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Twenty-First Annual

Undergraduate Research Conference

Butler University
April 17, 2009

Welcome!

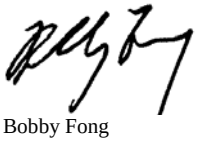
Welcome to Butler University and to Indianapolis!

Each year, 600 students from over 30 Midwest colleges and universities gather for the Butler Undergraduate Research Conference. The largest gathering of undergraduate researchers in the Midwest, this occasion offers students from a variety of disciplines the opportunity to present the results of their labors, replicating the format and climate of professional conferences.

Undergraduate research has been identified by the National Survey of Student Engagement as a "high impact" educational practice that promotes critical thinking, learning through practice, and knowledge in depth. It enhances undergraduate liberal learning as well as encouraging advanced study in the major.

I encourage your to take this opportunity to share in the enthusiasm and knowledge of your fellow students at this event. May your own presentations go well, but also support other presenters by attending sessions that pique your interest. Enjoy your experiences today!

Sincerely



Bobby Fong
President, Butler University

Butler University heartily welcomes you to the Twenty First Annual Undergraduate Research Conference. This year's conference brings together researchers as well as their mentors and friends from schools across the country.

The scholars participating in this year's conference have engaged the world of ideas and are kindly sharing their work. We commend their character and congratulate them for their accomplishments. Their presence ensures a future for the academy.

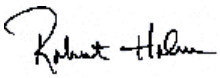
Faculty sponsors have encouraged and directed the talented young women and men toward a life of the mind. Faculty sponsors, thus, help these curious travelers follow a path of intellectual tradition. We thank the faculty for their support of these scholars.

Support derives not only in the form of hard work. We thank Eli Lilly and Company for its continued financial support of this event.

We hope that your experience on Butler's campus will help you sustain your mind, promote dialogue with others, meet individuals from other communities, and grow in understanding.

This conference represents people coming together to affirm the place of knowledge and truth in human affairs. By such gatherings are bonds of community strengthened and constructive destinations reached. Thank you for sharing your ideas with us on "your road to success".

Sincerely,



Robert F. Holm, Ph.D.
Co-Director

Richard J. McGowan, Ph.D.
Co-Director

Conference Personnel

Conference Director
Dr. Richard McGowan

Administrative Assistant
Jamie Survance

Conference Co-Director
Dr. Robert Holm

Special Events Advisor
Mary Azar Callahan

Area Coordinators

Anthropology
Dr. Elise Edwards

Art History
Dr. Elizabeth Mix

Biology
Dr. Michael Maloney

Business Administration & Economics
Dr. Deborah Skinner

Chemistry
Dr. Geoffrey Hoops

Communication: Speech and Journalism
Dr. William Neher

Education
Dr. Meredith Beilfuss

Exercise Science and Human Performance
Dr. Michael Worrell
Hanover College

Foreign Languages
Dr. Willi Schwoebel

Gender Studies
Dr. Katharina Dulckeit

History
Dr. Scott Swanson

International Studies
Dr. Montgomery Broaded

Literature
Dr. Lee Garver

Math and Computer Science
Dr. Rebecca Wahl

Media Studies
Dr. Allison Harthcock

Performing Arts
Dr. James Briscoe

Pharmacy/Health Sciences
Dr. Jane Gervasio

Philosophy & Religion
Dr. Chad Bauman

Physics
Dr. Xianming Han

Political Science
Dr. Craig Auchter

Psychology
Dr. Joel Martin

Sociology
Dr. Antonio Menendez

Visual Art
Dr. Gautam Rao

URC Conference Schedule

7:30 a.m.	Conference Registration and Check-in 2nd Floor Atherton Union Continental Breakfast, Reilly Room, Atherton Union
8:30 a.m.	Opening Remarks Dr. Jamie Comstock, Provost Reilly Room, Atherton Union
9:00 a.m. – 4:00 p.m.	Conference Sessions
10:00 a.m. – 3:00 p.m.	Poster Sessions First Floor, Jordan Hall
11:00 a.m. – 1:00 p.m.	Visual Art Display Reilly Room, Atherton Union
11:30 a.m. – 1:30 p.m.	Lunch Reilly Room, Atherton Union
12:00 p.m.	Welcome Address Dr. Bobby Fong, President Reilly Room, Atherton Union
4:00 p.m.	Conference Concludes

Presentation Schedule

Anthropology

Session A Jordan Hall, Room 276

09:15AM Rebuilding Vietnam in a Post-Conflict Era: An Interdisciplinary Investigation of Cultural Resources in Economically Deprived Communities. Scarlett Russell.
09:30AM Conflict Development and Resolution in College Groups. Michelle Ferguson.
09:45AM Two Tales, One City, and Millions of Refugees: The Effect of Smyrna on Greece and Greeks. Jennifer Banning.
10:00AM Interactions that Create Safe Havens: A Study of International Student Orientation Methods at Hanover College. Margaret McAdams.

Session B Jordan Hall, Room 276

10:30AM Differences in Male and Female Activity Budgets in Mantled Howler Monkeys (Alouatta palliata) on Barro Colorado Island. Cathrine Cozad.
10:45AM Social proximity of male and female Alouatta palliata on Barro Colorado Island. Leslie Stern, Cathrine Cozad, Chris Jernigan, Diane Matacale, Jillian Hodge.
11:00AM An examination of the prehensile tail use of Alouatta palliata on Barro Colorado Island. Jillian Hodge.
11:15AM Location preference in trees of Howler monkey on Barro Colorado Island, Panama. Diane Matacale.
11:30AM Observations of the mantled howler monkey (A. palliata) on BCI. Chris Jernigan.
11:45AM Intragroup Social Relations of Male and Female Alouatta palliata. Leah Moody.

Session C Jordan Hall, Room 276

01:00PM Witches in the Bible Belt: The Complex Power Relations of Contemporary Wicca. Tucker Foltz.
01:15PM Chaotic Expressions and Individuality in Modern Japan. Pedro Bassoe.
01:30PM Being Ao: Indigenous Identity in Nagaland, India. Ketayinla Jamir.
01:45PM Cargo Cults and Literacy in Papua New Guinea. Kathryn Crystal.

Session D Jordan Hall, Room 276

02:15PM Turning Possibilities into Fact: How Innovators Reinterpret Reality. Darren DeBruhl, Heidi Morrow, Brian Beasley, Chris Chambers, Lauren Holditch, Michael Kostelnik, Tim Morrison, Scott Peterson, Lindsey Sanner, Nate Weiss, Vanessa Wirth.
02:30PM A Moment in Archaeology: A Reflexive Examination of the Culture of Meaning-Making in Archaeology. Jonathan Irons.
02:45PM Strategikon: Anthropology and War. Tyler Wolford.
03:00PM Freeing the Snow Lion: A Theatrical Approach to a Tibetan Refugee Ethnography. Erin Aquino.

Art History

Session A Fairbanks Center, Room 146

02:15PM "Apocalyptic Opener": A Political Music Video. Mary Ruble.
02:30PM Wenda Gu and the Temple of Heaven. Tarin Milligan.
02:45PM Bruce Nauman. Cortney Norman.

Biology

Session A Gallahue Hall, Room 105

09:00AM The Identification of a Phytochrome B Gene in Nymphaea odorata. Alyssa Burkhardt.
09:15AM Factors influencing fox squirrel (Sciurus niger) leaf nest distribution in an urban residential habitat. Ryan Moog.
09:30AM Auxin Concentrations in Foliar Embryo of Kalanchoe pinnata during Leaf Development and Leaf Detachment via Agrobacterium Transformation and DR5:GUS Analysis. Mike Trombley.
09:45AM Flower Color Variability And The Effects Of Mixed Mating In The Protandrous Plant Saponaria Officinalis L. (Caryophyllaceae). Shabnam Jabbari.
10:00AM Protein Tertiary Structure Universe Viewed from the Perspective of Surface Shape. Matt Herron.
10:15AM A Study of Aquatic Invertebrates as Indicators of Organic Pollution in Pony Creek near North Manchester, Indiana using the Hilsenhoff Family-level Biotic Index. Katie Helmerick, Delanie Losey.
10:45AM Role of Decay Accelerating Factor (DAF) in Bacterial Translocation of Escherichia coli through the Intestinal Epithelium. W. Tania Rahman, Sean P. Colgan, Louise Glover, Simon Keely, Walter Bruyninckx.
11:00AM Effect of ectopic phosphatase expression on phosphorylation patterns in Drosophila. Audrey Spelde.
11:15AM Cover Object Preference in Forest Dwelling Salamanders. Megan McGlothin, Rebecca Hughes.
11:30AM Limnological Assessment on the Uses of Hydroacoustic Surveys to Describe Littoral Zones in Several Indiana Lakes. Ashlee Haviland.

Session B Gallahue Hall, Room 106

09:00AM An Examination of the Correlation between Shoot Apical Meristem Size and Leaf Heterophylly in Pisum sativum. Cindy Halfman.
09:15AM The Identification and Localization of Caltractin in Stentor coeruleus. Nabeel Kheiri.
09:30AM Determination of Dispersal Patterns of Ambystoma texanum at Eagle Creek Park, Indianapolis, IN. Stacey Summitt.
09:45AM Comparative Study of Tertiary Structure Prediction Methods. Priyanka Surana, Daisuke Kihara, David Yang.
10:00AM An analysis of the environmental and hormonal effects on the growth and development of the moss Ceratodon purpureus. Megan Knight.
10:15AM Two Eleutherodactylus species on Dominica and notes about habitat use. Ruth Carter.
10:45AM The Great Fish Debate: A Scientific Examination of Salmon Aquaculture. Elizabeth Otte.
11:00AM Computational Protein Function Prediction. Gregg Thomas (1), Daisuke Kihara, Meghana Chitale (2), David La (1).
11:15AM The Expression and Activity of Aromatase in Canine Reproductive Tissues. Leomar Bautista.
11:30AM Assessment of Headwater Habitats within the Central Muscatatuck Watershed in Southeastern Indiana. M. Ross Alexander.

Session C Gallahue Hall, Room 105

01:00PM Analysis of Radial Tree Growth Patterns Using Dendrometer Bands in Southeastern Indiana. Cassie Morris.
01:15PM A phylogenetic analysis of egg and clutch size characteristics in turtles. Jessica Swihart.
01:45PM Freshwater Mussels as a Measure of Lotic System Integrity. Sarah Curry, Emma Eilts, Jacob Wenger.
02:00PM Play Behavior in Three Sympatric Species of New World Monkeys in a Costa Rican Tropical Forest. Natasha Niday.
02:15PM The Effect of passage of time and the sampling mechanism on gene frequencies in a population of Drosophila initiated with equal numbers of Bar and Wild flies. Daniel Elliott, Kaleigh Nelson.
02:30PM Genetic diversity of two local fox squirrel (Sciurus niger) populations. Jill Devine.

Session D Gallahue Hall, Room 106

01:00PM Effects of Fire Season, Fire Front, and Fire Temperature on the Mortality of Various Tree Species in Early Successional Grasslands in Southeastern Indiana. Paul Killian.
01:15PM Modulation of 17 ß-Estradiol-induced Expression of BRCA1 by Chemotherapeutic Agents in Estrogen-Responsive Luminal and Estrogen Non- Responsive Basal-Type Human Mammary Epithelial Cells in Primary Culture. Danielle Black, Kari Kendall, Kelly Oda, Lynne Cary.
01:30PM Effects of Female Masculinization on the Behavioral Ecology of Spotted Hyena (Crocuta crocuta). Victoria Shaw.
01:45PM Reproduction, Habitat Preference, and Year Class Strength of Smallmouth Bass (Micropterus dolomieu) in the Eel River near North Manchester, Indiana. Ryan Peterson, Caleb Asbury.
02:00PM Isolation of Arbuscular Mycorrhizal Fungi from Successional Dune Landscape. Cameron Miller.
02:15PM The effect of passage of time and the sampling mechanism on gene frequencies in a population of Drosophila initiated with equal numbers of Bar and Wild flies. Sadie Dizney, Nick Sommers, Lauren Steele.

Business Administration & Economics

Session A Holcomb Building, Room 235

09:30AM Microfinance in Bangladesh. adoit pradhan.
09:45AM Why growing banking sector hasn't resulted in a rapid economic growth of Nepal? Johan Maharjan.
10:00AM Does the Minimum Wage actually create poverty? Alicia Dixon.

Session B Holcomb Building, Room 235

10:45AM Effects of War on International Trade in U.S. Shaheer Burney.
11:00AM Comparable Worth. Alex Robbe.

Chemistry

Session A Gallahue Hall, Room 108

09:00AM Solid Phase Amide Bond Formation using Staudinger-Vilarrasa Coupling and Microwave Irradiation. Ryan Schmidtz.
09:15AM Fill Your Stomach and Your Car - From Burgers to Biodiesel. Mark Howell.
09:30AM Organic Synthesis of Fluorescent Chemosensors for Metallic Ions. Rachel Koontz.
09:45AM Ionic Liquid Synthesis and Its Use as Solvent in Lanthanide Luminescence Studies. Katherine Cox.

Session B Gallahue Hall, Room 108

10:30AM The Determination of Alkylphenols in Surface Waters. Nishaat Yunus.
10:45AM The %Trans-fat in Fast Food French Fries: A Pilot Study. Nicole Helsel.
11:00AM Increasing Retention Times and Column Efficiency in Reversed-Phase HPLC by Focusing at the Column Head using a Non-Eluting Solvent. Andrew Kneller.

11:15AM Optimization of a polydimethylsiloxane based passive sampler of common household volatile organic compounds. Jennifer Osborne, Olujide Akinbo, Dr. Michael J. Samide.

11:30AM Exchange capacity of a poly(acrylic acid) ion exchange film for Pb2+ in aqueous solution. Kyle Mandler.

Session C Gallahue Hall, Room 108

01:00PM Infrared Spectroscopic Studies of Metal Ion Induced Changes in the Secondary Structure of transferrin protein. Allen Chacha.

01:15PM Characterization of Insulin Aggregation Using CE Separation and RLS Detection. Joshua Knapp.

01:30PM Enzyme Kinetics In A Genteically Engineered Protein Hydrogel. Nicholas Zehner.

01:45PM The Effect of Selenium Compounds on Oxidative Damage to the Mononucleotide 2'-Deoxyguanosine-5-Monophosphate and Formation of 8-Hydroxy-2'Deoxyguanosine. Stutay Monga.

02:00PM Characterization of DNA Functionalized Surfaces By Fluorescence Microscopy. Laurel Heckman.

02:15PM Effects of Parthenolide Derivative on Cervical Cancer Prone Cells. Rishi Megha.

Communication: Speech & Journalism

Session A Fairbanks Center, Room 246

09:00AM A Contrast of Bilingual and Monolingual Children in regards to Language Acquisition. Jessica Pfister.

09:15AM Race and Rhetoric in the 2008 Presidential Election. Lindsey VanDyck.

09:30AM "Report From Baghdad: The Ethical Concerns of Journalists on the Front Lines". Monica Freeman.

10:00AM A Comparative Analysis of the 2008 Presidential Campaign Coverage in Two Indiana Daily Newspapers: Are Voters Well-Served? Robert Herman.

10:15AM An evaluation and analysis of the fantasy themes of the emergent church movement employed in the rhetoric of Brian McLaren's A New Kind of Christian. Lindsay Snider.

10:30AM Bringing Cohesion to a Movement: The Dove Real Beauty Campaign. Elisabeth Duncan.

11:00AM Instant Democracy: Phone Text, Twitter, and YouTube. Edwin Faunce.

11:15AM Obama's Millennial Movement: A Fantasy Theme Analysis. Kathryn St. Cyr.

11:30AM Ensuring the Future of Environmental Journalism Through a Positive Environmental Ethic. Elizabeth Otte.

Education

Session A Jordan Hall, Room 183

10:00AM Alternative Education: A Pathway to Success. Kim Clement.

10:15AM What is the impact of the Montessori approach of education, as implemented on city public school students, particularly at IPS School 91? Katherine Arbuckle, Sarah Ryan, Arthur Hochman.

10:30AM Public vs. Private Secondary Education and College Success. Redrick Taylor III, Julia Smith, Rachel Dahlgren.

Exercise Science and Human Performance

Session A Gallahue Hall, Room 101

10:00AM Effect of Caffeine on the Resting Heart Rate and Resting Blood Pressure of Individuals With Varying Fitness Levels. Elizabeth Wehr.

10:15AM Ambulatory activity level and glucose clearance in overweight college-age males. Kyle Mandler.

10:30AM The Effects of Probiotic Therapy on Murine Leukocyte Proliferation. Danielle Eskens.

10:45AM Effects of Exercise, Time of Day, and Meals on Urinary Free Cortisol Concentrations. Trevor Lair.
11:00AM Validity of the Borg scale ratings of perceived exertion. Chelsea Uchihara.

Foreign Languages

Session A Jordan Hall, Room 278

10:00AM Wasser Thema in zwei Kurzgeschichten von Wolfgang Borchert. Meagan Hinze.
10:15AM Título: Experiencias y aprendizaje con niños indígenas en Chiapas. Rachel Walters.
10:30AM Reflektierungen von Deutschland. Meagan Hinze.
11:00AM L'ombre d'un doute: A Play in the Style of Eugène Ionesco. Adam Kegley, Ashley Kohl.
11:15AM Le Byronique de Bergerac. Sarah Cramer.
11:30AM Charles de Gaulle's influence on contemporary French culture and on France's rejection of genetically modified food. Susanna Foxworthy.

Gender Studies

Session A Fairbanks Center, Room 146

01:00PM Laws to Promote the Innocence and Chastity of Young Women in the Progressive Era. Heather Sperry.
01:15PM The Effects of the United States' Occupation of Iraq and Afghanistan on Women's Liberation and Equal Rights Movements in Arab Nations. Victoria Haladyna.
01:30PM Strike A Pose: The Fabulous Life of a Young Drag Queen. Adam Kegley.

History

Session A Jordan Hall, Room 205

09:00AM Diasporic Identity and Strategic Interests in Uyghur China: Xinjiang from the Han Dynasty to the Present. Nicholas Steiner.
09:15AM Reflections on a Revolution: The Xinhai Revolution of 1911 and What it Means for China. David Schultz.
09:30AM (Image)ining Danger:Purity, Race and America's Wars in Asia. Anna Obermayer.
09:45AM "Looking for the Army Bias". Amanda Rutherford.
10:00AM Legendary Leaders: Female Authority Figures in Irish History and Mythology. Janelle Jenkins.
10:45AM John Maynard Keynes and the Arts of Bloomsbury, 1919-1936. Kara Blakley.
11:00AM Looking Proudly Down: Examining the Case of Hanover College's First African-American Student. Abigail Fulton.
11:15AM Momentary Collapse: An Investigation of Twentieth Century Lynchings Based on a Case Study of the Marion, Indiana Lynchings. Leah Kent.
11:30AM Jimi Hendrix on Wikipedia: Good or Bad History? Lindsay Rump.
11:45AM The Pinkerton National Detective Agency: Looking Beyond Stereotypes. Stephanie Joyce.

Session B Jordan Hall, Room 205

01:00PM Constructions of Femininity: Women and the World's Columbian Exposition. Lauren Maxwell.
01:15PM Arianism in the North African Vandal Kingdom. Stephen Williams.
01:30PM Double Standard: An Analysis of the Gendered History of Birth Control in Mid-Twentieth Century Indiana. Laura Weiskopf.

International Studies

Session A Jordan Hall, Room 207

10:00AM American Multinational Companies in Ghana. Okletey Wilson-Tei.
10:15AM Genocide: Emotional Adjective or Legal Definition. Ida Nininger.

10:30AM Child Soldiers in Central Africa: Causes and Solutions. Katrina Bieker.
10:45AM Geographical Gender Gap: Exploring Differences Between Female National Parliamentary Representation in the Northern and Southeastern European Union. Jacqueline Mills.

Literature

Session A Jordan Hall, Room 303

09:00AM "You Can Only Guide Someone Who Asks": Essentialism vs. Individualism in Maryse Condé's Heremakhonon. Lydia Bringerud.
09:15AM Beyond the Slave/Whore: Veronica's Feminism in Maryse Conde's Heremakhonon. Emma Faesi.
09:30AM Wait for Happiness: Thinking Beyond the Sex. Krista Peterson.
09:45AM Maryse Conde's Heremakhonon: A Discourse on Reappropriating Black Female Sexulaity. Michelle Cabrera.

Session B Jordan Hall, Room 301

09:00AM Experiencing Subjective Time: An Explication of Eliot's Concept of Time. Jenna McCullough.
09:15AM Inside a Mind: Imitation and Representation in T.S. Eliot's. Eric Kokonas.
09:30AM The Fisher King and The Woods as God's Temple. Nathan Antiel.

Session C Jordan Hall, Room 303

10:30AM Yeats and Ronsard: Exploring the Connections. Susanna Foxworthy.
10:45AM Yeats Makes Modernism. Elizabeth Huggins.
11:00AM Pound and Imagism: Why They're Better than Romantics. Dustin Smith.

Session D Jordan Hall, Room 301

10:30AM Forget Mel Gibson and Ask Chaucer: What Do Women Want? Kristen Stout.
10:45AM Harry Monmouth: England's Fifth King Henry. Daniel Hallberg.
11:00AM Use of Comedic Utopias in François Rabelais and Dr. Seuss. Abigail Tohline.

Session E Jordan Hall, Room 307

10:45AM From Grass to Rushdie: The Inheritance of the Delusional Narrator in the Postmodernist Reclamation of the Past. Sara Gillespie.
11:00AM Discovering a Postmodern Mother and Child. Monica Freeman.
11:15AM In Other('s) Words: Ethical Representation in Holocaust Drama. Lindsay Snider.

Session F Jordan Hall, Room 303

01:00PM Memoir: Ways I Disappointed My Father. Dustin Smith.
01:15PM "Family Recipes". Sarah Murrell.
01:30PM Inheritance. Monica Freeman.

Session G Jordan Hall, Room 301

01:00PM "Spirit burthened with clay": Hawthorne and the Romantics. Catherine Barnett.
01:15PM Quoth the Alice 'Never More': A comparative study of how modern perceptions of Edgar Allan Poe and Lewis Carroll were formed. Robin Connelly.
01:30PM Identity and the American Dream: Revealing the Failure of the American Dream in Invisible Man, A Streetcar Named Desire, and Death of a Salesman. Allison Barlow.

Session H Jordan Hall, Room 307

01:00PM Pride and Excess: The Question of Sympathy in the Satanic and False Messianic Hero. Brandon Fitzsimmons.
01:15PM Mrs. McNair as Ghost and Child in Gail Godwin's "Dream Children". Kelsey Warren.
01:30PM Moral Vampires and Monstrous Maidens: The New Face of "Gothic". Abigail Fulton.

Math and Computer Science

Session A Jordan Hall, Room 242

10:00AM Generating Lower Bounds for G(k) in Waring's Problem. Keenan Hecht.
10:15AM OT-MACH filter generation and Pattern Recognition using Neural Networks. Wes Edens.
10:30AM Algebraic Cryptanalysis of SMS4. Jeremy Erickson.
11:00AM Eigenvalues of Structured Penta-diagonal Matrices. Johan Maharjan.
11:15AM Crazier Die-Games. Prayat Poudel, Johan Maharjan, Charilaos Skiadas.

11:30AM An Investigation of the Structure Underlying Irreducible Divisors. Drew Swartz, Hilary Smallwood.

Media Studies

Session A Fairbanks Center, Room 146

10:30AM An Analysis of Sexual Content in Popular Music. Jarrett Davis.
10:45AM Where Did My Music Go? Janet Czys.
11:00AM The Quest for Equality: Portrayal of Women's Suffrage in the New York Times, 1919-1921. Jenna Widmann.
11:15AM PROJECT CLOVERFIELD: An Update on American Film Genres. Keaton Wooden.
11:30AM Facebook and Employers: The Truth. Jackie Koumpouras.

Performing Arts

Session A Lilly Hall, Room 133

09:00AM Brahms and His Art: A Neoclassic Portrait of Music History and Personal Identity. Zakary Tschiniak.
09:15AM The Calculated Compelling Compositions of Cole Porter. Zachary Colby.
09:30AM Schumann's Fantasiestuecke: A Study in Romantic Aesthetics. Jamie Knuckles.
09:45AM Nationalism in Bedrich Smetana's Vltava. Catherine Kling.
10:00AM Olfactory Performance: The Essence of You. Emily Cross.
10:15AM Why Theatre? A Study of Robert Wilson. Rachel Bennett.
10:30AM The Power of Hope: Anne Frank and Ryan White Overcoming Hatred. EveMarie Bessenbach.
11:00AM The Composer Distilled in the Piano Etude: the cases of Chopin and Ligeti. Brooks Frederickson.
11:15AM The Ambivalence of Musical Expression in Times of Oppression: Dmitri Shostakovich's Symphony No. 5. Cora Davidson.
11:30AM Igor Stravinsky:His Underlying National Musical Heritage. Rachel Juszczak.
11:45AM A Modern Approach to a Baroque Form: the Bach-Busoni Fugue. Michael Tirman.

Pharmacy/Health Sciences

Session A Pharmacy Building, Room 106A

09:00AM Examining the Attitudes and Feelings of Pharmacists in the Retail Setting Regarding the Prospect of Over-the-Counter Statin Drugs. Jared Allen, Chris Peric, Cameron Willoughby, Bryan Dodd.
09:15AM Assessing Physician Compliance with the Use of Ipratropium for the Treatment of Asthma Exacerbations in the Emergency Room and Upon Hospital Admission. Alexis Bamvakais, Laura Strunk.
09:30AM Assessment in the difference in availability of Plan B emergency contraception in rural and urban pharmacies. Caitlin Austgen, Kortney Bolk.
09:45AM Physician response to pharmacist initiated renal dosing interventions in a rural long term care facility. Rachel Busch, Michael Furey, Sarah Nisly, Camille Boyken.
10:30AM Who's who among world healthcare. Amber Baig, Ann Blank, Alisha Bland.
10:45AM Evaluation of the efficacy and safety of varenicline at a Veterans Affairs Medical Center. Nora Phelan.
11:00AM Medications That Should Not be Delivered via Pneumatic Tube Systems. Megan Fleming, Lauren Rykovich, Amy Peak.
11:15AM Investigation of the potential risk associated with the concomitant use of clopidogrel and omeprazole: A retrospective chart review. Katie Bunner.
11:30AM Mutagenesis studies on the D2 Ci2 domain and its role in dopamine receptor signaling. Daniel Jansen.

Session B Pharmacy Building, Room 106B

09:00AM The Impact of Pharmaceutical Care in an Underserved Community Care Center. Erin Hewitt, Ryan Humphrey, Debbie Saurmann.
09:15AM Analysis of appropriate use of albuterol metered dose inhalers in a retail pharmacy setting. Ashley Swearingen, Jennifer Karn-Clodfelter.
09:30AM Top Healthcare Systems of the World. Alisha Bland, Amber Baig, Amarjit Kaur
09:45AM Incidence of pneumonia in COPD patients treated with inhaled corticosteroids within a veterans affair medical center (VAMC). Nathanael Repine, Trish Szachta, Amanda Woloszyn, Trish Szachta, Darin Ramsey.
10:30AM Nanoparticulate formulation of Low-Molecular Weight Heparin (LMWH) and dimethyldioctadecylammonium bromide (DDAB). Reid Hanway, Nathan Brooks, Nusrat Motlekar.
10:45AM A Prospective Evaluation of Anti-Xa Levels in Obese Patients Receiving Enoxaparin for Venous Thromboembolism Prophylaxis. Brett Gatens, Cory Layton, Danh Dinh, Cory Layton.
11:00AM Assessment of Cardiovascular Risk in an Underserved Community Using the Framingham Criteria. Erica Wring, Andrea Bishop, Ashley Townsend.
11:15AM Linezolid Utilization Patterns in a Veterans Affairs Medical Center: A Retrospective Chart Review. Timothy Ryan Overpeck.

Session C Pharmacy Building, Room 202

09:00AM My First Patient: Teen Style. Kimberly Barker, Carrie Kessler, Kristal Williams.

09:15AM Assessing a Human Papillomavirus (HPV) Health Promotion Campaign on a University Campus and Among Community Groups. Felicia Eckerle, Kimberly Long, Amy Howell, Carrie Maffeo.

09:30AM Resources to Enhance Achievement of Community Health in Indiana (REACH IN): Pharmacy Students' Perceptions. Nicole Javit, Courtney Seal.

09:45AM Evaluating Outcomes of Patients with Invasive Methicillin-Resistant Staphylococcus aureus (MRSA) Infections: A Look into Vancomycin Minimum Inhibitory Concentrations (MIC's). Tara Menacher, Rebecca Wyatt.

10:00AM Investigation of the Use of Aranesp through Observing Initial Dosing Patterns in Patients with Anemia Due to Chronic Renal Failure. Neil Ratcliff.

10:30AM Examining the Attitudes and Opinions of Pharmacists in the Retail Setting Regarding the Prospect of Over-the-Counter Statin Drugs. Chris Peric, R. Cameron Willoughby, Bryan Dodd, Jared Allen.

10:45AM Role of Community Pharmacies in Addressing Public Health Needs in Health Care Professional Shortage Areas (HPSAs) in Indiana: A Qualitative Analysis of the Community Pharmacist Perspective. Joshua Lorenz, Carriann Richey (Smith).

11:00AM Evaluation of Feeding Intolerance of Patients Placed in Pentobarbital-Induced Coma at Methodist Hospital. Gabriel Stillabower, Josh McGehee, Nicole Ponton, Jonathan Egel.

11:15AM Utilization of secondary prevention medications following a first acute myocardial infarction: a retrospective cohort analysis. Ryan Chavis, Lindy Stitz.

11:30AM Evaluation of Compliance Rates for Pediatric Vaccinations and Analysis of Parental Beliefs and Concerns Regarding These Vaccinations. Kellianne Holt, Emily Papineau, PharmD.

Session D Pharmacy Building, Room 205

09:00AM Assessment of COPHS Technology Initiative - A Faculty Perspective. Crystal Baumberger, Lindsey Whaley.

09:15AM The Impact of Varenicline on Smoking Cessation within a CVS Patient Population. Rachel Gotshall, Brittney Konrad, Haley Carroll.

09:30AM Clinical Information Systems in the US health system: understanding the barriers to implementation. Sheryl Selvey.

09:45AM Top Healthcare Systems of the World. Nichole Stetson, Amanda Lee.

10:00AM Influence of drug samples in the selection of future drug therapy: A retrospective chart review. Ashley Soulliere, Theresa Kellar.

10:30AM Implementing 797 Guidelines in a Compounding Pharmacy. Kirsten "Kasey" Tobbe, Brooke Timberlake, Laura Eckart.

10:45AM Review of Tygacil (tigecycline) administration and its FDA approved indications. John Honeas, Ryan Drury.

11:00AM Developing an Assay to Profile the Upregulated TREK-1, a Stretch-Activated Potassium Channel, found in Prostate Cancer. Susan Surber.

11:15AM Assessment of lipid management examining LDL goals at Community Family Medical Clinic: a retrospective chart review. Eric Harter, West Evan, Evan West, Lindsey Whitis.

11:30AM A Study of the Relationship between Nutritional Knowledge and Healthy Eating Habits. Megan Hamilton, Claire Brackmann.

Session E Pharmacy Building, Room 212

09:00AM The Effect a Consistent Regimen of Strength Training, via a Boxer's Workout, can have on Parkinson's Disease Progression and Patient's Quality of Life. Allison Kroeger, Katie Leciejewski, Angela Ockerman.

09:15AM Evaluation of the COPHS Technology Enhanced Learning Initiative: A Student Survey. Keith Hildebrand, Erin Linneman.

09:30AM The correlation between weight change and the variation in INR level in patients on warfarin. Chelsie Bentz.

09:45AM Evaluating Physician Prescribing Trends and Compliance with Current JNC-7 Hypertension Guidelines. Nicholas Reed, Greg Watts.

10:00AM The effect of inhaled corticosteroids on cardiovascular hospitalizations in patients with COPD. Lyndsay Gray, Jessica Love, Matt Speheger.

Session F Pharmacy Building, Room 106A

01:00PM Retrospective Chart Review & Analysis of Antibiotic Use in Patients with Acute COPD Exacerbations. Erik Adamson, Phil Habing, Philip Habing.

01:15PM Top Health Care Systems of the World. Scott Vouri, Matt Rettig, Ann Blank.

01:30PM Evaluation of Erythropoiesis Stimulating Agent Prescribing Patterns at the Clarian Hematology Oncology at Methodist Hospital Outpatient Clinic: A Retrospective Chart Review. Aaron Lanning, Phillip Buchanan.

01:45PM Resources to Enhance the Achievement of Community Health for Indiana (REACH IN): Patient Perspectives. Danielle (Harman) Smuck, Valerie Ott.

Session G Pharmacy Building, Room 106B

01:00PM Evaluation of Feeding Intolerance of Patients Placed in Pentobarbital-Induced Coma at Methodist Hospital. Jonathan Egel, Gabriel Stillabower, Josh McGehee, Nicole Ponton, Nicole Ponton.

01:15PM Current Drug Disposal Practices of the Indianapolis Community: A Patient Viewpoint. Lindsey Love.

01:30PM A magazine-style educational resource for the young female with diabetes. Rachael Schroeder, Mary Shea, Kristal Williams.

01:45PM Impact of the Type of ACE-inhibitor Initiated After an Acute Myocardial Infarction on Future Hospitalizations Due to Cardiovascular Complications. Ryan Kluber, Jonathan Klimek.

Session H Pharmacy Building, Room 202

01:00PM Evaluation of Advanced Pharmacy Practice Experience Competency Requirements. Denise Kolanczyk, Andrea Sadtler.

01:15PM Roles of Pharmacy In Underserved Settings. Jesse Haines.

01:30PM A Collection of Patient Education Materials in a CD-Rom for Family Residents and Patients. Benjamin Pearson.

01:45PM Treatment of Enterococcus Bacteremia in a Hematology-Oncology (Hem/Onc) Population. Amy Lorenz, Gina Christofaro.

Session I Pharmacy Building, Room 212

01:00PM Assessment in the difference in availability of Plan B emergency contraception in rural and urban pharmacies. Kathy Corressell, Kortney Bolk, Kristen Nichols.

01:15PM Assessment on the appropriateness of benzodiazepine therapy compared to antidepressant therapy for the long-term treatment of generalized anxiety disorder. Lynnsey Showers, Allison Worthington, Darin Ramsey.

01:30PM Assessing physician compliance with the use of Ipratropium for the treatment of asthma exacerbations in the emergency room and upon hospital admission. Suzi Ritzi, Sabrina Douglas, Sheel Patel, Alexis Bamvakais, Laura Strunk.

01:45PM Medication Therapy Management and Health Literacy Assessment through Healthy Horizons: the "Manage My Medications" Study. Pamela Burcham, Lindsay Saum, Christy Pelych.

Philosophy & Religion

Session A Jordan Hall, Room 201

10:00AM Breathe Slow, Jot Fast: An Exploration of the Effects of Meditation on Creative Writing. Samantha Atkins.

10:15AM Breaking Bread: Reconnecting to the True Self through Individual and Communal Eating Habits. Annie Huey.

10:30AM Religious Involvement & College Students' Outlook on Life. Mele Cabral, Amy LaGrange, Henry Stern IV.

10:45AM Icons: A Comparative Look at the Development of Christian and Buddhist Icons. Keith Lohse.

Session B Jordan Hall, Room 201

01:45PM The Integration of Reason and Morality: Aristotle's Concept of Phronesis. Rebecca Carhart.

02:00PM On the Phenomenological account of James's Metaphysics. Ryan Commet.

02:15PM Paradigm Shifts and Incommensurability—Fighting the Trend of Relativity. Emily Mudge.

02:30PM Justification is a Signifier of Truth: A Solution to the Swamping Problem. Isaac Glahn.

Session C Jordan Hall, Room 201

03:15PM Peace at What Price? The Ethics of Private Military Contractors and Humanitarian Interventions. Reed Kurtz.

03:30PM A Process Philosophy of Medicine. Nicholas Zehner.

Physics

Session A Gallahue Hall, Room 348

09:00AM Electromagnetically Induced Transparency of Rubidium Vapor. Thomas Tuegel.

09:15AM Fractal Construction by Simulation of Quantum Random Motion. David Johnson.

09:30AM The Opto-Galvanic Effect. Lewis Parker.

09:45AM Assembly of a Testing Apparatus for Electron Position Sensing Devices. Kyle Obergfell.

10:15AM Growth and Evolution of the Central Black Hole in the Galactic Nucleus. Kim Phifer.

10:30AM Temperature Analysis of Galactic Bubbles. Utsav Hanspal.

10:45AM Lack of Triggered Star Formation. Abel Mengistu.

11:00AM Variability of Sun-like Stars in the Old Open Cluster M67. R. Wesley Tobin.

11:15AM Search for X-Ray Pulsations from the Radio Pulsar PSR J0631+1036. Lynda Wilkinson.

11:30AM The Emergence of Spacetime in String Theory. Nate Vander Werf.

Session B Gallahue Hall, Room 348

01:30PM AFM Studies of conducting polymer P3HT on Mica, Live Gold Electrode Gaps, and Pre-flight samples for MISSE-7. Tsega Mengistu.

01:45PM Radiative Decays of the J/? Meson. Bethany Reilly.

02:00PM Kinetics of Heating and Cooling of Nanoparticles in Pulsed Laser Fields. Christian Iversen.

02:15PM Optical Properties of Normal and Cancerous Cell Organelles. Molly Gillam.

02:30PM Short and Ultrashort Laser Pulse Heating of Bone Tissue. Colin Rice, Renat Letfullin.

02:45PM Measuring Faraday Rotation with an Alternating Magnetic Field. Michael Gehl.

Political Science

Session A Jordan Hall, Room 203

11:00AM A Guide to Understanding Rural Hospital Construction and Expansion, 1946 to 2008. Sarah Davis.
11:15AM Patriots, Plumbers, and Our Better Angels: The Establishment of Ethos in the Rhetoric of the 2008 Presidential Campaigns of Sens. John McCain and Barack Obama. Ryan Hehner.
11:30AM More than Minimal: Judicial Minimalism and the October 2006 Supreme Court Term. Sean Clerget.
11:45AM The Bias Box: Television News Sources, Political Party Affiliation, and Democracy. Jeremy Castle.

Psychology

Session A Jordan Hall, Room 216

09:00AM Religiosity and Health: Associations and Possible Explanations. Elliot Spengler, Nicole Ehlert, Kate Wainwright, Aliza Strock, Stephanie Guetig.
09:15AM Religious and Sexual Identity Among LGB Individuals Raised Christian. Kelli Hammes.
09:30AM Sex Differences and Antigay Bias in Responses to Same-sex Stimuli. Christine McLean.
09:45AM What do students want to learn from a human sexuality class? A qualitative study of students' first-day interests. Erica Lindburgh, Christian Driver.
10:00AM The Influence of Sexually Explicit Material on Women's Sexual Behavior and Attitudes. Shanna Sutherland.
10:30AM Hate Group Impressions of Barack Obama: Pre and Post the 2008 Election. Kristina Wesler.
10:45AM Race, Interrogation, and the Perception of Guilt. Meredith Elliott, Seyram Kekessie.
11:00AM Explicit and Implicit Gender in the Context of Gender Schema Theory. Jacob Cooper, Karin Schubert.
11:15AM Moral Judgments in the Third Dimension. Lee Harp, Jennifer Caudill.
11:30AM The effects of facial similarity on displaced aggression. Kristen Brookes, Zach Liapis.

Session B Jordan Hall, Room 236

09:00AM I May Have Memory Problems, But They're Nothing Like Ethel's: Self-Perceptions in Spouses of Dementia Patients. Amanda Zolman, Lindsay R. Palmer, Patrick Healey, Diane Healey.
09:15AM Can Eye Interrupt? The Effect of Auditory Distraction, Visual Distraction & a Simple Intervention on College Students with ADHD. Jenna Pierce, Samantha Campbell, Eric Massey, Suneeta Kercood.
09:30AM Memorattention: Adults Fail to Distinguish Memory from Attention When Forming Self-Judgmenmts. Madison Hurd, Katie Berg.
09:45AM The Fate of Abandoned Answers. Kaitlin Kiburz.
10:15AM Two heads are still better than one: Collaborative inhibition is artifactual. Lauren McClure.
10:30AM Effects of Encoding Specificity on Analogical Problem Solving. Anna Smitherman.
10:45AM Effects of Color on Scene Recognition Memory. Tabitha Walls.
11:00AM The Effects of Perceived Failure or Success in Cooperative Tasks on Group Performance and Individual Self-Efficacy, Self-Esteem, and Motivation. Jessica Berryhill.
11:15AM Who is at Fault? A Look at Blame-Placing in Regards to Self-Esteem and Locus of Control. Rachel Doty.

Session C Jordan Hall, Room 238

09:30AM Why do Psychology Departments Require Students to Take Research Methods and Statistics Courses? Georgia Waddups.
09:45AM Peer Mentoring and Emotional Intelligence. Nathan Raines.
10:00AM The Goldest Golden Years: Physical Activity Levels in Later Life. Christopher Ketcham, Myles Trapp.
10:15AM The Effect of a Partner's Attractiveness on the Perception of the Companion. Leslie Rowan, Joseph Petrucci.
10:45AM The effects of sexualized content in children's media on pre-adolescent girls' self image. Erin Huntington, Chelsey Cabatu.
11:00AM The Stress and Coping Strategies for Parents of Children with Autism Spectrum Disorder. Cody Davis, Ayca Coskunpinar.
11:15AM The Effect of Child-Parent Relationships on Romantic Partner Selection. Courtney Tyler, Sarah Pasquale.
11:30AM Effects of Acculturation on Subjective Well-Being: A Group Without Ethnic Solidarity. Candice Lane.

Session D Jordan Hall, Room 216

01:00PM Correspondent Inferences and Schemas. Megan Drudy.
01:15PM The Effects of Equine-Assisted Psychotherapy on Juveniles in a Residential Treatment Facility. Rebekah Wilson, Kristine Schuster.
01:30PM Expectancy Effects and Behavioral Performance According with Experience Level. Ashley Bane, Ashley Devers.
01:45PM Exploring the relationship between alcohol consumption and happiness. Krissy Noren, Lisa Ellens.
02:00PM Eating Disorders Among College Students. Jeanette Gutierrez, Julie Milosevich, Susana Morales.
02:30PM Point Vibration Therapy Device for Individuals on the Autism Spectrum. Rebecca Van Aartsen, Kevin Wagner, Steven Lehmann, Eric Devine, Kimberly Sajevic, William Burgett, Jonathan Blackwell, Christopher Handley.
02:45PM College Student Sleep Habits: Relationships Among Attitudes, Personality, and Health. Alexis Chambers.
03:00PM Native American Concerns in Psychology. Amanda Hawk.

Session E Jordan Hall, Room 236

01:00PM Birth Statistics for African and Asian Elephants in Human Care. DeeDee Lehner.
01:15PM The Behavioral Development of African and Asian Elephant Calves. Brittany Hock.
01:30PM Spy-hopping in Mustelus canis: adaptive behaviors of the smooth dogfish shark in captivity. Megan Vaupel.
02:00PM Improving Communication for Locked-In Syndrome Patients. Jessica Williams.
02:15PM Color Afterimages from Invisible Colors. Judith Asem, Greg Francis.
02:30PM The Effect of Graphical Quality on Aggression in Violent Video Games. Michael Sterling, Kyle Kollstedt.
02:45PM Optimization of electrode placement in movement-based non-invasive brain computer interfaces. Nicholas Del Grosso, Darcy Dubuc.

Session F Jordan Hall, Room 238

01:00PM "Should I? Would I?": Self-discrepancy and the Costs of Failing to Confront Prejudice for Non-targets. Lindsey Boes, Scott Anderson, Robert Doyle, Jarrad Shaw, Jamie Watson.
01:15PM Dedicated to the One I Love: Relationship Serving Attributions May Undermine Prejudice Confrontation. Amica Jutla, Carrie McGrath, Michael Monceski, Tori Rice, Jessica Van Cleave, Jennifer Petty.
01:30PM Stigma Controllability & Confronting Mental Illness Prejudice. Sisi Yu, Cheyenne Dunbar.
01:45PM What Beliefs are Stigmatized? David Briley.
02:15PM Effect of Affiliation on Response to Prejudiced Remarks. Kristen Malone, Laura Spice, Kate Morris.
02:30PM Confronting Sexism: Who Is Responsible? Marie Danh, Peggy Zizzo, Laura Spice, Kristen Malone, Alex Lindsey.
02:45PM Telling Your Boss What You Really Think: Sexism Confrontation as a Function of Perpetrator Power and Perceived Intent. John Blanchar.
03:00PM Who Should Speak Up? Perceived Responsibility for Confronting Racism. Alex Lindsey, Marie Danh, Peggy Zizzo, Laura Spice, Kristen Malone.
03:15PM When Do African Americans' Implicit Racial Biases Predict their Liking of Healthcare Providers? Winnie Mancil, Janna Williams, Leslie Ashburn-Nardo.

Sociology

Session A Jordan Hall, Room 348

09:00AM Predispostional Factors: Who's the next serial killer? Katie Krueger.
09:15AM An Exploration of Gender and Violent Offenders: A Look at the College Students' View of Male and Female Serial Killers. Linda Lawder.
09:30AM Jail Staff And The Experince Of Work Stress And Emotional Dissonanace: The Role of Emotional and Psychological Influences. Stephen House.
09:45AM The Implementation of Restorative Justice in South Africa: Conflicts of Parks and People- A Case Study. Liz Wilmers.
10:00AM Addressing the 'Need to Know': Are Our Opinions of Sex Offender Registries Based on Emotion or Pragmatism? Amber Oconnor.
10:15AM The Effect of Drugs on Performance at School and Work. Josh Anna.
10:30AM Members of Fraternities Who Choose to Abstain from Drinking and Their Perceptions of Their Fraternity Brothers. William McInerney.
10:45AM The Conceptualization of Human Trafficking in the Media: A Content Analysis of United States Newspapers. Alicia Brownlee.
11:00AM The Art of Video Games - An Investigation of Sex, Race, and Violence. Jon Florida.
11:15AM Attitudes on Abortion and Demographics Which Effect Them. Shelby Pile.

Session B Jordan Hall, Room 387

11:00AM Is Heterosexism Prevalent Among University Students? Amanda Bednara.
11:15AM College Students and Current Events: Are Students Really Informed? Andrew Tompkins.
11:30AM The importance of birth control methods among college students. Greta Petri.
11:45AM HIV/AIDS: Religiosity, Knowledge, and Sexual Practices of College Students. Chloe Blasingame.
12:00PM Moral Panics, College Students, and the Internalization of Methamphetamine Stereotypes. Katie Butler.
12:15PM Being An International Student: The Experience From Their Own Perspective. Lindsey Kanter.
12:30PM The Impact of Valparaiso University Study Abroad Programs on Students' Worldviews. Whitney Pollatz, Jodi Naumann.
12:45PM College Student's Views of People with Visible Physical Disability and the Perceived Factors Affecting Social Interaction between the Nondisabled and the Physically Disabled. Amanda Redman.
01:00PM The Effect of Place of Residence and Social Integration on Suicidal Ideation of College Students. Kelly Ferriell.

Session C Jordan Hall, Room 348

01:00PM Fashion Roadkill: The effects of fashion consciousness on disordered eating in young women. Kristen Lulich.
01:15PM Harvesting Starvation. Morgan Roddy.
01:30PM Alternative Opportunity Structures in Adult Education. Lucie Kalousova.
01:45PM Still Separate and Unequal. Adam Butler.
02:00PM Colliding Realities and Narratives of Socioeconomic Class and School Achievement. Emily Miller.
02:30PM Gender Inequality in Disney Feature Length Animated Films: The Evolution and Perpetuation. Jesseca Cox.
02:45PM Romantic Relationships in the Workplace. Leigha Corbett.
03:00PM Father Absense and the Effect on Female romantic Relationships. Rachel Lewis.
03:15PM Parental Arguing: How Child Witnesses Are Affected. Jenny Jerdan.

Visual Art Display

Group A 11:00am - 1:00pm, Atherton Union Reilly Room

1 Black and White Photographs. Connor Ray.
2 Extended Memories. Jamie Kostecki.
3 Oh Snap! : An Experiment in Photography. Brenden Hudson.
4 The Middle of Somwhere. Jonathan Irons.
5 A Moment in the Demise of Wright St. University. Jonathan Irons.
6 Salad Fingers. Jonathan Irons.
7 Reflections of Femininity. Katelin Clark.

Poster Presentations

Group A 10:00am - 10:50am

1 Eastside Story: Portrait of a City Neighborhood on the Suburban Frontier. Margaret Baurley, Dan Branstrator, Autumn Langley, Stephanie Yarian, Autumn Langley, Courtney Singleton.
2 Reaction Functions in the Chinese and U.S. contexts. Nam Vu.
3 To Blink or Not to Blink: Investigating Prepulse Inhibition and Facilitation in Schizophrenia Patients. Lindsay R. Palmer, William P. Hetrick, Tara T. Lineweaver.
4 Intergroup Attitudes of Caucasians toward African-Americans. Christopher Childs.
5 Discrimination of attention-related and motor-related evoked activity by hemispheric comparison over the motor cortex. Darcy Dubuc, Nicholas Del Grosso.
6 Piecing Autism Together: Families and Support Groups. Daniel Ladig.
7 Cyberporn and Loneliness among Undergraduate College Students. Chris Haak, Joe Winger, Seth Ragsdale, Jon Pfleegor.
8 The Relationship between Traditional Cheating, Digital Cheating, and Gender among College Students. Ashley Lawrence, Anna Isaacson.
9 Attitudes Toward Autism. Carrie Edyvean.
10 A Study on the Relationship of Media and Intimacy. Ashley Johnson, Laura Wheeler.
11 An Analysis of Gender and College-Age Students' Self-Disclosure on Facebook. Grace Arnold.
12 College Students' Inclination to Use the Internet Over Other Forms of Entertainment. Travis Cooper, Josh Henderson, Jeff Brady, Kory Hollensteiner, Jeremy Lopez, Allen Kincaid.
13 A Middle Class Look at the Adolescent-Adult Transitional Period and the Self-Concept. Bryan Findley.
14 State of Assault. Megan Smith, Amanda Smith.
15 The Influence of Anatomical Placement and Walking Speeds on Pedometer Accuracy. Travis Misamore.
16 A Brief Respite. Jonathan Irons.
17 Developmental changes in mandibular precursors at embryonic day 13.5 in Ts65Dn mice. Brady Harman, Randall Roper, Josh Blazek, Cherie Billingsley, Emily Thomas, Danny Carney, Nicole Shepherd, Will Brewer.

Group B 11:00am - 11:50am

1 The Expression of Heat-Shock Protein 70 and Metallothionin I in Trout Red Blood Cells Exposed to Cadmium: Development of a Cell Physiology Lab. Victor Anciano.
2 Conservation of C2H2 zinc-finger proteins in eukaryotic genomes. Vincent Keller.
3 Increased Developmental Delay in the Ts65Dn Down Syndrome Mouse Model. Abby Newbauer, Randall Roper, Josh Blazek.
4 A retrospective analysis of comorbid traits associated with craniofacial dysmorphology in infants with Down syndrome. Sandra Stone, Randall Roper, Maria Stanley.
5 Genetic Basis of Abdominal Pigmentation Variation in D. ananassae. Taruna Aggarwal.
6 Investigating the Relationship Between Vacuolar Proteins and Telomere Length Regulation. Jillian Koziel, Sarah Shewmaker, Emily Brandau, Alberto Lubrano.
7 Fungal Growth Rates Supreessed In Honey Bee Colonies By Regular Treatment Of Organic Acids. Brady Christensen, Jay Yoder, Travis Croxall.
8 Effect of Polymerase Mutations on the Efficiency of Break-Induced Replication in Saccharomyces Cerevisiae. Alexandra Vayl, Anna Malkova, Kelly Van Hulle.
9 Increasing the Solubility of Ebolavirus Nucleoprotein. Heather Jeffries.
10 Negative Synergistic Epistasis in Drosophila Melanogaster. Caitlin Rex, Sarah Rossiter, Amanda Lyons.
11 Mites Present On The Madagascar Hissing-Cockroach May Serve As In Reducing Human Associated Mold Allergies. Michael Chambers, Jay Yoder, Justin Tank, Joshua Benoit.
12 The effect of chaya extract on the ergosterol synthesis in S. cerevisiae. Patty Campbell, Dominique Edwards.
13 The %Trans-fat in Fast Food French Fries: A Pilot Study. Lauren Frank, Matthew Westenfeld.
14 Optical Absorption of Normal and Leukemic Cells. Andrew Huh.
15 The effects of maternal deprivation and MK-801 on prepulse inhibition in BALB/cByJ mice. Laura Wiscomb, Erin Crask.

Group C 12:00pm - 12:50pm

1 The Expression of Metallothionein I in Indiana Game Fish Exposed to Copper. Juan Hernandez, Chris Owens.

2 Inciting Cimex Lectularius To Host Seek: The Effect Of Releasing 2-Hexenal And 2-Octenal (Two Alarm Pheromone Components Released During Feeding) In The Presence Of Inactive Bed Bugs. Bethany Rohr, Jay Yoder, Joshua Benoit.

3 Synthesis and Use of Cyclic Vinyl Boronic Acid. Jeni Bishop.

4 Synthesis of Heterocyclic Amines from 1,4-Hydroxypyridine. Alicia Phelps, John Esteb.

5 Development of the Methodology for the Synthesis of Substituted Cyclohex-2-en-1-ols. Wendu Ding.

6 Synthesis of Fragrant Esters Using the Microwave Reactor. Crystal Hon.

7 Indirect Modification of Electrodes via Thiophene-Derivative Electropolymerization for Water Quality Monitoring. Elizabeth Wagoner.

8 Enhanced Infrared Absorption of Anisole. Brittnee Singco, Ashley Pinaire, Shannon Teeters-Kennedy.

9 Liquid Carbon Dioxide Extraction of Various Food Flavors, Evaluation and Analysis. Deven Shinholt.

10 Fire Walking Analyzed. Travis Rider.

11 Extraction of Menthol from Mentholated Cigarettes. Grace Douglass, Stephanie Knezz.

12 The effects of geometry on the singlet-triplet coupling of m-bis-allyl benzene diradicals. Paul Jones, Paul Wenthold.

13 Fabrication of Glass and PMMA Microfluidic Devices using Laser Ablation. Benjamin Mann, Ron Hofmann.

14 Understanding the Dipole Moment Function of Heteronuclear Diatomic Molecules. Erin Biddle, Adam Wasserman.

15 Development of Carbene Complexes with Tungsten and Chromium Metals using Microwave Technology. Devin Shone, Scott Wentz.

16 Exploring the Complex Hydrogen-Bonding Network in D1-like Receptor Binding Pocket by Synthesizing and Evaluating Bicyclic Dopamine Analogues. Aubrie Harland, Dr. David Nichols, Lisa Bonner, Benjamin Chemel, Jose Juncosa.

Group D 1:00pm - 1:50pm

1 Habitat remediation of Vinca minor invaded forests in southeastern Indiana. Jessica Peebles.

2 A Comparative Study of Parrotfish Herbivory and its Effects on Algal Cover at Two Patch Reefs off the Eastern Coast of Andros Island, Bahamas. Christopher Cagnet, Jenna Oberley, Tyler Overmyer, Emily Cebalt.

3 The Effects of Wetland Restoration on Salamander Populations in Eagle Marsh; Allen County, Indiana. Leslie Hamilton.

4 Monitoring the Natural Return of the Long-Spined Sea Urchin, Diadema Antillarum, and Its Effects on the World's Third Largest Barrier Reef Complex, Andros Island, Bahamas. Amy Roberts, Vanessa Herman, Ashley Everhart, Melissa Boyle.

5 Ramifications of Nascent Fungicides on Local Aquatic Organisms. Heather Jeffries.

6 Light microscope analysis of dandelion (Taraxacum officinale) tissues exposed to heavy metals. Julie Ziegler, Matthew Collier, Jaclyn Flickinger, Kevin Gribbins.

7 Determination of metal storage sites in the root and leaf tissues of North American dandelions (Taraxacum officinale). Jaclyn Flickinger, Matthew Collier, Julie Ziegler, Kevin Gribbins.

8 Recovery efforts of orchid endomycorrhizal fungi from herbarium specimens. Andrew Pille, Matthew Collier, Michael Chambers, Brady Christensen, Travis Croxall, Jay Yoder, Lawrence Zettler.

9 Concentration of Cu, Fe, Pb, and Zn in dandelions (Taraxacum officinale; Asteraceae) growing in central Ohio urban polluted soils. Natalie Davidson, Matthew Collier.

10 Determination And Characterization Of A Cave Cricket Aggregation Pheromone And Its Implicatinos For The Cave Ecosystem. Travis Croxall, Jay Yoder, Brady Christensen.

11 A histological examination of seeds sampled from terrestrial, aquatic, and epiphytic orchid (Orchidaceae) taxa using scanning electron microscopy. Samantha Imfeld, Matthew Collier, Kevin Gribbins, Jay Yoder, Lawrence Zettler.

12 The Determination of Macro Algae Taxonomy and Percent Coverage on Patch Reef Areas; Andros Island, Bahamas. Megan Selking, Thomas Meehan.

13 Freshwater suitability and spread to inland locations in the red-jointed fiddler crab by suppressed cuticular permeability to water. Chloe Hart, Sarah Stueber, Matthew Collier, Kevin Gribbins, Michael Chambers, Jay Yoder, Jason Bosley.

Group E 2:00pm - 2:50pm

1 The germ cell development strategy during mixed spermatogenesis within the male Mediterranean Gecko, Hemidactylus Turcicus (Reptilia: Gekkonidae). Erik Poldemann, Kevin Gribbins, Justin Rheubert, Matthew Collier.

2 Histological Evaluation of Spermatogenesis in the Spiny Lizard, Sceloporus bicanthalis. Marla Anzalone, Nicole Vrettos, Kevin Gribbins, Erik Poldemann.

3 Glandular Secretion From The Urnulae Of The Red Velvet Mite Provides Extreme Resistance To High Temperature. Justin Tank, Jay Yoder, Brian Hedges.

4 Strain Of Adult Seed Beetle That Exhibits Larval Competition Promotes Water Conservation And Survival. Daniel Buchan, Jay Yoder, Justin Tank, Bethany Rohr, George Keeney.

5 Ability To Resist Heat Damage Due To High Temperatures By Dermal Gland Secretion During Feeding In The Brown Dog Tick. Brian Hedges, Jay Yoder, Justin Tank, Joshua Benoit.

7 Observations of Dwarf Novae Outbursts and Causal Mechanisms. Dennis McClure.

6 Interactions between the a9/a10 ACh Receptors and the SK2 Channel. Nancy Rivera.

8 A Critical Case Study in Usage-Centered Design. Austin Toombs, Andrew Haddad.

9 Simulating the Velocity Distrobution Dispersion Function. Nicholas Humphrey.

10 Reflectance from Nichrome Nanofilms at Communications Wavelenths. Amanda Barnett, Azad Siahmakoun, James Wilkerson.

11 The Search for Substructure in Abell Galaxy Clusters. R. Wesley Tobin.

12 Programming Electrons! Neal Coleman.

13 The accuracy of the elliptical trainer exercise machine's kilocalorie prediction and heart rate sensor. Tara Holstine.

14 Noninvasive physiological markers for anaerobic threshold. Sylvanna Bielko, Bryant Stamford, Barbara Wahl.

15 The Effectiveness of Off-Season Training Programs. Justin Smith, Bryant Stamford, Barbara Wahl.

Conference Abstracts

Anthropology

Session A Rebuilding, Socialization, and Negotiation in Groups and Communities
Jordan Hall, Room 276
Moderator: Dr. Elise Edwards

09:15AM
Rebuilding Vietnam in a Post-Conflict Era: An Interdisciplinary Investigation of Cultural Resources in Economically Deprived Communities. Scarlett Russell. Ball State University, Muncie, IN. Sponsor: Gerald Waite

The following study contains an in-depth analysis of community building in Vietnamese communities in the post-American conflict era, drawing on research from the academic disciplines of Anthropology, Social Work, Sociology, and History as well as direct ethnographic observation. Focus is given to previously existing cultural characteristics in communities and how these characteristics have been drawn upon to restore ruined areas. The Dao Tien Restaurant, located in Hoi An in central Vietnam, is examined as a specific case study. The article seeks to draw connections between cultural resources and the ways in which these resources can be used to elicit change. Global influences on Vietnamese growth such as the Doi Moi, capitalism, and a rising tourism market are also discussed in relation to the impact on community building.

09:30AM
Conflict Development and Resolution in College Groups. Michelle Ferguson. Hanover College, Hanover, IN. Sponsor: Karen Porter

My research on the group "Campus Crusaders for Christ" (CRU), focuses on how CRU's hierarchical structure affects the development and resolution of group conflict. Using both qualitative and quantitative data, I will argue that the individuals that make up CRU are no more prone to conflict than any other student at Hanover College. However, the very structure of the leadership team and worship band in CRU makes conflict inevitable as seen in the election process, the lack of members' access to the leaders, and the low level of members' involvement in decision-making and operations. CRU members alleviate structural tensions by using non-confrontational behaviors such as joking, indirect language, and avoidance.
These behaviors highlight members' tacit recognition of inequality while simultaneously reproducing the existing group structure. My research was conducted for my anthropology research methods course and entailed semi-structured interviews, interviewer-absent self-administered questionnaires, and participant-observation. Studying the hierarchy of a Christian college group can provide insights into how power structures can affect group conflict and resolution even in a relatively informal setting.

09:45AM
Two Tales, One City, and Millions of Refugees: The Effect of Smyrna on Greece and Greeks. Jennifer Banning. Ball State University, Muncie, IN. Sponsor: Gerald Waite

1922 marked the end of the Greco-Turkish War. The city of Smyrna, known as Izmir in Turkey, had been burned to the ground, and Turkey and Greece agreed to an exchange of populations. The effects of this exchange are being felt to this day; the cities of Greece obtained at least 1,250,000 refugees, a fact that would change the face of the population forever. The burning of Smyrna has not been forgotten, and continues to have an effect on the people of Greece. This essay will examine the events leading up to the population exchange as well as its lasting effects on Greek people.

10:00AM
Interactions that Create Safe Havens: A Study of International Student Orientation Methods at Hanover College. Margaret McAdams. Hanover College, Hanover, IN. Sponsor: Karen Porter

Most colleges and universities in America have an international student population. With globalization as an ever-present threat to the autonomy of individual cultures, the subject of orientation methods for international students is an important topic to address. Interest in this research comes from the desire to understand orientation programs to ensure that they promote the necessary environments for international students, so as not to inhibit the retention of cultures. Research for this study was conducted at Hanover College during a period of three and a half months, in which I became involved with the Haq Center that facilitates the two other organization of interest in this study, the International Club and the I-Pal Program (International-Pal Program). I collected my data through participant observation, a self-administered questionnaire, and semi-structured interviews. The purpose of this study was to examine the orientation/adjustment programs that are specifically designed for international students, as well as to understand how these programs interact with the foundational structure of the Haq Center. The I-Pal program, as a social adjustment program to help in the transition of international students into the Hanover college environment, effectively promotes the process of socialization and the establishment of meaning, yet this leads to no avail without the presence of the Haq Center as a structural foundation of comfort for the international student population. Comfort is a necessary quality for international students; and with the basis for socialization implemented by the I-Pal program, there is a necessary balance between cultural retention and assimilation.

Session B Investigations of Mantled Howler Monkeys (Alouatta palliata) on Barro Colorado Island, Panama
Jordan Hall, Room 276
Moderator: Dr. Anneke DeLuycker

10:30AM
Differences in Male and Female Activity Budgets in Mantled Howler Monkeys (Alouatta palliata) on Barro Colorado Island. Cathrine Cozad. Butler University, Indianapolis, IN. Sponsor: Anneke DeLuycker

The mantled howler monkey (Alouatta palliata) of Barro Colorado Island was studied for approximately thirty hours during June 2008. This was a particularly dry month of the rainy season, which may have affected their daily activity budgets. Group activity budgets were observed to distinguish between male and female patterns of activity using scan sampling techniques. The activity for every individual in sight was recorded every five minutes at various periods during the day. Females with infants, females with no infants, males, and juveniles were recorded separately from one another. Their activities were calculated into percentages for each of the four groups and compared. The results did not support the original hypothesis that males would spend more time resting than females. I found that adults spent their energy very similarly on daily activities. Adults spent roughly 70% of the time resting, 8% eating, and 18% of the time traveling. These major activities consumed the most time because they are ultimately most necessary for survival in the lethargic lifestyle of the mantled howler monkey. Although these percentages were similar, the other daily activities

varied greatly. Males spent much less time socializing than females but spent much more time on vocalizations. Males must budget more of their energy for vocalizing, whereas females, who do not regularly vocalize, can budget more energy for socializing. Although the results did not support the original hypothesis, they did support the hypothesis that males give up other daily activities in order to conserve the energy necessary to vocalize.

10:45AM

Social proximity of male and female Alouatta palliata on Barro Colorado Island. Leslie Stern, Cathrine Cozad, Chris Jernigan, Diane Matacale, Jillian Hodge. Butler University, Indianapolis, IN. Sponsor: Anneke DeLuycker

Over a span of 6 days and a little less than 25 hours, I observed the social proximity of Alouatta palliata females and males on Barro Colorado Island. Females participate in agnostic and affiliative behaviors with one another. While dominant traits can be seen in this species among males and females, interacting and showing aggression within the group is not often seen. I used instantaneous scan sampling with five-minute intervals for one hour to observe the social interactions. I expected to see females spending more time in close proximity to other individuals more than males. I found that females spent 58.39% of their time in close proximity to others while males only spent 40.22% of their time in close proximity to others. While females spend more time in close proximity with other it is unclear from my data whether or not this is driven by male dominant hierarchies.

11:00AM

An examination of the prehensile tail use of Alouatta palliata on Barro Colorado Island. Jillian Hodge. Butler University, Indianapolis, IN. Sponsor: Anneke DeLuycker

The purpose of this study was to examine the prehensile tail use of Alouatta palliata on BCI in resting, locomotion, and feeding behaviors and examine the differences between the tail use of males and remales. It was hypothesized that the tail would be used in more than 50% of the time in feeding, locomotion, and resting behaviors, and that the tail would be used more in feeding than in any other behavior. It was also hypothesized that the inverted bipedal tail position would be utilized most often in feeding and that males would use their tail more than females because of their increased weight and size. The study was done using the instantaneous focal time sampling method on 44 individuals over a 30 hour and 22 minute period on different groups of A. palliata on BCI. The results showed that males and females combined used their tails in over 50% of their time resting, feeding, and locomoting. Tail use was also most prevalent in feeding and was used approximately 95% of the time. The inverted bipedal position and the hind leg support position were both equally favored among males and females when feeding and males used their tales less frequently than females in resting and locomotion. Further studies should be done with more individuals over a longer period of time for more accurate results.

11:15AM

Location preference in trees of Howler monkey on Barro Colorado Island, Panama. Diane Matacale. Butler University, Indianapolis, IN. Sponsor: Anneke DeLuycker

In this study, I observed the use of habitat and support use of Alouatta palliata,also known as the Howler monkey. I used the focal scan method to find out what level of strata was used the most, support size preference, and what part of the branch was used the most. I discovered that howler monkeys spent the majority of their time in the upper strata and are normally located on terminal branches. Howler monkeys use every size of suppose depending on what activity the howler monkey is performing. There was not a lot of information about where in the canopy howler monkeys spent their time, except from a few ficus studies which said that howler monkeys spend time in the upper canopy where all of the fruit is located. Fromm this study I concluded that howler monkeys use every level, support, and branch position in the trees, but some levels and branches are more preferred for use during certain activities.

11:30AM

Observations of the mantled howler monkey (A. palliata) on BCI. Chris Jernigan. Butler University, Indianapolis, IN. Sponsor: Anneke DeLuycker

The goal of this study was to better understand the diet of the mantled howler monkey (A. palliata) on BCI and examine the differences between age and sex groups within the mantled howler monkey social structure. Through this study the dietary habits of individuals within a certain class (age and sex: adult male, juvenile, adult female with dependent offspring, and adult female without dependent offspring) of the howler's social structure was observed. It was hypothesized that the juveniles and the adult females would eat respectively more fruit than the other age and sex classes of the mantled howler monkeys. Data collected supported the hypothesis (juveniles 23.3%, adult female with dependent offspring 23.4%, adult male16.2%, and 11.7% fruit diet), however more testing will be required to better estimate the true differences between age and sex classes of A. palliata.

11:45AM

Intragroup Social Relations of Male and Female Alouatta palliata. Leah Moody. Butler University, Indianapolis, IN. Sponsor: Anneke DeLuycker

The social and spatial relations of both male and female mantled howler monkeys (Aloutta palliata) were studied in order to examine the differences between the sexes on Barro Colorado Island. It was observed that females socially interact ten times the amount that males do. Males vocalize ten time more than the amount of females.

Session C Stigmas, Stereotypes, and Stratification: Negotiating Identity from Indiana to India
Jordan Hall, Room 276
Moderator: Dr. Sholeh Shahrokhi

01:00PM

Witches in the Bible Belt: The Complex Power Relations of Contemporary Wicca. Tucker Foltz. Earlham College, Richmond, IN. Sponsor: Deborah Jackson

Wicca, the modern manifestation of spiritual beliefs and practices historically known as "witchcraft," is practiced by at least half a million contemporary Americans. These Wicca practitioners face considerable stigma—persecuted by conservative Christians as devil-worshipers, and dismissed by mainstream Americans as illegitimate, even ridiculous. The severity of these negative responses increases as one moves away from major metropolitan centers and socially progressive regions of the country. Thus, a small deindustrializing, strongly Christian city in Indiana is an especially difficult environment in which to be Wiccan. This paper is based on four months of ethnographic and interview research with Wicca practitioners in just such a city. I analyze three different levels of power relations. The first level emerges from interviewees' personal connections to Wicca as they draw on the inherent power of magic in witchcraft, and the fear it engenders. Then, I explore the city as a context in which Wiccans are persecuted and marginalized, leading to feelings of powerlessness. The third and final manifestation of power relations occurs within the coven – a hierarchical structure in which the high priestess was perceived by my interviewees as exerting inordinate control over coven members. Themes of power and magic reverberate throughout the entire analysis as they reflect upon the various contexts in which they operate.

01:15PM
Chaotic Expressions and Individuality in Modern Japan. Pedro Bassoe. Ball State University, Muncie, IN. Sponsor: Gerald Waite

The aim of this paper was to explore the ways in which various forms of art and fashion in modern Japan are used to express a vision and sense of individualism that defied the hierarchically structured view of a homogenous society. The paper begins with an examination of the claim that Japan is a mostly a genetically homogenous, group-oriented society and answers in the affirmative. It then asks how a genetically homogenous group with deeply ingrained systems of hierarchy and social status would express individuality and dissent in art and other cultural formats. Due to the overwhelming scope of such a topic, three areas were selected for focus. The first topic was literature in which Haruki Murakami, Ryu Murakami, and Banana Yoshimoto were examined and the topic of deconstructing and remolding social models frequently appeared. Following that was music where the startling and chaotic sounds of Merzbow, Acid Mothers Temple, and Boris were discussed. The final portion of the paper delves into fashion and explores the relationship between defiant subcultures that develop alongside trends in styles. Most of the art discussed was seen to be reactionary, oftentimes reveling in chaotic and unapproachable self-expression, and as complete negation of structural rules.

01:30PM
Being Ao: Indigenous Identity in Nagaland, India. Ketayinla Jamir. Earlham College, Richmond, IN. Sponsor: Deborah Jackson

In this paper, I explore the identity and experience of the Ao tribe of Nagaland, India: how they have been represented and how they represent themselves; how they imagine themselves, how the different aspects of their reality have been constructed; and what factors from the past have led them to this present notion and construction of reality. The paper examines the Ao people's position in society, in relation to other tribes, through the lens of social stratification as well as by exploring the notions of power, prestige, status and rewards. Furthermore, I explore the question of how Aos situate themselves in the present scene in Nagaland, where the call for a strong identity and culture among the Nagas is becoming all the more significant and visible, and the Nagas are trying to find a secure standing and assert their presence within India. While the sources for this study have been mostly published works (authored by both Ao people and outsiders), and internet resources (forums, blogs, and websites), I also draw on my own experience as a member of the Ao community. Incorporating information and insights from these various sources, and considering both historical and contemporary dynamics, the paper seeks to illuminate the many (often conflicting) forces that shape the experience of being Ao.

01:45PM
Cargo Cults and Literacy in Papua New Guinea. Kathryn Crystal. Taylor University, Upland, IN. Sponsor: Steve Bird

Cargo cult movements in Papua New Guinea have exemplified the way a culture interprets new events within an existing framework, often to the confusion of those on the outside. While overt cargo cult activity may have declined in Papua New Guinea, the beliefs propelling it are still alive and well today; these cultural ways of thinking continue to affect adaptation to outside realities. This study examines the effect of a cargoistic worldview on current conceptualization of literacy in a village near the Rai Coast. Interviews and conversations from a three-month field study performed by the author in fall 2008 are used to understand how villagers see the national education system, the value and use of literacy in the three main languages of the village, and the process of learning how to read and write.

Session D New Frontiers in Anthropology
Jordan Hall, Room 276
Moderator: Dr. Elise Edwards

02:15PM
Turning Possibilities into Fact: How Innovators Reinterpret Reality. Darren DeBruhl, Heidi Morrow, Brian Beasley, Chris Chambers, Lauren Holditch, Michael Kostelnik, Tim Morrison, Scott Peterson, Lindsey Sanner, Nate Weiss, Vanessa Wirth. Ball State University, Muncie, IN. Sponsor: James Nyce

This exploratory study of inventors and innovators looks at how these individuals extend what most Americans often think is science and technology. For them, the most important of resources they use is science itself. However, case studies of three Indiana inventors and innovators show they each take different positions on whether they map reality as conventional practitioners of science do. For them, science is still an open book whose forces, laws and principles are still to be discovered and reinterpreted. The result is that these informants tend to view much of today's science and technology as slight variations or improvements of what is already known. How these inventors and innovators describe how their experiments and the kinds of resources they believe would further their work raises questions about state and local strategies that exist within Indiana to support innovation.

02:30PM
A Moment in Archaeology: A Reflexive Examination of the Culture of Meaning-Making in Archaeology. Jonathan Irons. Butler University, Indianapolis, IN. Sponsor: Elise Edwards

As the postprocessual movement has become more accepted in archaeology, it comes as no surprise that the discipline is still working out its role in 21st century anthropology. From department to department and site to site archaeologists vary in their attachment to the humanities or to the sciences.

It was at a site in northwestern Kenya that these variations became all too clear. I returned to the same site and the result was an ethnography of an archaeological field school. In my reflections, I came to invoke Bruno Latour's understanding of the politics of lab space and opened the black box of archaeological practice.

In this paper I present a brief example of how I have examined archaeology as a series of photographic moments. In particular I discuss the activity of drying artifacts on a screen. I suggest that the array of social contingencies coming to bear on a simple utilitarian activity create something that should be considered inherently interpretive and meaningful. To conclude, I compare the archaeological process to the act of making a photograph in order to illustrate the creativity involved. By demonstrating the intricate social matrix of a field school, I emphasize the importance of reflexive ethnographic work being performed in tandem with, and as a part of, a traditional type of archaeology.

02:45PM
Strategikon: Anthropology and War. Tyler Wolford. Ball State University, Muncie, IN. Sponsor: christine shea

Emperor Maurice's "Strategikon", a Byzantine war manual of the 6th century CE, is not only a complicated and thorough multi-arms theory in par with Sun Tzu's "The Art of War", it also contains a surprise for the anthropologist in its eleventh chapter. The chapter, titled "Characteristics and Tactics of Various Peoples," contains ethnographic information of great importance, not only to the ethnohistory of the late classical world of the Persians, Slavs, or Turkish peoples, but also to the worldview of the Byzantine state. I will demonstrate to what degree Maurice, or possibly

another writer of the work, actually came in contact with the people whom he wrote about. Not only will I touch on the quality of the "field work" applied to obtain the information in the Strategikon, I also will exhibit the view of such practices. Does the mixture of anthropology and war cause ethical doubts in the Byzantine mindset, as it does in the modern researcher?

03:00PM
Freeing the Snow Lion: A Theatrical Approach to a Tibetan Refugee Ethnography. Erin Aquino. Butler University, Indianapolis, IN. Sponsor: Elise Edwards

I will explore the relationship between anthropological research focused on issues of social justice and theatrical production. I took my ethnographic work carried out in India and put the information and interviews into a devised theatre piece. I wanted to see if theatre can be a meaningful vehicle for translating and transmitting anthropological work focused on human rights issues to the general public.
The fusion of global/social problems with theatre is highly important to this field. In many instances, in history and today, theatre performance helps to inspire the individual or group to generate change. My hope is that a theatre piece on Tibetan refugees may inspire people to learn more about this particular issue, or, at least, provoke empathy for people that lead different lives from our own in America. Based on discussion in peace studies classes, people are less likely to harm or do violence to those they have taken the time to get to know. My goal was to present an informed and educated theatre piece that encourages an audience to learn more about the Tibet issue.
For this presentation, I will present a very small portion of the theatre piece as well as discuss the importance of the performance and the reaction to it.

Art History

Session A
Fairbanks Center, Room 146
Moderator: Dr. Elizabeth Mix

02:15PM
"Apocalyptic Opener": A Political Music Video. Mary Ruble. Hanover College, Hanover, IN. Sponsor: Elizabeth Winters

YouTube has become the newest medium of expression for young people all over the world. Ryder McQueen Band, a young, up-coming group from Louisville, has strong political views. Their song, "Apocalyptic Opener" is about being stuck in a world that is dark and seemingly full of destruction. The purpose of the music video is to create a visual interpretation of the band's lyrics in order for the viewers to fully grasp the song's message. The video reflects the frustration of being young and coming from a small town, where the majority political ideology differs greatly from their own. The band believes there is dissonance between the decisions politicians have made in recent years and the religious beliefs that they profess. By posting the video on YouTube, the band's message can be heard by anyone who chooses watch and listen.

02:30PM
Wenda Gu and the Temple of Heaven. Tarin Milligan. Valparaiso University, Valparaiso, IN. Sponsor: Nina Corazzo

Wenda Gu is one of the premier visual artists to come out of China in the twentieth century. His unique style sets him apart from most artists of his generation. Known as a genetic artist Gu creates his art out of unique materials that often disturb and repel the common patron of the arts. His fifteen year on going project United Nations has shocked and amazed viewers with its monumental magnitude. China Monument: Temple of Heaven is a project that is held close to his heart, and has become a literal weaving together of different cultures in hopes that one day we will all live together as equals.

02:45PM
Bruce Nauman. Cortney Norman. Valparaiso University, Valparaiso, IN. Sponsor: Nina Corazzo

An indepth analysis of Bruce Nauman's 1983 work "House Divided". A brief summary of Nauman's biography and of the Govenor State statue garden.

Biology

Session A
Gallahue Hall, Room 105
Moderator: Dr. Nat Hauck

09:00AM
The Identification of a Phytochrome B Gene in Nymphaea odorata. Alyssa Burkhardt. Butler University, Indianapolis, IN. Sponsor: Katherine Schmid

Phytochromes are protein photoreceptors in plants that monitor light quality and are involved in mediating the shade avoidance response. The shade avoidance response is a collection of developmental changes made in order to maximize light absorption by increasing stem and petiole length, elevating leaf angles, and reducing branching. In Nymphaea odorata, commonly known as water lily, similar developmental changes are observed as plants that once produced leaves that rested on the surface of the water begin to produce aerial leaves with elongated petioles that extend above the surface of the water. This transition from surface to aerial leaves may be a phytochrome-mediated response to the shade which is produced as water lily leaves cover the surface of the water and reduce the light quality for the remainder of the submerged developing plant. Several phytochromes and other photoreceptors may be involved in causing the appearance of multiple leaf forms, but phytochrome B is proposed to be the primary regulator. During this study, a partial phytochrome B gene sequence was identified. In order to identify phytochrome B, primers were designed to target a portion of the gene sequence, multiple copies of the gene fragment were made, and the gene fragment was sequenced. Throughout the procedure, a known sequence for a previously identified phytochrome A was used as a control. The sequence obtained from the phytochrome B fragment was aligned with the list of previously determined sequences, and the sequence was found to be more consistent with phytochrome B than with phytochrome A.

09:15AM
Factors influencing fox squirrel (Sciurus niger) leaf nest distribution in an urban residential habitat. Ryan Moog. Butler University, Indianapolis, IN. Sponsor: Travis Ryan

With the world's surging human population, urbanization of natural habitats has become an increasing concern. The addition of human habitats creates impervious structures, such as concrete, homes and garages, and utility fixtures, which replace the uninterrupted natural landscape that existed previously. These abiotic and biotic changes to the landscape that come with human habitation can put strains on any wildlife population and can overexploit their ability to compete in the newly developed habitat. By studying the distribution of organisms in an urbanized environment, we can

glean information about what factors are most influential to wildlife residents. Beginning in 2003, Butler students began collecting data regarding the distribution of fox squirrel (Sciurus niger) leaf nests, which are known as dreys and appear on larger trees, on ten non-contiguous plots throughout the Butler-Tarkington neighborhood. Leaf nests are used as an indicator of the density of individual fox squirrels on the plots. Nests were counted on each plot, and heights of habitated trees were recorded. In addition to the leaf nest data, we collected self-reported data from neighborhood residents concerning their yard maintenance. Tree heights were found to be statistically significant: plots with taller trees were found to be more densely populated. Results of neighborhood-reported data are pending at the time of this writing.

09:30AM

Auxin Concentrations in Foliar Embryo of Kalanchoe pinnata during Leaf Development and Leaf Detachment via Agrobacterium Transformation and DR5:GUS Analysis. Mike Trombley. Butler University, Indianapolis, IN. Sponsor: Philip Villani

The plant Kalanchoe pinnata has an unusual means of asexual reproduction where its leaves contain foliar embryos that can spawn new plants when detached from the original plant. The goal of our experiment is to determine the concentration of the plant hormone auxin during leaf development and detachment. Auxin regulates the plants cell growth and cell expansion by means of gene regulation. It directly inhibits or stimulates the expression of numerous genes responsible for growth and development.
The reporter gene DR5:GUS is used as a molecular marker for auxin. Wherever auxin is present, the DR5:GUS gene is expressed and the plant will turn blue. The concentration of auxin can be determined by the color gradient present.
The DR5:GUS gene will be put into a plant using Agrobacterium to transfer genes. The DR5:GUS gene is placed into a plasmid, the plasmid is placed into Agrobacterium, the plant is exposed to Agrobacterium, and Agrobacterium transfers the gene into the plant.
The goal of this experiment is to insert the DR5:GUS reporter gene into the K. pinnata via Agrobacterium transformation and then determine the concentration of auxin by quantitative analysis. There are two parts to this experiment. First, the DR5:GUS gene must be inserted into a special Agrobacterium plasmid pCL18. Secondly, there must be a protocol developed to successfully transfer DR5:GUS into the plant. While the insertion of the DR5:GUS into the Agrobacterium plasmid is still underway, a successful tissue culture protocol has been established for bacterial transformation.

09:45AM

Flower Color Variability And The Effects Of Mixed Mating In The Protandrous Plant Saponaria Officinalis L. (Caryophyllaceae). Shabnam Jabbari. University of Indianapolis, Indianapolis, IN. Sponsor: Sandra Davis

The anthers of the perennial herb Saponaria officinalis release pollen before the stigmas become receptive. It is thought that such protandrous breeding systems evolved in order to prevent self-fertilization and reduced fitness in progeny. However, overlap between male and female stages may allow for self-fertilization and help ensure reproduction, resulting in a mixed mating system. This is contrary to the belief that plants tend to solely rely either on outcrossing or selfing. This research focused on the mixed mating and flower color adaptation used by S. officianalis to ensure pollination in various environments. Five populations throughout central Indiana were compared. Each plant was pollinated using one of three crosses: control, geitonogamous, and outcrossed. Pollinator visitation and preference was observed at various times throughout the day. Flower color was quantified across populations and flower stage. There was no observable variation in color between populations; however, color varied across flower stages. S. officinalis flowers change from white to pink, corresponding with their gender development. It is believed that sun exposure has an effect on the concentration of the pink pigment anthocyanin, leading to population level color differences. Furthermore, color variability may have an effect on pollinator visitation and preference. Seed set was observed and compared among the populations. Seeds were then germinated in the laboratory. Following germination, the plants will be replanted in a common garden to observe the long-term fitness. UV exposure will be manipulated to further analyze environmental effects on color development and patterns of pollinator visitation.

10:00AM

Protein Tertiary Structure Universe Viewed from the Perspective of Surface Shape. Matt Herron. Purdue University, West Lafayette, IN. Sponsor: Daisuke Kihara

Traditionally, sequential and spatial arrangements of the secondary structure are used to compare proteins for database searches and study. Here a novel approach of using solely protein surface shape to compare and classify proteins is introduced. In order to investigate the whole protein universe on the basis of surface shape, first 990 proteins from the SCOP database were selected, each from a different fold classification. The pair wise Euclidean distances between all the protein's 3D Zernike descriptor files was then calculated. The 3D Zernike file is a series expansion of 121 numbers that represent and quantify the protein's surface shape. Then dgsol was used to solve the distance geometry of all the Euclidean distances, and map all the 990 representative proteins into a 3D space. The mapping represents the relative similarity in surface shape for the proteins. When graphed, interesting trends and characterizations in the overall distribution of surface shape can be observed. Then a Principle Component Analysis was run on the data to confirm the trends observed intuitively. Originally it was expected that proteins of similar composition would exhibit similar surface shape, though this was interestingly disproven. As the results show, ratio of alpha helices to beta sheets is independent of surface shape. This model has a wealth of opportunity and ability, as it makes it possible to see the extreme cases of surface shapes, as well as proteins who share very similar surface shape.

10:15AM

A Study of Aquatic Invertebrates as Indicators of Organic Pollution in Pony Creek near North Manchester, Indiana using the Hilsenhoff Family-level Biotic Index. Katie Helmerick, Delanie Losey. Manchester College, North Manchester, IN. Sponsor: Jerry Sweeten

Organic pollution resulting from excess nutrients and other allochthonous material is a major water quality issue for many streams in Indiana. During fall 2008, aquatic benthic macroinvertebrates were collected and identified to Family level from four sites along Pony Creek near North Manchester, Indiana. Pony Creek, a 3rd order stream, is the basis for a long-term biological monitoring project conducted by students at Manchester College. Data were used to determine the level of organic pollution based on the Hilsenhoff Family Biotic Index. This study examined the relationship between tolerance levels of aquatic invertebrates to organic pollution and what their level of tolerance suggests about the area in which they live. Sites were designated as number of stream kilometers from the confluence with the Eel River ranging from stream 8 Km at site one to stream 1 Km at site four. Invertebrates were collected from each of the four sites with the number of organisms collected varying from 113 to 36. The average tolerance value of the invertebrates found at each site was determined and used to classify each site's water quality. The water quality varied from very poor to fair, with average tolerance values from 7.29 to 5.73, with a trend that showed the water quality decreasing from upstream to downstream. Data were also analyzed using the Shannon Diversity Index. This Index indicated whether the diversity at each site was significantly different ($p<0.05$). This calculation supports a statement that the greater the biodiversity does not necessarily indicate better water quality.

10:45AM
Role of Decay Accelerating Factor (DAF) in Bacterial Translocation of Escherichia coli through the Intestinal Epithelium. W. Tania Rahman, Sean P. Colgan, Louise Glover, Simon Keely, Walter Bruyninckx. Hanover College, Hanover, IN. Sponsor: Craig Philipp

Bacterial translocation is an important process that can allow bacteria to infect normally sterile tissues such as the bloodstream or lymph nodes, which may then lead to sepsis. Decay-Accelerating Factor (DAF) is a protein that can be found on intestinal epithelial cells and has been implicated in facilitating bacterial translocation. In our study, we investigated whether Escherichia coli (E. coli) utilize DAF in its translocation through a CaCO-2 cell model epithelium. We also determined if over time and under hypoxic conditions (as compared to under normal oxygen conditions) bacterial translocation increases. The results of our study indicated that DAF ($F = 3.063$; $P > 0.05$) or varying oxygen conditions (hypoxia or normoxia) ($F = 0.388$; $P > 0.05$) did not significantly affect bacterial translocation. Furthermore, the interactive and combined effects of antibody, oxygen, and time conditions did not have any significant ($P > 0.05$) effect on translocation. Time by itself, however, was a significant factor ($F = 8.724$; P 0.05).

11:00AM
Effect of ectopic phosphatase expression on phosphorylation patterns in Drosophila. Audrey Spelde. Millikin University, IL. Sponsor: Samuel Galewsky

Phosphatases that are involved in dephosphorylating tyrosines are known as protein tyrosine phosphatases (PTPs). PTPs are thought to act as molecular “on/off” switches in signaling pathways where they remove the phosphates from phosphorylated tyrosines. The Drosophila Pez gene codes for a cytoskeleton associated PTP. The protein is composed of three distinct functional domains. 1) The FERM domain confers cytoskeleton localization, 2) The central linker domain is involved in protein-protein interactions. 3) The carboxy terminus of Pez contains the PTP catalytic domain. We ectopically over-expressed Pez using the UAS/GAL4 system in a variety of tissues and analyzed phosphorylation patterns using anti-phosphorylated tyrosine (Ptyr) antibody. We analyzed tissues using immunofluorescence and protein extracts via protein gel blots. In all cases, levels of Ptyr dramatically increased in the Pez-expressing cells. While surprising, these results may correlate with features of Pez structure. The PTP domain is non-standard, suggesting either that Pez can bind Ptyr without hydrolyzing it, or that Pez has high selectivity for certain protein substrates. In any case, this result proves that Pez is not a strong, general phosphatase, but is involved with a tyrosine kinase pathway. To explain this data most simply, we hypothesize that (at least when in excess) Pez removes an inhibitory phosphate on a kinase, triggering it to become overactive and raising local Ptyr levels.

11:15AM
Cover Object Preference in Forest Dwelling Salamanders. Megan McGlothin, Rebecca Hughes. Purdue University North Central, Westville, IN. Sponsor: Vanessa Quinn

We were interested in examining the factors that determine choice of cover objects in forest dwelling salamanders. We provided salamanders with four different types of cover objects dispersed randomly in a wooded area. There were three treatment groups (painted, altered edges, and cover objects inserted in 9-10 cm depressions) and one control group used for this test. There were 10 cover objects for each group. Each board was checked for salamanders at least once a week and in many cases two times a week. At the end of the 2 month experiment, more salamanders were counted beneath the painted cover object group and the control group in comparison to the altered edge group and the bare soil group. It was interesting that the salamanders did not distinguish between the control group and the painted group suggesting that they could not detect possible toxic chemicals in the paint.

11:30AM
Limnological Assessment on the Uses of Hydroacoustic Surveys to Describe Littoral Zones in Several Indiana Lakes. Ashlee Haviland. Manchester College, North Manchester, IN. Sponsor:

Hydroacoustic technology has become important for assessing lake ecosystems, monitoring fish movement, and lake and stream health. The Biosonics Echosounder system consists of hydroacoustic equipment, which operates from a slow-moving boat and records bottom depth, submerged vegetation height, and submerged vegetation density. This information was coupled with geographic location coordinates from a Global Positioning System (GPS) and stored together in digital files, representing submerged aquatic vegetation (SAV) status at points along transect lines. Adequate spatial interpolation was used to present the SAV information, including density, height, and water depth, as spatially continuous data for mapping bathymetery and littoral zones, which are important habitats for fish communities. The data collected are a result of recent technology that makes data collection more efficient, thus allowing the collection of many more data points those of previous methods. Previous attempts to map these lakes took place in the 1950’s when technology limited the amount of data that could be efficiently collected. Tier II aquatic vegetation survey and a hydroacoustic survey were performed on Atwood Lake, Lagrange County; Hackenburg Lake, Lagrange County; and Kuhn Lake, Kosciusko County, Indiana to determine the extent of the littoral zone and to describe an inventory of plant species within each individual lake. This study identified that definitive littoral zones were evident in all three lakes and that plant species varied among uses of the lake, development along lake shorelines, size, and location of the lake.

Session B
Gallahue Hall, Room 106
Moderator: Dr. Chris Hess

09:00AM
An Examination of the Correlation between Shoot Apical Meristem Size and Leaf Heterophylly in Pisum sativum. Cindy Halfman. Butler University, Indianapolis, IN. Sponsor: Philip Villani

The formation of leaves most often is associated with the shoot apical meristem (Poethig 1997). This is still a developing area of botanical knowledge, and the correlation between leaf characteristics and the characteristics of the shoot apical meristem is relatively unknown. The question then arises, however, if such drastic changes in leaf form are seen, what is causing these changes? The purpose of our study and presentation is to examine possible correlation between apical meristem size and leaf heterophylly. If changes in the shoot apical meristem size influence heterophylly in leaves, then as shoot apical meristem changes, leaf characteristics will change. Our hypothesis is that the larger the shoot apical meristem, the higher the level of leaf complexity. We performed a quantitative examination of the ramifications of leaf development as influenced by the size of the shoot apical meristem in six different genetic accessions of Pisum sativum. We tested growth trends in two different ways, both within a plant itself and between plants, taking leaf and meristem samples at specific developmental milestones. Our leaf complexity data is comprised of characteristics noted at maturity, including complexity, length, biomass, and cell size. Shoot apical meristem size was measured using a scanning electron microscope. Data will be presented on our findings as well as the result of our statistical correlation and ANOVA analysis of variants. Our conclusions will address the correlation witnessed between shoot apical meristem size and leaf heterophylly.

09:15AM
The Identification and Localization of Caltractin in Stentor coeruleus. Nabeel Kheiri. Butler University, Indianapolis, IN. Sponsor: Michael Maloney

Caltractin is a 20-kDa, EF hand, calcium-binding protein that forms 4-nm filaments and is very similar to calmodulin in amino acid sequence. Previous research has demonstrated that caltractin-like proteins are present in the heterotich ciliate Stentor coeruleus. In Stentor, these caltractin-like proteins are found in the myonemes (contractile fibers) and membranellar band which makes up part of the oral apparatus located at the anterior end of the organism. If the oral apparatus is damaged or removed, Stentor has the ability to regenerate an entirely new oral apparatus. Once oral regeneration is initiated, the oral apparatus is removed and eight to ten hours later the oral primordium forms a new oral apparatus. Using immunocytochemistry we applied the anti-Stentor 23kD protein antibody (specific to the caltractin-like protein) to the cells during oral regeneration to determine where and when the caltractin-like proteins are present. The results indicated that caltractin is present during the various stages of oral regeneration, specifically located in the myonemes and new oral primordium of the regenerating cell. The data suggests that in the early stages of oral regeneration, we see a diffuse pattern of the protein in the developing primordium which in later stages becomes more arranged and defined in assembling the individual membranelles of the membranellar band itself.

09:30AM
Determination of Dispersal Patterns of Ambystoma texanum at Eagle Creek Park, Indianapolis, IN. Stacey Summitt. Butler University, Indianapolis, IN. Sponsor: Dr. Travis J. Ryan

Many studies have revealed the intimate details of the life history of small-mouthed salamanders, Ambystoma texanum; however, little work has been done on the distance these amphibians migrate from their breeding sites. This information is important not only to understand the life history of A. texanum, but also to better inform the conservation efforts of wetland populations by describing the types of barriers that may hinder movements and to demonstrate the impact of urbanization. Clark, Cripe, and Stachinaw (2003) hypothesized that distance limits dispersal in A. texanum and creates genetically isolated groups. More specifically, they suggested that the population at Eagle Creek Park, Indianapolis, IN had a metapopulation structure with 5 isolated breeding groups. This study is an extension of their work and examines the gene flow between breeding sites of A. texanum at Eagle Creek Park. Hatchlings were collected from 9 ephemeral ponds and microsatellite markers were used to characterize genetic variation of the sub-populations. Similarities between sub-populations demonstrated the occurrence of gene flow between sub-groups and movement patterns of A. texanum between breeding sites was inferred.

09:45AM
Comparative Study of Tertiary Structure Prediction Methods. Priyanka Surana, Daisuke Kihara, David Yang. Purdue University, West Lafayette, IN. Sponsor: Daisuke Kihara

Structure prediction is one of the most important areas pursued in bioinformatics and biochemistry, with wide ranging applications in drug design and engineering of novel enzymes. The accurate and efficient prediction of protein structures is impeded by the large space of structural possibilities and the limited understanding of protein structural stability. There exists, a plethora of protein structure prediction methods ranging from homology modeling (MODELLER) to more computationally intensive ones such as ab initio modeling (ROSETTA, CABS). In this study we have used a combination of some popular methods to predict tertiary protein structure.
The study assesses two approaches for protein structure prediction. Beginning with amino acid sequences, the first technique involves protein sequence alignment and template recognition followed by comparative protein structure modeling and finally side chain refinement. The second starts with ab initio structure prediction followed by refinement using full-atom protein model construction.
The results that will be presented were done for CASP8 (8th Community Wide Experiment on the Critical Assessment of Techniques for Protein Structure Prediction). The RMSD of 35% of the structures was less than 6.0 Å.
Recommendations for the most desirable method for mass structure prediction will be presented.

10:00AM
An analysis of the environmental and hormonal effects on the growth and development of the moss Ceratodon purpureus. Megan Knight. Butler University, Indianapolis, IN. Sponsor: Philip Villani

Mosses provide a unique opportunity to study the effects of hormones and environmental factors on plant development. There were two main goals of this study. The first goal was to investigate the effects of abscisic acid (ABA) on the species of moss, Ceratodon purpureus, in order to determine if this hormone has an influence on growth and development. The second goal was to investigate the effects of environmental factors including light intensity and pH to determine how they affect C. purpureus. Then the data from ABA concentration, pH, and light intensity experiments were compared to see how they each affected growth and development of this moss species. The general trend seen was that growth was greatest in the control groups of each experiment while bud formation occurred with the greatest frequency in the environmental extremes.

10:15AM
Two Eleutherodactylus species on Dominica and notes about habitat use. Ruth Carter. Earlham College, Richmond, IN. Sponsor: John Iverson

Dominica, a volcanic island located in the West Indies, is one of the least populated and under-surveyed islands in the Lesser Antillean chain. As part of an NSF-REU program studying Dominica's native and invasive frogs last summer, we surveyed the local species, their macro- and microhabitats, and perch types and heights. Previous studies from neighboring islands demonstrated competition between similar Eleutherodactylus species in similar habitats. The primary goal of this project was to determine habitat preferences of the two threatened Eleutherodactylus species, the endemic E. amplinympha and the invasive E. martinicensis, and discover whether they can and do coexist. We surveyed five sites of differing elevation and levels of natural and human disturbance for the two Eleutherodactylus species. Sites included pristine rain and cloud forests, a national park reserve, an agricultural field, and a coconut plantation at sea level. We recorded microhabitat, perch type and perch height for many frogs encountered. Our data documented similarities and differences in the macro- and microhabitat preferences for these two very similar species.

10:45AM
The Great Fish Debate: A Scientific Examination of Salmon Aquaculture. Elizabeth Otte. Hanover College, Hanover, IN. Sponsor: Daryl Karns

The United Nations says that aquaculture may be the only way to meet the growing human population's demands for protein. While 90 percent of farmed fish are herbivorous, global production of one carnivorous fish, salmon, has increased by a factor of 40 since the 1980s. As salmon production grows, so does its environmental impact. Opponents to fish farming recite a litany of dangers associated with the industry. First, aquaculture threatens to decimate wild populations through transfer of a fatal parasitic disease. It also depletes wild fish populations in order to feed caged salmon. Aquaculture puts the ecosystems surrounding the pens at risk as nutrient overload of food and medicinal waste destroys the sea floor and marine habitat. Finally, aquaculture threatens a way of life for fishing communities and poses a health risk to human consumers. But fish farming

advocates argue that when done responsibly, their trade can actually help save the oceans and feed the world. It reduces the pressure on wild salmon populations and provides a reliable, nutritious food source at a decreasing cost. Advocates of aquaculture note that fish convert energy at a higher rate than cattle, swine, and poultry, making it the most environmentally responsible form of agriculture. I will examine the great fish debate's central question: can we have our fish and eat them, too? I will employ recent research as I discuss salmon farming, and provide potential solutions, including the designation of marine protected areas, consumer action, and organic aquaculture alternatives.

11:00AM

Computational Protein Function Prediction. Gregg Thomas (1), Daisuke Kihara, Meghana Chitale (2), David La (1). Purdue University, West Lafayette, IN. Sponsor: Daisuke Kihara

With the vast amounts of data now available regarding genome sequences it is now applicable to design computational methods to predict protein structure and function from sequence. A variety of servers and software are available and new methods are developed regularly. With this diversity of methods it becomes necessary to compare them to see their individual strengths and weaknesses. The Critical Assessment of Techniques for Protein Structure Prediction (CASP) does just that by allowing researchers to test their prediction methods for protein structure and function on recent experimentally solved proteins that have not yet been published. Participation in the most recent CASP, CASP8, will be discussed in the context of function prediction. We have participated in the CASP8 function prediction category and submitted predictions for 128 target proteins. Bioinformatics approaches we used range from sequence analysis tools to structure-based function site predictions. We will present the procedure we employed and show several examples of our predictions.
We will also discuss a novel method for predicting metal ion binding sites within proteins which we are currently developing based on our experience in CASP8.

11:15AM

The Expression and Activity of Aromatase in Canine Reproductive Tissues. Leomar Bautista. Earlham College, Richmond, IN. Sponsor: David Matlack

Aromatase is a Cytochrome P450 enzyme that converts androgens into estrogens. It is expressed in reproductive tissues as well as the brain, muscle, and adipose tissue. The Cytochromes P450 comprise a large family of enzymes that are important in steroid metabolism, as well as in drug and xenobiotic metabolism. They are ER membrane bound heme monooxygenases that utilize O2, NADP and a reductase to oxidize a number of organic substrates. Aromatase is an important enzyme in normal reproductive development, physiology and behavior; and is currently an important target for inhibitors in estrogen-dependent breast cancers and certain endocrinopathies. Aromatase assays are also now important screening tools for suspected endocrine-disrupting toxins and for drug development.

We obtained fresh canine testes, ovaries and placenta from local veterinary facilities. We used immunohistochemistry to detect aromatase in these tissues. Aromatase activity was determined with a microsomal assay. Microsomes represent membrane fragments, mainly ER membrane fragments, and are the standard cellular fraction used for cytochrome P450 assays. We used homogenation and differential ultracentrifugation to obtain microsomes from the canine tissues. Microsomes were incubated with an NADPH-regenerating system and varying concentrations of the substrate, testosterone. The product, 17-ß-estradiol, was detected and quantified with HPLC. The Michaelis-Menten equation was used to determine the apparent KM and Vmax for each microsomal preparation.

Future work could include aromatase quantification using spectroscopy and standardization of our microsomal assay for use in our toxicology research and classes.

11:30AM

Assessment of Headwater Habitats within the Central Muscatatuck Watershed in Southeastern Indiana. M. Ross Alexander. Hanover College, Hanover, IN. Sponsor: Daryl Karns

As part of the Central Muscatatuck Watershed Project (CMWP), a local community initiative to monitor water quality across southeastern Indiana, I investigated the health of headwater systems within the watershed. The watershed includes parts of Jefferson, Jennings, Scott, Ripley, and Jackson counties. The CMWP established nine volunteer and 15 professional sampling sites. From June through September 2008, I assessed nine headwater systems located upstream of the volunteer/professional sites; I sampled each site four times. Following Hoosier Riverwatch protocols, I compared the nine sites in terms of habitat structure, eight different water quality measurements (DO, BOD, pH, E. coli, nitrate, nitrite, orthophosphate, and turbidity) and the composition of the macroinvertebrate communities. Based on this comparison, the nine sites fell into high (3 sites), intermediate (3 sites), and low (2 sites) quality sites directly related to the level of human disturbance. At all sites, the DO and BOD measurements varied considerably with stream flow, pH levels were generally circumneutral, and nitrate/nitrite, orthophosphate levels were low. The composition of the macroinvertebrate communities varied considerably (2 to 15 species recorded per site) and exhibited relatively low species diversity and low species overlap among sites. Pollution Tolerance Index scores (based on macroinvertebrate diversity) ranged from poor to excellent. I observed high variability in the E. coli counts among sites and among sample periods; E. coli counts typically exceeded Indiana state standards for full body contact (235 colonies/100mL). I will discuss the significance of these findings in the context of the larger CMWP project.

Session C
Gallahue Hall, Room 105
Moderator: Dr. Phil Villani

01:00PM

Analysis of Radial Tree Growth Patterns Using Dendrometer Bands in Southeastern Indiana. Cassie Morris. Hanover College, Hanover, IN. Sponsor: Darrin Rubino

Dendrometer bands are metal bands that measure small-scale fluctuations in tree diameter. They permit analysis of radial growth at a daily- (even hourly-) scale. Dendrometer bands were placed on 146 trees of 18 different species in a mesic forest of southeastern Indiana (Jefferson County). Trees were banded to determine the growing season of various species (beginning and cessation of radial growth) and to monitor growth patterns and growth rates over an entire growing season. We also analyzed the influence of specific weather events (e.g., drought, rain fall) on growth. The bands were installed prior to the beginning of radial growth (late winter) and were monitored weekly through late fall. Radial growth was first noted in mid-May for most species. In mid-August, growth halted for three species (tulip poplar, sugar maple, and ash), whereas the remaining species sustained growth through September; few species continued growth into October. Following extended dry periods, radial growth was generally minimal. For most species, a rapid increase in growth was observed after rain events. Intensive sampling (evening, following morning, midday, evening) revealed diurnal fluctuations in stem size; trees were generally largest in the morning and smallest in the evening. High variability in growth patterns was observed within and among species. The bands will remain on the trees indefinitely for future analyses.

01:15PM
A phylogenetic analysis of egg and clutch size characteristics in turtles. Jessica Swihart. Earlham College, Richmond, IN. Sponsor: John Iverson

Despite extensive study, the evolutionary history of the turtle and its body plan remains a great mystery. Recently discovered fossils have reopened the question of whether turtles evolved as terrestrial or aquatic organisms. Controversy also exists concerning other aspects of the early life history of turtles. The phylogenetic relationships among most extant turtle taxa are now known well enough to permit reconstructions of the evolution of many life history traits. We compiled data from the literature on egg shape, egg mass, eggshell type and clutch size for all possible turtle species and then mapped those traits on a concatenated tree of life for all living turtle species using phylogenetic software. Analysis suggests that ancestral turtles laid elongated eggs of a large mass. These eggs had rigid shells and were produced in medium sized clutches. The adaptive significance of these traits will be discussed.

01:45PM
Freshwater Mussels as a Measure of Lotic System Integrity. Sarah Curry, Emma Eilts, Jacob Wenger. Manchester College, North Manchester, IN. Sponsor: Jerry Sweeten

Freshwater mussels are among many of the organisms currently affected by decreased water quality in lotic environments throughout the Midwest. Because of their nature as filter feeders, requirement for specific sediment, and reproductive necessities, they are more than adequate representatives for measuring water and ecosystem quality. The purpose of this study was therefore to create an Index of Biological Integrity for streams located throughout the Midwest. To achieve this, a total of 481 live and dead mussels were collected from a twelve mile stretch of the Eel River. From July to October 2008, collections were made at four different sites along the river. All mussels were first used to measure river water quality based on tolerance values from the Tolerance Ratings of Freshwater Mussels of Illinois. This index suggests that the Eel River is of high quality with a significantly higher number of pollutant intolerant species present than pollution tolerant species. However, a considerable number of widespread species did not have a tolerance rating, while others yielded an unclear distinction between tolerant and intolerant. Therefore, a more clear and descriptive system for determining water and substrate quality is needed for more serious scientific research. A Shannon-Weaver diversity index was also performed to determine diversity based on the mussels collected. Diversity across the Eel River was determined to be consistent, however both live and dead specimens were accounted for. Along with the tolerance index, more research is needed to develop a more accurate representation of live mussel diversity in the future.

02:00PM
Play Behavior in Three Sympatric Species of New World Monkeys in a Costa Rican Tropical Forest. Natasha Niday. Hanover College, Hanover, IN. Sponsor: Daryl Karns

For many mammals, and especially for primates, play behavior is important in developing fundamental social skills and for improving motor skills. We studied differences in the level of play among three sympatric subject species: Mantled Howler monkeys (Allouatta palliata), White-Faced Capuchin monkeys (Cebus capucinus), and Black-Handed Spider monkeys (Ateles geoffroyi). We also examined the behavioral context in which play occurred within the troop and analyzed the differences in frequency of play among age classes. The study was conducted at the Zota Biological Field Station and in Puerto Viejo, Costa Rica. We collected behavioral observations using instantaneous focal sampling at one minute intervals; we recorded a total of 49.8 hours of observations. Our data analysis indicates that there is a significant difference in the amount of play exhibited among species; Mantled Howlers engage in less play than White-Faced Capuchins and Black-Handed Spider monkeys. Play is more likely to occur during troop resting or feeding periods. Lastly, play is most common among the juvenile age class.

02:15PM
The Effect of passage of time and the sampling mechanism on gene frequencies in a population of Drosophila initiated with equal numbers of Bar and Wild flies. Daniel Elliott, Kaleigh Nelson. Marian College, Indianapolis, IN. Sponsor: Michael Eoff

The earliest change was a drop in Bar gene frequency. Possible causes and the effect of sampling methods on gene frequency are discussed.

02:30PM
Genetic diversity of two local fox squirrel (Sciurus niger) populations. Jill Devine. Butler University, Indianapolis, IN. Sponsor: Carmen Salsbury

The objective of my study is to examine the genetic diversity of two local populations of fox squirrels living near the campus of Butler University. I will examine genetic diversity using microsatellite genetic analysis on DNA collected from hair samples. I will use hair or tissue samples collected from live fox squirrels in the summer of 2007 and tissue samples collected in the summer of 2008. The genetic diversity of the fox squirrel population living around Butler will be compared to the genetic diversity of fox squirrels living in a separate population at Eagle Creek Park. The Eagle Creek population will serve as a basis for comparison since I could not locate any information about the genetic diversity of fox squirrels living in suburban areas. I will use live-trapping techniques that I learned in the summer of 2007 to trap and collect tissue samples from squirrels at Eagle Creek Park in the summer of 2008. By examining the genetic diversity of these two populations, I hope to provide information that will help us understand how tree squirrels are affected by forest fragmentation. Patterns of genetic diversity may reveal how living in forest fragments affects squirrel movement, reproduction, and survival.

Session D
Gallahue Hall, Room 106
Moderator: Dr. Shelley Etnier

01:00PM
Effects of Fire Season, Fire Front, and Fire Temperature on the Mortality of Various Tree Species in Early Successional Grasslands in Southeastern Indiana. Paul Killian. Hanover College, Hanover, IN. Sponsor: Darrin Rubino

Prescribed fires are a commonly utilized tool for land managers seeking to maintain the health of grassland habitats and thwart further succesional seres from encroaching on the grassland. Restoring fire to these grassland ecosystems helps to foster the biological diversity and native flora and fauna that once thrived under natural disturbance regimes. Data from three prescribed burns conducted at Big Oaks National Wildlife Refuge in Madison, Indiana were used to describe the relationship between fire season, fire front, and fire temperature on mortality of trees in the extensive grasslands managed at the refuge. Temperature data for the fires were collected with pyrometers that utilized a temperature sensitive paint, as well as type-K thermocouples attached to Hobo dataloggers. With a logistic regression, we found that fire season, Acer rubrum, Liquidambar styraciflua, flanking fires, and head fires are all significant predictors for tree mortality in the final model (chi-square = 69.281, $P < 0.001$) with a true positive probability of 0.648. We also found that fire temperature at the stem surface and basal diameter of the stem are both significantly related to tree mortality in a logistic regression from the Spring dormant season fire (chi-square = 7.428, $P = 0.024$) with a true positive probability of 0.836. Our results suggest that tree mortality varies among species

subjected to prescribed fires; however, controlling the invasion of woody stems of less than 10 cm can be accomplished by utilizing head fires in the fall growing season.

01:15PM

Modulation of 17 ß-Estradiol-induced Expression of BRCA1 by Chemotherapeutic Agents in Estrogen-Responsive Luminal and Estrogen Non- Responsive Basal-Type Human Mammary Epithelial Cells in Primary Culture. Danielle Black, Kari Kendall, Kelly Oda, Lynne Cary. Bethel College, IN. Sponsor: Lynne Cary

As women battle breast cancer, physicians often base their choice of chemotherapeutic drug on the presence of the tumor genetic biomarkers, HER2, ER and PR. Unfortunately, oftentimes women develop resistance to their potentially lifesaving treatment and the mechanism of resistance is not well understood. To gain insight into this problem, the modulation of BRCA1 gene, a known risk factor for breast cancer, was investigated in vitro. Using a relative quantitative real-time PCR method, the impact of three variables, estrogen, and drug choice and estrogen receptors on BRCA1 expression was determined. Three different types of breast epithelial cell types were selected for testing; hTERT-HME1, ER-negative MDA-MB 231 and ER-positive MCF-7. The overall expression panels varied for pre-treatment and following treatment with two commonly prescribed drugs tamoxifen, a selective estrogen antagonist and paclitaxel, an anti-mitotic spindle agent. Overall, paclitaxel and tamoxifen decreased the levels of expression of BRCA1 in all cell lines, although tamoxifen had a much smaller fold difference than paclitaxel, relative to the calibrator. As expected 17 beta-estradiol up-regulated the expression of BRCA1 in ER-responsive MCF-7 cells post-tamoxifen treatment, relative to a lack of up-regulation in ER-non-responsive MDA-MB-231 cells. The results with the non-cancerous hTERT-HME1 cells were inconsistent with a wild-type BRCA1 genotype; exhibiting a lower baseline level compared to the MCF-7 calibrator and highly elevated levels following paclitaxel treatment. Overall, these observed drug modulations of BRCA1 levels in adenocarcinoma cells support a further investigation of BRCA1 as a possible predictive marker for breast tumor response to chemotherapy is merited.

01:30PM

Effects of Female Masculinization on the Behavioral Ecology of Spotted Hyena (Crocuta crocuta). Victoria Shaw. Hanover College, Hanover, IN. Sponsor: Daryl Karns

Spotted hyena (Crocuta crocuta) are notorious as cowardly, laughing scavengers. However, these perceptions are prejudiced by historical misunderstanding of this dynamic social predator. Spotted hyena compare to primates in social intelligence, and are considered a promising subject of research in the evolution of social intelligence and female mammalian sexual development. I spent the summer of 2008 as an intern at Predator Ridge at the Denver Zoo, the only facility with an intact clan of one female, two males, and mixed-sex twin cubs. I made observations at the zoo and investigated the primary literature on the behavioral ecology of spotted hyena. Spotted hyena females exhibit the most extreme masculinization of external genitalia of any mammal. The costs of female masculinization include difficult mating, high rates of maternal and neonatal mortality from labor complications, and high rates of siblicide. The benefits of the evolution of female masculinization are uncertain. It is postulated that aggressive females have more success in competitive feeding situations to ensure infant survival. Female masculinization influences the social structure and behaviors of spotted hyena by producing large, aggressive females. Spotted hyena live in fission-fusion societies structured as a matrilineal social system of inherited social ranks. The system of absolute female dominance is maintained through aggression and complex social interactions such as the meeting ceremony, competitive feeding, and coalition formation. Understanding of the social structure and complex behavioral ecology of spotted hyena is necessary for developing effective conservation programs for this species and the habitats in which they live.

01:45PM

Reproduction, Habitat Preference, and Year Class Strength of Smallmouth Bass (Micropterus dolomieu) in the Eel River near North Manchester, Indiana. Ryan Peterson, Caleb Asbury. Manchester College, North Manchester, IN. Sponsor: Jerry Sweeten

The Eel River, located in north central Indiana, has been the subject of numerous fish surveys since a dramatic absence of smallmouth bass was documented in the early 1980's. While these surveys have provided important data, none have focused on a particular stream reach over multiple field seasons. Through the months of May and June 2006-2008, chemical, physical, and biological data were collected regarding the population, habitat, spawning, prey selectivity and year class strength of smallmouth bass (Micropterus dolomieu) in the Eel River near North Manchester, Indiana. Nest surveys were conducted weekly by snorkeling and/or by wading over a 2.5 km stream reach. Fish clearly preferred nest sites in back eddies where water velocities were less than 0.1 m/sec and water depths were between 30 and 40 cm. In 2006 and 2008 nesting success was poor with stream discharge of 31m3/sec and 14.5 m3/sec respectively. In 2007 there were twenty successful nests with a mean stream discharge of only 6.6 m3/sec. The largest number of black fry produced in 2006 from any nest was 39 and the largest number of sac fry counted was only 139. In 2007 over 500 black fry were observed and over 1,500 sac fry were counted in at least one nest. There were no documented successful nests in 2008. The Zippin depletion method population was used to estimate the population of M. dolomieu each year of the study in a 500 m stream reach. In 2006 the population was estimated to be 116, 32 in 2007 and only 8 in 2008.

02:00PM

Isolation of Arbuscular Mycorrhizal Fungi from Successional Dune Landscape. Cameron Miller. Purdue University North Central, Westville, IN. Sponsor: Nancy Marthakis

Arbuscular Mycorrhizae is a soil fungus that is believed to play an intimate role in enhancing nutrient uptake between plant root and soil. In infertile soils, nutrients taken up by the mycorrhizal fungi can lead to improved plant growth and reproduction. The ability of several sand dune inhabiting plant species to successfully colonize dune sites appears to depend upon the presence in the soil of Arbuscular Mycorrhizal Fungi (AMF) that form mutualistic associations with roots. It is also known that dune sites along the eastern coast barren of vegetation lack these fungi. This interaction between dune plants and the Arbuscular soil fungi have been shown to promote better ecosystem restoration outcomes. The focus of this study is to collect soil samples along the plant-root-soil interface, also known as the rhizosphere. Soil was collected from an experimental block in each of the three habitats along the Indiana Dunes National Lakeshore to include fore dune, secondary dune and oak dominated communities. The root pieces in the soil samples were processed, stained and evaluated by microscopic analysis for the presence of AMF. Preliminary results of our slide analysis show an overall low rate of infectivity by AMF.

02:15PM

The effect of passage of time and the sampling mechanism on gene frequencies in a population of Drosophila initiated with equal numbers of Bar and Wild flies. Sadie Dizney, Nick Sommers, Lauren Steele. Marian College, Indianapolis, IN. Sponsor: Michael Eoff

The earliest change was a drop in Bar gene frequency. Possible causes and the effect of sampling methods on gene frequency are discussed.

Business Administration & Economics

Session A
Holcomb Building, Room 235
Moderator: Dr. Tom Litkowski

09:30AM

Microfinance in Bangladesh. Adoit Pradhan. Hanover College, Hanover, IN. Sponsor: Eric Dodge

Microfinance has been much talked about in recent years. It is seen as a major step in poverty alleviation around the world and many organizations and donors have supported various microfinance programs around the world. The most successful of all these programs is the Grameen Bank in Bangladesh, which is credited to having started the microfinance revolution. This paper will study the effectiveness of microfinance in Bangladesh, focusing on the Grameen bank and measuring the impact of microfinance on the per capita GDP.
Over the years, the scale of the Grameen Bank has grown rapidly, both in terms of numbers and capital. This paper will study the relation between the growth in the capital and participation with the overall growth in the per capita GDP of Bangladesh, which has been very high in the last decade. This paper will also look at other key characteristics of the microfinance program in Bangladesh, particularly the participation of women. Another variable considered is the percentage of participants below the poverty line. Furthermore, this paper will also look at the growth in the capital of the Grameen Bank and make comparisons to the growth in the overall growth of the economy of Bangladesh. Finally, this paper will also delve into the social aspects of microfinance, looking at the changing social dynamics that has been seen in Bangladesh and the effect of microfinance at the grassroots level.

09:45AM

Why growing banking sector hasn't resulted in a rapid economic growth of Nepal? Johan Maharjan. Hanover College, Hanover, IN. Sponsor: Nasrin Shahinpoor

Banking System in Nepal originated with the establishment of Nepal Bank Limited on November 15, 1937. Although several amendments were passed in later years to improve the functions of NRB, and several government-owned commercial, development and agricultural banks were established to help develop the economy, hardly any changes were felt in the economic sector. Nepal still remains a poor country whose economy solely relies on the agricultural sector. Government had the monopoly in the banking sector up until 1984 when the privatization of banks was finally allowed. As of now, there are more than twenty three commercial banks in Nepal. Unlike developed countries where financial institutions constitute the backbone of the economy, the profitability of banking sector in Nepal hasn't led to a significant improvement of the economy as a whole. In this paper, I discuss reasons for the disparity between the growing banking sector and the slow economic growth in Nepal. I will analyze the history of banking sector in Nepal in the context of the political situations and the policies implemented by the government and Nepal Rastra Bank. I will propose several possible solutions to this crisis. Apart from the political instability and increasing unemployment rates, several other factors such as instability in policy formulation, low investment opportunities, lack of business ethics, moral hazards, slow technological development, and migration of customers, seems to be fueling the ineffectiveness of financial institutions in the development of Nepal.

10:00AM

Does the Minimum Wage actually create poverty? Alicia Dixon. Butler University, Indianapolis, IN. Sponsor: Thomas Litkowski

Right now, the United States is in one of the worst economic crises of its time. Unemployment and part time jobs have become the norm for the average working American. The purpose of this paper is to research the minimum wage and how it correlates with the nation's poverty level. Research shows that America's minimum wage is not high enough for a family of three to be at or above the poverty level if there is only one person working and his or her salary is at the minimum wage. This paper is a compilation of research on the history of the minimum wage including when and why it was created, questions if the minimum wage has always been below the poverty level, and how it affects Americans today. At the end there will also be a discussion on alternatives to the minimum wage along with suggestions for improvement.

Session B
Holcomb Building, Room 235
Moderator: Dr. Deborah Skinner

10:45AM

Effects of War on International Trade in U.S. Shaheer Burney. Hanover College, Hanover, IN. Sponsor: Eric Dodge

My paper is on the effects that war has on the international trade of a country. War always has a significant impact on the economy. During time of war, the country has to divert its resources toward military and defense needs. For this reason, consumer goods of the country suffer while the production of capital goods increases. The time of war is usually characterized by instability in the economy and I expect that this will impact international trade negatively. A reason for this is that exporters to the war inflicted country and importers of the country's products will not have confidence in the country's ability to produce and buy if it has an unstable economy. I will be focusing on U.S. and how its international trade has been affected by war in the past years. I will use a regression model to analyze this affect. My dependent variable is international trade which will be calculated by the summation of imports and exports. My independent variables are war, exchange rates, GDP growth, fiscal policy (taxation), and interest rates. War is a dummy variable and will be given a 1 for every year that the country experienced war and 0 otherwise. The data for all my variables is time series and I will run a quantitative regression to study the results.

11:00AM

Comparable Worth. Alex Robbe. Butler University, Indianapolis, IN. Sponsor: Richard McGowan

In America, women have historically occupied certain, and low-paying, jobs. Many people claim that this situation is problematic, even today. Some policies, such as comparable worth, seek to remove the discrepancies between male-dominated and female-dominated occupations. As one ethicist explained in his textbook, "Comparable worth holds that women and men should be paid on the same scale, not just for doing the same or equivalent jobs, but also for doing different jobs involving equal skill, effort, and responsibility." I will analyze the policy of comparable worth. I will first present data on men, women, and occupations. Then, I will examine whether women are guided into certain occupations or not. I will also present and evaluate arguments regarding comparable worth. Finally, I will discuss the changes that society has already made and the changes or improvements that society might still make. In essence, comparable worth may contribute to a positive change for our society.

Session A Synthetic Methods and Applications
Gallahue Hall, Room 108
Moderator: Dr. Anne Wilson

09:00AM
Solid Phase Amide Bond Formation using Staudinger-Vilarrasa Coupling and Microwave Irradiation. Ryan Schmidtz. Butler University, Indianapolis, IN. Sponsor: Paul Morgan

Amide bond formation is an already well documented area of organic chemistry, and is very useful in its application in medicine and pharmaceuticals. However, current methods have not been investigated with regards to optimization of reaction times, solvents, and energy sources. In addition, current methods also utilize toxic solvents to cleave the peptide from the solid phase resin. In our study, we combine the Staudinger and Vilarrasa coupling reactions with microwave irradiation to develop and optimize the synthesis of amide bonds through the use of a solid support. Instead of attaching the peptide to the solid support, our amide bond is left in solution, allowing for easier cleanup and the use of less toxic solvents.

09:15AM
Fill Your Stomach and Your Car - From Burgers to Biodiesel. Mark Howell. Indiana University-East, Richmond, IN. Sponsor: Hitesh Kathuria

Seemingly worthless waste vegetable oil (WVO) is easily converted to biodiesel fuel. Conversion is little more than a mixing and washing process. It can be done with reagents found on the shelf of any major discount department store. Biodiesel is biodegradable, non-toxic, and burns cleaner than petroleum diesel. It can be used in any diesel engine with little or no modification. With fossil fuel sources diminishing, biodiesel is a renewable and inexpensive alternative to petroleum fuels.

09:30AM
Organic Synthesis of Fluorescent Chemosensors for Metallic Ions. Rachel Koontz. Anderson University, Anderson, IN. Sponsor: Dr. Chad Wallace

Fluorescent chemosensors, known as fluoroionophores, can be designed and synthesized to detect environmentally and biologically significant ionic species, such as Hg2+ and Cu2+. Fluoroionophores consist of a fluorogenic unit, known as a fluorophore, and an ion recognition unit, known as an ionophore. The focus of research has been to synthesize fluoroionophores with two pyrene units linked by a polyether for the detection and quantification of metallic ions in solution. Pyrenes have been chosen as the fluorogenic units because of fluorescent properties and strong pi-pi orbital interaction when two pyrenes are brought within close proximity. A polyether linkage between two pyrenes is suitable because electron-donating oxygen atoms will coordinate with metallic cations. Coordination between metallic cations and oxygen atoms on the polyether linkage will induce a conformational change within the fluoroionophore, bringing the pyrene units into close proximity. The result is a detectable shift in emission wavelength. Variation in the length of the polyether will change the size of the ion-recognition cavity of the fluoroionophore, resulting in ion-specific fluorescent probes. The intensity of emitted light will be proportional to analyte concentration. A conceptual explanation of fluoroionophores, fluorescence, and excimer formation will be presented. Following will be a discussion of the attempted synthesis of the target molecule and corresponding spectral analysis.

09:45AM
Ionic Liquid Synthesis and Its Use as Solvent in Lanthanide Luminescence Studies. Katherine Cox. Butler University, Indianapolis, IN. Sponsor: Todd Hopkins

The objective of this research is to study the solvent properties of ionic liquids using lanthanide luminescence. Ionic liquids (ILs) are useful solvents because of their unique properties. ILs are relatively nonvolatile solvents that have melting points below room temperature (25ºC). In this research an IL was synthesized to create a non-aqueous solvent in which lanthanide complexes could fluoresce without interference from water molecules. A particular IL was selected for synthesis based on its structural characteristics and synthesis methodology. To achieve solubility of the lanthanide complex in the non-aqueous environment of the IL it was also necessary to create a less polar version of the lanthanide complex as well. So far this research has focused on the synthesis of the IL and the lanthanide complex; characterization of the products with H-NMR and spectroscopy; and increasing the yield of products from chemical synthesis. Further studies will focus on testing the stability of the IL, the solubility of the lanthanide complex in the IL, and the effect of the IL solvent environment on the luminescence of the lanthanide complex.

Session B Analysis of Organic Compounds in Complex Mixtures
Gallahue Hall, Room 108
Moderator: Dr. Olujide Akinbo

10:30AM
The Determination of Alkylphenols in Surface Waters. Nishaat Yunus. Butler University, Indianapolis, IN. Sponsor: Olujide Akinbo

Every year over 500,000 tons of alkylphenol polyethoxylates are produced worldwide; once they are used, more than half of them end up in aquatic environments. Alkylphenols are mainly used in industry as surfactants to lower the surface tension of liquids or detergents. Once these materials are used by industries or in household detergents, they are processed in wastewater treatment facilities where they are broken down into metabolites such as nonylphenol and bisphenol-A. These products are then expelled in surface waters. Recent literature has shown that these metabolites can mimic hormones causing estrogenic effects in fish species with concentrations as low as 1-10 µg/L. It has also been hypothesized that greater amounts of endocrine disruptors may be responsible for increased occurrences of cancers in humans.
The first phase of this study validated solid-phase extraction (SPE) cartridges and calibrated a fluorescence detector using various solvents. Results showed that the detector provided the best sensitivity at 225 nm with a methanol solvent. Also, data showed that samples need to be preconcentrated at or above 16ppm in order to get trustworthy data from the SPE cartridges. Further research will include incorporation of an LC/MS, sample preparation and SPE cartridge capacity studies.

10:45AM
The %Trans-fat in Fast Food French Fries: A Pilot Study. Nicole Helsel. Purdue University North Central, Westville, IN. Sponsor: Sharron Jenkins

Studies linking high trans-fat diets to coronary heart disease (CHD) have prompted the need to either regulate, limit, or completely ban trans-fat from all commercial food products, including fast foods. Many U.S. fast food chains now claim that their food items, particularly French fries, have “no trans-fat”. In our study, we determined the %trans-fat extracted from fries obtained from 13 popular fast food restaurants and compared our findings with the %trans-fat reported in each restaurant’s literature or nutrition fact table. Rapid attenuated total reflection-Fourier transform infrared (ATR-

FTIR) spectroscopy was used to assess the trans-fat content of oil extracted from fry samples. According to our preliminary data, seven of the thirteen restaurants had fry trans-fat levels ranging from 12 to 43% of the total extracted fat. These values were significantly higher than the amount of trans-fat reported in each restaurant's literature. Our study suggests that the trans-fat content in fast food fries may be much higher than what is actually disclosed in a restaurant's literature. In addition, a restaurant's "no trans-fat" claim may not necessarily hold true for all the individual restaurants within its franchise. Since there is no federal regulation of trans-fat content in fast foods, it is important that trans-fat claims and trans-fat labelling are accurate and up to date so consumers are able to make healthier food choices when dining in fast food establishments

11:00AM

Increasing Retention Times and Column Efficiency in Reversed-Phase HPLC by Focusing at the Column Head using a Non-Eluting Solvent. Andrew Kneller. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Daniel Morris

We present an injection technique that focuses and holds solutes at the head of a reversed-phase HPLC column prior to beginning elution with the separation mobile phase. The column is equilibrated with a non-eluting solvent (water in this case) prior to the injection, and the injection is performed using the same solvent. The separation mobile phase is introduced immediately after the sample is injected. This injection scheme enhances solute focusing at the head of the column prior to the start of the separation. While increasing the retention times of all components in the sample, we observe no additional band broadening. In fact, an increase in column efficiency is observed. This allows large volumes (up to 500 µL) of otherwise dilute samples to be injected directly on the column without a prior clean-up step (such as solid-phase extraction) to remove salts and other impurities that elute at early times and co-elute with analyte peaks. Several DNA bases exhibit evidence of oxidative damage, and have been recognized as warning signs in the detection of cancer. Typically these markers are at such low levels that they cannot be detected without additional preparation steps that are time consuming and risk contaminating the sample. We demonstrate the effectiveness of this injection technique for the separation of a mixture of nucleosides (50 nM) and the oxidative damage marker 8-hydroxy-2'-deoxyguanosine (8-OH-dG, 3 nM) in a high-salt matrix (0.5 M phosphate).

11:15AM

Optimization of a polydimethylsiloxane based passive sampler of common household volatile organic compounds. Jennifer Osborne, Olujide Akinbo, Dr. Michael J. Samide. Butler University, Indianapolis, IN. Sponsor: Olujide Akinbo

Dangerous volatile organic compounds, or VOCs, can accumulate as indoor air pollution within homes causing health problems in the habitants. In order to determine the concentration of VOCs in such areas a field-deployable sampler is necessary. The focus of this work has been to develop an inexpensive, reusable, sensitive field-deployable passive sampler for monitoring VOCs in indoor air. We have devised a sampler that uses polydimethylsiloxane (PDMS), which is a common inexpensive, non-polar adsorbent. The sampler is comprised of an aluminum bottle coated with the PDMS. In operation, the coated portion is exposed to the air to be sampled. The bottle is then screwed into the top portion which keeps the material sealed-in. The sample from the aluminum bottle is then transferred to the GC for analysis using a Gas Phase Sampling Device (GSPID). In this work, sample equilibration time (in the bottle), GSPID gas flow rate and the sample loop filling times were optimized. Solutions containing toluene, ethylbenzene, and o-xylene were used as representatives for common household VOCs. Butanone was used as an internal standard in order to control reproducibility.

11:30AM

Exchange capacity of a poly(acrylic acid) ion exchange film for Pb2+ in aqueous solution. Kyle Mandler. Hanover College, Hanover, IN. Sponsor: Craig Philipp

Introduction: Ion exchange materials can effectively bind and trap multivalent metal ions in solution and offer a number of possibilities for the purification of water contaminated with a variety of heavy metals. In this study the capacity and rate of remval for Pb2+ of a poly(acrylic acid) based exchange resin was determined.
Methods: A 1:1 by weight solution of poly(vinyl alchohol) and poly(acrylic acid) was made and cast on a clean glass plate. After drying, the film was cross-linked with formaldehyde to induce insolubility. The film was then acidified in a 10% HNO3 solution. Following acidification, the film was loaded with calcium in a supersaturated solution of CaOH. Three 1g samples of dried calcium-form films were placed in 100mL of 1000ppm Pb2 solution for one week. Levels of Pb2+ were determined using Inductively Coupled Plasma – Atomic Emission Spectroscopy
Results: After one week, the levels of Pb2+ in each sample had been reduced to below the detection limit for the ICP-AES instrument (8-15ppb).
Discussion: The almost total elimination of Pb2+ from solution after one week indicates that the loading capacity of the films is at least 100mg Pb2+ per gram of film, or 10%. Subsequent trials of increased [Pb2+] will be conducted until a true maximum has been determined. We expect this to be around 400mg Pb2+ per gram of film, or 40%.

Session C Chemical Analysis of Biochemical Systems
Gallahue Hall, Room 108
Moderator: Dr. Garrett McGowan

01:00PM

Infrared Spectroscopic Studies of Metal Ion Induced Changes in the Secondary Structure of transferrin protein. Allen Chacha. Butler University, Indianapolis, IN. Sponsor: Joseph Kirsch

Transferrins are proteins considered as one of the most essential iron transport system in vertebrates and invertebrates. They are capable of bearing a single Fe(III) atom in each of their two lobes. Infrared spectroscopy technique was utilized to investigate structural changes in both holo (iron rich) and apo (iron poor)-transferrin proteins in water solution as alcohol of different R-group sizes were added to the solution. Spectra collected were for water, water vapor, holo-transferrin in water, apo-transferrin in water, and each of the transferrin proteins treated with methyl alcohol, isopropyl alcohol, and isobutyl alcohol in water solution. Spectral subtraction was used to remove interfering water absorptions and to reveal the amide I band absorptions of the transferrin proteins. The profiles of the amide I absorptions and deconvoluted amide I absorptions were used to describe the structural changes (changes in the ratio of alpha-helix to beta-sheet) in the transferrin proteins. The structural changes in the transferrins were considered in terms of the amount of iron and nature of alcohol. Results showed alcohol addition increased transferrins' Amide I beta-sheet profile. Methyl alcohol had a greater effect on holo-transferrin protein. Isobutyl alcohol had a weak effect on holo-transferrins' beta-sheet profile while methyl alcohol showed a larger effect on apo-transferrins' beta sheet profile.

01:15PM

Characterization of Insulin Aggregation Using CE Separation and RLS Detection. Joshua Knapp. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Luanne Tilstra

Polypeptide aggregation is intimately related to a variety of human pathologies. Alzheimer's, Huntington disease, and Creutzfeldt-Jakob disease give rise to debilitating conditions characterized by the formation of fibrillar aggregates and inclusion bodies observable in brain tissue.

Advancing the understanding of the aggregative pathway at its initial stages houses great potential for the development of a kinetic mechanism, but one of the primary experimental difficulties lies with detecting particles of submicron and nanometer size. In response to this problem, an analytical instrument has been assembled for two primary purposes: detecting particles of nanometer and micrometer size, and accurately quantifying numbers of particles in sample solutions by detecting individual particles. The efficient separation of particles is achieved through capillary electrophoresis. If proper separation has been achieved, individual particles can be observed as incident laser light undergoes Rayleigh light scattering. Analysis of particle size distributions obtained at various times during controlled aggregation may clarify the mechanisms by which individual protein monomers, dimers, and oligomers bind to one another to form the floccules and aggregates we observe in tissue. As a monitoring method, the system can aid in the elucidation of specific conditions under which systems must be maintained to prevent aggregation. Significant progress has been made in optimizing the instrument for the study of human insulin. Manual alignment of the optical components has been perfected, software is being developed for focused data analysis, and proof-of-concept experiments using polystyrene beads of known size are under way.

01:30PM

Enzyme Kinetics In A Genteically Engineered Protein Hydrogel. Nicholas Zehner. Anderson University, Anderson, IN. Sponsor: Scott Kennedy

A genetically engineered multi-domain protein forms a hydrogel network through intermolecular interactions. This protein, called ATCTA, consists of three domains: a-helix (A), thrombin cleavage site (T), and water-soluble coil (C). The flanking a-helices self-associate in tetrameric bundles forming cross-links for the hydrogel network. In the presence of thrombin, the hydrogel degrades due to the thrombin cleavage sites. To better understand the hydrolysis reaction of ATCTA, a series of kinetic experiments was performed. A problem arises in analysis of ATCTA because the experimental procedure only allows for the direct measurement of the concentration of free water-soluble coils. To address this limitation, three proteins ATC, CTA, and CTATC were also analyzed to better understand the specific characteristics of each respective thrombin cleavage site. Reaction simulations were fit to the experimental data providing site-specific measurements of kcat and KM. Statistical analysis revealed that the kcat and KM parameters for the hydrolysis reaction were unique to each site. Despite the different values of kcat and KM for each reactive site, preliminary analysis of a two site model provides evidence that the reaction kinetics within the hydrogel can be understood.

01:45PM

The Effect of Selenium Compounds on Oxidative Damage to the Mononucleotide 2'-Deoxyguanosine-5-Monophosphate and Formation of 8-Hydroxy-2'Deoxyguanosine. Stutay Monga. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Daniel Morris

Oxidative stress and oxidative DNA damage in particular are associated with several different diseases and clinical conditions as well as the aging process. Oxidative DNA damage is very site specific, targeting the readily oxidized guanine base and forming the hydroxylated derivative 8-hydroxy-2'-deoxyguanosine (8-OH-dG). The metal ions Cu(II), Fe(II) and Cr(III) are among several that exhibit site specific damage to the guanine base in DNA, resulting in double-strand breaks and production of 8-OH-dG. Selenium compounds in general tend to be effective anti-oxidants, specifically selenium dioxide (SeO2) and the selenite salt (Na2SeO3). We allowed the metal ions Cu(II), Fe(II) and Cr(III) to react with H2O2 to generate reactive oxygen species (ROS) in the presence of the mononucleotide 2'-deoxyguanosine-5'-monophosphate (dGMP). The mononucleotide serves as a simplistic model for nucleic acid polymers. We monitored the production of the oxidative damage marker 8-OH-dG in the presence of the anti-oxidants SeO2 and Na2SeO3. We observed that the selenium compounds decreased overall oxidative damage to the mononucleotide, but had virtually no effect on the levels of the specific oxidative damage marker 8-OH-dG. This suggests that production of 8-OH-dG involves a site-specific reaction involving the metal ion and H2O2, and that the selenium compounds are incapable of suppressing this particular reaction. This provides insight into the mechanism by which the selenium compounds minimize oxidative damage.

02:00PM

Characterization of DNA Functionalized Surfaces By Fluorescence Microscopy. Laurel Heckman. Butler University, Indianapolis, IN. Sponsor: Todd Hopkins

In the field of clinical diagnostics, biosensors are used to identify genetic disorders by hybridizing a surface-bound DNA sequence with the patient's DNA. To further improve biosensor design, two nonlinear optical techniques, sum frequency generation (SFG) and second harmonic generation (SHG), were used to probe the orientation, chirality, and surface charge density of the surface-bound DNA strands. In this system, short DNA oligonucleotides were attached to a N-hydroxysuccinimide (NHS) ester functionalized fused quartz surface via an amide bond. However, the reactions steps involved in preparing these surfaces have not been fully optimized for the SHG and SFG experiments. In this current study, fluorescence confocal microscopy was used to image fluorescently labeled single-strand DNA (ssDNA) and its labeled complementary sequence for the first time. The optimum time duration required for hybridization was found to be 2 hours. Using contact angle, the minimum NHS linker concentration required for high surface coverage was found to be 1 mg/mL NHS linker in toluene and an optimal rinsing method to minimize aggregates and remove unreacted silane was also determined. Not only does this investigation help others who are studying DNA at surfaces functionalize surfaces more efficiently, it also gives insight about surface-bound DNA hybridization. These experiments provide a better understanding of medical biosensors that utilize DNA hybridization.

02:15PM

Effects of Parthenolide Derivative on Cervical Cancer Prone Cells. Rishi Megha. Butler University, Indianapolis, IN. Sponsor: John Esteb

Cancer biology has been one of the fastest growing fields of research within the past 10 years. As a result of a combination of early detection and greater drug strength, the odds of surviving cancer have vastly improved over the last two years. The proposal of this experiment is to study the rate of cell death of cervical cancer prone cells (CGL1 cells), induced by the drug Parthenolide. The study will systematically vary the exposure of CGL1 cells to both drug levels and radiation levels to determine the optimum conditions to promote programmed cell death (apoptosis). This data will be collected and analyzed, including, the variation of gene expression, including those that are specific to apoptotic activity, specifically the inhibition of nuclear factor-kappa b (NF-kB) and the presence of BAX. The specific cells I will be using are CGL1 cells, which are derived from the HeLa cell line. HeLa cells have been used in laboratories across the world for research because they are cancerous cells that can live outside the body indefinitely, and they replicate very quickly in comparison to other cell lines (5). They are named after a cervical cancer victim from whom they were attained, Henrietta Lacks, hence the name, HeLa. The CGL1 line is a hybrid cell line with the fusion of tumorgenic HeLa cells with normal non-tumorgenic human fibroblast cell. This results in a cell that is prone to cancer, but functions normally.

Communication: Speech & Journalism

Session A
Fairbanks Center, Room 246
Moderator: Dr. Bill Neher

09:00AM

A Contrast of Bilingual and Monolingual Children in regards to Language Acquisition. Jessica Pfister. Butler University, Indianapolis, IN. Sponsor: Suzanne Reading

With an ever growing multilingual population in the United States, our education systems face the decision of whether or not to teach children a second language at the start of their schooling. In order to make this decision, parents, educators, as well as researchers are wondering what it means to be bilingual and what positive or negative results are seen in young children who obtain multilingual lexicon systems. Multiple language acquisition has only recently become a heavily researched and focused topic. Many questions have been left unanswered and furthermore, experts in the field are coming to contradicting results and conclusions. The presented thesis investigates the culmination of recent research in this newly developed field, as well as provides valuable feedback on growing up bilingual from those who would know best: bilingual individuals themselves.

09:15AM

Race and Rhetoric in the 2008 Presidential Election. Lindsey VanDyck. Butler University, Indianapolis, IN. Sponsor: Carol Reeves

This research focused on the role that race played in Obama's rhetoric in the 2008 Presidential Campaign. The research examined, evaluated, and compared two of Obama's speeches and used the theories of Afrocentrism and Eurocentrism to reach a conclusion.

09:30AM

"Report From Baghdad: The Ethical Concerns of Journalists on the Front Lines". Monica Freeman. Butler University, Indianapolis, IN. Sponsor: Dr. Charles St. Cyr

The relationship between the military and the media has long been one of contention. From the inception of the United States and the inception of media outlets in this country, the military officials and journalists have often disagreed on the best way to report on the nation at war. Until now. By embedding reporters with specific troops during the current war in Iraq, the United States military and the United States media have come to a compromise. While the media is allowed full access to stories, the government has laid clear lines on what can and cannot be reported. The media needs the military for the wealth of stories and opportunities it gives for reporting; the military needs the media to report and tell the story of the troops and the wars. It is not possible to sever this relationship and maintain a healthy media or military. However, while the two entities agree on embedded reporters as the best possible association between them, it is difficult to see this arrangement as a flawless solution to the problem. With knowledge of how the embedment process has been helpful to the media and the military, and the embedded journalists have not seen a large disparity of ethical standards, a complete examination of the facts, values, principles, and loyalties using the Potter Box method of analysis can be done to prove embedded journalists are able to act ethically.

10:00AM

A Comparative Analysis of the 2008 Presidential Campaign Coverage in Two Indiana Daily Newspapers: Are Voters Well-Served? Robert Herman. Butler University, Indianapolis, IN. Sponsor: Dr. Charles St. Cyr

Every four years, citizens of the United States have the right and the privilege to vote for the president, the figurehead of the entire country. It's a staple of the democracy we live in to have that power, and as such, much media coverage involves the presidential campaigns during the months that precede the important event.
Yet, every time a presidential election rolls around, every American who is of age to vote simply does not vote. In fact, only 56.7 percent of the voting-age population voted in the 2004 election.

This leads to two central research questions. Do newspapers present accurate, balanced, fair, and objective information in stories about presidential candidates to American voters, specifically Indiana voters, during a presidential election, and to what extent or to what degree does a major metropolitan daily differ from a small city daily in how stories about presidential candidates are edited and displayed?
This study is structured in a way where the Northwest Indiana Times and the Indianapolis Star are examined in the same 25-day period, and they are then analyzed on various macro and microediting subjects, such as story count, use of adjectives, story placement, and others.
This is a case study that aims to find how two Indiana papers focused and reported on the presidential election right after the primary season and what discrepancies exist in their journalistic methods.

10:15AM

An evaluation and analysis of the fantasy themes of the emergent church movement employed in the rhetoric of Brian McLaren's A New Kind of Christian. Lindsay Snider. Taylor University, Upland, IN. Sponsor: Jessica Rousselow-Winquist

Beginning in the 1990s, a group of Christian leaders who were dissatisfied with what they perceived as the American church's abandonment of the relevancy of the gospel began banding together to form a movement known as the "emergent" or "emerging" church. These Christian leaders and their adherents seek to restore the American church to its place of influence by rescuing Christian truth from the restrictive clutches of modernism and repackaging the gospel message to make it accessible and relevant to a culture embracing a post-modern worldview. Through the analysis of emergent leader Brian McLaren's A New Kind of Christian, this essay seeks to evaluate the rhetoric of the emergent church movement to determine its values, goals, and ultimate effectiveness in creating and sustaining a rhetorical vision for the church. The framework for this analysis is Richard Bormann's fantasy theme theory which allows for the evaluation of rhetoric in terms of the dramas that individuals and groups present and respond to. The particular fantasy theme which McLaren employs in his rhetoric of the emergent church is that of a chosen people pursuing a holy cause which will inaugurate a golden age in the impact of the church.

10:30AM

Bringing Cohesion to a Movement: The Dove Real Beauty Campaign. Elisabeth Duncan. Taylor University, Upland, IN. Sponsor: Jessica Rousselow

In September 2004 a global study entitled The Real Truth about Beauty: A Global Report was commissioned by Dove, a Unilever Beauty Brand, "to further the global understanding of women on beauty and well-being – and the relationship between them." This study was a way for Dove to enlighten women on the notion of beauty and its definition. One of the researchers, Dr. Nancy Etcoff, stated that this study was a means for beauty

"to be reclaimed" from the media and redefined by women around the globe.
Pandora's Box was opened by The Real Truth about Beauty: A Global Report and gave rise to the Dove Real Beauty Campaign. The purpose of this study is to show how the Dove Real Beauty Campaign brings cohesion to a movement that had no physical outworking and provides an outlet for awareness on a global scale. Dove's campaign has resonated with the generation of young women under pressure from the unrealistic images of beauty that the media presents. Through a countercultural approach Dove has been able to make a small step towards assisting women as they redefine beauty.

11:00AM

Instant Democracy: Phone Text, Twitter, and YouTube. Edwin Faunce. Indiana University-Kokomo, Kokomo, IN. Sponsor: Chris Darr

In August of 2008 the campaign of Democratic presidential candidate Barack Obama advertised that supporters registered on the candidate's website could sign up for an instant text message notifying them when Obama had made his choice for Vice Presidential running mate. This opportunity for grassroots supporters getting firsthand information, instead of being given exclusively to major media outlets, is unprecedented in political communication. SMS (Short Message Technology) text messages and websites like YouTube and Twitter are slowly replacing more mainstream media like newspapers, broadcast news, and even email in communicating political messages to the public. Advanced communication technology is also allowing constituents and citizens to voice their concerns to politicians and pundits as well. However, this new portal to "democratic" technology, refreshing in its ability to empower the electorate, has proven just as frightening in the scope of possibilities for fraud, misinformation, and misuse. The question that needs to be asked is: Does this new age of "techno-democracy" begin to usher in a new era of political openness and communication? Or is lack of oversight into the medium, and public apathy going to once again empower a certain few with the means and the technology to influence the decision makers with direct access?

11:15AM

Obama's Millennial Movement: A Fantasy Theme Analysis. Kathryn St. Cyr. Taylor University, Upland, IN. Sponsor: Jessica Rousselow

For decades, presidential campaign rhetoric has been subjected to extensive scrutiny. Examining the Obama campaign from a critical perspective reveals an unprecedented use of dramatic rhetoric specifically targeted toward the values and interests of American youth. United under Obama's powerful vision and charisma, a grass-roots movement of teenagers and young adults grew rapidly during the months preceding Election Day. The purpose of this study is to identify and analyze the discourse surrounding this pro-Obama movement of "Millennial" Americans. Elements of Bormann's fantasy theme analysis will be applied in an attempt to uncover how the campaign rhetoric tapped into the values and motives of the demographic born in or after 1982 – Generation Y.

11:30AM

Ensuring the Future of Environmental Journalism Through a Positive Environmental Ethic. Elizabeth Otte. Hanover College, Hanover, IN. Sponsor: Kay Stokes

I will examine the discussion surrounding journalism's uncertain future, and offer my own contribution in terms of Environmental Journalism (EJ). Because environmental topics receive relatively little media attention, economic constraints are even more threatening. EJ's failure or success, then, will provide lessons for journalism as a whole. I believe that securing the continued, profitable dissemination of scientific information requires us to engage readers with a positive, participatory environmental ethic. I begin with the assumption that environmental journalists are pro-environment in the same way that sports writers are pro-sports; even balanced EJ expresses a set of values about the environment. Unfortunately, most environmental issues rely on readers' guilt to inspire action and attention. A guilt-based ethic does not address our complex relationship with nature. It merely calls humans to solve problems they perpetuated but did not create, and to use individual action as the primary response to global issues. We must address the serious issues, and individual action is key. But guilt-based ethics create disillusionment and despair – feelings that do not encourage continued interest in environmental issues. To genuinely engage a sustained (and thereby a paying) readership, we must employ a positive environmental ethic. EJ must develop readers' intrinsic (though undernourished) curiosity about the natural world and address global issues. I will explore how this balance might be achieved, and use Conscientia, a natural science magazine I developed, as an example of this new EJ. Finally, I will extrapolate lessons from participatory, positive ethic-based EJ to the broader future of journalism.

Education

Session A
Jordan Hall, Room 183
Moderator: Dr. Meredith Beilfuss

10:00AM

Alternative Education: A Pathway to Success. Kim Clement. Butler University, Indianapolis, IN. Sponsor: Margaret Brabant

A growing trend is the increasing number of students at-risk of academic failure. As many students become at-risk of academic failure for a variety of reasons, several of these students turn to alternative education programs. Unfortunately, though, these students face negative stereotypes due to their unique needs and circumstances; alternative education has a reputation of serving students that are delinquents, troubled, unable to learn, etc. The purpose of this presentation is to address the role of alternative education specifically in Indiana and to delineate how these programs help students overcome risk factors and stereotypes associated with alternative education. Through demonstrated academic outcomes and student surveys, it becomes obvious that alternative education programs in Indiana help students overcome the negative stereotypes placed upon them by remaining in and completing their middle and/or secondary educations.

10:15AM

What is the impact of the Montessori approach of education, as implemented on city public school students, particularly at IPS School 91? Katherine Arbuckle, Sarah Ryan, Arthur Hochman. Butler University, Indianapolis, IN. Sponsor: Arthur Hochman

In the ever-changing field of education, it is important to step back and analyze what sound educational foundations are working to positively shape the future of children. Education is full of "new" and "improved" ideas, as well as calls for change and cries of gloom and doom. Perhaps we might be better served by looking at practices, philosophies, and programs that already exist, that might actually work, could be built on, or might reveal what our future direction should be.

This study examines a current city public school in Indianapolis that utilizes the Montessori philosophy as its underlying foundation. Anecdotally it appears to be a strong program, but we wanted to dig deeper and see what data might show. Our question was: How does the Montessori philosophy, that has been around for many years, serve an urban population? What is its impact on its students beyond their tenure at the school? On the other hand, if it is not making a positive impact, in what ways might we build on its positive elements, or what are the possible reasons that it is not meeting the needs of its children.
Specifically we interviewed as many of the graduates of this public K-8 school in Indianapolis as we could locate. Our goal was to determine their perception of the impact of their K-8 Montessori experience at Indianapolis Public School 91, given that they are now in high school, college and beyond.

10:30AM

Public vs. Private Secondary Education and College Success. Redrick Taylor III, Julia Smith, Rachel Dahlgren. Valparaiso University, Valparaiso, IN. Sponsor: Matthew Ringenberg

This research explores the relationship between a student's public or private high school education and their college success. The Null Hypothesis is that there will be no difference between the success of Valparaiso University students' success and the type of high school they attended. The hypothesis is that Valparaiso University students who attended private high school will have more success in college than those who attended public high school.
The study surveyed approximately 100 junior level college students. There is a wide array of majors represented. There was approximately equal representation of gender and a diverse representation of race. Research was partly obtained by questionnaires distributed out in the student Union and in classrooms.
A t-test is used to compare the average GPA of students who attended private school versus students who attended public school, measure the amount of extracurricular activities of students who went to either type of high school, and measure the average number of hours participants from both types of high school spends in social settings. An ANOVA was also used to measure number of hours participants from both types of high schools spends in social settings.
The study implies that educational background is indicative of a student's current performance in college academically, socially, and in extracurricular activities. The results of this study might be useful to the administration here at the university as they continue their efforts to extend the best services possible to the entire student body.

Exercise Science and Human Performance

Session A
Gallahue Hall, Room 101
Moderator: Dr. Mike Worrell

10:00AM

Effect of Caffeine on the Resting Heart Rate and Resting Blood Pressure of Individuals With Varying Fitness Levels. Elizabeth Wehr. Hanover College, Hanover, IN. Sponsor: Bryant Stamford

Caffeine is a regularly consumed stimulant that affects the sympathetic nervous system. Conversely, the sympathetic nervous system is stimulated during exercise. Additionally, regular exercise decreases heart rate and blood pressure. The correlational relationship between these two variables is uncertain. Therefore, this study aims to establish if such a correlation exists.
It is hypothesized that there is an inverse relationship between fitness level and resting heart rate and resting blood pressure. Additionally, it is thought that resting heart rate will not change significantly with the administration of caffeine. Finally, it is theorized that resting blood pressure will increase in all subjects upon the administration of caffeine, with the increase being greater in less fit subjects.
Eight male subjects, between the ages of 18 and 22, performed a YMCA Submaximal Cycle Ergometer test to determine their VO2max, and resultantly their fitness level. Their fitness level was also evaluated via their resting heart rate and by their answers to a questionnaire concerning their weekly exercise routines. Each participated in two experimental sessions where their heart rate and blood pressure measurements were recorded every ten minutes after administration of either 500 mg Vitamin C or 400 mg caffeine.
There appears to be a positive correlation between fitness level and resting systolic blood pressure upon the administration of caffeine. Additionally, caffeine appears to have no consistent effect on resting heart rate. Data is still being collected and will be further analyzed with the assistance of Dr. Barbara Wahl and Dr. Bryant Stamford.

10:15AM

Ambulatory activity level and glucose clearance in overweight college-age males. Kyle Mandler. Hanover College, Hanover, IN. Sponsor: Bryant Stamford

Hypotheses: It was hypothesized that (1) Administration of 0.5 glucose/kg body mass will significantly increase measured blood glucose. (2) After peaking, the rate of blood glucose clearance will be enhanced by exercise. (3) Moderate exercise will induce the highest rate of glucose clearance. (4) As the number of metabolic syndrome risk factors a subject possesses increases, glucose tolerance will decrease.
Methods: Five male subjects attending Hanover College will participate. Measurements of height, weight, resting blood pressure, waist-to-hip ratio, body fatness, and fasting blood glucose were made. The weekly activity level of each subject was established with a questionnaire. The blood glucose of each subject was measured after an 8 hour fast. The subjects exercised at three intensities: sedentary, moderate 50%VO2max, and heavy 85%VO2max, after which a solution of 0.5g dextrose/kg body weight was ingested. Blood glucose was then measured at 20 and 40 minutes following dextrose ingestion.
Results: Two subjects have completed all three rounds of data collection. One subject was moderately overweight (BMI=26.4), regularly participated in aerobic exercise, and presented with no other metabolic syndrome. The second subject was obese (BMI = 36.3), regularly participated in anaerobic exercise, and presented with elevated fasting blood glucose (>100mg/dL), resting blood pressure (>120/80), and a waist-hip ratio of greater than 0.9. For each exercise mode, the first subject's blood glucose measurements at 20 and 40 minutes following the dextrose injection were (in mg/dL) 143 and 163 (sedentary), 152 and 141 (50%VO2max), and 143 and 135 (85%VO2max). The second subject's blood glucose measurements were: 145 and 157 (sedentary), 160 and 140 (50%VO2max), and 153 and 142 (85%VO2max).

10:30AM

The Effects of Probiotic Therapy on Murine Leukocyte Proliferation. Danielle Eskens. Hanover College, Hanover, IN. Sponsor: Michael Worrell

Live cultures of helpful bacteria, or probiotics, found predominantly in fermented milk products have been shown to effectively help regulate digestive functions. Probiotics have also been shown to have immunological advantages. Studies have indicated an increase in specific

and non-specific immune responses with probiotic therapy. This study examines the possible benefits of probiotic yogurt, and specifically the short-term efficacy of probiotic ingestion to increase leukocyte proliferation in regards to murine immunology. Supplementation is expected to increase leukocyte proliferation significantly in the experimental group comparatively to the control group. Studies have demonstrated an elevation in lymphocyte and monocyte activity in response to probiotic treatment, and because of this differential lymphocyte and monocyte counts are expected to significantly increase more percentage wise than any other leukocyte. Twenty four immunocompetent mice were divided evenly into an experimental and control group. The experimental group was given an oral administration of a probiotic yogurt treatment over a three week period. At days 1 and 21 a tail clip procedure was performed to obtain blood sample for quantifying both total and differential leukocyte counts for all mice. Results will be analyzed using a standard t-test. It is expected that total leukocyte counts will increase more with the experimental group than the control group. These results could further support probiotics as a beneficial immunological therapy in the prevention of illness and infection.

10:45AM

Effects of Exercise, Time of Day, and Meals on Urinary Free Cortisol Concentrations. Trevor Lair. Hanover College, Hanover, IN. Sponsor: Bryant Stamford

Introduction: Cortisol is a steroid hormone produced by the adrenal glands that controls the body's response to stress. During exercise, cortisol ensures that there will be a bountiful supply of glucose available for energy by breaking down proteins and countering the effects of insulin. The purpose of this study is to measure the concentration of urinary free cortisol at different times of day, both at rest and post exercise, in a twenty two year old male. Hypotheses: Vigorous exercise will produce a higher cortisol concentration than the moderate and light exercise intensities. Light exercise will result in the lowest concentration of cortisol. In the meal trials, cortisol concentrations post-meal will be higher than concentrations collected after fasting. Resting urinary free cortisol concentrations will be highest at 0700 hours and lowest at 2400 hours. Methods: Fasting urinary cortisol concentrations were measured at three different times of day, after exercise, and following a meal. The exercise was performed at three different intensities (light, moderate, and vigorous) corresponding to 25, 50, and 85% VO2max respectively, and cortisol concentrations were measured one hour post-exercise. The times of day where resting urinary cortisol was collected were 0700, 1400, and 2400 hours. In two trials, the subject consumed a meal at 1200 hours and then measured cortisol concentrations at 1400 hours. All cortisol concentrations were measured via HPLC. Results: Pilot data support the hypotheses. Full data collection and analysis will be presented.

11:00AM

Validity of the Borg scale ratings of perceived exertion. Chelsea Uchihara. Hanover College, Hanover, IN. Sponsor: Bryant Stamford

Introduction: Borg scale Ratings of Perceived Exertion (RPE) convey subjective perceptions of physical work during exercise. The scale has been verified as a valid and reliable instrument for implementation during exercise testing. The underlying foundations of the scale, however, have been less well validated. The purpose of this study was to validate the underlying assumptions upon which the scale was developed. Methods: 10 male subjects were tested on a treadmill machine at varying workloads administered in both a progressive and random order, while measuring heart rate and recording RPE responses. Workloads lasted for 2 minutes with HR and RPE recorded 10 seconds before the end of the corresponding workload. Results: Across the group, treatment order did not affect Borg's expected HR:RPE ratio of 10:1 according to the generated r-values of 0.97 and 0.98 for random and progressive treatments. However, individual data produced r-values of 0.5 and 0.66 for random and progressive treatments as well as an average deviation of RPE of +0.93. Discussion: The results suggest that Borg scale ratings are underestimated during random intensity exercise and thus, do not fit as well with Borg's expected model. While assessing groups of individuals the scale holds merit, but consistently underestimated responses in individuals may cause misuse and misdiagnosis. As a result, Borg scale use should be approached cautiously in specialized cases such as cardiac rehabilitation that are unique to an individuals physical capacity.

Foreign Languages

Session A
Jordan Hall, Room 278
Moderator: Dr. Willi Schwoebel

10:00AM

Wasser Thema in zwei Kurzgeschichten von Wolfgang Borchert. Meagan Hinze. Butler University, Indianapolis, IN. Sponsor: Willi Schwoebel

Die zwei Kurzgeschichten Liebe blaue graue Nacht und Das Gewitter aus Wolfgang Borcherts Sammlung „Die traurigen Geranien" haben andere Thema als seine Nachkriegwerke. Beide haben als das gleiche Hauptthema Wasser. Die Kurzgeschichten unterscheiden sich von einander durch die Darstellung von Wasser und wie es empfunden wird.

10:15AM

Título: Experiencias y aprendizaje con niños indígenas en Chiapas. Rachel Walters. Hanover College, Hanover, IN. Sponsor: Eduardo Santa Cruz

Este estudio describe mis experiencias de la práctica profesional que realicé durante el verano de 2008 en San Cristóbal de Las Casas, Chiapas, México. Mi estudio explica el trabajo que hice con el programa Sueniños, una organización que asiste a la población infantil indígena marginada, dentro de la comunidad de San Cristóbal. Mi estudio se enfoca tanto en mi trabajo con los niños como en investigar la historia de Chiapas, su población indígena, la discriminación y problemas a que se enfrenta su población por medio de un análisis de textos claves (Balún Canán de Rosario Castellanos y El fuego y la palabra de Gloria Muñoz Ramírez) y entrevistas personales. Finalmente, el estudio muestra las maneras en que estas experiencias e investigaciones me han beneficiado y afectado al presente y hacia el futuro.

10:30AM

Reflektierungen von Deutschland. Meagan Hinze. Butler University, Indianapolis, IN. Sponsor: Fred Yaniga

Es ist ganz wichtig ins Ausland zu gehen, aber es ist vielleicht wichtiger, dass man danach an die Zeit zurückdenkt. Dieses Ziel erreichte ich durch eine Serie von Kurzschreiben und die Aufbereitung einer Webseite. Diese Reflektierungen halfen mir viele Ereignisse und Erlebnisse besser zu verstehen.

11:00AM

L'ombre d'un doute: A Play in the Style of Eugène Ionesco. Adam Kegley, Ashley Kohl. Butler University, Indianapolis, IN. Sponsor: Sylvie Vanbaelen

"L'ombre d'un doute" is a French play modeled after the works of Eugène Ionesco. Presenters will perform excerpts from this piece. The play utilizes many Ionesconian themes (including lack of communication, death, and humor).
The main character, Panpier, is a poet who cannot seem to find inspiration to write the perfect love poem. As the lights dim and his frustration grows,

his shadow comes to life. Seemingly innocent at first, the shadow grows increasingly threatening to Panpier and his creativity until the final climatic moments of the play when Panpier must muster the courage to defeat his shadow or perish.

11:15AM

Le Byronique de Bergerac. Sarah Cramer. Hanover College, Hanover, IN. Sponsor: LaVerne Dalka

Cette présentation est une analyse psychologique de Cyrano de Bergerac, le héros du pièce du théâtre "Cyrano de Bergerac" de Edmond Rostand. Cette analyse comparera de Bergerac aux héros romantiques, ou Byronique, du début du 19ème siècle, citant de Bergerac comme une réinvention de ce type de caractère. En particulier, il éxaminera l'interation du héros avec les règles de la société. Comme un héros romantique, de Bergerac est plus concerné avec la cultivation d'un richesse intérieur qu'un richesse extérieur de la société. Cependant, le raison pour son rejet de la société est ironqiue, mais très humain, et ajoute une motivation humain du héros romanique. Il rejette le richesse extérieur parce que sa préoccupation avec son propre extérieur, spécifiquement avec son grand nez, le convainc qu'il est laid et inacceptable pour la société. Finalement, cette présentation examinera l'effet de sa préoccupation avec son grand nez dans son amour de sa cousine, la belle Roxane. De Bergerac pense, parce que sa cousine est un membre de la société, elle doit avoir une préoccupation avec son grand nez et, cependant, il pense qu'elle ne l'aime jamais. La mélancholie poétique de son amour pour Roxane est un autre lien entre lui et les héros romaniques. En bref, cette présentation expliquera comment son grand nez fait Cyrano de Bergerac une réinvention du héros romanique.

11:30AM

Charles de Gaulle's influence on contemporary French culture and on France's rejection of genetically modified food. Susanna Foxworthy. Butler University, Indianapolis, IN. Sponsor: Larry Riggs

Recently, more questions have been raised in the United States regarding genetically modified food, and there has been a movement toward promoting organically grown products. Since the introduction of this biotechnology, Europeans have questioned the safety of genetically modifying organisms, and their policy butts heads with current American policy. Specifically, it is well documented that the French, the largest exporters of food in the European Union, are strongly opposed to genetically modified food. This resistance can be traced back in history to Charles de Gaulle, who came to power in France after World War II and helped rebuild the country after occupation. De Gaulle's political ideology included many facets including encouraging the sovereignty of France and restoring the "greatness" of France. He is the French leader who withdrew from NATO, refused to sign the Atmospheric Test Ban Treaty of Moscow in 1963, and demanded that all American forces in France leave after World War II. This political ideology, known as Gaullism, declined in popularity after massive rebellions in 1968, but the basic principles of Gaullism exist today in France and continue to influence policy decisions, most notably policy regarding genetically modified food.

Gender Studies

Session A
Fairbanks Center, Room 146
Moderator: Dr. Katharina Dulckeit

01:00PM

Laws to Promote the Innocence and Chastity of Young Women in the Progressive Era. Heather Sperry. Butler University, Indianapolis, IN. Sponsor: Vivian Deno

During the previous fall semester, I took a history class that covered the Gilded Age and Progressive Era. The final project was to compose a research paper of your choice. I chose to write about seduction laws and age of consent laws during this time period. I discuss how they paved the way for statutory rape laws and affected the women's rights movement using specific examples and experiences via court cases during this time in history.

01:15PM

The Effects of the United States' Occupation of Iraq and Afghanistan on Women's Liberation and Equal Rights Movements in Arab Nations. Victoria Haladyna. Ball State University, Muncie, IN. Sponsor: Paul Ranieri

The repercussions of the recent wars in the Middle East are numerous. From fluctuation in oil prices to racial profiling, the War on Terror in Afghanistan and Operation Iraqi Freedom has led to, especially with the advent of new media, a level of discourse never before seen. But what about the relatively lesser-acknowledged effects? By integrating select forms of new media, I intend, throughout the course of this presentation, to shed light on the overall negative consequences the United States' war on terror has had on the ever ongoing struggle for women to gain equality in Middle Eastern countries. I will specify how the United States' involvement in the Middle East has done little or nothing to advance women's rights, and has in fact, depreciated the status of women in Iraq and Afghanistan. Ongoing wars in the Middle East have depleted resources, razed entire communities and left thousands of women widowed. These women are left to care for their families alone, often without electricity or sometimes even clean water. The result of these circumstances has caused a mass diaspora of those remaining in Iraq and Afghanistan, placing people in refugee situations, thus exacerbating the situation tenfold and further delaying equal rights for women, not just in the Middle East, but worldwide.

01:30PM

Strike A Pose: The Fabulous Life of a Young Drag Queen. Adam Kegley. Butler University, Indianapolis, IN. Sponsor: Hilene Flanzbaum

The presenter will read an excerpt from his memoir: Strike a Pose. This memoir chronicles the presenter's journey from innocent admiration for the Drag Queens in the film "Too Wong Foo: Thanks for Everything! Julie Newmar" to his own debut as a full-fledged Queen of the Stage a few months ago. With a biting tone and a larger than life attitude, this memoir explores gender identity in a novel, witty manner and utilizes the Fabulosity of the presenter's "Voice of the Queen Within" to do so.

History

Session A
Jordan Hall, Room 205
Moderator: Dr. Scott Swanson

09:00AM

Diasporic Identity and Strategic Interests in Uyghur China: Xinjiang from the Han Dynasty to the Present. Nicholas Steiner. Wittenberg University, Springfield, OH. Sponsor: Dr. Jerry Pankhurst

From the earliest dynasties, China's involvement in Central Asia has been based on key strategic interests. Indeed, the early Silk Road first introduced China to the double-edged sword of globalization. As I look at China in the context of globalization revisited for the 21st century, I can only marvel at the similarities of circumstance: The nation's economic rise and consequent spike in demand falls on the shadow of Soviet dissolution to the resource-rich Northwest; the old republics are restless, and their internal social movements are, at best, unpredictable. In the geographic middle of China's attention westward are the Muslim Uyghur, who share much of the same history as their Central Asian brethren. In light of an increasing frequency of "Uyghur terrorism" in Chinese media sources, is Uyghur society actually susceptible to foreign militant Islam, or are there other factors involved? Answers need not come from normative reasoning, but an understanding of analytical sociology, ethnology, and politics as they relate to perceptions of history.

09:15AM

Reflections on a Revolution: The Xinhai Revolution of 1911 and What it Means for China. David Schultz. Earlham College, Richmond, IN. Sponsor: Chuck Yates

This paper examines causes and effects of the Xinhai Revolution of 1911, which transformed China from an imperial monarchy into a republic. Some of the causes of the revolution were wars with foreign powers, such as the Opium Wars fought between China and Britain over trading rights. After the wars, China became subject to a series of unequal treaties with Western powers. This led to many rebellions such as the Taiping and Boxer Rebellions, which served as further proof of Qing weakness, and caused even greater impositions by the West. In response to these rebellions and foreign encroachment, the Self-Strengthening Movement was initiated in an attempt to modernize China. Unfortunately, the movement tried to adopt Western technology without making any structural or cultural changes, and so lacked any real institutional reform. This would be proven in the Sino-Japanese War, when Japan defeated China and gained control of Korea. This loss brought about the Hundred Days' Reform, which was the first real reformative movement in China. Unfortunately the reform came too late, as the Xinhai Revolution began in October of 1911. Four months later, Emperor Puyi abdicated his throne, allowing the creation of the Republic of China. This laid the groundwork for future revolutions and party politics in China, and ultimately led to the China we know today. Future study should center on different ways of seeing the events of the revolution, on what it actually achieved, and on how the ideas of the revolution can be seen in China today.

09:30AM

(Image)ining Danger:Purity, Race and America's Wars in Asia. Anna Obermayer. Earlham College, Richmond, IN. Sponsor: Chuck Yates

In this paper I will look at images of Asian people and cultures American has been at war with. The images I will concentrate on are "common culture" images such as novels, movies, and music. I will look at the way such sources have portrayed America's relationship to the Philippines,Japanese, and Vietnamese, during the twentieth century. I will pay particular attention to sources regarding the second World War and the Vietnam War. I will also interrogate the idea of cultural purity and how America is often portrayed as "pure" in such common culture sources,while America's involvement with Asian cultures and peoples is portrayed as challenging or endangering that "purity." I will look at how American purity can be constructed on a level of culture, gender, sexuality and race working together and in relationship with each other. Similarly I am also interested in how Asian peoples and cultures are constructed as conversely "impure." I think the way America perceives and portrays an "enemy" people is interesting particularly when coupled with all the other racial, sexual and cultural tensions inherent in our dealings with Asia. Although this concept of the "pure" verse the "impure" changes and manifests itself in different ways depending on the time and culture being portrayed. Finally I want to touch upon how

09:45AM

"Looking for the Army Bias". Amanda Rutherford. Butler University, Indianapolis, IN. Sponsor: George Geib

"Looking for the Army Bias" is a methodological look at the scholarship about the Women's Army Corps. Specifically, I am taking the secondary sources on the Women's Army Corps and pinpointing where I see a strong Army bias. I am then taking this biased information and subjecting it to scrutiny based upon a variety of primary sources on the Women's Army Corps. The Women's Army Corps is most useful for this study in part because it has received only marginal scholarly attention and yet has a rich primary archive.

10:00AM

Legendary Leaders: Female Authority Figures in Irish History and Mythology. Janelle Jenkins. Taylor University, Upland, IN. Sponsor: Dr. Steve Messer

This paper compares and contrasts three major female figures in Irish legend, literature, and history: Queen Medb of pre-Christian mythology, Brigit, the early Christian Abbess of Kildare, and Grace O'Malley, known as Granuaile, the "Pirate Queen" of the medieval age. Rather than stereotyping these women's experiences and insisting that each woman fit a single interpretation, this paper will argue that these leaders gained power in a male-dominated world through diverse means. Living in separate time periods, these women faced divergent cultural expectations as idealized females and had unique responses to these expectations. However, they share the common denominators of success and pre-eminence in societies typically dominated by men, a remarkable achievement.
Because these women's reputations have for centuries rested in the hands of male biographers or on skewed legends, it is difficult for the modern historian to separate fact from fiction. Recognizing this difficulty, this paper will explore the validity of using literature, albeit skewed or biased literature, to draw conclusions about society, particularly about women's roles in Ireland's history. The medium of literature is especially valuable because, in the absence of strong historical documentation, literature imparts a rich understanding of life, elevating the details which provide deep insights into the emotions, values, and thoughts of its subjects.

10:45AM

John Maynard Keynes and the Arts of Bloomsbury, 1919-1936. Kara Blakley. Wittenberg University, Springfield, OH. Sponsor: David Wishart

The art scene of 1920s Britain, experiencing previously unseen variety, was particularly marked by two types of art: traditional art that appealed to commercial consumption, and the avant-garde art of intellectuals. During this time it was the Bloomsbury Group, a group of upper-class intellectuals, artists, and critics, that decided what constituted first-rate, avant-garde art. Because of the post-WWI re-cosmopolitanisation of London, newly-wealthy middle-class buyers became interested in collecting art as an economic asset. Consumers in the art market became preoccupied with speculative practices: buying modern art and expecting to sell it later at a

profit. These buyers were not interested in the intellectual concerns of the artists, but rather the future market value of the work. Bloomsbury members eschewed speculative practices, and brought artists such as Cézanne, Matisse, and Picasso to London. John Maynard Keynes, a heterodox economist and Bloomsbury member, recognized the importance of experimental, intellectual art, and during the Depression, played a critical role in the Council for the Encouragement of Music and Arts. While the Depression left galleries empty, Bloomsbury more concerned with patronage than polarization. Keynes was one of the most notable patrons, providing most of the funding for the Cambridge Arts Theater. Because Keynes' Bloomsbury affiliation stimulated his creative potential, he contributed non-traditional thought in both economics and art connoisseurship. In economics, this culminated in the publishing of the General Theory, which in turn provided the source for the Keynesian Revolution. A parallel shift in art was catalyzed by Keynes' and other Bloomsbury members' connoisseurship.

11:00AM

Looking Proudly Down: Examining the Case of Hanover College's First African-American Student. Abigail Fulton. Hanover College, Hanover, IN. Sponsor: Jonathan Smith

In spite of the progressive abolitionist stance taken by Hanover College's founder in 1827, Hanover College did not welcome her first African-American student until 1948. Even then, that "welcome" was a strained one. Amidst the storm of racial attitudes and college politics that arose, the determination of the student, Alma Gene Prince, forced those in power to re-examine their beliefs, their loyalties, and the policies of the college. Revealing correspondence from this era details more than just the ensuing struggle; it demonstrates the enormity of influence that a few unswerving individuals can gain within the small-college setting.

11:15AM

Momentary Collapse: An Investigation of Twentieth Century Lynchings Based on a Case Study of the Marion, Indiana Lynchings. Leah Kent. University of Evansville, Evansville, IN. Sponsor: Annette Parks

Lynchings claimed the lives of more than three thousand black men and women between 1880 and 1930. Such events were flagrant displays of racism. They occurred across the American countryside, in quiet towns, and in large cities, leaving not only a permanent stain on the national heritage, but represented brief moments in time when the American judicial system collapsed.
Marion, Indiana in 1930 was the last place one would expect a lynching to occur. As the site of a stereotypical southern crime the Marion tragedy drew national attention. The lynchings left behind a long trail of scattered newspaper clippings and infamous photographic evidence documenting the reactions of the general public to the event. In examining the growing recurrence of lynchings in the early 1930s this study will examine the public reaction to and acceptance of the practice of lynching based on an analysis of contemporary newsprint and primary source. Ultimately, this paper will argue proving that despite increasing outcry against the practice in the early 1930s the general public was unwilling to confront the reality of racism.

11:30AM

Jimi Hendrix on Wikipedia: Good or Bad History? Lindsay Rump. Butler University, Indianapolis, IN. Sponsor: Dr. Paul Hanson

The internet has become quite possibly the most invaluable necessity of the 21st century. Society goes to the internet for directions, addresses, social connections, recipes, and entertainment. A wealth of information is available from a person's desk or at the click of a mouse and there is hardly anything that society cannot access via the internet. Wikipedia, a free, online encyclopedia was designed with this in mind. Wikipedia has an article for a myriad of different subjects and accessing this information is free and easy. However, most historians generally do not trust Wikipedia to be a valid, historical source. But, if so many people use Wikipedia, then doesn't there has to be some sort of authenticity to it? This paper focuses on one very specific Wikipedia article (the article about Jimi Hendrix) and answers the question, through a much centered scope, about whether or not Wikipedia can be taken to be legitimate history. This paper examines very closely the sources Wikipedia cited when comprising their article about Jimi Hendrix, his life, his career, and his death. The paper forced me to be a methodical historian, looking up every article and book and answering the fundamental questions: Do they exist? Are they accurate? Are they academically sound? Finally, how is the information presented? This paper answers the question about whether or not, when the topic is focused, Wikipedia can be taken as a valid historical source.

11:45AM

The Pinkerton National Detective Agency: Looking Beyond Stereotypes. Stephanie Joyce. Butler University, Indianapolis, IN. Sponsor: Vivian Deno

Due to urbanization, immigration, and industrialization, crime became a national threat in almost every large American city from the Civil War to the outbreak of World War I. Both rural and urban law enforcements were incompetent and corrupt in the face of mass transportation, big business, and lack of state and federal support. Founded in Chicago in 1850, the Pinkerton National Detective Agency was America's first professional private investigation company. The overall image of the Agency that emerges from labor literature is negative: the use of mercenaries by corporations was irresponsible, uncivilized, and essentially undermined the state and federal law enforcement community.
This study offers a holistic perspective of the Pinkerton Agency through the examination of nineteenth century periodicals and advertisements, as well as the philosophy of founder Allan Pinkerton: "the ends justify the means, if the ends being for the accomplishment of Justice." I challenge the narrow assumption of the Agency as a body of mercenaries used explicitly for strikebreaking because while many working-class citizens learned to hate the Pinkertons as a dangerous enemy to the goals of organized labor, it should be known that the Agency overall made other, more positive, achievements as the forerunner of the modern Federal Bureau of Investigation and Interpol. The accounts given by Pinkerton family, their contemporaries, and the assessments made by present-day professional historians which I have considered, add to a greater understanding of why the Pinkerton National Defense Agency was needed and how it evolved during the Progressive Era.

Session B
Jordan Hall, Room 205
Moderator: Dr. Scott Swanson

01:00PM

Constructions of Femininity: Women and the World's Columbian Exposition. Lauren Maxwell. Butler University, Indianapolis, IN. Sponsor: Vivian Deno

At the turn of the century, the definition of a proper woman was hotly contested between two different groups of women. The World's Columbian Exposition of 1893 in Chicago offers an opportunity to examine how and why this debate occurred. This was the first time that women were given a government-sanctioned role in public affairs, and is therefore an important milestone in women's history, but this particular part of the Exposition is often overlooked. My thesis examines two particular bodies of women called the Board of Lady Managers and Queen Isabella Society, and how their separate efforts to coordinate the exhibition of women's work demonstrate the contestation of the definition of femininity in the period. While the Isabellas wanted a more radical representation of women at the Exposition, the Board of Lady Managers eventually won the debate and presented a very conservative view of the capabilities of women. An

analysis of letterbooks, official records, newspaper sources, pamphlets and other historical records, will provide substance for the paper.

01:15PM

Arianism in the North African Vandal Kingdom. Stephen Williams. Taylor University, Upland, IN. Sponsor: Tracy Hoskins, Alan Winquist

While many accounts of Western religious history mention the fourth century controversies surrounding the belief system we describe as "Arianism," this sect also seems to receive little attention beyond the fourth century. Despite this lack of coverage, we know that the religious convictions of those who rejected the Council of Nicaea continued on well into the early Medieval Ages. Who were these religious dissidents, what did they practice and how did they think? This presentation will focus on Arianism within the North African Kingdom of the Vandals during the period stretching roughly from 430 to 530 A.D., and how the Arians present in this locale compared and contrasted with contemporary Catholics. Through this comparison a profile of how these Arians perceived both themselves and their world will begin to emerge.

01:30PM

Double Standard: An Analysis of the Gendered History of Birth Control in Mid-Twentieth Century Indiana. Laura Weiskopf. Butler University, Indianapolis, IN. Sponsor: Vivian Deno

The advertisements of Planned Parenthood and similar 'family planning' organizations were revolutionized in 1960 with the distribution of the first oral contraceptive for women. Simply known as "the Pill," the birth control pill changed the way sex and sexuality was talked about and treated by society. The reaction of the public to the Pill was gender biased, as it was either referred to as the liberator of female sexuality or the cause of female promiscuity, with no mention of its effect of men's reproductive responsibility. While birth control has been a singular subject in women's history, there has been little attention paid to the history of men's sexual responsibilities. Numerous newspaper articles, advertising flyers, journal articles, brochures and books stressed the importance of women and access to sexual health education. Twentieth century literature pertaining to sexual reproduction, however, has historically overlooked and disregarded the education of males, illustrating the gendered history of sexual education. "Double Standard" investigates the history of birth control during mid-twentieth century Indiana and how history scholars have failed to look at the topic from a gender perspective. Examining primary documents from the era of the Pill and analyzing the way in which birth control education during the mid-twentieth was gendered towards women will allow us to assess man's place in the reproductive revolution.

International Studies

Session A
Jordan Hall, Room 207
Moderator: Dr. Monte Broaded

10:00AM

American Multinational Companies in Ghana. Okletey Wilson-Tei. Hanover College, Hanover, IN. Sponsor: Dr. Mi Yung Yoon

This presentation reviews foreign direct investment (FDI) as an aspect of globalization that is occurring in the periphery countries.This presentation explores two fields of international studies; the economic and political effects of multinational companies on the host country. This study focuses on Accra, Ghana as a case study to examine the impact of FDI on host countries in the global periphery.
Under the economic effects, the presentation will try to explain how these multinationals affect Accra economically. In the long run, are they beneficial or detrimental to the economic growth of Accra and Ghana? In terms of political effects, this presentation will explore how much these multinationals affect political decisions in Accra and therefore Ghana. It will go ahead and explore how Ghanaian politicians treat multinational companies and why they treat them in such a way. The presentation will then examine to what extent these multinationals are affected by the Ghanaian politics and why? The presentation will finally proceed to analyze this information in a discussion of these effects of the multinationals on Ghana. In doing this, we will be able to see one aspect (FDI) of how globalization affects a peripheral country.

10:15AM

Genocide: Emotional Adjective or Legal Definition. Ida Nininger. Butler University, Indianapolis, IN. Sponsor: Antonio Menendez

The international system of justice and accountability engages many levels of what has become a global society. Academia, the media, politicians and activists, world leaders and international organizations and institutions interact in pursuit of justice for victims of the most heinous crimes. The term "genocide" is used in a variety of situations which do not necessarily constitute genocide according to the legal definition of the term. This misusage of the term threatens the efficacy and expediency of legal processes.

My thesis will show the misapplication and misusage of the term by different scholars of the international community. To this end I will conduct document analysis as well as interviews with scholars, journalists, politicians, and other non-legal professionals. In conclusion, I will outline possible solutions for addressing proper use of this concept.

10:30AM

Child Soldiers in Central Africa: Causes and Solutions. Katrina Bieker. Ball State University, Muncie, IN. Sponsor: Gerald Waite

The use of child soldiers is abhorrent worldwide, but the practice continues still today. It is most prominent in Africa due to the great civil unrest that began with the end of imperialism. Children, with most aged between 14 to 18, are brainwashed, drugged, or otherwise controlled and made to commit, experience and witness horrific acts of violence that negatively affect their emotional well-being and their ability to function as rational adults. This paper will describe the history of the use of child soldiers in central Africa and the emotional and physical short- and long-term impacts on individuals and countries. Furthermore, it will indicate ways in which governments, organizations and the average person can assist current and former child soldiers and strive toward prevention of this atrocious problem.

10:45AM

Geographical Gender Gap: Exploring Differences Between Female National Parliamentary Representation in the Northern and Southeastern European Union. Jacqueline Mills. Hanover College, Hanover, IN. Sponsor: Dr. Mi Yung Yoon

Despite the movement toward greater female political participation in the European Union (EU), progress among the twenty-seven member states varies across national parliaments. Today, a serious disparity still prevails between female participation in national parliaments of the northern and southeastern EU. Though the status of female parliamentarians is expected to differ among the individual nations of Europe, the inequality between geographical regions in the EU suggests the need for further investigation.

Why is there such a visible difference between the numbers of women in national parliaments in the northern EU as opposed to the southeastern EU? This study discusses and examines the social and political factors, including cultural environment, education and employment, electoral structures, political parties, and gender quotas, contributing to the significant variation in female parliamentary representation in national parliaments of the northern and southeastern EU. Specifically, this study uses statistics and research from reputable parliamentary sources and peer-reviewed academic journals to compare and contrast characteristics of women parliamentarians in the northern EU, represented by Sweden, Finland, and Denmark, and the southeastern EU, represented by Slovenia, Romania, and Hungary.

Literature

Session A Caribbean Encounters: Sex, Gender, and Race in Maryse Conde's "Heremakhonon"
Jordan Hall, Room 303
Moderator: Dr. Ania Spyra

09:00AM

"You Can Only Guide Someone Who Asks": Essentialism vs. Individualism in Maryse Condé's Heremakhonon. Lydia Bringerud. Butler University, Indianapolis, IN. Sponsor: Ania Spyra

Gerise Herndon's article "Gender Construction and Neocolonialism" explores the politics of social identity in Maryse Condé's novel Heremakhonon. Herndon acknowledges that though the islands of the Caribbean as they are known today are an artificial construct, their inhabitants are faced with an identity crisis as a result of colonialism and postcolonialism. She argues that "transculturation," or the sharing of cultures, is not the issue, but rather the aggression surrounding the sharing of other cultures that created this identity crisis. Herndon furthermore argues for the word "metissage" to be used to describe this artificial cultural construct versus the word "creolization," which she feels is imperialist. Herndon goes on to say that women writers of the Caribbean have a unique perspective to offer in literature since they are thrice marginalized by gender, race and place of origin. However, Herndon argues against the term "femininist" as applied to the works of Caribbean women authors. She feels the term "womanist" is more appropriate, since it allegedly does not carry with it the socio-political baggage so often associated with the feminist movement in the United States and Europe among "white, bourgeois women" (Herndon 3). I disagree with all three of these terms because they are essentialist; the very existence of these words necessitates cultural baggage and negates the individual experience. Therefore, by trying to identify a unique "West Indian" experience, Herndon has potentially silenced the voices of other authors by trying to make them fit into a single category.

09:15AM

Beyond the Slave/Whore: Veronica's Feminism in Maryse Conde's Heremakhonon. Emma Faesi. Butler University, Indianapolis, IN. Sponsor: Ania Spyra

The intellectual, rebellious, and very sexual Veronica is the narrator in Maryse Condé's Heremakhonon. A native of Guadaloupe, she travels first to Paris, then Africa, on a quest of self-discovery; her several affairs in these locations are a part of the search for her identity. Regarded as a social miscreant, Veronica acts out in ways that disappoint and confuse both her family and society. Gerise Herndon criticizes Veronica's sexual exploits, stating that her character is un-feminist and exemplifies the slave/whore archetype and the stereotypical sexually insatiable Black woman. Herndon feels that Veronica's choice of men subscribes to the banal convention that women exist only to sexually serve men in positions of power. While Veronica does tend to choose sexual partners of a higher social, political or racial class, her choices do not mean that she is subordinate to these men. Rather, it implies that she makes her decisions free of the influence of others. Although society tends to frown upon her selection of men, she ignores their opinions and principles to act in her own best interest. Veronica's three sexual relationships, openly defiant behavior and generally independent lifestyle are explored in terms of their effect on her, the men and society. By displaying the tenets of feminism in her individualistic behavior, this essay refutes Herndon's claim that Veronica is an un-feminist sexual slave.

09:30AM

Wait for Happiness: Thinking Beyond the Sex. Krista Peterson. Butler University, Indianapolis, IN. Sponsor: Ania Spyra

Maryse Conde's Heremakhonon is pervaded by sexuality. Because of this, it is easy to view sex as a central theme within itself. Arthur Flannigan takes this tact in his article, "Sex and Sexuality in Fracoise Ega and Maryse Conde" with his assertion that Heremakhonon is about little else but sex. This view fails to stretch beyond the shock value of Veronica's liasons to address Conde's primary purpose. It is through a more careful analysis of the text that one is able to see the sexuality in Heremakhonon as a means to describe the conflict of "Caribbeanness" rather than a scandalous statement.

09:45AM

Maryse Conde's Heremakhonon: A Discourse on Reappropriating Black Female Sexulaity. Michelle Cabrera. Butler University, Indianapolis, IN. Sponsor: Ania Spyra

In the article "The Nigger of the Narcissist: History, Sexuality and Intertextuality in Maryse Conde's Heremakhonon," author Susan Z. Andrade claims that the female protagonist of the novel Heremakhonon, Veronica, serves as a means for reappropriating the historically negative stereotype of the overly sexed black female through her numerous sexual escapades. I will counter Andrade's claim by demonstrating that not only does Conde's portrayal of Veronica not serve as a means for reappropriating the stereotype of the salacious black female but that Veronica's overt promiscuity aids in further perpetuating this negative label.

Session B Modernist Subjectivity: Eliot, Hemingway, and the Fisher King
Jordan Hall, Room 301
Moderator: Dr. Lee Garver

09:00AM

Experiencing Subjective Time: An Explication of Eliot's Concept of Time. Jenna McCullough. Taylor University, Upland, IN. Sponsor: Joseph Ricke

Many critics note Eliot's preoccupation with nonchronological time. However, "nonchronological" is too nebulous and, when suggested, "synchronic" is too limiting of a description for his concept of time. As a more accurate term, "collapsible time" draws on the specifics of what occurs in Eliot's explication of time. Eliot's concept of past and future does not portray them as collectively synonymous with the present but, rather, differentiates the experience of each constituent of "now," utilizing memory and hope to "collapse" the past and future into the present. The "non-nonchronology," I suggest, describes the tension between a desire to escape chronological time while inevitably participating in it. The facets of time are exposed through the investigation of this tension, particularly in subjective experience of time and turning toward the concept of "collapsible time."

09:15AM
Inside a Mind: Imitation and Representation in T.S. Eliot's. Eric Kokonas. Butler University, Indianapolis, IN. Sponsor: Lee Garver

A close reading of "The Love Song of J. Alfred Prufrock" confirms that T.S. Eliot's poem is the deep exploration of an individual's psyche, which uses representation primarily as a means of establishing within the reader a sense of what it is like to be Prufrock rather than as a means to express any overarching theme. In that light, "Prufrock" is not an "imitation of life", but more appropriately, an "imitation of a life."

09:30AM
The Fisher King and The Woods as God's Temple. Nathan Antiel. Taylor University, Upland, IN. Sponsor: Colleen Warren

Plagued by a memory of the past juxtaposed with the depravity of the present, the heroes of modern literature oftentimes represent a glorified version of the past who come to realize that life no longer exists as it once did and even its memory is fast in fading. Modern literature descries a loss of tradition, a debasement of religion, and a hollow social morality. The epiphany undergone by the characters of modern literature, that reality as it now exists is a mere shadow of life as it has been, proves painful. In "The Waste Land" and The Sun Also Rises, the characters of the Fisher King and Jake Barnes both suffer from impotence; three options for an escape from the pain caused by their impotence are presented: numbness, religion, and communion with nature. The Fisher King and Jake both choose to wallow in numbness for a time, but go on to seek resuscitation. The Fisher King ultimately finds rejuvenation in religion and nature, while Jake, finding religion empty, only gains healing from communing with nature.

Session C Making It New: Yeats, Pound, and Modernist Poetics
Jordan Hall, Room 303
Moderator: Dr. Lee Garver

10:30AM
Yeats and Ronsard: Exploring the Connections. Susanna Foxworthy. Butler University, Indianapolis, IN. Sponsor: Lee Garver

It would seem that in the vast scope of history, a man from the French Renaissance and a man in pre-revolutionary Ireland would have little in common. The structure of their respective languages, French and English, are completely different. One lived in a time of princes and chateaus, of religious wars and decadence, and in an age where vast amounts of new knowledge were ushered in by the invention of the printing press. The other lived in a period ripe with strife from the invading imperialist influence of England. He saw drastic changes caused by industrialization and World War I and experienced the pangs of unrequited love. Pierre Ronsard, the prince of French poets during the Renaissance, and W.B. Yeats, Ireland's beloved poet, are two men whose pen struck the paper and created a revolution in written expression. The connection between Yeats and Ronsard is rarely explored, and certainly the themes and emotions within their poems are unique to their experiences. However, Yeats translated at least two of Ronsard's poems, and thus exploring the connection between the two poets is worth undertaking. Although they draw from different themes, Yeats and Ronsard share similar biographical backgrounds, goals when writing poetry, and influences within their poetry, most notably the ancient texts.

10:45AM
Yeats Makes Modernism. Elizabeth Huggins. Butler University, Indianapolis, IN. Sponsor: Lee Garver

This essay argues that William Butler Yeats's early poetry, up until Pound publishes "A Restrospect," is the foundation of what contemporary scholars consider to be principles of Modernism. My paper specifically investigates the role of Victorianism in Yeats's early work as a key factor in its influence over the movement.

11:00AM
Pound and Imagism: Why They're Better than Romantics. Dustin Smith. Butler University, Indianapolis, IN. Sponsor: Lee Garver

The paper argues the need for Pound and Imagism in the early 20th century. Through the use of Pound's "A Retrospect," I demonstrate his poetry's originality and experimentation. By comparing Pound's poetry to a Shelley poem, I show how a revival of poetry was needed. And by showing the imagistic techniques used in "The Wasteland," I prove how Imagism was necessary as beginning the overall Modernist movement.

Session D Church, King, and Katroo: Social Critique from Chaucer to Dr. Seuss
Jordan Hall, Room 301
Moderator: Dr. William Walsh

10:30AM
Forget Mel Gibson and Ask Chaucer: What Do Women Want? Kristen Stout. Franklin College, IN. Sponsor: Jayne Marek

During the Middle Ages, the Church held misogynistic views. First, it feminized sin and treated women with less dignity. The Church also believed that women's attractive gaze manipulated men. In addition, the Church blamed Eve for sexuality, which it associated with the Fall of Man. Last, the Church viewed women as illogical because they talked more than men.
By looking at the misogynistic views of the Church, one can describe the perfect woman of the Middle Ages: She was quiet and subservient to men, especially her husband. Also, the ideal woman refrained from intimate relations with men, which included married couples. Last, she wore only the plainest clothing and abstained from modifying the skin, body or hair. Despite the Church's view, Chaucer shows that he respected women by portraying the Wife of Bath as a successful woman who does not fit the ideal description. Since Chaucer's stories were intended to be read aloud, Chaucer made her story controversial so that the audience would discuss it. He also reveals Alison's character in stages so that the reader—or listener—does not miss important parts. Alison's moral of her story—that women want mastery or sovereignty—reveals more about Chaucer's character: It shows that he not only disapproved of the Church's misogynistic views but also that he respected women.

10:45AM
Harry Monmouth: England's Fifth King Henry. Daniel Hallberg. Valparaiso University, Valparaiso, IN. Sponsor: Elizabeth Burow-Flak

It's good to be the king—sort of. As Shakespeare's histories show us, the Kings of England seem to do absolutely nothing but wage wars, silence rebellions, or get deposed, which has to make one question Mel Brook's famed words, so let's just change the saying a bit; it's good to be a good king. Now we might be getting somewhere, but what makes a good king? On the Shakespearean stage, there is arguably one true good king: Henry V, so it's good to be Henry V. So the scene now shifts to what makes Henry V such a good king. Is it his war-like prowess, or maybe his strong

faith and trust in God through all of his actions. All of these things contribute in part to what makes Henry V great, but for Shakespeare Henry's greatness comes from his connection with the people. It is not that he is Henry V; it is because he is Prince Hal, Harry Monmouth, friend of the commoner: the protector of the entire realm, including London's Cheapside. So it's not necessarily good to be the king, but that the king is good because he is Harry Monmouth when he could easily be Henry Plantagenet.

11:00AM

Use of Comedic Utopias in François Rabelais and Dr. Seuss. Abigail Tohline. Ball State University, Muncie, IN. Sponsor: Dorothy Stegman

Utopias and dystopias have been used in literature for hundreds of years for a variety of purposes, the most common of which are social parody, political commentary, and comedic satire. François Rabelais was one of the greatest comedic and satirical authors in the history of fiction, and his use of utopia as parody has been studied extensively. Another author who utilized the device of comedic utopia is Dr. Seuss (Theodore Geisel), widely seen as one of the best children's authors of modern times. Though these authors have over 400 years of distance between them, their styles, use of utopia, and comedic exaggeration have much in common. In this paper, I compare Rabelais' famous utopia/dystopia of the Abbey of Theleme from his novel Gargantua with Dr. Seuss' land of Katroo from his children's book Happy Birthday to You! in order to show their strikingly similar stylistic components—such as the use the absurd, comedic exaggeration, and an appeal to the base desires of humans—and in order to explain how these fabricated worlds are used to reveal the authors' ideals of how the world should be.

Session E Postmodern Excursions: Inheritance, Ethics, and Motherhood from Levinas to Lacan
Jordan Hall, Room 307
Moderator: Dr. Brynnar Swenson

10:45AM

From Grass to Rushdie: The Inheritance of the Delusional Narrator in the Postmodernist Reclamation of the Past. Sara Gillespie. Butler University, Indianapolis, IN. Sponsor: Lee Garver

Salman Rushdie's narrative voice in "Midnight's Children" not only borrows superficially and stylistically from Günter Grass's "The Tin Drum", but more importantly utilizes the delusional narrator as a means to regain and interpret the unreliable past. In postmodern literature this involves a narrative which never retains constancy or truth. The purpose of this presentation is to examine whether the two novels serve a direct purpose for their authors; that is to recover a history and a life that they no longer possess except in their own erratic memory. If so, the delusional narrators, then, serve as an extension of their creators, encapsulating their own past in an attempt to demonstrate the faulty nature of memory and the transience of one's own identity. I mean to compare the effects of the use of the unreliable and erratic narrator on the ambiguities that occur within both texts and how this conveys and reclaims the purposeful delusions from which the narrators obviously suffer.

11:00AM

Discovering a Postmodern Mother and Child. Monica Freeman. Butler University, Indianapolis, IN. Sponsor: Lee Garver

The definition of motherhood shifts with social change. Biologically, motherhood is equated to a female's ability to conceive and birth a child, and then provide for the basic needs so that the infant survives. Socially, the postmodern definition of traditional motherhood is blurred. The genre was mostly written after the traditional Victorian ideal of mothers staying at home to raise children was shattered and it instead reflects mothers leaving home to gain independence and self-identity beyond that of a mother caring for her family.
Particularly, the texts Beloved (1987), Housekeeping (1980), and White Noise (1985), reflect on this social change. While the mothers in the stories do not exactly mirror the movement from stay-at-mother to working mother, they interpret the lasting effects an absent mother has on her child. All three mediate on the idea that as a mother creates a role for herself beyond that of a mother, the child will endure a loss of grounded self-identity. By changing her own identity, she disrupts her child's, leaving the child to suffer through reality, love, and fear alone.
It is revealing to look at the postmodern mothers of Beloved, Ruth, and Jack in conjunction with the ideas of psychoanalyst Jacques Lacan. Lacan focused on concepts such as the individual's unconscious and identity, paying particular attention to self-identity affected by the mother-child relationship. Beloved, Housekeeping and White Noise, along with postmodern psychological insight from Lacan, suggests that without a traditional mother, children become ungrounded in an attempt to achieve specific identity.

11:15AM

In Other('s) Words: Ethical Representation in Holocaust Drama. Lindsay Snider. Taylor University, Upland, IN. Sponsor: Joseph Ricke

The central question of Holocaust criticism today is the power and limitation of representation. As fewer and fewer Shoah survivors remain to bear witness to the Holocaust through their personal memory, contemporary theorists have been forced to reconcile the moral obligation to remember the Holocaust with the inability of any artistic expression to fully portray the totality of that event. Post-Holocaust philosopher Emmanuel Levinas's work on the subject of alterity has greatly contributed to this discussion of ethical communication. This paper seeks to demonstrate how three plays which offer representations of the Holocaust experience portray ethical communication in light of Levinas's theory. Using Levinassian conceptions of the Other, "face-to-face encounters" and "substitution," A Shayna Maidel, Annulla: An Autobiography, and Broken Glass reveal how memories of the Holocaust can be ethically transmitted in the familial context through embodied understanding.

Session F The Memoir
Jordan Hall, Room 303
Moderator: Dr. Hilene Flanzbaum

01:00PM

Memoir: Ways I Disappointed My Father. Dustin Smith. Butler University, Indianapolis, IN. Sponsor: Hilene Flanzbaum

My memoir is about my personal issues with my father. He was an alcoholic. And through past memories, I tell how he and his alcoholism affect my life today.

01:15PM

"Family Recipes". Sarah Murrell. Butler University, Indianapolis, IN. Sponsor: Lee Garver

In my memoir, "Family Recipes," I discuss how eating disorders are passed down from generation to generation. I attempt to track down the origin of disordered eating in my own family, and discuss the American obsession with food. "Family Recipes" also explores how the eating disorders of my family members colors my relationship with them, and examines the possibility that those without the disorder may never fully understand those with it.

01:30PM
Inheritance. Monica Freeman. Butler University, Indianapolis, IN. Sponsor: Lee Garver

"Inheritance" delves into the imaginations of what a grandmother could be before she died of breast cancer, from the granddaughter who never met her.

Session G Spirit, Drugs, and the American Dream: Fiction and Drama from Hawthorne to Ellison
Jordan Hall, Room 301
Moderator: Dr. Andrew Levy

01:00PM
"Spirit burthened with clay": Hawthorne and the Romantics. Catherine Barnett. Taylor University, Upland, IN. Sponsor: Joseph Ricke

Although Nathaniel Hawthorne demonstrates some ideological similarities to his contemporary Romantics, his view of human nature as evidenced in several of his short stories seems to support the claim that Hawthorne was far from being a "typical" Romantic. "The Birth-mark," "Young Goodman Brown," "Dr. Heidegger's Experiment," and in some senses "The Artist of the Beautiful" appear to make him out to be against (or at least differ in degree from) many of the fundamental tenants of Romanticism and Transcendentalism, especially in the inability of his characters to attain self-perfection or divinity and the way that he does not devalue the physical as much as some others in his portrayal of the relationship between the natural and spiritual parts of man. Not every author of an era must fit the type, and there seems to be adequate evidence to maintain that Hawthorne was among those who did not conform in every point to the ideals held by some of his fellow Romantics.

01:15PM
Quoth the Alice 'Never More': A comparative study of how modern perceptions of Edgar Allan Poe and Lewis Carroll were formed. Robin Connelly. Franklin College, IN. Sponsor: Jayne Marek

Edgar Allan Poe and Lewis Carroll are two large literary figures whose works are said to have been inspired by their drug abuse. But modern medical knowledge and paper accounts from their time may indicate that they were not addicts, thus weren't inspired by drugs. As the possibility is explored, an attempt will be made at understanding how modern perceptions of Poe and Carroll came to be.

01:30PM
Identity and the American Dream: Revealing the Failure of the American Dream in Invisible Man, A Streetcar Named Desire, and Death of a Salesman. Allison Barlow. Taylor University, Upland, IN. Sponsor: Joseph Ricke

By using the texts of Invisible Man, A Streetcar Named Desire, and Death of a Salesman, identity and freedom within the American Dream are explored.

The American Dream is a social order where individual identity has a higher value than societal identity. America is nicknamed, the "Land of Opportunity" because it provides the opportunity for a person to define themselves. Although America is an individualistic society, society still mandates expectations to allow a person to be accepted. Authority voices in society dictate: If you are enough of something (assimilate enough, are beautiful enough, work hard enough) then you will be accepted within society. This deprives the Dream of any freedom as the characters in the texts lose themselves trying to fulfill the expectations. The essence of the Dream is to be accepted in society as an individual, but what happens is that society mandates conformity for acceptance.

Society dictates the expectations of the Dream and each character tries to fit into societal expectations in pursuit of the Dream. The characters become disillusioned by the Dream, seeing it as false. Responding to this disillusionment is critical, and the characters respond to the disillusionment by either continuing to fulfill the Dream's expectations, or by rejecting it to find their true, individual identity. The characters then deal with the consequences of their decision as they seek to find the freedom and identity promised by the American Dream.

Session H Ghosts, Maidens, Vampires, and Tragic Heroes: Monsters and Misanthropes from Moliere to Meyer
Jordan Hall, Room 307
Moderator: Dr. Susan Neville

01:00PM
Pride and Excess: The Question of Sympathy in the Satanic and False Messianic Hero. Brandon Fitzsimmons. Taylor University, Upland, IN. Sponsor: Beulah Baker

Though Alceste, of Moliere's The Misanthrope, and Captain Ahab, of Herman Melville's Moby-Dick, are representatives of two diverse schematic paradigms, the inherent tragedy in each of their stories is indicative of two subsidiary molds of the traditional Tragic Hero. By examining a four-part system of definitive criteria on this traditional character mold, as developed by William G. McCollom, this paper examines two chiefly unsympathetic interpretations of the post-traumatic Tragic Hero: first, the False Messianic, as depicted in the pomp and chicanery of Alceste; second, the Satanic, as divulged in Captain Ahab's prideful resilience.

Both characters possess extraordinary charisma, stemming from an initially healthy pride that allows them to succeed in their respective societies. Yet, when the order of their societies is threatened by traumatic encounters with representatives of unflinching Ultimate Truth – in the forms of Celimene's rejection of Alceste's love and the White Whale's crippling of Ahab – the charismatic confidence that had memorably defined both characters is distorted through excess. This excessive allegiance to the definitive good of each character's nature is reminiscent of Aristotle's concept of hamartia – identified by McCollom as the "tragic flaw" essential in each hero. As each character reacts more and more drastically due to their wounded charisma, the tragedy of their plights is deserving of less and less sympathy, their once-noble characters succumbing to corrupted versions of Tragic Heroism.

01:15PM
Mrs. McNair as Ghost and Child in Gail Godwin's "Dream Children". Kelsey Warren. Taylor University, Upland, IN. Sponsor: Nancy Dayton

When the main character in Gail Godwin's short story "Dream Children" undergoes a horrific still-birth and then the second pain of losing another child she thought her own, she chooses to reject her painful existence and identity, leaving behind her current life and what it represents by entering both a death-like state and state of re-birth, adopting the roles of both ghost and child. Mrs. McNair's ability to do this, and her belief that "nobody is just one person" (Godwin 242) is affirmed by her encounters with a recurring ghost-like child visitor. As Mrs. McNair increasingly identifies with this ghost-like child, she adopts the roles of ghost and child for herself. First, like a ghost, she lives in an empty, isolated mansion; her physical appearance and movements are ghost-like; and she is fascinated with otherworldly topics and intentionally involved in the supernatural world. Second, she assumes the identity of a child. Already a young woman, her youthfulness is heightened by child-like behavior; her

appearance is described as child-like, and her relationship with Mr. McNair is one of parent-child rather than husband-wife. Most interestingly, she cultivates for herself the “magical reality” that surrounds children and keeps them safe (Godwin 242). Finally, as Mrs. McNair adopts these roles, they better enable her to have more fulfilling relationships with both the boy and her husband in a newly restructured family. Work cited: Godwin, Gail. “Dream Children.” American Short Story Masterpieces. New York: Random House Publishing, 1987.

01:30PM

Moral Vampires and Monstrous Maidens: The New Face of “Gothic”. Abigail Fulton. Hanover College, Hanover, IN. Sponsor: Margot Tomsen

The characters in our latest works of Gothic literature have overturned the genre’s conventions. No longer preying upon our terror that our barbarous, superstitious past will destroy our modern, civilized, scientific present, the monsters in today’s literature are now showing us that our focus on the scientific and philosophical cutting-edge is destroying many precious beliefs and traditions from our past. To showcase this literary shift, this presentation draws on recent bestselling works of the “new Gothic,” including Anne Rice’s Interview with the Vampire, Thomas Harris’s Hannibal Lecter Omnibus, and Stephenie Meyer’s Twilight Saga as examples of the latest transformations of the vampire and his prey. Now that the vampires are “moral” and the once-helpless maidens do most of the chasing, we as readers find ourselves facing our latest and greatest monster: ourselve

Math and Computer Science

Session A
Jordan Hall, Room 242
Moderator: Dr. Rebecca G. Wahl

10:00AM

Generating Lower Bounds for G(k) in Waring's Problem. Keenan Hecht. Butler University, Indianapolis, IN. Sponsor: Scott Parsell

Since 1770 many conjectures surrounding Waring's problem have gone unresolved. More recently these conjectures have been extended to congruences. Given a positive integer k, Hardy and Littlewood defined G(k) as the smallest integer s for which the congruence x1k +.. + xsk = n (mod p) can be satisfied for all integers n and all primes p. We obtain new bounds for G(k) for certain large values of k. This problem reduces to a finite set of congruences to be checked computationally, since analytic arguments can be used to handle all large prime moduli. We deal with the smaller primes via C-programming and the use of Butler University's supercomputer.

10:15AM

OT-MACH filter generation and Pattern Recognition using Neural Networks. Wes Edens. Butler University, Indianapolis, IN. Sponsor: Scott Parsell

JPL is developing an Automatic Target Recognition (ATR) system for use in robotic and military applications. The system will be able to detect, identify and track various targets of interest. ATR systems can also be used by robotic exploration vehicles to navigate unknown terrain without the time lag of radio communication. The process has three main stages: detection, feature extraction, and identification. The method for detection is an optimized OT-MACH (optimal trade-off MACH) filter combined with a wavelet transform to identify various ROIs (Region of Interest). The feature extraction phase involves various filtering and then binning the ROI to create a feature vector. The identification stage uses a feed forward back propagation neural network to classify each feature vector and remove false positives. Each of the stages has various parameters that must be optimized for a given target. This paper will discuss the full process optimized for jet and missile images and underwater mines in sonar images.

10:30AM

Algebraic Cryptanalysis of SMS4. Jeremy Erickson. Taylor University, Upland, IN. Sponsor: Alfred McKinney

The SMS4 block cipher is part of the Chinese WAPI wireless standard. It is a 32-round block cipher with 128-bit blocks and 128-bit keys. This paper explores algebraic attacks on SMS4 using Groebner basis attacks on equation systems over GF(2) and GF(2^8), as well as attacks using a SAT solver derived from the GF(2) model.

11:00AM

Eigenvalues of Structured Penta-diagonal Matrices. Johan Maharjan. Hanover College, Hanover, IN. Sponsor: Carl Jagels

The need to evaluate expressions of the form f(A)v, where A is a large sparse or structured symmetric matrix, v is a vector, and f is a nonlinear function, arises in many applications. One class of standard approximation methods used is called Krylov subspace methods. These methods are polynomial based methods. Typically, the Gram-Schmidt process is applied to produce an orthogonal basis of a subspace of dimension much smaller than that of the matrix. The process produces a square tri-diagonal Jacobi matrix, T, of reduced dimension and the function is evaluated for T instead of A. There exist efficient algorithms for computing the eigenvalues of symmetric tri-diagonal matrices. These methods give the exact solution for polynomial functions of the proper degree. They can, however, converge very slowly for important classes of functions that arise in applications. For this reason, researchers have recently begun to investigate rational Krylov subspace methods that converge more rapidly than their polynomial based counterparts. The analog of the matrix T for these methods is penta-diagonal. The focus of this work is to produce an efficient method for computing the eigenvalues of these structured penta-diagonal matrices.

11:15AM

Crazier Die-Games. Prayat Poudel, Johan Maharjan, Charilaos Skiadas. Hanover College, Hanover, IN. Sponsor: Charilaos Skiadas

In a game involving two dice where only the sum of the dice matters, could we use dice with different labeled numbers without affecting the game? In 1978, it was shown that there is only one other way to do that, by using the dice with labels “1,2,2,3,3,4” and “1,2,4,5,6,8”. Gallian and Rusin (1979) generalized this problem, by considering dice with more sides. We examine the possibility of using dice with different numbers of sides. For instance we can combine a 4-sided die and a 9-sided die to achieve the same result as two standard 6-sided dice.

11:30AM
An Investigation of the Structure Underlying Irreducible Divisors. Drew Swartz, Hilary Smallwood. Indiana University/Purdue University at Fort Wayne, Fort Wayne, IN. Sponsor: David Legg

In previous literature Coykendall/Maney, as well as Axtell/Stickles have discussed the concept of irreducible divisor graphs of elements in domains and rings with zero-divisors respectively, with two different definitions. In this talk I discuss irreducible divisor graphs of ring elements under a hybrid defnition of the two previous ones; in hopes that this graph will reveal structure concerning irreducible divisors in rings with zero-divisors. I also compare the three graphs and examine in what respects they are related. Other graph-theoretic properties of this graph will also be discussed.

Media Studies

Session A Media Content and Industry
Fairbanks Center, Room 146
Moderator: Dr. Allison Harthcock

10:30AM
An Analysis of Sexual Content in Popular Music. Jarrett Davis. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this study is to analyze the amount of sexual content in the lyrics of popular American music. Further, the researcher will determine whether or not there has been an increase or decrease in sexual content in American music over the past four decades. For this experiment the researcher will examine the five most popular songs from the year 2000,1990,1980,1970 and 1960. The five most popular songs from these respective years will come from the Billboard hot 100, which is frequently used as the standard measure for ranking songs in the United States. This study was conducted by using the grounded theory and constant comparative technique.

10:45AM
Where Did My Music Go? Janet Czys. Butler University, Indianapolis, IN. Sponsor: Allison Harthcock

Over time there has been a slow death of diversity in the communication media such as television and radio. However, the lack of diversity is quietly moving to the recording side of the music industry. Consolidation of ownership within the movie and television, and now the music industries is resulting in a deficiency in diversity. By tracking the diversity in the television and movie industry in the United States, and comparing it to the current events in the music industry, I will show that the music industry is following the same path. Unfortunately, this path ultimately leads to the further marginalization of the already marginalized groups, such as gays & lesbians and minorities in the Unites States. Because music is the aural embodiment of emotions, it allows for people -- both recording and listening to music -- to express how they are feeling. Without the music of the marginalized being recorded, it does not give those groups an outlet of expression, which further marginalizes them.

11:00AM
The Quest for Equality: Portrayal of Women's Suffrage in the New York Times, 1919-1921. Jenna Widmann. Butler University, Indianapolis, IN. Sponsor: Kwadwo Anokwa

On August 26 1920, the United States government ratified the Nineteenth Amendment, giving women right to vote as a nation. Long before this day, women and men called for the vote, making suffrage a central issue in the press. The New York Times, founded in 1851 ran stories, cartoons and articles about the suffrage movement.
The purpose of this research is to find how articles written at this time were analyzed and how they depicted the movement. By looking at the Times in the year prior to the ratification, 1919, the year it passed, 1920, and the year after, 1921, an idea of how suffrage was viewed is obtained. An historical analysis of the time period through articles is used to determine perspectives of the press, as well as a content analysis of articles to better understand how sources and journalists relayed suffrage. The author theorizes the press coverage conveyed strong notice for the ratification of the nineteenth amendment. Expected results will show a pro-suffrage stance from the Times as well as adequate coverage and placement of women’s organizations.

11:15AM
PROJECT CLOVERFIELD: An Update on American Film Genres. Keaton Wooden. Ball State University, Muncie, IN. Sponsor: Barbara Stedman

While the film CLOVERFIELD fits into the style of Cinema Verite, the combination of its literary technique and cinematic storytelling leads to the realization of a new genre of film, one drawn from films like THE BLAIR WITCH PROJECT and the tech-culture phenomenon. We could say this genre is an evolution of first person story-telling combined with Hollywood hyperbole, and may call this the "Diary genre"; a glimpse of Spectacle meets Suburbia. The result is a mature, cinematic view of humanity through the lens of a modern everyman stuck in a Manhattan war zone, as well as a fine film.

11:30AM
Facebook and Employers: The Truth. Jackie Koumpouras. Butler University, Indianapolis, IN. Sponsor: Dr. Charles St. Cyr

Today, many companies are looking at social networking sites and search engines to obtain information about potential candidates for hire. Instances have occurred where employers reject applicants who they believe violate standards of appropriate behavior. Utilizing the internet as a pre-employment tool surely helps employers hire the best and brightest people for jobs. But is it ethical? Such a tactic is great for employers who want responsible people working for them. However, applicants are unaware that hiring managers are viewing and judging their Facebook pictures from a party last weekend. Who would have thought that a simple picture from a night out with friends would jeopardize future career opportunities? This question has created a heated debate. My presentation will look at academic studies to investigate both sides of the argument. In addition, testimonies from employers and users of social sites will be examined. The presentation will continue with theories of mass communication and two Potter Box analyses to answer the controversal debate. You won't want to miss it!

Performing Arts

Session A
Lilly Hall, Room 133
Moderator: Dr. James Briscoe

09:00AM

Brahms and His Art: A Neoclassic Portrait of Music History and Personal Identity. Zakary Tschiniak. Butler University, Indianapolis, IN. Sponsor: Dr. James Briscoe

Throughout Johannes Brahms's development as an individual, musician, and composer, one finds distinct inferences to romanticism and intellect. In his younger, formative years, he finds a fascination in the literature of E.T.A. Hoffmann, which develops a strong romantic impulse. As his maturation process commenced, he began to turn toward intellect in his study of music, attempting to repress this romantic urge. However, Brahms never lost his romanticism thanks to a strong relationship with Clara Schumann and his craft as a composer. The marriage of his romanticism and intellect are ever present in his "Symphony No. 4 in E Minor, Op. 98." Brahms had the ability to analyze and synthesize the influences which were impressed upon him and the influences which he sought himself. From this, he developed his own, distinct, neoclassic identity.

09:15AM

The Calculated Compelling Compositions of Cole Porter. Zachary Colby. Butler University, Indianapolis, IN. Sponsor: Dr. James Briscoe

When talking about the genre of Cole Porter's music, Mr. Arnold Schoenberg said, "I cannot pass over the American light music…I occasionally step down from my pedestal and enjoy light music." Even the mathematical musical genius of Schoenberg cannot miss the pure mystique that enchants a listener upon hearing a Cole Porter tune. It is this draw toward his music that cries forth for deeper examination of how lyrics, aesthetics, melody, and harmony allow a listener to discover how Porter's stylistic combinations elicit such timelessness.

09:30AM

Schumann's Fantasiestuecke: A Study in Romantic Aesthetics. Jamie Knuckles. Butler University, Indianapolis, IN. Sponsor: Dr. James Briscoe

Robert Schumann is universally acknowledged as one of the great Romantic, 19th-century composers. Schumann was also a prolific writer and a music critic well aware of the literary world. His work Fantasiestuecke, Op. 12, is a solo piano composition that in form and technique captures Schumann's romantic spirit, and it perfectly exhibits Schumann's aphorisms Florestan and Eusebius. This paper explores Schumann the critic as he exposed the personae Florestan and Eusebius and how the literary and psychological conception shaped Fantasiestuecke.

09:45AM

Nationalism in Bedrich Smetana's Vltava. Catherine Kling. Butler University, Indianapolis, IN. Sponsor: Dr. James Briscoe

"We Czechs are also endowed with creative force, yes, that we have our own and characteristic music."
When Bedrich Smetana wrote these words, his cycle of symphonic poems, Má Vlast, was complete. Smetana himself must have seen it as a conspicuously nationalist composition, because he titled the piece "My Fatherland." Whether Smetana was goaded into becoming the founder of Czech national music or inspired by his country's history, his intent was clear: to put Bohemia on the road to a great Czech musical tradition. We may see that important, powerful first step now by examining the central idioms of Czechness that he establishes.

10:00AM

Olfactory Performance: The Essence of You. Emily Cross. Butler University, Indianapolis, IN. Sponsor: John Green

I've always had a fascination with smell. I have made connections with smell and life that perhaps seem strange to the outside eye. I have noticed how much smell effects our daily mood, how it can connect us to memories once forgot, emotions long cast aside, how it can encourage or discourage certain behaviors and how it is anthropological – it differs from culture to culture. I started to explore these 'odd' connections further in my Butler Summer Institute research for a performance called Theatre Stinks/Actors Smell. This performance was a culmination of research done into the use of smell in theatre: used to expand the actors character development, to enlighten the audience experience and engage ones memory. I will discuss this journey, from inspiration to research, to travels abroad and challenges, to rehearsals, the final performances, and the hindsight given to me through time.

10:15AM

Why Theatre? A Study of Robert Wilson. Rachel Bennett. Butler University, Indianapolis, IN. Sponsor: Diane Timmerman

The focus of my presentation is the work of avant-garde theatre director Robert Wilson. Robert Wilson demonstrates the unconventional development of an innovative visionary and the affect of motivation on creating theatre. Wilson's aesthetic developed out of his education in painting and architecture as well as an interest in abstract dance, but perhaps the most important influence on Wilson's theatre was Raymond Andrews, a deaf boy, and Christopher Knowles, an autistic boy. Wilson's work is an expression of people and viewpoints that are often ignored in our society.
Robert Wilson's work has not been static over the years, but continually develops and changes. Wilson's early work was often referred to a silent opera, a magnificent visual show that communicated without words. Then Wilson, with the help of Christopher Knowles, experimented with the deconstruction of language. In recent years Wilson has applied his vision to existing works ranging from Heiner Müller's Quartet to William Shakespeare's Hamlet. One characteristic all of these stages in Wilson's career share is precise visual detail in lighting, set, costumes, and props. This vision is very architectural with strong lines and odd proportions. Robert Wilson's uncommon vision gives a voice to often ignored segments of society and accepts the unconventional rather than trying to change it or saying no to it.

10:30AM

The Power of Hope: Anne Frank and Ryan White Overcoming Hatred. EveMarie Bessenbach. Butler University, Indianapolis, IN. Sponsor: Cynthia Pratt

As a dancer, I truly believe in the power of art; it has the ability to not only convey a message, but also to inspire and influence people. For my honors thesis, I incorporated a choreographic component that allowed me to choreograph a significant work. I focused on a personal issue many people struggle with at some point in their lives: the issue of overcoming adversity while maintaining hope. Anne Frank writes in her diary, "because in spite of everything I still believe that people are really good at heart." We live in a world filled with hatred, prejudice, and discrimination that occurs on varying levels at different stages of our lives. Discrimination and reverse-discrimination is prevalent in our society among all racial groups and ethnic minorities. Individuals and groups around the world are continually

being persecuted for their religious beliefs and convictions. Animosity exists towards others due to their age, gender, physical handicap, or sexual orientation. Facing hatred and discrimination is a universal issue that affects everyone on a global scale. It is essential to learn from the example set by others and apply this knowledge to our own lives so we can also overcome adversity in a positive manner.

11:00AM

The Composer Distilled in the Piano Etude: the cases of Chopin and Ligeti. Brooks Frederickson. Butler University, Indianapolis, IN. Sponsor: Dr. James Briscoe

All études are not created equal--some are perfunctory technical studies aimed at just one specific aspect of playing--but others do cross the border between technical study and concert piece. Two of the best examples of this are the piano études of Frédéric Chopin and György Ligeti. Both composers used the études as chances to show their core compositional method and artistic perceptions in a series of compact studies. Not only are they landmark compositions for both composers, the piano études of Frédéric Chopin and György Ligeti can be seen as summation of each composer's compositional tendencies and techniques.

11:15AM

The Ambivalence of Musical Expression in Times of Oppression: Dmitri Shostakovich's Symphony No. 5. Cora Davidson. Butler University, Indianapolis, IN. Sponsor: Dr. James Briscoe

In light of the popularity of Dmitri Shostakovich's Fifth Symphony it comes as no surprise that the composer's own thoughts on the piece, described by the artist himself as a "Soviet artist's reply to a just criticism", are often discussed and debated. The events that led to the writing of the piece, the composition itself, and the reaction of the people and the Communist Party to this work of art is unlike anything the musical world had ever seen. The energy and spirit of Dmitri Shostakovich's Symphony No. 5, Op. 47 in D Major demonstrates both a patriotic work that appeases the Stalinist regime and a work which simultaneously expresses his discontent with the Communist Party through artistry. Through this presentation I will consider the latter of these two achievements of the Fifth Symphony: a successful expression of disapproval through ambiguity in musical composition.

11:30AM

Igor Stravinsky:His Underlying National Musical Heritage. Rachel Juszczak. Butler University, Indianapolis, IN. Sponsor: Dr. James Briscoe

Music critics and audiences hear Igor Stravinsky as one of the predominant forces in 20th-century music composition. Despite his celebrity status, there are periods of his musical output that are still unclear in their origins, especially during his Russian Period including "The Firebird Suite" and other landmarks. Later in his life, Stravinsky had on many occasions spoken negatively about his derivation of concepts from musical folklore, at times appearing embarrassed by something he felt a "dependence." While throughout Stravinsky's life he denied strong ties to his national musical heritage, his music contradicts his words by displaying a strong connection to native Russian elements.

11:45AM

A Modern Approach to a Baroque Form: the Bach-Busoni Fugue. Michael Tirman. Butler University, Indianapolis, IN. Sponsor: Dr. James Briscoe

The Fantasia Contrappuntistica depicts the deep understanding Busoni had of fugues and counterpoint. For him, the fugue was "a free, contrapuntal process linked to no traditional form, and yet formed through the laws of equilibrium, proportion, deployment, intensification, and termination." He saw the fugue as the paradigm of purity in music, with counterpoint and harmony as the methods of creating that purity. When Busoni began his work of finishing Bach's Die Kunst Der Fuge, one of his pupils in America gave him a new tactic in composition to make the Fantasia Contrappuntistica unique. Bernhard Ziehn discovered "a 'new polyphony' which [he] had demonstrated to [Busoni]; a technique in which melodic lines were combined in a strictly symmetrical way, without any prime regard for the resulting harmonies." He believed that the theme of a fugue should always maintain its original intervallic structure, so to maintain the mathematical purity and preciseness that fugues must demonstrate. Busoni used Ziehn's new concept of polyphony to finish Bach's final fugue, and he "showed how polyphony could be freed from classical harmonic shackles and formed into a new language which, however dissonant, would at all times be absolutely logical." Even Busoni stated is his writings that " the most valuable of these was the newly-found harmony that can arise through independent polyphony." So with his new set of tools and deep understanding of fugal exposition, Busoni shaped the Fantasia Contrappuntistica.

Pharmacy/Health Sciences

Session A
Pharmacy Building, Room 106A
Moderator: Dr. Erin Albert

09:00AM

Examining the Attitudes and Feelings of Pharmacists in the Retail Setting Regarding the Prospect of Over-the-Counter Statin Drugs. Jared Allen, Chris Peric, Cameron Willoughby, Bryan Dodd. Butler University, Indianapolis, IN. Sponsor: Iftekhar Kalsekar

Background: Coronary heart disease is the leading cause of death in the U.S. for adults. The long term benefits of statins include a decrease in morbidity and mortality in adults with CHD. Objective: The purpose of this study is to examine the attitudes of independent and chain retail pharmacists regarding OTC statin drugs. Methods: This is a cross-sectional survey based study which will be posted on SurveyMonkey. Pharmacists will be notified of the survey via e-mail. The survey will be composed of sections which assess pharmacists' views on patient use, pharmacists' ability to educate patients, and pharmacists concerns about liability issues. A final question assessing pharmacists' views on OTC statins will also be included. Demographics will follow the survey for statistical purposes. The data obtained will primarily be descriptive, and numerical values will be assigned to each possible score on the Likert scale. Responses will also be compared based on demographics or pharmacy type using one-way ANOVA tests or independent T-tests. For the final question regarding the pharmacist's opinion on OTC statins, a Chi-squared test will be used. All the statistical analysis will be conducted using SPSS at 0.05 level of significance (2-sided) Signficance: The pharmacist's role in healthcare is increasing everyday and more patients are turning to pharmacist for important medication and general medical advice. It is important to determine pharmacist's views of statin drugs being sold as OTC items since it will be the pharmacist who must educate patients to ensure proper use of these drugs.

09:15AM

Assessing Physician Compliance with the Use of Ipratropium for the Treatment of Asthma Exacerbations in the Emergency Room and Upon Hospital Admission. Alexis Bamvakais, Laura Strunk. Butler University, Indianapolis, IN. Sponsor: Sheel Patel

Background: Asthma is a chronic inflammatory disease of the airways characterized by inflammation and bronchial obstruction. Ipratropium is an anticholinergic agent helpful as adjunct therapy to short acting beta

blockers in the emergency care setting. However, it does not provide benefit after a patient is hospitalized for severe exacerbation and should be discontinued upon admission according to the National Heart, Lung and Blood Institute (NHLBI) Asthma Guidelines of 2007.
Study Objective: To assess prescribing patterns of ipratropium in the treatment of asthma exacerbations, thereby determining adherence to the NHLBI Asthma Guidelines.
Methods: This retrospective chart review is conducted at a tertiary care institution and includes patients in the emergency department experiencing an asthma exacerbation and subsequently admitted to an internal medicine or family practice service between October 2007 and May 2008. The study excluded patients less than 18 years of age, pregnant patients, and those with heart failure or COPD. Data collection includes age, gender, pertinent past medical history, exacerbation type, ipratropium use (in ED and/or upon admission), and concurrent medications for exacerbation.
Results: Data collection and analyses in progress.
Significance: The results of this study could improve patient care and reduce costs related to the management of asthma exacerbations.

09:30AM

Assessment in the difference in availability of Plan B emergency contraception in rural and urban pharmacies. Caitlin Austgen, Kortney Bolk. Butler University, Indianapolis, IN. Sponsor: Dennis Gardner

Background: The very controversial emergency contraceptive pill, Plan B, became available over the counter to persons 18 years of age and older in December of 2006. Plan B can be taken within 72 hours of sexual intercourse to decrease the likelihood of an unintended pregnancy. This short time frame makes its ease of availability crucial. Some pharmacies have Plan B available, some can obtain it within about 24 hours and some refuse to dispense it altogether. Studies have shown that unintended pregnancies are more prevalent in rural areas, making ease of acquisition of such an emergency contraception drug in these areas very important.
Objective: Our objective is to determine if there is a difference in immediate availability of Plan B in pharmacies located in rural versus urban areas.
Method: Telephone surveys were conducted to randomly selected rural and urban pharmacies in Indiana to determine if Plan B was in stock. Each county was classified as rural or urban based on the index of relative rurality. Proportional samples of rural and urban counties were selected and lists of pharmacies for each county selected were obtained per zip code using online yellow pages. From this list an equal number of rural and urban pharmacies were randomly selected to survey.
Results: Data collection is complete, but analysis is still ongoing.
Conclusion: To be determined upon completion of data analysis.

09:45AM

Physician response to pharmacist initiated renal dosing interventions in a rural long term care facility. Rachel Busch, Michael Furey, Sarah Nisly, Camille Boyken. Butler University, Indianapolis, IN. Sponsor: Sarah Nisly

Background: A previous study titled “Appropriate dosing of renally dosed medications in long term care patients with renal insufficiency” was conducted by Sarah Eversman, PharmD at Ripley Crossing Health Care Facility. The study found that many patients were receiving an inappropriate dose of medications that are renally dose adjusted.
Objective: The objective of this study is to assess if the current procedure that pharmacists use to make interventions is effective. The primary endpoint is whether the pharmacist initiated renal dosing interventions were accepted or denied.
Methods: Patients that have had a pharmacist initiated drug intervention involving a medication that is renally dose adjusted were queried from the DeVille pharmacy’s database. A retrospective chart review was conducted to examine pharmacists’ dosing interventions that were initiated between July 2007 and October 2008. Any renal dosing intervention made by a pharmacist was assessed for physician response.
Results: A total of 35 interventions were included. Of those interventions, 19 (54%) were accepted by the physician and 16 (46%) were not accepted. Of the interventions accepted, the dose was increased (5.3%), the dose was decreased (26.3%), or the medication was discontinued (68.4%). The median number of days of inappropriate therapy received prior to the intervention was 44 days. The median number of days between the intervention and therapy change was 15 days.
Conclusion: The results of this study provide descriptive data concerning the acceptance and timeliness of pharmacist initiated interventions involving renally dosed medications. This data may be useful in determining where modifications can be made in the intervention process to provide better patient care.

10:30AM

Who's who among world healthcare. Amber Baig, Ann Blank, Alisha Bland. Butler University, Indianapolis, IN. Sponsor: Erin Albert

Background: The World Health Organization has identified the top 20 countries with the best health care systems of the world. Analysis of these health care systems is needed for a better understanding of world health care and to further improve and educate the United States health care system and its people.
Objective: To Explore and write about the top 20 ranked health care systems in the world according to the World Health Organization.
Methods: Compiled list of the World Health Organizations ranked top 20 healthcare systems of the world. Research was conducted on each country. Chapters were written and submitted to the Writers’ Studio for editing. Students with assistance from mentor compiled chapters into a final book.
Results: Each country has formatted their healthcare system to best represent their culture, population, and political ideals. The way healthcare systems are run in one country will not necessarily work in another country. The size and leadership of the country may hinder its ability to change and adapt a new health care system. No country has either a fully universal or fully decentralized healthcare system. There are many different health care systems used by the top 20 countries; however, some ideals could potentially be applied to the United States.
Conclusion: After completion of the chapters, they were combined into a manuscript. The manuscript was the formatted and published to wikibooks. This is a site that allows others to read, edit and comment on your submitted literature.

10:45AM

Evaluation of the efficacy and safety of varenicline at a Veterans Affairs Medical Center. Nora Phelan. Butler University, Indianapolis, IN. Sponsor: Christopher Degenkolb

Background: Phase III studies have determined varenicline to be more effective than placebo and sustained release bupropion for smoking cessation. However, no studies have been conducted to determine usefulness in specific patient populations, particularly veterans, who are likely to have longer smoking histories and more comorbid illnesses. While phase III studies suggest varenicline is generally well tolerated, post-marketing reports have led the FDA to issue alerts regarding its likely association with behavior changes and worsening of psychiatric illnesses. However, no studies have correlated varenicline with significant behavioral changes.
Objective: To determine the efficacy and safety of varenicline at the Richard L. Roudebush Veterans Affairs Medical Center in Indianapolis, IN.
Methods: A retrospective chart review is being conducted of patients prescribed varenicline between May 1, 2006 and December 31, 2007. Efficacy will be evaluated by documentation of smoking cessation at 12, 24 and 52 weeks. Completion of 24 weeks of therapy, which is the recommended duration of treatment, will also serve as in indicator of effectiveness. Safety will be assessed by documentation of a new onset or worsening psychological illness not attributable to other causes, or the addition of medication to treat them. Assessment of tolerability, as

determined by documentation or treatment of nausea, insomnia, or abnormal dreams not attributable to other causes, will be a secondary objective. Data will also be collected on the provision of patient counseling on the potential risks and side effects of varenicline therapy upon initiation and at subsequent follow-up visits.
Results: Data collection is on-going.

11:00AM

Medications That Should Not be Delivered via Pneumatic Tube Systems. Megan Fleming, Lauren Rykovich, Amy Peak. Butler University, Indianapolis, IN. Sponsor: Amy Peak

BACKGROUND: Pneumatic tube systems are often used to transport medications. The pneumatic tube provides a quick system for delivering medications; however this is not a safe or appropriate method of transport for all medications.
OBJECTIVE: The objective of this study was to create a current comprehensive resource that distinguishes which medications should not be transported via pneumatic tube systems.
METHODS: A thorough review of all previously published literature was undertaken. Drug information specialists were contacted and asked to share their hospital's policies and procedures regarding the delivery of medications via pneumatic tube systems. Additionally, all drugs approved by the FDA since the time of the last literature publication were evaluated; package inserts were examined, and drug manufacturers were contacted when necessary. Data from all sources was complied into a single, current, comprehensive resource, which is being published in the journal Hospital Pharmacy.
RESULTS: There are many medications which should not be transported via pneumatic tube systems, including products which could have the active ingredient or vehicle altered, hazardous or chemotherapeutic products, living therapeutic modalities, carbonated products, flammable substances, controlled substances, products that may be broken during transport, items that exceed the system's size or weight limits, and medications that would result in a substantial monetary loss if "lost" in the tubing process.
CONCLUSIONS: Information regarding the transport of medications via pneumatic tube systems is necessary to ensure safe medication delivery. Our research uncovered many drugs and drug classes that should be excluded from transport via pneumatic tube systems.

11:15AM

Investigation of the potential risk associated with the concomitant use of clopidogrel and omeprazole: A retrospective chart review. Katie Bunner. Butler University, Indianapolis, IN. Sponsor: Amy Owczarek

Background: A drug interaction between omeprazole and clopidogrel has been identified and reported in recent research. It has been determined that platelet reactivity index of patients taking clopidogrel is increased with the concomitant use of omeprazole due to inhibition of CYP 2C19 thereby decreasing the effect of clopidogrel.
Objective: The objective of this study is to determine if the interaction between omeprazole and clopidogrel has a clinical impact in patients with a coronary artery stent. The primary objective is to examine the incidence of reocclusion of a stented artery in patients taking omeprazole and clopidogrel. Secondary outcomes include the incidence of stroke, myocardial infarction, and death.
Methods/Procedures: A retrospective chart review will be performed utilizing Richard L. Roudebush Veterans Affairs Medical Center records to identify fifty patients who received clopidogrel and fifty patients who received clopidogrel and omeprazole following placement of a stent. Comorbid conditions, other medications, and type of coronary artery stent will be collected. Chi square analysis will be used to determine the significance of these results. Statistics will be computed using SPSS version 15 software.
Significance: Omeprazole is commonly prescribed for treatment of gastroesophageal reflux disease, to prevent stress ulcers in hospitalized patients, and many times continued upon discharge without an indication. The results of this study could be used to help identify the clinical impact of this drug-drug interaction and guide in the prescribing habits of omeprazole in patients who are receiving clopidogrel.

11:30AM

Mutagenesis studies on the D2 Ci2 domain and its role in dopamine receptor signaling. Daniel Jansen. Butler University, Indianapolis, IN. Sponsor: Medhane Cumbay, PhD.

Dopamine is a neurotransmitter that has a profound effect on brain function. Dysfunction of the dopaminergic systems in the brain can lead to debilitating conditions such as schizophrenia and Parkinson's disease. Dopamine has its effects on the brain by acting on a class of cell surface receptors termed G protein-coupled receptors (GPCRs). GPCRs are a large family of proteins that consists of approximately 1000 closely related proteins that respond to a wide range of signals. As with all membrane proteins, GPCRs act to translate external information (e.g. dopamine) into signals that alter cell function.
Some drugs that act on dopamine receptors can produce selective activation of certain signal transduction pathways over others.
Serotonin receptors are closely related to dopamine receptors both in structure and function. All GPCRs share structural similarities, and what is observed in one receptor often translates to other closely related receptors. The changes in the serotonin receptor that lead to selective activation of different pathways has been localized to a segment of the receptor called the second intracellular loop C-terminal domain (Ci2). The Ci2 segment of receptor has recently been shown to be important for receptor-G protein interaction in serotonin receptors. Mutagenesis studies of the Ci2 domain demonstrated that point mutations can drastically alter specific signal transduction pathways and change the response to activation by certain drugs. Details of the mutagenesis on the Ci2 domain of the D2 dopamine receptor and characterization of its effect on D2 receptor signal transduction will be presented.

Session B
Pharmacy Building, Room 106B
Moderator: Dr. Trish Devine

09:00AM

The Impact of Pharmaceutical Care in an Underserved Community Care Center. Erin Hewitt, Ryan Humphrey, Debbie Saurmann. Butler University, Indianapolis, IN. Sponsor: Trish Devine

Background: Underserved Community Centers play a major role in assisting those people who are empoverished and can not afford a doctor's bill. There is a immensly important opportunity for pharmacists in this setting to use clincial knowledge and ensure safe management of patients' medication and disease state education. Therefore, it is imparative that pharmacist recognize the need for involvement in the under served community to help improve patient outcomes. There is currently no pharmacy influence at the Kingsway Community Care Center, which could lead to potentially harmful medication use and patient safety issues.
Objective: The main objective of our proposed study is to aid the center in finding out how pharmacist intervention can have an impact on the level of patient safety.
Methods: A retrospective medical chart review at the Kingsway Community Care Center in Avon, Indiana, from September 2008 through May 2009. The patients inclued will be those that have been seen at the clinic the previous year. Those patients will be followed for 3 months to assess their disease state and medication use. Interventions in place at the time of the chart review will also be recorded. An observational recording form will be used to collect the data from the patient's chart.
Significance: The impact of this study can potentially be life saving. Pharmacy influence in the center can lead to improved patient care by safely monitoring medication usage and help provide disease state

counseling. The counseling will include both disease state modifications and medication safety. Many opportunities are available at the center and we intend to help identify those situations where pharmacists can be included.

09:15AM

Analysis of appropriate use of albuterol metered dose inhalers in a retail pharmacy setting. Ashley Swearingen, Jennifer Karn-Clodfelter. Butler University, Indianapolis, IN. Sponsor: Bonnie Brown

Background: Albuterol metered dose inhalers (MDIs) are an essential part of treatment for asthma and chronic obstructive pulmonary disorder (COPD). With the recent switch from chlorofluorocarbon (CFC) to hydrofluoroalkane (HFA) propellants, the generic albuterol inhalers are no longer available. Many patients are struggling to pay for HFA inhalers, which has brought about awareness for the need of an analysis of appropriate use of albuterol MDIs in retail pharmacy. This study will analyze appropriate use based off patient characteristics, disease state, guidelines, and manufacturer recommendations.
Study Objective: Evaluate appropriateness of use of albuterol MDIs in a retail pharmacy setting.
Methods: Evaluate the number of albuterol MDIs filled by individual patients in a retail pharmacy from January 1, 2008 through December 31, 2008. MDIs will include: albuterol, ProAir, Proventil, Ventolin, and Xopenex HFA. Other data will include age and use of other medications for the treatment of asthma and COPD.
Results: 52 patients were selected and averaged 0.22 albuterol MDIs per patient per month. 11 patients were identified as having asthma, 5 patients were identified as having COPD, and 36 patients were unable to be categorized as asthma or COPD.
Conclusion: With results showing that 2 patients used more than 1 albuterol MDI per month, there is definitely a need for pharmacist intervention in therapies of patients using albuterol MDIs in the retail pharmacy setting. We can also conclude intervention is needed by the 36 patients who were unable to be identified as having asthma or COPD based on their controller medications.

09:30AM

Top Healthcare Systems of the World. Alisha Bland, Amber Baig, Amarjit KAUR. Butler University, Indianapolis, IN. Sponsor: Erin Albert

Title: Who's Who Among World Healthcare
Background: The World Health Organization has identified the top 20 countries with the best health care systems of the world. Analysis of these health care systems is needed for a better understanding of world health care and to further improve and educate the United States health care system and its people.
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09:45AM

Incidence of pneumonia in COPD patients treated with inhaled corticosteroids within a veterans affair medical center (VAMC). Nathanael Repine, Trish Szachta, Amanda Woloszyn, Trish Szachta, Darin Ramsey. Butler University, Indianapolis, IN. Sponsor: Darin Ramsey

Purpose: Recent studies show a possible increase in the incidence of pneumonia in Chronic Obstructive Pulmonary Disease (COPD) patients treated with inhaled corticosteroids (ICS). There are currently conflicting guidelines for the use of ICS in the treatment of COPD. The Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines has long been standard management for COPD. Initially, they recommend the use of long-acting bronchodilators, with ICS reserved for more ill patients. In contrast, the guidelines of the American College of Physicians recommend the use of either an ICS or a long-acting bronchodilator as a first line treatment option for COPD. This study will examine the incidence of pneumonia in COPD patients treated with ICS compared to other long-acting controller medications.
Methods: This retrospective case-control study will include patients of the R. L. Roudebush VAMC in Indianapolis, Indiana with a diagnosis of COPD. All patients will have been treated with an ICS, inhaled long-acting beta-agonist, inhaled long-acting anticholinergic, and/or combination therapy. The desired patient population cohort is 300 individuals, 150 of whom will be COPD patients who experienced an episode of pneumonia within our study dates. These patients will be matched to 150 COPD patients on inhaled long-acting controller medications with no prior episode of pneumonia based on similar characteristics.
Results/Conclusions: To be presented at Butler University's Undergraduate Research Conference in April.

10:30AM

Nanoparticulate formulation of Low-Molecular Weight Heparin (LMWH) and dimethyldioctadecylammonium bromide (DDAB). Reid Hanway, Nathan Brooks, Nusrat Motlekar. Butler University, Indianapolis, IN. Sponsor: Nusrat Motlekar

Background: LMWH is the anticoagulant of choice for prevention of thromboembolism. However, LMWH is currently only available as an injection, decreasing patient compliance. Oral administration barriers include metabolism by heparinases, relatively high molecular weight and chemical instability. The physicochemical properties of DDAB, specifically its Log P value, makes it a suitable candidate for preliminary nanoparticle formulation attempts. DDAB may serve as a promoter of gastrointestinal absorption of LMWH and assist in masking the negative charge and hydrophilicity of LMWH to aid in oral delivery. A previous study concluded that LMWH nanoparticles could be obtained using DDAB.
Objective: To create nanoparticles of LMWH using DDAB and analyze their size and stability to further validate the conclusions of a previous study.
Methods: Use a standard amount of LMWH, spontaneously mixed with varying dilutions of DDAB and deionized water. Further, analyze the size of the nanoparticle formulation via Dynamic Light Scattering with a particle sizer (NicompTM 380 ZLS). Differential Scanning Calorimetry and Fourier Transform Infrared data will be collected to verify excipient compatibility. Samples will be stored at 25 degrees Celsius and 4 degrees Celsius for a predetermined period of time and analyzed for preliminary stability.
Significance: If preliminary experiments with nanoparticle formulation of LMWH are successful and reproducible, further studies could optimize the nanoparticle formulation process. If long term in vitro/in vivo studies are conclusive, nanoparticle formulation has the potential for use in oral delivery of LMWH. Stability studies could help to enhance nanoparticle formulation, and through such investigations novel ways to deliver macromolecular drugs may be explored.

10:45AM

A Prospective Evaluation of Anti-Xa Levels in Obese Patients Receiving Enoxaparin for Venous Thromboembolism Prophylaxis. Brett Gatens, Cory Layton, Danh Dinh, Cory Layton. Butler University, Indianapolis, IN. Sponsor: Alex Ansara

Background: All patients admitted to the hospital are evaluated for deep vein thrombosis prophylaxis, and risk factors determine the type of prophylaxis. One method is the use of enoxaparin dosed 40 mg subcutaneously daily. Guidelines from the American College of Chest Physicians (ACCP) recommend checking anti-Xa levels in obese patients to ensure proper anticoagulation, though studies have shown these doses to be inadequate in this population.
Study Objective: To prospectively evaluate anti-Xa levels in obese patients to determine if levels of anticoagulation are adequate.
Methods: Patients (>136kg) admitted to Methodist Hospital will be evaluated for inclusion in the study. Patients meeting inclusion criteria will have one anti-Xa level drawn 4 hours after the first dose of enoxaparin 40 mg subcutaneously daily is administered. Anti-Xa level can be drawn after more than one dose has been administered. We hope to include 100 patients in this study. The main outcome is the percentage of patients reaching therapeutic anti-Xa levels, the secondary outcome is incidence of minor or major bleeding. Descriptive statistics will be reported and the percentage of patients reaching therapeutic anti-Xa levels will be analyzed.
Results: To date we have collected approximately 35 patients. Without statistical analysis, the anti-Xa levels so far have vastly been undetectable (<0.15 IU/ml). This suggests the prophylactic dose may not be high enough for the obese population in the setting of deep vein thrombosis prophylaxis.
Conclusion: Currently the goal number of patients has not reached and, therefore, we are not able to conclusively report our data.

11:00AM

Assessment of Cardiovascular Risk in an Underserved Community Using the Framingham Criteria. Erica Wring, Andrea Bishop, Ashley Townsend. Butler University, Indianapolis, IN. Sponsor: Jeanne VanTyle

Background: Shepherd Community Clinic is a non-profit organization that assists underserved, uninsured patients. An additional challenge is the large number of Hispanic patients served. This population parallels those that have disparities in healthcare as well as a high risk for cardiovascular disease. Despite being able to prevent and effectively manage cardiovascular disease, it continues to stand as the leading cause of death in the United States. The clinic effectively treats acute, and some chronic, conditions; however assessment of overall cardiovascular risk has not yet been established. Objective: To assess the cardiovascular risk in the Shepherd community using the Framingham criteria. Methods: A prospective, descriptive, observational design will be used. The target population includes patients ages 20-79, who attend a Heart Health Day or the regularly scheduled clinics. Data including age, race, height, weight, blood pressure, smoking status, and cholesterol will be collected via personal interview, measurements, and the Cholestech® system. Framingham risk scores will then be calculated and assessed for each subject. Measures of disease frequency and prevalence of each element will be determined, as well as the overall 10-year risk of subjects experiencing a cardiovascular event. Significance: Underserved, ethnic minorities are at high risk for cardiovascular disease making both prevention and treatment crucial. Recognition is the key, and this study can serve as a baseline in this population. It is anticipated that this information will help Shepherd direct their resources by indicating which risk factors are most prevalent as well as the need for cardiovascular disease prevention and treatment.

11:15AM

Linezolid Utilization Patterns in a Veterans Affairs Medical Center: A Retrospective Chart Review. Timothy Ryan Overpeck. Butler University, Indianapolis, IN. Sponsor: Christopher Degenkolb

Background: Linezolid has been used to treat gram-positive infections in the United States since 2000. During this time it has been highly utilized for the treatment of vancomycin-resistant Enterococcus faecium and methicillin-resistant Staphylococcus aureus (MRSA) infections. Linezolid is also approved to treat nosocomial pneumonia caused by Staphylococcus aureus including MRSA or Streptococcus pneumonia and community-acquired pneumonia caused by susceptible gram-positive organisms.
Objectives: Primary: Assess the adherence to recommended hospital guidelines of linezolid use.
Secondary: Determine efficacy rates, incidence of adverse effects, monitoring of adverse effects, and potential for drug interactions.
Methods: This study is currently being conducted as a retrospective chart review at the Richard L. Roudebush Veterans Affairs Medical Center. Patients receiving at least a one week treatment course of linezolid during the 2007 calendar year are eligible to be included in this analysis. Data collected to determine adherence rates to the hospital guidelines include: indication for linezolid use, previous treatments for current infection, isolated pathogen, and site of infection. Efficacy rates are to be measured by the resolution of clinical symptoms for the indicated infection as documented per the electronic medical record. Adverse effect data will be collected to determine incidence of thrombocytopenia in patients receiving linezolid for greater than two weeks and proper monitoring of weekly complete blood counts while receiving prolonged therapy. Data collected to monitor for potential drug interactions include: temporary discontinuation of serotonergic agonists, restarting serotonergic agonists after the completion of linezolid, and the concomitant use of a serotonergic agent while receiving linezolid.

Session C
Pharmacy Building, Room 202
Moderator: Dr. Kristal Williams

09:00AM

My First Patient: Teen Style. Kimberly Barker, Carrie Kessler, Kristal Williams. Butler University, Indianapolis, IN. Sponsor: Kristal Williams

Purpose: This study's goal is to decrease unhealthy dietary and physical activity habits, promote healthy lifestyle changes and increase awareness of chronic medical conditions among high school students in a pre-health sciences program. This includes introductory, patient-care opportunities for students who, themselves, are their first patient.
Background: Healthy People 2010 set a goal to ''Increase the proportion of..health professional training schools whose basic curriculum for health care providers includes core competencies in health promotion and disease prevention.'' It would be advantageous to incorporate healthy habits and behaviors into pre-health sciences curricula because of the increased incidence of common adult medical conditions in children.
Methods: Crispus Attucks Medical Magnet Program's sophomores and juniors are eligible to participate in this educational and interventional study, which is modeled after Butler University College of Pharmacy and Health Sciences' "My First Patient" Program and guided by selected CAPE outcomes. This study consists of interactive, health-education presentations on obesity, healthy eating, and diabetes prevention. The students will self-assess their nutritional and exercise habits and will undergo health screenings for Cholestech•LDX obtained blood glucose and cholesterol measurements, blood pressure, and body composition analysis. Information from their health assessments and presentations will show students their detrimental behaviors and disease risk. Acting as their first patient, students will design and implement a patient-specific therapeutic-lifestyle plan (TLP). This project began January 2009. Students' knowledge, ability to

implement healthy lifestyle changes, and improvement in their health will be assessed 3 months after the TLP implementation date.
Results: To be presented

09:15AM

Assessing a Human Papillomavirus (HPV) Health Promotion Campaign on a University Campus and Among Community Groups. Felicia Eckerle, Kimberly Long, Amy Howell, Carrie Maffeo. Butler University, Indianapolis, IN. Sponsor: Carrie Maffeo

Background: Centers for Disease Control and Prevention reports that approximately 10 million sexually active individuals aged 15–24 are infected with genital human papillomavirus (HPV). In 2007, a HPV health promotion campaign at Butler University was successful in increasing HPV awareness. The '08-'09 campaign expands the project to the Indianapolis community.
Objective: To assess individual health outcomes of a HPV health promotion campaign for Butler University students and community groups regarding HPV, the HPV vaccine, and cancer risks.
Methods: This campaign includes developing educational materials appropriate for current Butler University students and community adults, selecting and training peer educators to lead health education seminars for adults, and utilizing pre- and post- surveys assessing personal changes implemented after attending the seminars. Inclusion criteria include Butler University students and adults in the community greater than 18 years of age. The pre-survey evaluates demographics, baseline HPV and HPV vaccine knowledge, and HPV vaccine status. The post- survey assesses HPV knowledge, the type of information shared and with how many individuals, and HPV vaccine status. Descriptive statistics of respondents' demographic data and analysis of gender differences will be performed. Pre- and post-survey results will be compared to examine potential changes in behavior and knowledge.
Significance: Study results will assess how a campaign can help patients make informed health decisions and evaluate the effectiveness of such a campaign on a college campus and in a community possibly leading to the development of other health education awareness programs instrumented by pharmacists.

09:30AM

Resources to Enhance Achievement of Community Health in Indiana (REACH IN): Pharmacy Students' Perceptions. Nicole Javit, Courtney Seal. Butler University, Indianapolis, IN. Sponsor: Carriann Richey (Smith)

Resources to Enhance Achievement of Community Health in Indiana (REACH IN): Pharmacy Students' Perceptions

Study objective: To identify if pharmacy students believe that pharmacists can serve as a resource for community health and what factors might impact a student's decision to become a pharmacist in a medically underserved area.
Methods: An online survey was made available for 3 weeks to pre-professional and professional phase pharmacy students at Butler and Purdue University via a link to Survey Monkey found in their university e-mail. Questions focused on students' perceptions of their ability to be a resource for community health needs as a future pharmacist and interest in working in underserved areas, as well as demographics such as gender, employment status, and hometown origin. Analysis will include demographic factors that might influence student interest.
Results: At the time of abstract submission, 426 students had attempted the survey. Final results will be presented at the undergraduate research conference.
Significance: This assessment will be used by Indiana colleges of pharmacy to gauge pharmacy students' perspectives with regard to community health and medically underserved areas. The results may then be used to guide development of future academic initiatives.

09:45AM

Evaluating Outcomes of Patients with Invasive Methicillin-Resistant Staphylococcus aureus (MRSA) Infections: A Look into Vancomycin Minimum Inhibitory Concentrations (MIC's). Tara Menacher, Rebecca Wyatt. Butler University, Indianapolis, IN. Sponsor: Jarrett Amsden

Background: MRSA has become a leading cause of serious nosocomial infections in the United States. While vancomycin is considered the treatment of choice for invasive MRSA infections, the emergence of MRSA strains with reduced susceptibility to vancomycin have begun to affect treatment outcomes. This reduced susceptibility has been described in MRSA isolates that should be susceptible under current standards, which refer to minimum inhibitory concentrations (MIC) of 2-4 ug/mL.
Objective: The primary objective of this study is to determine in-hospital mortality associated with MRSA bacteremia and the influence of the minimum inhibitory concentrations on these outcomes. The secondary objectives include: ICU length of stay (LOS), total hospital LOS, vancomycin dose, treatment duration, and the time to sterilize the blood cultures.
Methods: The study will be a retrospective cohort study of patients with MRSA bacteremia. The study will be conducted from January 1, 2008 through December 31, 2008 within the hospitals of Clarian Health Partners, Indianapolis, IN. The cohorts will comprise patients whose MRSA isolates had a vancomycin MIC of either less than 2 ug/mL or those with an MIC greater than or equal to 2 ug/mL.
Significance: This study will determine which MIC values are associated with favorable treatment outcomes. Ultimately, this study will help decide whether more aggressive empirical vancomycin dosing is required, or if the use of an alternative agent should be considered in order to achieve better outcomes in patients with invasive MRSA bacteremia.

10:00AM

Investigation of the Use of Aranesp through Observing Initial Dosing Patterns in Patients with Anemia Due to Chronic Renal Failure. Neil Ratcliff. Butler University, Indianapolis, IN. Sponsor: Alex Ansara

Background: Many patients receive erythropoietin stimulating agents (ESAs) when being treated for anemia. The initial dosing as recommended by the manufacturer for Aranesp is 0.45mcg/kg for a patient being treated for anemia due to CRF. Also, ESAs are very expensive. Need for Study: Often, patients are initially given a maximum dose, and not dosed based on weight. Serious cardiovascular effects have been reported in patients on ESAs with hemoglobin (Hgb) levels higher than 13mg/dL. Maximum Aranesp doses may lead to rapid and drastic increases in Hgb levels. Also, hospitals may suffer financial loss due to excessive ESA use. The purpose of this study is to analyze prescribing patterns of Aranesp by assessing initial doses, indication for treatment, and discontinuation of therapy once Hgb reaches 12mg/dL.
Methods: A retrospective chart review study will be conducted. The primary outcome will be the initial dose used for patient. Patient data will be recorded with a data collection sheet. Information being analyzed includes: age, admission diagnosis, past medical history, dose, frequency and duration, hemoglobin level at start and end of therapy. To maintain patient privacy no identifying information will be recorded. All data used in the study will be given to the principal investigator to retain for a period of no less than three years. Inclusion criteria: Patients aged 18 or older, being treated with Aranesp for anemia due chronic renal failure.
Exclusion criteria: Patients with cancer, acute renal failure, and patients with a PMI of renal transplant.
Statistical Analysis: A chi square analysis will be conducted. Results: Results pending.

10:30AM

Examining the Attitudes and Opinions of Pharmacists in the Retail Setting Regarding the Prospect of Over-the-Counter Statin Drugs. Chris Peric, R. Cameron Willoughby, Bryan Dodd, Jared Allen. Butler University, Indianapolis, IN. Sponsor: Iftekhar Kalsekar

Background: Coronary heart disease is the leading cause of death in the U.S. for adults. The long term benefits of statins include a decrease in morbidity and mortality in adults with CHD. Objective: The purpose of this study is to examine the attitudes of independent and chain retail pharmacists regarding OTC statin drugs. Methods: This is a cross-sectional survey based study which will be posted on SurveyMonkey. Pharmacists will be notified of the survey via e-mail. The survey will be composed of sections which assess pharmacists' views on patient use, pharmacists' ability to educate patients, and pharmacists concerns about liability issues. A final question assessing pharmacists' views on OTC statins will also be included. Demographics will follow the survey for statistical purposes. The data obtained will primarily be descriptive, and numerical values will be assigned to each possible score on the Likert scale. Responses will also be compared based on demographics or pharmacy type using one-way ANOVA tests or independent T-tests. For the final question regarding the pharmacist's opinion on OTC statins, a Chi-squared test will be used. All the statistical analysis will be conducted using SPSS at 0.05 level of significance (2-sided) Signficance: The pharmacist's role in healthcare is increasing everyday and more patients are turning to pharmacist for important medication and general medical advice. It is important to determine pharmacist's views of statin drugs being sold as OTC items since it will be the pharmacist who must educate patients to ensure proper use of these drugs.

10:45AM

Role of Community Pharmacies in Addressing Public Health Needs in Health Care Professional Shortage Areas (HPSAs) in Indiana: A Qualitative Analysis of the Community Pharmacist Perspective. Joshua Lorenz, Carriann Richey (Smith). Butler University, Indianapolis, IN. Sponsor: Carriann Richey (Smith)

Objectives: To determine the perception of community pharmacists in full county HPSAs within the state of Indiana with regard to the following community health issues: the present need, demand, and frequency of additional pharmacist-provided community health activities, the role of the pharmacist in community health, and the barriers to providing additional community health activities. To assess potential opportunities for both community pharmacies and Butler University to actively address community health needs in selected areas in the state of Indiana.
Design: Voluntary, third party administered telephone survey.
Participants: Pharmacists-in-charge at selected pharmacies located in full county HPSAs.
Interventions: A 29-point questionnaire addressed the need and demand of pharmacist-provided clinical pharmacy and community health activities, barriers to providing these services, role of the pharmacist in community health, follow-up opportunities for assistance in providing services, and pharmacy demographics.
Main Outcome Measures: Characteristics determined by the survey responses.
Results: Eighty-two percent of pharmacists responded (65/80). Most of the pharmacists described their pharmacy as a chain-operated retail pharmacy (68.2%). Seventy-nine percent pharmacists described their pharmacies as rural vs. non-rural, and fifty-three percent described their pharmacies as filling between 200-400 daily prescriptions. Sixty-one percent responded that their pharmacy communicates with the county health department yearly or less. Seventy-three percent of pharmacists characterized patient demand for additional pharmacist-provided services as low.
Conclusion: Pharmacists in full county HPSAs in Indiana are willing to provide additional pharmacist-provided services that improve community health. Barriers to providing these services must be addressed according to the perspective of the pharmacist-in-charge.

11:00AM

Evaluation of Feeding Intolerance of Patients Placed in Pentobarbital-Induced Coma at Methodist Hospital. Gabriel Stillabower, Josh McGehee, Nicole Ponton, Jonathan Egel. Butler University, Indianapolis, IN. Sponsor: Jane Gervasio

Background: Nutrition plays a critical role in recovery following traumatic brain injury. Increased caloric needs, access difficulties, and electrolyte abnormalities often undermine efforts to provide adequate nutrition in this population. There is much debate and insufficient evidence that this patient population can tolerate enteral nutrition; few studies are available which demonstrate that patients placed into pentobarbital-induced comas can tolerate enteral nutrition.
Study Objective: To determine if head injury patients placed into pentobarbital-induced comas are able to tolerate enteral nutrition. The secondary objective of this study is to identify characteristics of this population that may predispose them to feeding intolerance.
Methods: The study objective will be met by retrospectively examining patient charts at Methodist Hospital, Indianapolis, Indiana. A computer generated list will be used to identify patients receiving both enteral nutrition and pentobarbital for coma induction/maintenance during the study period, January 1, 2006 to October 31, 2008. Patients meeting criteria will be examined for evidence of and reasons for feeding intolerance. Data related to pentobarbital use and patient characteristics will be collected. Descriptive statistics will be utilized to describe the study population. Differences between patients who tolerated and those who did not tolerate enteral nutrition will be examined. Data will be analyzed using Statistical Package for Social Sciences (SPSS) for Windows.
Significance: Data will be used to identify if enteral nutrition may be safely delivered to head injured patients in pentobarbital-comas. Results will be presented to critical care and trauma practitioners with appropriate education implemented where needed.
Results: Pending
Conclusion: Pending

11:15AM

Utilization of secondary prevention medications following a first acute myocardial infarction: a retrospective cohort analysis. Ryan Chavis, Lindy Stitz. Butler University, Indianapolis, IN. Sponsor: Iftekhar Kalsekar

Background: There is an impressive wealth of evidence supporting secondary preventive medications in improving survival and health outcomes after an acute myocardial infarction (AMI). A review of literature suggests that secondary prevention medications recommended by national guidelines continue to be used variably and often sub- optimally.
Study objective: The objective of the study is to evaluate the utilization of medications recommended by the AHA Guidelines for the secondary prevention of AMI in a cohort of Indiana patients.
Methods: The study will be conducted using administrative claims data of the Indiana Medicaid program. A retrospective cohort design will be used and patients discharged from the hospital with either a primary or secondary diagnosis code for an AMI (ICD-9 code 410.x1) between January 1, 1999 and December 31, 2002 will be identified. Only patients under the age of 65 and having a first AMI will be enrolled. Medication utilization will be assessed and followed for a year post- hospital discharge. Logistic regression analyses will be used to identify potential clinical (co-morbidities, presence of cardiovascular risk factors) and demographic (sex, age, race) factors predicting utilization of medications at discharge for secondary prevention of AMI.
Significance: This study will aid in identifying which medication therapies are actually being prescribed and utilized by patients after discharge. This could help identify potential targets for further education and areas of focus in maximizing secondary prevention strategies for Indiana patients in the future.

11:30AM

Evaluation of Compliance Rates for Pediatric Vaccinations and Analysis of Parental Beliefs and Concerns Regarding These Vaccinations. Kellianne Holt, Emily Papineau, PharmD. Butler University, Indianapolis, IN. Sponsor: Bonnie Brown

Background: Pediatric vaccinations and their safety have been a recurrent topic in the U.S. news, and this has caused concern for many parents. History has shown that anti-vaccination movements can lead to decreases in vaccination rates as well as outbreaks of vaccine-preventable diseases. To date, no known existing study has assessed compliance rates for both CDC and Indiana State Department of Health (ISDH) required vaccinations within the Community Health Network or has assessed parental feelings towards pediatric vaccinations in both Indianapolis and rural Indiana.
Study Objectives: To assess vaccination compliance rates for CDC-recommended vaccinations given between the ages of 4-6 and ISDH school-required vaccinations in seven year-old children in Indianapolis and to assess parental beliefs and concerns regarding vaccinations in Indianapolis and rural southern Indiana.
Methods: Both a retrospective chart review and a survey will be used to meet the study objectives. The medical records of seven year-old patients within the Community Health Network will be evaluated to assess vaccination compliance based on the CDC immunization schedules for children ages 4-6 as well as ISDH requirements. Surveys were distributed in four Indianapolis area pharmacies and one pharmacy in rural southern Indiana. The survey assessed the respondent's agreement with several statements regarding vaccines and also evaluated the influence of several factors on whether to vaccinate.
Results: Data analysis is ongoing
Conclusion: The results of the study will be beneficial in assessing current vaccination rates in a large healthcare network in Indianapolis as well as what concerns may be facing parents.

Session D
Pharmacy Building, Room 205
Moderator: Dr. Joseph Jordan

09:00AM

Assessment of COPHS Technology Initiative - A Faculty Perspective. Crystal Baumberger, Lindsey Whaley. Butler University, Indianapolis, IN. Sponsor: Sarah Nisly

Background: In 2005, Butler University COPHS initiated a laptop program requiring pharmacy classes to participate. The faculty agreed upon the COPHS Technology-Enhanced Learning Project, which encourages faculty to increase use of technology in the curriculum. To date, one completed study looked at the student's perspective of the laptop initiative focusing on the students' opinions on the laptop use. In addition, there is another ongoing study determining if the goals of the COPHS Technology-Enhanced Learning Project were met, from the students' perspective. The aforementioned projects did not evaluate the faculty perspective.
Objective: To determine if, in the faculty's opinion, goals set forth in the COPHS Technology-Enhanced Learning Project are being met.
Methods: This study will use SurveyMonkey website to anonymously survey Butler pharmacy faculty on topics related to the COPHS Technology-Enhanced Learning Project. The survey is designed to correspond with goals of the COPHS Technology-Enhanced Learning Project. Then, the answers will be analyzed and used to determine if the COPHS laptop initiative is meeting the goals or not.
Significance: The findings of the study can be used to determine which goals of the COPHS Technology-Enhanced Learning Project are not being met. In turn, we will know which goals need additional assistance to be met. By doing this survey, we hope educational tools may be developed to enhance the technology initiative.
Results: Pending

09:15AM

The Impact of Varenicline on Smoking Cessation within a CVS Patient Population. Rachel Gotshall, Brittney Konrad, Haley Carroll. Butler University, Indianapolis, IN. Sponsor: Tracy Sprunger

Background: Chantix (varenicline), the newest smoking cessation product, has been shown to be an effective aid in smoking cessation by many qualitative studies. However, a quantitative study assessing patients' attitudes towards the effectiveness and side effects of varenicline is needed to determine the true clinical benefits of this medication. To date there have not been any published patient survey results assessing varenicline.
Objective: To evaluate the attitudes of CVS patients regarding the benefits and barriers of using varenicline for smoking cessation.
Methods: A telephone survey will be used as a quantitative measure to meet the study objective. Patients from CVS pharmacies in the Indianapolis area that are greater then 18 years of age, and who filled a prescription for varenicline between the dates of November 1, 2007 through January 31, 2008 will be eligible to participate in the survey.
The telephone survey will consist of 16 questions related to smoking history, successful use of the product, use of other products, and side effects. The information collected will be analyzed using SPSS version 16.0.
Results: Data collection is ongoing and results will be presented at the Undergraduate Research Conference on April 16, 2009.
Significance: A recent black box warning for varenicline has contributed to negative media attention and is causing hesitancy for its use. This study enables retail pharmacists to use local patient obtained results/data regarding varenicline when assisting patients with smoking cessation therapy.

09:30AM

Clinical Information Systems in the US health system: understanding the barriers to implementation. Sheryl Selvey. Butler University, Indianapolis, IN. Sponsor: Bonnie Brown

Background: Data on health information technology is continuously outdated, and while many hospitals employ electronic medical records (EMRs), data regarding the application of clinical information systems into these EMRs is sparse and fragmented.
Objective: To identify and understand barriers associated with implementation of clinical information systems in the lagging US health informatics industry.
Methods: A literature search was conducted using two primary databases: Pubmed/Medline and EbscoHost. Research examined current barriers to implementation of clinical information systems, stratifying findings into each of the individual sectors: providers, health plans, patients, quality organizations, and government agencies. Search words included clinical information systems, electronic medical records, e-prescribing, and health informatics.
Results: A total of 28 journals and 4 texts were analyzed with dates ranging from 2001-2008. The Journal of American Medical Informatics Association had the most articles cited (n = 4). Barriers found to implementation of clinical information systems include provider skepticism, data capacity and maintenance, patient confidentiality, reimbursement, capital costs, evidence of value creation, event alerts and physician overrides, information tracking mechanisms, incentives, payer focus on short-term costs savings, political arguments, focus on pharmaceutical R&D, and national standardization.
Conclusion: Technology integration into the health field is slow, as exemplified by the number and extent of barriers facing implementation of clinical information systems. Future studies will need to focus on cost-benefit analysis and results based information in order to weaken some of these barriers and expedite implementation of clinical information systems.

09:45AM

Top Healthcare Systems of the World. Nichole Stetson, Amanda Lee. Butler University, Indianapolis, IN. Sponsor: Erin Albert

Background: The WHO has identified the top 20 health care systems countries of the world. Analysis of these health care systems is needed for a better understanding of world health care and to further improve and educate the United States health care system and its people.
Objective: To Explore and write about the top 20 ranked health care systems in the world according to the World Health Organization.
Methods: Compiled list of WHO ranked top 20 healthcare systems of the world. Research was conducted on each country. Chapters were written and submitted to the Writers' Studio for editing. Students with assistance from mentor compiled chapters into a final book.
Results: Each country has formatted their healthcare system to best represent their culture, population, and political ideals. The way healthcare systems are run in one country will not necessarily work in another country. The size of the country may hinder its ability to change and adapt a new health care system. No country has either a fully universal or fully decentralized healthcare system. There are a lot of different health care systems used by the top 20 countries; however, some ideals could potentially be applied to the United States.
Conclusion: Letters collected and contacts made were limited. Book deadline is December 31st 2008. A book release in the spring is anticipated. The Book cover is by Dr. Gautam Rao-Dean of Media Arts Butler University and students. A grant provided by Johnson and Johnson will allow Butler Pharmacy graduate of 2009 a copy of the book for graduation.

10:00AM

Influence of drug samples in the selection of future drug therapy: A retrospective chart review. Ashley Soulliere, Theresa Kellar. Butler University, Indianapolis, IN. Sponsor: Deborah Zeitlin

Background: Drug samples usage has become controversial. A literature review was conducted that found published studies demonstrating the risks and benefits associated with initial prescribing behaviors when samples were available. However, this review showed a lack of studies evaluating the influence of sample medications in regards to predicting the future course of medication therapy.
Study objective: This study will determine the impact initial drug sample use has on the continuation of the medication as long term therapy.
Methods: A retrospective medical chart review was done to meet the study objectives from January 1, 2008 to June 30, 2008 using patients at IU Methodist Family Practice Center, Clarian Health, Indianapolis, IN. The patient population consisted of patients who received sample medications for chronic disease states within the time frame as indicated by the study site sample logbook. Information about these patients was recorded on the data collection sheet designed specifically for this study. Their charts were then evaluated three months later to see if the patient was still on the initial prescribed drug sample. If a patient was still on the sample medication at the three month interval, then their chart was reevaluated three months later to determine if the patient was still on the initial prescribed drug sample.
Results: Data collection has been completed at this time. Analysis and results are still pending.
Significance: The goal of this study is to examine whether the initial supply of drug samples will predict the patient's future course of drug therapy.

10:30AM

Implementing 797 Guidelines in a Compounding Pharmacy. Kirsten "Kasey" Tobbe, Brooke Timberlake, Laura Eckart. Butler University, Indianapolis, IN. Sponsor: Joseph Jordan

Background: In 2004 the USP 797 Guidelines were written to provide enforceable procedures and requirements for compounding sterile preparations. Since then, there have been many updates to these guidelines to ensure continuing quality control in the compounding of sterile preparations. The most recent updates to the USP 797 Guidelines were released in January 2008 and put into effect in June 2008. These updates focused mainly on individual training and evaluation.
Objective: This study is examining how the updated USP 797 Guidelines are incorporated into a compounding pharmacy, Precision Compounding. The objectives of the study are to monitor adherence to the USP 797 Guidelines, and based on the study's findings, make recommendations to improve compliance as well as provide feedback to similar facilities about challenges and successes in the processes of becoming compliant.
Methods: The study will consist of modifying the Standard Operating Procedures of Precision Compounding Pharmacy in order to make them compliant with the revisions of the USP 797 Guidelines. The modifications will be documented and monitored over a period of time to ensure proper adherence. Based on the monitoring data, further modifications may be made at Precision Compounding Pharmacy if compliance is not achieved. The study will also analyze the practicality, ease of application, and the financial impact of changes.
Significance: This study will be significant to pharmacies which compound sterile products that strives to improve compliance. Adherence to USP 797 Guidelines is necessary to ensure the sterility of products and safety of the patients receiving the products.

10:45AM

Review of Tygacil (tigecycline) administration and its FDA approved indications. John Honeas, Ryan Drury. Butler University, Indianapolis, IN. Sponsor: Tracy Sprunger

Background: Tygacil (tigecycline) is a glycylcycline antibiotic, with activity against several multi-drug resistant organisms, approved for treatment of skin and soft tissue infections (SSTI) and complicated intra-abdominal infections. The pharmacy department at Community Health Network (CHNw) has noted an increased use of tigecycline over the past 2 years. Due to the high cost and desire to reserve this agent for multi-drug resistant organisms we would like to determine if tigecycline is being used appropriately at CHNw.
Objective: The objective of the study is to evaluate the use of tigecycline by physicians in the Community Health Network.
Methods: The study is a retrospective chart review, enrolling patients 18-90 years of age who received at least one dose of tigecycline from July 1, 2007 to June 30, 2008. The primary outcome will be to conduct a medication use evaluation (MUE) of tigecycline at CHNw. Our goal is to evaluate the indication, duration of therapy, dosing, as well as alternative agents appropriate for the particular patient considering allergies and cultures/susceptibilities.
Significance: With this study, we hope to determine the incidence of unnecessary empiric prescribing of tigecycline. Based on the findings, we hope to develop a guideline for the appropriate use of tigecycline at CHNw.

11:00AM

Developing an Assay to Profile the Upregulated TREK-1, a Stretch-Activated Potassium Channel, found in Prostate Cancer. Susan Surber. Butler University, Indianapolis, IN. Sponsor: Medhane Cumbay, PhD.

Background: Recently, a new family of potassium channels has been discovered with members having upregulated expression in several types of malignancies. Specifically, TREK-1, a stretch-activated potassium channel, has been verified to be upregulated in prostate cancer, but is absent as a receptor in normal prostate tissue. TREK-1 could potentially be used to direct treatment more specifically towards prostate cancer since its expression in other non-malignant human tissue is limited.
Objective: The goal of this project is develop a high-throughout drug screen (HTS) that targets TREK-1 to increase the efficiency of discovering potential drug treatments for prostate cancer.
Methods: Due to the nature of TREK-1 expression and function, two separate assays will be performed to confirm the presence and functionality of TREK-1. The first one, known as a western blot, will determine if

TREK-1 protein is present in prostate cancer cells (PC3). According to previously published literature, positive results for TREK-1 expression in PC3 should be present. The second assay, known as the Fluorescence Imaging Plata Reader (FLIPR), will measure the activation of the channel since its normal function is to flux potassium ions across the cell membrane. If both of these assays are used jointly, it is possible to make some inferences concerning the activity of TREK-1.
Significance: Current therapies for prostate cancer patients are limited. Furthermore, of the few treatment options available, a significant reduction in the quality of life is usually a result of these therapies. Prostate cancer is the second leading cause of cancer death in American men, and discoveries such as this, provide another avenue for drug development to improve treatment options for patients.

11:15AM

Assessment of lipid management examining LDL goals at Community Family Medical Clinic: a retrospective chart review. Eric Harter, West Evan, Evan West, Lindsey Whitis. Butler University, Indianapolis, IN. Sponsor: Emily Papineau

Background: Coronary heart disease (CHD) is the leading cause of death in both males and females in the United States. Abnormal lipid levels are one of the most common risk
factors for development of CHD.
Objective: The objective of the proposed study is to identify the percentage of patients that reached their LDL goal reduction during a 1 year time period between October 2007 and October 2008 at Community Family Medical Clinic.
Methods: A retrospective cohort design will be used to meet the study objectives. Adult patients between the ages of 18 and 80 with documented treatment with lipid lowering agents will be examined. For each patient an LDL goal will be calculated based on the risk factors and risk equivalents for each patient. The drug, dose, route, and possible monitoring parameters of lipid therapy will be noted. An LDL serum level will be noted at a minimum of six weeks after any lipid-lowering therapy was initiated. This number will be used to determine if the patient has reached their LDL goal number. The results of the study will be added at a later date.
Significance: Results will indicate if current hyperlipidemia management strategies are optimal or if they could be improved.

11:30AM

A Study of the Relationship between Nutritional Knowledge and Healthy Eating Habits. Megan Hamilton, Claire Brackmann. Valparaiso University, Valparaiso, IN. Sponsor: Matthew Ringenberg

The aim of this study is to explore the relationship between students' level of nutritional knowledge and their eating habits. The research hypothesis is that increased levels of nutritional knowledge are associated with healthier eating habits for college students.
The sample for this study is comprised of approximately 150 college students between the ages of eighteen and twenty-three at Valparaiso University. Participants are both male and female and are between the ages of eighteen and twenty-three. The constructs being measured are as follows:
Eating habits- how closely do participants follow the guidelines of the Five A Day campaign created by the Centers for Disease Control and Prevention which encourages people to consume a combined five fruits and vegetables everyday as a means of promoting healthy eating habits.
Nutritional labels- how much do participants use nutritional labels when they are available.
Level of nutritional knowledge- how high or low participants score on questions created from basic nutrition facts published by the Center for Disease Control and Prevention.
This research has implications for colleges and universities that wish to promote healthy eating habits for their students. If nutritional knowledge is found to predict healthier food selections, colleges and universities should implement or expand nutrition education programs. If a strong positive relationship is demonstrated, campuses should consider mandating that all students complete a nutrition course, preferably during their freshman year. If no relationship is found, colleges and universities should consider other incentives for making nutritional choices rather than focusing on nutrition education.

Session E
Pharmacy Building, Room 212
Moderator: Dr. Laura Ruekert

09:00AM

The Effect a Consistent Regimen of Strength Training, via a Boxer's Workout, can have on Parkinson's Disease Progression and Patient's Quality of Life. Allison Kroeger, Katie Leciejewski, Angela Ockerman. Butler University, Indianapolis, IN. Sponsor: Angela Ockerman

Background: Pharmacologic therapy is the cornerstone of Parkinson's Disease (PD) treatment, but exercise is often utilized as an adjunct to sustain maximal function for as long as possible and improve patient's quality of life. Research in PD exercise therapy has consistently shown favorable outcomes despite that there are currently no definitive studies identifying the most important aspects of exercise for PD patients.
Study Objective: To examine the effect that a consistent regimen of strength training, via a boxer's workout, can have on PD progression and patient's quality of life.
Methods: Prospective data collection of twenty-six PD patients who currently use Rock Steady Gym for a regular regimen of boxing strength and conditioning techniques as outlined by a certified trainer. Testing will occur at baseline and sixteen weeks later with comparison between patients who attend a minimum of three times weekly, against those who do not. Evaluation includes: Unified Parkinson's Disease Rating Scale (UPDRS), Mini Mental Status Exam (MMSE), medication management, and a patient self assessment. Inclusion criteria includes: at least 18 years old and willingness and ability to comply with the sixteen weeks of boxing training. Exclusion criteria includes: MMSE <20 and concurrent involvement in another study. Statistical tests will be conducted at a 0.05 level of significance utilizing chi-square test of independence. Statistical analysis will be conducted using Statistical Package for Social Sciences version 14.0 (SPSS Inc., Chicago).
Significance: The goal is to statistically show the symptomatic improvements of PD symptoms while participating in this type of regular exercise regimen.

09:15AM

Evaluation of the COPHS Technology Enhanced Learning Initiative: A Student Survey. Keith Hildebrand, Erin Linneman. Butler University, Indianapolis, IN. Sponsor: Amy Peak

Background: In 2004, the Butler University College of Pharmacy and Health Sciences initiated a technology enhanced learning initiative, including a mandatory laptop program.
Objective: The primary objectives of this study are to evaluate if the original initiative goals are being met and determine the effectiveness of the program. The secondary goal of this study is to illicit students' perspectives on the new learning environment including benefits and distractions.
Methods: A voluntary, anonymous electronic survey of all professional phase pharmacy students was conducted.
Significance: The results of this survey will be compared to the results of a faculty survey. The results will be used to evaluate and aid in the improvement of the initiative.
Preliminary Results:
Response rates: P1=98, P2=101, P3=57, P4=57
91.9% of responders feel that having laptops helps them take better notes. 96.6% report that they have never used their laptop to gain an advantage or "cheat." 70.3% either never or rarely use the technology to plagiarize.

67.3% feel that the technology initiative improved their learning outcomes while 25% felt it made notetaking easier but did not improve learning outcomes. Only 1% of students feel that the technology initiative did more harm than good.
81.7% either sometimes or often have used their computer to research information that they would otherwise have not done if the computer were unavailable.
Conclusion: Overall, the results trend toward a benefit from the technology initiative. The survey helps illustrate goals that are being met and areas where improvement is needed.

09:30AM

The correlation between weight change and the variation in INR level in patients on warfarin. Chelsie Bentz. Butler University, Indianapolis, IN. Sponsor: Deborah Zeitlin

Background: Patients on warfarin require close monitoring for safety and effectiveness. Many drug and lifestyle interactions have been determined; however, there is a lack of studies demonstrating whether there is a correlation between weight change and variation in INR.
Objective: The objective of this study is to determine if there is a correlation between weight loss or weight gain and an increase or decrease in patients' INR while on warfarin.
Methods: A retrospective chart review was used to meet the study objective. The study was conducted via medical records from the IU/Methodist Family Practice Center Anticoagulation Clinic, Clarian Health, from September 2007 to September 2008. Patients monitored by the Anticoagulation Clinic with a weight change of >5 lbs were included. Potential confounding factors that are known to affect INR were noted. Age, gender, INRs, medication changes, diet, alcohol use, activity level, warfarin dose and weight change were obtained from these patients' charts. A Pearson product moment correlation co-efficient will determine if there is a correlation between weight change and the variation in INR level in patients on warfarin. Categories of weight change in 5 lb intervals will be compared to mean INR levels within different weight change categories. Statistical analyses will be conducted using Statistical Package for Social Sciences version 14.0 (SPSS Inc., Chicago).
Significance: Warfarin requires close monitoring to avoid clot formation or significant bleeding. This study could potentially provide important information to change the monitoring and adjustment of warfarin in patients who have weight loss or weight gain.

09:45AM

Evaluating Physician Prescribing Trends and Compliance with Current JNC-7 Hypertension Guidelines. Nicholas Reed, Greg Watts. Butler University, Indianapolis, IN. Sponsor: Iftekhar Kalsekar

Background: Hypertension has been a serious health problem that has led to serious complications since it was first brought into the public spotlight in the 1960's. Numerous studies have looked at different ways to control hypertension, but there has yet to be a major study that looks at long term prescribing trends and physician compliance to the JNC 7 guidelines.
Study Objective: To examine and evaluate the prescribing trends of physicians for antihypertensive agents compared to the current JNC VII guidelines in newly diagnosed hypertensive patients.
Methods: The data source for this research project will be the National Ambulatory Medical Care Survey (NAMCS) database. Survey data will be compiled from 2003-2006 and compared to the JNC VII hypertension guidelines to determine if physicians are adherent. The following data will be extracted for each patient: age, gender, race, insurance status, presence of co-morbid conditions, blood pressure, type of antihypertensive medication prescribed, concomitant medications, and counseling provided by the physician. Medications prescribed by physicians will be identified using National Drug Code (NDC). Adherence to JNC 7 guidelines will be assessed on the basis of an algorithm constructed from the JNC 7 guidelines. The weighting provided by NAMCS will also be used to provide national estimates of the adherence rates. Additionally, a multi-weighted logistic regression analysis will be conducted to explore patient characteristics related to adherence of JNC 7 guidelines.
Significance: The goal of this study is to increase physician adherence to current evidence-based medicine guidelines which in turn improves patient outcomes.

10:00AM

The effect of inhaled corticosteroids on cardiovascular hospitalizations in patients with COPD. Lyndsay Gray, Jessica Love, Matt Speheger. Butler University, Indianapolis, IN. Sponsor: Julie Koehler

Background: Several studies have been conducted to determine whether inhaled corticosteroids (ICS) have an impact on COPD-related morbidity and mortality. Only one study demonstrated a significant reduction in mortality. This reduction was due to a decrease in cardiovascular death rather than death due to COPD.
Study objective: To further evaluate the effect of ICS on cardiovascular mortality and hospitalization due to cardiovascular events in patients with COPD.
Methods: A retrospective cohort study design will be used to meet study objectives. A computer-generated list of patients discharged with a diagnosis of COPD exacerbation from Methodist Hospital will be included in the study population. Patients will be randomly selected from this list for inclusion into the study if they fit within the pre-determined inclusion and exclusion criteria. Patients will then be categorized into one of two groups: those who received ICS and those who did not post-discharge from initial hospitalization. The primary outcome measures will include re-admission to the hospital due to cardiovascular cause or death due to cardiovascular cause. Secondary outcomes will include readmission to the hospital due to a COPD exacerbation and death due to COPD, cancer, or other causes. Descriptive statistics will be used to determine baseline characteristics of the study population and patients experiencing outcomes. A chi-square test will be used to compare differences among the treatment groups.
Significance: The goal of this study is to assess the cardiovascular benefits of ICS in COPD patients and provide further recommendations on ICS use following hospitalization due to COPD exacerbation.

Session F
Pharmacy Building, Room 106A
Moderator: Dr. Bailee Belcher

01:00PM

Retrospective Chart Review & Analysis of Antibiotic Use in Patients with Acute COPD Exacerbations. Erik Adamson, Phil Habing, Philip Habing. Butler University, Indianapolis, IN. Sponsor: Kevin Tuohy

Research Site: Methodist Hospital, Indianapolis, Indiana
Project Dates: January 1, 2007 through December 31, 2007
Objective: To evaluate the necessity and appropriateness of prescribing antibiotics when a patient presents with an acute COPD exacerbation.
Background: COPD is a major global health concern as it is growing in prevalence. Acute COPD exacerbations have been associated with significant morbidity, mortality, and health-care expenses. COPD exacerbations are frequently treated as respiratory infections with empiric antibiotic therapy, but only about one-half are caused by bacterial infections. There is a lack of studies that evaluate the appropriate or inappropriate use of antibiotics in these circumstances although criteria have been published regarding the recommended use of antibiotics in COPD exacerbations.
Methods: A retrospective chart review will be performed to meet the study objective. 100 patients admitted to Methodist Hospital with a primary diagnosis of COPD exacerbation between January 1, 2007 and December 31, 2007 will be randomly selected and reviewed. The patient ages will range from 18 to 89 years of age. The patients will be assessed using a data collection sheet that measures demographics (gender, age, race, etc.), past medical and social history, COPD medications, and clinical presentation

(vitals, worsening dyspnea, cough, labs, etc.). Appropriate statistical analyses will be performed. Data collection is currently in process.
Significance: The goal of the study is to evaluate the appropriateness of prescribing antibiotics to patients with COPD exacerbations. Overall results will be presented to Methodist Hospital prescribers in order to increase awareness of antimicrobial prescribing guidelines for COPD exacerbations.

01:15PM

Top Health Care Systems of the World. Scott Vouri, Matt Rettig, Ann Blank. Butler University, Indianapolis, IN. Sponsor: Erin Albert

Background: The WHO has identified the top 20 health care systems countries of the world. Analysis of these health care systems is needed for a better understanding of world health care and to further improve and educate the United States health care system and its people.
Objective: To Explore and write about the top 20 ranked health care systems in the world according to the World Health Organization.
Methods: Compiled list of WHO ranked top 20 healthcare systems of the world. Research was conducted on each country. Chapters were written and submitted to the Writers' Studio for editing. Students with assistance from mentor compiled chapters into a final book.
Results: Each country has formatted their healthcare system to best represent their culture, population, and political ideals. The way healthcare systems are run in one country will not necessarily work in another country. The size of the country may hinder its ability to change and adapt a new health care system. No country has either a fully universal or fully decentralized healthcare system. There are a lot of different health care systems used by the top 20 countries; however, some ideals could potentially be applied to the United States.
Conclusion: Letters collected and contacts made were limited. Book deadline is December 31st 2008. A book release in the spring is anticipated. The Book cover is by Dr. Gautam Rao-Dean of Media Arts Butler University and students. A grant provided by Johnson and Johnson will allow Butler Pharmacy graduate of 2009 a copy of the book for graduation.

01:30PM

Evaluation of Erythropoiesis Stimulating Agent Prescribing Patterns at the Clarian Hematology Oncology at Methodist Hospital Outpatient Clinic: A Retrospective Chart Review. Aaron Lanning, Phillip Buchanan. Butler University, Indianapolis, IN. Sponsor: Sheel Patel

Background: In 2007, the American Society of Clinical Oncology/American Society of Hematology (ASCO/ASH) updated their guidelines for the use of erythropoiesis stimulating agents (ESA) in patients with cancer. Prescribers are still adjusting to these guideline changes.
Objective: To identify prescribers' adherence to the updated ASCO/ASH guidelines regarding the use of these agents in anemic cancer patients at the Clarian Hematology Oncology at Methodist (CHOM) clinic.
Methods: A retrospective chart review study is being used to meet the study objective. The updates were published in January of 2008; therefore, patients who were started on an ESA, either epoetin alfa or darbepoetin alfa, from April 2008 through September 2008 will be identified and analyzed. Each patient's individual utilization of ESA therapy will be compared to the updated guidelines to give an overall picture of adherence by prescribers to these new guidelines. Areas that will be assessed include demographic information such as age and sex, along with patient specific information such as cancer diagnosis, treatment setting (adjuvant vs. metastatic), iron monitoring, agent choice and dose, and hemoglobin level at initiation of therapy.
Results: Preliminary data suggest lack of iron store monitoring prior to ESA initiation and iron supplementation during treatment. Data collection and formal analysis is still in progress.
Significance: The ultimate goal of this study is to create awareness of the updated guidelines and increase prescriber adherence to these guidelines.

01:45PM

Resources to Enhance the Achievement of Community Health for Indiana (REACH IN): Patient Perspectives. Danielle (Harman) Smuck, Valerie Ott. Butler University, Indianapolis, IN. Sponsor: Carriann Richey (Smith)

Background: There are currently no studies regarding patient perspectives of pharmacists in health professional shortage areas (HPSAs) in Indiana. Patients' perspectives of pharmacists are important because they may not be aware of the many services that pharmacists can provide to help meet their health care needs. In areas where health care professionals are in short supply, pharmacists may be an important, unknown resource for patients.
Objective: Determine current health care needs of patients living in federally designated full county HPSAs in Indiana that could be addressed by pharmacists. Methods: This is a survey based study. Surveys were distributed to 49 pharmacies located in federally designated HPSAs. Each pharmacy received 100 surveys. Pharmacies were asked to distribute all surveys on one day. Any patient using one of the selected pharmacies on the day of survey distribution aged 18 and older were asked to participate. Surveys were returned to Butler using prepaid return envelopes. The collected surveys were entered into an EXCEL spreadsheet for comparison and analysis. Results: Pending, at the time of submission 552 surveys had been returned. Implications: This information will be useful to Butler University when combined with the pharmacist portion of the REACH survey in order to identify communities that would benefit from new pharmacist services and especially those that may provide opportunites for students.

Session G
Pharmacy Building, Room 106B
Moderator: Dr. Nikki Wilson

01:00PM

Evaluation of Feeding Intolerance of Patients Placed in Pentobarbital-Induced Coma at Methodist Hospital. Jonathan Egel, Gabriel Stillabower, Josh McGehee, Nicole Ponton, Nicole Ponton. Butler University, Indianapolis, IN. Sponsor: Jane Gervasio

Background: Nutrition plays a critical role in recovery following traumatic brain injury. Increased caloric needs, access difficulties, and electrolyte abnormalities often undermine efforts to provide adequate nutrition in this population. There is much debate and insufficient evidence that this patient population can tolerate enteral nutrition; few studies are available which demonstrate that patients placed into pentobarbital-induced comas can tolerate enteral nutrition.
Study Objective: To determine if head injury patients placed into pentobarbital-induced comas are able to tolerate enteral nutrition. The secondary objective of this study is to identify characteristics of this population that may predispose them to feeding intolerance.
Methods: The study objective will be met by retrospectively examining patient charts at Methodist Hospital, Indianapolis, Indiana. A computer generated list will be used to identify patients receiving both enteral nutrition and pentobarbital for coma induction/maintenance during the study period, January 1, 2006 to October 31, 2008. Patients meeting criteria will be examined for evidence of and reasons for feeding intolerance. Data related to pentobarbital use and patient characteristics will be collected. Descriptive statistics will be utilized to describe the study population. Differences between patients who tolerated and those who did not tolerate enteral nutrition will be examined. Data will be analyzed using Statistical Package for Social Sciences (SPSS) for Windows.
Significance: Data will be used to identify if enteral nutrition may be safely delivered to head injured patients in pentobarbital-comas. Results will be presented to critical care and trauma practitioners with appropriate education implemented where needed.
Results: Pending
Conclusion: Pending

01:15PM

Current Drug Disposal Practices of the Indianapolis Community: A Patient Viewpoint. Lindsey Love. Butler University, Indianapolis, IN. Sponsor: Jeanne VanTyle

Background: Trace amounts of medications have been discovered in wastewater, rivers, lakes, and groundwater. However, water treatment systems are unable to remove the pharmaceuticals from the water. Therefore, the trace amounts of medications end up in the water Americans use to drink, cook, and bathe. There currently are no set guidelines for how patients should go about disposing of unused medications. It is no wonder, then, why patients are unsure of what to do with their old medications.
Objective: The objective of this study is to determine the current medication disposal practices of Indianapolis residents and to gauge this population's willingness to participate in proper disposal programs.
Methods: This is a multiple choice, survey based study that will be given at local pharmacies across the city of Indianapolis from IRB approval to March 31, 2009. The survey will contain eight questions and ask about their current disposal practices and willingness to dispose of unwanted or expired medications at designated locations. It will also categorize them demographically to see if age, education, or gender plays a role in their attitudes.
Significance: There is currently no data available for the disposal practices of Indianapolis residents, and there is also no definitive disposal program for the city. By determining current habits, it will be clear whether or not patients are dumping their pharmaceuticals into disposal areas most likely to end up in the water supply. This data will be a solid foundation from which to build disposal policies.

01:30PM

A magazine-style educational resource for the young female with diabetes. Rachael Schroeder, Mary Shea, Kristal Williams. Butler University, Indianapolis, IN. Sponsor: Kristal Williams

Objective: The objective of this project is to author a magazine-style diabetes educational resource for adolescent females. The magazine resource would be designed to educate early adolescent readers in a fun, interesting and innovative way about their medical condition by encouraging self-management and promoting a lifestyle of healthy living tailored specifically to their interests. Additionally, the magazine resource hopefully alleviate some of the stress and burden that young females feel toward their disease and lead them to feeling a sense of normalcy in their life.
Methods: After identifying the struggles of our pre – and early teen campers with diabetes, we extensively researched the available educational resources for children and adolescents with diabetes. The books reviewed targeted individuals between 5 – 11 years of age, with the majority targeting the younger, 5-7 year olds individuals. The diabetes education available on the internet is mostly targeted toward parents of children with diabetes to help them learn to care for their children. Overall our book and internet search found limited diabetes information and education for the pre – and early teen age group.
Significance: The specific purpose of this magazine-style resource guide is to provide age – appropriate, gender – specific education regarding managing diabetes. The educational content of the magazine will cover topics including the pathophysiology of diabetes, carbohydrate counting, appropriate treatment of hypo- and hyperglycemia, insulin therapy and sick day management, healthy eating and exercise and diabetes-related complications. Additionally the magazine will include stories and/or statements from females, of varying age and ethnicity, with diabetes.

01:45PM

Impact of the Type of ACE-inhibitor Initiated After an Acute Myocardial Infarction on Future Hospitalizations Due to Cardiovascular Complications. Ryan Kluber, Jonathan Klimek. Butler University, Indianapolis, IN. Sponsor: Iftekhar Kalsekar

Background: Since the introduction of angiotensin-converting enzyme (ACE) inhibitors into clinical practice in the early 1980s, there have been numerous ways discovered in which angiotensin II can be harmful to the cardiovascular system. In several trials, there have been reports of a specific ACE inhibitor reducing the incidence of morbidity and mortality. This has led to the assumption of a class effect of ACE inhibitors; however, the varying pharmacologic and structural characteristics of ACE inhibitors potentially influence the potency and bioavailability of each drug and could result in varying effectiveness.
Study Objective: To examine the impact of different ACE inhibitors on mortality and morbidity in patients with recent acute myocardial infarctions.
Methods: The objective of the study will be met using a retrospective cohort design. Patients discharged from the hospital with either a primary or secondary diagnosis code for an acute MI (ICD-9 code of 410.x1) between January 1, 2000 and December 31, 2005 will be identified using medical and prescription claims data of a State Medicaid program (Indiana State Medicaid). The study sample used will have to fill a prescription for an ACE-inhibitor within 60 days after discharge. The date of the first prescription for an ACE-inhibitor after discharge will be treated as the index date. These patients will be followed to examine the incidence of mortality and hospitalizations due to cardiovascular complications. Kaplan-Meier analysis and Cox-proportional hazards model will be used to examine differences in outcomes between the different ACE inhibitors.
Significance: The ultimate goal of this study is to aid in making important formulary decisions and assist physicians in choosing between ACE-inhibitors for reduction in mortality and cardiovascular complications after an acute myocardial infarction.

Session H
Pharmacy Building, Room 202
Moderator: Dr. Alex Ansara

01:00PM

Evaluation of Advanced Pharmacy Practice Experience Competency Requirements. Denise Kolanczyk, Andrea Sadtler. Butler University, Indianapolis, IN. Sponsor: Bruce Hancock

Background: The fourth year of the Butler University College of Pharmacy and Health Sciences(COPHS)pharmacy program consists of 10 four-week rotations. There is a comprehensive competency list, which must be completed by the end of 10 rotations. The competency sheet consists of a list of 76 tasks, 9 of which are optional. It does not provide equal task evaluation at each rotation site and type. Some pharmacy programs at other universities have opted to develop an individualized competency set for each type of rotation rather than a comprehensive set for the entire year.
Objective: To evaluate and implement competency sets individualized by rotation type rather than having a comprehensive set for all 10 rotations.
Methods: This is a cross-sectional survey based study. Rotation type specific rotations will be developed based on the current COPHS comprehensive set, rotation syllabi, competency sets used by other pharmacy programs, objective guidelines, and rotation experience. Feedback will be obtained from preceptors that are members of a Continuous Quality Improvement Committee. A trial run of the new competencies will be during the February and March 2009 rotation blocks. E-mail addresses for preceptors and PharmD Class of 2009 students will be obtained from the Butler University COPHS Rotation Coordinators. A Survey Monkey link will be sent via e-mail to the target population to evaluate the rotation specific competency sets in comparison to the

comprehensive set. The competencies will then be uploaded to a website for future pharmacy classes and preceptors to use.
Results: Pending
Conclusion: Pending

01:15PM

Roles of Pharmacy In Underserved Settings. Jesse Haines. Butler University, Indianapolis, IN. Sponsor: Jeanne VanTyle

Background: Many underserved clinics lack sufficient staff to handle all medication and treatment concerns. Having a pharmacist on available would provide a higher level of care for the patient in both prescription and disease state management. Many small clinics lack a pharmacy specialist at the site. This creates a higher work load for clinicians performing duties they may not be well-versed in.
Objective: To educate the medical community by highlighting some of the important roles a pharmacist can fulfill at underserved clinics.
Methods: The study objective will be met by visiting some of the underserved clinics in the Indianapolis area, interviewing the clinicians there, and observing where pharmacy can make a positive impact. Certain initiatives will also be taken to provide a system for prescription assistance program management at one clinic while helping to design a layout of an outpatient pharmacy at another.
Results: A pharmacist can make a clear impact at nearly every underserved clinic. They can do this by aiding the clinic in the enrollment process of patients in prescription assistance programs, providing pharmaceutical advice to clinicians, counseling patients on medications being prescribed, and dictating prescriptions to outside pharmacy staff.
Conclusion: Often times the area of underserved health care is overlooked by pharmacists. It is important that pharmacists are aware of the contribution they can make while pursuing their responsibility to the health care community. Pharmacists contributing to community health care could have a great positive impact.

01:30PM

A Collection of Patient Education Materials in a CD-Rom for Family Residents and Patients. Benjamin Pearson. Butler University, Indianapolis, IN. Sponsor: Deborah Zeitlin

Background: Family Practice physicians require proper patient education materials. Studies have shown that written materials given to patients to recall doctors' instructions increase patients' knowledge about their diseases and medications. The impact is to reduce medication errors and improve understanding, retention and compliance. Providing a proper storage system of patient education materials is a step towards an efficient healthcare system.
Objective: To create a collection of patient education materials into a CD-Rom for family practice residents.
Methods: A survey was administered to family practice residents and physicians in an outpatient clinic. Topics included were those deemed most important to residents and physicians based on a Likert scale. Patient education materials will be collected based on those results. Appropriate patient education materials will be taken from the current library of patient education materials available at the IU Methodist Family Practice Center, Clarian Health, Indianapolis, Indiana and reviewed to determine if revisions are required. Links to appropriate websites on each disease state will provide new and up to date information. The patient education information will be formatted on to a CD-Rom to increase accessibility for physicians. The CD-Rom will be distributed to the family practice residents when they graduate in June 2009. It will be for their personal use once they begin working in their own private practice.
Significance: Providing a physician recommended, patient-friendly, updated source of patient education materials for family practice residents will be a significant improvement to patient care through improved access to materials to increase patients' knowledge of illnesses and therapies.

01:45PM

Treatment of Enterococcus Bacteremia in a Hematology-Oncology (Hem/Onc) Population. Amy Lorenz, Gina Christofaro. Butler University, Indianapolis, IN. Sponsor: Jarrett Amsden

BACKGROUND: Infection is the leading cause of mortality in neutropenic cancer patients, and specifically Enterococcal infections have become an emerging cause of invasive infections in (hem/onc) patients. Furthermore, several studies have demonstrated a higher mortality in patients with Vancomycin-resistant Enterococcus (VRE) bacteremia compared to those with Vancomycin-sensitive Enterococcus (VSE). Thus, the purpose of this study is to evaluate and compare the outcomes of VSE and VRE bacteremic hem/onc patients at Clarian Health Partners.
STUDY OBJECTIVES: The primary objective is to evaluate the in–hospital mortality in hem/onc patients with VSE and VRE bacteremia. The secondary objectives are to evaluate preceding antibiotic exposure, length of hospital stay (LOS), time to sterilize the blood cultures, time to become afebrile, and readmission after 28 days.
METHODS: This is a retrospective comparative cohort study evaluating outcomes in patients with a hem/onc disease who have VSE or VRE bacteremia. Patients will be identified by querying a proprietary database MedMined which houses all microbiological data for Clarian Health Partners. Inclusion Criteria: patients > 18 years of age, hospitalization between January 1, 2008 and December 31, 2008, diagnosis of a hematologic-oncologic disease, and at least one positive blood culture with Enterococcus spp. Exclusion Criteria: patients with a history of Enterococcus spp. infection within the preceding 28 days of their admission or a polymicrobic infection. Patients in each cohort will be matched based on the following criteria:
1. Acute leukemia versus non-acute leukemia diagnosis
2. Absolute neutrophil count (ANC) categories of ANC 1000 mm3 at the time of the first positive Enterococcus spp. blood culture
3. Hematopoetic stem-cell transplant (HSCT) versus non-HSCT
RESULTS: This study included 20 patients (11 male, 9 female). Full data analysis and final results are underway.
SIGNIFICANCE: The outcomes of this study will help to determine if our current treatment strategy for Enterococcus spp. bacteremia is effective at reducing mortality. Any differences found during this study may help us better identify those patients with VRE and allow us to initiate early active antimicrobial therapy in these patients which should result in a more favorable outcome.

Session I
Pharmacy Building, Room 212
Moderator: Dr. Dennis Gardner

01:00PM

Assessment in the difference in availability of Plan B emergency contraception in rural and urban pharmacies. Kathy Corressell, Kortney Bolk, Kristen Nichols. Butler University, Indianapolis, IN. Sponsor: Dennis Gardner

Background: The very controversial emergency contraceptive pill, Plan B, became available over the counter to persons 18 years of age and older in December of 2006. Plan B can be taken within 72 hours of sexual intercourse to decrease the likelihood of an unintended pregnancy. This short time frame makes its ease of availability crucial. Some pharmacies have Plan B available, some can obtain it within about 24 hours and some refuse to dispense it altogether. Studies have shown that unintended pregnancies are more prevalent in rural areas, making ease of acquisition of such an emergency contraception drug in these areas very important.
Objective: Our objective is to determine if there is a difference in immediate availability of Plan B in pharmacies located in rural versus urban areas.
Method: Telephone surveys were conducted to randomly selected rural and urban pharmacies in Indiana to determine if Plan B was in stock. Each

county was classified as rural or urban based on the index of relative rurality. Proportional samples of rural and urban counties were selected and lists of pharmacies for each county selected were obtained per zip code using online yellow pages. From this list an equal number of rural and urban pharmacies were randomly selected to survey.
Results: Data collection is complete, but analysis is still ongoing.
Conclusion: To be determined upon completion of data analysis.

01:15PM

Assessment on the appropriateness of benzodiazepine therapy compared to antidepressant therapy for the long-term treatment of generalized anxiety disorder. Lynnsey Showers, Allison Worthington, Darin Ramsey. Butler University, Indianapolis, IN. Sponsor: Darin Ramsey

Assessment on the appropriateness of benzodiazepine therapy compared to antidepressant therapy for the long-term treatment of generalized anxiety disorder.
Introduction. Treatment options for Generalized Anxiety Disorder (GAD) include benzodiazepines, selective serotonin reuptake inhibitors (SSRIs), tri-cyclic antidepressants (TCAs), hydroxyzine, and psychotherapy. The current guidelines recommend SSRIs as the first line treatment option for GAD. The use of BZDs are only indicated for 2-4 weeks until an anti-depressant takes effect.
Problem Statement. The main objective of this study was to examine physicians' prescribing habits of BZDs compared to antidepressants for anxiety, and determine if these habits follow current recommendations.
Methods. This retrospective cohort study was conducted using patient medical records from the Richard L. Roudebush VA Medical Center in Indianapolis, IN. Patients must have a diagnosis of anxiety, GAD, or depression/anxiety and must have been prescribed a BZD between the dates of January 1st, 2007 and December 31st, 2007. The date of the first filled benzodiazepine prescription was used as the date of initiation of BZD therapy. A twelve-week follow-up period was utilized after the date of initiation of the benzodiazepine. Patients were excluded if they were prescribed antidepressants at monotherapy, had a diagnosis of any other psychological disorder, or if they received primary care outside of the Richard L. Roudebush VAMC. Descriptive statistics based on the data obtained from data collection sheets will be analyzed with Statistical Packages for Social Sciences version 16.0. Frequency distributions will be reported. Central tendency and variability will be examined for continuous variables
Results, Discussion, Conclusion: Available upon completion in June 2009.

01:30PM

Assessing physician compliance with the use of Ipratropium for the treatment of asthma exacerbations in the emergency room and upon hospital admission. Suzi Ritzi, Sabrina Douglas, Sheel Patel, Alexis Bamvakais, Laura Strunk. Butler University, Indianapolis, IN. Sponsor: Sheel Patel

Background: Asthma is a chronic inflammatory disease of the airways characterized by inflammation and bronchial obstruction. Ipratropium is an anticholinergic agent helpful as adjunct therapy to short acting beta blockers in the emergency care setting. However, it does not provide benefit after a patient is hospitalized for severe exacerbation and should be discontinued upon admission according to the National Heart, Lung and Blood Institute (NHLBI) Asthma Guidelines of 2007.
Study Objective: To assess prescribing patterns of ipratropium in the treatment of asthma exacerbations, thereby determining adherence to the NHLBI Asthma Guidelines.
Methods: This retrospective chart review is conducted at a tertiary care institution and includes patients in the emergency department experiencing an asthma exacerbation and subsequently admitted to an internal medicine or family practice service between October 2007 and May 2008. The study excluded patients less than 18 years of age, pregnant patients, and those with heart failure or COPD. Data collection includes age, gender, pertinent past medical history, exacerbation type, ipratropium use (in ED and/or upon admission), and concurrent medications for exacerbation.
Results: Data collection and analyses in progress.
Significance: The results of this study could improve patient care and reduce costs related to the management of asthma exacerbations.

01:45PM

Medication Therapy Management and Health Literacy Assessment through Healthy Horizons: the "Manage My Medications" Study. Pamela Burcham, Lindsay Saum, Christy Pelych. Butler University, Indianapolis, IN. Sponsor: Carrie Maffeo

Background: Medication Therapy Mangement (MTM) has been found to improve clinical outcomes for patients with chronic diseases and can provide a cost savings for the patient as well as third party payers.
Objective: To assess health related outcomes in patients that receive MTM services; determine if a correlation exists between level of health literacy, number of prescriptions, adherence score, and number of resolved MTM claims; assess the cost-benefit of an MTM service to a self-insured institution; conduct a baseline assessment of participants' health literacy.
Methods: Participants included are Butler University employees and their spouses/ domestic partners covered by Butler Anthem insurance taking 4 or more chronic medications or medications for one of the following conditions: dyslipidemia, hypertension, asthma, hypothyroidism, depression, anxiety, heartburn/gastroesophageal reflux disease or diabetes. Participants will undergo two appointments 2 to 3 months apart that will include a fasting lipid panel and glucose, blood pressure, weight, body mass inde and if appropriate HgA1C and/or TSH. Participant's adherence to their medication regimens and health literacy will be assessed. A health and medication history will be obtained for each participant including monthly cost of medications. The pharmacist will perform a MTM review, develop recommendations to optimize therapy and consent the healthcare provider will be contacted to discuss recommendations. Statistical tests will be conducted at the 0.05 level of significance. The statistical analyses will be conducted using Statistical Package for Social Sciences version 14.0 (SPSS Inc., Chicago).

Philosophy & Religion

Session A Religious Practice: History, Effects, and Implications
Jordan Hall, Room 201
Moderator: Dr. Chad Bauman

10:00AM

Breathe Slow, Jot Fast: An Exploration of the Effects of Meditation on Creative Writing. Samantha Atkins. Butler University, Indianapolis, IN. Sponsor: Marguerite Stanciu

Meditation practice has been used in many cultures for a variety of reasons throughout history, including religious practice, self-development, and applications in the field of the arts and sciences. The objective of this research was to explore the effects of sitting meditation practice on the creative writing process and its product. The thesis was that meditation would increase the writer's productivity, discipline, and focus. I served as both the subject and the observer, meditating and writing for set periods of time each week for nine weeks and documenting the reactions. After nine weeks, there was a large body of creative work produced and journals indicated that the most obvious effects of meditation on writing related to inspiration, discipline, and developing awareness of individual writing patterns and preferences. In conclusion, the research does not disprove or prove the thesis but rather provides an individual's insight on the topic

gained through experimentation. Thus, these findings describe specific examples of the insights gained as well as they explore further connections between meditation and other spiritual practices on creative writing through interviews with writers and academic research.

10:15AM

Breaking Bread: Reconnecting to the True Self through Individual and Communal Eating Habits. Annie Huey. Hanover College, Hanover, IN. Sponsor: David Cassel

In today's hurried world, a sense of disconnect with the true self seems to have become the norm among many people. One possible solution to this problem of disconnection is to become more thoughtfully in tune with and possibly actively alter individual and communal eating habits. The renewal of whole individuals within their communities is the intended end result of this thoughtful and active process.

10:30AM

Religious Involvement & College Students' Outlook on Life. Mele Cabral, Amy LaGrange, Henry Stern IV. Valparaiso University, Valparaiso, IN. Sponsor: Matthew Ringenberg

The aim of this study is to determine whether college students who participate in weekly religious services have a different outlook on life than students who do not participant in weekly religious services. It is hypothesized that those students who attend weekly religious services will have a more positive outlook on life. Previous studies have found that individuals with an increase of daily spiritual experiences are associated with significantly higher odds of being happy, excited, satisfied with self, and optimistic about the future (Ellison & Fan, 2007).
The primary purpose is to find if students on a religious campus, who attend the religious services, have a better outlook on their life compared to those students who do not attend these services. The findings of this study show a correlation between religious participation and a student's positive outlook on life.
The sample for this study is comprised of undergraduate Valparaiso University students. The data was collected from students in two locations on campus; the student union and the university chapel. A majority of students pass through the union daily so the students in that location are the best representation of the population. Intentional interviewing was used to survey those who were in attendance at the daily Morning Prayer at the campus chapel.
Hopefully this research will provide religious universities a context of how religious activities influence the lives of its students. It is hoped that this research will demonstrate the role that religious activities play in the lives of students, particularly with regard to life outlook.

10:45AM

Icons: A Comparative Look at the Development of Christian and Buddhist Icons. Keith Lohse. Butler University, Indianapolis, IN. Sponsor: Chad Bauman

The Development of religious icons can be a long and convoluted story. Most of these stories are quite unique, even though they may cross paths with each other from time to time. In the intriguingly unique case of Christianity and Buddhism the development is near parallel. My project and paper are about researching this development and looking at the theological basis for the occurrence. I am paying attention to the influences coming from the laypeople, communities, and cultures involved with and surrounding the early sects. I am also looking into the doctrines and beliefs of the founders to find any common threads that may have affected the development of these traditions and their icons.

Session B Epistemology and Morality
Jordan Hall, Room 201
Moderator: Dr. Stuart Glennan

01:45PM

The Integration of Reason and Morality: Aristotle's Concept of Phronesis. Rebecca Carhart. Taylor University, Upland, IN. Sponsor: Jim Spiegel

This presentation explores the virtue of phronesis, often translated "practical wisdom," which is a key component within Aristotle's ethics and his view of human reason. Though there are significant difficulties with Aristotle's division of the soul and his categorization of the virtues, his concept of phronesis offers valuable insights into how closely intellectual and moral life are related. Aristotle describes how phronesis oversees the combining of reason and desire in making moral decisions, thus enabling a person to choose wisely regarding practical matters. Applying Aristotle's concept to virtue epistemology, Linda Zagzebski expands the role of phronesis to encompass intellectual virtues as well as moral.
Aristotle defines phronesis as "a true and reasoned state of capacity to act with regard to the things that are good or bad for man," and he views this virtue as essential for achieving humankinds' proper end. This presentation explains Aristotle's distinctions between moral and intellectual virtues and between speculative and practical intellect. It compares phronesis to sophia, or speculative reason, and presents the major functions of phronesis as distinguished by Linda Zagzebski. The conclusion of this research is that practical wisdom is a necessary feature for a person of integrity, who must be virtuous in both thought and action and able to correctly relate the two. This concept is valuable for both ethics and epistemology, as well as simply in daily life.

02:00PM

On the Phenomenological account of James's Metaphysics. Ryan Commet. Wayne State University, MI. Sponsor: William Stine

In his paper, William James and Phenomenology, James M. Edie makes the claim that James's "Radical Empiricism" and his assessment of intentionality in such works as his Principles of Psychology show parity with the writings of the early phenomenologists, namely Husserl. In asserting this, Edie presents James's metaphysics as a sort rigorous idealism, which is a derivative of the primacy of experience in James's writings. However, as I intend to show, the bold metaphysical claims of pure phenomenological idealism do not lie within the realm of James's epistemic program. I will present James's metaphysics as a component of his epistemology, which emphasizes that the scope of personal experience limits our knowledge of the external world; however, as I will show, such limitations within James's epistemic framework do not permit us to deny the existence of external objects altogether. In elucidating the relationship between our knowledge and the ontology of external objects, I will show that the phenomenological account of James's metaphysics as found in Edie is unwarranted.

02:15PM

Paradigm Shifts and Incommensurability—Fighting the Trend of Relativity. Emily Mudge. Taylor University, Upland, IN. Sponsor: Jim Spiegel

Thomas Kuhn's theory related in his influential book, "The Structure of Scientific Revolutions" provides a more accurate analysis of the development of scientific knowledge than previous models, particularly the inductivist and falsificationist approaches, yet Kuhn's theory has been accused of denying scientific rationality. Two aspects of his theory have the greatest consequences for the rationality of science; these are the irrationality of paradigm shifts and paradigm incommensurability. Kuhn's theory fails to clearly distinguish between processes of science and non-science, which gives his theory applicability beyond philosophy of science

into other disciplines such as politics and religion, and a strong comparison can be made between religious conversions and a scientific paradigm shift. Individuals such as Paul Feyerabend have used paradigm incommensurability as justification for epistemic anarchism, which leads to relativity and personalization of all belief. I contend that Kuhn's theory does not support Feyerabend's epistemic anarchism; Kuhn is clear that within a paradigm there is a definite rationality. Furthermore, although paradigm shifts require a degree of faith rather than solely depending on rationality, science and knowledge formation in general is still a rational process. Our observation may be theory-laden but that does not eliminate the existence of external truth and science's progression toward it. Although Kuhn's theory does not deny rational knowledge, it does offer a healthy reminder that there are limits to scientific rationality.

02:30PM

Justification is a Signifier of Truth: A Solution to the Swamping Problem. Isaac Glahn. Hanover College, Hanover, IN. Sponsor: Jared Bates

Justified true beliefs are generally taken to be more valuable than merely true beliefs. This requires that the greater value of justified true beliefs be explained by the addition of justification. Justification for a belief seems to be valuable because it indicates that the belief is likely to be true, likelier than would be the case for an unjustified belief. However, it is unclear how a true belief which is likely to be true could be more valuable than a true belief which is unlikely to be true, and so it is unclear how justified true beliefs could be more valuable than merely true beliefs. This argument is known as the swamping problem and seeks to undermine the claim that the value of justification comes from indicating likelihood of truth. I intend to show that the value of likelihood of truth is not swamped by the value of truth, but in fact does explain the greater value of justified true beliefs. This is because we cannot be aware of the truth of a proposition unless we know the proposition, that is, have justification for the proposition. Thus justification alerts us to the truth of our true beliefs, and this alone can account for the greater value of justified true beliefs.

Session C The Ethics of War and a Philosophy of Medicine
Jordan Hall, Room 201
Moderator: Dr. Harry van der Linden

03:15PM

Peace at What Price? The Ethics of Private Military Contractors and Humanitarian Interventions. Reed Kurtz. Butler University, Indianapolis, IN. Sponsor: Harry van der Linden

The emergence and expansion of the private military industry has had profound impacts on the nature of war in the post-Cold War world. Private military contractors play an integral role in the modern military complex and as such have emerged as important actors in the international and domestic spheres. For some, these companies also provide an appealing alternative means of responding to humanitarian crises such as the genocide in Darfur that the international community has not sufficiently addressed. My project is a normative examination of the dilemmas faced with the possibility of utilizing the private military industry in humanitarian interventions and an analysis of the possible implications of such a policy shift.

03:30PM

A Process Philosophy of Medicine. Nicholas Zehner. Anderson University, Anderson, IN. Sponsor: Willard Reed

Despite the incredible scientific achievements of Modern Medicine, the current model it employs relies on flawed metaphysical assumptions. In exploring the application of the process philosophies of Alfred North Whitehead, Charles Hartshorne, and other process philosophers, a Post-Modern Model of Medicine can be developed. This Post-Modern Model of Medicine as understood in Marcus Fords "A Process Theory of Medicine," is characterized by the rejection of objectivism, that one can completely know something objectively, by the acknowledgement that science is not a value-neutral endeavor, that scientists bear some responsibility for their actions as scientists, and by rejecting disciplinary boundaries as narrow and groundless, originating in historical accidents. In this model, everything is understood in relation to everything else. True individuals are a result of their relationships to what already exists. This interrelation principle is the foundation and groundwork for this Post-Modern Model of Medicine and informs every aspect of its application.

Physics

Session A
Gallahue Hall, Room 348
Moderator: Dr. Xianming Han

09:00AM

Electromagnetically Induced Transparency of Rubidium Vapor. Thomas Tuegel. Butler University, Indianapolis, IN. Sponsor: Gonzalo Ordonez

Electromagnetically induced transparency (EIT) is a quantum mechanical effect caused by wave interference between electrons in the atoms of a medium excited by two different coherent light sources. EIT causes dramatic changes in the optical properties of the medium depending on the incoming light and can be used to amplify the interactions between two beams of light—interactions which normally occur only with very powerful lasers. EIT can also be used to slow down or stop the propagation of light through a medium. These effects have potential applications to quantum computation, quantum storage, and networking based on quantum entanglement.

09:15AM

Fractal Construction by Simulation of Quantum Random Motion. David Johnson. Butler University, Indianapolis, IN. Sponsor: Gonzalo Ordonez

A random walk or classical random walk is where a particle's trajectory consists of taking successive random steps. Aggregation of particles undergoing a classical random walk is used to generate fractal structures. Besides being a mathematical curiosity, fractals are observed in nature and the study of them has led to models of natural processes.

Recently, research has been done on adapting the classical random walk, so that it included quantum effects. Using the tools of quantum mechanics, the position of a particle in space is propagated. Little research has tried to aggregate particles undergoing a quantum random walk. And even then, such models are based on arbitrary calculation and don't utilize fundamental equations of quantum mechanics.

This project's goal is to adapt the quantum random walk into quantum random motion, where fundamental equations are instead used. The resulting structures wil be compared to those made by the classical random walk and quantum random walk. Possible applications of this research

include thin film forming techniques, low temperature chemistry, and advancement in material science in cases were both quantum and classical effects dominate. Also, the quantum random walk has been demonstrated to be useful in developing algorithms for quantum computers.

09:30AM

The Opto-Galvanic Effect. Lewis Parker. Butler University, Indianapolis, IN. Sponsor: Xianming Han

The Opto-Galvanic Effect (OGE) is an atomic phenomenon that occurs when an atom is quickly energized and then allowed to decay back to the ground state. For our experiment, a Category IV laser was used to energize the gas atoms in the cathode tubes, which contained mixtures of Carbon-Neon gas, Carbon Monoxide gas or Neon gas depending on which effect was being sought, and had a current across the cathode which was varied during the test. The experiment first used tubes that had been used the previous year to compare with newer tubes and their data was compared to see if the newer tubes could be used to gain better data. The experiment's setup and overall procedure was improved to be safer and to obtain more precise data. Different cathode tubes were used to explore a broader range of wavelengths where the effect is known to occur. The mixture of gases in the tubes affected how and when the OGE was formed and having multiple gasses in a tube allowed for more exploration but made finding an effect difficult. Using a tube containing a single gas helped researchers quickly find specific OGE's. The current and most applicable use of this type of experiment and its data would be the energy saving fluorescent light bulb application. Using different gasses and lower currents will allow a brighter and cheaper source of lighting, which will reduce electric bills and cut back on the emission of greenhouse gasses from power generating stations.

09:45AM

Assembly of a Testing Apparatus for Electron Position Sensing Devices. Kyle Obergfell. Butler University, Indianapolis, IN. Sponsor: Xianming Han

Through an agreement between Dr. Han Xianming of Butler University and Dr. Chen Xiangjun of the University of Science and Technology of China (USTC), I travelled to China and spent the summer in their electron spectroscopy lab. Here I worked in conjunction with Tian Qigou, another student, on the assembly of a test apparatus which could be used to evaluate the resolution of Position Sensing Devices (PSD). This chamber will be used to collect experimental data for the evaluation of a new PSD designed at USTC that will output the electron position in polar coordinates.

10:15AM

Growth and Evolution of the Central Black Hole in the Galactic Nucleus. Kim Phifer. Butler University, Indianapolis, IN. Sponsor: Brian Murphy

Recent observational evidence has given astronomers a better understanding of the galactic nucleus of the Milky Way. I have used the Fokker-Planck method in order to produce a computer model of the Milky Way with a central black hole and a surrounding cluster of stars as a function of time. Using this method, I set initial physical parameters and attempt to fit the model to the current observational data. The models show the growth of the supermassive black hole over time. From these models, I am able to determine the initial conditions of the Milky Way Galactic Nucleus and the primary growth mechanisms of the black hole.

10:30AM

Temperature Analysis of Galactic Bubbles. Utsav Hanspal. Manchester College, North Manchester, IN. Sponsor: Christer Watson

Employing data collected by the GLIMPSE and MIPSGAL surveys, we selected and analyzed 16 out of 322 galactic bubbles identified by Churchwell et al. (2006). Only bubbles with an overlapping 24 and 70 μm thermal dust emission (from MIPSGAL) in the interior of the bubble distinct from the 8 μm PAH emission (from GLIMPSE) towards the perimeter of the bubble were selected. Since the origin of the 24 and 70 μm fluxes is believed to be thermal, only those fluxes were measured for the analysis. Temperature of the large dust grains in the interior of the bubble was determined for each bubble by fitting a modified blackbody curve. A temperature range of 53 ± 9 K was observed. 8 sources with simple circular morphology were also analyzed to determine temperature dependence on radius. A power-law function (K/xa) was fit to this analysis to yield an a value ranging between 0.04 – 0.19. This small a value suggests that an undetermined combination of stochastic heating and Lyman-alpha heating may be responsible for the temperature trends of bubbles.

10:45AM

Lack of Triggered Star Formation. Abel Mengistu. Manchester College, North Manchester, IN. Sponsor: Christer Watson

In analyzing 8μm-emission from the GLIMPSE survey (Benjamin et al. 2003), Churchwell et. al (2006) identified bubbles of diffuse emission which were partially or fully closed. They argued this structure is largely due to excitation of PAH molecules and that they are formed by O/early-B stars that are pushing away their surrounding gas. If the surrounding gas is compressed as it is being pushed it may become gravitationally unstable possibly forming stars. 50 bubbles were selected from the catalog by Churchwell et al. (2006) for further study. We used the 2MASS Second Incremental Release Point Source Catalog and the GLIMPSE point-source catalog. We fit J-band to 8μm photometry with Monte-Carlo numerical models constructed by Robitaille et al. (2006). Observations were made on the YSO densities and distribution around the bubbles. A numerical simulation was also built and compared to the results.

11:00AM

Variability of Sun-like Stars in the Old Open Cluster M67. R. Wesley Tobin. Ball State University, Muncie, IN. Sponsor: Robert Berrington

Few physical processes can affect the earth's climate on a global scale. The variable irradiance of the Sun is one such process. The Sun is known to vary by about 0.2% due to Sunspots and other surface activity. We do not yet know whether the Sun's variability is normal. Similar activity in other stars has shown variability averaging near 20 millimagnitudes for stars with Sun-like spectral type. Understanding how our Sun compares to other stars has important relations to stellar astrophysics as well as astrobiology. The age (4.2 Gyr) and metallicity (0.03 [Fe/H]) of the stars in M67 are similar to the Sun (4.57 Gyr and 0.02 [Fe/H]). Combining these facts with the cluster's location and size and it is evident that M67 is a perfect astrophysical laboratory for studying solar-type variations.

We present the results of the first season of observations and analysis for both single and binary Sun-like stars in M67. We find several known variable stars with comparable amplitudes of variability. Our best photometric precision is 10 millimagnitudes, ranging as high as 20 millimagnitudes for Sun-like stars. Variability is detected as low as 20 millimagnitudes in amplitude. Finally, we also present an analysis of the limits of observation using a small research-grade telescope.

11:15AM

Search for X-Ray Pulsations from the Radio Pulsar PSR J0631+1036. Lynda Wilkinson. Anderson University, Anderson, IN. Sponsor: John Millis

The pulsar PSR J0631+1036 lies in the Galactic anticentre in the constellation Monoceros. The source is approximately 43,000 years old, as determined from measurements of the pulsar's period

and period derivative, and has a relatively long rotational period of 288 milliseconds. An original source distance of 6.5 kpc was determined using the observed dispersion measurement of 125 pc
cm-3. However, this value was later reassessed to 1 kpc, because it is believed that the high dispersion measurement was a result of the source's position inside or near the dark cloud LDN 1605.
This pulsar was first observed by the Arecibo Radio Telescope in Puerto Rico in 1994, and thought to be interacting with, or embedded inside, dark cloud LDN1605. The pulsar was then investigated further by the Einstein X-ray Space Telescope which detected X-ray pulsations consistent with the radio period. However a positional discrepancy of 75" from the Arecibo result was found, prompting a further investigation using the XMM-Newton Space Telescope. Preliminary, unpublished results from the XMM-Newton study indicate no X-ray source in or near the Einstein error circle. This, and a subsequent radio study from the VLA, support the initial Arecibo result. However, given the discrepancy with the Einstein result, it is clear that further investigation into the nature of the X-ray emission in the region is warranted.
This research utilized the XMM-Newton Space Telescope to investigate both the radio source position and surrounding areas including the Einstein error circle, to determine the precise morphology of the X-ray emission for this region.

11:30AM
The Emergence of Spacetime in String Theory. Nate Vander Werf. Indiana University-South Bend, IN. Sponsor: Rolf Schimmrigk

In order to be consistent as a quantum theory of gravity, string theory requires that our universe have additional dimensions. The extra dimensions form a particular type of geometry called Calabi-Yau manifolds. A fundamental open question in string theory over the past two decades has been the problem of constructing a direct relation between the physics on the worldsheet and the emergence of spacetime. The strategy used in our work is to use methods from arithmetic geometry to find a link between the geometry of spacetime and the structures that define the theory on the string worldsheet. The approach involves identifying modular forms that arise from the Omega and other motives of the intermediate cohomology with modular forms derived from underlying conformal field theory. The aim of this talk is to describe the first steps in our project to provide a string theoretic interpretation of modular forms derived from K3 surfaces of Brieskorn-Pham type and then see whether it is possible to extend the string analysis of these surfaces to K3 motives of higher rank. The problem involves the calculation of number theoretic constructions called Jacobi sums. Some of the Jacobi sums form Omega orbits that can be used to construct a L-series and q-expansion. The problem then is to see if the q-expansion can be factored into Hecke-indefinite modular forms that might be of some use in understanding the relation between the worldsheet and geometry of spacetime.

Session B
Gallahue Hall, Room 348
Moderator: Dr. Xianming Han

01:30PM
AFM Studies of conducting polymer P3HT on Mica, Live Gold Electrode Gaps, and Pre-flight samples for MISSE-7. Tsega Mengistu. Manchester College, North Manchester, IN. Sponsor: Gregory Clark

The self-assembly properties of P3HT (Poly-3-hexylthiophene), a conducting polymer, on mica and live Gold electrode gaps was investigated using an atomic force microscope. Pre-flight samples for the Materials International Space Station Experiment 7 (MISSE-7) were also analyzed. Tapping mode imaging was used to observed surface steps in mica with both drop cast and spin cast P3HT dissolved in chloroform. Pearl-like structures as the step edges and a consistent band of P3HT at these same locations were observed. Dielectrophoresis of P3HT in chloroform and p-xylene was attempted to induce the growth of nano-fibers between the live gold electrodes.

01:45PM
Radiative Decays of the J/? Meson. Bethany Reilly. Taylor University, Upland, IN. Sponsor: Joseph Ricke

I have measured the branching ratio of the decay psi(2S) to four pions (two positive, two negative) and a photon using data consisting of approximately 26 million psi(2S) events from the CLEO-c particle detector at LEPP during my summer REU at Cornell University. I modified a C++ program that had been designed for a reasonably similar analysis in order to perform my analysis. I used several methods to deal with the issue of background contamination due to neutral pion events in the signal, as well as to avoid losing as few as possible good events. The branching ratio has been measured as: (2.64 +/- 0.02 +/- 0.14) * 10^(-3).

02:00PM
Kinetics of Heating and Cooling of Nanoparticles in Pulsed Laser Fields. Christian Iversen. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Renat Letfullin

In the present paper we perform the time-dependent simulations and detailed analysis of the different nonstationary pulsed laser-nanoparticle interaction modes, and show the advantages and disadvantages of multipulse (set of short pulses) and single pulse laser heating of nanoparticles. The laser heating of nanoparticles is very sensitive to the time structure of the incident pulsed laser radiation, the time interval between the pulses, and the number of pulses used in the experiments. A comparative analysis for both radiation modes (multi-pulse and single-pulse) are discussed for laser heating of nanotargets in nanosecond, picosecond and femtosecond time scales to make recommendations for efficient laser heating of nanomaterials in the experiments.

02:15PM
Optical Properties of Normal and Cancerous Cell Organelles. Molly Gillam. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Renat Letfullin

The field of optics offers several technologies that may be developed to serve as cancer detection devices or specific therapeutic agents. Progress towards the development of these new optical technologies in cancer diagnosis and therapy requires the investigation of the optical properties of normal and cancerous cell organelles. In the present paper we perform comparative computer simulations of the absorption and scattering efficiencies for normal and cancerous cell organelles and determine the optimal laser parameters for cancer diagnosis and therapy. These simulations are performed by using Mie diffraction theory at the single-scattering approximation. We have examined the effects of size and refractive index on the light-absorbing properties of normal and cancerous cell nuclei, mitochondria, and ribosomes in the cytoplasm.

02:30PM
Short and Ultrashort Laser Pulse Heating of Bone Tissue. Colin Rice, Renat Letfullin. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Renat Letfullin

Bone is a complex biological tissue, with organic and mineral phases. The interaction between the different types of bone tissue and short/ultrashort laser pulses holds great interest in laser medicine, including laser dentistry. High laser energy densities in ultrashort pulses can be focused on a small irradiated surface (spot diameter is 10–50 μm) leading to rapid temperature rise and thermal ablation of the bone tissue. Ultrashort pulses, specifically those in the picoseconds and femtosecond ranges, impose several challenges in modeling bone tissue response. In the present paper we

perform the time-dependent thermal simulations of short and ultrashort pulse laser-bone interaction in single pulse and multipulse (set of ultrashort pulses) modes of laser heating. A comparative analysis for both radiation modes is discussed for laser heating of different types of the solid bone in nanoseconds, picoseconds and femtoseconds time scales to make the recommendations for efficient laser treatment of bone tissue for the laser surgery and dentistry.

02:45PM

Measuring Faraday Rotation with an Alternating Magnetic Field. Michael Gehl. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Maarij Syed

Faraday rotation is a magnetically induced circular birefringence observed in certain materials. Linearly polarized light traveling through such a material will experience a rotation in its plane of polarization. The amount of rotation is typically represented as the product of the magnetic field strength, the propagation distance and a material dependent constant, known as the Verdet constant. In the past this constant has been measured with steady state magnetic fields applied to the material. Recently, several groups have demonstrated the use of alternating magnetic fields in performing these measurements. The use of an alternating field allows the measurements to be recovered with a lock-in amplifier, leading to a large increase in sensitivity. Using this technique, polarization rotations as small as 10E-5 radians can be measured. With this ability, very thin samples and samples with low Verdet constants can be investigated. Measuring such small rotations, however, requires care to avoid excess noise and false signals. In this presentation we discuss the challenges associated with this technique, and ways in which they can be overcome. Additionally, we present some of the results we have collected using this method.

Political Science

Session A Political Dillemmas in the Construction of the Future
Jordan Hall, Room 203
Moderator: Dr. Craig Auchter

11:00AM

A Guide to Understanding Rural Hospital Construction and Expansion, 1946 to 2008. Sarah Davis. Hanover College, Hanover, IN. Sponsor: Ruth Turner

Rural hospitals are constructed and expanded under a basic set of rules. The expansion or construction of a hospital is dependent on three variables: financial means, assessment of need, and lack of competition. Hospitals are forced to expand or construct a new facility to fulfill their basic functions (financial stability, public support, and excellence of care). The process of construction or expansion becomes complex as political entities, public opinions, and government funding intertwine. For my study, I use Harrison County Hospital in Southern Indiana as an example of the process of expansion and construction. Starting with the Hill-Burton Act of 1946 and continuing to the hospitals construction in 2007, I review the political dilemmas, the financial problems, and the public's response to this hospital over the years. I also make predictions for the future of rural hospitals based on current and future legislation concerning insurance and the uninsured.

11:15AM

Patriots, Plumbers, and Our Better Angels: The Establishment of Ethos in the Rhetoric of the 2008 Presidential Campaigns of Sens. John McCain and Barack Obama. Ryan Hehner. Butler University, Indianapolis, IN. Sponsor: Carol Reeves

With the 2008 Presidential election now at last concluded, the timing is right for an analysis of the rhetoric used throughout the campaigns. The focus of this paper is the rhetoric of the candidates for the two major parties—Republican John McCain and Democrat Barack Obama. This paper examines the various ways in which the two candidates attempted to establish rhetorical ethos during their respective campaigns. In order to study the use of ethos by both candidates, I analyzed video and transcripts from six speeches from both campaigns. In consultation with rhetorician Dr. Carol Reeves, I chose six speeches for each candidate. The resulting analysis shows the tendency of both candidates to recycle past successful Presidential rhetorical tactics, and highlights the differences and varying levels of effectiveness of the means of establishing ethos, especially near the end of the campaign. Senator Obama’s ethos is demonstrated to be more consistent and more effective.

11:30AM

More than Minimal: Judicial Minimalism and the October 2006 Supreme Court Term. Sean Clerget. Wabash College, Crawfordsville, IN. Sponsor: Dr. Melissa Butler

Are issues such as affirmative action, abortion, gay marriage, separation of church and state, or free speech important to you? If yes, then understanding the Supreme Court and how the Justices make decisions should be of interest. During Senate confirmation hearings, Senators question judicial nominees in order to discern how the nominee would rule on certain issues. Understanding how judges decide cases is not only a political issue, but is also the subject of scholarly debate. Recently, University of Chicago Professor of Law Cass R. Sunstein published a book arguing in favor of a theory of judicial decision making called "Judicial Minimalism." Judicial minimalism means leaving things undecided through “narrow” or “shallow” rulings, and often focuses on “promoting democratic debate” in the other political branches. Sunstein argues that Justice Sandra Day O'Connor led the way for judicial minimalism and that the theory has repeatedly been practiced by multiple justices. Other Scholars however argue that his theory only applies to Justice O’Connor and not to other Justices. One goes so far as to say that the theory of Judicial Minimalism will retire along with Justice O'Connor. Now that she has retired, this paper sets out to determine how judicial minimalism was used in the first full Supreme Court term following Justice O'Connor's retirement.

11:45AM

The Bias Box: Television News Sources, Political Party Affiliation, and Democracy. Jeremy Castle. Hanover College, Hanover, IN. Sponsor: Dr. William Kubik

Political Scientists recognize television as an important source of information for voters, but mass media scholars frequently express concern over bias in television news. There is a great deal of debate over whether television news sources have a liberal or conservative bias, in part because scholars have identified potential sources for both types of bias. This paper uses statistical analysis of the 2000 National Election Survey to demonstrate that exposure to either local or national television news programs makes viewers more likely to identify with the Democratic Party. In addition, the paper explores the relative strength of this bias compared to classic party affiliation predictors such as income and education, finding that television news viewership is a comparatively strong predictor of party affiliation.

Session A Health, Sexuality, and Social
Jordan Hall, Room 216
Moderator: Dr. Brian Giesler

09:00AM

Religiosity and Health: Associations and Possible Explanations. Elliot Spengler, Nicole Ehlert, Kate Wainwright, Aliza Strock, Stephanie Guetig. Butler University, Indianapolis, IN. Sponsor: Brian Giesler

Past work has repeatedly demonstrated that religiosity and health are correlated. Across a range of populations, religious and spiritual variables have been shown to predict physical health, mental health, and more generally, overall well-being (see reviews by Powell, Shahabi & Thoresen, 2003; Rew & Wong, 2006; Seeman, Fagan & Seeman, 2003). What remains unclear is why religiosity is (usually) positively related to health. Researchers have suggested a variety of mechanisms that may account for this relationship, including improved social support, increased ability to self-regulate, and greater likelihood of engaging in protective health-related behaviors (e.g. lower intake of alcohol, etc.). The planned survey study will be used to examine several of the leading theories that might explain this relationship as well as explore some additional explanatory variables that have to date received little attention. Butler University undergraduates from introductory psychology courses and various campus organizations will complete the planned survey, which will contain a combination of previously validated as well as newly constructed measures. Regression analyses will be used to determine the percent of variance in health accounted for by religious and spiritual variables and to what extent potential mediators can account for the anticipated associations between religiosity and health.

09:15AM

Religious and Sexual Identity Among LGB Individuals Raised Christian. Kelli Hammes. Ball State University, Muncie, IN. Sponsor: Heather Adams

The present study examines religion and spirituality as lesbian, gay, and bisexual (LGB) college students experience them. The study is anchored in feminist standpoint theory (FST) (New, 1998), which assumes knowledge is perspectival and influences an individual's view of social relations and individual experiences and interpretations. Following this theory, research considerations of a person's location in multiple social groups produces a more subtle and complex understanding of their experiences. This project aims to address this goal by exploring participants' locations in two important identity realms- sexuality and religiosity.
Religious lesbian, gay, and bisexual college students often experience simultaneous identity domains of religion and sexuality, and closer examination of this 'standpoint,' is relevant for multicultural research in academia and appreciation for diversity. Greater knowledge of this identity conflict and its resolutions may assist contribute to this growing area of knowledge. Participants in this study were recruited from a local LGB community organization at Ball State University, and the study consists of about six formal interviews. The data was transcribed and analyzed with a general thematic analysis. The two main issues explored include: negotiation of conflict between sexual orientation and religious beliefs and resolutions techniques associated with this conflict.

09:30AM

Sex Differences and Antigay Bias in Responses to Same-sex Stimuli. Christine McLean. Ball State University, Muncie, IN. Sponsor: George Gaither

Adams, Wright, and Lohr (1996) demonstrated that homophobic men were more aroused by a video of male-male sex than were non-homophobic men using a penile plethysmograph to assess sexual arousal, suggesting that homophobia may be a defense mechanism against one's own same-sex attractions. This study received a great deal of media attention, but a literature review suggests that it's never been replicated, and has even been contradicted by a study using startle response as a measure of sexual arousal (Mahaffey et al. 2005). The current study examines the relationship between homophobia and college students' time spent viewing and categorizing different types of pictures, including nude males and nude females. The sample population consisted of 18 students (women = 9, men = 9) in psych100 at Ball State University. Data have been collected and the analyses are currently ongoing. The experimenters will conduct zero-order correlation analyses (separately by participant gender) to identify relationships between scores on the IAH and categorical responses (the percentage of nude male pictures that the participant categorized as "negative" rather than positive, neutral, or sexual) to the pictures, as well as reaction times in making the classifications. Following the findings of Adams et al., we expect to find positive correlations between IAH scores and: (a) the percentage of nude male images that men categorized as "sexual" and (b) reaction times (higher homophobia being related to more time spent viewing nude male images). Results will be discussed in the context of the idea that homophobia is a sign of repressed homosexality.

09:45AM

What do students want to learn from a human sexuality class? A qualitative study of students' first-day interests. Erica Lindburgh, Christian Driver. Ball State University, Muncie, IN. Sponsor: Heather Adams

Among several starter questions on the first day of class, students were asked to write three things they would like to learn in this course, followed with a discussion of some of their responses. This allowed the professor to provide relevant information and create expectations for the course. It also demonstrates to students a postmodern feminist perspective, providing personal and relevant information, and emphasizing the deconstruction of students' lived experiences as a guide for the course. Data was collected from approximately 400 students in two different sections of the course, for a total of 1,200 questions. These questions were then analyzed through qualitative general thematic analysis to develop categories of types of questions asked. Frequency counts were then conducted for each category. The goal was to learn what students were interested in learning in a human sexuality class, which is valuable information for human sex instructors.

10:00AM

The Influence of Sexually Explicit Material on Women's Sexual Behavior and Attitudes. Shanna Sutherland. Hanover College, Hanover, IN. Sponsor: Ellen Altermatt

This study was designed to examine the influence of sexually explicit material (SEM) on women's sexual behavior and attitudes. The study tested competing feminist views on SEM. Anti-pornography feminists believe that viewing SEM will be associated with more negative sexual behaviors and attitudes. In contrast, pro-sex feminists believe that viewing SEM will be associated with more positive sexual behaviors and attitudes. These views were tested by having women fill out an on-line survey. Participants were asked to report on experience with SEM in their life time and the previous year and their reasons for viewing SEM. Next, they were asked to report on the attributes that were most important to their concept of self and, also, what attributes they look for in a sexual partner. Finally, they were asked to report on what types of sexual behaviors they participated in during the previous year. Consistent with the anti-pornography stance, it is expected that women who frequently view or read SEM will be more likely to objectify themselves, more likely to objectify men and more likely to participate in high-risk sexual behavior. Also, it is expected that women who frequently view SEM will report doing so primarily because it gives gratification to males.

10:30AM

Hate Group Impressions of Barack Obama: Pre and Post the 2008 Election. Kristina Wesler. Hanover College, Hanover, IN. Sponsor: Stephen Dine Young

With Barack Obama's win as US President, history has been made. This historical change raises the possibility that racial attitudes will also change. One group of particular interest is those people who hold explicitly racist views, particularly toward African-Americans. How will openly racist people understand this new power shift? How will they respond to a black nomination? It seems likely that this shift can be seen in the attitudes directed toward Obama himself. A content analysis of fifteen hate group websites was undertaken in order to determine racist perspectives pre- and post-election. Three different websites were used for each of five racial hate categories. From those websites, ten forums and twenty posts within each forum were analyzed. Posts from the month before and the month after official national elections were analyzed. Posts were coded for both the writers' representations of Barack Obama (e.g., as an animal, as a communist, etc.) and their suggested behavioral responses to his Presidency (e.g., violence, racial segregation, etc.). Connections will be made between representations and behavioral responses and both categories will be compared before and after the election. The study highlights continued racial discrimination within the political sphere and has practical implications for home-grown terrorist efforts because of attitude-behavior connections.

10:45AM

Race, Interrogation, and the Perception of Guilt. Meredith Elliott, Seyram Kekessie. Hanover College, Hanover, IN. Sponsor: Bill Altermatt

In this study, researchers investigated the effects of racial stereotypes regarding anger and how those perceptions would influence a juror and the perception of the interrogator who appears to be aggressive. There were two interrogation conditions (mild and harsh) and two race conditions (Black and White). Participants completed a survey that measured their perceptions of suspect guilt and the appropriateness of interrogator behavior, in addition to a questionnaire based on the Modern Racism Scale (McConahay, 1986). Participants completed the survey online and randomly viewed one of eight conditions involving Black and White interrogators and suspects with either mild or harsh interrogation styles. In the Black interrogator - harsh interrogation condition, we expect jurors to see the interrogator as inappropriately aggressive and the suspect as less guilty as compared to when the harsh interrogator was White.

11:00AM

Explicit and Implicit Gender in the Context of Gender Schema Theory. Jacob Cooper, Karin Schubert. Hanover College, Hanover, IN. Sponsor: Bill Altermatt

Gender researchers have long engaged in heated controversy over psychological differences between women and men; thus, the methods by which researchers measure gender are constantly being scrutinized and adjusted. Recent gender studies have sought to determine whether implicit, automatic reactions can be used to measure participants' gender self-concept. This study used the Implicit Associations Test (IAT; Greenwald, McGhee & Schwartz, 1998) to examine the effectiveness of assessing gender self-concept using a two-dimensional model (in which it is possible to score high on both masculinity and femininity) versus a one-dimensional model (in which masculinity and femininity are opposite ends of a bipolar scale). A two-dimensional measurement of gender self-concept is more consistent with gender schema theory, and also more consistent with the explicit measurements which are currently being used to study gender (specifically the Bem Sex Role Inventory). For the two-dimensional model, two separate IATs assessed participants' automatic associations between 1) self and feminine and not feminine traits and 2) self and masculine and not masculine traits. The one-dimensional model was adapted from a study by Greenwald and Farnham (1998). It consisted of a single IAT which assessed participants' automatic associations between self and feminine and masculine traits. A people-things occupational preference questionnaire was also administered, adapted from Prediger (1982) and Lippa (1991, 1998). The researchers expect that the two-dimensional model will predict scores on the people-things occupational preference questionnaire better than the one-dimensional model.

11:15AM

Moral Judgments in the Third Dimension. Lee Harp, Jennifer Caudill. Hanover College, Hanover, IN. Sponsor: Bill Altermatt

This study examined the effects of priming the participant's emotions on their subsequent moral judgments. Participants were randomly assigned to a control, elevation, disgust, or purity condition. Each condition contained photographs selected to elicit the emotion reflected in the individual's assigned condition. The goal of this study is to determine whether participants who are primed with disgust-content photographs will be more judgmental (will judge a transgression as more wrong) on various moral judgments than participants primed with purity-content photographs. The present study will examine whether participants primed with purity-content photographs will be less judgmental than participants in the neutral condition. Purity-content seems to be the opposite of disgust-content. Whereas purity-content involves the removing or the absence of contamination properties, disgust-content involves the addition or presence of contamination properties. However, the emotions of disgust and elevation appear to have opposing functions. Moral disgust is the emotion experienced upon witnessing the agent giving into his or her lower, animal nature whereas elevation is experienced upon witnessing the agent appealing to his higher, uniquely human nature. The specific relationship between purity and elevation is unclear. Therefore, this study will also look at the relative effects of exposure to elevation-content photographs to purity-content photographs on moral judgments.

11:30AM

The effects of facial similarity on displaced aggression. Kristen Brookes, Zach Liapis. Hanover College, Hanover, IN. Sponsor: John Krantz

This experiment explores the ideas behind genetic psychology, unconscious altruism and aggression. Previous research has examined similarity on the basis of beliefs. These studies have shown that participants were more likely to aggress against people that had dissimilar beliefs to their own. The current study examines whether or not facial similarity produces the same results in effect that participants are more likely to aggress against those with dissimilar faces to their own. This experiment studies the effects of facial similarity on the expression of displaced aggression. In this experiment the participant's faces were morphed with stock photos to various levels (10%, 20%, 30%, 40%, and 50%). Participants were first given a frustration task, their frustration levels were measured on a self-report Likert scale from 1-15. After completing the frustration task, the participants were then given two tasks one a forced choice tasks in which the participants had to aggress against the photos by administering varying amounts of vinegar to a glass of water that they are told will be given to the subject. The second task was a continuum in which the participants were asked to divide the vinegar amongst the photos giving as much or as little to each as they wish. We expect to find that participants are more likely to displace their aggression on the photos of the lowest morph therefore holding aggression from those who are more facially similar to themselves.

Session B Cognitive
Jordan Hall, Room 236
Moderator: Dr. Mandy Hege

09:00AM
I May Have Memory Problems, But They're Nothing Like Ethel's: Self-Perceptions in Spouses of Dementia Patients. Amanda Zolman, Lindsay R. Palmer, Patrick Healey, Diane Healey. Butler University, Indianapolis, IN. Sponsor: Tara Lineweaver

Accurately detecting dementia relies on valid self-perceptions of memory. Previous research indicates that having a first-degree relative with Alzheimer's disease causes adults to be more concerned about their memory and more accurate at judging their memory abilities. However, little research has examined spouses of dementia patients. This study investigates whether older adults' memory self-perceptions are impacted by having a spouse with dementia, and whether this depends on the spouse's degree of dementia. We expected that spouses of dementia patients would form opinions about their own memory by comparing their memory successes and failures to those of the patient. As a result, those with spouses in the milder stages of dementia would have more concern for their own memory than those with spouses in the later stages of the disease. To date, eight spouses of patients with dementia have completed tests of memory self-perceptions, auditory memory, and visual memory. In addition, information about the date of diagnosis was available for spouses of four participants. One sample t-tests compared participants' self-perceptions to normative standards for their age. Participants scored significantly above age norms. For those participants with available data, the length of time their spouse had been diagnosed with dementia correlated negatively with self-report measures, even when age was statistically controlled. Thus, results to date suggest that spouses of dementia patients view their memory positively, but, contrary to expectations, show a trend of declining self-perceptions as their spouses' dementia progresses.

09:15AM
Can Eye Interrupt? The Effect of Auditory Distraction, Visual Distraction & a Simple Intervention on College Students with ADHD. Jenna Pierce, Samantha Campbell, Eric Massey, Suneeta Kercood. Butler University, Indianapolis, IN. Sponsor: Tara T. Lineweaver

We investigated how college students with ADHD are impacted by various types of distractors in their environment while completing visual and auditory working memory tasks. We also examined the use of an intervention known to be effective with young children with ADHD. We hypothesized that auditory distractions would decrease performance on auditory working memory tests, whereas visual distractions would interfere with visual working memory. Additionally, we thought the intervention would improve performance for college students with ADHD, but that it would not effect college students without the disorder.
In Study 1, 37 college students diagnosed with ADHD completed two auditory and two visual working memory tests. We tested one third of the participants in a distraction-free environment, one third while sitting next to a laptop screen displaying a series of candid photos (visual distraction), and one third while playing a recording of college students conversing (auditory distraction). Results indicated that visual distractions impaired auditory, but not visual, working memory. Auditory distractions did not significantly effect either type of working memory.
In Study 2, the same 37 college students with ADHD, along with 26 controls, completed two additional working memory tasks. Half of the participants in each group performed the tasks with the intervention, which involved playing with a small plastic toy. Results of this study indicated the no intervention group significantly outperformed the intervention group on one of the two measures, regardless of diagnosis. These results suggest that the intervention distracted all students equally, both controls and those with ADHD.

09:30AM
Memorattention: Adults Fail to Distinguish Memory from Attention When Forming Self-Judgmenmts. Madison Hurd, Katie Berg. Butler University, Indianapolis, IN. Sponsor: Tara T. Lineweaver

Previous research regarding memory self-efficacy, or beliefs about one's own memory abilities, has shown weak relationships between self-reports and a person's actual memory, with stronger relationships documented between self-reports and mood. To investigate how people formulate their ideas about their own memory function, we examined the possible influences of attention and intelligence on memory self-efficacy ratings. Thirty-nine undergraduate students completed tests of memory self-perceptions, intelligence, attention, auditory memory, visual memory, and mood. In addition, participants completed four prospective memory tasks (i.e., remembering to do something at a later time). Correlational analyses examined the relationships between memory self-reports and the other test measures. For memory tests, significant correlations ($p<.05$) emerged between memory self-efficacy and total scores across two visual memory tests. Interestingly, none of the verbal memory measures nor prospective memory shared significant relationships with memory self-reports. Memory self-reports correlated more strongly with attention measures than with any of the memory test scores. However, the relationship between memory self-reports and intelligence was weak. Finally, surprisingly, neither depression nor anxiety significantly predicted memory-self reports. Current results highlight the complexity of adults' memory self-efficacy judgments, and indicate that when typical adults judge their memory ability, they may not only focus on visual over verbal memory skills, but likely also consider other cognitive proficiencies that contribute to memory successes in everyday life. These results suggest that typical adults define memory more broadly than memory researchers and that researchers conducting future studies should take that into account when they examine how adults formulate memory self-perceptions.

09:45AM
The Fate of Abandoned Answers. Kaitlin Kiburz. Butler University, Indianapolis, IN. Sponsor: John N. Bohannon III

86 Butler University students viewed a slide show and individually completed a related questionnaire. After one week, participants answered the same questionnaire in one of three recall groups: nominal pairs in isolation again, grouped pairs with a partner, and equal chances pairs each wrote down his/her answer before agreeing on one answer. At the 2 week delay, all participants answered individually again. The results were analyzed using a x 3 recall group (nominal pair vs grouped pair vs equal chances pair) x 3 time of testing (immediate, 1 week, 2 week) x 2 type of test (recall vs recognition) repeated measure ANOVA. The analysis of total correct items revealed a significant effect of time of testing $f(4,365)=2.524$, $p<.05$ without the interaction of type of test. Over time, memory improves in both grouped pairs and equal chances pairs and is retained in isolation. The analysis of unique correct items also revealed a significant effect of time of testing $f(4, 1.268)=11.986$, $p<.0001$. Participants remembering in grouped pairs during week 1 artificially show reduced memory. When remembering individually again during week 2, the participants were released from any collaborative inhibition and memory returned to its initial level. In addition to being able to impose collaborative inhibition in the grouped pair participants, we were able to release them from reduced memory by having them recall in isolation again. This leads us to believe that the phenomenon of collaborative inhibition is not a memory failure, but it due to an artifact of testing.

10:15AM

Two heads are still better than one: Collaborative inhibition is artifactual. Lauren McClure. Butler University, Indianapolis, IN. Sponsor: John Bohannon

Recollection is frequently social; people tend to remember with others and when they do, their joint recollection is enhanced (Meudell, Hitch & Kirby, 1992). However, the phenomenon, collaborative inhibition, occurs when pairs of subjects recall fewer correct "unique" items than others recall in isolation. This study examined whether or not collaborative inhibition would disappear if the total possible number of unique items were equal in groups and individuals randomly put into pairs and triads.
Following a 15 slide narrated slideshow, all participants completed a questionnaire that was delivered in three ways. One was given to a group of students to answer individually (nominal). A second set of subjects was put into pairs or triads and asked to work together as a group. The third set of subjects were put into pairs or triads and asked to work together, but with different directions: each individual in the pair or triad was asked to think about their answer first, write it down, and then discuss together which answer they wanted to choose as their final answer.
The previous method gave nominal pairs extra guesses at each memory question whereas their grouped subjects had but one mutual chance to get the question correct. Our results showed that when grouped subjects were given the same number of tries as the nominal subjects, their items recalled were identical to the nominal subjects. This led us to believe that the phenomenon of collaborative inhibition is not a memory failure, but an artifact of the testing procedure.

10:30AM

Effects of Encoding Specificity on Analogical Problem Solving. Anna Smitherman. Ball State University, Muncie, IN. Sponsor: Dr. Kristin Ritchey

Analogical problem solving and encoding specificity are two important concepts in cognitive psychology. Gick and Holyoak (1980) demonstrated several different scenarios which affected participants' ability to transfer solutions between analogous problems. Encoding specificity research (Tulving & Wiseman, 1975) tends to show that memory is improved when encoding and recall methods are the same. While much research has been conducted in each of these areas separately, the interaction between encoding specificity and analogical problem solving has yet to be studied. Using previously tested stories and problems solving tasks (Gick & Holyoak, 1980), participants' ability to transfer solutions between problems was tested by presenting a story problem with a solution and an analogous story problem for which they were asked to provide a solution. Encoding specificity was tested by presenting the stories in either the same way (both stories visually or aurally) or in different ways (first story visually and recall aurally or vice versa). Preliminary results indicate that encoding specificity does not have a significant effect on participants' ability to transfer solutions between story problems. The results of this study have significant educational implications with regards to learning, memory and problem solving and can be applied to achieve optimal information synthesis.

10:45AM

Effects of Color on Scene Recognition Memory. Tabitha Walls. Anderson University, Anderson, IN. Sponsor: Curt Leech

Color has been shown to facilitate memory for natural scene photographs, but not man-made scenes, more than black and white in the majority of the literature; however, there have been a few studies that have found the reverse effect. Going with the weight of evidence, I hypothesized that color will improve picture recognition for natural scenes, and no difference between color and black and white for man-made scenes. Fifty-eight participants, who showed no problems with color perception, were tested for memory recognition. Each participant was shown a set of 25 photographs, which included both natural and man-made scenes in color or black and white. They were then shown a set of 50 photographs, which included the original stimuli, mixed in with similar stimuli, and were then asked to indicate which photographs were seen previously. The data are being analyzed using analysis of variance.

11:00AM

The Effects of Perceived Failure or Success in Cooperative Tasks on Group Performance and Individual Self-Efficacy, Self-Esteem, and Motivation. Jessica Berryhill. Anderson University, Anderson, IN. Sponsor: Linda swindell

The current study will examine the influence of age and success or failure within a first task on group performance on a second task. In addition, this study will investigate how individual variables (self-efficacy, self-esteem and motivation) are affected by age and success or failure on a task. The first hypothesis predicts that groups within the failure condition would see decreases in the level of performance during the second task. The second hypothesis predicts groups consisting of older college students will perform the second task faster than younger college students across both conditions (prior success and failure). The third hypothesis predicts that individuals experiencing prior task failure will be more likely to score lower on self-efficacy and self-esteem post-tests than those experiencing success. The final hypothesis predicts that participants experiencing prior task failure will also experience decreases in task motivation. Participants will be divided into two groups based on class level (younger students defined as 1st/ 2nd year students; older students defined as 3rd/4th year students) and randomly assigned to either the success or failure condition during the first task. In groups of five, volunteers will complete a second task. Individual self-efficacy and self-esteem will be measured before and after completing the tasks using the General Perceived Self-Efficacy Scale (Schwarzer & Jerusalem, 1993) and an adapted form of the Current Thoughts Scale (Heatherton & Polivy, 1991). Motivation will be completed using an adapted form of the Motivation Scale (Sundre, 1999). Data will be analyzed using t-tests and analyses of variance.

11:15AM

Who is at Fault? A Look at Blame-Placing in Regards to Self-Esteem and Locus of Control. Rachel Doty. Anderson University, Anderson, IN. Sponsor: Curt Leech

The purpose of this study was to examine the direction in which one places blame after experiencing a failed interpersonal interaction; specifically, the relationship between self-esteem, locus of control, and blame. Previous research has found a relationship between self-esteem and locus of control. It was upon this foundation that the present study was designed to expound on the direction of blame. It was hypothesized in this study that when one fails to have a successful interpersonal interaction, there would be a relationship between self-esteem and blame-placing. In particular, the higher one's self-esteem, the more likely one would place blame on him/herself, while the lower one's self-esteem, the more likely one would place blame on others. Additionally, it was hypothesized there would be a relationship between locus of control and blame-placing. More specifically, the more internally controlled the individual, the more likely he/she would place blame on him/herself, while the more externally controlled the individual, the more likely he/she would place blame on others. Eighty-six college students enrolled in a general psychology class at a small Midwestern university were administered the Rosenberg (1965) Self-Esteem Scale, the Locus of Control Scale (Rotter, 1966), and a Blame-Placing Scale, produced by this author, which were used to test the hypotheses. The data are currently being analyzed by means of Pearson product moment correlations with corresponding t-tests of significance.

Session C Developmental and Methodology
Jordan Hall, Room 238
Moderator: Dr. Bob Padgett

09:30AM
Why do Psychology Departments Require Students to Take Research Methods and Statistics Courses? Georgia Waddups. Indiana University/Purdue University at Indianapolis, Indianapolis, IN. Sponsor: Leslie Ashburn-Nardo

Instructors, students, and administrators alike often ponder the way in which undergraduate courses are taught and whether or not they are effective in creating a strong research foundation. Previous researchers have described different approaches to teaching research methods and statistics with little empirical research into whether these approaches are effective. The present study examined whether students who have completed the statistics/methods sequence would be better able than those who have not completed the sequence to answer questions regarding statistics and research methods after reading an empirical journal article. Methods/stats participants (n=42) were recruited by their instructor, and 76 other participants were recruited through the Psychology Department Subject Pool. After reading an empirical journal article, participants were given a test with questions regarding their ability to identify key methods objectives. Information was also obtained regarding the grade they received in statistics, their class's emphasis on SPSS, and their confidence regarding statistics. As hypothesized, methods/stats students answered more article-related questions correctly than students who have not completed methods/stats. Methods students completed the same assessment at the end of the semester, upon completion of the methods course. These scores will be compared to the original scores of the methods participants. It is hypothesized that these total scores will be significantly higher than the initial scores as well as the control groups' scores.

09:45AM
Peer Mentoring and Emotional Intelligence. Nathan Raines. Anderson University, Anderson, IN. Sponsor: Curt Leech

This study investigated the effect of the amount of time involved in a school sponsored peer mentoring program,if any, on a child's emotional intelligence. Based on previous research of emotional intelligence, higher scores of emotional intelligence strongly correlate with better academic performances, and less aggression. It was hypothesized that children who participated in the peer mentoring program will have higher scores on the emotional intelligence scale, than their peers who had not been involved in the program. Third and fifth grade students, within New Castle (Indiana) School Corporation were tested on a modified emotional intelligence scale. The tests were scored, evaluated, and analyzed using t-tests. Using an alpha level of 0.10, the data showed that children within the peer mentoring program did not have significantly higher emotional intelligence scores. Further analysis based on gender also showed significance using a two-way ANOVA. That is, there are differences on certain subscales of emotional intelligence for boys and girls.

10:00AM
The Goldest Golden Years: Physical Activity Levels in Later Life. Christopher Ketcham, Myles Trapp. Butler University, Indianapolis, IN. Sponsor: Tara T. Lineweaver

We examined the impact of childhood and adolescent athletic involvement on physical activity levels, physical and health self-efficacy and physical self-concept in older adults. The previous literature suggests that being active when younger, getting good grades in physical education and being involved in competitive athletics as an adolescent leads to higher levels of physical activity later in life. We wondered whether this is because those who meet these three criteria have higher physical self-efficacy and a stronger physical self-concept. We hypothesized that older adults who were active in their youth would have higher levels of physical self-efficacy and physical self-concept and that physical self-efficacy and physical self-concept, in turn, would predict physical activity levels in older adults' current lifestyles. We used individuals' involvement in childhood and high school sports to predict their health self-efficacy, physical self-efficacy and physical self-concept through the use of multiple questionnaires. 50 healthy adults aged 35 to 96 years-old participated in the study. While childhood sports and gym grades were not predictive of self-efficacy or self-concept, an individuals' participation in high school sports did predict their current physical self-efficacy. In addition, strong correlations emerged between current physical activity levels and physical and health self-efficacy. Thus, our findings support our hypotheses. Overall, we believe that because an increase in physical and health self-efficacy predicts physical activity levels, potentially the converse is also true. In that case, increasing individuals' health and physical self-efficacy may be one way to increase their physical activity levels and overall health.

10:15AM
The Effect of a Partner's Attractiveness on the Perception of the Companion. Leslie Rowan, Joseph Petrucci. Saint Joseph's College, Rensselaer, IN. Sponsor: Chau-Ming Wong

The effects that attractive and unattractive female partners have on the perceptions of a moderately attractive male was inspected. Undergraduate students (11 male and 19 female, mean age = 19.4) were shown two pictures. One picture was of a moderately attractive man and the other of an attractive or unattractive female. The participants were told that the two people in the pictures were married or not connected. They were given the Perception Questionnaire and asked to rate the male. The hypotheses were that when the moderately attractive male was married to the attractive female, he would be perceived in the most positive way. When married to the unattractive female, he would be rated in the most negative way. When the male was shown to have no connection with the female, she would have no effect on how the male was perceived; therefore, this situation was not taken into account. A two-way between-subjects ANOVA was used to examine whether the physical attractiveness of a female companion and the relationship type had an influence on the perceptions of a moderately attractive male. No statistically significant results were yielded regarding the total perception score. On the individual intelligence scale, attractiveness was found to be statistically significant, $F = 7.108$, $p = .013$. On the individual scales of level of education and popularity, attractiveness was found to be statistically significant, $F = 7.375$, $p = .012$, and, $F = 6.361$, $p = .018$, respectively. The remaining individual scales yielded no statistically significant results.

10:45AM
The effects of sexualized content in children's media on pre-adolescent girls' self image. Erin Huntington, Chelsey Cabatu. Hanover College, Hanover, IN. Sponsor: Ellen Altermatt

The sexualization of girls permeates U.S. culture. One of the major cultural contributors to the sexualization of girls is the media. In this study, we examined the effects of sexualized content in children's media on pre-adolescent girls' self image. Participants were girls from a local elementary school. The girls were randomly assigned to two groups. The first group viewed a clip of non-sexualized content from a popular children's television program. The second group viewed a clip with sexualized content from a popular children's movie. Before and after watching the clips, the girls reported on their media habits, body image, and self-esteem. Girls in the two groups were also interviewed about their responses to the clips and about their perceptions of sexualized media more generally. We anticipate that girls who watched the sexualized video will report greater declines in body dissatisfaction and self-esteem than girls who watched the non-sexualized clip. Experimental results will be discussed in light of the interview data.

11:00AM

The Stress and Coping Strategies for Parents of Children with Autism Spectrum Disorder. Cody Davis, Ayca Coskunpinar. Hanover College, Hanover, IN. Sponsor: Ellen Altermatt

There is clear evidence that parents of children with disabilities face challenges that can lead to negative outcomes, including heightened stress and depression. Less well understood is how stress levels, coping strategies, and psychological well-being may differ among parents dealing with different types of disabilities. The current study addressed this issue by comparing the outcomes of parents of children diagnosed with three different nervous system disabilities: Down Syndrome, Fragile-X Syndrome, and Autism Spectrum Disorder. Parents of typically-developing children were also assessed. Participants were notified of this study via on-line support groups and completed surveys on-line. We anticipate that coping strategies will be similar across the three groups of parents of children diagnosed with a nervous system disorder and will include family support, self-education about the disability, and support groups. Consistent with evidence from one recent study (Stoneman, 2007), we also anticipate that parents of children with Autism Spectrum Disorder will report the highest levels of stress and depression. These results will be interpreted in light of parents' responses to open-ended questions about their stress levels, coping strategies, and psychological well-being.

11:15AM

The Effect of Child-Parent Relationships on Romantic Partner Selection. Courtney Tyler, Sarah Pasquale. Hanover College, Hanover, IN. Sponsor: Stephen Dine Young

Internal working models are established during early childhood and maintained into adulthood as a guide to interpersonal behavior in novel situations. Since parental figures tend to be whom a child has the most contact with, these models are based off of the relationship he/she has with these figures. This internal working model is especially important in romantic relationships in regard to the type of relationships people form and the kind of partners that are chosen. In heterosexual romantic relationships, the opposite sex parent has been shown to be influential in the selection of a romantic partner. This study investigates whether people apply an internal working model to the personality trait of submissiveness/dominance; in particular, we hypothesize that if the quality of the parent-child relationship is positive then people will look for partners similar to their opposite sex parent. Participants were asked to complete an online questionnaire regarding the level of submissiveness/dominance of their maternal and paternal figures, their current/most recent romantic partner, and themselves using a Likert scale. They were also asked to indicate the quality of their relationship with each individual using a Likert scale. It is expected that a correlation will be found between the submissiveness/dominance level of the opposite sex parent and the romantic partner, particularly when the early childhood relationship with the opposite sex parent was strong. These findings will shed light on the importance of early childhood experiences in both the types of relationships people form and the personality types of partners they choose.

11:30AM

Effects of Acculturation on Subjective Well-Being: A Group Without Ethnic Solidarity. Candice Lane. Anderson University, Anderson, IN. Sponsor: Curt Leech

The purpose of this study was to examine the effects of acculturation over time on subjective well-being of international students. Although studies have shown that acculturative stress is a concern in the beginning stages of the acculturation process, through the study of various ethnic groups, it has also been suggested that subjective well-being may improve as a result. Therefore, it was hypothesized that freshmen international students would have lower subjective well-being than upperclassmen international students. It was also hypothesized that international students, when compared with domestic students, would show a greater difference in subjective well-being between freshman and upperclassman status. One-hundred two students participated in this study conducted at a small, Midwestern university, including 78 domestic and 21 international students, 33 men and 67 women. Domestic/international status data were missing for three participants and gender data were absent for two. Participants completed two measures of subjective well-being, the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1989), and the Positive and Negative Affect Scale (Watson, Clark, & Tellegen, 1988). A demographic survey was also administered and included age, academic years completed at the institution of higher education, gender, domestic or international status, major area of study, race and economic status. The data are being analyzed with an F-multivariate test and a two-way F-multivariate test.

Session D Clinical
Jordan Hall, Room 216
Moderator: Dr. Joel Martin

01:00PM

Correspondent Inferences and Schemas. Megan Drudy. Butler University, Indianapolis, IN. Sponsor: Joel Martin

Correspondence bias is the tendency to attribute the causes of others' behavior to internal (dispositional) factors and to attribute our own behavior to external (situational) factors. Previous research suggests that correspondence bias may be reduced in individuals experiencing increased depressive symptomology. However, the relationship between correspondence bias and depressive schema activation has not yet been studied. In the present study, 140 participants will be recruited from psychology classes and will be offered extra credit for pariticpation. Following informed consent, participants will complete a measure of depressive symptomology and will be randomly assigned to read one of four vignettes. Two vignettes are self-referent, while two are other referent; two activate a depressive schema (failure), while the remaining two activate a non-depressive schema (falling down). Participants will then be asked a series of open- and closed-ended questions about causal attributions regarding the read scenario. I hypothesize that participants with higher levels of depressive sypmtomology will be more likely to make the correspondence bias under the condition of depressive schema activation. Further, I hypothesize that participants with higher levels of depressive symptomology will be more likely to commit the correspondence bias in the self-referent condition, as opposed to the non self-referent condition.

01:15PM

The Effects of Equine-Assisted Psychotherapy on Juveniles in a Residential Treatment Facility. Rebekah Wilson, Kristine Schuster. Hanover College, Hanover, IN. Sponsor: Stephen Dine Young

This study assesses the impact of Equine-Assisted Psychotherapy (EAP) on court-ordered adolescent males in a residential treatment facility with regards to self-esteem, verbal and non-verbal communication, and expectations for the future. EAP is a growing field that uses the relationship that can form between client and horse as a therapeutic tool. Through this relationship, the therapist focuses interaction in the relationship around developing certain skills. Within the facility being studied, all aspects of the adolescents needs are provided through this facility with the majority of them being held within it. EAP is the primary method of therapy and is completed in groups. To assess the criteria, pre- and post-surveys were distributed to the adolescents as well as the therapist and horse professional. Throughout the study, condensed weekly surveys were completed by the therapist and horse professional to give greater detail. The assessments completed by the adolescents were the Rosenberg Self-Esteem Scale, the Beck Hopelessness Scale, and a communication assessment created by the researchers. Similar assessments were created for the therapist and horse professional to mirror the questions posed to the

adolescents. We expect to find significant increases in self-esteem and communication skills as well as more positive expectations for the future. This study could show how effective EAP is in a short period of time, which can have implications for its growing presence and acceptance within the healthcare industry.

01:30PM

Expectancy Effects and Behavioral Performance According with Experience Level. Ashley Bane, Ashley Devers. Hanover College, Hanover, IN. Sponsor: John Krantz

Alcohol has been shown to impair decisions and behavior. However, social expectation can also impair decision making and behavior. This study examines the role of expectations of alcohol effects have on behavioral response and decision making. Participants in the experimental group were given a drink with a milliliter of alcohol around the rim of their glass Participants in the control group were told they were in the control group and given no alcohol but tested in the same manner that those in the experimental group were. Both groups were given three 6 oz. cups of lemonade and given five minutes to drink each one, after a ten minute break they were tested. To test motor coordination, a peg board was used and to test reaction time a drop test was done. A questionnaire was used to assess attitudes toward risks, to test changes in decision making, participants in both conditions filled out an attitudes towards risk questionnaire. A relationship is expected to be found between expecting alcohol and being more willing to engage in risky behaviors, and no relationship between this expectation and performance.

01:45PM

Exploring the relationship between alcohol consumption and happiness. Krissy Noren, Lisa Ellens. Valparaiso University, Valparaiso, IN. Sponsor: Matthew Ringenberg

Alcohol is a big part of college students' lives and many students feel as thought drinking alcohol will make them happier. This is a dangerous message that students are learning from the media and other sources. It is hypothesized that in reality, the higher the level of alcohol consumption, the lower the level of one's happiness will be. In other words, levels of alcohol consumption will have a negative relationship with levels of happiness. Research has shown that nearly half of college students consume beer at least once per week and over half reported drinking five or more beers on average at any one time (Coll et. Al 2008). Social reasons were reported to be the primary motivation for drinking for 63% of students in one survey conducted (Kairouz et. al 2002). This study will be surveying traditional students at Valparaiso University. The aim is to survey at least 150 people as a representative sample of students at small private Midwestern colleges. In order to assess students' levels of happiness, the subjective happiness scale by Lyubomirsky will be used as well as other questions relating to alcohol consumption. It is expected that students who consume more alcohol will be less happy, and students who consume less alcohol will be happier. If the results prove this to be true then it will be an important finding regarding alcohol use by students and could be applied to alcohol awareness or education on college campuses.

02:00PM

Eating Disorders Among College Students. Jeanette Gutierrez, Julie Milosevich, Susana Morales. Valparaiso University, Valparaiso, IN. Sponsor: Matthew Ringenberg

Eating disorders have become major topics of discussion among young American adults. They are defined as disturbances in normal eating habits. These distorted behaviors often include restricting caloric intake, consuming a large amount of calories in a short amount of time, or purging through the use of laxatives, diuretics, or vomiting. (National Eating Disorders, 2009). The occurrence of bulimia has increased significantly over the second half of the twentieth century in both men and women (Hudson, Hiripi, Pope & Kessler, 2006). According to the National Eating Disorder Association, 10 million females and 1 million males suffer from eating disorders, unfortunately, the magnitude of this issue is on the rise (National Eating Disorders, 2009). Men and women both have distorted views about what they find attractive in themselves as well as what the opposite sex finds pleasing (Rosen, Saltzberg & Wendt, 2007). This paper will primarily focus on the two most common eating disorders, Bulimia Nervosa and Anorexia Nervosa. Through our research and surveys we will explore the perceptions that men and women on the Valparaiso University campus have on their own body image. The research will show if college students have the same perceptions about their body image.

02:30PM

Point Vibration Therapy Device for Individuals on the Autism Spectrum. Rebecca Van Aartsen, Kevin Wagner, Steven Lehmann, Eric Devine, Kimberly Sajevic, William Burgett, Jonathan Blackwell, Christopher Handley. Valparaiso University, Valparaiso, IN. Sponsor: G. Scott Duncan

The Autism Society of America estimates that 1 in 150 American children struggle with Autism Spectrum Disorder (ASD). 75 percent of these children are also affected by Sensory Processing Disorders (SPD). Children with ASD and SPD sometimes have difficulty determining the spatial positioning of their limbs, leading to increased anxiety levels and self-stimulatory behavior. The objective of this project is to help children with ASD integrate into classroom settings by reducing disruptive behavior due to anxiety and sensory processing issues. Previous studies have shown that apparatus designed for sensory stimulation, such as Professor Grandin's "Squeeze Machine," are successful in decreasing self-stimulatory behavior in children with ASD. A study performed by Goodall and Corbett found that intermittent vibration also decreased self-stimulatory behavior. However, many of the current sensory stimulation apparatus are prohibitively large, expensive, and conspicuous. To provide discreet sensory stimulation to a student in a classroom environment, this project is developing a Point Vibration Therapy Device (PVTD), designed to apply a vibration stimulus to the wrist or upper arm. The PVTD is completely portable and approximately the size of a large wristwatch. The vibration stimulus is generated by two weighted disk motors, powered by a lithium-ion battery. Programmable parameters of the vibration stimulus include the intensity and duration of vibration, both regulated by a microcontroller. These parameters can be programmed to the PVTD via a personal computer interface.

02:45PM

College Student Sleep Habits: Relationships Among Attitudes, Personality, and Health. Alexis Chambers. Ball State University, Muncie, IN. Sponsor: Michael Tagler

Research indicates that sleep is very important to maintain normal physical, cognitive, and emotional functioning. However, college students comprise a large population plagued by poor sleep routines. In fact, studies have shown that many students are not well-informed of the importance of sleep and often suffer sleep disorders and high levels of sleep debt. However, little research has been conducted to determine the role that attitudes, personality, and sleep habits play. Therefore, this study was designed to examine the relationships among attitudes toward sleep, personality, health, and sleep habits. Specific measures include the Beck Depression Inventory, Pittsburgh Sleep Quality Index, Epworth Sleepiness Scale, Dysfunctional Beliefs and Attitudes about Sleep Scale, Composite Scale of Morningness-Eveningness, Zimbardo Time Perspective Inventory, NEO-FFI, and the Short Form-8 Health Survey. Correlational results of this study will be presented. Discussion will include how these results can lead to future research on the effective design of interventions to improve sleep habits.

03:00PM
Native American Concerns in Psychology. Amanda Hawk. Ball State University, Muncie, IN. Sponsor: Heather Adams

There is a concern criteria for the psychological research is driven by the non-Native American dominant norm rather than by the Native American population. This study is the first step in exploring potential disconnect between psychological studies and psychological concerns of Native Americans. This study is examining frequency counts of 900 psychological journal articles, from Psych Info drawn from 2003 to 2008, about Native Americans in a qualitative general thematical analysis. Codes were developed from the thematical analysis and categories were developed and defined throughout the coding. When codes are finalized the frequency counts will be computed for each category. Further research will be conducted in the summer 2009, where the frequency counts of the prior research will be compared to the concerns found in a Native American written newspaper. With using the same codes the frequency counts will then be compared and will show whether the concerns of Native Americans are being met in psychological articles.

Session E Comparative, Sensation, and Perception
Jordan Hall, Room 236
Moderator: Dr. Bob Dale

01:00PM
Birth Statistics for African and Asian Elephants in Human Care. DeeDee Lehner. Butler University, Indianapolis, IN. Sponsor: Robert Dale

African (Loxodanta africana) and Asian elephants (Elephas maximus) have lived in the care of humans for many years, yet there is very little public information concerning some basic characteristics of newborn elephant calves. I have gathered data about birth height, birth weight, birth time, and gestation period. There are significant differences between the two species, as well as differences between sexes, most apparent in the birth height and weight. I will compare the characteristics of African and Asian elephants in captivity and discuss how my results are relevant to the study of elephants in range countries.

01:15PM
The Behavioral Development of African and Asian Elephant Calves. Brittany Hock. Butler University, Indianapolis, IN. Sponsor: Robert Dale

At least 100 African elephants, Loxodonta africana, have been born in captivity, but we know little about the physical or behavioral development of these animals. We obtained information pertaining to elephant calves' physical development, health and behavioral patterns from several institutions housing pregnant African elephants or caring for elephant calves. This information may help institutions care for their young elephants by providing guidelines concerning typical aspects of elephant calf development. They may also permit us to compare the development of calves born in range countries and calves born in the care of humans.

01:30PM
Spy-hopping in Mustelus canis: adaptive behaviors of the smooth dogfish shark in captivity. Megan Vaupel. Butler University, Indianapolis, IN. Sponsor: Robert Dale

The smooth dogfish (Mustelus canis), a small bottom dwelling shark found primarily along the Atlantic coast ranging from Massachusetts to Argentina, serves as an interesting species for research. Not much is known of their behavior, particularly in the deep recesses of the sea (down to a depth of 200m) where they occasionally migrate. In captivity, the smooth dogfish demonstrate a behavior called "spy-hopping", in which the sharks raise their heads vertically out of the water and temporarily linger in this position. Spy-hopping is a frequently noted behavior in most marine mammals and a few larger species of sharks. There is very little published information about the behavior of smooth dogfish in the wild, and there have not been any reports of spy-hopping. However, Mark Hall has observed this behavior at the Biomes Marine Biology Center in Rhode Island, and he suggests that spy-hopping may be a mechanism for food detection when humans approach the area. Careful observations of this behavior under differing conditions in captivity, and a review of published research on spy-hopping in other species, may provide some insight into this unusual behavior.

02:00PM
Improving Communication for Locked-In Syndrome Patients. Jessica Williams. Purdue University, West Lafayette, IN. Sponsor: Greg Francis

Locked-in syndrome is a condition in which a patient's voluntary muscles are paralyzed. Locked-in patients lose no cognitive functions, but they are essentially locked inside their own bodies and can communicate with other people only through eye movements and blinks. Communication is precious for these patients and virtual keyboards have been developed to allow such patients to type by selecting the row and then column that contains the desired letter. The selection process requires cycling through possibilities until it reaches the target, and as a result typing with these keyboards is very slow (3-5 words per minute). We considered whether typing with this method might be significantly faster by redesigning the placement of letters on the virtual keyboard. We developed an optimized virtual keyboard that minimized the text entry time for the first chapter of the book Le Scaphandre et le Papillon, written by locked-in patient Jean-Dominique Bauby. The optimized keyboard entered the text for this chapter 33% faster than a corresponding alphabetical keyboard. The advantages of the optimization persisted for subsequent chapters of the book. Similar effects are reported for other text and for various types of virtual keyboards. Overall, the results suggest that optimized keyboards could provide significantly faster text entry for patients with locked-in syndrome and similar conditions. While this improvement may only be a few words a minute, this escalation should provide a significant improvement in the lives of patients with locked-in syndrome.

02:15PM
Color Afterimages from Invisible Colors. Judith Asem, Greg Francis. Purdue University, West Lafayette, IN. Sponsor: Greg Francis

Color afterimages from invisible colors.

Previous research has found that a faint red-green vertical grating can be made invisible when it is superimposed on a stronger blue-yellow horizontal grating and black horizontal lines outline the blue and yellow rows. In our experiment we show that the red-green grating can produce an afterimage even when it is not seen. On each trial a participant saw an image for one second. The image was then either followed by a one second blank screen and then a box of random dots (possible-afterimage condition) or was immediately followed by a box of random dots (no-afterimage condition). At the end of the trial, the participant reported whether they saw any red or green during the entire sequence of images. Across trials we systematically varied the strength of the red-green grating. An afterimage from invisible colors is identified by more report of seeing red or green during the possible-afterimage condition than during the no-afterimage condition. Data averaged across 35 participants demonstrates that for intermediate strengths of the red-green grating participants sometimes do not see the grating in the original stimulus but do see an afterimage. We explain the invisibility of the red-green grating in the inducing stimulus and the visibility of the red-green afterimage with a theory of visual perception where colors spread across regions defined by oriented contours.

02:30PM
The Effect of Graphical Quality on Aggression in Violent Video Games. Michael Sterling, Kyle Kollstedt. Hanover College, Hanover, IN. Sponsor: John Krantz

Violent video games have been shown to increase the e level of aggression at least in some players. One of the factors that has not been studied much is the game's appearance. This experiment tested the effects of the quality of the graphics of a videogame had on the aggression of a participant. The game chosen for this study was Call of Duty 4, which is a violent and realistic video game where the graphics can be easily manipulated. Participants played with either a high or low level of graphics. The low graphical settings were played on a laptop with most of the graphical settings set to a minimum level. The high graphical settings were played on an Xbox 360. Pre-existing levels of aggression were measured with an aggression questionnaire administered before game play. Next the participants played a tutorial level to familiarize the participants with the game, then the participants played a level with real fighting. The aggression of the participants was measured by the competitive reaction time task developed by Bushman and Saults (2007). The researchers hypothesize that the higher graphical setting will produce higher levels of aggression in the participants than in the lower graphical setting. The impact of this study could be viewed as a predictor what effects video games could have on the.

02:45PM
Optimization of electrode placement in movement-based non-invasive brain computer interfaces. Nicholas Del Grosso, Darcy Dubuc. Wittenberg University, Springfield, OH. Sponsor: Josephine Wilson

Brain-Computer Interfaces (BCIs), computer software that is controlled using brain activity as the input device, has in the past been limited to providing neurofeedback on the frontal regions of the brain, which indicate the general excitation states of the user. Today, however, more functional BCI systems have been developed that focus on the recognition of characteristic wave patterns over the motor cortex related to specific movements. While many populations could benefit from BCI systems, problems like cost, long training times, and invasive implant systems reduce their usefulness in the public sector. In light of this problem, we are studying the ability of a low-cost electroencephalography (EEG) system to detect and discriminate between left and right motor commands using few electrodes and computationally undemanding real-time analysis techniques. In this first experiment, six undergraduate students pressed handheld buttons with their thumbs in response to onscreen stimuli while electrodes recorded activity over their motor cortex. Although further analysis will indicate the accuracy levels of the system's left/right motor discrimination, electrodes C5 and C6 (of three per hemisphere, C1-C6) best recorded characteristic frequency patterns of the motor cortex (12-16 Hz Mu suppression) and thumb motor responses (Simultaneous increase in Mu activity and 35-42 Hz beta activity at motor response, present in five participants). These results confirm our hypothesis that motor activity can be inferred from a dual-electrode EEG system. Later experiments will use different electrode configurations to increase dual-electrode BCI performance in motor discrimination between left/right hand movements and left/right motor imagery.

Session F Prejudice and Stereotyping
Jordan Hall, Room 238
Moderator: Dr. Kate Morris

01:00PM
"Should I? Would I?": Self-discrepancy and the Costs of Failing to Confront Prejudice for Non-targets. Lindsey Boes, Scott Anderson, Robert Doyle, Jarrad Shaw, Jamie Watson. Purdue University, West Lafayette, IN. Sponsor: Stephanie Goodwin

Prior research suggests that people who are the targets of prejudice (e.g., women, racial/ethnic minorities) feel guilty and ruminate when they fail to confront prejudice. The goal of the present research is to determine whether these effects generalize to non-targets (e.g., men, Whites). Sixty participants (Ps) will be recruited for a study of social attitudes and will complete measures of self-discrepancy regarding whether they believe they should vs. would confront prejudice toward one of three social groups (smelly people, fraternity/sorority members, Blacks). Ps will then complete measures of affect (e.g., guilt, shame), self-esteem, rumination, commitment to challenging prejudice, and perceptions of social norms regarding prejudice toward the group. We hypothesize: 1) greater self-discrepancy (i.e., believing one should but would not confront) will predict negative affect, rumination, and lower self-esteem; 2) commitment to challenging prejudice will mediate the relationship between self-discrepancy and negative psychological outcomes; and 3) perceptions that social norms proscribe prejudice toward the group will moderate commitment to challenging prejudice toward the group. Assuming our hypotheses are supported, these data would suggest that the costs of not confronting may be similarly high for non-targets and targets.

01:15PM
Dedicated to the One I Love: Relationship Serving Attributions May Undermine Prejudice Confrontation. Amica Jutla, Carrie McGrath, Michael Monceski, Tori Rice, Jessica Van Cleave, Jennifer Petty. Purdue University, West Lafayette, IN. Sponsor: Stephanie Goodwin

People often fail to confront prejudice despite their desires to do so. The Confronting Prejudiced Responses (CPR) Model argues that perceiving prejudice to be urgent (i.e., harmful, intentional) predicts whether people are motivated to confront. The goal of the present research is to explore whether perceivers' relationships with perpetrators moderate perceptions that prejudice is urgent. Eighty participants (Ps) will be asked to think about a recent social encounter and to rate their interaction partners' with regard to relationship closeness and related constructs (e.g., type of relationship). Ps will next read a scenario and imagine their interaction partners making a prejudiced comment (hostile vs. benevolent) about Blacks. Ps will next complete measures of perceived urgency (e.g., harm, injustice, prejudice), perpetrator intentions, and their desires to confront. Ps will then complete measures of their general tendencies to confront others' who violate social norms. We hypothesize that relationship closeness will negatively predict perceived urgency and perpetrator intentions. That is, the closer people feel toward the perpetrator, the less they will perceive prejudice to be intentional and harmful, and the less they will want to confront prejudice. We further predict that perceptions of urgency and intent will positively predict desires to confront prejudice. Finally, we predict these effects will be independent of individual differences in the tendency to confront social norm violations. Assuming our hypotheses are supported, these data would lend further validity to the CPR model and point to the role of perceived urgency prejudice confrontation.

01:30PM

Stigma Controllability & Confronting Mental Illness Prejudice. Sisi Yu, Cheyenne Dunbar. Purdue University, West Lafayette, IN. Sponsor: Stephanie Goodwin

Although people often want to confront prejudice, they do so less frequently than they say they would like. Perceiving prejudice to be justified may explain why people sometimes fail to confront prejudice. The present research examines whether perceiving stigma to be controllable undermines perceptions that prejudice is harmful/unjust; when prejudice is perceived to be just and fair, confrontation should seem unwarranted. Pilot data from our lab partially support this argument; the more participants believed homosexuality was controllable (rather than biological), the less harm they saw in anti-gay prejudice and the less they reported wanting to confront it. The present research applies this argument to mental illness stigmas. Lay theories about the origins of mental illnesses vary in terms of perceived controllability. For example, most people perceive schizophrenia as less controllable than addiction. In the present study, participants will read scenarios wherein an actor makes a prejudiced comment about someone who has a mental illness (schizophrenia vs. addiction) before answering questions regarding perceptions of the comment and desires to confront it. Participants in a baseline condition will read about an actor who makes a comment regarding someone who is rude. We predict that participants will view schizophrenia as less controllable (relative to addiction) and, in turn, perceive prejudice toward schizophrenics as more urgent – i.e., more harmful, more intentional, and more unjust—than prejudice toward addicts. In addition, we predict that viewing prejudice toward schizophrenics as more urgent will positively predict desires to confront. Implications for reducing prejudice will be discussed.

01:45PM

What Beliefs are Stigmatized? David Briley. Butler University, Indianapolis, IN. Sponsor: Kate Morris

Presently there is a growing body of research regarding the disclosure of stigmatized status (such as being homosexual, being HIV positive, being a victim of sexual abuse, etc.). However, there is little to no research regarding the disclosure of stigmatized beliefs (such as belief in the paranormal, conspiracies, certain religious beliefs, etc.). As preliminary research for my honors thesis, I am investigating the degree to which potentially stigmatized beliefs are present and the extent to which they are stigmatized on Butler's campus. This preliminary survey consists of an 18 item inventory, where each item is a belief that is either fairly mainstream (e.g. God exists), or potentially stigmatized (e.g. Aliens exist and visit Earth). Participants will either report how strongly they personally agree or disagree with that belief or how bizarre they think it is for someone to hold that belief. These two conditions will help me to understand which potentially stigmatized beliefs are held by students on campus, and how much people stigmatize those beliefs. I will discuss the results and how I will use the data I gather in the formulation of my honors thesis.

02:15PM

Effect of Affiliation on Response to Prejudiced Remarks. Kristen Malone, Laura Spice, Kate Morris. Butler University, Indianapolis, IN. Sponsor: Kate Morris

Evidence shows that people generally respond more negatively to racist remarks than sexist remarks (Fiske & Stewart, 1993). We are interested to see if affiliation with a target of prejudiced remarks influences how people respond to those remarks. The 2008 election included two candidates who belong to minority groups that are commonly subjected to prejudiced remarks: Presidential candidate Barak Obama and Vice-Presidential candidate Sarah Palin. The goal of this study was to see if participants' affiliation with a candidate (i.e., their intention to vote for the Democratic or Republican ticket) would affect responses to prejudiced remarks about the candidates. In this study, participants read a scenario describing a social interaction in which a student made either a racist remark about Obama or a sexist remark about Palin. Participants then rated their internal and external responses to the remark. Participants also reported who they intended to vote for in the election. We predicted that when people affiliate with a certain candidate through their intention to vote for that candidate, their response to prejudice would be more negative when their candidate is the target of prejudice than when the opposing candidate is the target of prejudice. Thus, the affiliation with the target of prejudice will override the general tendency to evaluate racism more negatively than sexism.

02:30PM

Confronting Sexism: Who Is Responsible? Marie Danh, Peggy Zizzo, Laura Spice, Kristen Malone, Alex Lindsey. Butler University, Indianapolis, IN. Sponsor: Kate Morris

Evidence suggests that verbal or non-verbal confrontation can be effective in addressing prejudice (Czopp, Monteith, & Mark, 2006), yet people refrain from confronting prejudices they witness (Swim & Hyers, 1999). The Confronting Prejudiced Responses (CPR) Model (Ashburn-Nardo, Morris, & Goodwin, 2008) posits many reasons why people often do not address such behavior. The focus of this study is based on one of the CPR factors—who is deemed to be responsible for confronting discrimination. The goal of the study was to see if people will feel less inclined to confront prejudice if there is an authority figure or target person present when prejudice occurs. 328 participants read a scenario of a social interaction in which a student made a sexist remark. Scenarios included an authority figure (RA) who was either absent or present and a target person (female student) who was either absent or present. Participants then rated how responsible they felt the RA and/or target were for confronting the prejudice. In addition, participants described what they personally would have done in the situation. We predicted that the more responsibility the participant felt the authority and/or target person had, the less inclined the participant would be to confront the prejudice themselves. Results and implications will be discussed.

02:45PM

Telling Your Boss What You Really Think: Sexism Confrontation as a Function of Perpetrator Power and Perceived Intent. John Blanchar. Indiana University/Purdue University at Indianapolis, Indianapolis, IN. Sponsor: Leslie Ashburn-Nardo

Although interpersonal prejudice confrontation is an effective strategy in reducing harmful social biases (e.g., Czopp, Monteith, & Mark, 2006), people are often hesitant to voice dissatisfaction and confront perpetrators of prejudice (e.g., Swim & Hyers, 1999). Power, which refers to an individual's ability to influence others through the control of valuable resources, is one factor that may contribute to people's hesitancy. For example, low-power individuals may perceive the costs of confronting as outweighing the benefits. Perpetrator intent, however, is essential in perceiving an individual as prejudiced (e.g., Swim, Scott, Sechrist, Campbell, & Stangor, 2003) and may moderate power's effects on confrontation. To investigate these questions, 120 participants will view an Internet chat discussion between two confederates ostensibly working together on an evaluative task via networked computers. During this discussion, one of the confederates, who is either equal to or higher in power than the participant, will articulate a sexist comment framed with harmful or humorous intentions. Participants will then be given an opportunity to confront the perpetrator. Participants should be less likely to confront a high-power rather than equal-power perpetrator, but only when perceived intent is humorous. When participants perceive harmful intent, they should confront regardless of perpetrator power. Results of this study will contribute to the growing literature of prejudice confrontation and diversity education, ideally helping researchers, educators, and organizations develop effective intervention models with the goal of curbing prejudice and discrimination.

03:00PM
Who Should Speak Up? Perceived Responsibility for Confronting Racism. Alex Lindsey, Marie Danh, Peggy Zizzo, Laura Spice, Kristen Malone. Indiana University/Purdue University at Indianapolis, IN. Sponsor: Leslie Ashburn-Nardo

Although confrontation of racist remarks has been shown to be an effective way of reducing subsequent expressions of prejudice (Czopp, Monteith, & Mark, 2006) and empowering victims (Swim & Thomas, 2006), people are rarely as proactive as they would like to be (Swim & Hyers, 1999). This study was designed to investigate diffusion of responsibility as a main reason for this reluctance to confront. 328 participants read about a social interaction that supposedly occurred at a local dormitory involving a racist comment. They then rated how responsible and how effective each bystander would be in addressing the comment. The bystanders were manipulated such that an authority figure (a resident assistant) was present in one condition but absent in the other. A target member and several non-target members were present in both conditions. Results showed that authority figures are viewed as more responsible for addressing the racist comment compared to the target member and the non-target members. When an authority figure was not present, the target was viewed as more responsible than the non-target bystanders for addressing the comment. Results also showed that the authority figure and the target member are both viewed as effective in addressing the racist comment when compared to the non-target bystanders in both conditions. This study could have important implications for the confrontation of racial prejudice in the real world. If bystanders know what to expect from one another they should be able to make better decisions in confronting and eliminating prejudice.

03:15PM
When Do African Americans' Implicit Racial Biases Predict their Liking of Healthcare Providers? Winnie Mancil, Janna Williams, Leslie Ashburn-Nardo. Indiana University/Purdue University at Indianapolis, Indianapolis, IN. Sponsor: Leslie Ashburn-Nardo

In an effort to address healthcare disparities among minorities in the United States, researchers have proposed matching patient with provider based on race. However, patient-provider race congruence may have little effect towards diminishing these disparities if minorities' ingroup attitudes are not positive. A widely accepted measure of associations outside of our consciousness, the Implicit Association Test (IAT), has shown that over 60% of African Americans favor Whites relative to Blacks (Ashburn-Nardo, Knowles, & Monteith, 2003). Moreover, to the extent that African Americans favor Whites on the IAT, they more strongly prefer a White partner on tasks that are stereotypically associated with Whites' success (Ashburn-Nardo & Johnson, 2006; Ashburn-Nardo et al., 2003). However, research on terror management theory suggest that individuals will more readily access stereotypic evaluations when there is perceived threat (Schimel et al., 1999). In the present study, 107 African American college students completed two measures of the IAT, evaluative and stereotypic, and rated (fictitious) Black vs. White physicians on perceived competence and likeability in a low-vs. high-threat context. We have begun to find a marginally significant relationship between Blacks' evaluative IAT scores, healthcare providers' race, and health threat salience such that the more Blacks implicitly favor Whites, the more favorable their likability ratings of a White vs. Black provider, especially when threat salience is high. Data will continue throughout the semester in order to increase statistical power.

Sociology

Session A Deviance and Social Control
Jordan Hall, Room 348
Moderator: Dr. Ken Colburn

09:00AM
Predispostional Factors: Who's the next serial killer? Katie Krueger. Butler University, Indianapolis, IN. Sponsor: Robert Padgett

The term "serial killer" is fairly new, coined only in the last thirty years. Since then the concept has produced an array of research concerning everything from the killer's mental history to his/her childhood experiences. However, the term's true acceptance and acknowledgement came when the media and especially American pop-culture utilized the idea of a "serial killer" in everything from comic books to feature-length films. Unfortunately, while this media explosion gave the concept plenty of recognition; its misuse has tended to skew the factual meaning of the term. This paper looks specifically at the true definition of a serial killer attempting to clarify the misleading depiction that has come from the media influence. Nineteen people, including infamous murderers such as Ted Bundy and Jeffrey Dahmer as well as more obscure killers such as Carl Panzram, were studied at length. Data was gathered on each convicted killer focusing on his/her life prior to the beginning of the killing spree. Unlike previous research done on the topic, this investigation looks at a fairly large sample of both serial killers and personal characteristics to determine whether a sample of serial killers share any characteristics. These common traits lend proof to the idea that predispositional factors in serial killers exist and can be identified. These factors can then perhaps be utilized to detect future serial killers and correct their inevitable path of murder before their first kill. This factual analysis will also provide a great base to inspire further, more in depth research.

09:15AM
An Exploration of Gender and Violent Offenders: A Look at the College Students' View of Male and Female Serial Killers. Linda Lawder. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

Previous research done by Lee and DeHart (2007) studied the public's level of fear in response to a male serial killer on the loose in Baton Rogue. This study like others of its kind focuses solely on the male serial killer. Even though male serial killers are more common, studying female serial killers should not be overlooked. This research study was designed to explore how gender affects perceptions of a serial killer. My research question asks; does the gender of a serial killer affect how the serial killer is perceived by society, specifically college students? I examined the following variables; the level of public fear and nervousness when a serial killer is presumed to be on the loose, the amount of protective measures people use when a serial killer is presumed to be on the loose, the severity of punishment implement to serial killers, and assumptions made about a serial killers past. Finally, I examined how the gender of the participant affects his or her response to the variables above.
The results show that male serial killers are no more feared than female serial killers who committed the same crimes. The data shows that the gender of the participant causes more variation about perceptions of a serial killer than does the gender of the serial killer. This effect is also seen in severity of punishment, because male participants gave slightly harsher punishment than female participants regardless of the gender of the serial killer.

09:30AM

Jail Staff And The Experince Of Work Stress And Emotional Dissonanace: The Role of Emotional and Psychological Influences. Stephen House. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this study is to determine if the research done by (Higgins) on correction staff in prisons applies to correctional staff that work in jails and have direct contact with inmates. The present study will examine a board range of potential predictors of job stress. It will primarily focus on if and how experience of emotional dissonance may affect the experience of work stress. The study also examines the negative affect of working in correction. Role conflict that may be experienced, evaluation of job performance and whether or not the workers feel they have task control are also examined.

09:45AM

The Implementation of Restorative Justice in South Africa: Conflicts of Parks and People- A Case Study. Liz Wilmers. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

Successfully righting the wrongs committed against historically disadvantaged peoples while simultaneously attempting to preserve some of the world's most naturally beautiful spaces, is a most challenging and complex task. Through a South African lens, this case study will explore the application of a restorative justice model to an environmental and social conflict by dissecting the details of the Manaba Case. Initial research was conducted over a four-week period through formal interviews with a group of facilitators from Phoenix Zululand (PZ), representatives of Ezemvelo KwaZulu-Natal Wildlife (EKZNW), and a group of local community members in Mbazwana. These interviews highlight the values and perspectives of several main actors involved which aid in understanding the roots of this particular conflict. A restorative justice framework was used and the information collected was then used as a specific case study. Data analysis brought to light the failed potential of turning the "ideals" behind restorative justice into living realities. Several key themes emerged that explain this failure: conflicting values and disunity among actors, placing blame and lack of action, inconsistency and miscommunication, and forgotten or neglected values of restorative justice. Limitations and possible avenues for further study are discussed with the intention of aiding future researchers.

10:00AM

Addressing the 'Need to Know': Are Our Opinions of Sex Offender Registries Based on Emotion or Pragmatism? AMBER OCONNOR. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

Since 1996, all 50 states as well as the federal government have passed Megan's Law, calling for mandatory sex offender registration as well as public access to that information. Community notification is based on the presumption that it will provide citizens with information they can use to protect children from victimization, deter sex offenders from committing new offenses, assist law enforcement investigations and establish legal grounds to hold known offenders. Despite the overwhelming desire for sex offender registries, there appears to be a gap in what our current sex offender policies are meant to protect and what occurs in everyday life. Existing policies appear to be largely driven by public demand, concern, and fear rather than based in the existing academic research on sex offenders. With a focus on previous research and an analysis of results from a CBS/New York Times poll (2003) examining public opinion of the sex offender registry, this study will examine the factors that affect public support for this policy. I expect to find that society's support for the sex offender registry is based largely on emotion rather than pragmatism. Possible explanations for this finding as well as the implications of the findings for the effectiveness of current and future public policy will be discussed.

10:15AM

The Effect of Drugs on Performance at School and Work. Josh Anna. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this study is to determine what college majors are more prone to use illegal drugs and analyze the differences in performance at school and work between those who use and those who do not. By identifying what college majors are more likely to use illegal drugs, the researcher hoped to discover a difference in performance at work and school between those who use illegal drugs vs. those who do not. The research will hopefully answer the question of: Does the use of illegal drugs affect the type of college major a person has or their performance in school and at work? The study was conducted by surveying 100 students at a small Midwestern liberal arts university to find out what college majors have a tendency to use illegal drugs and what the differences were in performance at work and school.

10:30AM

Members of Fraternities Who Choose to Abstain from Drinking and Their Perceptions of Their Fraternity Brothers. William McInerney. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

In a study done by Henry Wechsler, as high as forty percent of fraternity members reported to be frequent binge drinkers (Wechsler, Lee, Kuo, and Lee, 2000). And with a national average of Greek college students who abstain from drinking at only 7.4% (Wechsler, Lee, Kuo, and Lee, 2000), it is intriguing to see how abstainers fit into the fraternity system. The purpose of the present research was to get a better understanding of what it means to be an abstainer within a climate that encourages drinking. The participants for this study are members of six fraternities at a small Midwestern university who choose to abstain from drinking. In-depth interviews will be conducted with these abstainers to get a better understanding of this issue with questions addressing the following areas: (a) personal reasons for abstaining; (b); knowledge of drinking patters among members of fraternities; (c) reasons for joining the fraternity; (d) frequency of drinking within his particular fraternity; (e) pressures to drink; (f) non alcohol related fraternity social events; (g) abstainers view of his fraternity's drinking habits; (h) frequency of the abstainer as topic of discussion; (i) how alcohol affects the fraternity members; (j) exclusion or feeling of being an outcast of the abstainer. Although the study has not yet been completed, through data already collected it can be expected that the abstainers interviewed will not feel as if they are outcasts or be the subject of any discrimination or prejudice by the other non-abstaining members of the fraternity. These anticipated findings will suggest that there are no negative effects from being a member of a fraternity while abstaining from drinking.

10:45AM

The Conceptualization of Human Trafficking in the Media: A Content Analysis of United States Newspapers. Alicia Brownlee. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

Trading in people is the most profitable organized crime around the world next to trading in guns and drugs. Yet, we know very little about Human Trafficking and its representation in the media. We do, however know that the United States seems to be slow to understand the scope and impact of this phenomenon. Human trafficking is not just a vile business in other countries, but cases of trafficking have been reported in all 50 states. Despite the wide scope and seriousness of this crisis, trafficking in persons is not a top priority for most of the population in United States. Thus it is not surprising that it is not typically a topic of urgency for the public agenda. This present investigation seeks to use several elite United States newspapers as the vehicle for understanding the ways in which people perceive the gravity of human trafficking, what it is caused by, whom it affects, and the best way to diminish it. Taking a social constructivist approach, a content analysis of articles on human trafficking will be

conducted to provide a descriptive picture and understanding of the representation of this social problem in the media

11:00AM

The Art of Video Games - An Investigation of Sex, Race, and Violence. Jon Florida. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this study was to perform a content analysis of video games to investigate the portrayal of men, women, different reaces, and aggression. After gathering the data, questions may be asked as to if the content of these games are suitable for the children of today. The researcher wants to replicate a prior study to see if time and more advanced technology has changed the portrayal of said components.

11:15AM

Attitudes on Abortion and Demographics Which Effect Them. Shelby Pile. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of the study was to examine the different attitudes towards abortion under various circumstances. These circumstances include abortion as the result of rape and because of serious defects of the child. The study will then examine different demographics that effect these attitudes. The study will use the General Social Survey to conduct the research.

Session B College Students' Lifeworld
Jordan Hall, Room 387
Moderator: Dr. Krista Cline

11:00AM

Is Heterosexism Prevalent Among University Students? Amanda Bednara. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this study is to examine the prevalence of heterosexist attitudes among university student populations. The previous studies on this topic focus mainly on these attitudes within social work and psychology, with some emphasis on that of high school students and teachers. These studies do not address heterosexist thought among the general university student population. This study examined the prevalence of heterosexism along with the demographics of the students at a small private Midwestern university using a convenience sample survey.

11:15AM

College Students and Current Events: Are Students Really Informed? Andrew Tompkins. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this study is to determine whether college students are well informed on current events, foreign and domestic or are disconnected and too busy with their own lives(work, school, family, friends etc.) to keep up with them. The researcher hopes to discover whether students are informed or too preoccupied with their own lives. This study will be conducted using a convenience sample of students at a small private mid-western university.

11:30AM

The importance of birth control methods among college students. Greta Petri. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this study is to examine the importance of safe and protected intercourse among college age students. This study will be conducted on a small private university, studying a population of traditional college students. A survey will be conducted, to examine the use of birth control methods and the amount of sexual activity present. The study will examine different ways that college students practice safe intercourse. The study will examine the student's personal feelings about unprotected intercourse as well as the birth control methods available to them.

11:45AM

HIV/AIDS: Religiosity, Knowledge, and Sexual Practices of College Students. Chloe Blasingame. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

Prior research has revealed that the number of cases of HIV/AIDS is growing amongst the college population (CDC 2008). Research has also revealed that college students are relatively knowledgeable about HIV/AIDS, but they are still risky in their sexual behaviors and practices. Religiosity has also been seen to have an effect on sexual practices. The purpose of the study is to determine if religiosity affects HIV/AIDS knowledge which will in turn affect sexual practices of college students. A 10 minute survey was administered to 134 Butler students to test the hypothesis that a college student's religiosity will affect their knowledge about HIV/AIDS which will in turn affect their sexual practices. Consistent with previous studies, preliminary results indicate that despite being knowledgeable about HIV/AIDS, students often engage in risky sexual behaviors. Further analyses will be conducted to further examine this relationship as well as the effect of religiosity, including religious beliefs, on HIV/AIDS knowledge and sexual practices.

12:00PM

Moral Panics, College Students, and the Internalization of Methamphetamine Stereotypes. Katie Butler. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

This study highlights the importance of applying the moral panic framework to the current methamphetamine threat. A review of the literature shows that the most likely groups to engage in methamphetamine use are gay men or college students, even though typical stereotypes represent methamphetamine users as poor, uneducated, rural whites. A survey with questions about perceptions of drug users, as well as personal drug use, was administered to 158 students at a small, Midwestern, liberal arts college. Findings show that many aspects of these familiar stereotypes are internalized by the surveyed college students. For instance, college students perceive methamphetamine to be instantly addictive and that addiction is incurable. Students also believed that methamphetamine use has increased since 2000 and tended to stereotype methamphetamine as only a rural, white problem. However, students did not agree with the stereotype that methamphetamine is a drug of the lower class and the uneducated.

12:15PM

Being An International Student: The Experience From Their Own Perspective. Lindsey Kanter. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

The purpose of this research study was to take a closer look at international students' experiences in America and at Butler University. Prior studies identify numerous problems international students often face, but do not explore the experience from the perspective of the students. Using a symbolic interactionist perspective, this study examines the meanings these students attach to their experiences and how they define success in the college environment. In-depth interviews were conducted with ten Butler international students from seven different countries to provide further insight to the findings from past studies. The data indicates that international students expect many of the necessary cultural adaptations and stressors; these issues therefore do not devastate their experiences or make them want to return home, for example. Though all of these students have very diverse situations that have been imperfect in a variety of ways,

they all said the experience of being an international student in America will definitely be worthwhile in the end. However, findings point to dissatisfaction with Butler's efforts to intentionally integrate international students with other American students. There was also a lack of support for the International Unit within campus housing. The implications of these findings for improving the experience of these students in college are discussed.

12:30PM

The Impact of Valparaiso University Study Abroad Programs on Students' Worldviews. Whitney Pollatz, Jodi Naumann. Valparaiso University, Valparaiso, IN. Sponsor: Matthew Ringenberg

The aim of the research study was to determine whether studying abroad impacts student's worldviews. It was hypothesized that Valparaiso University's semester long study abroad programs in either England or Germany would have an impact on the student's cross-cultural awareness. This impact was measured by comparing the scores of student's worldviews from a retrospective stance prior to going abroad as well as from a post-study abroad standpoint.
A sample was obtained from approximately 60 male and female undergraduate students who studied abroad. These students were enrolled at Valparaiso University and participated in a semester long program in either Cambridge, England or Reutlingen, Germany. The students studied abroad for the spring of 2007 or the fall of 2008 semesters.
The survey measured the four following constructs: the potential for one to remain positive in new experiences and environments; student's open-mindedness to new cultures and ideas; the ability to interpret communication styles across cultures; and the capacity to maintain one's personal identity while experiencing and respecting different cultures.

12:45PM

College Student's Views of People with Visible Physical Disability and the Perceived Factors Affecting Social Interaction between the Nondisabled and the Physically Disabled. Amanda Redman. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

In the United States, there are more than 51 million cases of disability, and many structural and individual inequalities are evidenced between the nondisabled and physically disabled populations. Research has indicated that increased interaction/inclusion of the physically disabled population into mainstream society will decrease said inequalities. Past studies have emphasized the perspective of the disabled individual and largely ignored those of the non-disabled. However, if one is to fully understand interactions, it is imperative to study the views and perspectives of the non-disabled. Using a symbolic interactionist approach, I examine the question: how do able-bodied college students view people with visible physical disability and do they perceive there are factors affecting interaction between the able-bodied and the physically disabled? Qualitative, in-depth interviews were conducted with 13 students and reveal that the existing theories are relevant. Negative views of disability and societal barriers infringe upon the interactions between the nondisabled and the visibly physically disabled. Stigma associated with the master status of a visible disability make interacting with physically disabled people more difficult/confusing for non-disabled people. The implications of these results for the inclusion of the disabled in the college setting are discussed.

01:00PM

The Effect of Place of Residence and Social Integration on Suicidal Ideation of College Students. Kelly Ferriell. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

Suicide is the second leading cause of death among college students. I propose that social isolation affects feelings of depression and thoughts of suicide. The student's residence has an effect on one's ability to become socially integrated into the campus community. A student who lives on-campus is, by nature, more likely to be socially integrated with peers, and will therefore report lower levels of depression and suicidality than students who live off-campus. Using an anonymous survey, I analyzed the students' participation in campus activities, characteristics of their residence, symptoms of depression and evidence of suicidal thoughts and plans. I expect to find that students who live on campus, especially those who are part of a Greek sorority or fraternity, will report fewer symptoms of depression and will have lower suicide ideation. I expect students who are well integrated into the college environment by participating in campus activities will also be less depressed and suicidal.

Session C Contemporary Issues
Jordan Hall, Room 348
Moderator: Dr. Marvin Scott

01:00PM

Fashion Roadkill: The effects of fashion consciousness on disordered eating in young women. Kristen Lulich. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

The purpose of this study was to examine the effect of fashion trends on body image and disordered eating among young women. Given the image of feminine beauty represented in the media and popular culture, it seems likely that women who are concerned with being fashionable may feel more pressure to conform to these images. I hypothesize, therefore, that women who are fashion conscious will be more likely to have a negative body image and issues with disordered eating than women who are less fashion conscious. Data was collected from one hundred female undergraduates (freshmen, sophomore, junior and senior) at a small private Midwestern university using a survey design. Preliminary results indicate that there is a correlation between fashion consciousness and disordered eating. It has been found that when the desire for fashion goes down so do issues in disordered eating, when the desire to be fashion conscious, disordered eating goes up as well.

01:15PM

Harvesting Starvation. Morgan Roddy. Marian College, Indianapolis, IN. Sponsor: William Mirola

This study examines small farmers in peripheral nations and their state of food security, particularly focusing on Vietnam, Malawi, and Kenya. The continuing expansion of globalization provides a more integrated world market, yet many small farmers are disconnected and are unable to sell their crops. As the farmers from these countries experience varying levels of political and economic support from their local and national governments, so do they have varying levels of food security. Data revealed the amount of crop diversification on a household level as well as the amount of governmental encouragement/aid in growing certain crops; this data tends to indicate that the more reliance on cash crops, instead of greater diversification, leads to greater states of food insecurity. Due to the precariousness of world market commodity price influxes, varying amounts of government assistance, and accessibility to the world market system, small farmers in Vietnam, Malawi, and Kenya face food insecurity in differing degrees. This study seeks to explore what political-economic factors are most indicative in determining the food security of the farmers of these peripheral nations.

01:30PM
Alternative Opportunity Structures in Adult Education. Lucie Kalousova. Earlham College, Richmond, IN. Sponsor: Deborah Jackson

Studies show that the General Education Development (GED) appears to be an educational route that does not lead to substantial improvement in earnings or quality of life overall, unless the GED recipient continues on a path towards higher education. In my ethnographic research at the adult education center in Greenville, IN – a small deindustializing city -- I was struck early on by the fact that the majority of students there did not anticipate engaging in further education. This paper is based on that ethnographic project-—a study that was motivated by a desire to understand what, if anything, participants who had no intention of pursuing higher education might gain from a GED program. My findings in this pilot study corroborate those of others in that I, too, found that the GED certificate does not seem to lead to significant enhancement of career possibilities. My findings diverge from other studies, however, in showing that the process of attaining the GED does serve to improve participants' future prospects. This improvement comes not from the ostensible goal of the adult education program – i.e., the certificate itself – but rather from the informal networking that occurs at the center. Students' daily attendance, I argue, generates informal opportunity structures through the encouragement of communal action; this, in turn, results in the (unplanned) acquisition of horizontal social capital, ultimately making a lasting positive impact on students' lives.

01:45PM
Still Separate and Unequal. Adam Butler. Butler University, Indianapolis, IN. Sponsor: Antonio Menendez

Over the course of the history of the United States, the public secondary education system has failed many students. For a period, students were legally barred from attending certain schools due directly to racial considerations. More recently schools have remained segregated, but through different means. Segregation in public education is inextricably linked to other social issues, including housing discrimination, making the problem even more difficult to tackle, but the relevant issues are now receiving renewed attention. Now, we must answer the question: where do we go from here?

02:00PM
Colliding Realities and Narratives of Socioeconomic Class and School Achievement. Emily Miller. Earlham College, Richmond, IN. Sponsor: Deborah Jackson

There has been much research on differences among students with regard to social/economic capital and problems created by the increasingly widening gap of resources. Problems such as achievement gaps are currently on the forefront of national educational issues, and yet due recognition is not given to the inequities created by low socioeconomic status. This paper explores the realities of injustices encountered by low income students who are pursuing educational attainment, alongside the narratives of "The Great School Legend" and "The American Dream." Over the course of two months, I spent several hours a week in a low income elementary school classroom, observing interactions and language that support the reality and/or narrative of American education. I question the strength, truth, and feasibility of both the reality and the narrative to exist in solitude and to thrive simultaneously. Utilizing various social reproduction theories, I define how both the reality and the narrative are woven into education and our society systemically and separately, and ultimately how they function to support one another.

02:30PM
Gender Inequality in Disney Feature Length Animated Films: The Evolution and Perpetuation. Jesseca Cox. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this research was to examine Disney's feature length animated films throughout the company's existence to determine if gender inequality is present in the films, and has this inequality been remedied since the feminist movement of the 1970's. If gender inequality still exists in these films, then the researcher hoped to find the exact extent of the inequality, whether it was more or less than before the feminist movement of the 1970's. The study was conducted using content analysis of sixteen films along with another coder.

02:45PM
Romantic Relationships in the Workplace. Leigha Corbett. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this research was to look at romantic relationships in the confines of a person's workplace. The goal is to find out how often these relationships happen, the rules that an employer has in order to keep such relationships from going on, as well as the consequences of this behavior to the party involved as well as the company for which they work. A convenience sample was given to students at a small private mid-western university to the students in order to form the results.

03:00PM
Father Absense and the Effect on Female romantic Relationships. Rachel Lewis. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this research is to examine the effect of absent fathers on their daughter's romantic relationships. Previous studies have found that females who grew up in a home without a father will experience problems in their romantic relationships. These issues include, problems relating to, talking to and trusting their partner, negative feelings towards marriage and children, and a series of unsuccessful relationships. The following study attempted to target the specific consequences of this phenomenon specifically who the child lived with for the majority of their childhood, the level of income of the family, the other father figures in the child's life, and the mothers attitude toward the father, to determine the effects these variables have on the attitude of the daughter. This study was conducted using a convenience sample at a small mid-western liberal arts university.

03:15PM
Parental Arguing: How Child Witnesses Are Affected. Jenny Jerdan. Bellarmine University, Louisville, KY. Sponsor: Curt Bergstrand

The purpose of this study is to discover how adults who witnessed conflict between their parental figures as children, ranging anywhere from non-violent arguing to extreme cases of domestic violence, are affected in their adult romantic relationships based on the degree of the conflict that they witnessed, be it physical, emotion, or verbal.

Group A 11:00am - 1:00pm, Atherton Union Reilly Room

1

Black and White Photographs. Connor Ray. Butler University, Indianapolis, IN. Sponsor: Scott Bridge

These are black and white photographs that have been taken in a large array of places, from Australia to Boston. They were taken with a Nikon D70s. They were edited in photoshop.

2

Extended Memories. Jamie Kostecki. Butler University, Indianapolis, IN. Sponsor: Elizabeth Mix

Fifty percent or more of what we communicate is through body language including posture and gesture. A shrug of the shoulders could represent indifference, while a wave hello is a common greeting. It is equally important to recognize body language in works of art, and that a face need not be present in a portrait. This might be a difficult concept to grasp, since traditionally the definition of a portrait involves the realistic depiction of a person's face. Artists such as Frida Kahlo have definitely pushed the limits of portraiture, as in her work Las Dos Fridas, and I have also attempted to move beyond what is expected. In a photo project two years ago, I experimented with different positions, facial expressions and angles with my model, Julie. It just so happened that the frame in which I actually excluded her head from turned out to be one of the better compositions. Last semester, I chose, to appropriate my own work by changing the medium (a form of literal appropriation). The end result demonstrates just how much body language can communicate to others.

3

Oh Snap! : An Experiment in Photography. Brenden Hudson. Butler University, Indianapolis, IN. Sponsor: Gautam Rao

Photography is a powerful tool to give an audience an experience that can be potentially life-changing. I want to people that there is genuine good in the world and help them find the beauty in humanity that normally gets overlooked. I want to transform the ordinary into the extraordinary and magical. Most people see the surface; I want to show them just how deep the water really goes.
This set of pictures gives a strong depiction of a world-beyond-our-world. All pictures were taken in ordinary locations, but when combined with camera techniques, these ordinary places become the backdrop for something extraordinary. Shadow is used prominently in many of these pictures to help in their abstraction, and color is combined in an eerie way to create a sense of unreal in a familiar locale. However, I also take advantage of the absence of color, letting it toy with the eye to better transform an object into something else. Motion is also a large component of many of my pictures; a slow shutter gives the illusion of abandonment and desertion in a normally crowded city. Long exposure can also show the path of motion an object takes, distorting it so that it becomes alien in an otherwise normal scene. Through these techniques, I hope to force the audience to reexamine their surroundings and question what they perceive.

4

The Middle of Somwhere. Jonathan Irons. Butler University, Indianapolis, IN. Sponsor: Gautam Rao

We had only been in Kenya for less than 24 hours when we set out on another eight-hour leg of the journey. We were traveling to the Northwest provinces of country to set out on our anthropological and archaeological endeavors. However, little did we know how this trip would come to epitomize our travel experience in Kenya.
Our mutatu (or van) broke down once before we even left the capital city, Nairobi. Two hours into the trip we were moving along fine and taking in the scenery, when the mutatu broke down again. This time we were far from any town that could provide us with the necessary parts.
One brave team member set out to find the nearest town and get help. The rest of us were stuck, in the middle of the Great Rift Valley, at the mercy of the desert and the troop of baboons moving down the road.
This wide-angled photo demonstrates well the small and alone feeling that, for a brief time, pervaded our group psyche. We had nothing to do but to wait and explore the dry bush around the highway. Similar mechanical problems would plague our entire 6 week venture, but never were we so much in the middle of nowhere than on this first day.

5

A Moment in the Demise of Wright St. University. Jonathan Irons. Butler University, Indianapolis, IN. Sponsor: Gautam Rao

While carrying out a study of slow shutter speed, I chose a sporting event to make a bit of statement about technique. Sports photography is all about action and produces dramatic images of contorted bodies and bursts of emotion. Is it so necessary that we view these fluid displays of athletic ability in sudden and abrupt flashes?
The human eye cannot process sport in the same way that most sports photography does. Our peripheral vision broadens our perspective, we are caught up in the emotion and we experience the game as a narrative. Frozen frames can only come to reinforce our continuous experience of what is occurring on the playing field.
The ghostly figures in this moment of Butler women's basketball leave trails of lines. Ups and downs, as well as the brief pauses of shoes on the court tell a story of procession. This is a photographic representation of action and sport as we experience it in real time, not as a punctuated series of bursts, but rather as fluid and story-like.

6

Salad Fingers. Jonathan Irons. Butler University, Indianapolis, IN. Sponsor: Gautam Rao

This is part of a study of light and shadow. Here the waning sun of the day is shining through the thick mix of stems and leaves comprising the environment of a local greenhouse. The shapes of the leaves, both illuminated and shadowed create a sense of drama and dread.
An intense point of light rests on one broad leaf and casts a shadow of other vegetation on it. The contrast between light and dark draws out the texture of the leaf, the fine detail of veins and holes. Overall, this photo demonstrates the power of light to obscure, expose, and emphasize details in a scene.

7

Reflections of Femininity. Katelin Clark. Butler University, Indianapolis, IN. Sponsor: Elizabeth Mix

This photograph illustrates the different aspects of femininity, as seen both personally and in society. The piece focuses on items that objectify society's definition of beauty: flowers, makeup, artificial tanning lotion, pearls, and high heels. There is a reflection in the mirror of the compact which illustrates the impact of these objects on the artist's personal life. The reflection in the mirror shows how the stereotypes of women reflect upon the artist's life.
The piece encourages viewers to think about how the stereotypes of femininity and beauty affect them on a personal level. The purpose of the piece is to put a definition to what is considered typically feminine by

society and to make viewers think about the effect of this definition that society has created. The piece also asks viewers to think about how the objects featured in the photograph reflect upon women as a whole.

Poster Presentations

Group A 10:00am - 10:50am

1

Eastside Story: Portrait of a City Neighborhood on the Suburban Frontier. Margaret Baurley, Dan Branstrator, Autumn Langley, Stephanie Yarian, Autumn Langley, Courtney Singleton. Indiana University/Purdue University at Indianapolis, Indianapolis, IN. Sponsor: Susan Hyatt

The neighborhood around Community Hopital East, now known as Community Heights, had two phases of development. In the late 1800s, the older part of the neighborhood, from 13th Street and Emerson south to 10th Street, like its neighbor Irvington was once a suburban refuge for affluent families seeking to buy comfortable, single-family dwellings in what was then a relatively bucolic setting. The area north of 13th Street, up to I-70, grew rapidly in the post-World War II period as real estate developers built small tracts of bungalows and ranch houses for families to buy as their first "starter homes." In this poster session, students from the IUPUI Ethnographic Methods class will talk about their research through which they are writing a book about the history of the community. The research methods have included use of archival material, interviews, participant-observation and mapping. Topics to be will include the history of the local residential housing, the impact of the construction of the interstate highways, and the churches, schools, community groups and other local institutions that make up the present-day neighborhood.

2

Reaction Functions in the Chinese and U.S. contexts. Nam Vu. Wittenberg University, Springfield, OH. Sponsor: David Wishart

Predicting how the central bank will react to economic shocks has been crucial in any economic forecast. In this paper, the Taylor principle, which has successfully predicted the fluctuations of the Fed Funds Rate based on the changes in real GDP and inflation rate from their target values, will be applied in the case of China to determine whether the Chinese central bank – PBC – actually alters their discount rate policy based on those fluctuations. By applying the same Taylor principle in the U.S. and Chinese context, we will look at the possibility of using the lagged version of the Taylor rule as well as proposing a new Taylor rule for China using some economic indicators different from Taylor's initial suggestions.

3

To Blink or Not to Blink: Investigating Prepulse Inhibition and Facilitation in Schizophrenia Patients. Lindsay R. Palmer, William P. Hetrick, Tara T. Lineweaver. Butler University, Indianapolis, IN. Sponsor: William P. Hetrick

Research has shown that the cognitive impairment that accompanies schizophrenia may result from an inability to screen out irrelevant environmental stimuli and attend to important stimuli. Schizophrenics differ from others in their ability to effectively habituate to certain stimuli and in their effectiveness of sensory gating.
Prepulse inhibition (PPI) is a phenomenon in which a stimulus presented shortly before a startle stimulus (less than 500 msec) decreases the startle response. Prepulse facilitation (PPF) occurs when an initial stimulus occurring more than 1000 msec before the startle stimulus increases the startle response. Past studies have demonstrated both PPI and PPF deficits in schizophrenics.
This study seeks supporting evidence for a PPI/PPF deficit in schizophrenics and to extend these findings to additional patient groups. To date, 28 participants (14 schizophrenics, 14 controls) have undergone the PPI/PPF task, which involves EMG recordings using auditory prepulse and startle stimuli during a visual distraction task.
The groups were matched in age, gender and education. When the prepulse immediately preceded the startle stimulus (120msec), PPI was equally observed in both the left and right eyes of both groups. When the interval between the prepulse and the startle stimulus increased (4500msec), PPF occurred equally in the left eyes of healthy normal and schizophrenic participants. However, in the right eye, normal controls exhibited PPF in block 1, but PPI in block 2; schizophrenics demonstrated the opposite pattern. Data currently being collected on additional patient groups may help explain why these results fail to replicate those of earlier studies.

4

Intergroup Attitudes of Caucasians toward African-Americans. Christopher Childs. Ball State University, Muncie, IN. Sponsor: Bernard Whitley

The current study focuses on the contact hypothesis which states, people who have little contact with members of other groups will be more likely to hold stereotypic beliefs about and may hold negative attitudes toward those groups. Intergroup contact is inhibited in the U.S through residential racial segregation (Licther, Parisi, Grice,& Taquino, 2007). Individuals who choose to live in urban areas are more likely to have diverse populations than rural areas, making more opportunities for contact(Tuch, 1987). Reduced opportunities for contact make it possible for residents from rural areas to hold more stereotypic beliefs about members of minority groups and hold less favorable intergroup attitudes. Four other attitudes related to stereotyping and prejudice are assessed in the study: right-wing authoritarianism (RWA), social-dominance orientation (SDO), and perceived competitiveness, and threat from outgroups (Whitley & Kite, 2006, for review). Additional measures include depth and valence of contact toward African-Americans, racial tolerance, participant's positive and negative stereotypic views of African-Americans; participant's emotional reactions toward African-Americans; and participant's attitudes toward affirmative action are measured. Students from Ball State University completed a questionnaire assessing the components mentioned above via an online testing system. The current study investigates the levels of prejudice toward African-Americans among Caucasians from different regional backgrounds. The primary hypothesis is that Caucasians from urban backgrounds will exhibit less prejudice than those from non-urban backgrounds and that intergroup contact will mediate this difference. This study also explores the roles RWA, SDO, perceived threat and perceived intergroup competition play in the hypothesized attitude differences.

5

Discrimination of attention-related and motor-related evoked activity by hemispheric comparison over the motor cortex. Darcy Dubuc, Nicholas Del Grosso. Wittenberg University, Springfield, OH. Sponsor: Josephine Wilson

Using electroencephalography (EEG) to record brain activity from the scalp, (10-20 system, C1-C6, 3 per hemisphere), hemispheric differences in activity were identified in motor (thumb) control and attention. Six undergraduate students (three women) held a button in each hand, which they pressed with their thumb. When the letter "A" appeared, participants were to press the button in their left hand, and when "B" appeared they were to press the button in their right hand. Stimuli appeared in randomly on either the left or right side of the screen. Each subject completed four to six blocks of 40 trials. A cross appeared for 500ms, followed by either "A" or "B" appearing on the left or right side of the screen for 200ms. After trial averaging, the C6 (left side) and C5 (right side) electrodes most clearly indicated both motor-related activity (increase in both 14-16 Hz mu and 36-42 Hz beta activity at motor response) and attention-related activity (1 Hz

readiness potential, Increase in both 12-16 Hz mu and 36-42 Hz beta activity at stimulus) While further analysis remains for activity differences based on side of stimulus and response, these results indicate differing activity patterns for attention and motor activity in the motor cortex, thus allowing the discrimination between these two functions. This concept can be applied in small non-invasive brain-computer interfaces (BCIs). The ability of differentiation of attention and motor activity implies that simple BCIs could be programmed to filter out attention changes and use only motor-based activity as their input.

6

Piecing Autism Together: Families and Support Groups. Daniel Ladig. Ball State University, Muncie, IN. Sponsor: David Perkins

Autism Spectrum Disorder is the fastest growing developmental disability. Autism is defined as, a bio-neurological developmental disability typically appearing before age three. Characteristics of ASD may include repetitive behavior, withdrawal behavior, and/or misbehavior that make social outings for families difficult.
Caring for a child with ASD can be challenging and extremely demanding in many aspects. Previous research has indicated the day-to-day level of stress arising from parenting, the parents' lack of confidence in handling the child's behavior, the lack of supportive services to meet the needs of the affected child, and the realization that there is no cure for ASD are a few stressors experienced by parents.
The goal of this study is to identify specific resources and other benefits of participating in a support group for parents of children with ASD which includes autistic disorder, Asperger syndrome, and Pervasive Developmental Disorder Not Otherwise Specified (e.g., atypical autism). The content of the study includes: the feeling of community within an Autism support group, the use of respite care (temporary or short-term home care of a child that is provided, either for pay or on a voluntary basis, by adults other than the birthparents, foster parents, or adoptive parents that the child normally resides with) since joining the support group, the type of information shared between members, and the form and frequency of social activity with other support group members.

7

Cyberporn and Loneliness among Undergraduate College Students. Chris Haak, Joe Winger, Seth Ragsdale, Jon Pfleegor. Indiana Wesleyan University, Marion, Marion, IN. Sponsor: Tim Steenbergh

Evidence suggests substantial rates of involvement in internet pornography, or cyberporn, among U.S. consumers. Preliminary data has also shown a positive correlation between cyberporn viewing and loneliness; however, these data were collected from a survey conducted through a cyberporn site (Yoder, Virden, Amin, 2005). This study seeks to further our understanding of the relationship between internet pornography involvement and loneliness by studying a traditional undergraduate college student sample. This demographic group was chosen because it has grown up with the internet as an integral part of life and has ready access to it. Participants completed a cyberporn involvement measure and the UCLA Loneliness Scale Version 3 (Russell, 1996). We hypothesized that there would be a positive relationship between cyberporn viewing and loneliness. Our study includes data analyses addressing this hypothesis, and additional analyses examining other factors associated with cyberporn involvement are discussed.

8

The Relationship between Traditional Cheating, Digital Cheating, and Gender among College Students. Ashley Lawrence, Anna Isaacson. Valparaiso University, Valparaiso, IN. Sponsor: Jennifer Winquist

Over the years methods for communication have been expanding with the use of the Internet, cell phones, and computers. With the increasing ease and speed of communication, one wonders if students are utilizing these advancements in order to cheat. In this study, 110 students of Valparaiso University completed a questionnaire regarding their behaviors and beliefs about traditional cheating methods and digital cheating methods. The questionnaire was designed to compare how often students cheated in a traditional manner to how often they cheated in a digital manner. Not only was this comparison made, but how serious they believed the cheating to be was also compared for both methods. In addition, the gender of the participants was also recorded to see if there were any differences between males and females in cheating behaviors. The results of this research showed that students who cheated in a traditional manner were also more likely cheat in a comparable manner digitally. These results imply that the best way to determine if a student will cheat digitally is to see if they cheat traditionally. Despite the increase in technology use students were still more likely to cheat traditionally than they were to cheat digitally. It was also found that males cheated in a traditional manner significantly more than females, but there was no difference between genders for digital cheating. Overall these results imply that digitally cheating is not as much of a problem as traditionally cheating since traditionally cheating might lead to digital cheating behaviors.

9

Attitudes Toward Autism. Carrie Edyvean. Ball State University, Muncie, IN. Sponsor: David Perkins

Abstract: Many studies have been conducted to observe the effect of contact on mental illnesses, but few studies have observed the effect of contact on the autism spectrum specifically. This study attempts to provide a positive correlation between the amount of contact with an individual on the autism spectrum and attitude toward the autism spectrum. In addition, this study attempts to prove that negative symptoms (such as not talking) encourage positive attitudes more than positive symptoms (such as fits of anger).

Over a period of approximately 3 months, over 200 students were asked to fill out an online survey which included several scales testing attitude toward the autism spectrum. They also read vignettes displaying individuals on the autism spectrum with positive and negative symptoms in both a frustrating situation and an everyday social situation. Then they filled out attitudinal questions based on the vignettes. (Results to follow.)

10

A Study on the Relationship of Media and Intimacy. Ashley Johnson, Laura Wheeler. Indiana Wesleyan University, Marion, Marion, IN. Sponsor: Doug Daugherty

Technological innovation has made available many methods of communication, but little is known about the effects these innovations have on interpersonal communication and quality of relationship. Media Richness Theory suggests that modes of communication provide different amounts of information to the receiver. Additionally, greater levels of self-disclosure are associated with deeper and more satisfying relationships. Therefore, we hypothesized that the level of self-disclosure would vary across different forms of telecommunication mediums. We examined university students' use of different telecommunications mediums and the level of self-disclosure across these mediums. Participants were undergraduate college students from the Midwest. Participants completed a behavioral measure examining their use of telecommunications and modified versions of the Miller Social Intimacy scale and a self-disclosure scale. Descriptive analyses examining participants use of telecommunications mediums and their relationship to self-disclosure variables are presented.

11

An Analysis of Gender and College-Age Students' Self-Disclosure on Facebook. Grace Arnold. Valparaiso University, Valparaiso, IN. Sponsor: Jennifer Winquist

Facebook.com is a social networking website that allows users make personal profiles for themselves that display their identity. In this study we investigated the relationship between self-disclosure on Facebook profiles, gender, and age. Previous research has shown that females turn to others for validation while males keep more to themselves and also that teenagers self-disclose more than any other age group. Based on this research, we predicted that females would disclose more information than males and that younger Facebook users would disclose more information than older users. The profiles of 80 Facebook users (40 female and 40 male) were analyzed. Age was assessed by class status (Freshmen, Sophomore, Junior, or Seniors). Self-disclosure was assessed by counting the number of items of personal information provided in the users profiles, including gender, religious affiliation, address, and interests. The results revealed that males ($M = 15.65$, $SD = 3.8$) and females ($M = 15.58$, $SD = 4.97$) did not differ in the amount of personal information disclosed ($p = .94$). There was also no evidence that younger classes disclosed any more personal information than older classes ($p = .19$). Although the effects were not significant, this study opens door for other methods of testing these hypotheses. This study was limited to students of Valparaiso University.

12

College Students' Inclination to Use the Internet Over Other Forms of Entertainment. Travis Cooper, Josh Henderson, Jeff Brady, Kory Hollensteiner, Jeremy Lopez, Allen Kincaid. Indiana Wesleyan University, Marion, Marion, IN. Sponsor: Tim Steenbergh

College students use the Internet more than any other age group in the United States. With 86% of college students using the Internet regularly (Neilson, 2008), and for various forms of entertainment (Jones, 2002), we compared college students' inclination to use the Internet over other forms of entertainment. Participates were undergraduate psychology students. All participates entered a waiting room situation, where they were allowed to choose between various activities including books, newspapers, magazines, and computers with Internet access. Participates' activities were monitored from behind a one-way mirror. We examined participants' behavior in relation to demographics, personal attitude toward Internet use, and self-evaluation of Internet use. This study looks to find whether college students prefer the Internet when given other entertainment options during their leisure time. We developed an initial profile of those that are more inclined to use the Internet.

13

A Middle Class Look at the Adolescent-Adult Transitional Period and the Self-Concept. Bryan Findley. Butler University, Indianapolis, IN. Sponsor: Katherine Novak

In order to understand the transitional period between adulthood and adolescence, one must look at the differentiating values that exist. A person grows into who he or she is by holding true to the values that he or she are attracted to. However, at what point in time does the interpretation of one's self-concept come into play? This research aims to understand and account for the transitional period in a person's life from adolescence into adulthood and the values that are associated with each. It will then answer the question of what kinds of factors those values placed on an individual's self-concept.

14

State of Assault. Megan Smith, Amanda Smith. Ball State University, Muncie, IN. Sponsor: John McKillip

Nationwide, the backlog of forensic evidence in sexual assault cases exceeds 250,000. This backlog delays prosecution and thus adds to the emotional trauma already experienced by the victim. In addition to this DNA backlog, numerous communication problems exist among law enforcement officials, forensic nurses, victim advocates, and judiciary officials during laboratory and criminal proceedings. To find solutions to these problems, a research team, involving students from seven different disciplines, devoted a full semester to studying the published research on sexual assault and then attempted to verify this research by videotaping interviews with sexual assault victims as well as experts in legal, medical and social services. The purpose of this cinematic research was to produce a documentary film that clearly defined problems commonly experienced by victims following a sexual assault as well as to explain how to: 1. improve the collection, testing, and storage of forensic evidence; 2. revise communication policies among agencies; and 3. meet the short and long term emotional needs of the victim. Research consultants for the project included the Indianapolis-Marion County Forensic Services Agency and the Madison County Sexual Assault Treatment Center. This project was funded by the Virginia Ball Center for Creative Inquiry at Ball State University, and its research findings will be broadcast on public television, informing the general public about how to solve the problems that exist currently among agencies following a sexual assault.

15

The Influence of Anatomical Placement and Walking Speeds on Pedometer Accuracy. Travis Misamore. Hanover College, Hanover, IN. Sponsor:

Purpose: The purpose of this study is to examine the accuracy of steps recorded by a Freestyle Pacer Pro pedometer with regards to anatomical placement and walking speed. This research will examine the accuracy of the pedometer in order to better inform the public of the practical use for surveillance, screening, program evaluation, and intervention to prevent the overestimation of physical activity. Methods: A total of 20 Hanover College students (10 males and 10 females) will undergo four tests in a single scheduled day. All four tests will not exceed half an hour. The initial test is the stride length test which is necessary for calibration of each pedometer. This stride length measurement for each subject is set for all three pedometers. The next three tests are part of the actual test and are performed on a treadmill. Subjects will perform at walking speeds of 2, 3, and 4 mph with pedometers attached to their left ankle, hip, and wrist for each speed. Hypotheses: The Freestyle Pacer Pro Pedometer will be accurate within ± 8% at 2mph, 3mph, and 4mph when placed on the ankle, hip, and wrist. Previous studies have shown that the Freestyle Pacer Pro pedometer underestimated step count by as much as 8%.

16

A Brief Respite. Jonathan Irons. Butler University, Indianapolis, IN. Sponsor: Gautam Rao

Working with a group of anthropologists in Northwestern Kenya, I was charged with photo-documenting the different research endeavors. Over four or five days, we studied the potting process in a small town. This photo was taken during the clay procurement. From a small and well-hidden source, alongside one of the many red, dusty Kenyan roads, we watched as raw clay was dug out from the ground.

Robai enjoyed the attention paid to her by this group of young muzungus (or wanderers). At one point, she stood up to rest a moment while we weighed the clay she and her co-wives had harvested. I made this image just as she looked up. In it, her face is wise and sincere, speckled with bits of drying mud. Her gaze is at once weary and passionate, demonstrating the infusion of this arduous potting process into the meaning of life for the

family. It affords them not only economic return, but also a great deal of pride.
In the next moment, Robai beamed and feigned embarrassment of being the subject of my prying camera lens. However, in this brief respite, we glimpse the recognizable human character that is missing from many representations of Africa. Hard work and pride of accomplishment can surely bridge the cultural gap.

17

Developmental changes in mandibular precursors at embryonic day 13.5 in Ts65Dn mice. Brady Harman, Randall Roper, Josh Blazek, Cherie Billingsley, Emily Thomas, Danny Carney, Nicole Shepherd, Will Brewer. Indiana University/Purdue University at Indianapolis, Indianapolis, IN. Sponsor: Randall Roper

Down syndrome is a genetic disorder caused by three copies (trisomy) of chromosome 21. Genetically engineered mice have been used to effectively study Down syndrome (DS) phenotypes. The Ts65Dn mouse model is used because the developmental pathways and craniofacial phenotypes are similar to those of humans. We have recently shown that trisomy affects neural crest cell precursors of the craniofacial skeleton at embryonic day 9.5 (E9.5). We hypothesize that molecular alterations during development of bone and bone precursors cause structural and composition abnormalities found in individuals with DS. We also hypothesize that early developmental changes in neural crest lead to altered mandibular size at a later developmental stage (E13.5) in Ts65Dn mice. Mice are bred and at E13.5 the embryos are dissected from the Ts65Dn mother, washed and dehydrated. The embryos are then embedded in paraffin, cut parasagitally and stained with eosin. Unbiased stereology is used to quantify the volume of the whole embryo and the mandibular and tongue precursors. Embryo, tongue, and mandible size are quantified to examine whether the mandibular and tongue precursor volume relative to the total embryo volume is smaller and larger, respectively, in the trisomic Ts65Dn mice as compared to their euploid littermates. Preliminary results indicate differences between Ts65Dn and control mice in both mandibular volume and overall size. This research will provide temporal and spatial characterizations for examining gene expression differences and potential therapeutic intervention for DS craniofacial phenotypes.

Group B 11:00am - 11:50am

1

The Expression of Heat-Shock Protein 70 and Metallothionin I in Trout Red Blood Cells Exposed to Cadmium: Development of a Cell Physiology Lab. Victor Anciano. Earlham College, Richmond, IN. Sponsor: David Matlack

Because they are nucleated and capable of transcription, translation, and protein synthesis, fish red blood cells are a valuable model for studying cellular responses to a variety of stresses, including heavy metal toxicity. The heat shock proteins, HSPs, and metallothioneins, MTs, are two families of stress-induced proteins frequently studied in heavy metal toxicology. Fish red blood cells have been reported to respond to heavy metal stress by the expression of HSPs, and in some cases do so in a graded, dose-dependent manner, while the expression of MTs is more variable and is associated with survivability in the face of metal exposure. This research involved the development of a laboratory module for a 300-level cell physiology course at Earlham College. Mature rainbow trout, Oncorhyncus mykiss, were obtained from a commercial fishery. Fish were acclimated for a month before the experiment. Fish were anesthetized and blood drawn from the dorsal vein. Blood cells were washed and then incubated with varying molarities of cadmium. Cells were then lysed and the lysate was analyzed for total protein using the Bradford method, protein expression using SDS-PAGE, Hsp 70 expression using Western immunoblot and MTI expression using dot-blot. It was determined that the techniques were reliable enough to introduce this as a semester-long lab in Cell Physiology. Upon implementation of this lab, student groups also introduced a chelator or cadmium-competitor as a variable in studying cadmium responses. Students were also introduced to bioinfomatic tools using fish and other globins to construct phylogenetic trees.

2

Conservation of C2H2 zinc-finger proteins in eukaryotic genomes. Vincent Keller. Indiana State University, Terre Haute, IN. Sponsor: Gary Stuart

During the development and differentiation of an organism, transcription factors regulate the expression of genes by binding to specific DNA sequences. Zinc-finger (ZnF) transcription factors constitute the largest family of such factors while C2H2 ZnFs are the largest subtype. Because gene regulation is crucial to the survival of the organism, these transcription factors should be well conserved. Previously, Knight and Shimeld identified 39 C2H2 ZnF gene families conserved in Caenorhabditis elegans, Drosophila, and humans. Initially, we focused on the simpler metazoans such as placozoans, choanoflagellates, echinoderms, and cnidarians, but our long term objective is to use additional recently sequenced genomes to analyze the conservation of C2H2 ZnF genes across all available eukaryotic genomes. Web-based tools like “Inparanoid” and “OrthoMCL” can be used to extract likely gene orthologs from species specific sequence databases (like GiardiaDB) or compilation databases (like NCBI). Using a technique known as best reciprocal BLAST hit (RBH), we verified likely orthologs and uncovered additional orthologs from the newly sequenced metazoan genomes. Work to date reveals the absence of even well conserved genes in some lineages. For instance, both MTF and TFIIIA are found to be conserved from cnidarians to humans, whereas both are absent in the nematode lineage. In addition, TFIIIA was found to be conserved from plants to humans, but appeared to be missing in simple plant-like organisms like green and red algae. The sporadic absence of these genes is not surprising in view of the fact that deletions of these genes are tolerated in some organisms.

3

Increased Developmental Delay in the Ts65Dn Down Syndrome Mouse Model. Abby Newbauer, Randall Roper, Josh Blazek. Indiana University/Purdue University at Indianapolis, Indianapolis, IN. Sponsor: Randall Roper

Ts65Dn mice are the most widely used mouse model for Down syndrome research. This mouse model is trisomic for about half of the genes on human chromosome 21. Ts65Dn mice are difficult to generate because the males are subfertile and females are not good mothers. In addition, a percentage of pups from Ts65Dn litters do not survive into adulthood. We hypothesize the embryos of Ts65Dn mothers have increased developmental variability than mice with a similar genetic background (B6C3F1) resulting in a lower rate of survival. Additionally, we hypothesize that homozygosity for the retinal degeneration gene mutation affects the litter size of Ts65Dn females. To test our first hypothesis we are collecting embryonic data from both 9.5 day embryos (E9.5) and 13.5 day embryos (E13.5) to see whether the number of offspring and developmental stage of the embryos differs between Ts65Dn and control mice. To test our second hypothesis, we are genotyping Ts65Dn mothers for the retinal degeneration mutation to see if homozygosity results in smaller or less viable litters than in Ts65Dn mice exhibiting a wild-type or heterozygous genotype. The data from these experiments may show the negative effects of developmental delay in Down syndrome using the Ts65Dn mouse model.

4

A retrospective analysis of comorbid traits associated with craniofacial dysmorphology in infants with Down syndrome. Sandra Stone, Randall Roper, Maria Stanley. Indiana University/Purdue University at Indianapolis, Indianapolis, IN. Sponsor: Randall Roper

Down syndrome (DS) is one of the most common genetic disorders to affect humans and occurs in 1 out of every 733 births. It is caused by the triplication of chromosome 21 (Trisomy 21) and results in several consequences including craniofacial dysmorphology, cardiac defects and cognitive impairments. Common craniofacial phenotypic expressions in individuals with DS include brachycephaly, shortened midface, small mandible, protruding tongue and flattening of the nasal bridge. These traits may affect the feeding, breathing, swallowing and hearing of these individuals. Tissues affected in DS, including craniofacial skeleton, have a neural crest (NC) component, and our laboratory has recently demonstrated through the use of DS mouse models that trisomy causes NC deficits. We hypothesize that NC deficits may affect multiple tissues in DS and that NC facial dysmorphology, as typified by feeding and breathing difficulties, may be indicative of other deficiencies in individuals with DS. To better understand these secondary phenotypes resulting from craniofacial and NC anomalies, we are performing a retrospective chart review on 137 infants with DS up to six months of age who have visited the Ann Whitehill DS clinic at Riley Hospital from August 2005 to August 2008. Cardiac, gastrointestinal, endocrine, pulmonary, auditory, and feeding data is being collected and statistical analysis will determine the comorbidity of these traits. We anticipate finding specific traits that are more commonly associated with each other in individuals with DS. Identification of these comorbid phenotypes will help healthcare providers identify potential complications in infants with DS through association of particular NC derived phenotypes.

5

Genetic Basis of Abdominal Pigmentation Variation in D. ananassae. Taruna Aggarwal. University of California - Davis, CA. Sponsor: Artyom Kopp

In Drosophila, abdominal pigmentation is a highly variable trait with a well-understood genetic and biochemical basis, which makes pigmentation an excellent model for reconstructing the molecular mechanisms behind evolutionary changes. This study investigates the genetic basis for intraspecific variation in D. ananassae. In this cosmopolitan species, most strains have light pigmentation, but some South Pacific populations have evolved dark pigmentation. Genes, ebony (e) and yellow (y) encode enzymes required for the synthesis of light and dark pigments, respectively, and are known to contribute to color pattern variation in several Drosophila species. This leads to a hypothesis that y and e also contribute to pigmentation variation in D. ananassae. To test this hypothesis, a dark parental strain (TBU136) was crossed to a light strain (KMJ1), and a large panel of recombinant F2 progeny from this cross was scored for abdominal pigmentation. To test for association between each gene and the pigmentation phenotype, 200 F2 male progeny were genotyped for molecular markers at the e and y loci. Both markers exhibit a strong linkage with the phenotype, indicating that y and e contribute to color pattern variation in D. ananassae. The next objective is to determine which regions of the e and y genes account for abdominal pigmentation variation by sequencing these loci from multiple dark and light strains of D. ananassae originating from different geographic locations. Sequencing will be followed by population-genetic analyses to test for sequence divergence that may reflect directional selection or restricted gene flow.

6

Investigating the Relationship Between Vacuolar Proteins and Telomere Length Regulation. Jillian Koziel, Sarah Shewmaker, Emily Brandau, Alberto Lubrano. Hanover College, Hanover, IN. Sponsor: Jennifer Osterhage

Telomeres, the DNA-protein complexes at the ends of linear chromosomes, are essential for maintaining genomic stability. Removal of the terminal RNA primer during semi-conservative replication results in loss of telomeric DNA over successive cell divisions. The evoluntionarily conserved enzyme telomerase elongates chromosome ends to counteract this effect. A genome-wide screen to identify regulators of telomere length in S. cerevisiae found 173 genes that affect telomere length when mutated. Several of these gene products have vacuolar functions, including Atg11, Ape3, Vps32, and Bro1. A previous report has shown that other vacuolar proteins involved in telomere length regulation exert their effect(s) through the heterodimeric Ku complex. Ku performs many functions at the telomere, including protecting natural chromosome ends from inappropriate DNA repair and promoting telomere elongation by telomerase through a direct interaction with its intrinsic RNA component. Based on the aforementioned research, we hypothesized that Atg11, Ape3, Vps32, and Bro1 affect telomere length via the Ku pathway. We are currently conducting an epistasis experiment to test this hypothesis. Models that link vacuolar function and telomere maintenance will also be presented.

7

Fungal Growth Rates Supreessed In Honey Bee Colonies By Regular Treatment Of Organic Acids. Brady Christensen, Jay Yoder, Travis Croxall. Wittenberg University, Springfield, OH. Sponsor: Jay Yoder

Multiple types of beneficial fungi are found within honey bee colonies facilitating storage of bee bread and pollen. Some types of pathogenic fungi, such as Ascosphaera apis (agent of chalkbrood) and Aspergillus flavus (agent of stonebrood) are also present. Based on fungus ecology, fungus will take over and exploit an unoccupied substrate, especially if a formerly present fungus were suppressed. In this study, application of formic acid and oxalic acid (parasitic mite control agents) and high fructose corn syrup (feeding supplement) were examined to compare the effects of these compounds on growth rates of common bee fungi. Hive conditions were simulated using 30?C, total darkness and eleven fungi (original bee isolates) were tested on potato dextrose agar using trisecting line method to calculate radial growth rate (N=3 replicates of 45 each). The fungi tested were Absidia sp., Alternaria sp., A. apis, Asp. flavus, Asp. niger, Cladosporium cladosporioides, Fusarium sp., Mucor sp., Penicillium glabrum, Rhizopus sp., and Trichoderma sp. Of the 11 fungi, six were sensitive to the organic acids (Absidia sp., A. apis, Asp. flavus, Fusarium sp., Penicillium sp., and Mucor sp). Fungi growth rates were most suppressed by formic acid (4-6 fold), followed by oxalic acid (2-3 fold) and then high fructose corn syrup (2 fold). Evidence suggests that use of these compounds can alter the fungal dynamics of honey bee colonies leaving potential unoccupied substrate. Field observations support this conclusion as honey bee colonies repeatedly treated with these compounds experience increased fatality due to takeover by fungal pathogens.

8

Effect of Polymerase Mutations on the Efficiency of Break-Induced Replication in Saccharomyces Cerevisiae. Alexandra Vayl, Anna Malkova, Kelly Van Hulle. Indiana University/Purdue University at Indianapolis, Indianapolis, IN. Sponsor: Anna Malkova

The continuation of the living world lies on the passing down of DNA from one generation to the next. Unfortunately, the main component in this process, that being DNA is vulnerable to breaks. DNA, being determined to fix itself, is able to enter various repair mechanisms. Break-induced replication (BIR) is one of several repair pathways for DNA. This pathway

is not the ideal repair mechanism since it can cause a loss of DNA material and other tribulations that could lead to serious problems, including cancer. To better understand the pathway, several polymerases were mutated in order to observe their roles in BIR. It was observed that pol3-Y708A,a mutation of the Pol d complex, had a significant effect on BIR. Further research will be done on various other polymerase mutations as well as on the identification of how specifically pol3-Y708A mutation effects BIR.

9

Increasing the Solubility of Ebolavirus Nucleoprotein. Heather Jeffries. DePauw University, Greencastle, IN. Sponsor: Sharon Crary

The Ebola virus was first detected in Zaire and Sudan in 1976. The Zaire strain has one of the highest mortality rates of any human virus at about 90%. To become infectious, the single-stranded RNA requires multiple viral proteins including the nucleocapsid protein (NP), which binds first, and VP35. Bacterial expression of NP results in protein aggregates. Two methods for increasing the solubility of NP were tested. The first is expressing NP in eukaryotic cells due to possible post-translational modifications. The second is expressing NP and VP35 concurrently. Expression of NP in S. cerevisiae was successful. Column chromatography based on a Histidine tag added to NP shows that NP is soluble when expressed in yeast cells, but the protocol does not yet lead to purified protein. Repeating the protocol with modified buffers will most likely produce pure NP. The trials for dual expression of NP and VP35 have not yet been completed because the resulting plasmid needs to be sequenced, but this method should provide NP in a high enough concentration to be studied. If the structure of NP can be examined, then the protein can possibly be prevented from binding to the ebolavirus, thereby obstructing ebolavirus replication.

10

Negative Synergistic Epistasis in Drosophila Melanogaster. Caitlin Rex, Sarah Rossiter, Amanda Lyons. Bowling Green State University, OH. Sponsor: Ronny Woodruff

Spontaneous deleterious mutations are a constant part of the genomes of all organisms. These genetic changes and their synergistic interactions may in part be responsible for the maintenance and evolution of sexual reproduction and genetic recombination, inbreeding avoidance, senescence, the evolution of mate choice by the good gene mechanism, evolution of degenerate Y chromosomes, DNA repair, genetic control of DNA-element transpositions, extinctions of endangered species by mutational meltdown, and positive correlations between recombination rate and nucleotide diversity. Yet, the role of deleterious mutations in these evolutionary processes depends on the degree of negative synergistic epistasis among the mutations, the average fitness effects of each mutation, including reduction in fitness in homozygotes and dominance in heterozygotes, and the deleterious genomic mutation rate. The estimations of selection coefficients and dominance of deleterious mutations in higher organisms are diverse, and the presence of negative synergistic epistasis for these mutations is controversial. In addition, although there are estimations of the deleterious genomic mutation rate in a number of higher organisms, including nematodes, Drosophila and humans, these estimations are broad, ranging from about 0.01 to 10 per generation. Hence, it is important to determine whether negative synergistic interactions occur among deleterious mutations and to determine the distribution of their fitness effects.

11

Mites Present On The Madagascar Hissing-Cockroach May Serve As In Reducing Human Associated Mold Allergies. Michael Chambers, Jay Yoder, Justin Tank, Joshua Benoit. Wittenberg University, Springfield, OH. Sponsor: Jay Yoder

Despite being commonly found in science classrooms, museums, and households, Madgascar hissing-cockroaches, Gromphadorhina portentosa, raise serious health concerns given their widespread use and connection to allergies and childhood asthma. Several allergenic molds carried by these cockroaches are heavy spore producers characterized by rapid growth including: Alternaria sp., Aspergillus sp., Cladosporium sp., Geotrichum sp., Mucor sp., Penicillium sp., Rhizopus sp., and Trichoderma sp. This study examines the effectiveness of a symbiotic mite (Androlaelaps schaeferi) to regulate fungal levels found on the cockroach's surface. Two different media were used to culture/compare the number of fungal colonies on mite-free and mite-infested cockroaches and cockroaches loaded with a known numbers of mites (replicates of 20 each; N=3). Results suggest that in adult female cockroaches, the presence of mites reduced the total number of surface fungi by 2/3, by 1/3 in adult male cockroaches and by 1/4 in final instar nymphal cockroaches. The amount of external fungus decreased as cockroaches were artificially loaded with increasing numbers of mites. The mites seem to be nonspecific in the reduction of fungi as the same fungi were present on mite-free and mite-infested cockroach colonies, with a reduction in the overall amount of fungi. The mites do not eat the fungi; rather they eat cockroach saliva that the fungi use as a growing substrate. The mites may minimize the risk of fungal pathogens that could be encountered by these cockroaches in their native habitat therefore functioning to reduce levels of molds associated with cockroach allergy in humans.

12

The effect of chaya extract on the ergosterol synthesis in S. cerevisiae. Patty Campbell, Dominique Edwards. Purdue University North Central, Westville, IN. Sponsor: Rosa Rivera-Hainaj

Cnidiscolous chayamansa (chaya) is a leafy dark green shrub native of tropical Mexico that has been used as a dietary supplement over the centuries. The nutritional values of chaya compare to those of spinach. Chaya is used in Central American countries as a folk remedy for high cholesterol. This plant has been observed as a potential remedy for ailments like high cholesterol and diabetes. However, there is not sufficient scientific data supporting the role of chaya in the treatment of the mentioned conditions. Cholesterol is a sterol essential to normal cellular activity including protein function, maintenance of normal permeability and fluidity of the plasma membrane, and organelle identity. Biosynthesis of cholesterol in higher eukaryotes and some bacteria uses the enzyme HMG-CoA reductase, which is the target of many anti-cholesterol medications. In this study, we investigated the effects of a traditionally prepared chaya tea extract on the ergosterol synthesis of Saccharomyces cerevisiae (yeast). S. cerevisiae was chosen because the pathway it uses for ergosterol synthesis is similar to the pathway that humans used in the synthesis of cholesterol. Negative controls were grown in a medium in the absence of chaya tea extracts. Positive controls were grown in a medium supplemented with chaya tea extracts. The concentration of total ergosterol in the yeast was determined using a spectrophotometric assay.

13

The %Trans-fat in Fast Food French Fries: A Pilot Study. Lauren Frank, Matthew Westenfeld. Purdue University North Central, Westville, IN. Sponsor: Sharron Jenkins

Studies linking high trans-fat diets to coronary heart disease (CHD) have prompted the need to either regulate, limit, or completely ban trans-fat from all commercial food products, including fast foods. Many U.S. fast food chains now claim that their food items, particularly French fries, have "no

trans-fat". In our study, we determined the %trans-fat extracted from fries obtained from 13 popular fast food restaurants and compared our findings with the %trans-fat reported in each restaurant's literature or nutrition fact table. Rapid attenuated total reflection-Fourier transform infrared (ATR-FTIR) spectroscopy was used to assess the trans-fat content of oil extracted from fry samples. According to our preliminary data, seven of the thirteen restaurants had fry trans-fat levels ranging from 12 to 43% of the total extracted fat. These values were significantly higher than the amount of trans-fat reported in each restaurant's literature. Our study suggests that the trans-fat content in fast food fries may be much higher than what is actually disclosed in a restaurant's literature. In addition, a restaurant's "no trans-fat" claim may not necessarily hold true for all the individual restaurants within its franchise. Since there is no federal regulation of trans-fat content in fast foods, it is important that trans-fat claims and trans-fat labelling are accurate and up to date so consumers are able to make healthier food choices when dining in fast food establishments

14

Optical Absorption of Normal and Leukemic Cells. Andrew Huh. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Renat Letfullin

The absorption spectra from a leukemic cell line and normal blood cells are obtained by using a spectrophotometer Evolution 300. The scanning range is from 190 to 1100 nm with a 1.0 nm step. The two average absorption spectra of normal and carcinoma cells have clear differences because their structure and amount of nucleic acid, protein, and other major molecules are changed. This difference in absorption spectra can be used as effective and accurate technique for the leukemia diagnosis.

15

The effects of maternal deprivation and MK-801 on prepulse inhibition in BALB/cByJ mice. Laura Wiscomb, Erin Crask. DePauw University, Greencastle, IN. Sponsor: Carrie Van Brunt

The neurodevelopmental model of schizophrenia suggests that genetic vulnerability in combination with early life stress causes atypical brain development and leads to the onset of the disease post-adolescence. The glutamate hypothesis suggests that glutamate hypofunction is responsible for the behavioral sequela of schizophrenia. We tested the combination of a hippocampal mutation and maternal deprivation and assessed behavioral response to a glutamate antagonist using a prepulse inhibition paradigm. We used BALB/cByJ mice, a strain with an autosomal dominant mutation called hippocampal lamination defect (Hld), which alters neuronal migration in a single subdivision of the hippocampus. We examined the early life stress of maternal deprivation on postnatal days 6-10. Once the mice reached maturity we administered the glutamate antagonist MK-801 immediately prior to testing the BALB/cByJ mice and the control mice C57BL/6J for prepulse inhibition (PPI) of acoustic startle response (ASR). We hypothesized that the BALB/cByJ mice will show the greatest deficits of PPI after drug administration. In addition, we predicted an interaction between strain of mouse, maternal deprivation, and administration of MK-801 such that after administration of MK-801, maternally deprived BALB/cByJ mice will experience the highest deficit in PPI. We propose that this will present a viable and potentially more accurate representation of human hippocampal abnormality than lesion.

Group C 12:00pm - 12:50pm

1

The Expression of Metallothionein I in Indiana Game Fish Exposed to Copper. Juan Hernandez, Chris Owens. Earlham College, Richmond, IN. Sponsor: David Matlack

The metallothioneins (MTs) are a family of cysteine-rich, low molecular weight, highly conserved polypeptides that putatively help regulate zinc homeostasis in the cell. MTs up-regulate in response to metal toxicosis in a number of organisms, including humans and some fish. This up-regulation may serve as a protective mechanism and enhance survivability, but it may be at the expense of long-term fitness.
The purpose of this research was to determine the pattern of expression of MT I in Indiana game fish exposed to copper. Copper sulfate is frequently used in ponds to control algae. It is toxic to invertebrates at low doses, but many fish seem able to survive low doses of copper. Studying the expression of MT I in fish exposed to copper is the beginning of a longer survivability versus reproductive fitness study with implications for local fish pond management.
Fingerling channel catfish, red-ear sunfish, blue gill and large mouth bass were divided into test (n=3 per species) and control groups (n=3 per species.) Test fish were exposed to 1ppm copper in their tank water for seventy-two hours. There was no significant difference in tissue fluorescence between test and control groups. There was inadequate protein in the tissue homogenate for ELISA or Western blot, so dot blot was performed and confirmed that was no significant difference between test and control groups. Future studies would involve higher doses of copper exposure and the use of larger fish to ensure adequate tissue samples for quantitative analysis.

2

Inciting Cimex Lectularius To Host Seek: The Effect Of Releasing 2-Hexenal And 2-Octenal (Two Alarm Pheromone Components Released During Feeding) In The Presence Of Inactive Bed Bugs. Bethany Rohr, Jay Yoder, Joshua Benoit. Wittenberg University, Springfield, OH. Sponsor: Jay Yoder

In this experiment, a possible cue for activation from quiescence of the bed bug Cimex lectularius was tested. Alarm behavior was expressed by unfed first instar nymphs and adults in response to feeding and recently fed individuals. GC/MS analysis confirms that feeding elevates secretion of the active components of bed bug pheromone (2-hexenal and 2-octenal) by 2-10 times. Behaviorally, bioassays involving a response from a neighboring bug's pheromone compared to 2-hexenal and 2-octenal show a 50% reduction in feeding interval time when a bug locates a feeding tube. Also, the scattering action of 2-hexenal and 2-octenal and the extracts of fed bugs have been confirmed in circular pen bioassays. The amount of fluid taken up during feeding was not affected, which suggests that there is no stimulatory effect on feeding by nearby fed bugs. Despite the alarm response, these results indicate that the presence of a host is signaled by compounds released during feeding, or when fed bugs have returned to their harborages where unfed bugs are located. Thus, 2-hexenal and 2-octenal function as general excitants that stimulate other bed bugs to become activated and undergo a vigorous searching behavior; this behavior increases the bed bug's potential for encountering a host, which is presumably mediated through temperature (body) cues.

3

Synthesis and Use of Cyclic Vinyl Boronic Acid. Jeni Bishop. Butler University, Indianapolis, IN. Sponsor: LuAnne McNulty

The goal of this project was to perform a reaction in order to make cyclic vinyl boronic acids that could be used in a Suzuki reaction. Various alcohols were made from aldehydes to be used for the boronic acid formation. The reaction conditions of the boronic ester were altered to try

to maximize yields to be able to perform as many microwave reactions as possible. Also, different methods were tried in order to purify the ester, but no conclusion was made. In addition, the actual microwave conditions were changed in order to maximize yields. Nuclear Magnetic Resonance spectroscopy was used to determine the identity of all products.

4

Synthesis of Heterocyclic Amines from 1,4-Hydroxypyridine. Alicia Phelps, John Esteb. Butler University, Indianapolis, IN. Sponsor: John Esteb

Heterocyclic systems are active in a number of biological systems, and are reported to have insecticidal, antibacterial, and antifungal properties. The specific heterocyclic framework to be synthesized in this project was quinolizidine via a three step process. First, 1,4-hydroxypyridine was converted to a protected silyl ether using various protecting groups. The resulting protected derivatives were then reacted with chlorobutanal to give N-alkylated products containing a pendant acyl group. Currently, we are optimizing the last step which is the final conjugate addition through a Michael reaction to produce the desired framework. The ease and straightforwardness of this synthesis could then be adapted and expanded to synthesize several natural products containing the quinolizidine structural motif.

5

Development of the Methodology for the Synthesis of Substituted Cyclohex-2-en-1-ols. Wendu Ding. Butler University, Indianapolis, IN. Sponsor: John Esteb

This project involves the development of methodology for the synthesis of substituted cyclohex-2-en-1-ols in one step via a multi-component reaction (MCR). In total, nine reaction combinations have been tried. So far five of the nine reactions have been successfully optimized, with yields ranging from 53% to 96%. With the new methodology, microwave irradiation is utilized as the power source, which allows the reaction period to be significantly shortened from 16 hours using conventional heating to 15 minutes.

6

Synthesis of Fragrant Esters Using the Microwave Reactor. Crystal Hon. Butler University, Indianapolis, IN. Sponsor: Paul Morgan

Microwave technology enables reactions to take seconds to minutes, rather than traditional methods which often take hours to days. Fischer Esterification is normally performed under reflux, a process which can take hours. Conditions for using the microwave reactor for Fischer Esterification were optimized and applied to many fragrant esters. Among the fragrant esters tested, several provided superior results. This method of synthesis of a fragrant ester production will be presented in detail.

7

Indirect Modification of Electrodes via Thiophene-Derivative Electropolymerization for Water Quality Monitoring. Elizabeth Wagoner. Butler University, Indianapolis, IN. Sponsor: Michael Samide

This study focused on the application of organic synthesis and electrochemistry to the formation of a modified electrode for use in environmental analysis. Specifically, the modified electrode would preconcentrate metal cations at the surface of an electrode through interaction with an electropolymerized chelating resin. Both qualitative and quantitative studies could then be performed through a modified anodic stripping method. The first section of the study involved the synthesis of a series of thiophene-based monomers with functionality suitable for metal-ion chelation. The method involved a coupling reaction that employs dicyclohexylcarbodiimide to join thiophene acetic acid with an appropriate amine through an amide formation. Preliminary results indicate that these monomers can be formed, but several side products are formed and the monomers are difficult to purify. Electropolymerization followed by a spectroscopic examination of the electrode surface comprised the next section of the project. Infrared spectroscopy indicates that polymerization does occur for some monomers, but not others. Stabilization of the radical cation by the metal-chelation functionality is the primary reason that polymerization does not occur. Electropolymerization involving pure thiophene and thiopheneacetic acid results in the production of polymer-coated platinum electrode capable of complexing with metal ions in solution. The preliminary experiments involving copper, iron, and nickel indicated that the films do not effectively remove metal from solution. Although a reliable method was not developed, future research in electrode modification via thiophene-derivate electropolymerization could achieve this goal.

8

Enhanced Infrared Absorption of Anisole. Brittnee Singco, Ashley Pinaire, Shannon Teeters-Kennedy. Franklin College, IN. Sponsor: Shannon Teeters-Kennedy

The extraordinary transmission effect allows more light to pass through holes in a metal film than is incident upon the holes, resulting from the propagation of surface plasmons along the metallic surface. In the infrared, nickel mesh with micron size holes can be utilized to study anisole and other thin films with enhanced infrared absorption. The 100 to 1000 fold enhancement eases peak identification and allows the observation of weaker vibrations.

9

Liquid Carbon Dioxide Extraction of Various Food Flavors, Evaluation and Analysis. Deven Shinholt. Butler University, Indianapolis, IN. Sponsor: Anne Wilson

Sub- and supercritical carbon dioxide has been utilized as an extraction solvent for a variety of natural compounds. This requires the use of specialized high-pressure vessels. It was reported recently that common laboratory apparatus (centrifuge tubes) could be utilized in liquid carbon dioxide extractions obviating the need for specialized equipment. Various herbs and spices (including orange, lemon, lime, and grapefruit zest, oregano, rosemary, sage, spearmint, nutmeg, black peppercorns, cloves, caraway seeds, and vanilla beans) were used as substrates for liquid carbon dioxide extractions by this straightforward technique. The extracted oils, containing terpenes and terpenoids, were then analyzed through GC/MS. Liquid carbon dioxide extraction by this procedure was evaluated utilizing an internal standard and GC analysis.

10

Fire Walking Analyzed. Travis Rider. Anderson University, Anderson, IN. Sponsor: Dr. Chad Wallace

Fire walking is the act of walking barefoot across hot embers from a fresh fire. The history of fire walking is both long and colorful. Its practice reaches far back in time and spans countless cultures. Common thought was that spiritual protection and proper focusing of the mind allowed individuals to walk across the embers. No scientific explanation of this phenomenon was sought after until less than a century ago. The proposed theories for the scientific explanation include thermal conductivity properties and the Leidenfrost Effect. The objective is to show the application of how these theories pertain to a person's ability to fire walk, especially in the case of differing woods' thermal properties.

11

Extraction of Menthol from Mentholated Cigarettes. Grace Douglass, Stephanie Knezz. Butler University, Indianapolis, IN. Sponsor: Anne Wilson

Menthol is a flavoring agent used as a major ingredient in mentholated cigarettes. Menthol can be extracted from various brands of cigarettes by utilizing liquid carbon dioxide as a solvent. The amount of extract can be measured and compared between brands. The presence of menthol is confirmed by GC/MS and NMR spectroscopy.

12

The effects of geometry on the singlet-triplet coupling of m-bis-allyl benzene diradicals. Paul Jones, Paul Wenthold. Purdue University, West Lafayette, IN. Sponsor: Paul Wenthold

Meta and para bis-allyl benzene diradicals (1m and 1p respectively) are structurally and electronically similar to tetramethylene ethene (TME), a famous diradical in organic chemistry. However, the benzene spacer allows for control of the properties of the ground electronic state. For example, whereas TME is a ground state singlet experiment and calculations predict 1m to be a ground state triplet. In this work, we use spin-flip calculations to investigate the effect of geometry on the triplet coupling in 1m. We examine the effect of rotating the allyl groups on both the overall energy of the triplet state and the singlet-triplet splitting. Preliminary results indicate the largest coupling occurs when the allyl groups are coplanar with the ring, although the optimized geometry is with both allyl groups staggered at 45°.

13

Fabrication of Glass and PMMA Microfluidic Devices using Laser Ablation. Benjamin Mann, Ron Hofmann. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Daniel Morris

The growing field of microfluidics fascinates scientists with the possibilities that are presented with miniature scale devices that bend the rules of conventional fluid flow. This small scale flow is dominated by surface tension and surface charges, and the small Reynolds numbers achievable by microscopic channels prevents turbulent mixing. Unfortunately, many techniques for fabricating these devises, such as wet chemical etching, are very time-consuming and must be performed with great accuracy in order to make a working device. We present a fast and accurate method for fabricating microfluidic devices using a commercially available CO2 laser-based etching system. While standard photolithographic process and wet chemical etching can take up to one hour/device and provide highly variable channel dimensions, laser ablation allows for dozens of identical devices to be made in a matter of minutes, and the design possibilities are endless. Using such a technique, even a small-scale laboratory can obtain a multitude of devices. We have used this technique on both glass and poly(methyl methacrylate) (PMMA) substrates, and we present a comparison of the channel properties (physical and chemical) obtained from the laser ablation technique and conventional wet chemical etching methods.

14

Understanding the Dipole Moment Function of Heteronuclear Diatomic Molecules. Erin Biddle, Adam Wasserman. Purdue University, West Lafayette, IN. Sponsor: Adam Wasserman

The dipole moment of any heteronuclear diatomic molecule reaches a maximum value at large separation Rmax between the two nuclei. Predicting Rmax accurately is a difficult task for most electronic-structure methods. For example, standard Density Functional Theory within the Local Density Approximation (LDA)yields unphysical fractional charges at large separations, so the LDA molecular dipole never reaches a maximum. We show numerical evidence of this in the case of Carbon Monoxide, and provide an explanation. To understand the origin and location of Rmax, we solve the quantum-mechanical problem of a simple one-dimensional model with non-interacting electrons.

15

Development of Carbene Complexes with Tungsten and Chromium Metals using Microwave Technology. Devin Shone, Scott Wentz. Butler University, Indianapolis, IN. Sponsor: Stacy O'Reilly

Fischer carbene species are defined as a transition metal that has a double bond to a carbon atom. Furthermore, the carbon is covalently bonded to a heteroatom as well. The current study focuses on synthesizing Fischer carbenes from alternative p acids. A microwave synthesizer was explored for its ability to produce a carbene complex with both chromium and tungsten metals. Details of the reactions of both tungsten and chromium metals with a variety of isocyanides will be discussed in detail.

16

Exploring the Complex Hydrogen-Bonding Network in D1-like Receptor Binding Pocket by Synthesizing and Evaluating Bicyclic Dopamine Analogues. Aubrie Harland, Dr. David Nichols, Lisa Bonner, Benjamin Chemel, Jose Juncosa. Purdue University, West Lafayette, IN. Sponsor: Dr. David Nichols

Dopamine pathways in the brain play important roles in memory consolidation, reward circuitry, and locomotion. There are two distinct sub-families of dopaminergic G-Protein Coupled Receptors: D1-like (D1, D5) and D2-like (D2, D3, D4), which display opposing physiological effects. Currently, we are engaged in the design and synthesis of D1-like- selective agonist ligands to probe the influence of certain amino acid residues in dopamine receptors on the potency and selectivity of dopamine agonists toward specific receptor sub-types, thereby gaining information about distinct dopamine pathways. After Abbott Laboratories reported a series of 2-substitued 7,8-hydroxy-4-aminomethylisochroman compounds as being highly D1-like selective agonists, we designed and synthesized a series of chroman and carbocyclic analogues. The chroman series showed unexpectedly high affinity for D2-like receptors; however, the carbocyclic compounds proved to have desired D1-like selectivity. Based on information from receptor point mutation assays and computer modeling, we have designed two additional carbocyclic ligands that are currently being synthesized and will be submitted for pharmacological evaluation. These two agonists are hypothesized to have important and novel hydrogen-bonding interactions in the D1-like receptors, and the anticipated selectivity of these compounds could make them prime candidates for the treatment of diseases such as Parkinson’s, addiction, and schizophrenia.

Group D 1:00pm - 1:50pm

1

Habitat remediation of Vinca minor invaded forests in southeastern Indiana. Jessica Peebles. Hanover College, Hanover, IN. Sponsor: Darrin Rubino

Invasive plants are those that naturalize and spread outside of their normal range. They then become dominant or disruptive in native ecosystems. Periwinkle (Vinca minor) is such a species that is currently invading forests in southern Indiana. The objectives of this study were to determine the effects of treatment with glyphosate in varying concentrations (1, 2, 3 and 4 percent) on Vinca cover, species richness, percent woody plants, and percent non-native plants. Following treatment three years after the initial treatment of 115 one m2 plots, vinca cover decreased significantly (P 0.05) in treated plots (all concentrations) from the non-invaded control plots. After three years, species richness increased significantly (P 0.05) from the non-invaded control plots. In Vinca invaded plots, percent woody plants

decreased significantly (P 0.05) from that of the non-invaded control plots. The percentage of non-native plants was not significantly different (P > 0.05) from that of the non-invaded control plots. Future studies will include further monitoring of cover and richness in treated plots. Findings from this study will be used in a restoration-scale application for the removal of this species from local forests.

2

A Comparative Study of Parrotfish Herbivory and its Effects on Algal Cover at Two Patch Reefs off the Eastern Coast of Andros Island, Bahamas. Christopher Cagnet, Jenna Oberley, Tyler Overmyer, Emily Cebalt. University of Saint Francis, Joliet, IN. Sponsor: Dr. Lawrence Wiedman

In the last few decades, Caribbean reefs that were once dominated by hermatypic corals have been degraded due to the increasing domination of leafy green macro-algae. One of the main factors in the overgrowth of the macro algae is the demise of the long-spined sea urchin, Diadema antillarum. Historically (prior to a 1981-83 die-off) Diadema were able to consume enough macro-algae to keep it from inhibiting coral growth and recruitment. Parrotfish are thought to have opportunistically assumed the role of the primary algal grazer on the reef, in part, replacing the absent urchins. This study was conducted to determine if, and what levels, parrotfish have in controlling the variance of algae on two patch-reef sites off Andros Island, Bahamas; Mastic Point, a patch-reef site that has minimal amounts of algal cover, and Three Sisters patch-reef where algae has enveloped the reef and greatly inhibited coral growth and recruitment. Diadema, naturally being reintroduced to this area, are absent on both reef sites, and conditions, other than algal cover, seem to be similar at each. It is hypothesized that the reduced amount of macro-algae at Mastic Point is due to the increased presence of parrotfish compared to the density of parrotfish at Three Sisters. Results from our fish census indicated that Mastic Point had a higher density of grazing parrotfish than that of Three Sisters, signifying that there may be a correlation between the amount of algae and the amount of grazing parrotfish. Further research will be attempted to quantify this correlation.

3

The Effects of Wetland Restoration on Salamander Populations in Eagle Marsh; Allen County, Indiana. Leslie Hamilton. University of Saint Francis, Joliet, IN. Sponsor: Dr. Lawrence Wiedman

A population census of salamanders in the Eagle Marsh area of Allen County (IN) was made in spring 2008. The collected data is intended to become the baseline for continued annual monitoring as the restored wetland matures. Phase II of the study will be completed in March/April 2009, but data is still being processed. Historically amphibians, especially salamanders and toads, have been used as coarse barometers for a wetland's health. It is hypothesized that the amphibian population could grow exponentially in a restored, mature wetland as healthy and viable habitat increases. Thus far three species of salamanders have been recorded from the study site's three collecting points monitored over a six-week duration. One salamander reported from nearby studies but not present in this study was a blue spotted salamander. Additional sample sites are being considered in the marsh, as is inclusion of more wetland areas in the adjacent Fox Island County Park.

4

Monitoring the Natural Return of the Long-Spined Sea Urchin, Diadema Antillarum, and Its Effects on the World's Third Largest Barrier Reef Complex, Andros Island, Bahamas. Amy Roberts, Vanessa Herman, Ashley Everhart, Melissa Boyle. University of Saint Francis, Joliet, IN. Sponsor: Dr. Lawrence Wiedman

The population of the black, long-spine sea urchin, Diadema antillarum, was nearly destroyed throughout the Caribbean in the early 1980s by a mysterious virus. The decline in population has, in turn over the last few decades, led to the decline in the region's coral barrier and patch reef structures by allowing leafy, green algae to overrun the reefs. This study is monitoring the natural repopulation of these urchins. There is little baseline data to date and none in the Bahamas; although at least one parallel study is being done in Jamaica where reef health has increased dramatically as the urchins have returned in sustainable numbers. Six sites near Stafford Creek, Andros Island, Bahamas are included in this multi-year monitoring program. To quantify green, macro algae abundance on the studied patch reefs, Image J is being used to analyze underwater photo mosaics created from the sites. A container shipwreck from the 1970's with moderately dense coral/sponge/hydroid cover is being used as a base point for the study. Initially, no Diadema had been recorded from that site. Recent observations and mosaics were made in December/January, 2006, 2007, 2008, 2009 and intermediate sampling June/July 2006, 2007, 2008 at the localities. Recordings of new appearances and densities of Diadema are being made continuously by haphazard sampling from Forfar Field Station staff and college and high school groups using Forfar as a base.

5

Ramifications of Nascent Fungicides on Local Aquatic Organisms. Heather Jeffries. DePauw University, Greencastle, IN. Sponsor: bruce serlin

As Asian Soybean Rust (ASR) is particularly threatening to the viability of important crops in the United States, the Environmental Protection Agency along with the U.S. Department of Agriculture and other state departments has given emergency exceptions to fungicides. For this study, two fungicides used to treat Asian Soybean Rust within the United States, Folicur© and Quilt©, were used in observation of effects on aquatic organisms, which may be found or similar to organisms found in Indiana. Six organisms, Ambystoma Mexicanum, Chlorella, Euglena gracilis, Scenedesmus Quadricauda, Selenestrum Capricornutum, and Spirogyra, were tested with both fungicides at multiple concentrations for relative sensitivity to control groups kept in similar conditions. The growth and development of A. Mexicanum were affected, and the groups treated with Quilt© experienced a higher percent of fatalities. The algae Chlorella, E. gracilis, S. Quadricauda, S. Capricornutum, and Spirogyra had varying sensitivities to the fungicide treatments in a chronic exposure test. Though specific results varied with fungicide type and concentration, both fungicides, Folicur© and Quilt©, are harmful to the tested organisms, and their use may be more detrimental than previously believed.

6

Light microscope analysis of dandelion (Taraxacum officinale) tissues exposed to heavy metals. Julie Ziegler, Matthew Collier, Jaclyn Flickinger, Kevin Gribbins. Wittenberg University, Springfield, OH. Sponsor: Matthew Collier

Previous studies have shown that dandelions (Taraxacum officinale Weber; Asteraceae) can be metal accumulators, thus it was hypothesized that dandelions growing in urban metal polluted soils sequester and store excess metals in their vacuoles and/or bind excess metals to negatively charged cell wall components (e.g., cellulose and/or lignin). This hypothesis was tested by performing a series of reciprocal greenhouse planting experiments in which distinct dandelion clones (previously identified by DNA fingerprinting) sampled from urban polluted (relatively high Cu, Pb, and ZN soil concentrations) sites were grown in both unpolluted (nutrient solution only; control) and polluted (nutrient solution + 120 mg kg-1 Cu and 260 mg kg-1 Zn) media (N = 12 for each media type). Four weeks after metal exposure, leaf and taproot tissues (N = 12) were harvested from all surviving plants, dehydrated, infiltrated, and embedded in Spurr's plastic, sectioned using an ultramictrotome, and then examined using an American Optical Ultrastar® light microscope at 10X, 40X, and 100X magnifications. Organ cellular morphologies of dandelions grown in polluted media (N = 12) displayed evidence of extreme tissue necrosis and chlorosis when compared to control plants, and sequestered metals were

readily visible in intercellular spaces via light microscopy (metals were not aggregated in cell vacuoles).

7

Determination of metal storage sites in the root and leaf tissues of North American dandelions (Taraxacum officinale). Jaclyn Flickinger, Matthew Collier, Julie Ziegler, Kevin Gribbins. Wittenberg University, Springfield, OH. Sponsor: Matthew Collier

Given that previous studies have shown that dandelions (Taraxacum officinale Weber; Asteraceae) can be metal accumulators, it was hypothesized that plants growing in urban metal polluted soils sequester and store excess metals in their vacuoles and/or bind excess metals to negatively charged cell wall components (e.g., cellulose, lignin, etc.). This hypothesis was tested by performing a series of reciprocal greenhouse planting experiments in which distinct dandelion clones (previously identified by DNA fingerprinting) sampled from urban polluted (relatively high Cu, Pb and Zn soil concentrations) sites were grown in both unpolluted (nutrient solution only; control) and polluted (nutrient solution + 120 mg kg-1 Cu and 260 mg kg-1 Zn) media (N = 12 for each media type). Four weeks after metal exposure leaf and taproot tissues were harvested from all surviving plants and were post-fixed using osmium tetroxide, dehydrated, infiltrated and embedded in Spurr's plastic, sectioned using an ultramicrotome and examined with a transmission electron microscope. Organ cellular morphologies of dandelions grown in polluted media (N = 12) displayed evidence of extreme tissue necrosis (hypertrophy and deterioration of most organelles) when compared to control plants, and sequestered metals were readily visible in intercellular spaces via electron microscopy (metals were not aggregated in cell vacuoles).

8

Recovery efforts of orchid endomycorrhizal fungi from herbarium specimens. Andrew Pille, Matthew Collier, Michael Chambers, Brady Christensen, Travis Croxall, Jay Yoder, Lawrence Zettler. Wittenberg University, Springfield, OH. Sponsor: Matthew Collier

Orchids are prized and coveted by the public and horticulturists for their showy flowers. Many orchid species are Federally-endangered or threatened. The requirement for highly specific mycorrhizal fungi as an absolute nutritional requirement by the orchid to stimulate germination and seedling development makes cultivation of orchids difficult from seed. Isolation, preservation, and cataloging of orchid mycorrhizal fungi are at the heart of orchid conservation. To determine whether herbarium specimens represent a potential source of fungi, orchid root sections were analyzed by internal fungus culturing (N=3 replicates of 8 samples/orchid on three different agar media). Briefly, root samples were surface sterilized with mild bleach (0.05%), cut into sections for embedding, and hyphal tips subcultured. Fungal identification was based on macroscopic and microscopic characteristics; i.e., conidia. A total of 11 different orchid species were analyzed, spanning collections from 1884-1982, from the Jacob's Herbarium (Wittenberg University), along with living orchids (Phalaenopsis sp.) as a positive control. No fungi were recovered from the herbarium specimens (N > 750 plates). As confirmation of our culturing technique, mycorrhiza was recovered from the live orchid and this isolate was successful at germinating orchid seed. Thus, herbarium specimens do not represent a reliable repository for orchid root micorrhizae. Therefore, emphasis on orchid conservation needs to be aimed at retrieving live material rather than relying on archived specimens.

9

Concentration of Cu, Fe, Pb, and Zn in dandelions (Taraxacum officinale; Asteraceae) growing in central Ohio urban polluted soils. Natalie Davidson, Matthew Collier. Wittenberg University, Springfield, OH. Sponsor: Matthew Collier

In this study, we investigated the ability of North American dandelions (Taraxacum officinale) to take up and sequester Cu, Fe, Pb, and Zn from urban polluted soils. Soil samples (N = 2 per site) and dandelion leaves (N = 40 per site) were collected from 3 polluted urban sites (e.g., near railroad tracks or overpasses) and from 2 relatively unpolluted sites in Springfield, Ohio (39.94N, -83.78W). Following collection, soil samples were dried and acid digested using 4M HNO3 to extract total soil metals. Dandelion leaves were rinsed, oven dried, and ashed in a muffle furnace at 550°C before also being acid digested with 4M HNO3. The concentrations of Cu, Fe, Pb, and Zn in soil and leaf extracts were determined through flame atomic absorption spectrometry. Mean concentration of soil metals in urban polluted sites were: Cu = 48.58 mg kg-1, Fe = 11858.03 mg kg-1, Pb = 17.23 mg kg-1, and Zn = 174.20 mg kg-1, while mean leaf metal concentrations were: Cu = 11.27 mg kg-1, Fe = 2417.39 mg kg-1, Pb = 2.38 mg kg-1, and Zn = 35.79 mg kg-1. Overall, when compared to soil and leaf metal concentrations from unpolluted sites, it was determined that dandelions growing in urban contaminated can take up and sequester soil metals at reasonably high concentrations. We are hopeful that dandelions will prove to be a model organism for future research regarding the effects of anthropogenic pollution on plant population genetic structure and the mechanism(s) of metal tolerance in higher plants.

10

Determination And Characterization Of A Cave Cricket Aggregation Pheromone And Its Implicatinos For The Cave Ecosystem. Travis Croxall, Jay Yoder, Brady Christensen. Wittenberg University, Springfield, OH. Sponsor: Jay Yoder

Many northern Kentucky cave ecosystems contain an important cave cricket, Hadenoecus cumberlandicus, found aggregating on cave ceilings where their guano serves as a primary energy source for ground-dwelling cave invertebrates. This study seeks to determine and characterize the origin of the clustering behavior. A pheromone located in cricket feces (guano) may serve an aggregate function signaling to other crickets about a suitable environment or to the presence of food. To investigate this pheromone, a series of bioassays were conducted in laboratory and on cave walls. Cricket defecation was collected on filter paper disks for 48 hours to obtain the natural pheromone (cricket excreta). Filter paper targets with natural pheromone and uric acid (0.001M, 0.01M, 0.1M) were then placed in a two-choice 1m transect block design and attraction was noted by observations at 1 and 6 hours (replicates of 10; N=4). The results from the uric acid test were inconsistent, suggesting uric acid not to be the active ingredient stimulating aggregation. However, in all tests, greater than 70% of crickets were attracted to the natural pheromone. The cave cricket aggregation pheromone is not a sex pheromone as results confirmed that adults and nymphs responded similarly to each other's excreta. Instead, this pheromone functions to concentrate crickets in areas of the cave with high relative humidity and reduced air currents in order to reduce water stress. Additional features of this pheromone are long range detection, attraction and arrestment (reduced ambulatory activity) that lead crickets at these highly selected sites in the cave.

11

A histological examination of seeds sampled from terrestrial, aquatic, and epiphytic orchid (Orchidaceae) taxa using scanning electron microscopy. Samantha Imfeld, Matthew Collier, Kevin Gribbins, Jay Yoder, Lawrence Zettler. Wittenberg University, Springfield, OH. Sponsor: Matthew Collier

The Orchidaceae is one of the largest and most diverse plant families in the world (~20,000 species), but individuals occupying this group are

extremely limited to where they can survive. This limitation derives from the inability of orchids to fully utilize their seed food reserves for germination, embryogenesis, and seedling development. The purpose of this study was to examine orchid seed ultrastructure representing ten different endangered taxa to determine if seed morphology may be related to habitat type and/or limitations. Seeds from the following species were used: Cleistes bifaria var. divaricata, Encyclia tampensis, Epidendrum nocturnum, Isotria medeoloides, Habenaria repens, Liparis elata, L. hawaiensis, Platanthera holochila, P. integrilabia, and P. leucophaea. Whole orchid seeds (N = 25/species) were dehydrated in an ethanol gradient, platinum sputter-coated, and viewed with a Hitachi S-2460N scanning electron microscope. All seeds displayed a consistent morphology, featuring a highly sculpted, multi-faceted seed coat with 2-6 µm regularly spaced ridges on the surface. Consistently, the spaces between ridges were most narrow for the epiphytic species (E. nocturnum, E. tampensis, L. elata and L. hawaiensis) with ridges for terrestrial orchids being more widely spaced. Size of seed (length) varied between 100-250 µm with the epiphytes being the longest and most slender and the terrestrials being more compressed. This seed ultrastructure for epiphytes is consistent with their need for greater permeability to water for germination.

12

The Determination of Macro Algae Taxonomy and Percent Coverage on Patch Reef Areas; Andros Island, Bahamas. Megan Selking, Thomas Meehan. University of Saint Francis, Joliet, IN. Sponsor: Dr. Lawrence Wiedman

The Determination of Macro Algae Taxonomy and Percent Coverage on Patch Reef Areas; Andros Island, Bahamas
Megan Selking, and Thomas J. Meehan. University of Saint Francis, Fort Wayne, IN. Sponsor: Dr. Lawrence Wiedman

Since the mass mortality of the long-spined urchin, Diadema antillarum throughout the Caribbean in the early 1980's, the marine ecosystem has become greatly altered. Diadema was a common herbivore on the local reefs and is believed to have been responsible for the majority of the herbivory that kept the algae growth in check. Since the disappearance of the Diadema, the algae growth has been rampant. Parrotfish and rock boring urchins have steadily increased in number to attempt to occupy this vacant niche, but have not kept pace.
This project attempts to census the green leafy macro algae present on several patch reefs on the east side of North-central Andros Island, Bahamas. Algae was collected and identified to as low taxa as possible. Percentage of algal cover was determined using randomly placed half meter squares. This information is being combined with data collected from two other concurrent research projects to find if there is a correlation between the density of algae cover and the density of parrotfish or Diadema present at each research location. Study sites where selected to overlap those of the other studies on patch reef areas near Forfar Field Station, Stafford Creek, Andros Island. One correlation possible is the algae preference of Diadema antillarum and parrotfish resulting in their different grazing impacts on these marine ecosystems.

13

Freshwater suitability and spread to inland locations in the red-jointed fiddler crab by suppressed cuticular permeability to water. Chloe Hart, Sarah Stueber, Matthew Collier, Kevin Gribbins, Michael Chambers, Jay Yoder, Jason Bosley. Wittenberg University, Springfield, OH. Sponsor: Matthew Collier

Fiddler crabs (Uca minax, U. pugnax and U. pugilator) from North Carolina have overlapping salt marsh/estuary habitats but differ in their capacity to live in brackish versus freshwater. U. minax can tolerate both fresh and brackish conditions whereas the other species are restricted to brackish water only. These crabs play important roles in the maintenance of the marsh community, as indicators for gauging productivity, and in assessing levels of environmental contaminants. This water balance study was conducted on male crabs to determine why U. minax can inhabit more terrestrial inland locations compared to the other species. Two distinguishing characteristics seen in U. minax were an enlarged body size (5x) and an extremely low net transpiration rate. These features allowed U. minax to lose less than 10% body water/day, while the smaller crabs lost half their water within the same time frame. Thus, decreased water retention corresponds to the inability of U. pugnax and U. pugilator to leave their moist brackish water environments compared to U. minax, which is adapted for water conservation. Interestingly, all three species have the same body water content (~ 67%) and are safeguarded against abrupt, lethal water loss by possessing no critical transition temperature. Lack of a critical transition temperature is consistent with the absence of water-proofing epicuticular lipids in crabs and matches their rapid water loss rates, which typically limit them to moisture-rich habitats. The greatly reduced activation energy in U. minax suggests a unique cuticular modification that suppresses drying and permits them to be more terrestrial.

Group E 2:00pm - 2:50pm

1

The germ cell development strategy during mixed spermatogenesis within the male Mediterranean Gecko, Hemidactylus Turcicus (Reptilia: Gekkonidae). Erik Poldemann, Kevin Gribbins, Justin Rheubert, Matthew Collier. Wittenberg University, Springfield, OH. Sponsor: Kevin Gribbins

The purpose of this study was to determine the testicular organization and the germ cell development strategy of Hemidactylus turcicus in comparison with other vertebrates. Testicular tissues from H. turcicus were collected from Hammond, Louisiana throughout the 2007- 2008 calendar year. The tissues were cut into transverse sections, dehydrated with ethanol, embedded in Spurr's plastic, sectioned, stained with toluidine blue/basic fuschin, and visualized with a compound light microscope. The testes are composed of seminiferous tubules lined with germinal epithelia in which several germ cell stages can be found during the active months of sperm development. Spermatogenesis is inactive during September with only immature spermatogonia A and spermatogonia B present in the seminiferous tubule and little mitotic activity. A recrudescence period begins in October and the early stages of spermatogenesis progresses through November. Spermiation is observed in December, continues through August with the largest spermatozoa release occurring in June and July. Multiple generations of mature elongated spermatids are found in association with early mitotic and meiotic cells during the months of December-August. This germ cell development strategy is comparable to that described in other squamates and is more reminiscent of the sperm development found in anamniotes, in which germ cell cohorts progress through the stages of spermatogenesis as a single population. Thus, the reptilian temporal model of germ cell development within a structurally amniotic testis leads to the hypothesis that reptiles retain temporal spermatogenesis and birds and mammals exhibit convergence of the spatial development strategy.

2

Histological Evaluation of Spermatogenesis in the Spiny Lizard, Sceloporus bicanthalis. Marla Anzalone, Nicole Vrettos, Kevin Gribbins, Erik Poldemann. Wittenberg University, Springfield, OH. Sponsor: Kevin Gribbins

Sceloporus bicanthalis is a viviparous lizard endemic to higher elevations of Mexico. Adult male S. bicanthalis were collected in Tuloca, Mexico (N=73) from August 2007- July 2008. The testes were fixed in glutaraldehyde, dehydrated in ethanol, embedded in EMBED-812, sectioned with an Ultramictrotome, stained with toluidine blue, and examined via light microscopy to determine the spermatogenic developmental strategy. In all observed months, the testes were spermiogenically active. This observation, along with the visualization of mature sperm in the lumina of the seminiferous tubules, suggests that S.

bicanthalis exhibits continuous spermatogenesis. This is significant because year-round spermatogenesis is unlike most reptiles, which exhibit seasonal spermatogenesis in this type of environment. Recently, seasonally breeding reptiles have provided evidence for a temporal germ cell development strategy similar to amphibians, where germ cells progress through spermatogenesis as a single population, which leads to a single spermiation event. This is much different than the spatial germ cell development found within the testes of other amniotes. Thus, we want to test the hypothesis that lack of seasonality determines the germ cell development strategy practiced by the temperate lizard, S. bicanthalis. Many mammals and birds exhibit continuous spermatogenesis and employ a spatial germ cell development strategy. Thus, we want to test whether reptiles that practice continuous spermatogenesis have a similar mammalian-like spatial germ cell development, which is different than the typical temporal development seen in seasonal reptile.

3

Glandular Secretion From The Urnulae Of The Red Velvet Mite Provides Extreme Resistance To High Temperature. Justin Tank, Jay Yoder, Brian Hedges. Wittenberg University, Springfield, OH. Sponsor: Jay Yoder

Balaustium sp. mites are being considered for use in biological control, primarily against scale insects. Despite their small size, these mites display an impressive toleration to high temperatures and resistance to desiccation. They have been observed on metal surfaces as hot as 50oC for up to 30 minutes suggesting that they may be able to be used for biological control in areas other than the Midwest. Our hypothesis is that a secretion from a large set of glands called urnulae (of unestablished function) on the dorsum of these mites provides a water-proofing barrier permitting them to tolerate high temperatures without succumbing to water or heat stress. In this study, net transpiration rate (N=75) and critical transition temperature (N=525) were determined comparing mites that had secreted with mites that had not secreted. Results showed that mites that had secreted (1.33%) lost water at approximately half the rate of mites that did not secrete (2.47%) and there was a 9oC increase in lethal permeability temperature (LPT, a temperature that if exceeded results in death by dehydration). Also in mites that had secreted, there was a decrease in Arrhenius frequency steric factor A as evidenced by a decrease in y-intercept on an Arrhenius plot as well as a 10kJ/mol drop in activation energy (Ea), implying a water impermeable cuticular modification. The lack of a critical transition temperature (CTT), however, implies that urnulae secretion coating resists a phase change as the temperature permitting mites to handle high temperatures without succumbing to water and heat stress by preventing cuticular breakdown.

4

Strain Of Adult Seed Beetle That Exhibits Larval Competition Promotes Water Conservation And Survival. Daniel Buchan, Jay Yoder, Justin Tank, Bethany Rohr, George Keeney. Wittenberg University, Springfield, OH. Sponsor: Jay Yoder

One of the most common and widespread stored grain pests (the seed beetle, Callosobruchus maculates) exhibits a unique developmental cycle beginning with adult females laying eggs on a seed's surface. The larvae hatch on top the seed, tunnel inside, feed within, pupate and then emerge as adults. Numerous adults can develop and emerge from a single seed in most seed beetle strains, including the Brazil strain. However, one strain (South India) exhibits a distinctive behavior where competition occurs within the seed among the multiple larvae and only one adult survives to emerge. In this study, we sought a possible correlation between survival and the competitive larval behavior by conducting a water balance study between the two strains (replicates of 15, N=3). Results suggest no difference between South India and Brazil strains with regard to dehydration tolerance, but provide evidence of the beetle's water conservation features necessary for survival in hot, dry storage bins. Critical transition temperature (CTT) and critical equilibrium humidity (CEH) were not present, thereby protecting beetles against excessive lethal water loss as temperatures increase. Furthermore, a larger body size for adults of South India strain were distinguished by an extended capacity to survive without food and water resulting in a lower net transpiration rate with suppressed activation energy (Ea, permeability constant). Water balance alterations for the South India strain indicate a potential for greater persistence, expanding distribution and increased bouts of reproduction for adults of C. maculatus strains that competed as a larva.

5

Ability To Resist Heat Damage Due To High Temperatures By Dermal Gland Secretion During Feeding In The Brown Dog Tick. Brian Hedges, Jay Yoder, Justin Tank, Joshua Benoit. Wittenberg University, Springfield, OH. Sponsor: Jay Yoder

Disturbance of brown dog ticks, Rhipicephalus sanguineus, causes the secretion of a defense mechanism in the form of fluid droplets from their dermal glands. Secretions can also be induced due to the pressure of engorgement during blood feeding. The brown dog tick can be found feeding on a host for many days in temperatures of 37°C. To investigate the possible role this secretion may play during the feeding process, maximum temperatures for survival (1 hour heat shock coupled with a behavioral scoring system) and dehydration tolerance (water loss rate) were compared between ticks that had secreted and had not secreted (untreated controls). Ticks were forced to secrete by pinching their legs with forceps, six test temperatures were used, and there were replicates of 60 ticks/temperature; N=3. Results showed that the water loss rate of ticks after secretion was not impacted, but heat tolerance was improved. Ticks that had not secreted were able to survive at 50°C for one hour whereas ticks that had secreted were able to survive at 56°C for one hour. Behaviorally, secreted ticks showed marked decreases in injury response and greater rates of recovery. Furthermore, during prolonged exposure to the host body temperature of 37°C, ticks that had secreted survived one week longer than untreated controls. The results of this study imply that secretion by dermal glands is critical to surviving high body temperatures experienced on the host during feeding.

6

Interactions between the a9/a10 ACh Receptors and the SK2 Channel. Nancy Rivera. University of California - Davis, CA. Sponsor: Ana Vazquez

The inhibitory feedback of the central nervous system to the cochlea is mediated by the ion channels clustered postsynaptically at the basal pole of the outer hair cells. It has been well-established that Acetylcholine receptors (AChRs) and small-conductance potassium channels (SK2) are involved (Blanchet et al. 1996). We hypothesize that the a9/a10 ACh receptors are associated with SK2 channels in cochlea hair cells either by "linker proteins" that anchor to the same protein complexes or directly by protein-protein interactions. We have fluorescently tagged a9 and SK2 constructs that we will use to confirm our hypothesis that the AChRs and the SK2 ion channel indeed form a protein complex. I constructed the fluorescently tagged-a10 AChR to study these interactions. Using polymerase chain reactions (PCR) and recombinant DNA methods, we fluorescently tagged the cytoplasmic domain with ECFP (enhanced cyan fluorescent protein) and EYFP (enhanced yellow fluorescent protein). We will initiate detail studies of the protein-protein association that contribute to the efferent modulation of the outer hair cell properties using Fluorescent Resonance Energy Transfer (FRET) imaging techniques.

7

Observations of Dwarf Novae Outbursts and Causal Mechanisms. Dennis McClure. Ball State University, Muncie, IN. Sponsor: Ronald Kaitchuck

My planned research is to observe several selected dwarf novae to determine possible causal mechanisms for outburst. A dwarf nova consists of a white dwarf star accreting matter from a red dwarf companion star. This matter forms a rotating accretion disk about the star's equator. Because

the disk is the site of the outbursts dwarf novae are a unique and interesting type of variable star. The candidates for observation will be selected based on the periods between outbursts (< 60 days) to allow for multiple chances of observing an outburst. They must also be visible during the time constraints of the project. I will analyze the accretion disks at times of quiescence and during outburst. These observations will lead to a better understanding of the causal mechanisms of dwarf novae outbursts. Photometric data will be collected using the 16" Meade and the 14" Celestron at the Ball State University Observatory, as well as the telescopes located at both the Kitt Peak National Observatory and the Cerro Tololo Inter-American Observatory. Photometric data will be used to determine the size and temperature of the accretion disks in outbursts. This data will then be processed using standard IRAF procedures. Light curves will be used to determine the periodicity and duration of outburst. Color information will be used to calculate disk temperature and outburst location within the accretion disk. The results will be compared to various models proposed in the literature to determine possible mechanisms for the periodic outbursts.

8

A Critical Case Study in Usage-Centered Design. Austin Toombs, Andrew Haddad. Ball State University, Muncie, IN. Sponsor: Paul Gestwicki

Usage Centered Design is an approach to developing software in a way that best suites the tasks and jobs the software will be used for. It is a systematic, model-driven approach to improving product usability. Our goal was to assess the effects of Usage-Centered Design on the design process, development stage and final quality of a non-trivial software application. Through our attempt at exercising Usage-Centered design principles, we came to many positive and negative realizations.
Opponents of the Usage-Centered Design process claim that the long design stage slows down development and can push back dead-lines and increase cost. Contrary, we found there was a greater organization and clarity to our work, which offsets the supposedly negative effects. The design documents themselves give those involved a more clear understanding of the tasks which still need to be completed and in what direction developers should be going. This project-management-like approach to software development makes Usage-Centered Design a powerful tool. We also found that a greater discipline is required to follow a Usage-Centered Design approach. Long Term implications are hard to judge due to the fact that we will not be maintaining the software past its initial acceptance but with further research in this area it will be possible to assess the way Usage-Centered design affects the maintenance stage of software development.
The product we developed was a drag and drop application used to create an educational multi-media teaching tool. An educator could use this tool as he/she would a textbook; for instruction.

9

Simulating the Velocity Distrobution Dispersion Function. Nicholas Humphrey. Ball State University, Muncie, IN. Sponsor: Robert Berrington

We present several N-body simulations of galaxy clusters with 50 galaxies each initiating a pilot study to characterize the evolution of galaxies in the cluster environment. We will measure the velocity dispersion (s) of the galaxies in these simulations and calculate the velocity dispersion distribution function (VDDF). The VDDF is the number of galaxies that are found in the interval s to s + ds for a given velocity dispersion. The velocity dispersion of a galaxy measures the depth of its potential and gives insight into its mass. We parametrize the VDDF by a mathematical function which can be applied to the VDDFs calculated from observational data and allows us to compare between the observed and simulated clusters and quantify the significance of any trends.
Since the VDDF is affected not only by the mass evolution of the galaxies but also by environmental factors it is a great tool for examining how each of those factors contribute to the overall evolution and dynamics of galaxies in the cluster environment. In particular, extremely massive centrally located elliptical galaxies are found at the center of clusters. One question that these simulations directly address is whether these centrally-located dominant galaxies (CDG) evolve primarily through mass accretion, luminosity evolution or some combination of the two.
This project is a subset of a further reaching study combining observational data with computer simulations to study the effects of the cluster environment on the mass evolution and dynamics of galaxies in the cluster environment.

10

Reflectance from Nichrome Nanofilms at Communications Wavelenths. Amanda Barnett, Azad Siahmakoun, James Wilkerson. Rose-Hulman Institute of Technology, Terre Haute, IN. Sponsor: Maarij Syed

We have conducted Surface Plasmon Resonance (SPR) experiments in the Kretchmann configuration on Nichrome films deposited on fused silica prisms. The experiment is performed at communications wavelengths of 1320 nm and 1550 nm. The Nichrome metal films of 50 nm thickness are grown by magnetron sputtering and are 80%/ 20% binary alloy films of nickel and chromium. For comparison, we will also present results for pure Nickel and Chromium films. Our results show that SPR behavior is a sensitive function of film composition, and our results point to interesting regimes where the reflectance is dominated by different processes that take place at the interface between the Nichrome metal and the dielectric (fused silica in our study). We will also present details of a surface plasmon model that successfully explains the prominent features present in the Nichrome film. However, the model is unable to successfully explain the features seen in our results with the nickel or chromium films. While the experimental results are important from a basics physics standpoint (interaction of free electrons in metal with light), we will also comment on possible technological applications of these results in the exciting area of optical switching.

11

The Search for Substructure in Abell Galaxy Clusters. R. Wesley Tobin. Ball State University, Muncie, IN. Sponsor: Robert Berrington

Substructure in galaxy clusters determines the environment of the system of galaxies, is linked to the dynamics of the individual galaxies within the cluster. Observations of galaxy clusters have shown that a large portion, about 40%, of galaxy clusters have statistically significant substructure. Substructure also indicates the current and past dynamics and processes that have shaped the evolution of the galaxy cluster.
There is a plethora of detailed information for galaxy clusters, however, numerous clusters lack detailed analyses describing the cluster environment. For example, there is almost no information regarding substructure in Abell 154. One study suggests that the galaxy cluster is not undergoing interactions, but another study contradicts this position, indicating the existence of substructure. Further information on galaxy clusters is needed in order to detect and describe the nature of any substructure in the galaxy cluster.
We have obtained radial velocity measurements of numerous galaxies in several galaxy clusters. Data were obtained using the Hydra multi-obect spectrograph on the WIYN 3.5 meter telescope at KPNO. Analysis of these radial velocity measurements shows indications of substructure. We determine this substructure using a battery of statistical tests and correlation of velocity data and spatial data. Since galaxies trace the potential well and the underlying substructure, we will verify our results with X-Ray and Radio data. We then characterize the dynamics of the systems, and study how the subclusters are affecting each system. We will be able to explain the evolution of the substructure that leads to its current dynamical state.

12

Programming Electrons!. Neal Coleman. Ball State University, Muncie, IN. Sponsor: Antonio Cancio

Density functional theory describes the total energy of an electronic system as a continuously differentiable functional of the set of electron orbitals. By consequently avoiding the N-body problem, it is a powerful tool for numerical simulation, with applications in solid-state physics and quantum chemistry. While we know such a functional exists in principle, its construction is complicated by quantum-mechanical fluctuations in the electron density caused by electron-electron interactions; known approximations thus require the addition of a correction term, the "exchange-correlation energy." This project is a series of first steps on the road to implementing a correction to the exchange-correlation energy of the well-known local density approximation. It includes the construction of a non-uniform grid generator to deal with the extreme nonuniformities of typical atomic densities, a numerical differentiator in order to integrate a Laplacian calculator into the publicly available functional theory code SIESTA, a routine to generate automatic atomic densities to test the numerical differentiator using Slater density approximations, and an exploration into using Lagrangian polynomial interpolation to increase the accuracy of numerical differentiation.

13

The accuracy of the elliptical trainer exercise machine's kilocalorie prediction and heart rate sensor. Tara Holstine. Hanover College, Hanover, IN. Sponsor: Bryant Stamford

Purpose: To determine the accuracy of the heart rate sensor and kilocalorie expenditure predictions on the Elliptical Trainers (ET) at two different movement speeds and body weights. Methods: Ten apparently healthy female subjects who were familiar with the elliptical trainer were equipped with a Polar Monitor heart rate sensor. Metabolic rate was determined by oxygen consumption and converted to caloric output. The first treatment entailed exercise at 2.0 mph for ten minutes. Upon completion, the subjects were to stop and rest until heart rate returned within ten beats of resting. The second treatment was the same, but with the subject wearing a 20 pound weight vest. The third treatment was the same as the second but was conducted at 3.0 mph. Results: The Elliptical Trainer heart rate sensor was consistent with the Polar Monitor; within 1-2 beats at most recordings. The Elliptical Trainer slightly overestimated kilocalorie expenditure, but not significantly (within 10 kilocaloires). While wearing the weight vest, subjects expended slightly more kilocalories (not significant), and also expended a greater amount (significant) when exercising at a speed of 3.0 mph when compared with 2.0 mph. Conclusion: The kilocalorie expenditure predictors programmed into the elliptical trainer are accurate and not influenced by body weight, but are influenced by speed. This suggests that the elliptical trainer is a non-weight bearing exercise. The heart rate sensors are very accurate and therefore supported my hypothesis.

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Noninvasive physiological markers for anaerobic threshold. Sylvanna Bielko, Bryant Stamford, Barbara Wahl. Hanover College, Hanover, IN. Sponsor: Bryant Stamford

Introduction: The anaerobic threshold (AT) reflects the level of oxygen consumption at which there is a systematic increase in blood lactate concentration. A variety of noninvasive physiological variables have been recommended to determine AT. The purpose of this study is to determine the efficiency of these variables. Hypotheses: It is hypothesized that: VCO2, FEO2, FECO2, respiratory rate, VE/VO2, and VE/VCO2, will demonstrate a distinct breakpoint reflecting the anaerobic threshold as a percentage of VO2 max. Tidal volume, respiratory exchange ratio (R), and heart rate will not demonstrate a distinct breakpoint reflecting the anaerobic threshold as a percentage of VO2 max. Heart rate will demonstrate a distinct breakpoint reflecting the anaerobic threshold when compared to VCO2. Methods: Ten college-aged females will perform a VO2 max test on a Monark cycle ergometer. Physiological responses will be measured by a ParvoMedics metabolic cart. Resistance will increase 0.5 kg per minute until voluntary exhaustion. A five minute cool-down with no resistance will follow. Results and Discussion: Initial data indicate that VO2, respiratory rate, VE/VO2, and VE/VCO2 are the most effective markers for AT. There are some inconsistent findings for tidal volume, respiratory exchange ration and heart rate. The data reflect the hypothesized trends in predicting the anaerobic threshold. The initial data appear to show that AT can be reliably predicted through several noninvasive physiological makers. The full results will be presented at the conference.

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The Effectiveness of Off-Season Training Programs. Justin Smith, Bryant Stamford, Barbara Wahl. Hanover College, Hanover, IN. Sponsor: Bryant Stamford

INTRODUCTION: Off-season training is an exercise program used by coaches for sports teams to maximize increases in physical fitness and strength. The purpose of this study was to determine the effectiveness of the Hanover College off-season football training program by comparing body composition and strength testing scores prior to and after the program. METHODS: The study included over thirty-five division III football players. Tests include maximal bench press, squat, and power clean, and body weight, relative strength measures, and hydrostatic weighing for % body fat. RESULTS: Statistically significant increases in strength occurred in all lifts. The change in body weight was 1.23 pounds, the body composition was a loss of 2.23 %, the lean tissue increased by 5.71 pounds, the bench press increased 17.59 pounds, the power clean increased by 13 pounds, and the squat increased 31.55 pounds. DISCUSSION: Off-season training is the most effective means of enhancing fitness and strength. The Hanover Program was shown to be effective. However, experts suggested some changes that included losing body weight instead of gaining it, not focusing on relative strength, and more focus on technique instead of strength gains. Although the suggestions were mentioned, the coaching experts did agree that the Hanover Program was successful. The program showed that there was goals met and that the athletes did become stronger, leaner, and most of all, better athletes.

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