

Grand Valley State University

Cell and Molecular Biology

Professional Science Master's Colloquium



Date: April 28, 2023

Venue: 4402 KHS

Time	Presenter	Title	Mentor
11:15 – 12 pm	Pizza	Mingle with our Professional Science Master (PSM) students and let them tell you their experiences !	
12:00 – 12:20 pm	Elizabeth Cazallis	Variant identification by sequencing of SARS-CoV-2 spike protein receptor binding domain	Dr. Pei-Lan Tsou (GVSU)
12:20 – 12:40 pm	Javier Guillen	Effects of cerebrovascular disease on amyloid pathology in novel rat model of mixed dementia	Dr. Scott Counts (MSU)
12:40 – 1:00 pm	Jessica Ensing	In vitro biotinylation and streptavidin pull down of Fzd9b	Dr. Stephanie Grainger (VAI)
1:00 – 1:20 pm	Bhavna Dixit	Technical analysis of factors influencing small airways in the pathogenesis of pulmonary cystic fibrosis	Dr. Xiaopeng Li (MSU)
1:30 – 1:50 pm	Kaje'ne Thompson	Assessing terazosin neuroprotection in the preformed fibril model of Parkinson's disease	Dr. Joseph Patterson (MSU)
1:50 – 2:10 pm	Dahlya Kamarudin	Western blot: theory, technique, and trouble shooting on the road to detect alpha-synuclein	Dr. Sok Kean Khoo (GVSU)
2:10 – 2:30 pm	Taylor Segorski	Pepper mild mottle virus as a monitoring tool in wastewater-based epidemiology	Dr. Sheila Blackman (GVSU)
2:30 – 2:50 pm	Mary Gifford	A characterization of the complement response to alpha-synuclein preformed fibril induced synucleinopathy	Dr. Matthew Benskey (MSU)
2:50 – 3:10 pm	Cameron Lee	Lipid starvation induces ferroptosis sensitivity	Dr. Evan Lien (VAI)

Elizabeth Cazallis



I grew up in Hartland, Michigan, and recently moved to Kalamazoo, Michigan. In 2019, I pursued a bachelor's degree in Cell and Molecular Biology at GVSU. In this program, I worked on a research project investigating the underlying mechanisms behind tip growth in plants. I fell in love with the molecular aspects of biology and was accepted into the combined Cell and Molecular Biology bachelor's/master's program. Shortly after joining this program, I started my internship at the Molecular Monitoring for Environment and Health Lab at GVSU with Dr. Pei-Lan Tsou, Dr. Sheila Blackman, and Dr. Puneet Chowdhary. As of August of 2022, I have been working on developing a standard operating procedure for amplifying the spike protein receptor binding domain of SARS-CoV-2 from wastewater RNA extracts for sequencing as well as analyzing returned sequences for variant identification. My experience and skills I have learned at this internship has made me a desirable molecular biologist; I recently accepted a parasitology scientist role at Eurofins Lancaster Laboratories, where we will be developing veterinary pharmaceuticals for parasite prevention.

Javier Guillen



Originally from Warner Robins, Georgia, I am an upcoming graduate of the CMB-PSM program at Grand Valley State University. Prior to attending GVSU, I completed a Bachelor of Science in Biology at Fort Valley State University, a Historically Black College and University (HBCU) located in the heart of Georgia. My interest in both research and industry has led me to opportunities with Michigan State University, Van Andel Institute, and Grand River Aseptic Manufacturing, where I am currently employed full-time. My internship with Michigan State University was in the Department of Translational Neuroscience under the guidance of Dr. Scott Counts and John Beck. The internship provided me with invaluable lab experience and allowed for the development of techniques such as immunohistochemistry, HALO, and AxioScan. Stepping into my personal life, I enjoy spending my time with my two-year-old cat, Luna. I also enjoy getting active in sports and physical activity. As I prepare to graduate, I will be the first student to do so in the HBCU/HSI Consortium at Grand Valley State University. As it stands, my future plans are to continue working at Grand River Aseptic Manufacturing. However, I am giving some thought in pursuing an MD/PhD in the coming years.

Jessica Ensing



In the spring of 2021, I graduated from Grand Valley State University with a Bachelor of Science in biology with a minor in cell and molecular biology. I knew I wanted to continue my education in order to be a part of the biomedical research community, so I joined the professional science master's program in cell and molecular biology in the fall of 2021. I completed my internship for the program at the Van Andel Research Institute in Grand Rapids, MI in the Grainger Lab. The Grainger Lab investigates Wnt signaling and its effect on hematopoietic stem cell development and cancer. Specifically, I investigated the signal specificity between Wnt9a and Fzd9b. After completion of the internship, I was offered a full-time position with the Grainger Lab. Since then, I have become the lab manager of the Grainger Lab. Following graduation, I intend to remain with the Grainger Lab at the Van Andel Research Institute and continue to investigate how post translational modifications of Fzd9b affect Wnt9a signaling specificity.

Bhavna Dixit



I am from the Northern part of India and moved to US in 2012 for my husband's job in the IT field. We have two beautiful daughters. My bachelor's degree in Ayurvedic medicine is a holistic way of treating patients physically, mentally, and spiritually. With my desire to learn more about life sciences and research, I decided to major in cell and molecular biology at GVSU. My internship was with Dr. Xiaopeng Li in the Department of Pediatrics and Human Development, MSU, who focuses on cystic fibrosis pathogenesis caused by defects in the cystic fibrosis transmembrane conductance regulator (CFTR). In the lab, I performed techniques to analyze different factors affecting the proliferation of epithelial layer, role of different genes like CFTR, SMA, β -Actin or Piezo1 gene, and CRE system to investigate their role in cystic fibrosis. During my internship, I had the opportunity to perform different cell and molecular biology techniques like western blot, RNA extraction, qPCR, immunohistochemistry, and cell culture. This internship has provided confidence for me to work in a new working environment, besides invaluable technical and soft skills. It was a great resume builder and gave me a competitive edge to get a job. I have accepted a position as a Research Assistant at Dr. Li's lab and will continue working on his project to explore and gain more knowledge on cystic fibrosis.

Kaje'ne Thompson



I was born and raised in the metro Detroit area and surrounding cities of Michigan. I always had a fascination with human biology and general sciences. Growing up I aspired to become a doctor, I've looked up to my mother and grams who have been hard working nurses that were patient and compassionate not only to our family but their patients. I attended Michigan State University in 2016 to find out what I was passionate about in science and how I could help others without becoming a doctor. One of my older sisters was diagnosis with multiple sclerosis at this time. I had little understanding of autoimmune disorders and wanted to get an understanding of how these disorders manifest as I too, suffered from unexplainable pains and symptoms periodically. My personal drive to be more knowledgeable led me to continue my education at Grand Valley State University. Shortly after joining the PSM program I started my internship at the MSU Grand Rapids Research Center where I aided in Parkinson disease research. I worked on assessing the efficacy of terazosin as a neuroprotective drug in rat models which I will be published as co-author. I have learned many techniques and lessons through my internship experience. My goal is to continue to learn and work on research for potential treatments in medicine or therapeutics.

Dahlya Kamarudin



I am an international student from Malaysia, but Michigan has been my home away from home for the past 8 years. I obtained my bachelor's degree in Biomedical Science at WMU, where all my family members graduated from, "Go Broncos". As a kid, I was frequently checked into the hospital for asthma attacks; this led to my strong desire to attend medical school and specialize in pediatrics. However, when Covid hit right after my graduation, everything changed. I continued teaching at a spectacular Preschool in Kalamazoo, then moved to Grand Rapids to pursue a PSM degree in cellular and molecular biology at Grand Valley. The program was new to me, and I struggled to adapt initially. After my first semester, everything started to make sense. I started working with Professor Wallsteadt as a teaching assistant, supporting CMB classes for Early College students by mentoring and tutoring ~40 high school students in their research labs and classes. A year later, I became a graduate assistant in that same lab. In my final year, I was fortunate to secure an internship in Dr. Khoo's lab. I have been working on a project studying the effect of alpha-synuclein-related microRNA mimics on alpha-synuclein protein expression in Parkinson-like neuronal cells, where I run many Western blots to detect protein expression. I gained tremendous experience and skills during this internship that helped me secure a job at the Van Andel Research Institute, which I am excited to start this summer. I also wish to pursue my PhD in the near future.

Taylor Segorski



I am originally from Escanaba, Michigan - a town in Michigan's Upper Peninsula. I received my undergraduate degree here at Grand Valley State University in Biomedical Sciences. I also played for the GVSU softball team for 4 years during my undergrad. In my free time, I love to coach softball, and I am currently the assistant varsity coach at Lowell High School. I also have three dogs- Lumos, Roma, and Bella, that I spend most of my time outside of school and work with! Shortly after beginning the Professional Science Masters program, I began working for the Molecular Monitoring lab at GVSU, where we monitor the spread of SARS-CoV-2 through wastewater samples throughout Kent County. I was also given a GA position to help out in the CMB 156 classroom- a class centered around giving undergraduate students research experience studying regeneration. I later took an internship position in the Molecular Monitoring lab, allowing me to focus on expanding the PMMoV research and data we had begun collecting over the past year. Following graduation, I will continue my work with the Molecular Monitoring lab while also continuing my coaching career!

Mary Gifford



I am originally from Indianapolis, IN, and attended Indiana University where I received bachelor's degrees in Biology and English Literature. I worked for several years as a research technician in pediatric hematology/oncology where my focus became studying innate immunity and inflammation in the context of dysfunctional NADPH oxidase production. I took a break from the lab to pursue several projects with my husband. We owned record stores, had a 40-acre hobby farm, did some tutoring, and raised three pretty amazing humans. To return to lab work, I am pursuing a Professional Science Master's in Cell and Molecular Biology at GVSU. I completed my internship at Translational Neuroscience at Michigan State University Grand Rapids Research Center with Dr Matthew Benskey, whose focus is on the role of neuro-immune interactions and neuroinflammation in the development of Alzheimer's Disease and Parkinson's Disease. The internship helped me develop proficiency with molecular techniques for evaluating gene expression, and histologic and immunofluorescence techniques. Upon graduation, I plan to continue working as a research technician in translational neuroscience at MSU.

Cameron Lee



I am a graduating student of the CMB PSM program here at GVSU. I did my undergrad in biochemistry at Central Michigan University and currently work as a Research Technician in two different labs at Van Andel Institute. My project was my introduction to cancer metabolism and explored how exogenous lipid content affects cancer cell susceptibility to death by ferroptosis. I plan to enroll in Van Andel Institute's graduate school at the end of this year and obtain my PhD in Molecular Biology, with a focus on cancer metabolism.

We would like to thank all supervisors/mentors from our internship sites for providing invaluable internship experience to our PSM students to enhance their professional development. We would also like to thank GVSU College of Liberal Arts and Sciences, the Graduate School, Center for Scholarly and Creative Excellence, and Professional Science Master's Program for their continuing support.

