

Student Research Poster Display

Caputo Hall Lobby

April 21-26, 2016

- Applied Engineering, Safety and Technology
- Biology
- Chemistry
- Computer Science
- Earth Sciences
- Emergency Management
- Geography
- Mathematics
- Physics

College of Science and Technology

Welcome Message from the Dean

On behalf of the College of Science and Technology, welcome to the Undergraduate Research Recognition Ceremony, held annually during the Spring semester. This program extends the University's *Made In Millersville* event, a celebration of undergraduate research and creativity where approximately 300 students participated in over 150 presentations, exhibits, and performances. Our College had the largest number of presentations this year and 40 of these posters are on display today. These are a representation of the over 170 projects that undergraduate students have carried out with faculty this past year within the College of Science and Technology.

Although this will be the inaugural year for the College to have its research recognition ceremony, student/faculty research has a rich history at Millersville University that has been in place for well over a decade. The goals of this event are to

- celebrate the breadth of research inquiry and scholarly activity within the College,
- promote and create a sense of excitement about the research students and faculty are collaboratively engaging in, and
- recognize the hard work and dedication of our students and faculty.

Engaging undergraduates in research is critical to a student's development as a scholar and a key feature in Millersville University's strategic plan, *Our Bold Path*. Identified as a high-impact practice, research experiences place the content knowledge students learn in the classroom into the context for how it is used within the discipline and by practitioners in the field. I would like to thank Dr. Aaron Haines, Ms. Marianne Frantz, and Ms. Susan Thomas for organizing the event with Ms. Amanda Kopil and Ms. Morgan Speakman for creating the program.

I hope you enjoy perusing the posters displays and the fine work performed by our students and faculty.

Sincerely,

A handwritten signature in blue ink that reads "Michael Jackson". The signature is written in a cursive, flowing style.

Michael Jackson
Dean, College of Science and Technology

Made In Millersville

For more information on *Made In Millersville*, please visit: <http://blogs.millersville.edu/madeinmu/files/2016/04/Confere3nce-Schedule.pdf>.

Posters on Display

Poster 1: Victoria Coutts, Mentor: Dr. Carol Ely Hepfer, Biology, *Isolation and comparative analysis of candidate twitchin RNA sequences from distinct muscle types in the squid.*

Poster 2: Cara Discavage, Mentor: Dr. Susan DiBartolomeis, Biology, *Bacterial Contamination on Common Technology Equipment.*

Poster 3: Katherine Geating, Mentor: Dr. Carol Ely Hepfer, Biology, *Differential Gene Expression Analysis in Muscle Tissue of Squid Using Subtractive Hybridization.*

Poster 4: Joel Hassell, Mentor: Dr. Sharmin Maswood, Biology, *Cognitive behavior after tropisetron treatment in progesterone-primed female rats.*

Poster 5: Jennifer Houtz, Mentor: Dr. Brent Horton, Biology, *Behavioral endocrinology of social behavior in the wire-tailed manakin.*

Poster 6: Christina Michael, Mentor: Dr. Brent Horton, Biology, *Neuroendocrine and Genetic Bases of Alternative Behavioral Strategies in the Polymorphic White-throated Sparrow.*

Poster 7: Joseph Receveur, Mentor: Dr. John Wallace, Biology, *The characterization of microbiota changes after larval mosquito treatment in post-Hurricane Sandy tree divot habitat in Hunterdon County, NJ.*

Poster 8: Jenna Waite, Mentors: Dr. Brent Horton, Dr. Aaron Haines, and Dr. John Wallace, Biology, *The Effects of Endocrine Disrupting Chemicals on Avian Physiology and Behavior.*

Poster 9: Rachel Bechtel, Mentor: Dr. Steven Bonser, Chemistry, *Synthesis and chemistry of some 2-sulfobenzoyl-, and benzene-1,2-disulfonyl diaziridines, II.*

Poster 10: Matthew Carta and James Dreer, Mentor: Dr. Steven Kennedy, Chemistry, *Studies Toward the Synthesis of Hunanamycin A.*

Poster 11: Amy Lehr, Mentor: Dr. Kathryn Allen, Chemistry, *Improvement of mechanical properties of polylactones through pi stacking.*

Poster 12: Melody Aleman, Mentor: Dr. Ajoy Kumar, Earth Sciences, *Ecology of Chincoteague Bay.*

Poster 13: Michael Burns, Mentor: Dr. Ajoy Kumar, Earth Sciences, *Seasonal Distribution of Marine Organisms in a Salt Marsh Ecosystem in Wallops Island, VA.*

Poster 14: Angela Ditri, Mentor: Dr. Ajoy Kumar, Earth Sciences, *Validation and Analysis of MW_IR OI SST product over the Indian Ocean.*

Poster 15: Lindsey Ditzler, Mentor: Dr. Talor Walsh, Earth Sciences, *Fracture Frequency in Drill Core of the Appalachian Plateau.*

Poster 16: Cara Geiger, Mentor: Dr. Ajoy Kumar, Earth Sciences, *Validation and Analysis of MW_IR OI SST product over the Indian Ocean.*

Poster 17: Nathan Murry, Mentor: Dr. Ajoy Kumar, Earth Sciences, *Airborne LIDAR data assessment of Wallops Island, Virginia.*

Poster 18: Nathan Murry, Mentor: Dr. Ajoy Kumar, Earth Sciences, *Coastal Bays and Sea Level Rise: a Long-term analysis of Chincoteague Bay Barrier Island System.*

Poster 19: Amanda Long, Mentor: Dr. Ximena Catepillan, Mathematics, *A Sample of the Number Systems of the Indigenous Groups of Patagonia.*

Poster 20: Cecilia Hall, Mentor: Dr. Natalia Dushkina, Physics, *Structural Colors of Birds.*

Poster 21: Amy-Charlotte Devitz, Kurt Schaller, Kira Klaassen, and Corie Mellinger, Mentor: Dr. Dominique Didier, Biology, *The Art and Science of Bringing Fish Anatomy to the Classroom.*

Poster 22: Kevin Piaskowski, Mentor: Dr. Michael Nolan, Physics, *One and Two-Dimensional Random Walks with One-Step Memory.*

Poster 23: Emily Fucci, Dr. John Wallace, Geography and MUCES Water Resources, *The identification of best management practices on preserved farms for source water protection areas in Lancaster County: A pilot study.*

Poster 24: Orlando Alberto Ricetti Neto, Mentor: Dr. Ajoy Kumar, Earth Sciences, *Light study on the Effects of Beach Replenishment at Wallops Island.*

Poster 25: Jordan Card, Mentor: Dr. Ryan Wagner, Biology, *Oviposition behavior of Lepidopterans in response to secondary metabolites from *Ailanthus Altissima*.*

Poster 26: Maggie Wallner, Mentor: Dr. Ryan Wagner, Biology, *Effects of water soluble *Ailanthus alitssima* extract on larval growth of *Aedes aegypti*.*

Poster A: Hannah Ashberry, Mentor: Dr. Michael Elioff, Chemistry, *Normal Fluorescence Studies on a Series of Carboxylic Acid Dyes.*

Poster B: Laura Bankert, Mentor: Dr. Jeremiah Mbindyo, Chemistry, *Catalytic Investigation of Multimetal Nanostructures.*

Poster C: Sarah Kennedy, Mentor: Dr. Lyman Rickard, Chemistry, *Comparison of Determining Metal Ions in Water Samples by Rotating Disk Voltammetry and Atomic Absorption Spectroscopy.*

Poster D: Erin McIntyre, Mentor: Dr. William Kittleman, Chemistry, *Construction of a His-tagged expression plasmid for *SfnaD* of the *staphyloferrin A* biosynthetic pathway.*

Poster E: Maria Muniz, Mentor: Dr. William Kittleman, Chemistry, *Normal Development of an HPLC-Based Activity Assay for Ornithine Racemase.*

Poster F: Ryan Peterson, Mentor: Dr. Gary Zoppetti, Computer Sciences, *Design and Implementation of a 2D Arena Boss Game Using the Unreal Engine.*

Poster G: Ashley Orehek, Mentor: Dr. Richard Clark, Earth Sciences, *The Correlation of Mercury, Ions, and Weather Conditions at PA-47.*

Poster H: Amanda Sleinkofer, Mentor: Dr. Michael Briggs, Earth Sciences, *Reassessing the BATSE Catalogue of Terrestrial Gamma-ray Flashes.*

Poster I: Jack Warner, Mentor: Dr. Baoling Ma, Mathematics, *A mathematical model for the interactions between red blood cells, malaria parasite, and host immune response.*

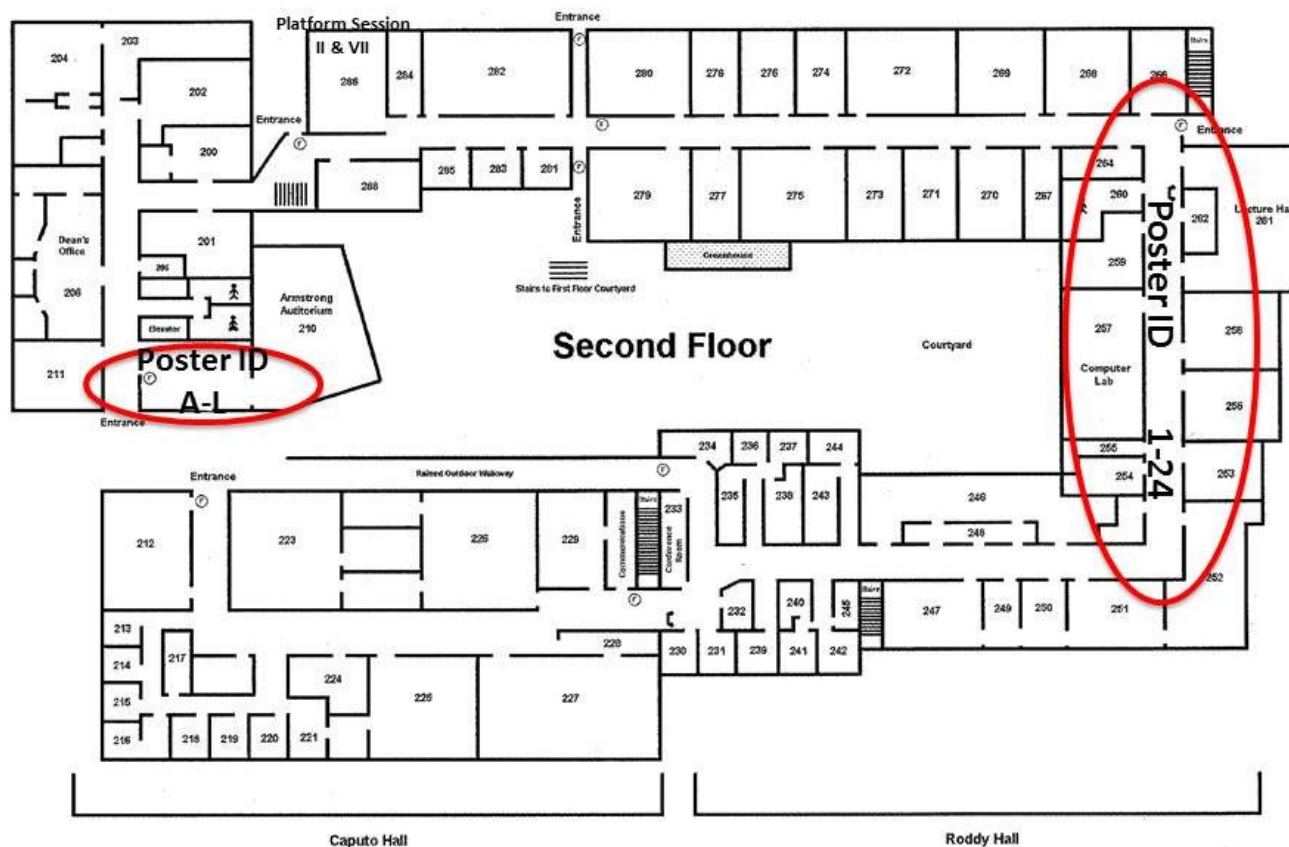
Poster J: Jose Urena, Mentor: Dr. Steven Bonser, Chemistry, *The Synthesis and Reactions of Some 1,3,5-Dithiotriazines*.

Poster K: William Shelton, Mentor: Dr. Jeremiah Mbindyo, Chemistry, *Synthesis of Carbon Nanofibers by Catalytic Chemical Vapor Deposition Using Nickel-Palladium Nanocatalysts*.

Poster L: Ivanny Jacome Ottati, Mentor: Dr. Steven Bonser, Chemistry, *Synthesis and Reactions of Some 1,2-Diacyl Diaziridines*.

Poster M: Linh Nguyen, Mentor: Dr. Aimee Miller, Chemistry, *Purification of Horseradish Peroxidase for Biochemistry Lab*.

Poster N: Nicholas VanLeuven, Mentor: Dr. Steven Bonser, Chemistry, *Progress towards the synthesis and chemistry of (2-alkyl-3-(4-substitutedphenyl)diaziridin-1-yl)(4-nitrophenyl)methanones*.



Independent Study Student Research Projects Conducted with Millersville University Faculty

1. Allan Abel, Biology, (mentor: Dr. Daniel Yocom), *Soil Invertebrate Study*.
2. Riya Aleid, Biology, (mentor: Dr. James Cosentino), *Cadaver Dissection*.
3. Melody Aleman, Biology, (mentor: Dr. Jean Boal), *Marine Primary Productivity*.
4. Melody Aleman, Earth Sciences, (mentor: Dr. Ajoy Kumar), *Ecology of Chincoteague Waters*.
5. Yahala Andress, Biology, (mentor: Dr. Joel Piperberg), *Acetaminophen Effects on Red Blood Cell Membrane Stability*.
6. Hannah Ashberry, Chemistry, (mentor: Dr. Michael Elioff), *Studies of Fluorescent Dyes*.
7. Rachel Ashmore, Chemistry, (mentor: Dr. Michael Elioff), *Fluorescence Studies of Organic Dyes*.
8. Laura Bankert, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *Catalytic Activity of Multimetal Nanostructures*.
9. Joshua Bard, Biology, (mentor: Dr. Jean Boal), *Possible Mimicry in Cat Vocalizations*.
10. Joshua Bard, Biology, (mentor: Dr. Jean Boal), *Songbird Recognition of Cat Vocalizations*.
11. Manij Battle, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *Biodegradable Nanoparticles for Drug Delivery*.
12. Brianna Beasley, Physics, (mentor: Dr. Natalia Dushkina), *Fiber Optics*.
13. Rachel Bechtel, Chemistry, (mentor: Dr. Steven Bonser), *The Synthesis & Chemistry of Some Novel Diaziridines*.
14. Pineal Bekere, Chemistry, (mentor: Dr. Edward Rajaseelan), *Synthesis of Novel Green Chemistry Catalyst*.
15. Hannah Beville, Biology, (mentor: Dr. Ryan Wagner), *Antibiotic Impact on Larval Development*.
16. David Bludis, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
17. Derek Borigo, Physics, (mentor: Dr. Michael Nolan), *Boundary Return Probability of Random Walks*.
18. George Bracelin, Applied Engineering, Safety & Technology, (mentor: Dr. Mark Atwater), *Advanced CNC Machining*.
19. Mike Burns, Earth Sciences, (mentor: Dr. Ajoy Kumar), *Ecology of Chincoteague Waters*.
20. Jordan Card, Biology, (mentor: Dr. Ryan Wagner), *Oviposition Behavior Analysis*.
21. Matthew Carta, Chemistry, (mentor: Dr. Steven Kennedy), *Amide bond formation studies en route to HunanAMYCIN A*.
22. Jennifer Cederberg, Chemistry, (mentor: Dr. William Kittleman), *Construction of SfnA Expression Plasmid*.
23. Liana Christmas, Earth Sciences, (mentor: Dr. Sepi Yalda), *Earth Science Applications*.
24. Keith Coasey, Physics, (mentor: Dr. Xin Li), *Antenna Design*.

25. Trevor Coble, Applied Engineering, Safety & Technology, (mentor: Dr. John Wright, Jr.), *Microcontrollers Applied Research & Experimentation*.
26. Paolo Cornelio, Chemistry, (mentor: Dr. Aimee Miller), *Measuring Mg²⁺ Levels in Yeast*.
27. Victoria Coutts, Biology, (mentor: Dr. Carol Hepfer), *Cloning of Twitchin Gene from Distinct Squid Muscles*.
28. Connor Dearth, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
29. Michael DeCaria, Mathematics, (mentor: Dr. Ronald Umble), *Explorations in Geometry and Topology*.
30. Austin DeHaven, Chemistry, (mentor: Dr. Maria Schiza), *Gold and Silver Nanoparticles Used for Raman Signal Enhancement*.
31. Cara Discavage, Biology, (mentor: Dr. Susan DiBartolomeis), *Bacterial Contamination on Equipment*.
32. Angela Ditri, Earth Sciences, (mentor: Dr. Ajoy Kumar), *Sea Surface Temperature Variability*.
33. Lindsey Ditzler, Earth Sciences, (mentor: Dr. Talor Walsh), *Appalachian Tectonics*.
34. James Dreer, Chemistry, (mentor: Dr. Steven Kennedy), *Reductive amination en route to HunanAMYCIN A*.
35. Justin Eastman, Mathematics, (mentor: Dr. Noel Heitmann), *Numerical Solutions to Differential Equations*.
36. David Edwards, Applied Engineering, Safety & Technology, (mentor: Dr. Mark Atwater), *Study and Characteristics of Nanocrystalline Metals*.
37. Mervin Fansler, Computer Science, (mentor: Dr. Carol Hepfer), *Development of Rapid Computer Simulation for Sequential Digestion of Nucleic Acid Sequences*.
38. Mervin Fansler, Mathematics, (mentor: Dr. Ronald Umble), *Topology of the n-Brunnian Links*.
39. Mervin Fansler, Mathematics, (mentor: Dr. Ronald Umble), *Detecting the Linkage of Brunnian Links*.
40. Kenny Feliz, Applied Engineering, Safety & Technology, (mentor: Dr. Thomas Bell), *Advanced Specialty Graphics*.
41. Jessica Fink, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Comparison of the GOES X-ray data with EUVI brightness of the source regions of the CME*.
42. Kalen Fisher, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
43. Brooke Frye, Biology, (mentor: Dr. Aaron Haines), *Small Mammal Trapping*.
44. Katherine Geating, Biology, (mentor: Dr. Carol Hepfer), *Evaluation of Differential Gene Expression In Distinct Squid Muscles*.
45. Cara Geiger, Earth Sciences, (mentor: Dr. Ajoy Kumar), *Sea Surface Temperature Variability*.

46. William Gervasio, Computer Science, (mentor: Dr. Gary Zoppetti), *Splating Distance Fields*.
47. Steve Gillen, Applied Engineering, Safety & Technology, (mentor: Dr. Scott Warner), *Study of Historical Furniture Construction*.
48. Christopher Gojda, Physics, (mentor: Dr. Sean Hendrick), *X-Ray Analysis of SNRs N49 & N49B*.
49. Jonathon Gojda, Physics, (mentor: Dr. Mehmet Goksu), *The Optimization of Wind Turbines*.
50. Matthew Green, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Dependency of Magnetic Field of the CME on Other Physical Quantities on the Sun*.
51. Matthew Green, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
52. Samuel Greer, Chemistry, (mentor: Dr. Michael Elioff), *Ab Initio Quantum Mechanics*.
53. Justin Griffin, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *Synthesis of Multimetal Nanowires*.
54. David Habig, Geography, (mentor: Dr. Jessica Kelly), *The Geography of Ring Roads*.
55. Cecilia Hall, Physics, (mentor: Dr. Natalia Dushkina), *Structural Colors of Birds*.
56. Jennifer Hane, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
57. Lindsay Harrison, Biology, (mentor: Dr. Ryan Wagner), *Effect of Herbivory on PPO*.
58. Joel Hassell, Biology, (mentor: Dr. Sharmin Maswood), *Cognitive Behavior After Tropisetron in Estrogen Primed Female Rats*.
59. Joel Hassell, Biology, (mentor: Dr. Sharmin Maswood), *Do estrogen and progesterone act synergistically to accentuate the cognitive effects of a serotonergic antagonist in female rats?*
60. Melinda Hatt, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Dependency of Magnetic Field of the CME on Other Physical Quantities on the Sun*.
61. Melinda Hatt, Earth Sciences, (mentor: Dr. M. Steiner), *Risk Assessment of Outdoor Airport Workers Exposed to Lightning*.
62. Jeffrey Heger, Applied Engineering, Safety & Technology, (mentor: Dr. Mark Atwater), *Design and Fabrication of Multifunctional Tailgate*.
63. Tyler Helsel, Computer Science, (mentor: Dr. Stephanie Schwartz), *Exploring Virtual Reality*.
64. Andrew Herr, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *HPLC Separation of Sugars*.
65. Franklin Herr, Biology, (mentor: Dr. John Wallace), *Blackfly Microbionic Project*.
66. Andrew Higgins, Applied Engineering, Safety & Technology, (mentor: Dr. Thomas Bell), *Advanced Specialty Graphics*.

67. Ryan Hikins, Biology, (mentor: Dr. James Cosentino), *Cadaver Dissection*.
68. Ryan Hikins, Biology, (mentor: Dr. James Cosentino), *Ratfish Venom Biochemistry*.
69. Michael Hinkley, Applied Engineering, Safety & Technology, (mentor: Dr. Joseph McCade), *Designing Sensors and Control Systems*.
70. Jennifer Houtz, Biology, (mentor: Dr. Brent Horton), *Molecular Determination of Offspring Sex Ratios in White-crowned Sparrows*.
71. Amber Howe, Biology, (mentor: Dr. James Cosentino), *Cadaver Dissection*.
72. Vanessa Hower, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
73. Isidore Iradukunda, Chemistry, (mentor: Dr. Lyman Rickard), *Surface Enhanced Raman Spectroscopy*.
74. Amanda Isabella, Biology, (mentor: Dr. Daniel Yocom), *Forest Quality Affect Soil Invertebrate Community*.
75. Brandan Jablonski, Computer Science, (mentor: Dr. Roger Webster), *Mobile APP for Android for NatureAtlas.org*.
76. Brandan Jablonski, Computer Science, (mentor: Dr. Roger Webster), *Continuation of Development of the Android App for natureAtlas.org*.
77. Ivanny Jacome Ottati, Chemistry, (mentor: Dr. Steven Bonser), *The Synthesis and Reactions of Some 1,2-Diacyldiaziridines*.
78. Shane Kacskos, Chemistry, (mentor: Dr. Edward Rajaseelan), *Synthesis of Nitrite Complexes of Iridium*.
79. Shane Kacskos, Chemistry, (mentor: Dr. Edward Rajaseelan), *Synthesis of Novel Iridium Nitrite Complexes*.
80. Alexander Kaltenbaugh, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Elevated Mixed Layers observed during OWLeS*.
81. Amanda Kato, Biology, (mentor: Dr. Ryan Wagner), *Behavioral Analysis of Spodoptera frugiperda in relation to Volatile Chemicals of Ailanthus altissima*.
82. Sarah Kennedy, Chemistry, (mentor: Dr. Lyman Rickard), *Rotating Disk Voltammetry*.
83. Anthony Kessler, Biology, (mentor: Dr. Aaron Haines), *Radio-tracking Pheasants/Teaching Project*.
84. Anthony Kessler, Biology, (mentor: Dr. Aaron Haines), *Analysis of Pheasant Data*.
85. Taylor Lagler, Mathematics, (mentor: Dr. James Fenwick), *Discriminant Analysis*.
86. Taylor Lagler, Mathematics, (mentor: Dr. Lewis Shoemaker), *The Magnetic Poles and Global Warming*.
87. Chelsea LaPenta, Biology, (mentor: Dr. Jean Boal), *Cat and Bird Vocalization*.
88. Chelsea LaPenta, Biology, (mentor: Dr. Jean Boal), *Cat Vocalizations*.
89. Richard Lees, Applied Engineering, Safety & Technology, (mentor: Dr. John Wright, Jr.), *Active Sensory Perception for Mobile Robotics*.
90. Beth LeFevre, Geography, (mentor: Dr. Charles Geiger), *Local Impacts of Expanding a Concentrated Animal Feeding Operation*.

91. Amy Lehr, Chemistry, (mentor: Dr. Kathryn Allen), *Polymeric Materials Synthesis and Applications*.
92. Amy Lehr, Chemistry, (mentor: Dr. Kathryn Allen), *Modification of Valerolactone*.
93. Amber Liggett, Earth Sciences, (mentor: Dr. Sepi Yalda), *A case study analysis of WSR-88D's gust front detection algorithms*.
94. Amber Liggett, Earth Sciences, (mentor: Dr. T. Yu), *Gust Front Detection Using Neuro-Fuzzy Algorithm with Polarimetric WSR-88D*.
95. Kelsey Lopez, Biology, (mentor: Dr. Aaron Haines), *Small Mammal Trapping*.
96. Sabiel Lopez, Biology, (mentor: Dr. Carol Hepfer), *Analysis of Squid Muscle Genes*.
97. Andrew Lytle, Biology, (mentor: Dr. Judith Cebra-Thomas), *The Evolution of Epidermal Appendages*.
98. Megan McAuliffe, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Dependency of Magnetic Field of the CME on Other Physical Quantities on the Sun*.
99. Megan McAuliffe, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
100. Troy McGuigan, Emergency Management, (mentor: Dr. Sepi Yalda), *Fundamentals of Safety and EM*.
101. Shayne McIntosh, Computer Science, (mentor: Dr. Stephanie Schwartz), *Leveraging CuDNN*.
102. Erin McIntyre, Chemistry, (mentor: Dr. William Kittleman), *Construction of SfnA Expression Plasmid*.
103. Natalie Midzak, Earth Sciences, (mentor: Drs. Richard Clark and Valbona Kunkel), *Dependency of Magnetic Field of the CME on Other Physical Quantities on the Sun*.
104. Natalie Midzak, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
105. Edward Monborne, Chemistry, (mentor: Dr. William Kittleman), *Production of SfnA Enzyme*.
106. Kyle Morganti, Earth Sciences, (mentor: Dr. Ajoy Kumar), *Validation of Satellite Data*.
107. Kyle Morganti, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
108. Sherrie Moyer, Biology, (mentor: Dr. Christopher Hardy), *Horticulture Independent Study*.
109. Sherrie Moyer, Biology, (mentor: Dr. Ryan Wagner), *Altissima Regulation of Seed Germination*.
110. Kenton Mummert, Chemistry, (mentor: Dr. Steven Kennedy), *Eugenol isolation and derivatization for incorporation into synthesis laboratories*.
111. Maria Muniz, Chemistry, (mentor: Dr. William Kittleman), *HPLC Assay Development for SfnA*.

112. Ann Nguyen, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *Galvanic Replacement Synthesis of Multi-metal Nanocatalysts*.
113. Linh Nguyen, Chemistry, (mentor: Dr. Aimee Miller), *Purification of HRP as a Biochemistry Lab Project*.
114. Nicholas Oakes, Applied Engineering, Safety & Technology, (mentor: Dr. Jack Ogutu), *Exposure to Toxic Byproducts in Smoke and Their Effects on Cancer in Firefighters*.
115. Ashley Orehek, Earth Sciences, (mentor: Dr. Richard Clark), *The Correlation between Mercury, Ions, and Weather Conditions at PA-47*.
116. Ashley Orehek, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Comparison of the GOES X-ray data with EUVI brightness of the source regions of the CME*.
117. Ashley Orehek, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
118. Dalton Patterson, Physics, (mentor: Dr. Sean Hendrick), *SNR N63A in the Large Magellanic Cloud*.
119. David Perillo, Chemistry, (mentor: Dr. Maria Schiza), *Green Synthesis of Silver and Gold Nanoparticles*.
120. Ryan Peterson, Computer Science, (mentor: Dr. Gary Zoppetti), *Independent Game Design in the Unreal Engine*.
121. Cody Petsch, Physics, (mentor: Dr. Tariq Gilani), *Electrical Properties of Thin Films*.
122. Quang Pham, Chemistry, (mentor: Dr. Edward Rajaseelan), *DSA Method Development*.
123. Kara Piarulli, Earth Sciences, (mentor: Drs. Richard Clark and Valbona Kunkel), *Comparison of the GOES X-ray data with EUVI brightness of the source regions of the CME*.
124. Kara Piarulli, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
125. Zachary Piasecki, Geography, (mentor: Dr. Derek Shanahan), *London: Land Use Change*.
126. Kevin Piaskowski, Physics, (mentor: Dr. Michael Nolan), *One and Two Dimensional Random Walks with One-Step Memory*.
127. Benjamin Porter, Computer Science, (mentor: Dr. Roger Webster), *Mobile APP for iPhone for NatureAtlas.org*.
128. Kristen Pozsonyi, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Dependency of Magnetic Field of the CME on Other Physical Quantities on the Sun*.
129. Kristen Pozsonyi, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
130. Christina Prestine, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Comparison of the GOES X-ray data with EUVI brightness of the source regions of the CME*.

131. Christina Prestine, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
132. Diana Rabchuk, Physics, (mentor: Dr. Tariq Gilani), *Mobility of Charged Carriers in Thin Film*.
133. Philip Radomski, Applied Engineering, Safety & Technology, (mentor: Dr. Jack Ogutu), *Noise Monitoring in Laboratory Environments*.
134. Joseph Receveur, Biology, (mentor: Dr. John Wallace), *Microbiome of mosquitos and their habitat*.
135. Brian Reilly, Biology, (mentor: Dr. John Wallace), *Entomological Collection Curation*.
136. Christopher Reuling, Physics, (mentor: Dr. Mehmet Goksu), *Harnessing Columnar Vortices for Power Generation*.
137. Orlando Alberto Ricetti Neto, Earth Sciences, (mentor: Dr. Ajoy Kumar), *Archaeological Oceanography*.
138. Irena Riley, Biology, (mentor: Dr. James Cosentino), *Cadaver Dissection*.
139. Michael Rosen, Physics, (mentor: Dr. Natalia Dushkina), *Laser Spectroscopy*.
140. Emily Rosenthal, Earth Sciences, (mentor: Dr. C. O'Dell), *A Comparison of Cloud and Aerosol Measurements between OCO-2 and CALIPSO*.
141. Jevica Salim, Chemistry, (mentor: Dr. Steven Kennedy), *Alkene migration studies en route to Altersolanol P*.
142. Rachel Saunders, Biology, (mentor: Dr. James Cosentino), *Cadaver Dissection*.
143. Leah Schwartz, Biology, (mentor: Dr. Jean Boal), *Social Dominance in Goats*.
144. Leah Schwartz, Biology, (mentor: Dr. Jean Boal), *Reproductive Behavior of Goats*.
145. Leah Schwartz, Biology, (mentor: Dr. Aaron Haines), *Zoology Database*.
146. William Shelton, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *Galvanic Replacement Synthesis of Multi-metal Nanocatalysts*.
147. William Shelton, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *Pd-Ni Nanocatalysts for Green and Sustainable Chemical Transformations*.
148. Curtis Silverwood, Earth Sciences, (mentor: Dr. Richard Clark), *Spaced Out – A Monthly Online Program that Communicates Space Weather Events to the Public*.
149. Curtis Silverwood, Earth Sciences, (mentors: Drs. Richard Clark and Valbona Kunkel), *Comparison of the GOES X-ray data with EUVI brightness of the source regions of the CME*.
150. Amanda Sleinkofer, Earth Sciences, (mentor: Dr. Michael Briggs), *Reassessing the BATSE Catalogue of Terrestrial Gamma-ray Flashes*.
151. Jeremiah Stone, Earth Sciences, (mentor: Dr. Robert Vaillancourt), *Phytoplankton Species Distribution in Western North Atlantic*.
152. Renee Stover, Chemistry, (mentor: Dr. Michael Elioff), *Dye-Sensitized Solar Cells*.

153. Erin Stratton, Biology, (mentor: Dr. James Moné), *Virology Research*.
154. Nicholas Strickland, Earth Sciences, (mentors: Drs. Richard Clark and Todd Sikora), *Examining the Nocturnal Stable Boundary Layer and Low-Level Jet during PECAN*.
155. Glorines Suarez-Rivera, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *Immunoassay Analysis of Atrazine in Environmental Samples*.
156. Nicole Sundo, Chemistry, (mentor: Dr. Lyman Rickard), *Capillary Electrophoresis*.
157. Thomas Tchistiak, Applied Engineering, Safety & Technology, (mentor: Dr. Thomas Bell), *Advanced Specialty Graphics*.
158. Matthew Thompson, Chemistry, (mentor: Dr. Kathryn Allen), *Polymer Synthesis*.
159. Katelyn Thompson, Geography, (mentor: Dr. Jessica Kelly), *Channelized Migration and Refugee Success in Receiving Communities*.
160. Gina To, Chemistry, (mentor: Dr. Steven Kennedy), *Shikimic acid isolation and derivatization for incorporation into synthesis laboratories*.
161. Jose Urena, Chemistry, (mentor: Dr. Steven Bonser), *The Synthesis and Reactions of 1,2-Diacyldiaziridines*.
162. Antonia Van Vliet, Mathematics, (mentor: Dr. Delray Schultz), *Mathematical Probability*.
163. Nicholas VanLeuven, Chemistry, (mentor: Dr. Steven Bonser), *Synthesis of 1-Aroyldiaziridines*.
164. Jenna Waite, Biology, (mentor: Dr. Brent Horton), *Endocrine Disruption in Birds*.
165. Ryan Walker, Biology, (mentor: Dr. John Wallace), *Development of a mosquito identification key for Hunterdon County, NJ*.
166. Crystal Wanner, Applied Engineering, Safety & Technology, (mentor: Dr. Mark Atwater), *Carbon Deposition Kinetics on Fe-Cu Alloys*.
167. Connor Whitman, Applied Engineering, Safety & Technology, (mentor: Dr. Ebrahim Karan), *Planned Service Project*.
168. Devon Whooley, Chemistry, (mentor: Dr. Jeremiah Mbindyo), *Analysis of Pharmaceutical Products in Water by HPLC*.
169. Nikki Wolford, Chemistry, (mentor: Dr. Edward Rajaseelan), *Synthesis of Organometallic Green Catalysts*.
170. Calen Wylie, Biology, (mentor: Dr. John Wallace), *Mosquito Control Using Plants*.
171. Andrew Yarosh, Earth Sciences, (mentor: Dr. Richard Clark), *The Correlation between Mercury, Ions, and Weather Conditions at PA-47*.
172. Darcey Young, Biology, (mentor: Dr. James Cosentino), *Medical Illustration*.
173. George Zarzecki, Applied Engineering, Safety & Technology, (mentor: Dr. Mark Atwater), *CNC Implementation and Analysis*.
174. George Zarzecki, Applied Engineering, Safety & Technology, (mentor: Dr. Louise Manfredi), *3D Printing Mechanical Characteristics*.
175. Steve Zelek, Computer Science, (mentor: Dr. Gary Zoppetti), *Independent Game Design in the Unity Engine*.

Please note that some students participated in projects on this list during both fall and spring semesters.

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