Penn State Behrend - Sigma Xi

Twenty-Fifth Annual Undergraduate Student Research and Creative Accomplishment Conference

Oral Presentations

Session I  Biology I - Microbiology
Session II  Biology II - Cell and Molecular Biology: Genetics
Session III Biology III - Organismal Biology and Behavior
Session IV  Chemistry and Mathematics
Session V  Computer Science and Engineering
Session VI  Economics I
Session VII  Economics II - Sport Economics
Session VIII  Engineering
Session IX  Psychology and History/Political Science
ORAL PRESENTATIONS

SESSION I
BIOLOGY I - Microbiology
169 Nick

8:55 a.m.  Welcome

9:00 a.m.  A Second Heme Detoxification System in the Insect Pathogen Bacillus thuringiensis
Casey Latario and Rachel Schmidt (Devin Stauff), Grove City College

9:15 a.m.  The Effects of Nano Zinc and Nano Silver as Antiseptics and Safety for Human Skin
Jui-En Hung (Kelly Miller), Penn State Behrend

9:30 a.m.  Antimicrobial Activity of Essential Oils from Spices on Foodborne Pathogens
Usman Ahmad (Om Singh), University of Pittsburgh-Bradford

9:45 a.m.  Break

10:30 a.m.  Musca domestica Transmission of Chronic Limb Ulcer Haemophilus ducreyi
Jordan Gaston (Tricia Humphreys and Bradley Hersh), Allegheny College

10:45 a.m.  Use of the Software Program Mothur to Analyze Bacterial and Fungal Diversity on Potato Tubers Treated with 1,4-dimethylnaphthalene (DMN)
René Díaz and Ravi Patel (Michael Campbell), Penn State Behrend

11:00 a.m.  A Long-Term Study Examining the Antibacterial Effectiveness of Agion Silver Zeolite Technology on Door Handles within a College Campus
Colleen Miller and Melissa Tarquinio (Beth Potter), Penn State Behrend

11:15 a.m.  End of Presentations

Noon  Awards Luncheon in Erie Hall
ORAL PRESENTATIONS

SESSION II
BIOLOGY II – Cell & Molecular Biology/Genetics
167 Nick

8:40 a.m.  Welcome

8:45 a.m.  Constructing Genetically Modified Human Serum Albumin Reconstituted With Heme as a Potential Nitrite Reductase
Mohammed Al Shibar (Mary Grace Galinato and Michael Campbell), Penn State Behrend

9:00 a.m.  A Genomic Survey for innexin 5 and 6 in Basal Dipteran Species
David Klodowski (Bradley Hersh), Allegheny College

9:15 a.m.  Using Brainbow Imaging to Trace Individual Cells throughout Zebrafish Development
Emily Mitchell and Drew Cobert (James Warren), Penn State Behrend

9:30 a.m.  Treatment of Potatoes with 1,4-dimethylnapthalene Results in Transcriptional Changes
Olivia D’Annibale (Michael Campbell), Penn State Behrend

9:45 a.m.  Break

10:30 a.m.  Patterns of ANII Expression and thoughts on its Regulation in Gametophytes of the Fern Ceratopteris richardii
Randy Toth, Julia Girouard, Kara Norman, and Shivali Singh (Mike Ganger and Sarah Ewing), Gannon University

10:45 a.m.  Who’s Eating Who?
Jared Wilczynski and Brian Fuller (Greg Andraso and Kelly Grant), Gannon University

11:00 a.m.  Relative Gene Expression in Postnatal Day 25 IRBP-deficient Mice
Ananya Yerramreddy and Matthew Tilley (Christy Donmoyer), Allegheny College

11:15 a.m.  Gene Expression of Structural and Functional Proteins in the LRAT-/- Mouse Model, a Model of Vitamin A Deficiency
Karishma Reddy (Christy Donmoyer), Allegheny College

11:30 a.m.  End of Presentations

Noon  Awards Luncheon in Erie Hall
ORAL PRESENTATIONS

SESSION III
BIOLOGY III – Organismal Biology and Behavior
170 Nick

8:55 a.m.  Welcome

9:00 a.m.  Tick Talk: Prevalence of Zoonotic Pathogens in Pennsylvania
            Ryan Braumann, Colin Fort, Amanda Hutzelmann, and Amy Lind (Tracy Farone),
            Grove City College

9:15 a.m.  A Census of the Bat Population on Gannon University’s Campus
            Nick Bengel and Erin Debelak (Steve Ropski), Gannon University

9:30 a.m.  The Relationship between Blood Lead Concentration and Raptors Involved in
            Vehicular Collisions
            Abby Hileman (Anne Jacobs), Allegheny College

9:45 a.m.  Break

10:30 a.m. Heat-Shock Response in Strongyloides Stercoralis Infective Larvae
            Laura Johnston (Wayne Forbes), Slippery Rock University

10:45 a.m. Pharyngeal Morphology of Field-Caught and Lab-Reared Bluegills (Lepomis
            Macrochirus), Pumpkinseeds (Lepomis Gibbosus), and their Hybrids
            Andrea Landgraf (Greg Andraso and Kelly Grant), Gannon University

11:00 a.m. Indirect Community Repercussions of Gun Violence: A Case-Control Study to
            Determine the Effect of Mass Shootings in The United States on the Birth
            Weight of Newborns
            Garrett Devenney (Becky Smullin Dawson), Allegheny College

11:15 a.m. End of Presentations

Noon     Awards Luncheon in Erie Hall
ORAL PRESENTATIONS

SESSION IV
CHEMISTRY AND MATHEMATICS
168 Nick

8:55 a.m. Welcome

9:00 a.m. Developing the Discrete Schrödinger Form via Discrete Orthogonal Polynomial Sequences
Derek Shaffer and Lauren Minner (Daniel Galiffa and Jennifer Ulrich), Penn State Behrend

9:15 a.m. Ideals and Extensions in Non-Commutative Rings
Marco Nunez (Papiya Bhattacharjee), Penn State Behrend

9:30 a.m. Elucidating the Nitrite Reductase Activity of Myoglobin by Altering its Hydrogen-Bonding Network: Method Optimization, Kinetics, and Spectroscopic Characterization
Jaclyn Gowen and Anthony Rodland (Mary Grace Galinato), Penn State Behrend

9:45 a.m. Break

10:30 a.m. The Discrete Sheffer Sequences as Solutions to the Discrete Schrödinger
Lauren Minner and Derek Shaffer (Daniel Galiffa and Jennifer Ulrich), Penn State Behrend

10:45 a.m. Assessing Electrochemically Reduced Graphene Oxide as a Support for Cyanide-Coordinated Ferriprotoporphyrin to Selectively Detect H2S
Susanne Simkovitch (Jason Bennett), Penn State Behrend

11:00 a.m. Do Vertex Replacement Rules Generate Post Critically Finite Self-Similar Sets?
Thomas Tuberson (Michelle Previte), Penn State Behrend

11:15 a.m. End of Presentations

Noon Awards Luncheon in Erie Hall
ORAL PRESENTATIONS

SESSION V
COMPUTER SCIENCE AND ENGINEERING
155 Nick

8:25 a.m. Welcome

8:30 a.m. An Intelligent Analysis Application that Helps Telling Student’s Academic Preference to Others
Xiaoyu Zhou (Meng Su), Penn State Behrend

8:45 a.m. Implementation of a NAS System
Blake Dulick (Terri Lenox), Westminster College

9:00 a.m. Leveraging Web Technologies for PLC Interfacing
Ryan Kelley (E. George Walters), Penn State Behrend

9:15 a.m. Analyzing Various Intelligent Agent Designs in a New Game Environment
Mark Patton (John Bonomo), Westminster College

9:30 a.m. Using Aquatic Adventure to Enhance the Learning of Mathematics in Preschool Children
Aaron Shifflett (Terri Lenox), Westminster College

9:45 a.m. Break

10:30 a.m. Developing a Tersoff Potential Molecular Dynamics Framework to Simulate Amorphous Materials
Yehya Awad (Blair Tuttle), Penn State Behrend

10:45 a.m. Learning to Learn: Using Artificial Neural Networks to Assist in the Short-Term Learning of Brain-Computer Interfaces
Zachary Dernar (C. David Shaffer), Westminster College

11:00 a.m. Application of the Internet of Things in Education
Yehya Awad (Naseem Ibrahimi), Penn State Behrend

11:15 a.m. Library Call Number Sorting Application
Christopher Andrejewski (David Loker), Penn State Behrend

11:30 a.m. End of Presentations

Noon Awards Luncheon in Erie Hall
8:40 a.m. Welcome

8:45 a.m. Does a College’s Admission Selectivity Affect its Student Loan Default Rate? Annie McGowan (Stephanie Martin), Allegheny College

9:00 a.m. The Effects of the Samaritans Dilemma on the Outcome in Natural Disasters Taylor Samuel (Stephanie Martin), Allegheny College

9:15 a.m. The Determinants of Renting versus Owning a Home Edward Tiemann (Stephanie Martin), Allegheny College

9:30 a.m. The Essential Correctional College Education Mark Egan (Stephanie Martin), Allegheny College

9:45 a.m. Break

10:30 a.m. Case Study on the Determinants of the Euro versus the United States Dollar Since 1999 Emily Neuherz (Stephanie Martin), Allegheny College

10:45 a.m. Gas Prices in Erie, Pennsylvania Natalie Szalajko (Kenneth Louie), Penn State Behrend

11:00 a.m. Examining Minority Business Ownership Marissa Baker (Kenneth Louie), Penn State Behrend

11:15 a.m. End of Presentations

Noon Awards Luncheon in Erie Hall
ORAL PRESENTATIONS

SESSION VII
ECONOMICS II – Sports Economics
156 Nick

8:55 a.m. Welcome

9:00 a.m. Performance, Wage and Nationality Discrimination in the Competitive Labor Market of Major League Soccer
Steven Ramsdell (Stephanie Martin), Allegheny College

9:15 a.m. Does Age in the NFL Matter in Order to Succeed Relative to the Salaries of the Highest Paid Players per Team?
Zach Harvey (Stephanie Martin), Allegheny College

9:30 a.m. NFL Player Trade and Acquisition Effects on Jersey Sales
Cody Stolar (Stephanie Martin), Allegheny College

9:45 a.m. Break

10:30 a.m. Economic Impact of Professional Sports Teams on their Cities
Nick Deichler (Stephanie Martin), Allegheny College

10:45 a.m. Does the Presence of Sports Affect Alcohol Sales and Crime Rates?
Zachary Hudac (Stephanie Martin), Allegheny College

11:00 a.m. Do Sports Venues Act as a Catalyst for Gentrification in Low Income Areas?
Ian Richards (Kenneth Louie), Penn State Behrend

11:15 a.m. End of Presentations

Noon Awards Luncheon in Erie Hall
ORAL PRESENTATIONS

SESSION VIII
ENGINEERING
165 Nick

8:10 a.m.  Welcome

8:15 a.m.  Experimental Investigation of Bend-Unbend Mechanics in the Tube-Flaring Process
Bradley Pier (Chetan Nikhare), Penn State Behrend

8:30 a.m.  Acoustic Noise Emission Analysis for Manufacturing Processes
Travis Roney (David Loker, Cheatan Nikhare, and Ihab Ragai), Penn State Behrend

8:45 a.m.  Hole Expansion and Strain Evolution during Biaxial Tension
John Nolan (Chetan Nikhare), Penn State Behrend

9:00 a.m.  Assessment of Ergonomic Risks in Engineering Research Labs at Penn State Behrend
Anton Benedikt and Kyle Beckett (Faisal Aqlan), Penn State Behrend

9:15 a.m.  Reconfiguring the Goat Wrench
Tyler Loughran (Charlotte de Vries), Penn State Behrend

9:30 a.m.  Mathematical Modeling of Microscale Fuel Cell Electrode Performance
Daniel Doleiden and Naz Argun (Adam Hollinger), Penn State Behrend

9:45 a.m.  Break

10:30 a.m.  Sectional Heat-Treated Tubing during Uniaxial Crash Test
Zachary McCauley (Chetan Nikhare), Penn State Behrend

10:45 a.m.  Case Study of Multipurpose Product Design Methodology
Johnathan Moody (Shraddha Sangelkar), Penn State Behrend

11:00 a.m.  The Effect of Applied Electricity on Springback during Bending and Flattening of Stainless Steel 304 and 316, Titanium ASM-T-9046, and Magnesium AZ31B
Jacklyn Niebauer and Ian Sweeney (Ihab Ragai and John Roth), Penn State Behrend

11:15 a.m.  Validation of Anisotropic Strain Data for University-Built Biaxial Tensile Machine
Emmett Vorisek (John Roth and Chetan Nikhare), Penn State Behrend

11:30 a.m.  End of Presentations

Noon  Awards Luncheon in Erie Hall
ORAL PRESENTATIONS

SESSION IX
PSYCHOLOGY AND HISTORY/POLITICAL SCIENCE
166 Nick

8:25 a.m. Welcome

8:30 a.m. Assessing the Effectiveness of Therapy Dogs for Children with Autism in an Educational Setting
Emily Galeza, Julia Gabrys, and Danielle Carioto (Heather Lum and Victoria Kazmerski), Penn State Behrend

8:45 a.m. The Influence of Mentoring on Positive Youth Development
Emily Marsden, Anana Tinnhe, Brianna Zaffino, Christina Murzynski, and Taylor Morris (Charisse Nixon and Nicole Rosen), Penn State Behrend

9:00 a.m. Parental Attachment and College Student Adjustment
Allison Rupe, Skylar Amorose, Jane Ann Wiggers, and Chelsey Cratty (David Herring), Penn State Behrend

9:15 a.m. Parenting Styles, Bullying, and Adjustment to College
Alyssa Pollo, Kyleen Baker, Jessica Mihalic, Melissa Watson, and Raven Porter (David Herring), Penn State Behrend

9:30 a.m. The Effect of Game-Play Difficulty on Auditory Attention: an Event-Related Potential Study
Alysha Simmons and Rachel Mooney (Victoria Kazmerski), Penn State Behrend

9:45 a.m. Break

10:30 a.m. “I’m in Lesbians with You”: A Microhistory of Romantic Friendships and Homosexuality Starring Emily Dickinson
Breanna Black (Amy Carney), Penn State Behrend

10:45 a.m. Examining the Effectiveness of a Promotional Giveaway Social Norms Campaign
Rebecca Dinsmore and Allison Gage (Melanie Hetzel-Riggin), Penn State Behrend

11:00 a.m. The Role of Life Events on Feelings
Meghan Burgdolt, Julia Luke, Jacob Benedict, and Brianna Zaffino (David Herring), Penn State Behrend

11:15 a.m. The Relationship between Personality and Perceived Support within a Friendship
Kelsey Heinrich, Madison Barone, and Carlye Swanson (David Herring), Penn State Behrend

11:30 a.m. End of Presentations

Noon Awards Luncheon in Erie Hall