Scholars Day 2019

Student Presentations and Exhibitions

Monmouth College
Huff Athletic Center, Fieldhouse

APRIL 16, 2019
Poster Presentations
2:00–4:00 P.M. Huff Athletic Center, Fieldhouse

**BIOCHEMISTRY DEPARTMENT**
Alexandria N. Tibbs [6]  
“Synthesis of Lignin Monomers”

**BIOLOGY DEPARTMENT**
Brendan G. Guenther  
Ashley N. Long  
Piper N. Miller  
Jordan M. Peckham  
Sarah A. Poirier [34]  
“Isolation and Genomic Annotation of Novel Microbacterium Phages Identification of a Putative Tail-Assembly Chaperone Translational Frameshift Sequence”

Ashley Cuddy [35 & 36]  
“Analyzing the Effects of Deforestation on Biodiversity in Sumatra, Indonesia Using Molecular Methods”

Abigail L. Danner [48]  
“Do Northern Cardinals Use Non-Visual Cues to Determine the Carotenoid Content of a Potential Food Source?”

Cheyenne Jane Hacker [47]  
“Antibacterial Activity of Blueberry, Strawberry, and Spinach Extracts on the Microbial Triggers of Select Autoimmune Inflammatory Diseases”

Alyssa J. Hale [45]  
“Occurences of Inter-domain Horizontal Gene Transfer”

**CHEMISTRY DEPARTMENT**
Brandon Allen, Andrew S. Ferris [53]  
“A Comparative Study Between Simulated and Experimental Electron Paramagnetic Resonance Data”

Rachel A. Book, Modou L. Jarju [52]  
“Analysis of a Myelin Sheath Model Membrane System with the Addition of Flavanols Found in Ginkgo biloba”

Emily R. Currens [51]  
“Synthesis of 5-Bromo-benzo[b]naptho[2,1,d]thiophene S-oxide and its ability to cause oxidative stress in cells”

Alison E. Gustafson [50]  
“Investigating a New Approach to Nitrogen-Nitrogen Bond Synthesis”

**EDUCATIONAL STUDIES DEPARTMENT**
McKenzie R. Campbell [9]  
Courtney E. Eklund [10]  
Ashley E. Farris [11]  
Aleeka C. Gentzler [12]  
Kylee R. Payne [24]  
Elizabeth G. Reasoner [23]  
Nathan P. Schroeder [22]  
Joshua P. Talley [21]  

**EDUCATION AND COMPUTER SCIENCE DEPARTMENT**
Colton A. Evans [30]  
“Comparison of The Lagrange Form of the Interpolating Polynomial and Natural Cubic Splines”

Alyssa J. Hale [44]  
“Numerical Analysis and Adaptation of the Hodgkin and Huxley Model of Neuronal Action Potential”

**Jennista E. Eastman, Sobhi Gheath Kazmouz** [60]  
“Investigating the Effect of Multiple Interactions on the Dimerization and Oxygen Stability of the Fumurate Nitrated Reductase (FNR) Transcription Factor in E. coli Bacteria”

**LOGAN B. HOEPFNER, JEFFREY RICKETTS-HAGEN** [59]  
“Salt Water Aquarium Research and Development”

**LAURA SANCHEZ ZARCO** [58]  
“Recombinant Expression of Human Cytochrome P450 Enzymes”

**Seth W. CROSLOW, Kathryn Elizabeth SAULCY** [57]  
“Investigating Insulin Monomer and Hexamer Formation with Langmuir Monolayers and Brewster Angle Microscopy”

**JACOB B. McCERRY** [56]  
“Formation of N-N Bonds as a Tool for Synthesis and Drug Development”

**ERIC J. OLIPHANT** [55]  
“Synthesis Of Indirect Antagonists To the Thyroid Hormone Receptor”

**ZELINDA A. TAYLOR** [54]  
“Oxidation of Lignin Monomers”

**HUFF ATHLETIC CENTER, FIELDHOUSE**

[X] = Easel number
Abhi Karan Singh Jouhal [33]
“Improving Debugging of Parallel Code with Trylocks”

Ashley Maurer [17]
“How point addition within elliptic curve groups enhances the security of cryptocurrencies”

Nathaniel Dalton Smolczyk [31]
“The Plane Symmetry Groups: Modifying Symmetry Structure with Linear Transformations”

Nathaniel Dalton Smolczyk [32]
“Visualizing Foundational Algorithms Using Core Web Technologies”

PHILOSOPHY AND RELIGIOUS STUDIES DEPARTMENT

Julia N. Wilson [13]
“Restorative Justice: A New Approach to Incarceration”

PHYSICS DEPARTMENT

Morgan A. Abraham [39]
“Applications of Nuclear Agriculture: Using the N-15 Isotope as a Tracer”

Noah J. Applegate [38]
“Digital Agriculture: An Application of Physics in the Field”

Bridgette C. Davey [37]
“Replicating the Franck-Hertz Experiment”

Colton A. Evans [29]
“Explanation of Orbital Elements and Gauss’ Method”

Esther S. Hubbard [28]
“Atmospheric Neutrons”

Peter J. Johnston [27]
“Operation of programmable camera and its uses in physics research”

Daniel Ramirez [26]
“Aquatic Drone”

Maggie Seefeldt-Swanson [25]
“Advanced Studies of Transistors”

POLITICAL ECONOMY AND COMMERCE DEPARTMENT

Savannah Taylor Ball [40]
“Econometric Analysis of the Effect of Higher Education on Unemployment”

Jude Hamadeh [41]
“The effects of Social Media Usage and Gender on Body Shaming”

Caitlyn C. Honan [42]
“Modeling Healthcare Costs”

Ian S. Moles [43]
“Modeling Net Gross Potential Rent Income With Apartments”

Tara Linh Sturgeon [49]
“Modeling House Prices in the Chicagoland Area”

POLITICAL SCIENCE DEPARTMENT

Jessica E. Acosta [18]
“The Invisible Refugee: Comparing the integration process amongst refugees in Amman, Jordan”

Mackenzi Lafferty [8]
“The Pink Tax: The Persistence of Consumer Price Disparity”

Zoe Meyer-Thomas [7]
“Terrorist Attacks in Sudan and Their Impacts on Civilian Religion and Governmental Trust”

William L. Savage [19]
“The effects of big money in politics”

Beatrix R. Thornton [20]
“The Bulldozer Revolution: Lessons from Serbia Peacefully ousting Milosevic”

PSYCHOLOGY DEPARTMENT

Paige A. Gerard [15]
“Psychiatric Patient Care In US Emergency Departments”

Andrew Todd Hardy [14]
“Exercise and Mood”

Ashlyn Rose Maher [16]
“A Replication Study: The Relationship of Narrative Tone and Depression”

THEATRE DEPARTMENT

“Classical Theatre History”

Amelia Chavez: Isabella Andreini [1]
Richard W. Eyre: Sophocles [2]
Terry L. Harris: Kalidasa [3]
Noah R. Harshbarger: Christopher Marlowe [4]
Molly C. Wintermute: Moliere [5]

continued on back
**Oral Presentation**

3:00 P.M. Huff Athletic Center, Hall of Fame Room

**GLOBAL FOOD SECURITY**

“Taranga: Predicting the Future of Food Security in Senegal”

*Elizabeth C. Smith*

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**Exhibitions**

2:00–4:00 P.M. Huff Athletic Center, Fieldhouse

**ART DEPARTMENT**

Award Recipients:

- Lobie Stone Fine Arts Scholarship: **Emily DeWitt [A]**
- Harlow Bloom Painting Prize: **Ethan Olson [B]**
- Jane Graham Most Promising Art Work Award and Helen McClure Weiland Scholarship in the Arts: **Miranda Pasky [C]**
- Helen McClure Weiland Scholarship in the Arts: **Rebecca Quick [D]**
- Walterhausen Sculpture Prize: **Nia Robertson [E]**

“Ceramic Glaze Experimentation and Ceramic 3-Dimensional Printing” [TABLES 9-10]

**Ryan Dawson**    **Olivia Howey**    **Rebecca Quick**

**CHEMISTRY DEPARTMENT**

“Immersive Experience on Andros Island, Bahamas: January Term 2019” [TABLE 1]

**Samuel M. Argubright**    **Emily E. Rein**    **Josie K. Welker**

**Rachel A. Book**    **Tara L. Sturgeon**    **Jacob E. Wenokur**

**William B. Fox**    **Zelinda A. Taylor**

“I-TASSER Protein Folding Project” [TABLES 2-4]

**Brandon Allen**    **Rachel A. Book**    **Kathryn E. Saulcy**

**Attilio J. Angellotti**    **Seth W. Croslow**    **Zelinda A. Taylor**

**Logan B. Hoepfner**    **Logan B. Hoepfner**

“Development of Microscope Systems for the Visualization of Langmuir Films” [TABLE 5]

**Brandon Allen**

“Investigation into flow dynamics” [TABLE 6]

**Samuel M. Argubright**

“The Modeling and Development of 3D Printable Prosthetics” [TABLE 7]

**Maxwell E. Balagna**

**William B. Fox**

**MIDWEST JOURNAL OF UNDERGRADUATE RESEARCH**

**Savannah T. Ball**    **Lily M. Lindner**    **Luna Noofoory**

**Logan W. Evans**    **Ashlyn R. Maher**    **Hadley A. Smithhisler**

**Sobhi G. Kazmouz**    **Zoe Meyer-Thomas**    **Shannon M. Wilbourne**

**Gunnar S. Leaf**    **Grant E. Miller**    **Hunter L. Wollwert**