

Sigma Xi 2017 Presentation Winners

Oral Presentations

Biology I

Placement	Title and Student Presenters
First Place	Constructing Variants of Human Serum Albumin Reconstituted with Heme and Testing For Nitrite Reductase Activity <u>Alexandra Alfonso Castro</u> (Dr. Mary Grace Galinato), Penn State Behrend
Runner Up	Effects of inhaled CO ₂ on seizures in the febrile seizure mouse model <i>Mus musculus</i> <u>Daniel Daugherty</u> (Lee Coates), Allegheny College

Biology II

Placement	Title and Student Presenters
First Place	Green Frog (<i>Lithobates clamitans</i>) Tadpole: Ontogenetic Shifts of Food Preference, Foraging Behavior, and their Effect on Detritus Breakdown <u>Rachael Finigan</u> (Scott Wissinger), Allegheny College
Runner Up	Analysis of Genetic Diversity in the Pennsylvania State Population of white-tailed deer (<i>Odocoileus virginianus</i>) 110 years after Bottleneck and Translocation <u>Michael Arcieri</u> (Dr. Kristen Webb), Allegheny College

Biology III

Placement	Title and Student Presenters
First Place	Genetic Analysis of Cytochrome <i>b</i> and Cytochrome <i>c</i> Oxidase Subunit III Genes of <i>Cytauxzoon felis</i> in Domestic Cats (<i>Felis catus</i>) from Georgia <u>Megan Rodrigues</u> (Kristen Webb), Allegheny College
Runner Up	Targocil, a Wall Teichoic Acid Synthesis Inhibitor, Activates the DesK-DesR Two-Component System of <i>Bacillus anthracis</i> <u>Alex Metzger</u> (Devin Stauff), Grove City College

Chemistry

Placement	Title and Student Presenters
First Place	Electrochemical Investigation of Human Serum Albumin-Heme Enzyme with Proximal Tyrosine to Evaluate its Conversion of Nitrite to Nitric Oxide <u>Gary Fye</u> (Jason Bennett, Mary Grace Galinato) Penn State Behrend
Runner Up	Thermodynamic and Structural Impact of α,α -Dialkylated Residue Incorporation in a β -Hairpin Peptide <u>Shelby Schettler</u> , Gabrielle Gette (George Lengyel), Slippery Rock University

Computer Science

Placement	Title and Student Presenters
First Place	Monte Carlo Price Forecasting and Portfolio Optimization <u>Garrett Ashbaugh</u> (David Shaffer), Westminster College
Runner Up	A Comprehensive Security Assessment of the Westminster College Unix Lab <u>Jacob Shodd</u> (David Shaffer), Westminster College

Computer Science, Economics, and Engineering

Placement	Title and Student Presenters
First Place	Crime Rates and Income in Erie, PA <u>Natalie Szalajko</u> (Ken Louie), Penn State Behrend
Runner Up	Data Mining for Chronic Kidney Disease Prediction <u>Ryan Markle</u> (Faisal Aqlan), Penn State Behrend

Engineering I

Placement	Title and Student Presenters
First Place	Design and Development of a Battery Internal Short Circuit Test Machine <u>Mary Burbules</u> and <u>Scott DeLaney</u> (Adam Hollinger), Penn State Behrend
Runner Up	Effects of Polarity and Current Path in Electrically Assisted Single Point Incremental Forming of 2024-T3 Aluminum <u>Tyler Grimm</u> (John Roth and Ihab Ragai), Penn State Behrend

Engineering II

Placement	Title and Student Presenters
First Place	Experimental Investigation of Bend-Unbend Mechanics in the Tube Flaring Process <u>Bradley Pier</u> (Chetan Nikhare), Penn State Behrend
Runner Up	SEM Characterization of Carbides in Low Temperature Tempered (LTT) Advanced High-Strength Low-Alloy (HSLA) Steels <u>Tyler Rigby</u> (Paul Lynch), Penn State Behrend

Environmental Science

Placement	Title and Student Presenters
First Place	Presence of Agricultural Herbicide Atrazine in Water, Foods, and Human Urine Samples <u>Anthony Concilla</u> (He Liu), Gannon University
Runner Up	Varying Reflective Materials for Low Cost, Organic Light Concentrating in Flexible, Photovoltaic Devices <u>Melissa McCann</u> (Ian Carbone), Allegheny College

Mathematics

Placement	Title and Student Presenters
First Place	Improved Bounds on a Variation on the Classical Waring's Problem <u>Paul LeVan</u> (David Prier), Gannon University
Runner Up	Heroin Epidemic Modeling with PDE's <u>James Richardson</u> and <u>Allison Torsey</u> (Saziye Bayram), Buffalo State College

Psychology

Placement	Title and Student Presenters
First Place	Examining the Effectiveness of the Captain McFinn Anti-Bullying Program among Erie Elementary Schools <u>Taylor Morris</u> , <u>Chelsea Ptak</u> , <u>Christina Murzynski</u> , and <u>Rebecca Dinsmore</u> (Charisse Nixon and James Hodge), Penn State Behrend
Runner Up	Vicarious Embarrassment and Reluctant Student Participation in Classrooms <u>Emily Galeza</u> (Carol Wilson, Victoria Kazmerski), Penn State Behrend

Poster Presentations

Biology I

Placement	Title and Student Presenters
First Place	Effects of prenatal nicotine and caffeine exposure on the respiratory response to hypercapnia in neonatal mice: a possible link to SIDS <u>Jasmine Nguyen</u> (Lee Coates), Allegheny College
Runner Up	Determining the Prevalence of <i>Borellia burgdorferi</i> in <i>Ixodes scapularis</i> in Presque Isle State Park <u>Robert Wood</u> (Sara Turner), Mercyhurst University

Biology II

Placement	Title and Student Presenters
First Place	Early Campanian Elasmobranch Assemblage from North Carolina with Paleoecological and Paleobiogeographical Implications <u>Taylor Kightlinger</u> and Gerard R. Case (Todd Cook), Penn State Behrend
Runner Up	TempPoster Variation of the Amphibian Fungal Pathogen <i>Batrachochytrium dendrobatidis</i> in Northwest Pennsylvania <u>Logan Billet</u> , Carissa Lange, and Bryce Olson (Matthew Venesky), Allegheny College

Biology III and IV

Placement	Title and Student Presenters
First Place	Complementary Genetic Screens Reveal Inactivating and Constitutively Activating Mutations in Two-Component Systems of <i>Bacillus anthracis</i> <u>Michelle Chu</u> , and <u>Ellen Upton</u> (Devin Stauff), Grove City College
Runner Up	Population Frequency of Group 1 Pilin Producing <i>Pseudomonas aeruginosa</i> in Environmental Isolates <u>Samantha Runser</u> (Tara Allison), Gannon University

Biology V

Placement	Title and Student Presenters
First Place	17-B Estradiol Attenuates Inflammatory Mediators in Rats after Traumatic Brain Injury <u>Olivia Dack</u> (Jeffrey Cross), Allegheny College
Runner Up	Effects of Glial and Apoptosis Inhibitors in a Modified Controlled Cortical Impact (CCI) Model in Juvenile Male Rats <u>Colleen Bodnar</u> (Jeff Cross and Jeff Hollerman), Allegheny College

Chemistry, Mathematics, and Physics

Placement	Title and Student Presenters
First Place	Increasing the Area of a White Diffusive Background can Increase the Power Output of a Luminescent Solar Concentrator <u>Jonathon Schrecengost</u> (Bruce Wittmershaus), Penn State Behrend
Runner Up	Investigating a Conjecture about Integrals from Probability Theory <u>Bridget Torsey</u> (Peter Mercer), SUNY Buffalo State

Computer Science & Engineering I

Placement	Title and Student Presenters
First Place	Solar Eclipse High Altitude Balloon System <u>Kaitlyn Babiarz</u> , <u>Maia MacKellar</u> , <u>Donovan Starks</u> , <u>Stephen Karpinsky</u> , <u>Alejandro Ferrero</u> , <u>Tenger Batjargal</u> , Lauren Reilly, Carter Miller, Jessica Moukoro, and Kangxu Wang (Wookwon Lee, Nicholas Conklin), Gannon University
Runner Up	Acoustic Noise Emission Data Collection for quenching process <u>Samantha Muhhuku</u> (Chetan Nikhare, David Loker, and Ihab Ragai), Penn State Behrend

Engineering II

Placement	Title and Student Presenters
First Place	Characterization of Advanced High Strength, Cost Effective Steels <u>Tyler Rigby</u> , <u>Dan Smith</u> , and <u>Joseph Helbling</u> (Paul Lynch), Penn State Behrend
Runner Up	Determining Material Properties of Nanotube Filament <u>Noah Shinn</u> , <u>Adam Giovanelli</u> , and <u>Patrick Campoli</u> (Krishna Mukherjee), Slippery Rock University

Environmental Science

Placement	Title and Student Presenters
First Place	Assessing Monthly Changes to the Degradation of Terrestrially Derived Dissolved Organic Carbon in a Temperate Lake <u>Sarah Magyan</u> (Christopher Dempsey), Gannon University
Runner Up	Assessing Penn State Behrend stream health through analysis of leaf decomposition <u>Emily M Brown</u> , and <u>Megan M Palko</u> (Dr. Pamela Silver), Penn State Behrend

Psychology I

Placement	Title and Student Presenters
First Place	Visual and Auditory Neural Activation for the Multimodal Integration in Visual Word Processing <u>Rebecca Sheley</u> and <u>James Dickinson</u> (Christopher McNorgan), The State University of New York at Buffalo
Runner Up	Comparison of Breathing Techniques and Art Therapy on Stress Reduction <u>Alyssa Tobin</u> , <u>Shelby Seidler</u> , and <u>Katerina Simon</u> (Victoria Kazmerski), Penn State Behrend

Psychology II

Placement	Title and Student Presenters
First Place	Money Conflicts Between Romantic Partners <u>Emma Walton</u> , <u>Leanne Confer</u> , <u>Leslie Hasty</u> , and <u>Skyler Ferringer</u> (Carol Wilson), Penn State Behrend
Runner Up	Gender Stereotypes in Video Game Characters <u>Austin Kobylinski</u> , <u>Kayla Redd</u> , and <u>Brock McCullough</u> (Victoria Kazmerski), Penn State Behrend

Psychology III

Placement	Title and Student Presenters
First Place	Playing Your Way to Success: Mental Mapping Using Pokémon Go <u>Jacob Benedict</u> , <u>Grace Waldfogle</u> , <u>Kameron Landers</u> , <u>Mason McGuire</u> , and <u>Tiffany Eichler</u> (Dawn Blasko and Heather Lum), Penn State Behrend
Runner Up	Inhibition of Automatic Spatial Attention Causing Depletion <u>Hannah Smith</u> and <u>Alexandera Zielinski</u> (Allison Connell Pensky), Allegheny College