

WMA RUGS

WEST MICHIGAN REGIONAL UNDERGRADUATE
SCIENCE RESEARCH CONFERENCE

PROGRAM

VAN ANDEL INSTITUTE

GRAND RAPIDS, MI

NOVEMBER 4, 2023

CELEBRATING 17 YEARS OF SCIENTIFIC AND EDUCATIONAL COLLABORATION

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FERRIS STATE UNIVERSITY - COLLEGE OF PHARMACY
GRAND VALLEY STATE UNIVERSITY
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RECRUITER CONTACT INFORMATION AND BOOTH HOURS

Recruiters will be in the DeVos Foundation Lobby. Start and end times for recruiters will vary. A list of recruiters, their contact information, and their availability is provided on pages 30-33.

QUESTIONS?

If you have questions or concerns before the research conference, please contact Michelle Love at undergrad@vai.edu. If you have questions or concerns during the conference, please contact one of the WMRUGS Research Conference Volunteers at the Information Booth.



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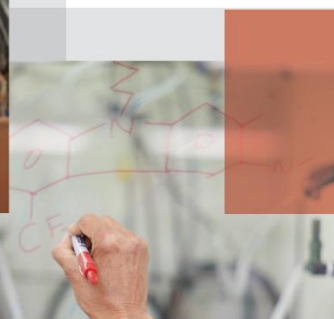
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ACKNOWLEDGEMENTS

WMRUGS RESEARCH CONFERENCE ORGANIZING INSTITUTIONS AND ORGANIZING COMMITTEE MEMBERS

Jennifer Hess, PhD – Aquinas College
Keith Grasman, PhD – Calvin University
Eric Nybo, PhD – Ferris State University College of Pharmacy
Mark Staves, PhD – Grand Valley State University
Kristin Dittenhafer-Reed, PhD – Hope College
Dwight Williams, PhD – Kalamazoo College
Heidi Lempradl, PhD – Van Andel Institute Graduate School and Van Andel Institute



WMRUGS RESEARCH CONFERENCE HOST

Thank you to Van Andel Institute (VAI) for hosting the West Michigan Regional Undergraduate Science Research Conference for 17 years!



WMRUGS RESEARCH CONFERENCE SUPPORT STAFF

VAI Security Services, Facilities Services and Housekeeping Services

Administrative support provided by Michelle Love, VAI Graduate School

Additional administrative support provided by the VAI Graduate School Staff and Graduate Students, and VAI Postdoctoral Fellows

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Audiovisual services provided by Tim Sundt, Terry Ballard and Bill Baillod with VAI Production Services

Catering services provided by Eurest Dining Services

Catering Services also provided by the High School Students from Kent ISD/KTC Hospitality & Culinary Services



WEST MICHIGAN REGIONAL UNDERGRADUATE SCIENCE RESEARCH CONFERENCE | SCHEDULE OF EVENTS

SATURDAY, NOVEMBER 4, 2023 | 8:00 AM – 3:30 PM | DOORS OPEN AT 7:30 AM

Note concurrent events and times for poster sessions and recruiter fair.

8:00 AM	ATTENDEE ARRIVAL AND POSTER SET-UP RECRUITER ARRIVAL AND SETUP
8:15 AM	FAIR GRADUATE SCHOOL, MEDICAL SCHOOL, PROFESSIONAL SCHOOL AND INTERNSHIP & EMPLOYMENT RECRUITERS DEVOS FOUNDATION LOBBY <i>Meet with recruiters including internship & employment, graduate school, professional schools and medical school recruiters from 8:15 AM – 9:15 AM</i>
9:15 AM	WELCOME OPENING REMARKS TOMATIS AUDITORIUM <i>Master of Ceremony Dwight Williams, PhD Kalamazoo College</i>
9:30 AM	KEYNOTE SPEAKER ADDRESS TOMATIS AUDITORIUM <i>Dr. Sylvia Fitting, Associate Professor, University of North Carolina at Chapel Hill, Department of Psychology and Neuroscience</i>
10:15 AM	POSTER SESSION 1 COOK-HAUENSTEIN HALL <i>Presenters at even-numbered posters</i>
10:15 AM	FAIR GRADUATE SCHOOL, MEDICAL SCHOOL, PROFESSIONAL SCHOOL AND INTERNSHIP & EMPLOYMENT RECRUITERS DEVOS FOUNDATION LOBBY <i>Meet with recruiters including internship & employment, graduate school, professional schools and medical school recruiters from 10:15 AM – 11:30 AM</i>
11:30 AM	GRADUATE STUDENT SCIENTIFIC RESEARCH TALK TOMATIS AUDITORIUM <i>Patrick Dischinger, PhD Candidate Van Andel Institute Graduate School</i>
12:00 PM	UNDERGRADUATE STUDENT SCIENTIFIC RESEARCH TALKS TOMATIS AUDITORIUM <i>Jessica Kean Aquinas College Chafer Jolman Calvin University</i>
12:30 PM	LUNCH LUNCH SERVED IN THE DEVOS FOUNDATION LOBBY NEAR WATERFALL <i>Lunch seating available in the VAI Café, VandeWoude Sessions Conference Room and Conference Rooms 3104 & 3105</i>
12:30 PM	FAIR GRADUATE SCHOOL, MEDICAL SCHOOL, PROFESSIONAL SCHOOL AND INTERNSHIP & EMPLOYMENT RECRUITERS DEVOS FOUNDATION LOBBY <i>Meet with recruiters including internship & employment, graduate school, professional schools and medical school recruiters from 12:30 PM – 2:30 PM</i>
1:15 PM	POSTER SESSION 2 COOK-HAUENSTEIN HALL <i>Presenters at odd-numbered posters</i>
2:30 PM	UNDERGRADUATE STUDENT SCIENTIFIC RESEARCH TALKS TOMATIS AUDITORIUM <i>Nora Schwartz Ferris State University – College of Pharmacy Jacquelyn Molloseau Grand Valley State University Skylar DeWitt Hope College Xavier Silva Kalamazoo College</i>
3:30 PM	CLOSING REMARKS CONCLUSION TOMATIS AUDITORIUM

KEYNOTE SPEAKER

9:15 AM | Welcome and Opening Ceremony | Tomatis Auditorium

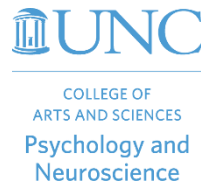
9:30 AM | Keynote Address | Tomatis Auditorium



Sylvia Fitting PhD

Associate Professor, University of North Carolina at Chapel Hill, Department of Psychology and Neuroscience

For more information on Dr. Fitting, visit: <https://fitting.web.unc.edu>



"The Endocannabinoid System: A helping HAND"

Scientific Talk Emphasis: Neuroscience

Abstract: Human immunodeficiency virus (HIV) remains a major global public health issue with approximately 39 million people currently living with HIV. While antiretroviral therapy has significantly increased survival rates and quality of life, neurological complications, also known as HIV-associated neurocognitive disorders (HAND), continue to persist. The Fitting research group incorporates a multidisciplinary approach in rodent models to examine the cellular, functional, and behavioral mechanisms involved in the neurotoxic consequences of HIV proteins on the central nervous system and the role of the endocannabinoid system. The endocannabinoid system is centrally involved in maintaining and restoring brain homeostasis and has attracted considerable attention as a promising therapeutic target in numerous neurodegenerative diseases. This presentation will highlight recent findings from our laboratory that shed light on potential therapeutic strategies to target the endocannabinoid system and mitigate HIV-induced neurotoxicity, neuroinflammation, and HAND. This also includes the use of Δ^9 -tetrahydrocannabinol (THC) and cannabidiol (CBD), which are the main components of the cannabis plant. Additionally, Dr. Fitting will share her career path and some insights gained along the way, to help students navigate their own career journeys.

Thank you to our keynote sponsor, the University of Michigan



GRADUATE STUDENT RESEARCH TALK

11:30 AM | Tomatis Auditorium

Patrick Dischinger, PhD Candidate | Molecular and Cellular Biology

Van Andel Institute Graduate School

Research Mentor: Matt Steensma, MD – Associate Professor | Van Andel Institute

Steensma Lab | Musculoskeletal Oncology | Department of Cell Biology

Scientific Talk Emphasis: NF1-related Breast Cancer



“Investigating the Role of NF1 in Breast Cancer Progression”

Abstract: Mutations in the NF1 gene frequently appear in metastatic breast cancers, suggesting that loss of NF1 drives epithelial to mesenchymal transition to support clonal expansion of cancer cells. A critical link between NF1 and ER-alpha in regulation of ER-alpha signaling has recently been established. In addition, recent novel findings show ER-alpha harbors additional functions beyond its canonical ER signaling and can act as an RNA binding protein (RBP) to influence cell fitness through post-transcriptional gene regulation. These studies have sparked motivation to investigate mechanisms in which neurofibromin interacts with ER-alpha and how disruption of this neurofibromin-ER-alpha interaction can contribute to metastasis and endocrine resistance. To study this, we identified expression of NF1 transcripts in breast cancer datasets that undergo exon skipping resulting in altered function/localization of neurofibromin, the protein encoded by NF1. We found NF1 exon skipping is associated with decreased overall survival. To investigate the effect of NF1 transcript exon skipping on ER-alpha activity, we generated a NF1-deficient, ER positive breast cancer cell line (MCF7 cells) to determine consequences of diminished NF1 function and resulting mechanisms contributing to breast cancer cell fitness. Our findings demonstrate that NF1 transcript exon skipping can be used for breast cancer prognosis, concurrently, NF1-deficient breast cancers harbor increased ER-alpha RNA binding and splicing burden. With these data we expose a new mechanism of therapeutic resistance and unexplored therapeutic vulnerabilities for NF1-deficient breast cancers.



UNDERGRADUATE STUDENT RESEARCH TALKS

12:00 PM - 12:30 PM | Tomatis Auditorium



Jessica Kean | Aquinas College

Major: Health Science | Class of 2024

Scientific Talk Emphasis: Cellular and Infection Microbiology

"Identifying Mechanisms of Cell Death in Keratinocytes and Macrophages in Response to Diverse Group B Streptococcus Isolates"

Abstract: Group B Streptococcus is an opportunistic bacterial pathogen that is most well-known for its ability to cause serious pregnancy complications and life-threatening infections in neonates. However, this pathogen is gaining increasing recognition as a major causative agent for skin and soft tissue infections, especially among individuals with underlying illnesses or afflictions that compromise the immune system. While substantial steps have been taken to understand the mechanisms of infection GBS employs during pregnancy and neonatal complications, much less is known about its ability to cause infections in the skin and soft tissues. To address this knowledge gap, we explored GBS-mediated cell death in two important cell types that are both present in human skin, keratinocytes (HaCaT cells) and macrophages (differentiated THP-1 cells). Keratinocytes are the most abundant cell type in the epidermis, and they are responsible for producing keratin, a protein that makes the skin tough and waterproof. Macrophages are present throughout the body, and they are one of several types of immune system cells that participate in the innate immune response to pathogens such as bacteria. Through our work, we discovered that both caspase-dependent and independent forms of cell death are likely contributors to keratinocyte and macrophage cell death. Pertaining to HaCaT cells, ST types ST12 and ST1 seemed to be most virulent and therefore could be associated with more severe disease in skin and soft-tissue infection. In a similar light, ST types ST17 and ST19 are likely to have shown more virulence concerning THP-1 cells. We are hopeful that this work will provide insights into how GBS leads to severe infections in the skin and why some strains tend to be more dangerous than others in different vulnerable populations. Co-Authors: Michelle E. Thompson, Joshua Wierenga, Rebecca A. Flaherty

Research Mentor: Rebecca A. Flaherty, PhD – Assistant Professor of Biology



Chafer Jolman | Calvin University

Major: Geology | Class of 2025

Scientific Talk Emphasis: Geology

"Characterizing Nearshore Sediments at Flat Iron Lake, Oakfield Township, Michigan"

Abstract: This project examines nearshore sedimentary characteristics at Flat Iron Lake (FIL) in west-central Michigan to discern depositional inputs and for subsequent paleoclimate research at FIL. We used a Livingstone coring device to collect sediment cores at two sites and characterized sedimentary features using a standard classification scheme. Facies at site 1 shift from peat to calcareous peat to sapropel. Sapropel facies at site 2 become silt-rich with depth. Both cores contain diffuse sand and recurrent diatom fossils. We observe an organic-to-inorganic transition near the end of the core, implying a shift in water depth or sediment supply regime and minimal watershed deposition. Aeolian transport possibly contributes to lake sedimentation based on the diffuse sand. The diatoms introduce a potential paleoclimate proxy for future research. These findings reveal components of FIL's depositional history and present avenues for subsequent research at this location. Co-Authors: Melinda Higley, PhD

Research Mentor: Melinda Higley, PhD – Assistant Professor of Geology, Geography, and Environment

UNDERGRADUATE STUDENT RESEARCH TALKS

2:30 PM - 3:30 PM | Tomatis Auditorium



Nora Schwartz | Ferris State University - College of Pharmacy

Major: Biotechnology | Class of 2024

Scientific Talk Emphasis: Molecular Biochemistry

"Diverse combinatorial biosynthesis for C-H functionalization of anthracyclines"

Abstract: Natural products are small molecules derived from plants, fungi, or bacteria. Microbial natural products are usually isolated from fermentation vats of the producing organism. Streptomyces, a soil dwelling bacterium, produce a class of natural products known as anthracyclines. Anthracyclines are aromatic polyketides that are used for the treatment of human cancers. Anthracyclines exert their mechanism of action by poisoning topoisomerase II, via the inhibition of DNA replication leading to apoptosis and death of the cancer cell. Despite their potency, anthracyclines are limited by dose-dependent cardiotoxicity. This has motivated our laboratory's research into engineering improved anthracycline variants via combinatorial biosynthesis. Combinatorial biosynthesis, or the use of genetic engineering to modify biosynthetic pathways to produce new and altered natural products, was employed in this study. We employed a BioBricks synthetic biology platform to generate new C - H functionalized anthracyclines. Previously, we generated four core polyketide scaffolds, including aklavinone, 9-epi-aklavinone, auramycinone, and nogalamycinone. First, we generated 2-hydroxy analogs by swapping the ketoreductase and first-ring cyclase enzymes for the aromatase-cyclase from the mithramycin biosynthetic pathway in our polyketide synthase cassettes. This added a hydroxyl group at the C-2 position. Next, we engineered several multi-oxygenase cassettes from the kosinostatin, doxorubicin, β -rhodomycin and the komodoquinone B biosynthetic pathways to catalyze 11-hydroxylation, 1-hydroxylation, 10-hydroxylation, 10-decarboxylation, and 4-hydroxyl regioisomerization. In total, this work sets the stage for the comprehensive microbial synthesis of designer anthracyclines. Co-Authors: Jacob Hecht and Dr. Eric Nybo

Research Mentor: Eric Nybo, PhD - Associate Professor of Medicinal Chemistry/Pharmaceutical Science

**Thank you to
Ferris State University College of Pharmacy
for being a poster session sponsor for 6 years!**

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Jacquelyn Molloseau | Grand Valley State University

Major: Biochemistry | Class of 2024

Scientific Talk Emphasis: Biochemistry

"Assessing the Role of Sediments and Groundwater in the Road Salt Pollution of an Urban Lake System"

Abstract: The use of road de-icing salt has resulted in the salinization of many freshwater ecosystems across areas in colder climates. In lake systems, road salt pollution can negatively impact biota, prevent seasonal mixing, and increase internal nutrient loading due to extended hypoxia. Past studies indicate that sediments and groundwater can retain chloride, a component of road salt, and release it throughout the year, resulting in continuous strain on the ecosystem. Over three years, we assessed the interactions between sediment, groundwater, and salt pollution in a hydrologically connected three-lake system in Grand Rapids, MI. During this research we conducted (1) an exploratory experiment with sediment cores, (2) a sediment flume study to assess retention during short-term exposure, (3) a salt isotherm experiment to determine equilibrium chloride concentration (ECC), and (4) a piezometer study to assess groundwater as a potential pollution pathway. Our preliminary experiment revealed that sediments taken from a tributary flowing into the lake, which is the main source of pollution, could retain chloride when incubated with salt-contaminated water. Similar results were found during the flume exposure study, providing evidence that sediments in the area could retain and release chloride. Performing isotherms allowed us to quantify the retention capability of these sediments; we discovered that at least one site along the tributary has an ECC low enough for sediments to serve as a chloride sink during high exposure events. Finally, we analyzed shallow groundwater from across the lake system, which revealed that the majority of the area is saturated with chloride. However, chloride concentrations within groundwater samples were not high enough to fully explain the lake concentrations. While the role of groundwater in road salt pollution is unresolved, we conclude that sediment interactions with chloride must be considered when taking action to limit road salt pollution. Co-Authors: Alan Steinman

Research Mentor: Alan Steinman, PhD – Allen and Helen Hunting Research Professor

Skylar DeWitt | Hope College



Major: Neuroscience & Psychology | Class of 2024

Scientific Talk Emphasis: Neuroscience

"Effects of Acute Hypoxic Exposure on the Olfactory System of Adult Zebrafish"

Abstract: Oxygen-deprived conditions (i.e. hypoxia) are found both in space and on Earth, and their effects on the olfactory system are not fully understood. Zebrafish offer an excellent model to study exposure to hypoxia due to substantial neuroplasticity mechanisms within their brain. We previously established that hypoxia leads to a decrease in mitochondrial function and increased apoptosis in the olfactory system; however, the underlying mechanisms behind this response, and the functional consequences of these changes, remain elusive. Thus, we aim to uncover the structural and functional effects of hypoxia on the olfactory system of zebrafish. To induce acute hypoxia, we subjected zebrafish to a hypoxic chamber with a dissolved oxygen (DO) level between 0.6-0.8 mg/L for 15 minutes. Following a recovery period, zebrafish brains were processed for biochemical assays. We assessed degeneration in the olfactory bulbs (OBs) by labeling astrocytes through Glial fibrillary acidic protein (GFAP) staining. In addition, we performed Hematoxylin and Eosin (H&E) and Alcian Blue stainings to characterize the tissue structure in the olfactory epithelium (OE). We also assessed olfactory function by means of olfactory-mediated responses to the odorant cadaverine. We observed a significant rise in astrocytic activation, a decrease in olfactory lamellar thickness in the olfactory epithelium, a disruption in the mucus layer, and a decrease in olfactory-mediated behavior. This research can give insights into further understanding the impact of hypoxia, specifically on olfactory morphology and function. Co-Authors: Marco Lopez-Vargas, Evan Thomas, Cassidy Larson, Cameron Houck, Luke Horsburgh, Dr. Erika Calvo-Ochoa

Research Mentor: Erika Calvo-Ochoa, PhD – Assistant Professor of Biology and Neuroscience



Xavier Silva | Kalamazoo College

Major: Mathematics and Computer Science | Class of 2024

Scientific Talk Emphasis: Mathematical Biology

“Computational Techniques for Finding Virus Transitions That Preserve Icosahedral Symmetry”

Abstract: Spherical virus capsids have icosahedral rotation symmetry, which includes 2, 3, and 5-fold rotations. These capsids can be characterized by affine extended point arrays which have icosahedral rotation symmetry. We use quasicrystallographic methods to embed the 55 standard point arrays in 6D to classify their associated icosahedral Bravais Lattice. We characterize native and mature viruses as point arrays and then search for 6D linear transitions of these point arrays which preserve all or some of icosahedral symmetry as a way of describing maturation. Finding transitions requires a large amount of computation for which we have employed a cluster and parallel computing techniques. We have reproduced previously discovered transitions for the Cowpea Chlorotic Mottle Virus that preserve 2 and 3-fold symmetry and more importantly have created a comprehensive list of what symmetries can be preserved between any possible combination of the 55 standard point arrays and their combinations.

Research Mentors: Stephen Oloo, PhD - Assistant Professor of Mathematics and David Wilson, PhD - Associate Professor of Physics

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Emerson '25
ECO club board, outdoor program leader
Major: biology
Concentration: environmental studies
Study abroad plan: Thailand

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POSTER SESSION SPONSORS



POSTER PRESENTER INDEX | ALPHABETICAL ORDER BY LAST NAME

Poster presentations will take place in Cook-Hauenstein Hall
 Presenters with even-numbered posters will present from 10:15 AM-11:30 AM
 Presenters with odd-numbered posters will present from 1:15 PM-2:30 PM

Last Name	First Name	Poster Number	Institution	Poster Subject Area
Addington	Sydney	112	Grand Valley State University	Immunology
Ahlstedt	Carter	3	Taylor University	Biochemistry
Akhavan Tafti	Shahriar	130	Kalamazoo College	Neuroscience
Allen	Hannah	98	Hillsdale College	Ecology and Evolution
Anderson	Larkin	63	Kalamazoo College	Chemistry
Andrews-Wilson	Jordyn	24	Kalamazoo College	Biochemistry
Bajko	Jonathan	64	Grand Valley State University	Chemistry
Baker	Lindsey	65	Kalamazoo College	Chemistry
Baptist	Paul	44	Ferris State University	Biotechnology
Barton	Sawyer	33	Grand Valley State University	Biology
Beach	Jenna	66	Kalamazoo College	Chemistry
Bedow	Jessica	2	Calvin University	Biochemistry
Beltran	Rebecca	117	Aquinas College	Mathematics
Bijoy	Mitra	31	Michigan State University	Biology
Blackmore	Peyton	35	Grand Valley State University	Biomedical Sciences
Blanzly	Preston	137	Kalamazoo College	Physics
Boer	Elliana	67	Hope College	Chemistry
Borror	Kyle	99	Calvin University	Engineering
Bos	Isaac	79	Calvin University	Chemistry
Bouman	Ryan	69	Calvin University	Chemistry
Braunohler	Aerin	102	Kalamazoo College	Environmental Science

Last Name	First Name	Poster Number	Institution	Poster Subject Area
Brekke	Gabriella	133	Ferris State University	Pharmacology
Brewer	Abigail	101	Hope College	Environmental Science
Bricco	Connor	12	Hope College	Biochemistry
Brock	Coral	97	Michigan State University	Ecology and Evolution
Brown	Courtney	70	Ferris State University	Chemistry
Brown	Kaylin	133	Ferris State University	Pharmacology
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Buckley	Lauren	72	Hope College	Chemistry
Bultje	Sarah	17	Calvin University	Biochemistry
Burke	Amara	103	Ferris State University	Environmental Science
Burns	Caitlin	25	Hillsdale College	Biology
Canfield	Morgan	53	Van Andel Institute (Grand Valley State University)	Cell and Molecular Biology
Chung	Yejin	73	Calvin University	Chemistry
Cocelli	Breana	34	Hillsdale College	Biology
Coffman	Madeleine	74	Kalamazoo College	Chemistry
Comer	Eden	4	Hope College	Biochemistry
Couturier	Brianna	75	Hope College	Chemistry
Cripe	Lucy	76	Kalamazoo College	Chemistry
Crute	Mikaela	131	Grand Valley State University	Nursing
De Roo	Caroline	141	Grand Valley State University	Physiology
Demlow	Cassie	79	Calvin University	Chemistry
Dery	Hanna	27	Taylor University	Biology
DeSanti	Kathryn	121	Ferris State University	Molecular Biotechnology
Detweiler	Alyssa	50	Aquinas College	Cell and Molecular Biology
DeYoung	Devi	80	Kalamazoo College	Chemistry
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Fulkerson	Gwendolyn	79	Calvin University	Chemistry
Gaitan	Aide	105	Kalamazoo College	Environmental Science
Gleeson	Griffin	81	Hope College	Chemistry
Grabill	Sebastian	136	Calvin University	Physics
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Guzman-Vargas	Alex	39	Ferris State University	Biotechnology
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Hurley	Madelaine	83	Kalamazoo College	Chemistry
Johnson	Lyric	51	Calvin University	Cell and Molecular Biology
Jolman	Chafer	113	Calvin University	Geology
Jordan	Emily	133	Ferris State University	Pharmacology
Kaatz	Allison	135	Aquinas College	Physics

Last Name	First Name	Poster Number	Institution	Poster Subject Area
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Kalam	Sangeda	37	Grand Valley State University	Biomedical Sciences
Kean	Jessica	59	Aquinas College	Cellular and Infection Microbiology
Kim	Taehyung	57	Grand Valley State University	Cell and Molecular Biology
Kim	Jiho	95	Calvin University	Computer Science
King	Hannah	8	Calvin University	Biochemistry
Klanseck	Sophie	56	Hope College	Cell and Molecular Biology
Klanseck	Isabelle	84	Hope College	Chemistry
Knapp	Kaitlyn	119	Grand Valley State University	Microbiology
Koellmann	Rhys	85	Kalamazoo College	Chemistry
Kokic	Nicole	43	Ferris State University	Biotechnology
Korhorn	Emma	133	Ferris State University	Pharmacology
LaMantia	Samantha	55	Grand Valley State University	Cell and Molecular Biology
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Le	Vu-Anh	111	Beloit College	Environmental Science
Learman	Caleb	26	Western Michigan University	Biology
Lee	Minji	100	Calvin University	Engineering
Lefevre	Lauren	35	Grand Valley State University	Biomedical Sciences
Lekan	Margaret	109	Kalamazoo College	Environmental Science
Levandowski	Leah	43	Ferris State University	Biotechnology
Licavoli	Dulcinea	29	Hope College	Biology
Lopez	Ernesto	50	Aquinas College	Cell and Molecular Biology
Lopez-Vargas	Marco	128	Hope College	Neuroscience
M Pellegrom	Isabella	142	Kalamazoo College	Physiology
Madsen	Makayla	30	Grand Valley State University	Biology
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Maurer	Madelyn	52	Grand Valley State University	Cell and Molecular Biology
McLean	Erin	141	Grand Valley State University	Physiology
Mehanovic	Edin	115	Aquinas College	Mathematics
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Miller	Abby	62	Grand Valley State University	Chemistry
Mitchell	Lauren	11	Kalamazoo College	Biochemistry
Mobley	Elijah	86	Kalamazoo College	Chemistry
Morgret	Caedmon	96	Calvin University	Ecology and Evolution
Mount	Dylan	138	Calvin University	Physics
Murphy	Anna	140	Kalamazoo College	Physiology
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O'Keefe	Grace	36	Van Andel Institute (Grand Valley State University)	Biomedical Sciences
Paige	Kendall	122	Ferris State University	Molecular Biotechnology
Pasupathy	Nivetha	129	Western Michigan University	Neuroscience
Pehrson	Noah	87	Calvin University	Chemistry
Penny	Nina	32	Indiana Institute of Technology	Biology
Priebe	Cameron	40	Ferris State University	Biotechnology
Proksch	Abigail	1	Ferris State University	Biochemistry
Putt	Lexus	125	Hope College	Neuroscience
Ramos	Roman	15	Kalamazoo College	Biochemistry

Last Name	First Name	Poster Number	Institution	Poster Subject Area
Rasool	Reem	88	Kalamazoo College	Chemistry
Reed	Vincent	21	University of Michigan	Biochemistry
Reilly	Noah	89	Aquinas College	Chemistry
Rhames	Maxwell	90	Kalamazoo College	Chemistry
Rodgers	Manya	45	Grand Valley State University	Cell and Molecular Biology
Rosenberger	Sofia	18	Hope College	Biochemistry
Rudisel	Emma	6	Hope College	Biochemistry
Rush	Delaney	35	Grand Valley State University	Biomedical Sciences
Sartori	Vincent	58	Van Andel Institute (Grand Valley State University)	Cell and Molecular Biology
Sawaqed	Laith	127	University of North Carolina-Chapel Hill	Neuroscience
Schwartz	Nora	120	Ferris State University	Molecular Biochemistry
Seburn	Emily	49	Grand Valley State University	Cell and Molecular Biology
Shebrain	Abdulaziz	61	Western Michigan University	Cell and Molecular Biology
Shenk	Sydney	20	Van Andel Institute (Aquinas College)	Biochemistry
Silva	Xavier	114	Kalamazoo College	Mathematical Biology
Smith	Madison	108	Hope College	Environmental Science
Sokacz	Allison	118	Kalamazoo College	Microbiology
Somsel	Erin	71	Kalamazoo College	Chemistry
Steen	Sam	54	Calvin University	Cell and Molecular Biology
Stoddard	Kameron	133	Ferris State University	Pharmacology
Swinney	Gabriel	7	Taylor University	Biochemistry
Tauber	Ryan	134	Kalamazoo College	Physics
Thompson	Ashley	47	Grand Valley State University	Cell and Molecular Biology
Tocco	William	91	Kalamazoo College	Chemistry
Tran	Kristen	93	Michigan State University	Computational Biology
Trinh	Nghia	116	Kalamazoo College	Mathematics
Tropea	Natalya	27	Taylor University	Biology
Tsurho	Visakuo	22	Van Andel Institute (Calvin University)	Biochemistry
Villani	Mirella	68	Kalamazoo College	Chemistry
Walters	Zane	60	Grand Valley State University	Cell and Molecular Biology
Wang	Yuqian	38	Calvin University	Biostatistics
Whetstone	Lauren	107	Aquinas College	Environmental Science
Woldt	Katarina	10	Calvin University	Biochemistry
Wudyka	Wade	35	Grand Valley State University	Biomedical Sciences
Yoo	Seoha	92	Calvin University	Chemistry
Ziegler	Zoe	23	Grand Valley State University	Biochemistry



POSTER SESSION SPONSORS



2023 POSTER PRESENTATIONS

Poster presentations will take place in Cook-Hauenstein Hall
Presenters with even-numbered posters will present from 10:15 AM-11:30 AM
Presenters with odd-numbered posters will present from 1:15 PM-2:30 PM

Due some of the research not being published, only the presenter names, institutions, co-authors, poster subject areas and presentation titles are included in this program.

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|--|---------------------|
| 1. Abigail Proksch, Ferris State University
Co-Authors: Jinjie Liu, Christoph Benning
<i>"Screening for PLIP3 Suppressor Mutants in Arabidopsis"</i> | Biochemistry |
| 2. Jessica Bedow, Calvin University
Co-Authors: Kachel Bedow, Maddy Hoogstra, Douglas Vander Griend, Chad Tatko
<i>"Investigating Peptide Folding of Tryptophan Zippers"</i> | Biochemistry |
| 3. Carter Ahlstedt, Taylor University
Co-Authors: Annika Bennett, Dr. Daniel Kaluka
<i>"Design to Data for mutants of β-glucosidase B from Paenibacillus polymyxa: E26K, I170Y, and V398N"</i> | Biochemistry |
| 4. Eden Comer, Hope College
Co-Authors: Natalie Olander, Dr. Leah Chase
<i>"Effects of Delayed HCA Exposure on a Rat Model of Bipolar Disorder"</i> | Biochemistry |
| 5. Elizabeth Merz, Calvin University
Co-Presenters: Sarah Bultje, Luke Witvliet, Kumar Sinniah
<i>"Incorporating Culinary Medicine into a First Year Science Course"</i> | Biochemistry |
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- 6. Emma Rudisel, Hope College** **Biochemistry**
"Mass spectrometry-based proteomics to study post-translational modifications of the mitochondrial transcription machinery"
-
- 7. Gabriel Swinney, Taylor University** **Biochemistry**
Co-Presenters: Anna Draviam
Co-Authors: Dr. Daniel Kaluka
"Proteolytic Cleavage of the SUMO Tag from P. falciparum Cytochrome b5-2"
-
- 8. Hannah King, Calvin University** **Biochemistry**
Co-Authors: Laura Westrate, Sam Steen
"Unraveling the Endoplasmic Reticulum"
-
- 9. Joseph Horsfield, Kalamazoo College** **Biochemistry**
Co-Authors: Dr. Megumi Murakami and Dr. Suresh V. Ambudkar
"Screening of Small Molecules to Target Multidrug Resistance-Linked ABC Drug Transporters"
-
- 10. Katarina Woldt, Calvin University** **Biochemistry**
Co-Authors: Laura Westrate, Erica Boldenow, Sean Harris
"The Effect of Environmental Toxicants on Mitochondrial Morphology"
-
- 11. Lauren Mitchell, Kalamazoo College** **Biochemistry**
Co-Authors: Ava Apolo and Dr. Josie Mitchell
"Genome Engineering of Fas Apoptotic Inhibitory Molecule (FAIM) in Drosophila melanogaster"
-
- 12. Connor Bricco, Hope College** **Biochemistry**
Co-Authors: Dr. Leah Chase
"LC-MS/MS for proteomic analysis of post-translational modifications on xCT"
-
- 13. Madison Hoogstra, Calvin University** **Biochemistry**
Co-Authors: Aerin Baker, Noah Pehrson, Jess Bedow, Kachel Bedow, Dr. Frederica Santoro, Laura Carosella, Dr. Stefano Raniolo, Dr. Vittorio Limongelli, Dr. Diego Brancaccio and Dr. Douglas Vander Griend
"Modeling How G Protein Binds Drug Molecules"
-
- 14. Pranav Nalam, Grand Valley State University** **Biochemistry**
Co-Authors: Dr. Brian Smith
"Biochemical and Structural Characterization of Aminoglycoside Nucleotidyltransferase-6Ib from Campylobacter fetus"
-
- 15. Roman Ramos, Kalamazoo College** **Biochemistry**
Co-Authors: Blakely Tresca, Regina Stevens-Truss
"Synthesis and Screening of Peptoid-Coumarins as Antibiotic Candidates"
-

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- 16. Ryan Erdmann, Hope College** **Biochemistry**
Co-Authors: MacKenzie Luurtsema
"Determining the nature of the interaction of mitochondrial DNA with nucleoid proteins involved in one carbon metabolism"
-
- 17. Sarah Bultje, Calvin University** **Biochemistry**
Co-Presenters: Luke Witvliet
Co-Authors: Dr. Kumar Sinniah
"Investigating the Binding of G-Quadruplex DNA to Lispro and Bovine Insulin"
-
- 18. Sofia Rosenberger, Hope College** **Biochemistry**
Co-Authors: Dr. Leah Chase
"Ubiquitination of xCT: impacts on the protein's stability, turnover rate, and localization"
-
- 19. Sophie Hruska, Calvin University** **Biochemistry**
Co-Authors: Dr. Chad Tatko, Dr. David Benson
"Synthesis of Cysteine-Tyrosine Crosslinks in β -Hairpin Peptide Models"
-
- 20. Sydney Shenk, Van Andel Institute (Aquinas College)** **Biochemistry**
Co-Authors: Molly Hopper, Ryan Sheldon
"Expansion of a Quantitative Metabolite Panel to GCMS"
-
- 21. Vincent Reed, University of Michigan** **Biochemistry**
Co-Authors: Rosa Romero, Adrien Chauvier, Nils G. Walter
"Exploring the Role of NusA on Glycine Tandem Riboswitch and Co-Transcriptional Regulation"
-
- 22. Visakuo Tsurho, Van Andel Institute (Calvin University)** **Biochemistry**
Co-Authors: Dr. Longxia Xu and Dr. Xiaobing Shi
"Understanding the non-canonical function of EZH1/2 in gene activation"
-
- 23. Zoe Ziegler, Grand Valley State University** **Biochemistry**
Co-Authors: Mary D. Fergus, Cynthia M. June, Robert A. Bonomo, Fabio Prati, Emilia Caselli, Rachel A. Powers, Bradley J. Wallar
"Characterization of inhibitors of ADC-33, a β -lactamase variant involved in antibiotic resistance"
-
- 24. Jordyn Andrews-Wilson, Kalamazoo College** **Biochemistry**
Co-Authors: Dwight A. Williams and Regina Stevens-Truss
"Determining Antibacterial Activity of Maleimide-Tryptamine Hybrids"
-
- 25. Caitlin Burns, Hillsdale College** **Biology**
Co-Authors: Dr. Christopher Heckel
"Agrobacterium mediated CRISPR Cas9 transformation of the LHCB2.1 gene in Arabidopsis thaliana"
-

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- 26. Caleb Learman, Western Michigan University** **Biology**
Co-Authors: Jacqueline T. Eng, Michelle Hrivnyak
"Bioapatite analysis in reconstruction of diet and mobility patterns in past human populations: a case study in Mongolia"
-
- 27. Chase Holland, Taylor University** **Biology**
Co-Presenters: Hanna Dery, Natalya Tropea
Co-Authors: Dr. Jessica Baker
"Pointing us in the right direction: the Drosophila wing as a model of planar cell polarity"
-
- 28. Christina Manna, Hillsdale College** **Biology**
Co-Authors: Dr. Justin McMechan & Dr. Molly Darlington
"Micromanaging Midges: Utilization of Stem Removal in the Soybean Gall Midge Colony"
-
- 29. Dulcinea Licavoli, Hope College** **Biology**
Co-Authors: Joseph Stukey
"Investigation of a second superinfection immunity repressor gene in mycobacteriophage Soul22"
-
- 30. Makayla Madsen, Grand Valley State University** **Biology**
Co-Authors: Dr. Cynthia L. Thompson
"Shorter generation times in primates may lead to enhanced resilience against conservation threats"
-
- 31. Mitra Bijoy, Michigan State University** **Biology**
Co-Authors: Dr. Smitha George
"SATB2 AND CIRC3915 CONTRIBUTE TO ARSENIC-INDUCED LUNG CANCER THROUGH EPIGENETIC MECHANISMS"
-
- 32. Nina Penny, Indiana Institute of Technology** **Biology**
Co-Authors: Dr. Karla Satchell and Dr. Francisco Silva Hernández
"Deciphering the function of the MARTX toxin effectors of Vibrio vulnificus"
-
- 33. Sawyer Barton, Grand Valley State University** **Biology**
Co-Authors: Cynthia Thompson
"Heat Shock Protein Detection in Mammalian Feces"
-
- 34. Breana Cocelli, Hillsdale College** **Biology**
Co-Authors: Dr. Christopher Heckel
"Immune Reactivity of Arabidopsis thaliana in response to pathogenic and nonpathogenic Pseudomonas syringae"
-
- 35. Delaney Rush, Grand Valley State University** **Biomedical Sciences**
Co-Presenters: Peyton Blackmore, Lauren Lefevre, Wade Wudyka
Co-Authors: Dr. Shkelzen Shabani
"Mu-opioid and TAAR1 receptor interaction is associated with profound thermic effects"
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- 36. Grace O'Keefe, Van Andel Institute (Grand Valley State University)** **Biomedical Sciences**
Co-Authors: Evan Lien (PhD) lead investigator, Thomas Rogers (PhD) lab mentor
"Investigating the Impact of Dietary Fats on Cancer Immunotherapy"
-
- 37. Sangeda Kalam, Grand Valley State University** **Biomedical Sciences**
Co-Authors: Ruijie Liu
"Assessment and Future Outlook for Breast Cancer"
-
- 38. Yuqian Wang, Calvin University** **Biostatistics**
Co-Presenters: Oghenesuvwe Ogedegbe
Co-Authors: Dr. Stacy DeRuiter
"TagTools: New Toolkit Analyzing High Resolution Biologging Data in R"
-
- 39. Alex Guzman-Vargas, Ferris State University** **Biotechnology**
Co-Authors: Camryn Lowe, Juliana Carey, Kassidy Vredeveld, Clifton Franklund, Bradley Isler, and Schuyler Pike
"Detecting The Pepper Mild Mottle Virus in Wastewater Samples From Northwestern Cities In Michigan"
-
- 40. Cameron Priebe, Ferris State University** **Biotechnology**
Co-Authors: Paul Baptist, Stacy Thurber, Kayla Chamberlain, Ethan Tippet, Matthew Swanson, Malachi Lapham, Chandler Hendrickson, Kyle Latta, Bailey Copeland, Jay Kennedy, Michael Solomon, Shannon Briggs, and Schuyler Pike
"Origin Determination and Quantification of E. coli in Billings Lake and Manton Creek of Manton, Michigan Over the Years"
-
- 41. Poster Withdrawn**
-
- 42. Kendra Hincka, Ferris State University** **Biotechnology**
Co-Authors: Emmanuel Vazquez-Rivera, Christopher Bradfield
"From Corpse to Soil: Investigating Microbiome Adaptations"
-
- 43. Leah Levandowski, Ferris State University** **Biotechnology**
Co-Presenters: Nicole Kokic, Elizabeth Haut
Co-Authors: Kassidy Vredeveld, Heather Schoenherr, M. Beth Zimmer, Clifton Frankland, Sky Pike
"SARS-CoV-2 Present in Ferris State University Wastewater 2020-2023"
-
- 44. Paul Baptist, Ferris State University** **Biotechnology**
Co-Authors: Cameron Priebe, Amara Burke, Jessica Harbaugh, Ian Owens, Elizabeth Haut, Nicole Kokic, Leah Levandowski, Matt Fourmier, Michael Kramer, Cliff Franklund, Sky Pike
"Performing Colilert-18 on Beach Water in Newaygo and Lake County and Method C on Beach Water in Manistee County Michigan"
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45. **Manya Rodgers, Grand Valley State University** **Cell and Molecular Biology**
Co-Authors: Mark Staves
"Anesthesia of Mechanosensing in Single Internodal Cells of Chara"
-
46. **Andrew Kaczmar, Western Michigan University** **Cell and Molecular Biology**
Co-Authors: Dr. Andrew Thompson, Shannon Tan
"Identification of igfbp, Ice, and hce Non-Coding Gene Regulatory Regions in N. whitei and O. latipes Using ATAC-seq"
-
47. **Ashley Thompson, Grand Valley State University** **Cell and Molecular Biology**
Co-Authors: Elena Tislerics, Carter Griffioen, Pranav Nalam, Hannah Bekius, Sheila Blackman, Pei-Lan Tsou
"Beaches and Feces: the Journey to Solve the #2 Mystery"
-
48. **Cecilia Guadalupi, Hillsdale College** **Cell and Molecular Biology**
Co-Authors: Ranjodh Sandhu, Eros Lazzerini Denchi
"The Role of KIF2A in Telomere Length Maintenance"
-
49. **Emily Seburn, Grand Valley State University** **Cell and Molecular Biology**
Co-Authors: Dr. Matthew Christians
"Deletion of Regions 2 and 3 of the Light-Response BTB Protein in Arabidopsis thaliana"
-
50. **Ernesto Lopez, Aquinas College** **Cell and Molecular Biology**
Co-Presenters: Alyssa Detweiler
Co-Authors: L. Robert Peters
"Characterization and Cloning of Scavenger Receptor B-1 in Aiptasia"
-
51. **Lyric Johnson, Calvin University** **Cell and Molecular Biology**
Co-Authors: Erica Boldenow, Sean Harris,
"Environmental Toxicant Metabolites Dichloroethylene (DCVC) and Trichloroethylene (TCVC) Inhibit LPS Stimulated TNF- α in THP-1 cells"
-
52. **Madelyn Maurer, Grand Valley State University** **Cell and Molecular Biology**
Co-Authors: Mike R. Wilson and Liyue Zhang
"FBXW7 and Its Interacting Partners in Endometrial Cancer"
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53. **Morgan Canfield, Van Andel Institute (Grand Valley State University)** **Cell and Molecular Biology**
"Exploring the Importance of Long Chain Fatty Acid Transport in the Mitochondrial Fatty Acid Synthesis Pathway"
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54. **Sam Steen, Calvin University** **Cell and Molecular Biology**
Co-Authors: Zubenelgenubi C. Scott, Dr. Lena F. Koslover, Dr. Laura M. Westrate
"ER Morphology and Dynamics"
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- 55. Samantha LaMantia, Grand Valley State University** **Cell and Molecular Biology**
Co-Authors: Dr. Matthew Christians
"Investigating the effects of light and temperature on Light Regulating BTB (LRB) proteins in Arabidopsis thaliana"
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- 56. Sophie Klanseck, Hope College** **Cell and Molecular Biology**
Co-Authors: Quinn Baar, Sara Filippelli, Dr. Virginia McDonough
"Examining the Impact of Ixr1 on OLE1 Expression"
-
- 57. Taehyung Kim, Grand Valley State University** **Cell and Molecular Biology**
Co-Authors: Matthew Christians, PhD
"The Effect of RPTP- β on Planarian Regeneration"
-
- 58. Vincent Sartori, Van Andel Institute (Grand Valley State University)** **Cell and Molecular Biology**
Co-Authors: Tim Triche Ph.D., Nathaniel Buteyn Ph.D., Eve Gardner M.S.
"Induction of HLA expression by EZH2 and Menin inhibition"
-
- 59. Jessica Kean, Aquinas College** **Cellular and Infection Microbiology**
Co-Authors: Michelle E. Thompson, Joshua Wierenga, Rebecca A. Flaherty
"Identifying Mechanisms of Cell Death in Keratinocytes and Macrophages in Response to Diverse Group B Streptococcus Isolates"
-
- 60. Zane Walters, Grand Valley State University** **Cell and Molecular Biology**
Co-Authors: Dr. Puneet Chowdhary, Dr. Sheila Blackman, Dr. Pei-Lan Tsou, Louis Walter, Elisabeth Hatfield, Elizabeth Cazallis
"Monitoring SARS-CoV-2 evolution through targeted next-gen sequencing of wastewater extracts in Kent County"
-
- 61. Abdulaziz Shebrain, Western Michigan University** **Cell and Molecular Biology**
Co-Authors: Dr. Antonio Morales-Hernández
"Characterizing the Progression of Human B-Cell Lymphoma in Cells Overexpressing GPRASP2"
-
- 62. Abby Miller, Grand Valley State University** **Chemistry**
Co-Authors: Richard Lord
"Transferring More Than Two Electrons: Multielectron Transfer in Heavy Transition Metal Complexes"
-
- 63. Larkin Anderson, Kalamazoo College** **Chemistry**
Co-Authors: Blakely Tresca
"Optimization a Cu-Cross Coupling Reaction"
-
- 64. Jonathan Bajko, Grand Valley State University** **Chemistry**
Co-Authors: Matthew Hart
"Synthesis of Novel Antibiotics to Treat Tuberculosis"
-

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- 65. Lindsey Baker, Kalamazoo College** **Chemistry**
Co-Authors: Dr. Alexander Erickson, Dr. Charles Garner, Dr. Timothy Brewster
"Synthesis and Characterization of Bis-hydrazinylpyridine Based Heterobimetallic Catalysts for the Deoxydehydration of Polyols"
-
- 66. Jenna Beach, Kalamazoo College** **Chemistry**
Co-Authors: Min Soo Kim, Piyusha Pargare, Yan Zhang, Dwight A. Williams
"Design and Synthesis of 2nd Generation 5-HPPC Derivatives as 5-HT_{2B} Receptor Ligands"
-
- 67. Elliana Boer, Hope College** **Chemistry**
Co-Authors: Dr. Tom Bultman
"The Local is Global: The Science of Coffee Roasting and Brewing"
-
- 68. Mirella Villani, Kalamazoo College** **Chemistry**
Co-Authors: Dr. Daniela M. Arias-Rotondo
"Progress Towards the Synthesis of [Mn(bim)₂]²⁺"
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- 69. Ryan Bouman, Calvin University** **Chemistry**
Co-Authors: Roger DeKock
"Quantum Chemical Logic, Atomic Ionization Energy and Atomic Size"
-
- 70. Courtney Brown, Ferris State University** **Chemistry**
Co-Authors: S. Eric Nybo
"Leveraging comparative genomics and metabolomics to unravel the biosynthesis of the decolorubin pathway"
-
- 71. Erin Somsel, Kalamazoo College** **Chemistry**
Co-Authors: Dwight A. Williams
"Synthesis of Second-Generation Amino-Pyrazole Derivatives Against Trypanosoma cruzi"
-
- 72. Lauren Buckley, Hope College** **Chemistry**
Co-Authors: Brianna Couturier, Connor Bovia, Meagan B. Elinski
"Structure-function relationships for biologically focused nanocomposite hydrogels"
-
- 73. Yejin Chung, Calvin University** **Chemistry**
Co-Authors: Mark Muyskens
"Impact of the Flexibility of a Hydroxy Group of Coumarins to its Quantum Yield"
-
- 74. Madeleine Coffman, Kalamazoo College** **Chemistry**
Co-Authors: Daniela M. Arias-Rotondo
"Towards the Synthesis of Schiff-Base Ligands for Manganese (II) Coordination Complexes"
-

75. Brianna Couturier, Hope College Co-Authors: Lauren Buckley, Connor Bovia, Meagan B. Elinski* <i>"Formation of polyacrylamide hydrogels through mechanochemistry"</i>	Chemistry
76. Lucy Cripe, Kalamazoo College Co-Authors: Dwight Williams <i>"Towards the Synthesis of iso-Tryptamine Derivatives"</i>	Chemistry
77. Savannah Dzumaryk, Grand Valley State University Co-Authors: Dr. Stephanie Schaertel and Dr. Ryan Hoekstra <i>"Nuclear Magnetic Resonance (NMR) Study of Caffeine Dimerization"</i>	Chemistry
78. Sam Ewald, Kalamazoo College Co-Authors: Faith Flinkingshelt, Daniela Arias-Rotondo <i>"Synthesis of Mn(II) Coordination Complexes with Tridentate Asymmetric Ligands"</i>	Chemistry
79. Gwendolyn Fulkerson, Calvin University Co-Presenters: Cassie Demlow, Isaac Bos Co-Authors: Dr. Herb Fyneweaver <i>"CHEMISTRY AND PUBLIC POLICY: EQUIPPING ADVOCATES"</i>	Chemistry
80. Devi DeYoung, Kalamazoo College Co-Authors: Jocelyn Suranyi and Dr. Blakely Tresca <i>"Modeling the Peptoids Nfkef and Nfkf with Computational Methods"</i>	Chemistry
81. Griffin Gleeson, Hope College Co-Authors: Connor Bovia, Lauren Buckley, Brianna Couturier, Morgan Platz, Meagan Elinski (mentor) <i>"Influence of nanoparticle chemical composition on in situ hydrogel friction"</i>	Chemistry
82. Sierra Hilditch, Grand Valley State University Co-Authors: Richard L. Lord <i>"Mechanistic Analysis of CO Oxidation to CO2 at Bimetallic Complexes"</i>	Chemistry
83. Madelaine Hurley, Kalamazoo College Co-Authors: Professor Paul Hergenrother, Kyle Abo <i>"Development of Novel Anticancer Electrophilic Compounds via the Complexity to Diversity Approach"</i>	Chemistry
84. Isabelle Klanseck, Hope College Co-Authors: Bryan J. Forrest, Jeffery B. Johnson* <i>"Exploring the Effectiveness of Novel Directing Groups for Rhodium-Catalyzed Decarbonylation"</i>	Chemistry
85. Rhys Koellmann, Kalamazoo College <i>"A Comparison of the Neuroprotective Effects of 5-HPEC and 7-HPEC at Equal Concentrations"</i>	Chemistry

-
- 86. Elijah Mobley, Kalamazoo College** **Chemistry**
Co-Authors: Dwight A. Williams
"TOWARDS OPTIMIZING AN EFFICIENT SYNTHESIS OF 5-BROMOTRYPTAMINE"
-
- 87. Noah Pehrson, Calvin University** **Chemistry**
Co-Authors: Aerin Baker, Professor Douglas Vander Griend
"Self-Assembly of a Supramolecular Cube"
-
- 88. Reem Rasool, Kalamazoo College** **Chemistry**
Co-Authors: Mya D. Gough, Dwight A. Williams
"Synthesis of Tryptamine-Maleimide Hybrids as Potential Antibacterial Agents"
-
- 89. Noah Reilly, Aquinas College** **Chemistry**
Co-Authors: Dr. Kevin Boyd, Dr. James Rasmussen, and Lauren Whetstone
"Categorization of Organic Compounds in Agricultural Soils"
-
- 90. Maxwell Rhames, Kalamazoo College** **Chemistry**
Co-Authors: Ann Marie Johnston, Isabella M. Pellegrom, Daniela M. Arias-Rotondo
"Synthesis and Characterization of Manganese Coordination Complexes with Schiff-Base Ligands"
-
- 91. William Tocco, Kalamazoo College** **Chemistry**
Co-Authors: Paul Lummis, Daniela Arias-Rotondo*
"Synthesis of photoactive manganese compounds with carbene ligands"
-
- 92. Seoha Yoo, Calvin University** **Chemistry**
Co-Authors: Dr. Michael Barbachyn
"Selective Reduction of Nitriles in the Presence of Aromatic Nitro Groups"
-
- 93. Kristen Tran, Michigan State University** **Computational Biology**
Co-Authors: Dr. Addie Thompson, Brandon Webster, Ally Schumacher & Linsey Newton
"Validating Nitrogen Response in Contrasting Maize Varieties"
-
- 94. Nguyen Nguyen, Kalamazoo College** **Computational Biology**
Co-Authors: Parisa Hosseizadeh, Cassandra Gonzalez, Kevin Harnden
"Computationally designed protein binding partners for SIRT1 deacetylase"
-
- 95. Jiho Kim, Calvin University** **Computer Science**
Co-Presenters: Jiho Kim
Co-Authors: Edom Maru, Noelle Haviland, Ray Flanagan, Saron Melesse, Souad Yakubu, ZeAi Sun, Dr. Kenneth C. Arnold
"Towards Full Authorship with AI: An Interactive User Interface for Supporting Revision"
-

<p>96. Caedmon Morgret, Calvin University Co-Authors: Dr. Ryan Bebej</p> <p><i>“Lumbar Specialization and the Evolution of Swimming Modes in Cetaceans”</i></p>	<p>Ecology and Evolution</p>
<p>97. Coral Brock, Michigan State University Co-Authors: Rachel E Kerwin</p> <p><i>“Root and shoot acylsugar screening across the Solanaceae family using LC-MS”</i></p>	<p>Ecology and Evolution</p>
<p>98. Hannah Allen, Hillsdale College Co-Authors: Daniel R. Uden</p> <p><i>“Cattle Upland Grazing Preferences in a Patch-Burn Grazing System”</i></p>	<p>Ecology and Evolution</p>
<p>99. Kyle Borrer, Calvin University Co-Authors: Julie Wildschut, Chad Tatko, Ava Tatko, Lachlan Bebee</p> <p><i>“Passive Chlorination: Providing Clean Drinking Water to Rural Ecuadorian Communities”</i></p>	<p>Engineering</p>
<p>100. Minji Lee, Calvin University Co-Authors: Professor Fred Haan</p> <p><i>“Extreme Wind Research: Pressure Induced Forces”</i></p>	<p>Engineering</p>
<p>101. Abigail Brewer, Hope College Co-Authors: Michael Philben</p> <p><i>“Characterization of seven bogs along a climate transect of Michigan peatlands”</i></p>	<p>Environmental Science</p>
<p>102. Aerin Braunohler, Kalamazoo College Co-Authors: Binney Girdler, Lauren Burns</p> <p><i>“Grazing vs. Mowing at the Lillian Anderson Arboretum”</i></p>	<p>Environmental Science</p>
<p>103. Amara Burke, Ferris State University Co-Authors: Jessica Harbaugh, Cameron Priebe, Paul Baptist, Cliff Franklund, and Sky Pike</p> <p><i>“Colilert E. coli Analysis and Sanitary Surveys in 9 Lakes in Newago and Lake Counties of Michigan”</i></p>	<p>Environmental Science</p>
<p>104. Faith Huff, Hope College Co-Authors: Suzanne DeVries-Zimmerman</p> <p><i>“Potential non-carbonate buffering in an interdunal wetland/slack along Lake Michigan”</i></p>	<p>Environmental Science</p>
<p>105. Aide Gaitan, Kalamazoo College Co-Presenters: Guenevere Baierle Co-Authors: Nupur Joshi and Elizabeth Abraham</p> <p><i>“DAWN Summer 2023 Internship”</i></p>	<p>Environmental Science</p>
<p>106. Jessica Harbaugh, Ferris State University Co-Authors: Amara Burke, Paul Baptist, Cameron Priebe, Bailey Copeland, and Sky Pike</p> <p><i>“Sanitary Surveys for Beach Sampling Sites at 11 Lakes in Newago, Lake, and Manistee Counties, Michigan”</i></p>	<p>Environmental Science</p>

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- 107. Lauren Whetstone, Aquinas College** **Environmental Science**
Co-Authors: Jim Rasmussen
"Soil Carbon Sequestration Variability Across Agricultural Land Management Practices in West Michigan"
-
- 108. Madison Smith, Hope College** **Environmental Science**
Co-Authors: Dr. Michael Philben, Abigail Brewer, Gael Figueroa-Enriquez, Christopher Klaver
"Temperature sensitivity of nitrogen mineralization in peat from bogs across a Michigan transect"
-
- 109. Margaret Lekan, Kalamazoo College** **Environmental Science**
Co-Authors: Anne Nitschke and Andreas Taubert
"Development of porous carbons and hybrid carbons for the treatment of heavy metal contaminated industrial wastewater"
-
- 110. Vu Anh Le, Beloit College** **Environmental Science**
Co-Authors: Vu Anh Le(1),(2), David Zoro(1),(3), Mike Waggoner(3) , Christine Ortiz(1) (1) Department of Materials Science and Engineering, Massachusetts Institute of Technology, MA 02139 (2) Department of Biology, Beloit College, Beloit, WI 53511 (3) Department o
"Life Cycle Assessment of Biodegradable Plastics Packaging Subject to Comprehensive Organic Sorting"
-
- 111. Vu-Anh Le, Beloit College** **Environmental Science**
Co-Authors: Le Quoc Hung
"Monitoring Subsidence Trends of Underground Water Exploitation Areas in Vietnam Using DInSAR Technique"
-
- 112. Sydney Addington, Grand Valley State University** **Immunology**
Co-Authors: Busalacchi M.F., Pullen J.J., Walczak J. J., Bunda N.A., Renkema K.R.
"Microbial experience influences B16 melanoma tumor growth"
-
- 113. Chafer Jolman, Calvin University** **Geology**
Co-Authors: Dr. Melinda C. Higley
"Characterizing Nearshore Sediments at Flat Iron Lake, Oakfield Township, Michigan"
-
- 114. Xavier Silva, Kalamazoo College** **Mathematical Biology**
"Computational Techniques for Finding Virus Transitions That Preserve Icosahedral Symmetry"
-
- 115. Edin Mehanovic, Aquinas College** **Mathematics**
Co-Authors: Dr. Joseph Spencer
"An Investigation of Stone Movement in Mancala"
-
- 116. Nghia Trinh, Kalamazoo College** **Mathematics**
Co-Authors: Dr, Patrik Hultberg
"Optimal Housing: A Panel Data Analysis for Optimal Trade Policy for the Singaporean Housing Market"
-

117. Rebecca Beltran, Aquinas College	Mathematics
<i>"Fundamental Theorem of Elliptic Wallace-Simson Lines"</i>	
118. Allison Sokacz, Kalamazoo College Co-Authors: Dr. Michael Wollenberg	Microbiology
<i>"Localizing P-form and M-form Photorhabdus Bacteria in the Heterorhabditis Nematode"</i>	
119. Kaitlyn Knapp, Grand Valley State University Co-Authors: Ian Cleary and Derek Thomas	Microbiology
<i>"Can One Protein Unlock Candida albicans Strains that are Unable to Make the Transition Required to Cause Disease?"</i>	
120. Nora Schwartz, Ferris State University Co-Presenters: Jacob Hecht Co-Authors: Jacob Hecht	Molecular Biochemistry
<i>"Diverse combinatorial biosynthesis for C-H functionalization of anthracyclines"</i>	
121. Kathryn DeSanti, Ferris State University Co-Authors: Dr. S. Eric Nybo	Molecular Biotechnology
<i>"Metabolic Engineering of Macrolide Antibiotics"</i>	
122. Kendall Paige, Ferris State University Co-Presenters: Jacob Hecht, Nora Schwartz Co-Authors: S. Eric Nybo	Molecular Biotechnology
<i>"Engineering Ribozyme-Based Insulator Parts for Improved Anthracycline Cell Factories"</i>	
123. Yen Giang Nguyen, Kalamazoo College Co-Authors: Cambridge Centre for International Research	Neuroscience
<i>"Gene Therapy in the Central Nervous System: ImageJ as a Tool for Image Analysis"</i>	
124. Carissa Matthews, Aquinas College Co-Authors: Jinghui Luo, PhD Andrew Tidball, PhD	Neuroscience
<i>"VANGL2 Mutations in in vitro Neurulation and Reversed Apicobasal Polarity Using Brain Organoids"</i>	
125. Lexus Putt, Hope College Co-Authors: Samantha Groenwold, Ted Lockett, Nathaniel Vorhees, Dr. Erika Calvo-Ochoa	Neuroscience
<i>"Modeling dopaminergic loss in the zebrafish olfactory system"</i>	
126. Claire Noe, Van Andel Institute (Central Michigan University) Co-Authors: Alysia Kasen, Michael Henderson	Neuroscience
<i>"Characterizing the presence of granulo vacuolar degeneration bodies in Parkinson's disease"</i>	

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- 127. Laith Sawaqed, University of North Carolina-Chapel Hill** **Neuroscience**
Co-Authors: Laith E. Sawaqed¹, Caitlin J. Huguely¹, William W.Y. Lee¹, Barkha J. Yadav-Samudrala¹,
Sylvia Fitting¹
“Effects of Chronic THC injections on Spontaneous Nociception, Motor Coordination, and Anxiety Behavior in HIV-1 Tg26 Mice”
-
- 128. Marco Lopez-Vargas, Hope College** **Neuroscience**
Co-Presenters: Marco A. Lopez-Vargas
Co-Authors: Skylar DeWitt, Evan Thomas, Cassidy Larson, Luke Horsburgh, Cameron Houck, & Dr. Erika Calvo-Ochoa
“Effects of acute hypoxic exposure on the olfactory system of adult zebrafish”
-
- 129. Nivetha Pasupathy, Western Michigan University** **Neuroscience**
Co-Authors: Bonnie E. Ewendick and Dr. Christine A. Byrd-Jacobs
“Efficacy of Clodronate and Zymosan on the Microglial Cells of Zebrafish”
-
- 130. Shahriar Akhavan Tafti, Kalamazoo College** **Neuroscience**
Co-Authors: Joanna Mattis, Chandni Rana
“Elucidating the Correlation Between Pre-Ictal EEG Spikes and Calcium Dynamics in the Pedunculopontine Nucleus (PPN) Through Fiber Photometry in SCN1A Mutant Mice Subjected to Hyperthermia-Induced Seizures”
-
- 131. Mikaela Crute, Grand Valley State University** **Nursing**
Co-Authors: Dr. Elizabeth Davis, DNP, RN, CNL
“Neonatal Pain Management Practices During Circumcision”
-
- 132. Cassandra Bryant, Michigan State University** **Pharmacology**
Co-Authors: Sera Sermet, Robert B Crawford and Norbert E Kaminski
“Evaluating the gene expression of cannabinoid receptors 1 and 2 on monocytes”
-
- 133. Emma Korhorn, Ferris State University** **Pharmacology**
Co-Presenters: Gabriella Brekke, Emily Jordan, Paton Birely, Kaylin Brown, Kameron Stoddard and Patrick Maloney
Co-Authors: Ben Zalupski, Katherine Armstrong, Kaylin Brown, Hailey York, Felix Amissah and Tracey Ward
“Promising PPAR (Peroxisome Proliferator Activated Receptor) molecules as treatment for Alzheimer’s Disease and decreased neuroinflammation”
-
- 134. Ryan Tauber, Kalamazoo College** **Physics**
Co-Authors: David Wilson
“Analyzing Parvovirus with Point Arrays”
-
- 135. Allison Kaatz, Aquinas College** **Physics**
Co-Authors: Beihai Ma
“Characterization of MAX Phase Ceramic Composites by Vickers Hardness Testing”
-

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- 136. Sebastian Grabill, Calvin University** **Physics**
 Co-Authors: Dylan Mount, Dr. Loren Haarsma
“Investigating lipid – ion channel biophysics using electrophysiology and temperature control”
-
- 137. Preston Blanzzy, Kalamazoo College** **Physics**
 Co-Authors: Dr. Dave Wilson
“Predicting Ligand-Bonding Epitope Regions on a Capsid Using Point Arrays”
-
- 138. Dylan Mount, Calvin University** **Physics**
 Co-Authors: Sebastain Grabill, Loren Haarsma
“Temperature Effects on Conductivity of Phospholipid Bilayers”
-
- 139. Samantha Major, Kalamazoo College** **Physics**
 Co-Authors: Dr. David Wilson
“Spectrum Analysis of HBV Strain and Drug Bound State Variances”
-
- 140. Anna Murphy, Kalamazoo College** **Physiology**
 Co-Authors: B.E. Fyk-Kolodziej, S.W. Haidar, and P.J. Mueller
“Regulation of Blood Pressure by the Brain: Neuroplastic Effects of proBDNF”
-
- 141. Caroline De Roo, Grand Valley State University** **Physiology**
 Co-Presenters: Erin McLean
 Co-Authors: Ruijie Liu
“Determining the effect of U0126 inhibiting ERK1/2 protein in STZ-induced diabetic mice”
-
- 142. Isabella M Pellegrom, Kalamazoo College** **Physiology**
 Co-Authors: Matthew K. Armstrong, Matthew M. Howrey, Bryce N. Balmain, Andrew R. Tomlinson, Tony G. Babb, James P. MacNamara, Benjamin D. Levine, Christopher M. Hearon & Satyam Sarma, & Denis J. Wakeham
“Determinants of aortic pulse pressure changes with exercise in patients with Heart Failure with preserved Ejection Fraction”
-
- 143. Kyle Fish, Grand Valley State University** **Physiology**
 Co-Presenters: Madeline Johnson
 Co-Authors: Dr. Frank Sylvester
“Red beetroot (Beta vulgaris rubra) alters vascular reactivity in porcine renal arteries”
-
- 144. Mohamed Hossain, University of North Carolina-Chapel Hill** **Psychology**
 Co-Authors: Barkha J. Yadav-Samudrala and Sylvia Fitting
“Effects of Acute Δ9-Tetrahydrocannabinol on Object Recognition Memory in HIV-1 Tat Transgenic Mice”
-
- 145. Mariana Dykstra, Calvin University** **Chemistry**
 Co-Authors: Mark Muyskens
“The photophysical properties of fluorescent coumarins”
-

INTERNSHIP AND EMPLOYMENT RECRUITER/REPRESENTATIVE CONTACT INFORMATION

GENTEX CORPORATION

Website: <http://www.gentex.com>

Careers Website: <https://gentex.wd5.myworkdayjobs.com/Gentex>

Application Period: There are rolling job opportunities as positions become available

Gentex Corporation – Corporate Headquarters
600 North Centennial Street
Zeeland, MI 49464

Chris Pollack, Talent Acquisition Specialist

Email: hr@gentex.com | Telephone: 616-772-1800

Zach Erno, Research and Development Manager

Email: hr@gentex.com | Telephone: 616-772-1800

Kurtis Geerlings, Director of Research & Development

Email: hr@gentex.com | Telephone: 616-772-1800

Gentex Corporation recruiters / representatives will be available from 8:00 AM to 3:00 PM.



MICHIGAN STATE POLICE

Website: <https://mspjjobs.michigan.gov/>

Careers Website: <https://www.governmentjobs.com/careers/michigan/MSP>

Application Period: Continuous job openings

Michigan State Police
7150 Harris Drive
Dimondale, MI 48821

Kristin Schelling, Biology Technical Leader

Email Address: SchellingK@michigan.gov | Telephone Number: 517-202-1007

Holly McDermitt, Departmental Analyst

Email Address: McDermittH1@michigan.gov | Telephone Number: 517-643-1339

Michigan State Police recruiters / representatives will be available from 8:15 AM-3:30 PM.



VAN ANDEL INSTITUTE

Research Internship Website: <https://www.vai.org/ug-internships>

Careers Website: <https://www.vai.org/careers>

Internship Application Period: See below

2024 Summer Internship Programs

Undergraduate student application period begins December 1, 2023 and the deadline to apply is February 1, 2024

Medical student application period begins December 1, 2023 and completed applications are accepted on rolling basis until the two (2) internship positions are filled for the summer

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

Undergraduate & Internship Program Committee

Email Address: undergrad@vai.edu | Telephone Number: 616-234-5708

Van Andel Institute recruiters / representatives will be available from 8:15 AM-2:30 PM.



GRADUATE SCHOOL, MEDICAL SCHOOL AND PROFESSIONAL SCHOOL RECRUITER CONTACT INFORMATION

FERRIS STATE UNIVERSITY – COLLEGE OF PHARMACY

Website: <https://www.ferris.edu/pharmacy>

Preferred Application Deadline: October 1, 2023 | Regular Application Deadline: June 1, 2024

Application Link: <https://www.ferris.edu/pharmacy/admissions/apply.htm>

Ferris State University – College of Pharmacy

Pharmacy Building

220 Ferris Drive

Big Rapids, MI 49307

Dr. Stephen Durst, Dean-College of Pharmacy

Email Address: dursts@ferris.edu | Telephone Number: 231-591-2254

Dr. Eric Nybo, Associate Professor of Medicinal Chemistry-Pharmaceutical Science

Email Address: EricNybo@ferris.edu | Telephone Number: 231-591-2236

Ferris State University – College of Pharmacy recruiters/representatives will be available from 8:00 AM-3:30 PM.

FERRIS STATE
UNIVERSITY

COLLEGE OF PHARMACY

GRAND VALLEY STATE UNIVERSITY

Website: <https://www.gvsu.edu/psm/>

Priority Deadline: December 1, 2023

Application Link: <https://www.gvsu.edu/admissions/>

Grand Valley State University

618C LV Eberhard Center

301 Fulton Street W

Grand Rapids, MI 49504

Anirudh Chowdhary, Director of the Professional Science Master's Program

Email Address: chowdhan@gvsu.edu | Telephone Number: 616-331-6297

Grand Valley State University recruiters/representatives will be available from 8:15 AM-2:30 PM.



INDIANA UNIVERSITY SCHOOL OF MEDICINE, BIOMEDICAL GRAD PROGRAMS

Website and Application Link: <https://go.iu.edu/ApplyIBMG>

Priority Deadline: December 1, 2023 | Final Deadline: December 31, 2023

Indiana University School of Medicine

635 N. Barnhill Drive | MS 207

Indianapolis, IN 46202

Britney Hieser, Admissions Counselor

Email Address: biomed@iupui.edu | Telephone Number: 317-274-5562

Indiana University School of Medicine recruiters/representatives will be available from 8:15 AM-3:00 PM.



PURDUE UNIVERSITY – INTERDISCIPLINARY LIFE SCIENCE PROGRAM (PULSe)

Website: <https://www.purdue.edu/gradschool/pulse/>

Application Deadline: December 1, 2023

Application Link: <https://www.purdue.edu/gradschool/pulse/admission.html>

Interdisciplinary Life Science Program (PULSe)

Purdue University

155 S. Grant Street

West Lafayette, IN 47909

Lindsey Springer, Lead Graduate Program Specialist

Email Address: lbcampbe@purdue.edu | Telephone Number: 765-496-9667

Purdue University – Interdisciplinary Life Science Program recruiters/representatives will be available from 8:15 AM-3:00 PM.



UNIVERSITY OF MICHIGAN

Website: <https://ogps.med.umich.edu/pibs/>

Application Deadline: December 1, 2023

Application Link: <https://medicine.umich.edu/medschool/education/phd-programs/about-pibs>

University of Michigan
1135 Catherine Street
Ann Arbor, MI 48109

**Laura Samuelson, Graduate Enrollment Coordinator**

Email Address: lasamuel@umich.edu | Telephone Number: 734-647-7005

Patrick Shrader, Graduate Enrollment Manager

Email Address: pcshrade@umich.edu | Telephone Number: 734-647-7005

University of Michigan recruiters/representatives will be available from 8:15 AM-3:30 PM.

VAN ANDEL INSTITUTE GRADUATE SCHOOL (VAIGS)

Website: <https://www.vai.org/graduate-school>

Application Deadline: December 1, 2023

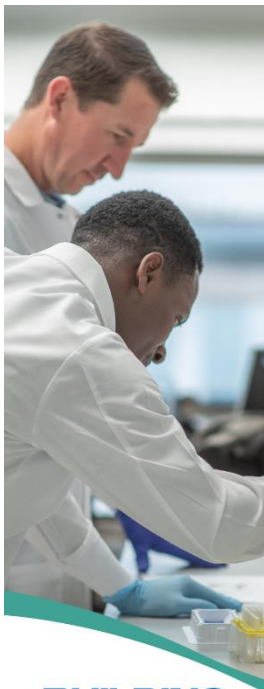
Application Link: <https://www.vai.org/graduate-school/admissions>

Van Andel Institute Graduate School
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

Van Andel Institute Graduate School recruiters/representatives will be available from 8:15 AM-3:00 PM.



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WAYNE STATE UNIVERSITY

Website and Application Link: <https://physiology.med.wayne.edu/grad-program>

Application Deadline: PhD with Fellowship Support: January 15, 2024; MS and Other: Rolling

Wayne State University
Room 5374 Scott Hall
540 E Canfield
Detroit, MI 48201

Charles Chung, Associate Professor of Physiology

Email Address: cchung@med.wayne.edu | Telephone Number: 313-577-1540

Christine Cupps, Academic Service Officer

Email Address: ccupps@med.wayne.edu | Telephone Number: 313-577-4639

Wayne State University recruiters/representatives will be available from 8:00 AM-3:30 PM.

**WESTERN MICHIGAN UNIVERSITY**

Website: <https://wmich.edu/grad>

Application Deadline: Revolving

Application Link: <https://wmich.edu/grad/apply>

Western Michigan University
1903 W. Michigan Avenue
Kalamazoo, MI 49008

Dr. Malia Roberts, Senior Director of Graduate Enrollment

Email Address: malia.roberts@wmich.edu | Telephone Number: 269-387-8212

Western Michigan University recruiters/representatives will be available from 8:30 AM-3:00 PM.



WESTERN MICHIGAN UNIVERSITY
Graduate College

WMU
Graduate College



150+ Graduate Programs
wmich.edu/grad/academics



Top 100 U.S. News & World Report
wmich.edu/about/facts#grad-top



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wmich.edu/grad/future-students



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