

KEYNOTE SPEAKER



Shelly Peyton, PhD

University of Massachusetts

Associate Professor and Graduate Program Director

Department of Chemical Engineering

Barry and Afsaneh Siadat Career Development Fellow

Molecular and Cell Biology Graduate Program

<http://www.peytonlab.org/>

“Tissue-guided hydrogel design to understand tissue tropism and drug resistance in breast cancer”

Improved *in vitro* models are needed to better understand cancer progression and bridge the gap between *in vitro* proof-of-concept studies, *in vivo* validation, and clinical application. Many methods exist to create biomaterial platforms to study cells in contexts more akin to what they experience *in vivo*, including hydrogels. Our lab has multiple approaches to create such systems, based on combinations of poly (ethylene glycol) (PEG) with peptides and zwitterions. In this presentation, I will discuss our efforts in using these cell culture environments to understand the role of the extracellular matrix (ECM) in controlling cancer cell innate response to drugs. Specifically, I will present data comparing the behavior of breast, prostate, and ovarian cancer cells to chemotherapy and targeted drugs when cultured as 3D spheroids, on 2D gels, and as a function of the stiffness of the tumor microenvironment. Importantly, I will also present a systems biology approach to validate possible combination therapies *in vivo*. Our work suggests that different model systems are important for evaluating cell response to receptor tyrosine kinase inhibitors, whose efficacy depends on cell-ECM interactions.

UNDERGRADUATE STUDENT RESEARCH TALKS



Amanda Roth, Aquinas College

Major(s): Biology and Environmental Science / Senior, Class of 2018

Research Mentor(s): [Rebecca Humphrey, PhD](#) – Department of Biology

“Testing the Effect of Cold Stratification Length on Germinating Native Wildflower Seed”



Sarah David, Calvin College

Major(s): Biochemistry (ACS) with a Neuroscience Concentration / Senior, Class of 2018

Research Mentor(s): [Rachael Baker, PhD](#) – Department of Chemistry and Biochemistry; [Amy Wilstermann, PhD](#) – Department of Biology; [Michael Barbachyn, PhD](#) – Department of Chemistry and Biochemistry

“Combating Antibiotic Resistance with Novel Fluoroquinolone-Based Compounds”



Casey Koch-LaRue, Grand Valley State University

Major(s): Mathematics, Philosophy / Senior, Class of 2018

Research Mentor(s): [Steven Schlicker, PhD](#) – Department of Mathematics

“Geometries from Groups”



Max Huffman, Hope College

Major(s): Geology and Environmental Science / Junior, Class of 2019

Research Mentor(s): [Edward Hansen, PhD](#) – Department of Geology and Environmental Science

Max Huffman¹, Erin Brophy¹, Edward Hansen¹, Charlotte Möller²

¹Department of Geology, Hope College. Holland, MI, USA / ²Department of Geology, Lund University, Lund, Sweden

“Partial melting of amphibolites in the Eastern Segment of the Sveconorwegian orogen, southern Sweden”

GRADUATE STUDENT RESEARCH TALKS



Jamie Grit, PhD Candidate – Cell and Molecular Genetics

“Consequences of RTK amplification and p53 loss in MPNSTs”

Van Andel Institute Graduate School

Alumna: Hope College - Bachelor of Science, Biology

Research Mentor: [Matt Steensma, MD](#)

Matt Pridgeon MD^{1,2}, Elizabeth Tovar PhD¹, Jackie Peacock PhD¹, Julia Wulfschlegel MD³, Emanuel Petricoin MD³, Carrie Graveel PhD¹, Matt Steensma MD^{1,2}

¹Van Andel Research Institute

²Spectrum Health

³George Mason University

Student Profile: <https://vaigs.vai.org/current-students-alumni/students/jamie-grit/>



Nicole Vander Schaaf, PhD Candidate – Cell and Molecular Genetics

“The Role of Polycomb Target Gene DNA Methylation in Intestinal Tumorigenesis”

Van Andel Institute Graduate School

Alumna: Indiana Wesleyan University - Bachelor of Science, Biology

Research Mentor: [Peter Laird, PhD](#)

Authors: Nicole A. Vander Schaaf¹, Zachary J. Jansen², Toshinori Hinoue¹, Wanding Zhou¹, KwangHo Lee¹, Peter W. Laird¹

¹Center for Epigenetics, Van Andel Research Institute

²Lyman Briggs College, Michigan State University

VAIGS Student Profile: <https://vaigs.vai.org/current-students-alumni/students/nicole-vanderschaaf/>

11TH ANNUAL
WEST MICHIGAN REGIONAL UNDERGRADUATE SCIENCE RESEARCH CONFERENCE
2017 POSTER PRESENTATIONS

AUTHORS LIST

Pages 4-7 includes a list of principal presenting authors by last name (alphabetical order)

| LAST NAME | First Name | Poster # | Institution | Field of Study | Co-Presenters |
|----------------|------------|----------|--------------------------------|----------------------------|----------------------------------|
| Aardema | Megan | 116 | Calvin College | Chemistry | |
| Ahlgren | Grace | 129 | Hope College | Chemistry | |
| Ahmadzai | Mohammad | 115 | Michigan State University | Cell and Molecular Biology | |
| Althaus | Thomas | 2 | Calvin College | Biochemistry | |
| Anumolu | Natalie | 3 | Calvin College | Biochemistry | |
| Arnson | Benjamin | 33 | Aquinas College | Biology | |
| Atma | Jenna | 37 | Calvin College | Biology | |
| Attanayake | Pavitra | 138 | Western Michigan University | Chemistry | |
| Ausherman | Christine | 15 | Hillsdale College | Biochemistry | |
| Ayala-Talavera | David | 101 | Grand Valley State University | Cell and Molecular Biology | |
| Barthel | Gabrielle | 38 | Calvin College | Biology | |
| Batas | Rogelio | 176 | Western Michigan University | Psychology | |
| Benn | Alyssa | 102 | Grand Valley State University | Cell and Molecular Biology | |
| Bennett | Julia | 81 | Grand Valley State University | Biomedical Sciences | |
| Bingle | Amber | 39 | Calvin College | Biology | |
| Blake | Ethan | 68 | Indiana Wesleyan University | Biology | |
| Boonstra | Jonathan | 117 | Calvin College | Chemistry | |
| Bottenberg | Kimberly | 12 | Grand Valley State University | Biochemistry | |
| Bouwman | Rachael | 118 | Calvin College | Chemistry | |
| Brian | Christian | 32 | University of Nebraska | Biochemistry | |
| Broadbent | David | 77 | Michigan State University | Biology | |
| Burchell | Brad | 69 | Indiana Wesleyan University | Biology | |
| Byl | Christina | 1 | Grand Valley State University | Allied Health Sciences | Kasey Forton |
| Callahan | Brianna | 170 | Michigan State University | Physiology | Omar Said |
| Campbell | Meghan | 130 | Hope College | Chemistry | |
| Capes | Elissa | 82 | Grand Valley State University | Biomedical Sciences | |
| Capps | Aaron | 13 | Grand Valley State University | Biochemistry | |
| Catalfano | Kevin | 16 | Hope College | Biochemistry | Mackenzie Schmidt |
| Chiara | Genevieve | 60 | Hillsdale College | Biology | |
| Crow | Elizabeth | 147 | Calvin College | Mathematics | Joyce Chew |
| David | Sarah | 5 | Calvin College | Biochemistry | |
| Davies | Steven | 137 | Lake Superior State University | Chemistry | |
| Davis | Scott | 92 | Ferris State University | Biotechnology | |
| Davison | Jacob | 166 | Central Michigan University | Physics | |
| DeYoung | Maxwell | 40 | Calvin College | Biology | Gregory Manni |
| Draper | Riley | 61 | Hope College | Biology | |
| Drew | Rebekah | 21 | Indiana Wesleyan University | Biochemistry | |
| Eikenberry | Araceli | 41 | Calvin College | Biology | |
| Ensley | Holly | 146 | Aquinas College | Mathematics | |
| Ervin | Harry | 42 | Calvin College | Biology | |
| Essenburg | Anna | 119 | Calvin College | Chemistry | Matthew Vander Wal |
| Estrem | Brandon | 22 | Indiana Wesleyan University | Biochemistry | Marissa O'Hair, Emily Gathercoal |
| Farrell | Regan | 120 | Calvin College | Chemistry | |

| LAST NAME | First Name | Poster # | Institution | Field of Study | Co-Presenters |
|---------------|-----------------|----------|-------------------------------|----------------------------|--------------------------------|
| Fischman | Haley | 62 | Hope College | Biology | |
| Fish | Skyler | 43 | Calvin College | Biology | |
| Fogo | Garrett | 156 | Hope College | Neuroscience | |
| Folkerts | Andrew | 98 | Calvin College | Cell and Molecular Biology | |
| Frantzeskakis | Melina | 103 | Grand Valley State University | Cell and Molecular Biology | |
| Freiman | Andrew | 104 | Grand Valley State University | Cell and Molecular Biology | |
| Fridley | Cody | 80 | Western Michigan University | Biomedical Engineering | |
| Frndak | Abigail | 121 | Calvin College | Chemistry | Ye Eun Kim |
| Fujii | Maria | 23 | Kalamazoo College | Biochemistry | |
| Gardner | Eve | 83 | Grand Valley State University | Biomedical Sciences | |
| Gibson | Amanda | 157 | Hope College | Neuroscience | |
| Gohl | Trevor | 88 A | Michigan State University | Biomedical Sciences | |
| Gohl | Trevor | 88 B | Michigan State University | Cell and Molecular Biology | |
| Golden | Joseph | 54 | Cornerstone University | Biology | |
| Golden | Shelby | 73 | Kalamazoo College | Biology | |
| Golus | Francesca | 57 | Grand Valley State University | Biology | |
| Gomez | Jasper | 89 | Michigan State University | Biomedical Sciences | |
| Gongwer | Michael | 160 | Indiana Wesleyan University | Neuroscience | Lexi Shepherd, Hannah Caringal |
| Gordon | Rebecca | 151 | Grand Valley State University | Microbiology | |
| Gordon | Kaitlyn | 161 | Kalamazoo College | Neuroscience | |
| Goy | Megan | 105 | Grand Valley State University | Cell and Molecular Biology | |
| Greaves | Christopher | 141 | Calvin College | Engineering | |
| Greiner | Raymond | 144 | Western Michigan University | Engineering | Emily Stypinski |
| Griffin | Ryan | 171 | Michigan State University | Physiology | |
| Haan | Jager | 63 | Hope College | Biology | |
| Hahs | Emma | 106 | Grand Valley State University | Cell and Molecular Biology | |
| Harrah | Ashleigh | 107 | Grand Valley State University | Cell and Molecular Biology | |
| Hashem | Tanwir | 177 | Michigan State University | Public Health | |
| Henson | Samuel | 108 | Grand Valley State University | Cell and Molecular Biology | |
| Hilbrands | Adam | 122 | Calvin College | Chemistry | |
| Hodge | Sarah | 25 | Michigan State University | Biochemistry | |
| Hofmeyer | Emily | 131 | Hope College | Chemistry | Addison M. Duda |
| House | Rachel | 44 | Calvin College | Biology | |
| Hughes | Sarah | 45 | Calvin College | Biology | Maria Bleitz, Rachel Warners |
| Irwin | Victoria | 84 | Grand Valley State University | Biomedical Sciences | |
| Jang | Hyeong Gyu | 4 | Calvin College | Biochemistry | Michael Moentmann |
| Jeong | KyuHyun | 148 | Calvin College | Mathematics | Katherine McLain |
| Joel | Joseph | 46 | Calvin College | Biology | |
| Johnecheck | Grace | 6 | Calvin College | Biochemistry | |
| Johnston | Dylan | 26 | Michigan State University | Biochemistry | |
| Jones | Kylee | 93 | Ferris State University | Biotechnology | |
| Kalkman | Jake | 47 | Calvin College | Biology | |
| Kazmierczak | Nathanael | 123 | Calvin College | Chemistry | |
| Keiser | Kailee | 17 | Hope College | Biochemistry | |
| Keramidas | Christina | 74 | Kalamazoo College | Biology | |
| Kitzmilller | Nate | 132 | Indiana Wesleyan University | Chemistry | |
| Kolany | Reed | 167 | Central Michigan University | Physics | |
| Koning | Elizabeth | 140 | Calvin College | Computer Science | Christiaan Hazlett |
| Krahn | Adam | 64 | Hope College | Biology | Bethany Van Houten |
| Kramer | Paige | 55 | Ferris State University | Biology | |
| Leddy | Sabrina | 24 | Kalamazoo College | Biochemistry | |
| Leon | Omar | 134 | Kalamazoo College | Chemistry | |
| Lewis | Reuben Lewis | 142 | Calvin College | Engineering | |
| Liegh | Kyler | 27 | Michigan State University | Biochemistry | |
| Lopez | Jacob | 163 | Davenport University | Nursing | |
| Lunderberg | Anna | 158 | Hope College | Neuroscience | |
| Machay | Alyssa | 65 | Hope College | Biology | |
| Mack | Ryan | 90 A | Michigan State University | Biomedical Sciences | |
| Mack | Ryan | 90 B | Michigan State University | Biomedical Sciences | |

| LAST NAME | First Name | Poster # | Institution | Field of Study | Co-Presenters |
|---------------|-------------|----------|--------------------------------|----------------------------|---------------------------------------|
| Mackinder | Jacob | 34 | Aquinas College | Biology | |
| Magolan | Abbey | 165 | Ferris State University | Pharmacy | |
| Maguire | Jesse | 70 | Indiana Wesleyan University | Biology | |
| Malcolm | Celina | 153 | Lake Superior State University | Microbiology | |
| Marshall | Liyah | 155 | Grand Valley State University | Neuroscience | |
| Martiradonna | Julia | 85 | Grand Valley State University | Biomedical Sciences | |
| Mason | Montana | 48 | Calvin College | Biology | |
| Mata | Martha | 36 | Aquinas College | Biology | |
| McCarthy | Connor | 86 | Grand Valley State University | Biomedical Sciences | |
| McGuire | Sean | 28 | Michigan State University | Biochemistry | |
| McKenzie | Steven | 109 | Grand Valley State University | Cell and Molecular Biology | |
| Miller | Michaela | 152 | Hillsdale College | Microbiology | |
| Mills | Jacqueline | 135 | Kalamazoo College | Chemistry | |
| Moore | Devin | 11 | Central Michigan University | Biochemistry | |
| Mullany | Kellie | 169 | Michigan State University | Physiology | |
| Newman | Aundrea | 154 | Cornerstone University | Neuroscience | |
| Norman | Kelsey | 150 | Calvin College | Mathematics | |
| Occhiuto | Christopher | 145 | Michigan State University | Immunology | |
| Pankratz | Trey | 127 | Grand Valley State University | Chemistry | |
| Pavlack | Monica | 94 | Ferris State University | Biotechnology | |
| Pemberton | Aaron | 49 | Calvin College | Biology | |
| Peterson | Elizabeth | 7 | Calvin College | Biochemistry | |
| Peterson | Hannah | 8 | Calvin College | Biochemistry | |
| Peterson | John | 18 | Hope College | Biochemistry | Megan Grimes |
| Pfaffenberger | Zechariah | 133 | Indiana Wesleyan University | Chemistry | |
| Philipose | Andrew | 50 | Calvin College | Biology | |
| Plesnicar | Joshua | 126 | Drake University | Chemistry | |
| Pope | Hunter | 56 | Ferris State University | Biology | |
| Rahman | Moshiur | 175 | Michigan State University | Psychology | Andrew Lee, Ali Moshrefi |
| Rankin | Michael | 29 | Michigan State University | Biochemistry | |
| Reasoner | Erin | 162 | University of Michigan | Neuroscience | |
| Reese | Kalina | 9 | Calvin College | Biochemistry | |
| Rippe | Preston | 71 | Indiana Wesleyan University | Biology | |
| Roberts | Madeleine | 136 | Kalamazoo College | Chemistry | |
| Robertson | Sarah | 110 | Grand Valley State University | Cell and Molecular Biology | |
| Ross | Kyle | 19 | Hope College | Biochemistry | Alexandra J. Wyeth |
| Roth | Amanda | 35 | Aquinas College | Biology | |
| Royer | Jada | 159 | Hope College | Neuroscience | |
| Rupp | Ryan | 97 | Michigan State University | Biotechnology | |
| Santome | Facundo | 173 | Grand Valley State University | Psychology | |
| Schepke | Kristin | 58 | Grand Valley State University | Biology | |
| Schertzing | Claire | 75 | Kalamazoo College | Biology | |
| Schindler | Ronald | 95 | Ferris State University | Biotechnology | |
| School | Kuana | 164 | Davenport University | Nursing | Heidi Stevens |
| Senti | Mackenna | 20 | Hope College | Biochemistry | Alicia M. Bostwick, Morgan K. Cinader |
| Shepherd | Lexi | 72 | Indiana Wesleyan University | Biology | Michael Gongwer, Hannah Caringal |
| Shirkey | Jaden | 100 | Ferris State University | Cell and Molecular Biology | |
| Sincox | Brittany | 14 | Grand Valley State University | Biochemistry | |
| Smith | Judy | 139 | Heidelberg University | Computational Science | |
| Spindler | Reagan | 174 | Hope College | Psychology | Samuel Kuiper |
| Spratt | Madison | 111 | Grand Valley State University | Cell and Molecular Biology | |
| Stout | Jacob | 172 | Calvin College | Psychology | |
| Stuart | Matera | 76 | Kalamazoo College | Biology | |
| Stukey | Geordan | 66 | Hope College | Biology | |
| Sweeney | David | 51 | Calvin College | Biology | Ye Joo Oh |
| Sykes | James | 30 | Michigan State University | Biochemistry | |
| Teasley | Hanna | 78 | Michigan State University | Biology | |

| LAST NAME | First Name | Poster # | Institution | Field of Study | Co-Presenters |
|-------------|------------|----------|-------------------------------|----------------------------|------------------------------|
| Ureel | Faith | 59 | Grand Valley State University | Biology | |
| Valentine | Ethan | 52 | Calvin College | Biology | |
| VanBlois | Luke | 67 | Hope College | Biology | Amanda Bentley |
| Vander Tuin | Zachariah | 128 | Grand Valley State University | Chemistry | |
| Vepa | Yamini | 31 | Michigan State University | Biochemistry | |
| Ver Beek | Noah | 143 | Calvin College | Engineering | |
| Versluis | Philip | 114 | Hope College | Cell and Molecular Biology | |
| Vincent | Tanner | 53 | Calvin College | Biology | Jonathan Walt |
| Waalkes | Erika | 79 | Western Michigan University | Biology | |
| Weiland | Macie | 112 | Grand Valley State University | Cell and Molecular Biology | |
| Wernette | Courtney | 96 | Ferris State University | Biotechnology | |
| Wharton | Janice | 124 | Calvin College | Chemistry | |
| Wheeler | Christina | 113 | Grand Valley State University | Cell and Molecular Biology | |
| Williams | Lorrayya | 10 | Calvin College | Biochemistry | |
| Williams | Alexandra | 87 | Grand Valley State University | Biomedical Sciences | |
| Williams | Jared | 168 | Central Michigan University | Physics | |
| Wolf | Mark | 99 | Calvin College | Cell and Molecular Biology | |
| Wyatt | Mikaela | 149 | Grand Valley State University | Mathematics | Ellen Grove |
| Yang | Canchai | 91 | Michigan State University | Biomedical Sciences | |
| Zerull | Emily | 125 | Calvin College | Chemistry | Matthew Rossler, Miles Mason |

2017 POSTER PRESENTATION TITLES

Pages 8-24 include a list of principal presenting authors and the titles of their presentations. This list is in alpha order by major and then institution.

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|---|-------------------------------|
| 1. Christina Byl, Grand Valley State University Co-Presenting Author(s): Kasey Forton Co-Author(s): Gabriella Barajas, Anna Folsom, Haley Hope, Connor Hanson, Laura Hartung, Casey Malburg, Rebecca Kralik, Ilissa Chasnack and Dr. Bruce Ostrow <i>"Growth and developmental timeline of the patagium in <i>Petaurus breviceps</i>"</i> | Allied Health Sciences |
| 2. Thomas Althaus, Calvin College <i>"Protein-Protein Interactions at the Cell Surface, GLUT1 activity and Presence in Human Cell Lines"</i> | Biochemistry |
| 3. Natalie Anumolu, Calvin College Co-Author(s): Kelly Hogan, Hui Jiang, Shannon Manning, Chuanwu Xi, Rita Loch-Carusso, and Erica Boldenow <i>"Cytokine Release from Human Extraplacental Membranes and Hemolysis for Five Group B <i>Streptococcus</i> Strains"</i> | Biochemistry |
| 4. Hyeong Gyu Jang, Calvin College Co-Presenting Author(s): Michael Moentmann <i>"Progress Toward the Synthesis of Novel Bacterial Topoisomerase Inhibitors Derived from Fluoroquinolones: Application of the Suzuki Cross-Coupling Reaction"</i> | Biochemistry |
| 5. Sarah David, Calvin College Co-Author(s): Dr. Rachael Baker, Dr. Amy Wilstermann, Dr. Michael Barbachyn <i>"Combating Antibiotic Resistance with Novel Fluoroquinolone-Based Compounds"</i> | Biochemistry |
| 6. Grace Johncheck, Calvin College Co-Author(s): Dr. Larry Louters, Dr. Brendan Looyenga <i>"Investigating Aggregation of <i>Glut1</i> by Exclusion Chromatography"</i> | Biochemistry |
| 7. Elizabeth Peterson, Calvin College Co-Author(s): Hannah Peterson, Rachael Bouwman, Kumar Sinniah, Seok Ki Choi <i>"A Force Spectroscopy Study of the Binding of Multivalent Dendrimer-Conjugated Vancomycin to a Model Bacterial Surface"</i> | Biochemistry |
| 8. Hannah Peterson, Calvin College Co-Author(s): Elizabeth Peterson, Rachael Bouwman, Kumar Sinniah, Bruce C. Steffes, Jason Fader <i>"Are Mosquito Nets an Effective Substitute for Surgical Mesh in Hernia Repair Surgery?"</i> | Biochemistry |
| 9. Kalina Reese, Calvin College Co-Author(s): Dr. Rachael Baker, Dr. Amy Wilstermann <i>"Elucidating Genotype-Phenotype Connections in <i>BCS1L</i> Mutations"</i> | Biochemistry |
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| <p>10. Lorryya Williams, Calvin College <i>"DFT Study of the Effect of Hydrogen Coverage on Propylene Adsorption PtZn Alloy Surface"</i></p> | Biochemistry |
| <p>11. Devin Moore, Central Michigan University Co-Author(s): Herbert H. Kavunja, Temitope O. Nathan, Benjamin M. Swarts <i>"A Chemical Reporter for Dual Cell-Surface Labeling of Mycobacteria"</i></p> | Biochemistry |
| <p>12. Kimberly Bottenberg, Grand Valley State University Co-Author(s): Cynthia L. Thompson <i>"Controlling for Contamination in Scent Mark Analysis of the Common Marmoset Monkey (Callithrix jacchus)"</i></p> | Biochemistry |
| <p>13. Aaron Capps, Grand Valley State University Co-Author(s): Mi Zhang, Stephen C. Jacobson <i>"Monitoring Disassembly of Hepatitis B Virus Capsids with Resistive-Pulse Sensing"</i></p> | Biochemistry |
| <p>14. Brittany Sincox, Grand Valley State University Co-Author(s): Gary Iacobucci, Gabriela K. Popescu <i>"Disease-associated Mutation Changes Kinetics and Permeation of NMDA Receptors"</i></p> | Biochemistry |
| <p>15. Christine Ausherman, Hillsdale College Co-Author(s): Evan M. Cornett, Robert M. Vaughan, and Scott B. Rothbart <i>"Investigating the Utility of Histone Peptide Microarrays for Detecting Circulating Autoantibodies"</i></p> | Biochemistry |
| <p>16. Kevin Catalano, Hope College Co-Presenting Author(s): Mackenzie Schmidt <i>"Characterization of System xc- Membrane Trafficking with Akt Mutants and xCT Mutants"</i></p> | Biochemistry |
| <p>17. Kailee Keiser, Hope College Co-Author(s): Dr. Virginia McDonough-Stuckey <i>"Protein-Protein Interactions Regulate OLE1 Gene Expression"</i></p> | Biochemistry |
| <p>18. John Peterson, Hope College Co-Presenting Author(s): Megan Grimes Co-Author(s): Megan Oostindie, Aaron Best, Matthew DeJongh <i>"Comparing Metabolic Strategies of Environmentally-Isolated Escherichia coli Strains"</i></p> | Biochemistry |
| <p>19. Kyle Ross, Hope College Co-Presenting Author(s): Alexandra J. Wyeth Co-Author(s): Kristin E. Dittenhafer-Reed <i>"The Role of Cardiolipin Biosynthesis in Driving Cancer Cell Chemotherapeutic Resistance"</i></p> | Biochemistry |
| <p>20. Mackenna Senti, Hope College Co-Presenting Author(s): Alicia M. Bostwick, Morgan K. Cinader Co-Author(s): Kristin E. Dittenhafer-Reed <i>"Investigating mechanisms of regulation of mitochondrial DNA stability and transcription"</i></p> | Biochemistry |

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|--|---------------------|
| <p>21. Rebekah Drew, Indiana Wesleyan University Co-Author(s): Dr. Jolie Leondard, Hannah Hartzler, and Malorie Meldy <i>"Development of biochemical tools for analysis of Nef-dependant Hck activation and viral packaging"</i></p> | Biochemistry |
| <p>22. Brandon Estrem, Indiana Wesleyan University Co-Presenting Author(s): Marissa O'Hair, Emily Gathercoal Co-Author(s): Marissa O'Hair, Emily Gathercoal, Dr. Stephen Leonard <i>"Development of selective and potent bivalent inhibitors of the tyrosine phosphatase SHP2"</i></p> | Biochemistry |
| <p>23. Maria Fujii, Kalamazoo College <i>"An Investigation into the Role of Specific Amino Acids Residues in the Lytic Activity of Antimicrobial Peptides"</i></p> | Biochemistry |
| <p>24. Sabrina Leddy, Kalamazoo College Co-Author(s): Laura Furge, Sarah Glass, Michael Orwin <i>"Rolapitant is not a mechanism-based inactivator or tight-binding inhibitor of CYP2D6 in vitro"</i></p> | Biochemistry |
| <p>25. Sarah Hodge, Michigan State University Co-Author(s): Rima Mouawad, Dr David N. Arnosti <i>"Investigating the molecular mechanisms underlying the function of the retinoblastoma protein in cellular development"</i></p> | Biochemistry |
| <p>26. Dylan Johnston, Michigan State University <i>"Understanding the Effect of Rbf1 protein on Regulation of Isocitrate Dehydrogenase"</i></p> | Biochemistry |
| <p>27. Kyler Liegh, Michigan State University Co-Author(s): Seomun Kwon; Dr. Michael Feldbrügge <i>"Purification of Extracellular Vesicles Produced by Ustilago maydis and Generation of an EV-Marker Strain"</i></p> | Biochemistry |
| <p>28. Sean McGuire, Michigan State University Co-Author(s): Fabian Brandenburg, Marion Eisenhut <i>"The Importance of the Transport Protein Mnx in Mn Homeostasis in Synechosystis sp. PCC 6803"</i></p> | Biochemistry |
| <p>29. Michael Rankin, Michigan State University <i>"Characterization of Peroxisomal Coenzyme A Carrier Candidates in Arabidopsis thaliana"</i></p> | Biochemistry |
| <p>30. James Sykes, Michigan State University Co-Author(s): Dr. Hariharan Subramanian, Dr. Ananth Kumar <i>"Identification of plant-derived compounds to treat mast cell-mediated allergic disorders"</i></p> | Biochemistry |
| <p>31. Yamini Vepa, Michigan State University Co-Author(s): Dr. Vivian Labrie <i>"Influence of Ten-Eleven-Ten Methyl dioxygenase 2 on the expression of familial Parkinson's Disease genes"</i></p> | Biochemistry |
| <p>32. Christian Brian, University of Nebraska Co-Author(s): Jordan Rose, Jade Woods, Annadurai Anandhan, Roman Levytsky, Oleh Khalimonchuk, Robert Powers, and Rodrigo Franco <i>"Mitochondrial Metabolism in Astrocytes: A Role in Xenobiotic Detoxification?"</i></p> | Biochemistry |

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|---|----------------|
| 33. Benjamin Arnson, Aquinas College Co-Author(s): L. Rob Peters PhD <i>"Subcloning of zebrafish (Danio rerio) wild-type NOD1 and K202R NOD1 into a Gateway pENTR vector"</i> | Biology |
| 34. Jacob Mackinder, Aquinas College Co-Author(s): Dr. Timothy Henshaw <i>"Kinetic Analysis of OXA-207, a G222V Mutant of OXA-24/40"</i> | Biology |
| 35. Amanda Roth, Aquinas College Co-Author(s): Dr. Rebecca Humphrey <i>"Testing the Effect of Cold Stratification Length on Germinating Native Wildflower Seed"</i> | Biology |
| 36. Martha Mata, Aquinas College Co-Author(s): Levi Milan, Dr. Xin Du <i>"Mechanics of Auxetic Metamaterial"</i> | Biology |
| 37. Jenna Atma, Calvin College Co-Author(s): Randy Van Dragt <i>"Effects of Controlled Prairie Burning on Epigeal Arthropod Populations"</i> | Biology |
| 38. Gabrielle Barthel, Calvin College <i>"Gut microbiota regulate systemic iron homeostasis in mice by modulating intestinal HIF-2α activity"</i> | Biology |
| 39. Amber Bingle, Calvin College <i>"A Decade of Floral Phenology at Flat Iron Lake"</i> | Biology |
| 40. Maxwell DeYoung, Calvin College Co-Presenting Author(s): Gregory Manni Co-Author(s): Dr. Dave Warners <i>"Relative Success of Native Michigan Plants in Urban Curb-cut Rain Gardens"</i> | Biology |
| 41. Araceli Eikenberry, Calvin College Co-Author(s): Stephanie Praamsma, Dr. David Warners <i>"Green Team - Urban Ecological Restoration"</i> | Biology |
| 42. Harry Ervin, Calvin College Co-Author(s): Tayler Chicoine and Sarah Evans <i>"Hungry Hungry... Microbes? Effects of Plant Identity and Nitrogen Availability on Soil Microbes Carbon Consumption"</i> | Biology |
| 43. Skyler Fish, Calvin College <i>"Stormwater capture via green infrastructure in the Plaster Creek Watershed"</i> | Biology |
| 44. Rachel House, Calvin College <i>"Isolation of CPT1 from Pichia pastoris and murine liver for functional and structural analysis"</i> | Biology |

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|--|----------------|
| <p>45. Sarah Hughes, Calvin College Co-Presenting Author(s): Maria Bleitz, Rachel Warners Co-Author(s): K. Grasman–Calvin College, Grand Rapids, MI/L. Williams, M. Annis, and J. Moore–US Fish and Wildlife Service, E. Lansing, MI</p> <p><i>“Great Lakes colonial waterbirds as sentinels for continuing reproductive and health impairments at contaminated sites in Michigan during 2010-17”</i></p> | Biology |
| <p>46. Joseph Joel, Calvin College Co-Author(s): Dr. Kyle Korshavn and Dr. Ayyalusamy Ramamoorthy</p> <p><i>“Ternary Interactions of Beta Cell Constituents in Aggregation Kinetics”</i></p> | Biology |
| <p>47. Jake Kalkman, Calvin College Co-Author(s): Dr. David Dornbos</p> <p><i>“Physiological Study of Common and Glossy Buckthorn’s Ability to Outcompete Native Species”</i></p> | Biology |
| <p>48. Montana Mason, Calvin College Co-Author(s): Vernon LaLone, Ashirvad Varma, Kari Nieto, Steve Schwendeman, Gus Rosania</p> <p><i>“Quantitative Raman Analysis of Drug Distribution in Tissue”</i></p> | Biology |
| <p>49. Aaron Pemberton, Calvin College Co-Author(s): Ryan M. Bebej, PhD</p> <p><i>“Creating High Quality Three-Dimensional Models through Photogrammetry”</i></p> | Biology |
| <p>50. Andrew Philipose, Calvin College Co-Author(s): Olivia Harlow, Meghan Schilthuis, and Anding Shen</p> <p><i>“IL6 and CD2 involvement in HIV infection of resting CD4+ T cells stimulated by Lymphatic Endothelial cells”</i></p> | Biology |
| <p>51. David Sweeney, Calvin College Co-Presenting Author(s): Ye Joo Oh Co-Author(s): Stacy DeRuiter</p> <p><i>“Software Tools for Analysis of Data from High-Resolution Animal-Borne Tags”</i></p> | Biology |
| <p>52. Ethan Valentine, Calvin College Co-Author(s): Chad A. Apol, and Dr. Darren S. Proppe</p> <p><i>“Small Forest Openings Impact Nest Predation at the Forest Edges”</i></p> | Biology |
| <p>53. Tanner Vincent, Calvin College Co-Presenting Author(s): Jonathan Walt Co-Author(s): Dr. Dave Warners, Stephanie Praamsma</p> <p><i>“Mapping Mayapple Growth in Restored Forest”</i></p> | Biology |
| <p>54. Joseph Golden, Cornerstone University Co-Author(s): Lindsey Galle</p> <p><i>“Stream Velocities, Gage Heights, Cross-Sectional Measurements and their Correlation to Develop Streamflow Evaluation Models”</i></p> | Biology |

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| <p>55. Paige Kramer, Ferris State University Co-Author(s): Christopher DeFraia <i>"An Arabidopsis Mutant with Drought Hypersensitivity"</i></p> | Biology |
| <p>56. Hunter Pope, Ferris State University Co-Author(s): Dr. M. Beth Zimmer <i>"The Effect of Upper Cervical Spinal Cord Injury on the Hippocampus: Structure and Function"</i></p> | Biology |
| <p>57. Francesca Golus, Grand Valley State University Co-Author(s): Dr. Jodee Hunt <i>"Making the Most of Enrichment: Efficacy with John Ball Zoo's Carnivores"</i></p> | Biology |
| <p>58. Kristin Schepke, Grand Valley State University <i>"Genetic Connectivity of Eastern Massasauga Rattlesnakes in Michigan"</i></p> | Biology |
| <p>59. Faith Ureel, Grand Valley State University Co-Author(s): Marianne S. Moore, Liliana M. Dávalos, Amy L. Russell <i>"From the Shadows of the Southeast: The Population Genetics and Phylogeography of Myotis austroriparius"</i></p> | Biology |
| <p>60. Genevieve Chiara, Hillsdale College Co-Author(s): Francis X. Steiner <i>"Analysis of Conserved Proteins Using Phage Display in Staphylococcus aureus Biofilms on Glucose-supplemented Media"</i></p> | Biology |
| <p>61. Riley Draper, Hope College <i>"Mutations in arv1 affect desaturase expression in yeast and mice"</i></p> | Biology |
| <p>62. Haley Fischman, Hope College Co-Author(s): Natalie Filipowicz, Kathleen Muloma, Benjamin Kopek <i>"Specific Lipid Requirements and Localized Lipid Composition Changes Associated with Flock House Virus RNA Replication Complexes"</i></p> | Biology |
| <p>63. Jager Haan, Hope College Co-Author(s): Spencer Morgan, Peter Vollbrecht <i>"Anxiety and Obesity: Effects of Diet, Obesity, and Predisposition in Sprague-Dawley Rats"</i></p> | Biology |
| <p>64. Adam Krahn, Hope College Co-Presenting Author(s): Bethany Van Houten Co-Author(s): Joseph Stukey <i>"Lower Isolation Temperatures Increase Cluster K Mycobacteriophage Isolation Frequency"</i></p> | Biology |
| <p>65. Alyssa Machay, Hope College Co-Author(s): Dr. Benjamin Kopek, Emily Jackson <i>"Genetic Tools to Study Zika Virus in Insect Cells"</i></p> | Biology |
| <p>66. Geordan Stukey, Hope College Co-Author(s): Adam Krahn, Bethany Van Houten, Joseph Stukey <i>"Cluster K Mycobacteriophages Exhibit Lytic Cycle Characteristics that may Confer a Growth Advantage at Lower Temperatures"</i></p> | Biology |

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| <p>67. Luke VanBlois, Hope College Co-Presenting Author(s): Amanda Bentley Co-Author(s): Lindsey Porter, Greg Fraley, Susan Fraley, Nicole Prihoda <i>"Food Restriction in Meat Ducks: the good, the bad, and the hopeful"</i></p> | Biology |
| <p>68. Ethan Blake, Indiana Wesleyan University Co-Author(s): Jesse Maguire, Preston Rippe, Nur Bashira Binti Shaharuddin, Wen Lin Chai, and Dan Jones <i>"Rescue of Human Oral Keratinocytes from a Bone Cancer Drug Side Effect: Zoledronate-Induced Necrosis Rescue"</i></p> | Biology |
| <p>69. Brad Burchell, Indiana Wesleyan University Co-Author(s): W. MATTHEW SATTLEY, STEPHEN D. CONRAD, MICHAEL T. MADIGAN <i>"Design, Construction, and Application of an Inexpensive, High-Resolution Water Sampler"</i></p> | Biology |
| <p>70. Jesse Maguire, Indiana Wesleyan University Co-Author(s): Preston Rippe, Ethan Blake, Nur Bashira Binti Shaharuddin, Wen Lin Chai, Dan Jones <i>"Rescue of Human Oral Keratinocytes from a Bone Cancer Drug Side Effect: Zoledronate-Induced Apoptosis Rescue"</i></p> | Biology |
| <p>71. Preston Rippe, Indiana Wesleyan University Co-Author(s): Jesse Maguire, Ethan Blake, Nur Bashira Binti Shaharuddin, Wen Lin Chai, Dan Jones <i>"Rescue of Human Oral Keratinocytes from a Bone Cancer Drug Side Effect: Zoledronate-Induced Senescence Rescue"</i></p> | Biology |
| <p>72. Lexi Shepherd, Indiana Wesleyan University Co-Presenting Author(s): Michael Gongwer, Hannah Caringal Co-Author(s): Matthew A. Kreitzer, Boriana K. Tchernookova, David Swygart, Chad Heer, Robert P. Malchow <i>"Extracellular PH Changes Mediated by Retinal Muller Glia are Shaped by Two Distinct Molecular Pathways"</i></p> | Biology |
| <p>73. Shelby Golden, Kalamazoo College Co-Author(s): Dr. Santiago Salinas <i>"The effects of acute heatwaves on fathead minnows (Pimephales promelas)"</i></p> | Biology |
| <p>74. Christina Keramidas, Kalamazoo College Co-Author(s): Dr. Dwight Williams <i>"The Neuroprotective Effects of RS-127445 in a Glutamate Excitotoxicity Model of Caenorhabditis elegans"</i></p> | Biology |
| <p>75. Claire Schertzing, Kalamazoo College <i>"The effect of rare and novel temperature regimes on the release of cryptic variation in the fathead minnow, Pimephales promelas"</i></p> | Biology |
| <p>76. Matera Stuart, Kalamazoo College Co-Author(s): James Gurney, Sam Brown <i>"S. mitis pairwise interaction downregulates P. aeruginosa quorum sensing and virulence expression in cystic fibrosis lung infections"</i></p> | Biology |
| <p>77. David Broadbent, Michigan State University Co-Author(s): Ananth Kammala, Rupali Das and Hariharan Subramanian <i>"Na⁺/H⁺ exchanger regulatory factor 1 (NHERF1) is a novel adapter molecule that regulates T cell response"</i></p> | Biology |

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| 78. Hanna Teasley, Michigan State University Co-Author(s): Hye Jin Chang, Tae Hoon Kim, and Jae-Wook Jeong <i>"Steroid Hormone Regulation of PIK3IP Expression in the Murine Uterus"</i> | Biology |
| 79. Erika Waalkes, Western Michigan University Co-Author(s): Pamela Hoppe and NaTasha Schiller <i>"Myosin Motor Domains Perform Distinct Functions in Caenorhabditis elegans Body Wall Muscle"</i> | Biology |
| 80. Cody Fridley, Western Michigan University Co-Author(s): James Springstead <i>"Multi-Angle Light Scattering as a Tool for Lipoprotein Analysis"</i> | Biomedical Engineering |
| 81. Julia Bennett, Grand Valley State University Co-Author(s): Ian Cleary, PhD <i>"Contributions of a membrane sensor protein to adhesion and biofilm formation in C. albicans"</i> | Biomedical Sciences |
| 82. Elissa Capes, Grand Valley State University Co-Author(s): Nynke van den Berg, Nutte (Tarn) Teraphongphom, Nick Oberhelman, Eben Rosenthal <i>"Assessing ECG changes in fluorescently labeled antibodies"</i> | Biomedical Sciences |
| 83. Eve Gardner, Grand Valley State University Co-Author(s): Patrick Dischinger <i>"Characterizing a Novel Neurofibromatosis Type 1 Rat Model"</i> | Biomedical Sciences |
| 84. Victoria Irwin, Grand Valley State University Co-Author(s): Derek Thomas, Ph. D <i>"Analyzing the Role of a Subset of Potentially Degraded Proteins in the Ability of Candida albicans to Change Morphologies"</i> | Biomedical Sciences |
| 85. Julia Martiradonna, Grand Valley State University Co-Author(s): Dr. Ian Cleary <i>"Testing Functional Redundancy of Two Candida albicans cell surface proteins"</i> | Biomedical Sciences |
| 86. Connor McCarthy, Grand Valley State University <i>"A Candida-specific Membrane Protein Affects Cell Adhesion and Filamentation"</i> | Biomedical Sciences |
| 87. Alexandra Williams, Grand Valley State University Co-Author(s): Randy Winchester <i>"Silicon Analogs of Modafinil"</i> | Biomedical Sciences |
| 88-A. Trevor Gohl, Michigan State University Co-Author(s): Trevor G. Gohl *, Ananth K. Kamala *, Ryan M. Mack, Christopher Occhiuto, Sami J. Abdelaziz, Manthan Patel, Hariharan Subramanian, Rupali Das *Contributed equally to the work Department of Physiology, Michigan State University <i>"ADAP regulates iNKT-cell mediated allergic response during asthma"</i> | Biomedical Sciences |

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| 88-B. Trevor Gohl, Michigan State University | Cell and Molecular Biology |
| Co-Author(s): Trevor Gohl, Hyun Lee, Ryan Mack, Ryan Griffin, Sami Abdelaziz, Omar Said, Kellie Mulaney, Manthan Patel, Rupali Das | |
| <i>"The immune adaptor ADAP plays a pivotal role in invariant natural killer T cell functions"</i> | |
| 89. Jasper Gomez, Michigan State University | Biomedical Sciences |
| Co-Author(s): Kyle J. Card; Thomas LaBar; Richard E. Lenski | |
| <i>"The evolution of antibiotic resistance in a long-term experiment with Escherichia coli"</i> | |
| 90-A. Ryan Mack, Michigan State University | Biomedical Sciences |
| Co-Author(s): Hyun H. Lee, Trevor G. Gohl, Rupali Das | |
| <i>"Identification of a novel immune checkpoint for iNKT cell anti-cancer response"</i> | |
| 90-B. Ryan Mack, Michigan State University | Biomedical Sciences |
| Co-Author(s): Trevor G. Gohl, Rupali Das | |
| <i>"Role of SKAP55 in iNKT cell development and function"</i> | |
| 91. Canchai Yang, Michigan State University | Biomedical Sciences |
| Co-Author(s): Ananth Kammala, Christopher Occhitto and Hariharan Subramanian | |
| <i>"Differential mast cell responses between C57BL6 (B6) and Balb/c mice are dictated by G-Protein Coupled Receptor Kinase 2 (GRK2)"</i> | |
| 92. Scott Davis, Ferris State University | Biotechnology |
| Co-Author(s): Dr. Konara Kollalpitiya | |
| <i>"The Association of 3β-Hydroxysteroid Dehydrogenase Type 2 with Inner Mitochondrial Translocase Tim17 by Western Blot Analysis"</i> | |
| 93. Kylee Jones, Ferris State University | Biotechnology |
| <i>"Effect of Cyclooxygenase Inhibition on the Docosahexaenoic Induced Apoptosis in Lung Cancer Cell"</i> | |
| 94. Monica Pavlack, Ferris State University | Biotechnology |
| <i>"The Assessment of Waterborne Pathogens in District 4 Recreational Waters using RT-PCR"</i> | |
| 95. Ronald Schindler, Ferris State University | Biotechnology |
| Co-Author(s): Dr. MaryBeth Zimmer | |
| <i>"Effect of Spinal Cord Injury on GFAP and BDNF Levels in Rat Spinal Cords"</i> | |
| 96. Courtney Wernette, Ferris State University | Biotechnology |
| Co-Author(s): Maggie Chasse, Patrick Grohar | |
| <i>"Investigating the EZH2 Dependency in Atypical Teratoid/Rhabdoid Tumor"</i> | |
| 97. Ryan Rupp, Michigan State University | Biotechnology |
| <i>"Sugar Uptake and Oxygen Generation of Galdieria sulphuraria"</i> | |

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| 98. Andrew Folkerts, Calvin College Co-Author(s): Patrick Jonker, Emily Rolof and Professor Brenden Looyenga <i>"Vesicle and Protein Trafficking in Renal Cancer"</i> | Cell and Molecular Biology |
| 99. Mark Wolf, Calvin College Co-Author(s): Jessica Guillaume, Steph Celano, Dr. Jeff MacKeigan <i>"Integrating Data-Driven and Rule-Based Model to Understand Autophagy"</i> | Cell and Molecular Biology |
| 100. Jaden Shirkey, Ferris State University Co-Author(s): Agnes Grzechnik, Dr. Alexandra Newton <i>"An Investigation of PHLPP1 Phosphorylation"</i> | Cell and Molecular Biology |
| 101. David Ayala-Talavera, Grand Valley State University <i>"Discovering What Lies Underneath: Characterizing CA19-9 and sTRA biomarkers"</i> | Cell and Molecular Biology |
| 102. Alyssa Benn, Grand Valley State University Co-Author(s): David Leonard and Agnieszka Szarecka <i>"Comparison of Network Patterns within the P Loop Region for OXA-66 Clinical Mutants P130Q and I129L"</i> | Cell and Molecular Biology |
| 103. Melina Frantzeskakis, Grand Valley State University Co-Author(s): Dayne Martinez, Jordan Straight, Nick Huisingh, Daniel Doyle <i>"The Influence of Phosphomimetic Nato3 on Dopamine Neuron Marker Expression"</i> | Cell and Molecular Biology |
| 104. Andrew Freiman, Grand Valley State University Co-Author(s): Dr. Margaret Dietrich <i>"Abnormal growth patterns of P. patens mutant phenotype may be due to disrupted miRNAs"</i> | Cell and Molecular Biology |
| 105. Megan Goy, Grand Valley State University Co-Author(s): Carrie Herp, Christopher Avey, Sheila Blackman <i>"Identification and expression analysis of Phenylalanine Ammonia Lyase in Echinacea purpurea"</i> | Cell and Molecular Biology |
| 106. Emma Hahs, Grand Valley State University Co-Author(s): Sok Kean Khoo <i>"microRNA 34b/c and alpha synuclein gene expression in SH-SY5Y cells for Parkinson's disease study"</i> | Cell and Molecular Biology |
| 107. Ashleigh Harrah, Grand Valley State University Co-Author(s): Brooke Armistead, Sok Kean Khoo <i>"miRNA-34b/c as disease progression biomarkers for Parkinson's Disease".</i> | Cell and Molecular Biology |
| 108. Samuel Henson, Grand Valley State University Co-Author(s): Derek Janssens, Pei-Lan Tsou <i>"Sorting Out Multiple Soybean Orthologs Of SLEEPY-1"</i> | Cell and Molecular Biology |
| 109. Steven McKenzie, Grand Valley State University Co-Author(s): Matthew J. Christians <i>"Ethylene-Induced Modification of EIN2 C-terminus in Arabidopsis thaliana"</i> | Cell and Molecular Biology |

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| 110. Sarah Robertson, Grand Valley State University <i>"AIM2 (Absent in Melanoma 2) as Possible Biomarker for Diagnosis of Typhoid Fever"</i> | Cell and Molecular Biology |
| 111. Madison Spratt, Grand Valley State University Co-Author(s): Jessica Thoe, Dawn Hart <i>"Polarity Kinase Orb6 Mediates Localization of Cytokinesis Nodes Mid1 and Cdr2"</i> | Cell and Molecular Biology |
| 112. Macie Weiland, Grand Valley State University Co-Author(s): Dr. Sok Kean Khoo <i>"Evaluation of leucine-rich repeat kinase 2 (LRRK2)-related microRNAs as biomarkers for Parkinson's disease"</i> | Cell and Molecular Biology |
| 113. Christina Wheeler, Grand Valley State University Co-Author(s): Dr. Jim Cohen, Dr. Gillian L. Ryan, Dr. Salomon Turgman Cohen <i>"Investigating Intraindividual Variation and Mutation in an Apple Tree (Malus domestica)"</i> | Cell and Molecular Biology |
| 114. Philip Versluis, Hope College Co-Author(s): Daniel A. Smith, Andy Hamilton, Damien Hill, LaVana Greene, and Leah Chase <i>"Activation of System xc- Trafficking via an Akt-dependent Signal Transduction Pathway"</i> | Cell and Molecular Biology |
| 115. Mohammad Ahmadzai, Michigan State University Co-Author(s): Ananth Kumar Kammala, Rupali Das & Hariharan Subramanian <i>"The role of GRK2 in the pathogenesis of asthma and airway inflammation"</i> | Cell and Molecular Biology |
| 116. Megan Aardema, Calvin College Co-Author(s): Dr. Douglas A. Vander Griend <i>"Assembly Process of the Supramolecular Nanojar"</i> | Chemistry |
| 117. Jonathan Boonstra, Calvin College Co-Author(s): Douglas A. Vander Griend <i>"Folding Dynamics and Characterization of β-hairpin Peptides"</i> | Chemistry |
| 118. Rachael Bouwman, Calvin College Co-Author(s): Lydia J. DeJonge, Nicole L. Michmerhuizen, Maggie A. Van Winkle, Amanda B. Witte, Kylin Hamann, and Dr. Kumar Sinniah <i>"A Study of the Interaction between Insulin and G-Quadruplex DNA"</i> | Chemistry |
| 119. Anna Essenburg, Calvin College Co-Presenting Author(s): Matthew Vander Wal Co-Author(s): Dr. Michael R. Barbachyn <i>"Progress Toward the Synthesis of Novel Bacterial Topoisomerase Inhibitors Derived from Fluoroquinolones. N-1 Aryl- and Heteroarylamine Derivatives"</i> | Chemistry |
| 120. Regan Farrell, Calvin College Co-Author(s): Roger L. DeKock <i>"The Chemical Reference Atom: The Role of Fictitious Atomic States in Regards to Electronegativity"</i> | Chemistry |

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| <p>121. Abigail Frndak, Calvin College Co-Presenting Author(s): Ye Eun Kim Co-Author(s): Dr. Carolyn Anderson <i>"Synthesis of Isoquinoline Alkaloids Derivatives"</i></p> | Chemistry |
| <p>122. Adam Hilbrands, Calvin College Co-Author(s): Elysa M. Wolf, Jackson L. Ross, David E. Benson <i>"Protein Oxidation Involved in Cys-Tyr Post-Translational Modification"</i></p> | Chemistry |
| <p>123. Nathanael Kazmierczak, Calvin College Co-Author(s): Dr. Douglas A. Vander Griend <i>"Uncertainty Estimation in Global Analysis of UV-Vis Titrations"</i></p> | Chemistry |
| <p>124. Janice Wharton, Calvin College <i>Please note that Janice Wharton will present her poster in Poster Session I from 10:00 AM to 10:45 AM</i> Co-Author(s): Dr. Mark Muyskens, student Isaac Izaguirre <i>"Natural Fluorescence of Planetree Extracts"</i></p> | Chemistry |
| <p>125. Emily Zerull, Calvin College Co-Presenting Author(s): Matthew Rossler, Miles Mason Co-Author(s): Carolyn Anderson <i>"Propargyloxypyridines as Precursors to Trisubstituted Indolizines"</i></p> | Chemistry |
| <p>126. Joshua Plesnicar, Drake University Co-Author(s): John Gitua <i>"REACTIONS OF π-BONDED ORGANIC SUBSTRATES WITH ORGANOTITANIUM REAGENTS"</i></p> | Chemistry |
| <p>127. Trey Pankratz, Grand Valley State University Co-Author(s): Jacob R. Lindale, Ryan L. Hollingsworth, Maryam Yousif, Stanislav Groysman, and Richard L. Lord <i>"Exploring the Reaction Mechanism and Origin of Regioselectivity in Dinickel Catalyzed Alkyne Cyclotrimerization"</i></p> | Chemistry |
| <p>128. Zachariah Vander Tuin, Grand Valley State University Co-Author(s): Scott N. Thorgaard <i>"Electrochemical Investigation of Facilitated Terbium Ion Transfer at Micro-Liquid/Liquid Interfaces"</i></p> | Chemistry |
| <p>129. Grace Ahlgrim, Hope College <i>"Synthesis of Ortho-Substituted Benzamides Through Nickel Mediated Cross-Coupling"</i></p> | Chemistry |
| <p>130. Meghan Campbell, Hope College <i>"Synthesis of Biologically Active Small Molecules to Fight Leishmanial Parasites"</i></p> | Chemistry |
| <p>131. Emily Hofmeyer, Hope College Co-Presenting Author(s): Addison M. Duda Co-Author(s): Sean R. Gitter, Matthew L. Smith, <i>"Halogen-substituted BF₂-azo dyes as precursors to longer wavelength photomechanical polymeric materials"</i></p> | Chemistry |

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| 132. Nate Kitzmiller, Indiana Wesleyan University Co-Author(s): W. Scott McCullough <i>"Parameterizing Docking Candidates to Evaluate Binding Affinity for SHP2 in silico"</i> | Chemistry |
| 133. Zechariah Pfaffenberger, Indiana Wesleyan University Co-Author(s): Dr. Robert Bacallao, Alexander Kolb <i>"SULT1C2 Post-translationally Modifies Mitochondria Respiration"</i> | Chemistry |
| 134. Omar Leon, Kalamazoo College Co-Author(s): Michael B. Sponsler <i>"Alkenyl Ditriflates and Diiodides: Conjugated, Non-Conjugated, and Cross-Conjugated"</i> | Chemistry |
| 135. Jacqueline Mills, Kalamazoo College Co-Author(s): Laura Lowe Furge, Ph.D <i>"CYP2D6 Allelic Variants *17-2, 17-3 and their Susceptibility to Inactivation by SCH66712"</i> | Chemistry |
| 136. Madeleine Roberts, Kalamazoo College Co-Author(s): Daniel P. Decker, Yulia Politanska, and Thomas J. Smith <i>"Reaction of the Small-Ring Macrocyclic N,N'-Dimethyltribenzo-1,4,7-triazacyclononatriene and Copper(II) Bromide Produces Three Distinctly Different Products, Including a Nitrogen Cation Radical Compound"</i> | Chemistry |
| 137. Steven Davies, Lake Superior State University Co-Author(s): Christina Magyar, Tyler Wall, Molly Campbell, Christopher Savich, Travis Quevillon, Dr. R. Adam Mosey <i>"A New One-Pot Multicomponent Synthesis Of Diverse 3,4-Dihydroquinazolines: Methodology Development, Reaction Scope Exploration, and Mechanistic Investigation"</i> | Chemistry |
| 138. Pavitra Attanayake, Western Michigan University Co-Author(s): Teanne Davis <i>"Development of an LC-MS-MS Method to Analyze High Heroin Positives in Oral Fluid and the Analysis of the Geospatial Hot Spots in Michigan, Indiana, and Ohio"</i> | Chemistry |
| 139. Judy Smith, Heidelberg University Co-Author(s): Dr. Manoj K. Jha, Tewodros Assefa <i>"Water Balance Study of a Small Watershed Using a Hydrological Model"</i> | Computational Science |
| 140. Elizabeth Koning, Calvin College Co-Presenting Author(s): Christiaan Hazlett Co-Author(s): Dr. Joel Adams <i>"Thread Safe Graphics Library"</i> | Computer Science |
| 141. Christopher Greaves, Calvin College Co-Author(s): Dr. Renard Tubergen <i>"Energy-Saving Alternative for Office Heating"</i> | Engineering |
| 142. Reuben Lewis Lewis, Calvin College Co-Author(s): Yoon Kim <i>"Modeling and Simulation of a Solar Simulator with Multi-wavelength High-power LEDs"</i> | Engineering |

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| <p>143. Noah Ver Beek, Calvin College Co-Author(s): Prof. David Wunder <i>"Chlorine Dosing with Flow Over Feeder"</i></p> | <p>Engineering</p> |
| <p>144. Raymond Greiner, Western Michigan University Co-Presenting Author(s): Emily Stypinski Co-Author(s): Dr. James Springstead <i>"Treating and Characterizing Atherosclerosis Using Biotechnology"</i></p> | <p>Engineering</p> |
| <p>145. Christopher Occhiuto, Michigan State University Co-Author(s): Mohammad Mustafa Ahmadzai and Hariharan Subramanian <i>"STIM1 contributes to mast cell functional response via MrgprX2"</i></p> | <p>Immunology</p> |
| <p>146. Holly Ensley, Aquinas College <i>"Efficient Mancala Movement"</i></p> | <p>Mathematics</p> |
| <p>147. Elizabeth Crow, Calvin College Co-Presenting Author(s): Joyce Chew <i>"Characterizing the Gröbner Bases of Generic Ideals"</i></p> | <p>Mathematics</p> |
| <p>148. KyuHyun Jeong, Calvin College Co-Presenting Author(s): Katherine McLain <i>"Clean Water for Liberia: Statistical Analysis"</i></p> | <p>Mathematics</p> |
| <p>149. Mikaela Wyatt, Grand Valley State University Co-Presenting Author(s): Ellen Grove Co-Author(s): other students: Samantha Law, Morgan Oneka; Mentors: PhD Lauren Keough, PhD David Clark <i>"King of the Coop: A Graphical Investigation of Chicken Pecking Orders"</i></p> | <p>Mathematics</p> |
| <p>150. Kelsey Norman, Calvin College <i>"Educational Interactives in Sage"</i></p> | <p>Mathematics</p> |
| <p>151. Rebecca Gordon, Grand Valley State University Co-Author(s): Alexis Porter, Shaowen Xu, Jordan Zhou <i>"Biofilm Growth Under Aerobic and Microaerobic Conditions"</i></p> | <p>Microbiology</p> |
| <p>152. Michaela Miller, Hillsdale College Co-Author(s): Dr. Francis Steiner <i>"Live/Dead staining and Effects of Acyl-Homoserine Lactone on Rhodobacter sphaeroides and Biofilm Growth"</i></p> | <p>Microbiology</p> |
| <p>153. Celina Malcolm, Lake Superior State University Co-Author(s): Christina Magyar, Tyler Wall, Steven Davies, Molly Campbell, Travis Quevillon, Dr. Martha Hutchens, Dr. R. Adam Mosey <i>"Evaluation of 3,4-Dihydroquinazolines as Inhibitors of MRSA Planktonic and Biofilm Growth"</i></p> | <p>Microbiology</p> |
| <p>154. Aundrea Newman, Cornerstone University <i>"The Neural Correlates of Love"</i></p> | <p>Neuroscience</p> |

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| 155. Liyah Marshall, Grand Valley State University | Neuroscience |
| <i>"The Effect of CRF2 Receptor Regulation on Depressive – Like Behaviors During Protracted Alcohol Withdrawal"</i> | |
| 156. Garrett Fogo, Hope College | Neuroscience |
| Co-Author(s): Andrew J. Gall | |
| <i>"Behavioral effects of ablation of retinal ganglion cells in diurnal grass rats"</i> | |
| 157. Amanda Gibson, Hope College | Neuroscience |
| Co-Author(s): Mackenzie Schmidt, Emma Hardy, Philip Versluis, Kevin Catalfano, Leah Chase | |
| <i>"Regulation of System xc-: Effects of N-terminal and C-terminal mutations on xCT cell surface expression"</i> | |
| 158. Anna Lunderberg, Hope College | Neuroscience |
| Co-Author(s): Dr. Leah Chase-Wallar, Jada Royer, Ryann Felton, Stephanie Simko | |
| <i>"Establishing the Validity of a Novel Animal Model for Bipolar Disorder Through Neurochemical Analysis"</i> | |
| 159. Jada Royer, Hope College | Neuroscience |
| Co-Author(s): Anna Lunderberg, Ryann Felton, Dr. Leah Chase | |
| <i>"Establishing the Validity of a Novel Animal Model for Bipolar Disorder Through Behavioral Testing"</i> | |
| 160. Michael Gongwer, Indiana Wesleyan University | Neuroscience |
| Co-Presenting Author(s): Lexi Shepherd, Hannah Caringal | |
| Co-Author(s): Robert P. Malchow, Boriana K. Tchernookova, Matthew A. Kreitzer | |
| <i>"ATP (P2Y1) Receptor Drives Glial Cell-Mediated Acidification of Retina"</i> | |
| 161. Kaitlyn Gordon, Kalamazoo College | Neuroscience |
| Co-Author(s): Dr. Victor Cazares and Dr Geoff Murphy | |
| <i>"Distinct activation in the infralimbic region of the prefrontal cortex in fear conditioned 129S1 and C57B6 mice"</i> | |
| 162. Erin Reasoner, University of Michigan | Neuroscience |
| Co-Author(s): Amy Rumora, Julia Haidar, Stephen Lentz, Eva Feldman | |
| <i>"Saturated Fatty Acids Impair Organellar Trafficking in Dorsal Root Ganglion (DRG) Sensory Neurons"</i> | |
| 163. Jacob Lopez, Davenport University | Nursing |
| Co-Author(s): L. K. Harris | |
| <i>"Evaluating Codon Usage in Lactobacilli Species"</i> | |
| 164. Kuana School, Davenport University | Nursing |
| Co-Presenting Author(s): Heidi Stevens | |
| Co-Author(s): Heidi Stevens, Laura Harris | |
| <i>"Computational Evidence of Colorectal Cancer Promoting Mechanisms from Streptococcal Infection"</i> | |
| 165. Abbey Magolan, Ferris State University | Pharmacy |
| Co-Author(s): Research Mentor: Dr. Felix Amissah, PhD, College of Pharmacy | |
| <i>"Aspirin Augments the Inhibitory Actions of Docosahexaenoic Acid on Lung Cancer A549 Cell Migration and Invasion"</i> | |

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- 166. Jacob Davison, Central Michigan University** **Physics**
Co-Author(s): Dr. Arash Bahramian, Dr. Jay Strader
"Spectral type identification of donor star in transient variable x-ray binary"
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- 167. Reed Kolany, Central Michigan University** **Physics**
Co-Author(s): Alistair Templeton, Medical Physicist, Rush University Medical Center
"Prophylactic nature of incidental brain irradiation in development of metastasis"
-
- 168. Jared Williams, Central Michigan University** **Physics**
"Calculation of Surface Diffusion Coefficients from Gaussian Output Files Using Einstein's Theory"
-
- 169. Kellie Mullany, Michigan State University** **Physiology**
Co-Author(s): Ryan M. Griffin, Ryan M. Mack, Trevor G. Gohl, Hyun H. Lee, Ananth K. Kamala, Hariharan Subramanian, Rupali Das
"Demystifying the role of GPCR-associated adaptor molecules in iNKT cell functions"
-
- 170. Brianna Callahan, Michigan State University** **Physiology**
Co-Presenting Author(s): Omar Said
Co-Author(s): Hyun H. Lee, Trevor G. Gohl, Ryan M. Mack, Tanwir Hashem, Ryan M. Griffin, Ananth K. Kamala, Hariharan Subramanian, Rupali Das
"CD2 contributes to the corticosteroid resistance (CR) phenotype of iNKT cells in asthma"
-
- 171. Ryan Griffin, Michigan State University** **Physiology**
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"Dichotomous role of NHERF1 in invariant natural killer T cell functions"
-
- 172. Jacob Stout, Calvin College** **Psychology**
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"Taste Perceptions of Chlorinated Water"
-
- 173. Facundo Santome, Grand Valley State University** **Psychology**
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"The Effect of CRF2 Receptor Activation on Anxiety-like Behaviors During Prolonged Alcohol Withdrawal"
-
- 174. Reagan Spindler, Hope College** **Psychology**
Co-Presenting Author(s): Samuel Kuiper
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"Associations of Religious, Spiritual, and Physical Activity Examined through Daily Diary Methods"
-
- 175. Moshir Rahman, Michigan State University** **Psychology**
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"Disordered Eating Screen for Athletes (DESA-6)"
-

176. Rogelio Batas, Western Michigan University

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“Development of a smartphone intervention for HIV medication adherence”

177. Tanwir Hashem, Michigan State University

Public Health

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“JAK inhibitors in allergy: a promising alternative for the treatment of severe asthma”
