WM RUGS

WEST MICHIGAN REGIONAL UNDERGRADUATE
SCIENCE RESEARCH CONFERENCE

PROGRAM

ANNUAL CONFERENCE | **NOVEMBER 12–13, 2021**

CELEBRATING 15 YEARS OF SCIENTIFIC AND EDUCATIONAL COLLABORATION

ORGANIZING INSTITUTIONS:

AQUINAS COLLEGE
CALVIN UNIVERSITY
FERRIS STATE UNIVERSITY – COLLEGE OF PHARMACY
GRAND VALLEY STATE UNIVERSITY
HOPE COLLEGE
KALAMAZOO COLLEGE
VAN ANDEL INSTITUTE GRADUATE SCHOOL

ZOOM WEBINAR | LIVE SCIENTIFIC TALKS

Live scientific presentations will be held via Zoom Webinar on November 12, 2021 and November 13, 2021.

SLACK | POSTER SESSIONS

Poster sessions will be held virtually via Slack on November 12, 2021 and November 13, 2021. This virtual platform allows conference attendees to view posters, as well utilize the chat/message discussion boards for Q&A sessions with the principal presenting authors and co-presenting authors.

QUESTIONS?

If you have **URGENT** questions or concerns during the conference while utilizing either Zoom or Slack, please contact Michelle Love at undergrad@vai.edu.

THANK YOU TO OUR SPONSORS!

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Keith Grasman, PhD – Calvin University
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Mark Staves, PhD – Grand Valley State University
Jianhua Li, PhD – Hope College
Dwight Williams, PhD – Kalamazoo College
Rita Guerreiro, PhD – Van Andel Institute Graduate School | Van Andel Research Institute

WMRUGS HOST

Thank you to Van Andel Institute (VAI) for hosting the
West Michigan Regional Undergraduate Science Research Conference for 15 years!

WMRUGS SUPPORT STAFF

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WEST MICHIGAN REGIONAL UNDERGRADUATE SCIENCE RESEARCH CONFERENCE | SCHEDULE OF EVENTS

Friday, November 12, 2021 | *Virtual Conference*

4:00 pm – 4:15 pm EST	Welcome | Presentations: Poster Session Sponsor and Supporting Sponsor	Zoom
4:15 pm – 5:00 pm EST	Keynote Speaker and Q& A Session **Amy Hauck Newman, PhD – National Institutes of Health** Scientific Director, National Institutes on Drug Abuse Intramural Research Program *"Drug Design for Substance Use Disorders"*	Zoom
5:00 pm – 5:15 pm EST	Break	
5:15 pm – 5:45 pm EST	Graduate Student Talk and Q&A Session **Rachel (Rae) House, PhD Candidate – Van Andel Institute Graduate School** *"How to starve a cancer cell: … and navigate a career in science"*	Zoom
5:00 pm – 5:15 pm EST	Break	
6:00 pm – 7:15 pm EST	Poster Session I | Even-Numbered Posters	Slack

Saturday, November 13, 2021 | *Virtual Fair: Graduate School, Medical Schools, Professional Schools and Employers*

8:00 am – 3:00 pm EST | Virtual Fair | Virtual Platform: Varies | See pages 37-40 for recruiter virtual hours

Saturday, November 13, 2021 | *Virtual Conference*

11:00 am – 11:15 am EST	Welcome | Poster Session Sponsor and Supporting Sponsor Presentations	Zoom
11:15 am – Noon EST	Undergraduate Student Talks	Zoom
	Bryce Platte – Aquinas College *"Construction of a Thin Metal Film Growth Chamber"*	
	Leah Knoor – Calvin University *"The photophysical properties of fluorescent coumarin photoacids"*	
	Jennifer Nguyen – Ferris State University's College of Pharmacy *"BIOPOLYMER-ARO/CYC: BIOBricks POLYketide Metabolic EngineeRing of Aromatases and Cyclases"*	
Noon – 12:30 pm EST	Break	
12:30 pm – 1:45 pm EST	Poster Session II | Odd-Numbered Posters	Slack
1:45 pm – 2:30 pm EST	Undergraduate Student Talks	Zoom
	Janelle Cook – Grand Valley State University *"Microscale biogeochemical dance with Earth-scale implications: Modern mat microbes synchronize migration to a diel tempo"*	
	Zachary Elmore – Hope College *"Assessment of Antibiotic Resistances in Escherichia coli Isolates from Freshwater and Comparison to Machine Learning Predictions"*	
	Hannah Hong – Kalamazoo College *"Synthesis of Diacetylene Monomers for the Use of Cross-Reactive Polypeptoid Nanomaterials"*	
2:30 pm EST	Conclusion | Closing Remarks	Zoom

KEYNOTE SPEAKER

Friday, November 12, 2021 | 4:15 pm – 5:00 pm EST | Zoom

Amy Newman Hauck, PhD

Scientific Director, National Institutes on Drug Abuse – Intramural Research Program
National Institutes of Health
For more information on Dr. Hauck, visit: https://irp.drugabuse.gov/staff-members/amy-hauck-newman/

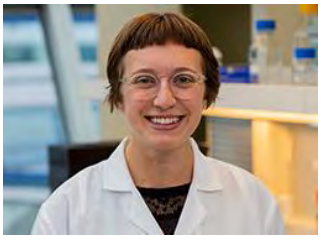
NIH National Institute on Drug Abuse *Intramural Research Program*

"Drug Design for Substance Use Disorders"

Abstract: The design, synthesis and development of potential medications to treat substance use disorders (SUD) has largely been driven by academic labs, as pharmaceutical industry has traditionally shied away from this space. The opioid crisis coupled with the COVID-19 pandemic has underscored the severity and lives lost to SUD, and particularly opioid use disorder (OUD) emphasizing the need for rapid development of treatments for this patient population. Over three decades of evidence indicate that dopamine D_3 receptors (D_3R) are involved in the control of drug-seeking behavior and may play an important role in the pathophysiology of SUD. The expectation that a selective D_3R antagonist would be efficacious for the treatment of SUD is based on several key observations. First, D_3R are distributed in strategic areas belonging to the mesolimbic DA system that has have been associated with behaviors controlled by the presentation of drug-associated cues. Second, repeated exposure to drugs of abuse produces neuroadaptations in the D_3R system. Third, the synthesis and characterization of highly potent and selective D_3R antagonists have further implicated an important role of the D_3R in SUD. Based on extensive preclinical and preliminary clinical evidence, the D_3R shows promise as a target for the development of pharmacotherapies for SUD as reflected by their potential to (1) regulate the motivation to self-administer drugs, and (2) disrupt the responsiveness to drug-associated stimuli that play a key role in reinstatement of drug-seeking behavior. The discovery that highly selective D_3R antagonists, such as VK4-116, do not adversely affect peripheral biometrics or cardiovascular effects alone or in the presence of oxycodone or cocaine suggest that this class of drugs has great potential in safely treating SUD.

GRADUATE STUDENT RESEARCH TALK

Friday, November 12, 2021 | 5:15 pm – 5:45 pm EST | Zoom



Rachel (Rae) House, PhD Candidate | Molecular and Cellular Biology

Van Andel Institute Graduate School

Research Mentor: Matt Steensma, MD and Carrie Graveel, PhD | Van Andel Institute

Steensma Lab | Musculoskeletal Oncology

Scientific Talk Emphasis: Cancer Metabolism, Neurofibromin (NF1)

"How to starve a cancer cell: … and navigate a career in science"

Rachel (Rae) J. House[1], Luke N. Redlon[1], Elizabeth A. Tovar[1], Ryan D. Sheldon[2], Abigail E. Ellis[2], Christine N. Isaguirre[2], Carlos D. Castello[2], Carrie R. Graveel[1], and Matthew R. Steensma[1,3,4*] [1]Center for Cancer and Cell Biology, Van Andel Institute, Grand Rapids, MI, USA; [2]Metabolomics and Bioenergetics Core, Van Andel Institute, Grand Rapids, MI, USA; [3]Helen DeVos Children's Hospital, Spectrum Health System, Grand Rapids, MI, USA; [4]Michigan State University College of Human Medicine, Grand Rapids, MI, USA

Abstract: *NF1* is a tumor suppressor gene and the key negative regulator of the RAS pathway. *NF1* is a top driver gene mutated in breast cancer (BC), and 27% of BCs exhibit damaging *NF1* alterations. *NF1* loss-of-function is a frequent event in the genomic evolution of estrogen receptor (ER)+ BC metastasis and endocrine resistance. Individuals with Neurofibromatosis type 1 (NF) – a disorder characterized by germline *NF1* mutations – have an increased risk of dying from BC. NF-related BCs are associated with adverse prognostic factors and decreased survival compared to sporadic BC. Despite studies interrogating the role of RAS mutation in tumor metabolism, no study has comprehensively profiled the *NF1*-mutant (*NF1*^{mut}) BC metabolome to identify exploitable metabolic vulnerabilities. We hypothesized that *NF1* mutations promote BC metabolic flexibility by increasing biosynthesis and altering amino acid and lipid metabolism. We utilized the MCF7 ER-dependent BC cell line and CRISPR-Cas9 editing to create several *NF1*^{mut} lines with distinct ER and RAS signaling profiles. The MCF-7 *NF1*^{mut} lines have premature stops (PS) in *NF1*'s RAS interaction domain, decreased *NF1* mRNA expression, altered NF1 isoform expression, and increased RAS pathway activation. *NF1*^{mut} MCF-7 cells have increased U13C-glutamine incorporation into TCA intermediates and amino acids, and increased U13C-glutamine and U13C-glucose incorporation into nucleotides and UDP-GlcNAc. *NF1*^{mut} cells also have increased extracellular acidification rates (ECAR) and increased oxygen consumption rates (OCR), suggesting an increased basal metabolic rate, which parallels the increased resting energy expenditure (RER) seen in NF patients. Our next step is to investigate the impact of ER and RAS inhibition on cellular energetics and metabolism with the goal of identifying a metabolic inhibitor that sensitizes *NF1*^{mut} BC to ER or RAS inhibition.

UNDERGRADUATE STUDENT RESEARCH TALKS

Saturday, November 13, 2021 | 11:15 am – Noon EST | Zoom

Bryce Platte, Aquinas College

Major: Chemistry | Class of 2022

Research Mentor: Kevin Boyd, PhD | Assistant Professor of Chemistry

Scientific Talk Emphasis: Chemistry

"Construction of a Thin Metal Film Growth Chamber"

Abstract: A simple low-vacuum system for chemical vapor deposition (CVD) of thin metal-containing films was developed. The system contains two source boats and a substrate holder, enabling the growth of mixed-metal films. Independent, controlled heating of the sources and substrate are done via pulse width modulation. In initial testing, a total of 21 films were grown. Four precursors were used: vanadyl acetylacetonate (bis(2,4-pentanedionato)oxovanadium(IV)), chromium (III) acetylacetonate (tris(2,4-pentanedianato)chromium(III)), cobalt (III) acetylacetonate (tris(2,4-pentanedionato)cobalt(III)), and titanium (IV) bis(actylacetonate)dichloride (dichloribis(2,4-pentanedionato)titanium(IV)). Films were grown on three types of substrate: indium tin oxide-coated glass, anodized aluminum, and an alumina-based ceramic material. Analysis of the films was by uv/vis absorbance, infrared spectroscopy, and fluorescence spectroscopy. In order to explore possible photocatalytic behavior of the films, a photoreactor design was developed using high-power light emitting diodes. Some films exhibited interesting thermal surface segregation behavior. Photocatalytic studies were inconclusive.

Leah Knoor, Calvin University

Major: Biochemistry | Class of 2022

Research Mentor: Mark Muyskens, PhD | Professor of Chemistry and Biochemistry

Scientific Talk Emphasis: Chemistry

"The photophysical properties of fluorescent coumarin photoacids"

Abstract: Coumarins are bioactive molecules that often serve as defenses in plant and animal systems, and understanding their fundamental behavior is essential for understanding their bioactivity. Many coumarins are fluorescent, weak acids that become much stronger acids after absorbing light, classifying them as photoacids. Aesculetin (6,7-dihydroxycoumarin) has recently attracted attention due to its ability to act as an antioxidant, but little is known about its photophysical properties. Using steady-state and time-resolved fluorescence spectroscopy, we characterize aesculetin in terms of ground-state and excited-state pKa, quantum yield, fluorescence lifetime, and photometric spectral properties. Aesculetin's notable decrease in quantum yield at low pH and exceptionally fast fluorescence lifetime make it unusual for a coumarin, and its >7 pK unit drop in pKa after absorbing light makes it one of the strongest photoacids of the natural coumarins. We also report that aesculetin forms a fluorescent, catechol-like complex with boric acid, and this complex has a pKa different from that of aesculetin on its own.

Jennifer Nguyen, Ferris State University – College of Pharmacy

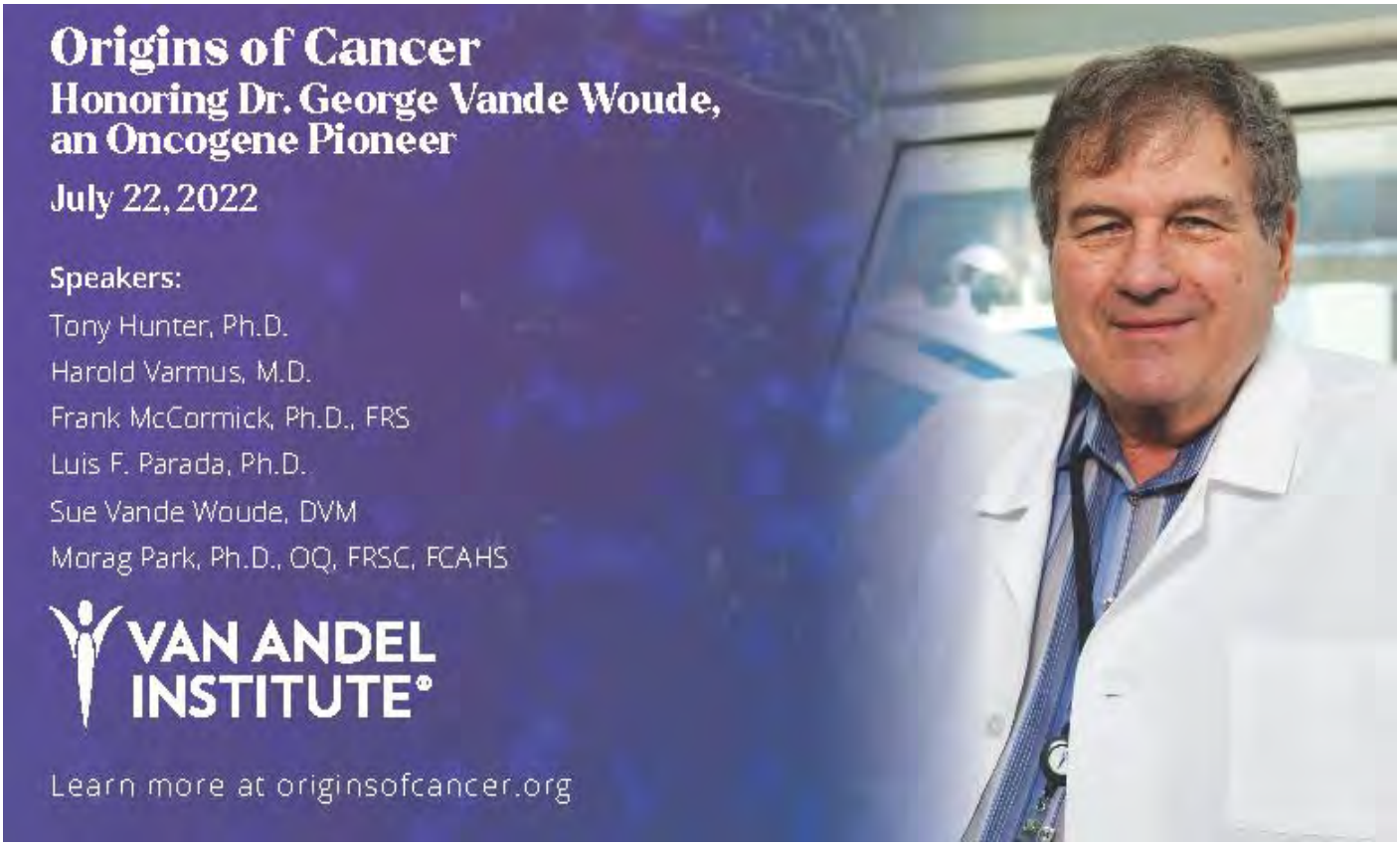
Major: Biotechnology | Class of 2022

Research Mentor: Eric Nybo, PhD | Associate Professor of Medicinal Chemistry

Scientific Talk Emphasis: Molecular Biotechnology

"BIOPOLYMER-ARO/CYC: BIOBricks POLYketide Metabolic EngineeRing of Aromatases and Cyclases"

Abstract: Anthracyclines are C-20 or C-21 aromatic polyketides produced by Streptomyces species and are clinically used in the treatment of various types of cancer. Anthracyclines are biosynthesized by a minimal polyketide synthase (minPKS) comprised of a ketoacyl synthase, chain length factor, acyl-carrier protein, and optionally, a type III acyltransferase. First ring aromatic polyketide biosynthesis then branches off into reducing PKS (i.e. C-9 ketoreduction) via an associated ketoreductase and aromatase enzymes or non-reducing PKS (i.e. 9-hydroxyl group) via aromatase/cyclase enzymes. Then, second-third ring cyclases install the tricyclic aromatic intermediate, which results in formation of an anthraquinone-like intermediate typified by nogalonic acid (C-20) or aklanonic acid (C-21). In this work, we engineered reducing-type and non-reducing type PKS cyclase constructs into Streptomyces coelicolor M1154 to reconstitute heterologous extended minPKS systems in vivo. Here, we developed a BioBricks toolkit of promoters, expression vectors, and engineered hosts for metabolic engineering of aromatases and cyclases. The activity of the different cyclase constructs was determined via complementation with a codon-optimized version of the nogalamycin minPKS (snoa123 (C-20 nogalamycin)), the aclacinomycin minPKS (aknBCDE2F, C-21 aclacinomycin), and the daunorubicin minPKS (dpsABCDG, C-21 daunorubicin). Our results indicate that the heterologous extended PKS systems exhibit significant enzymatic collaboration, which portends that aromatic PKS systems are amenable to new applications of combinatorial biosynthesis. The tools developed in this project will provide a basis for improved access to aklanonic acid and nogalonic acid analogues, which are useful for synthesis of pharmaceuticals and commodity chemicals.



UNDERGRADUATE STUDENT RESEARCH TALKS

Saturday, November 13, 2021 | 1:45 pm – 2:30 pm EST

Janelle Cook, Grand Valley State University

Major: Geology | Class of 2022

Research Mentor: Bopaiah Biddanda, PhD | Professor of Water Resources

Scientific Talk Emphasis: Biochemistry

"Microscale biogeochemical dance with Earth-scale implications: Modern mat microbes synchronize migration to a diel tempo"

Abstract: Colorful modern-day benthic microbial mats that resemble life on early Earth inhabit Lake Huron's cold, low-oxygen, high-sulfur submerged sinkholes. Herein, mats are dominated by motile filaments of purple-pigmented cyanobacteria capable of oxygenic and anoxygenic photosynthesis, and pigment-free chemosynthetic sulfur-oxidizing bacteria. We captured time-lapse images of diel vertical migration between phototactic cyanobacteria and chemotactic sulfur-oxidizing bacteria – turning the mat surface completely purple after dawn and nearly entirely white after dusk. Alternating waves of vertically migrating photosynthetic and chemosynthetic filaments responded rapidly to daily fluctuating sunlight and chemical energy compound across μm gradients – exhibiting their fastest motility following dawn and dusk, respectively; observations corroborated with time-lapse imaging and microprofiling of intact mats under simulated day-night conditions. Such synchronized daily mass migrations of mat-dwelling microbes during the long Precambrian (when the biosphere was mostly benthic), may have played a critical role in optimizing photosynthesis, chemosynthesis, carbon burial, and oxygenation.

POSTER SESSION SPONSOR

Zachary Elmore, Hope College

Major: Chemistry | Class of 2023

Research Mentor: Aaron Best, PhD | Harrison C. and Mary L. Visscher Professor of Genetics, Department Chair

Scientific Talk Emphasis: Biochemistry

"Assessment of Antibiotic Resistances in Escherichia coli Isolates from Freshwater and Comparison to Machine Learning Predictions"

Abstract: *E. coli* is a commonly accepted proxy for fecal contamination of water sources. It has been observed that there are strains of *E. coli* that are endemic to the environment implying that it might not be an effective proxy. This experiment seeks to look at *E. coli* populations to determine if some phenotype among them have a relationship to strains being a part of endemic populations or foreign contaminants; specifically AMR phenotypes. As part of ongoing monitoring of the freshwater Macatawa watershed (Holland, MI), we have isolated over 7000 strains of *E. coli*. In an effort to characterize the genetic diversity of freshwater *E. coli* populations, we have sequenced the genomes of over 600 strains and have experimentally determined AMR profiles for 277 of those watershed strains using a MicroScan WalkAway 96 Plus system that screens for 21 clinically relevant antibiotics. Among analyzed strains we have observed differences between environmental and clinical genomes and AMR genes. To further characterize the watershed isolates, we have used a recently published machine learning approach (Nguyen et al., 2019; doi:10.1128/JCM.01260-18) trained on a database of clinical *E. coli* genome sequences coupled with experimental antibiotic resistance data to predict resistance category for 194 sequenced watershed strains for 13 AMR's. The ML model has an F1 macro score of 0.5 when trained on 6000 clinical *E. coli* strains. After including environmental strains in the training set, the ML model F1 score greatly increased implying that there is some difference between the endemic and foreign population AMRs and their corresponding genes. As part of future work, we will add more endemic *E. coli* genomes to the ML training set and conduct comparative genomics analyses that may lead to knockout testing of genes found to potentially confer resistance. By doing so, we may find genes which can be used as markers to identify if *E. coli* in water represent fecal contamination or endemicity.

Hannah Hong, Kalamazoo College

Major: Chemistry | Class of 2022

Research Mentor: Blakely Tresca, PhD | Assistant Professor of Chemistry

Scientific Talk Emphasis: Chemistry

"Synthesis of Diacetylene Monomers for the Use of Cross-Reactive Polypeptoid Nanomaterials"

Abstract: Peptoids are N-substituted glycines that have gained significant attention due to its their chemical and structural similarities to peptides, a naturally-found molecule. The self-organization folding and self-assembly of polypeptoids can lead to the formation of a number of nanostructures and nanomaterials, such sheets, tubes, and nanoparticles. These peptoid structures have potential applications for drug delivery and as sensors. A current challenge in peptoid materials is the long term stability of folded peptoid structures. One method of achieving such stability is through the introduction of reactive monomers such as the diyne chains R1 and R2 onto a peptoid chain. The transformation of a diyne monomer ready for incorporation into polypeptoids was achieved through the asymmetric coupling of an alkynyl phthalimide and phenylacetylene. After optimization of the synthesis, a phthalimide-protected diacetylene monomer ready for deprotection was prepared in high yield and purified using flash chromatography. Using the same procedure, we prepared three diyne monomers with varying chain lengths which will ultimately allow us to study their effects on self-assembly. We successfully isolated a crystal of the phthalimide diyne and determined the structure by X-ray diffraction. The phthalimide diyne alone displays face-to-face stacking, the ideal orientation for future polypeptoids. Future work will focus on synthesizing polypeptoids using purified diacetylene monomers and improving the yield of the diyne monomers used.

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AUTHOR LIST

Co-presenters, co-presenting authors, co-authors and research mentors are included with the detailed poster information on pages 13-36.

Poster #	Last Name	First Name	Institution	Poster Subject Area
6	Akyeampong	Emmanuella	Calvin University	Biology
8	Anderson	Nathan	Calvin University	Biology
48	Asif	Md Sadek Hossain	Notre Dame College, Dhaka	Computer Science
18	Baker	Gloria	Grand Valley State University	Cell and Molecular Biology
70	Bartolik	Aleksandra	Kalamazoo College	Neuroscience
71	Beezhold	Brenna	Van Andel Research Institute	Neuroscience
1	Belay	Natnael	Hope College	Biochemistry
57	Bennett	Maci	Kalamazoo College	Environmental Science | Ecology and Evolution
49	Brodie	Juleon	Kalamazoo College	Computer Science
69	Brown	Katelyn	Ferris State University	Molecular Biotechnology
5	Bryant	Cassandra	Lansing Community College	Bioinformatics & Biostatistics
30	Callaghan	Jacob	Kalamazoo College	Chemistry
7	Carley	Kyrian	Calvin University	Biology
47	Contant	Tristan	Calvin University	Computational Biology
77	Davidson	Mikenna	Hope College	Psychology
66	De-Leon-Lopez	Yadira	Aquinas College	Microbiology
75	Dewyea	Mackenzie	Augusta University	Physiology
81	Dodd	Kelsee	Southern Illinois University	Biology
58	Dorman	Rylie	Grand Valley State University	Environmental Science
31	Dvorin	Gina	Kalamazoo College	Chemistry
63	Edgar	Shekira	Aquinas College	Mathematics
53	Fetter	Anna	Kalamazoo College	Ecology and Evolution
32	Flinkingshelt	Faith	Kalamazoo College	Chemistry
19	Francis	Elizabeth	Grand Valley State University	Cell and Molecular Biology
13	Garlicki	Gabrielle	Grand Valley State University	Biomedical Sciences
64	Gee III	Harold	Calvin University	Mathematics
9	Gibes	Sarah	Calvin University	Biology
20	Gift	Abigail	Hope College	Cell and Molecular Biology
33	Gleeson	Griffin	Hope College	Chemistry
72	Gonzales	Marissa	Grand Valley State University	Neuroscience
10	Green	Jewel	Southern Illinois University Carbondale	Biology
73	Harding	Madeline	Kalamazoo College	Pharmacology
21	Harris	Kodi	Morehouse College	Cell and Molecular Biology
14	Hecht	Jacob	Ferris State University	Biomedical Sciences
15	Henderson	Marian	Calvin University	Biomedical Sciences
34	Hunt	Shannon	Ferris State University	Chemistry
35	Johnston	Ann Marie	Kalamazoo College	Chemistry
36	Jonker	Isaac	Calvin University	Chemistry
65	Kaminski	Noelle	Aquinas College	Mathematics

Poster #	Last Name	First Name	Institution	Poster Subject Area
76	Keene	Tamara	Southern Illinois University Carbondale	Physiology
22	Koning	Katherine	Calvin University	Cell and Molecular Biology
80	Kornilov	Andrew	Calvin University	Biochemistry
37	Laney	George	Calvin University	Chemistry
23	LeFaivre	Heather	Ferris State University	Cell and Molecular Biology
67	Mariscal	Joe	Grand Valley State University	Microbiology
24	Miller	Grace	Grand Valley State University	Cell and Molecular Biology
17	Miloser	Payton	Grand Valley State University	Biostatistics
39	Milton	Lindsay	Grand Valley State University	Chemistry
50	Molchagin	Aleksandr	Kalamazoo College	Computer Science
25	O'Dea	Garrett	Grand Valley State University	Cell and Molecular Biology
2	Offerman	Alina	Kalamazoo College	Biochemistry
54	Oosterhouse	Stephanie	Calvin University	Ecology and Evolution
40	Otgonjargal	Gunzaya	Kalamazoo College	Chemistry
26	Patel	Poonam	Augusta University	Cell and Molecular Biology
27	Petouhoff	Annastasia	Hope College	Cell and Molecular Biology
41	Platte	Bryce	Aquinas College	Chemistry
4	Platz	Karlie	Hope College	Biochemistry
78	Ramsay	Natalie	Hope College	Psychology
79	Ramsay	Natalie	Hope College	Psychology
74	Rogowski	Lily	Kalamazoo College	Physics
59	Romanski	Allison	Grand Valley State University	Environmental Science
28	Ruhala	Jack	Grand Valley State University	Cell and Molecular Biology
29	Schaefer	Kristen	Geneva College	Cell and Molecular Biology
16	Schwartz	Nora	Ferris State University	Biomedical Sciences
60	Shaw	Rachel	Hope College	Environmental Science
11	Sierra	Petra	Kalamazoo College	Biology
51	Skalla	Caroline	Kalamazoo College	Computer Science
42	Spackman	Isaac	Calvin University	Chemistry
56	Ten Pas	Derek	Calvin University	Engineering
43	Thanasi	Roi	Grand Valley State University	Chemistry
55	Triemstra	Abigail	Calvin University	Ecology and Evolution
44	Tucci	MiaFlora	Kalamazoo College	Chemistry
45	Tyler	Annie	Kalamazoo College	Chemistry
61	Van Putten	Cassandra	Cornerstone University	Environmental Science
62	VanderBrug	Zoe	Aquinas College	Environmental Science
3	Vos	Matthew	Calvin University	Biochemistry
46	Walsh	Barney	Kalamazoo College	Chemistry
12	Wilmot	Daniel	Indiana Wesleyan University	Biology
52	Wolfe	Ronan	Kalamazoo College	Computer Science

2021 POSTER PRESENTATIONS | SLACK

Friday, November 12, 2021 | 6:00 pm – 7:15 pm EST | Poster Session I | Even-Numbered Posters

Saturday, November 13, 2021 | 12:30 pm – 1:45 pm EST | Poster Session II | Odd-Numbered Posters

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WMRUGS Help Slack Channel: *#help_technical-and-audio-visual-support_van-andel-institute*

2021 POSTER PRESENTATIONS

1. Natnael Belay | Hope College **Biochemistry**

Co-Author(s): Dr. Virginia McDonough

"Transcriptional Regulation of OLE1 by Cobalt Chloride is defective in Saccharomyces cerevisiae ixr1 Mutants"

2. Alina Offerman | Kalamazoo College **Biochemistry**

Co-Author(s): Regina Stevens-Truss

"Assessment of the Effects of Amphipathic Peptides on Gram-negative, Gram-positive, and Human Cell Membranes"

3. Matthew Vos | Calvin University **Biochemistry**

Co-Author(s): Laura Westrate

"The Role of ER Morphology in Protein Export"

4. Karlie Platz | Hope College **Biochemistry**

Co-Presenting Author(s): Katelynn Paluch | Co-Author(s): Kristin E. Dittenhaffer-Reed

"Characterization of Post-translational Modifications of Mitochondrial RNA Polymerase and Mitochondrial Ribosomal Protein L12"

5. Cassandra Bryant | Lansing Community College **Bioinformatics & Biostatistics**

Co-Presenting Author(s): Marisa Bommarito, Alex Hitchcock, Sarah Horger, and Matthew Rocha | Co-Author(s): Melinda Wilson, PhD

"What's that Smell? Investigating the Prevalence of the Invasive Brown Marmorated Stink Bug in Mid-Michigan"

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6. Emmanuella Akyeampong | Calvin University **Biology**

Co-Author(s): Hsin-Yu Chen, Daniel E Michele

"Ferroptosis and Sarcolemma Injury in Duchenne Muscular Dystrophy"

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7. Kyrian Carley | Calvin University **Biology**

Co-Presenting Author(s): Daniel Sculley

Co-Author(s): Emma Pastoor, Joshua De Young, Brianna Jansen, Ashley Meyer, Valeria Lacroix, Dr. Rachael Baker, and Dr. Amy Wilstermann

"Optimizing Zebrafish Care and CRISPR-Cas9 Genetic Modification"

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8. Nathan Anderson | Calvin University **Biology**

Co-Author(s): Randall DeJong, PhD

"Lay Down Your Arms: Does a Novel Avian Schistosome Cause Swimmer's Itch?"

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9. Sarah Gibes | Calvin University **Biology**

Co-Presenting Author(s): Oula Salih | Co-Author(s): Kelly DuBois, Ph.D.

"Green Infrastructure in Plaster Creek: Response of E.Coli and coliphage levels to floodplain implementation"

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10. Jewel Green | Southern Illinois University Carbondale **Biology**

Co-Author(s): Marjorie Brooks, PHD

"Differences in Alkalinity Relative to Denitrification in Mississippi Floodplains"

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11. Petra Sierra | Kalamazoo College **Biology**

Co-Author(s): Dr. William R. Morrison III, Ph.D. Research Entomologist USDA-ARS Center for Grain and Animal Health Research, Manhattan, KS; Marco A. Ponce, B.A. Ph.D. Student Department of Entomology Kansas State University Manhattan, KS

"Attraction, mobility, and preference by a secondary stored product insect to microbially- mediated volatile emissions by fungi in grain"

---

12. Daniel Wilmot | Indiana Wesleyan University **Biology**

Co-Presenting Author(s): Danielle Dadisman and Colten Mowat | Co-Author(s): Dan Jones

"Confocal fluorescence microscopy visualization of human gingival fibroblast plasma membrane with DiO lipophilic dye"

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13. Gabrielle Garlicki | Grand Valley State University **Biomedical Sciences**

Co-Author(s): Ian Cleary and Derek Thomas

"Over-expression and analysis of genes impacted during spaceflight in Candida albicans"

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14. Jacob Hecht | Ferris State University **Biomedical Sciences**

Co-Author(s): Nora Schwartz, Jennifer Nguyen, S. Eric Nybo

"Engineering of diverse post-PKS enzymatic steps in anthracyclinone biosynthesis"

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15. Marian Henderson | Calvin University **Biomedical Sciences**

Co-Author(s): Josh Meisner, MD, PhD; Sabrina Friedline; Yao-chang Tsan, PhD; Adam Helms, MD

"Efficacy of AAV-mediated gene replacement therapy for MYBPC3-associated HCM in iPSCMs"

16. Nora Schwartz | Ferris State University **Biomedical Sciences**

Co-Author(s): Jacob Hecht, Jennifer Nguyen, S. Eric Nybo

"Engineering of late-stage polyketide biosynthesis steps in the nogalonic acid pathway"

17. Biostatistics Payton Miloser | Grand Valley State University **Biostatistics**

Co-Author(s): Faculty Advisor: Dr. Paul Stephenson, GVSU Statistics

"Bio-Surveillance of COVID-19 Data using Statistical Process Control"

18. Gloria Baker | Grand Valley State University **Cell and Molecular Biology**

Co-Author(s): Matthew Christians Ph.D.

"How Phytohormones Impact Protein Degradation Through RUBylation in Arabidopsis thaliana"

19. Elizabeth Francis | Grand Valley State University **Cell and Molecular Biology**

Co-Author(s): Dr. Pei Lan Tsou, Dr. Sheila Blackman, Garrett O'Dea

"Monitoring Millenium Park beach for E. coli and coliform using qPCR and Colilert-2000 methods"

20. Abigail Gift | Hope College **Cell and Molecular Biology**

Co-Author(s): Virginia McDonough

"Transcriptional Regulation of OLE1 in wild type, ino2, ino4, and opi1 Mutants in Response to Inositol and Unsaturated Fatty Acids"

21. Kodi Harris | Morehouse College **Cell and Molecular Biology**

Co-Author(s): Manu Leonetti

"Optimizing Strategies for mNG Tagging of Endogenous Human Proteins in A549s"

22. Katherine Koning | Calvin University **Cell and Molecular Biology**

Co-Author(s): Nathan Scinto-Madonich, Dr. Miguel A. Piñeros

"Regulation of Apple Acidity: Is it Protein Turnover of ALMT Transporter?"

23. Heather LeFaivre | Ferris State University **Cell and Molecular Biology**

Co-Author(s): Kassidy Vredeveld, Schuyler Pike, Clifton Franklund, M. Beth Zimmer

"SARS-CoV-2 Variant Profiles Across Northern West Michigan"

24. Grace Miller | Grand Valley State University **Cell and Molecular Biology**

Co-Author(s): Dr. Mark Staves

"Using Blue Light to Test and Illuminate Models for Plant Gravity Sensing"

25. Garrett O'Dea | Grand Valley State University **Cell and Molecular Biology**

Co-Author(s): Dr. S Blackman, Dr. PL Tsou, Puneet Chowdhary, Austin M. Schian

"From Fever to Feces: Tracking the SARS-CoV-2 pandemic with Wastewater-Based Epidemiology"

26. Poonam Patel | Augusta University **Cell and Molecular Biology**

Co-Author(s): Dr. McCluskey, Dr. Bloomquist

"Innervation of tooth transplant in rodents"

27. Annastasia Petouhoff | Hope College **Cell and Molecular Biology**

Co-Author(s): Virginia McDonough

"Role of YOR365C, SIP5, YMR141C, RPL13B, and RPS16A in Transcriptional Regulation of OLE1 by Unsaturated Fatty Acids"

28. Jack Ruhala | Grand Valley State University **Cell and Molecular Biology**

Co-Author(s): Pei-Lan Tsou, Puneet Chowdhary, Sheila Blackman

"Hot Stuff: Developing a PMMoV Assay to Normalize the Fecal Content In Wastewater to Improve Consistency of SARS CoV-2 Data"

29. Kristen Schaefer | Geneva College **Cell and Molecular Biology**

Co-Author(s): Dr. Ilaria Panzeri

"Expanding the Limit of Detection for Methylome Profiling of Plasma Cell-free DNA"

30. Jacob Callaghan | Kalamazoo College **Chemistry**

Co-Author(s): Dr. Daniela Arias-Rotondo

"Synthesis of a Novel Mn(II) Bis-Tripyridyl Complex"

31. Gina Dvorin | Kalamazoo College **Chemistry**

Co-Presenting Author(s): Olivia Oswald

"Investigation into Potential Conformational Control of Peptoids Through Properties of Attached Sidechains"

32. Faith Flinkingshelt | Kalamazoo College **Chemistry**

Co-Author(s): Daniela M. Arias-Rotondo

"Synthesis of (E)-[(2,2'-Bipyridin-6-yl)-N-phenylmethane]imine: An asymmetric, chelating ligand for Ru(II) photoactive complexes"

33. Griffin Gleeson | Hope College **Chemistry**

Co-Author(s): Dr. Meagan Elinski

"Nanoparticle Interactions in Cartilage-Mimicking Hydrogels"

34. Shannon Hunt | Ferris State University **Chemistry**

Co-Author(s): Jennifer Nguyen, Jacob Hecht, Nora Schwartz

"BIOPOLYMER: BIObricks POLYketide Metabolic EngineeRing of minimal polyketide synthases"

35. Ann Marie Johnston | Kalamazoo College **Chemistry**

Co-Author(s): Dr. Daniela M. Arias-Rotondo

"[MnII(ppaR)3]2+ complexes for use in solar energy conversion"

36. Isaac Jonker | Calvin University **Chemistry**

Co-Author(s): Leah Knoor, George DuLanedy, and Mark A. Muyskens

"Photophysical properties of fluorescent coumarins"

37. George Laney | Calvin University **Chemistry**

Co-Author(s): Dr. Mark A. Muyskens

"Energetic Topography of Hydroxyl Rotation in Aesculetin"

38. POSTER WITHDRAWN **Chemistry**

39. Lindsay Milton | Grand Valley State University **Chemistry**

Co-Author(s): Dr. Laura Hawk

"Synthesis of fluorinated Kassinin, a model functional amyloid"

40. Gunzaya Otgonjargal | Kalamazoo College **Chemistry**

Co-Presenting Author(s): Hannah Hong | Co-Author(s): Blakely Tresca

"Synthesis of Diacetylene Amines for Cross-Reactive Polypeptoids"

41. Bryce Platte | Aquinas College **Chemistry**

Co-Author(s): Dr. Kevin Boyd

"Construction of a Thin Metal Film Growth Chamber"

42. Isaac Spackman | Calvin University **Chemistry**

Co-Author(s): Dr. James Jackson

"Chemometric Analysis in Organic Electrocatalysis"

43. Roi Thanasi | Grand Valley State University **Chemistry**

Co-Author(s): Stephanie Schaertel, George McBane

"Room Temperature Pressure Broadening Coefficients for the Second Overtone Band of Carbon Monoxide with Nitrogen and Neon Colliders"

44. MiaFlora Tucci | Kalamazoo College **Chemistry**

Co-Author(s): Dr. Dwight A. Williams

"Design and Synthesis of Aspernigrin A-Melatonin Hybrids as Potential Neuroprotective Molecules"

45. Annie Tyler | Kalamazoo College **Chemistry**

Co-Author(s): Suja Thakali, Dwight Williams

"Synthesis of Maleimide-Tryptophan Hybrids as Potential Antibiotics"

46. Barney Walsh | Kalamazoo College **Chemistry**

Co-Author(s): Steven Huss, Daniela Arias-Rotondo, Elizabeth Elacqua

"Progress Towards the Synthesis and Characterization of a Ruthenium-containing Single-Chain Polymer Nanoparticle"

47. Tristan Contant | Calvin University **Computational Biology**

"Extending Coverage of Specialized Metabolism Within Plant Metabolic Reconstructions"

48. Md Sadek Hossain Asif, Notre Dame College, Dhaka **Computer Science**

Co-Author(s): Adam Phalvan, Maria Korshunova, Steven Okada and Summer Stem Institute

"Predicting Potential Anti-viral Drug of Covid-19 by LSTM Based Recurrent Neural Network"

49. Juleon Brodie | Kalamazoo College **Computer Science**

Co-Author(s): Dr. Sandino Vargas Perez

"Parallel Algorithm Design for Compression of DNA Data Files"

50. Aleksandr Molchagin | Kalamazoo College **Computer Science**

Co-Author(s): Sandino Vargas Perez

"Analysis of the application of modern blockchain technologies by building a decentralized social media application"

51. Caroline Skalla | Kalamazoo College **Computer Science**

Co-Author(s): Peter Erdi, Tamas Kiss

"The power of computational science - applying agent based modeling to cognitive diversity"

52. Ronan Wolfe | Kalamazoo College **Computer Science**

Co-Author(s): Dr. Sandino Vargas-Perez

"Analysis of CUDA Approach to Next-Generation Sequencing Parallelization Using 'In Compresso' Application"

53. Anna Fetter | Kalamazoo College **Ecology and Evolution**

Co-Author(s): Dr. Binney Girdler

"Trail based vegetation surveys of a floodplain forest adjacent to the Paw Paw River, SW Michigan"

54. Stephanie Oosterhouse | Calvin University **Ecology and Evolution**

Co-Presenting Author(s): Abigail Triemstra | Co-Author(s): K. Grasman, M. Annis, C. Eakin, D. Tillitt, J. Ludwig

"Associations between environmental contaminants and vitamins A and E in plasma of pre-fledgling double-crested cormorants in the Great Lakes including areas of concern"

55. Abigail Triemstra | Calvin University **Ecology and Evolution**

Co-Presenting Author(s): Stephanie Oosterhouse | Co-Author(s): K.A. Grasman, M. Annis, C. Eakin, D. Tillitt, J. Ludwig

"Associations between organic contaminants and thiamine in the plasma of pre-fledging Great Lakes double-crested cormorants"

56. Derek Ten Pas | Calvin University **Engineering**

Co-Author(s): Carly Bogdajewicz, Julie Wildschut, Dr. Robert Hoeksema, and Dr. Chad Tatko

"CODEINSE- An Improved Method of Spring Capture"

57. Maci Bennett | Kalamazoo College **Environmental Science | Ecology and Evolution**

"Feeding trials of endangered Mitchell's satyr butterfly (Neonympha mitchellii mitchellii)"

58. Rylie Dorman | Grand Valley State University **Environmental Science**

Co-Author(s): Amanda Buday

"Perception of Water Quality Post-Removal from the Great Lakes Area of Concern List: A Study of White Lake"

59. Allison Romanski | Grand Valley State University **Environmental Science**

Co-Presenting Author(s): Madeleine Lang | Co-Author(s): Peter Wampler

"2021 Grand River Water Quality Sampling"

60. Rachel Shaw | Hope College — **Environmental Science**

Co-Author(s): Ali Koehl, Lauren Bryan, Christian Lundy, Grace Behrens

"Connecting Chemical Composition and Methane Production in a West Michigan Peatland"

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61. Cassandra Van Putten | Cornerstone University — **Environmental Science**

Co-Presenting Author(s): Elaina Westphal | Co-Author(s): Dr. Rob Keys

"Nitrate concentrations and effects on the lower Grand River from three tributaries"

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62. Zoe VanderBrug | Aquinas College — **Environmental Science**

Co-Author(s): James Rasmussen

"Ecological Components That Contribute to Stream Quality"

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63. Shekira Edgar | Aquinas College — **Mathematics**

"Representations of the Classical Groups Using Python"

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64. Harold Gee III | Calvin University — **Mathematics**

Co-Presenting Author(s): Sua Cho | Co-Author(s): Herb Fynewever

"Not all Mathematicians are White Men"

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65. Noelle Kaminski | Aquinas College — **Mathematics**

Co-Author(s): Dr. McDaniel

"Applications of Elliptic Geometry"

---

66. Yadira De-Leon-Lopez | Aquinas College — **Microbiology**

Co-Author(s): Rebecca Flaherty

"Understanding the Role of the PI3K/Akt Pathway in the Macrophage Response to Group B Streptococcus (GBS)"

---

67. Joe Mariscal | Grand Valley State University — **Microbiology**

Co-Author(s): Ian Cleary, PhD

"Effects of Expressing a Hypha-Inducing Gene in Pseudohyphal C. albicans cells"

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68. POSTER WITHDRAWN — **Microbiology**

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69. Katelyn Brown | Ferris State University — **Molecular Biotechnology**

Co-Author(s): Nina Gorgijevska, Jennifer Nguyen, Dr. S. Eric Nybo

"Metabolic engineering of new D-fucosyl and D-rhodinosyl tetracenomycins"

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70. Aleksandra Bartolik | Kalamazoo College — **Neuroscience**

Co-Author(s): Paul Jenkins

"Determining if mutations in Nav1.2 affect its binding affinity to ankyrin B"

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71. Brenna Beezhold | Van Andel Research Institute — **Neuroscience**

Co-Author(s): Dr. Michael X. Henderson, Dr. Alice Prigent

"Investigating the relationship between GCase and pathology in Parkinson's disease"

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72. Marissa Gonzales | Grand Valley State University **Neuroscience**

Co-Author(s): Dr. Beth Macauley

"Blocking Behavior in Brass Players: Connections Between Fluency in Speech and Music"

73. Madeline Harding | Kalamazoo College **Pharmacology**

Co-Author(s): Dwight Williams, PhD

"Investigating the Neuroprotective Effect of 5-Hydroxy-2-(2-phenylethyl)chromone and Diet in Caenorhabditis elegans"

74. Lily Rogowski | Kalamazoo College **Physics**

Co-Author(s): David Wilson

"Using Point Arrays to Characterize the Structure of Drug-Bound Hepatitis B Virus"

75. Mackenzie Dewyea | Augusta University **Physiology**

Co-Author(s): Dr. Amanda Behr (Thesis Adviser); Dr. Christina Wilson (Thesis In-field Reader); Dr. Wendy Turner (Thesis Honors Chair); Dr. Tim Sadenwasser (Augusta University Honor's Program Director)

"The Permanence and Communicative Ability of Medical Illustration"

76. Tamara Keene | Southern Illinois University Carbondale **Physiology**

Co-Author(s): Bristi Poudel, and Joseph Cheatwood, Ph.D.

"Behavior Analysis of Female Long Evans Rats Treated with Doxorubicin"

77. Mikenna Davidson | Hope College **Psychology**

Co-Presenting Author(s): Natalie A Ramsay | Co-Author(s): Hannah R Meade, McKenna Bartley, Corine LaFrenier, Elijah H Maxwell, Andrea M Rocco, Sonja Trent-Brown

"College Students' Screen Time in the Midst of a Pandemic"

78. Natalie Ramsay | Hope College **Psychology**

Co-Presenting Author(s): Mikenna Davidson | Co-Author(s): Dr. Sonja Trent Brown, Corine LaFrenier, Elijah H Maxwell, Andrea M Rocco, McKenna Bartley, Hannah R Meade

"A Holistic Approach to Physical Activity and Indicators of Overall Health: A Retrospective and Prospective Study"

79. Natalie Ramsay | Hope College **Psychology**

Co-Presenting Author(s): Mikenna Davidson | Co-Author(s): Dr. Sonja Trent Brown, McKenna Bartley, Hannah R Meade, Corine LaFrenier, Elijah H Maxwell, Andrea M Rocco

"College Students' Attitudes Toward the Outdoors: Trends During the Pandemic"

80. Andrew Kornilov | Calvin University **Biochemistry**

Co-Author(s): Jay Cen, Laura Westrate

"Effects of ER Morphology on Protein Distribution"

81. Kelsee Dood | Southern Illinois University Carbondale **Biology**

Co-Author(s): Kelsee Dodd, Alexander Glass and Michael Eichholz, PhD

"Mesopredator's Activity Levels in Different Biomes"

INTERNSHIP AND EMPLOYMENT RECRUITER/REPRESENTATIVE CONTACT INFORMATION

VAN ANDEL INSTITUTE

Research Opportunities Website: vaigs.vai.org/undergrad-research/
Guest Student Opportunities Website: vaigs.vai.org/undergrad-research/guest-students/
Summer Internship Undergraduate Application Deadline: February 1, 2022
Medical Internship Application Deadline: Rolling application until two (2) internship positions are filled

Van Andel Institute
Mailstop: 103C/234 DIV
333 Bostwick Avenue, NE
Grand Rapids, MI 49503

Michelle Love and Undergraduate & Internship Program Committee
Email Address: undergrad@vai.edu | Telephone Number: 616-234-5581

ZOOM VIRTUAL RECRUITING INFORMATION

Join Van Andel Institute's virtual booth: https://zoom.us/j/96043598649?pwd=QmNzNzBRKzRnVC8rbUFjeGdtRk4rdz09
Meeting ID: 960 4359 8649 | Passcode: 2021WMRUGS
Recruiters / Representatives: Michelle Love will be available during the following times on Saturday, November 13, 2021: 8:00 am–11:00 am EST, Noon–12:30 pm EST and 2:30 pm–3:00 pm EST

GRADUATE SCHOOL, MEDICAL SCHOOL AND PROFESSIONAL SCHOOL RECRUITER CONTACT INFORMATION

FERRIS STATE UNIVERSITY – COLLEGE OF PHARMACY

Website: ferris.edu/pharmacy
Preferred Application Deadline: October 1 | Regular Application Deadline: April 1

Ferris State University
Pharmacy Building
220 Ferris Drive
Big Rapids, MI 49307

Dr. Stephen Durst, Dean – College of Pharmacy, Dean's Office
Email: dursts@ferris.edu | Telephone: 231-591-2254

Dr. Thomas Dowling, Assistant Dean and Director of Research and Sponsored Programs
Email: thomasdowling@ferris.edu | Telephone: 616-643-1137

ZOOM VIRTUAL RECRUITING INFORMATION
Join Ferris State University's College of Pharmacy virtual booth: Meeting ID: https://zoom.us/j/96954202311
Meeting ID: 969 5420 2311 | Passcode: Ferris2021
The following Recruiters / Representatives will be available from 9:00 am–3:00 pm EST on Saturday, November 13, 2021: Drs. Stephan Durst, Thomas Dowling, Rodney Larson, Felix Amissah, Kim Hancock and Eric Nybo

GRAND VALLEY STATE UNIVERSITY

Website: gvsu.edu/gs/
Application deadlines vary by program. Please review the list of programs here: gvsu.edu/gs/masters-and-doctoral-degree-programs-9.htm

Grand Valley State University – The Graduate School
259C Richard M. DeVos Center | 401 W. Fulton Street
Grand Rapids, MI 49504

Rachel Van Den Broek, MA, MBL – Recruiter, Graduate Programs
Email: vandenr1@gvsu.edu | Telephone: 616-331-7067

Grand Valley State University – Professional Science Master's (PSM)
618C LV Eberhard Center | 301 W. Fulton Street
Grand Rapids, MI 49504

Anirudh Chowdhary, PhD, Affiliate Faculty and Professional Science Master's Coordinator
Email: chowdhan@gvsu.edu | Telephone: 616-331-6297

ZOOM VIRTUAL RECRUITING INFORMATION
Join Grand Valley State University's virtual booth: https://gvsu-edu.zoom.us/j/96899779284?pwd=MHAwSUZlQk
Meeting ID: 968 9977 9284 | Passcode: 854123
Recruiters / Representatives: Rachel Van Den Broek and Dr. Anirudh Chowdary will be available from 11:00 am–2:00 pm EST on Saturday, November 13, 2021

INDIANA UNIVERSITY SCHOOL OF MEDICINE
Website: go.iu.edu/IBMG
Application Deadline: December 1, 2021

The Indiana BioMedical Gateway (IBMG) Program
Indiana University School of Medicine – Graduate Division
635 North Barnhill Drive | Room 207
Indianapolis, IN 46202

Brandy S. Wood, Assistant Director, IBMG Program for PhD Study
Email: biomed@iupui.edu | Telephone: 317-274-8719

ZOOM VIRTUAL RECRUITING INFORMATION
Join the IU School of Medicine's virtual booth: https://iu.zoom.us/j/88199301170?pwd=c3AvaEdhYVVrMXVSbXZHTDF0ZVdSdz09
Meeting ID: 881 9930 1170 | Password: IBMG2021
Recruiters / Representatives: Brandy S. Wood will be available from 8:00 am–3:00 pm EST on Saturday, November 13, 2021

OHIO STATE UNIVERSITY, THE
Website: osbp.osu.edu/
Application Deadline: December 1, 2021

Biochemistry Program
The Ohio State University
484 W. 12th Avenue
Columbus, OH 43210

Franci Brink, OSBP Program Manager
Email: osbp@osu.edu | Telephone: 614-292-1463

ZOOM VIRTUAL RECRUITING INFORMATION
Join the Ohio State University virtual booth: https://osu.zoom.us/j/96689066000?pwd=QlpMT1k4ZU52VTVpdFA4Y0tzbnV6UT09
Recruiters / Representatives: Franci Brink will be available from 12:00 pm–3:00 pm EST on Saturday, November 13, 2021

PURDUE UNIVERSITY – INTERDISCIPLINARY LIFE SCIENCE PROGRAM (PULSe)
Website: purdue.edu/gradschool/pulse/
Application Deadline: December 1, 2021

Interdisciplinary Life Science Program (PULSe)
Purdue University
Ernest C. Young Hall, Room B-40 | 155 S. Grant Street
West Lafayette, IN 47907

Lindsey Springer, Graduate Program Specialist
Email Address: lbcampbe@purdue.edu | Telephone Number: 765-418-8627

ZOOM VIRTUAL RECRUITING INFORMATION
Join the PULSe virtual booth: https://purdue-edu.zoom.us/j/8148014093?pwd=NWp4QktYRG4veGZNaXFYZ09CQVk3UT09
Recruiters / Representatives: Lindsey Springer will be available from 9:00 am–1:30 pm EST on Saturday, November 13, 2021

SANFORD BURNHAM PREBYS MEDICAL DISCOVERY INSTITUTE – GRADUATE SCHOOL OF BIOMEDICAL SCIENCES
Website: sbpdiscovery.org/education/graduate-school
Application Deadline: December 6, 2021

Graduate School of Biomedical Sciences
Sanford Burnham Prebys Medical Discovery Institute
10901 North Torrey Pines Road
La Jolla, CA 92037

Paula Checchi, Ph.D. – Program Manager of Recruitment and Outreach
Email Address: pchecchi@sbpdiscovery.org | Telephone Number: 858-646-3100 extension 5048

ZOOM VIRTUAL RECRUITING INFORMATION
Join the Sanford's virtual booth: https://sbpdiscovery-org.zoom.us/j/93532716646?pwd=RzRGTWZnN1lCQ0Jmc0ozdGFoV0szUT09
Meeting ID: 935 3271 6646 | Passcode: 556049
Recruiters / Representatives: Dr. Paula Checchi will be available from Noon–3:00 pm EST on Saturday, November 13, 2021

STOWERS INSTITUTE FOR MEDICAL RESEARCH, THE GRADUATE SCHOOL
Website: stowers.org/gradschool
Application Deadline: December 1, 2021

The Graduate School of the Stowers Institute for Medical Research
1000 East 50th Street
Kansas City, MO 64110

Jinelle Wint, Ph.D. – Assistant Dean for Academic Affairs
Email Address: jwint@stowers.org | Telephone: 816-926-4327

ZOOM VIRTUAL RECRUITING INFORMATION
Join the Graduate School of the Stowers Institute's virtual booth:
https://us06web.zoom.us/j/81356957095?pwd=ZFZJNDFHYWNDUXdIQnNyWEFQekNQZz09
Meeting ID: 813 5695 7095 | Passcode: 659129
Recruiters / Representatives: Dr. Jinelle Wint will be available from 10:00 am–3:00 pm EST on Saturday, November 13, 2021

UNIVERSITY OF MICHIGAN – SCHOOL OF KINESIOLOGY
Website: kines.umich.edu/
Ph.D. Application Deadline: December 1, 2021 | Doctor of Philosophy in Movement Science
Master's Application Deadline: February 1, 2022 | Master's of Science in Athletic Training and Master's of Science in Movement Science

University of Michigan – School of Kinesiology
830 N. University Avenue
Ann Arbor, MI 48109-1048

Charlene Ruloff, Manager of Graduate Student Affairs
Email Address: cruloff@umich.edu | Telephone Number: 734-764-1343

Tahirah Gimson, Coordinator of Graduate Student Affairs
Email Address: tgimson@umich.edu | Telephone Number: 734-764-6617

ZOOM VIRTUAL RECRUITING INFORMATION
Join Uof M's School of Kinesiology virtual booth: https://umich.zoom.us/j/93132868633
Recruiters / Representatives: Charlene Ruloff and Tahirah Gimson will be available from 8:00 am–11:00 am EST on Saturday, November 13, 2021

VAN ANDEL INSTITUTE GRADUATE SCHOOL (VAIGS)
Website: vaigs.vai.org/admissions/
Application Deadline: December 1, 2021

Van Andel Institute Graduate School
Mailstop: 113/234 DIV
333 Bostwick Avenue, NE
Grand Rapids, MI 49503

Christy Mayo, Director of Enrollment and Records
Email Address: christy.mayo@vai.edu | Telephone Number: 616-234-5722

ZOOM VIRTUAL RECRUITING INFORMATION
Join the VAIGS virtual booth: https://zoom.us/j/95483092997?pwd=Vmw2bmFmM3FvM2pxMStRbm9mM3MxZz09
Meeting ID: 954 8309 2997 | Passcode: 214169
Recruiters / Representatives: Christy Mayo will be available from 8:00 am–3:00 pm EST on Saturday, November 13, 2021

VAN ANDEL INSTITUTE (VAI) – PURPLE COMMUNITY
VAI Website: vai.org
VAI Purple Community Website: purplecommunity.vai.org

Purple Community
Van Andel Institute
333 Bostwick Avenue, NE
Grand Rapids, MI 49503

About Van Andel Institute Purple Community

Van Andel Institute Purple Community is a grassroots fundraising program whose dedicated volunteers support VAI's mission of improving the health and enhancing the lives of current and future generations.

Purple Community volunteers host dozens of events each year that raise critical funds to support groundbreaking research into diseases like cancer and Parkinson's, and K–12 and graduate education programs at the Institute.

Purple Community volunteers support VAI for a number of reasons. Some have been personally impacted by the diseases being studied by world-class scientists at the Institute or know a friend or family member who has been affected. Others support the education programs at VAI that foster the next generation of scientific leaders.

There are plenty of ways to get involved with Purple Community, including:

- Organizing and hosting an event
- Volunteering at a Purple Community or VAI event
- Corporate partnerships
- Becoming a Student Ambassador
- Joining the Purple Community Cabinet

No matter how you give, 100% of any funds raised through your efforts go directly toward research and science education.

To learn more about how you can get involved, email purplecommunity@vai.org.

Visit us at purplecommunity.org

@purplevai @purplevai @purplecommunity

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