# SIGMA XI 2019 - WINNERS

## BIOLOGY – ORAL

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 1 | **Identifying Potential Brook Trout (*Salvelinus fontinalis*) Populations Based on Summer Temperature and Watershed Characteristics**<br>Megan Hazlett (Scott Wissinger, Chris Shaffer), Allegheny College - Ecology |
| 2ND | 7 | **Using sectioned otoliths to estimate growth rates of bluegills *Lepomis macrochirus* and pumpkinseeds *Lepomis gibbosus* from Presque Isle Bay, Lake Erie**<br>Mikkela Cabanillas, (Greg Andraso), Gannon University - Organismal Biology |

## CHEMISTRY, ENVIRONMENTAL SCIENCE & PHYSICS – ORAL

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 10 | **Characterization of the Hydroxyl Radical-Water Complex using Matrix Isolation Infrared Spectroscopy**<br>Tracy Jones, (Jay Amicangelo), Penn State Behrend - Chemistry |
| 2ND | 9 | **Theoretical Study of Disordered Graphene**<br>Victor Barone, (Blair Tuttle), Penn State Behrend - Physics |

## COMPUTER SCIENCE, ECONOMICS & MATHEMATICS – ORAL

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 39 | **Average distance between points on a regular n-gon to the points inside**<br>Bailey Hopkins, (Michelle Previte, Bruce Wittmershaus), Penn State Behrend - Mathematics |
| 2ND | 15 | **Emotion Detection for IoT Applications**<br>Kyle Jonas, Morayo Ogunsina, Karina Cuadrado (Abdallah Abdallah), Penn State Behrend - Computer Science/Software Engineering |

## ENGINEERING – ORAL

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 25 | **360 Videos and Virtual Reality-Based Teaching Modules to Teach Industrial Engineering Concepts**<br>Bradley Nulsen, Andrew Gerber, (Omar Ashour), Penn State University - Erie, The Behrend College - Industrial Engineering/Technology |
| 2ND | 22 | **Image Capture Performance for Computer Vision in Edge Compute Environments**<br>Theodore Stangebye, Joeseph Lovin, (Timothy Mohr), Grove City College - Electrical Engineering/Technology |

# SIGMA XI 2019 - WINNERS

## HISTORY & CULTURAL STUDIES – ORAL

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 30 | **Behrend Chessmen: A Collection of Early Reproduction Chess Artifacts**<br>Aurora Paterson, (Leigh-Ann Bedal), Penn State Behrend - History |
| 2ND | 32 | **Supporting Student Survivors: The Analysis and Creation of a Trauma-Informed Resource for Sexual Violence Survivors at Allegheny College**<br>Jordann Kline, (Heather Moore Roberson), Allegheny College - Community and Justice Studies |

## PSYCHOLOGY – ORAL

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 38 | **Effects of Victimization and Social Media Use**<br>Leanne Confer, Marna Owens-Bailey, Samantha Conway, (Charisse Nixon, James Hodge), Penn State Behrend - Psychology |
| 2ND | 36 | **Issues in Community-based Research**<br>Jack Parker, Bethany Pimental-Bowman, (Monali Chowdhury), Allegheny College - Psychology |

## BIOLOGY I – POSTER

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 5 | **Regulation of dihydrofolate reductase (DHFR) gene expression in human breast tissue cell lines**<br>Parmvir Deo, Meghan Robick, (Prasad Dalvi, Gary Vanderlaan), Gannon University - Cell & Molecular Biology |
| 2ND | 2 | **Role of SCAMP3 in β-Amyloid Production and Secretion**<br>Maura Mobilia, Mariam Alkhafaji, (Quyen Aoh), Gannon University - Cell & Molecular Biology |

## BIOLOGY II – POSTER (TIE – RESULTED IN TWO FIRST PLACE)

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 8 | **Assessing the stream health of PA tributaries to Lake Erie using macroinvertebrates**<br>Cytalia Crosby, Maggie Dolak, Christopher Ross, Kaylee Luchansky, (Chris Dempsey), Gannon University – Ecology |
| 1ST | 14 | **The impact of tadpole predation risk on frog morphology throughout development**<br>Zhuoyan Si, (Lynne Beaty), Penn State Behrend - Ecology |

# SIGMA XI 2019 - WINNERS

## BIOLOGY III – POSTER

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 25 | **Effects of *Conus striatus* Venom on the T-type Calcium Ion Channel Cav3.2**<br>Madeleine Stauffer, (Lauren French), Allegheny College - Neuroscience |
| 2ND | 24 | **Effects of Conus textile Crude Venom on the Kv4.2 Ion Channel Expressed in a *Xenopus laevis* Model**<br>Andrea Pence, (Lauren French), Allegheny College – Neuroscience |

## BIOLOGY IV – POSTER

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 27 | **Strain Dependent Vancomycin Sensitivity and the Influence of Culture Media on Antibiotic Inhibition in *Haemophilus ducreyi***<br>Delaney Lacey, (Tricia Humphreys), Allegheny College – Microbiology |
| 2ND | 32 | **Comparison of the Evolutionary Rates of Streptomycin Resistance in Three Common Agents of Urinary Tract Infection**<br>Michael Stewart, Parmvir Deo, Matthew Dilts, Ishveen Saini, (Prasad Dalvi, Gary Vanderlaan), Gannon University - Microbiology |

## CHEMISTRY, ENVIRONMENTAL SCIENCE & PHYSICS – POSTER (TIE – RESULTED IN TWO FIRST PLACE)

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 33 | **Multi-Site Directed Mutagenesis of Serine Residues to Glutamate in the C-Terminal Domain of *Saccharomyces cerevisiae* to Mimic Phosphorylation**<br>Dustin Williams, (Java Villemain), Indiana University of Pennsylvania - Biochemistry |
| 1ST | 37 | **Evaluation of Acceleration Due to Gravity Using Standard Preliminary Physics Laboratory Equipment**<br>Ethan Fontana, (Chuck Yeung, Thomas Flanagan), Penn State Behrend - Physics |

## COMPUTER SCIENCE, ECONOMICS & MATHEMATICS – POSTER

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 44 | **Analyzing Maximum and Minimum Scores of the Game 2048**<br>Zachary Aszalos, (David Prier), Gannon University - Mathematics |
| 2ND | 45 | **Location and Scale Parameter Estimation of Burr Type III Distribution by Monte Carlo Markov Chain (MCMC) Procedure**<br>Kyle Maraffi, Adam Majewski, Luke Pilarski, Mariah Kacey, (Woosuk Kim), Slippery Rock University - Mathematics |

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## ENGINEERING – POSTER

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 48 | **The Development of Processing Parameters for Industry Integration of Advanced High Strength Steels (AHSS)**<br>Jackson Craig, Austin Hankey, (Paul Lynch), Penn State Behrend - Mechanical Engineering/Technology |
| 2ND | 50 | **Integrating 3D Sand-Printing into the Pennsylvania Metalcasting Industry**<br>Jackson Craig, Austin Hankey, Elizabeth Gaughan, (Paul Lynch), Penn State Behrend - Mechanical Engineering/Technology |

## PSYCHOLOGY I – POSTER

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 58 | **How Mood is Affected by Type of Dog Stimulus in College Students**<br>Taylor Wood, Kayla Dick, (Shariffah Dawood), Penn State Behrend - Psychology |
| 2ND | 69 | **Reading and Writing Through Emergent Genres**<br>Hallie Myers, Madison McFeely, Mariah Knott (Lisa Ciecierski), Penn State Behrend - Education |

## PSYCHOLOGY II – POSTER

| PLACE | # | TITLE & AUTHORS |
|---|---|---|
| 1ST | 62 | **Using Functional Connectivity to Delineate Object Familiarity**<br>Jennifer Mosley, (Christopher McNorgan, Erica Edwards), University at Buffalo - Psychology |
| 2ND | 65 | **Video Game Genres' Effects on Academic Performance**<br>James Lisi, Donald Fromknecht, Matt Hammel, (Shariffah Dawood), Penn State Behrend - Psychology |