
New Faculty Join the Biomedical Sciences Department for 2016-17

Three new tenure track faculty joined the Biomedical Sciences Department this fall.

Ian Cleary, *Assistant Professor of Biomedical Sciences (Microbiology)*
Ph.D. in Molecular Biology and Genetics, University of Alberta, 2006
B.S. in Genetics, University of Alberta, 2000

Prior to GVSU, [Dr. Ian Cleary](#) was an Assistant Professor at the University of Tennessee at Martin and was a postdoctoral fellow at the University of Texas at San Antonio. His overall areas of research interest are medical mycology and molecular biology. His training and research experience includes work with different eukaryotic microbes, and focuses on combining molecular techniques with model systems to study genetic mechanisms governing the yeast to hypha transition in the opportunistic fungal pathogen, *Candida albicans*. Ian has published in well-respected journals that include Genetics, Microbiology, Molecular Microbiology. He has previously taught Introductory Cell Biology and Genetics, Introductory Bacteriology, Medical Mycology, and Molecular Microbiology.



Kathryn Haley, *Assistant Professor of Biomedical Sciences (Microbiology)*
Ph.D. in Microbiology and Immunology, Vanderbilt University School of Medicine, TN 2013
B.S. in Biological Sciences, Edinboro University of Pennsylvania, PA, 2004

[Dr. Kate Haley](#) comes to GVSU from Vanderbilt University where she was a postdoctoral research fellow working on *Helicobacter pylori* infections. Specifically, she has been researching how micronutrients influence the biogenesis of flagella and cag T4SS pili in *Helicobacter pylori*. Her other research focus at Vanderbilt was studying the intracellular degradation of heme by *Staphylococcus aureus*. Kate also performed research at Case Western Reserve University prior to her work at Vanderbilt University. She has previously published her work in Frontiers in Microbiology, Journal of Bacteriology, and Infection and Immunology to name a couple. Kathryn has prior teaching experience in Microbiology and Immunology at Belmont University, and Microbiology and Biology at Nashville State Community College.



Ruijie Liu, *Assistant Professor of Biomedical Sciences (Anatomy and Physiology)*
Ph.D. in Physiology, University of Illinois at Urbana Champaign, IL, 2011
M.S. in Microbiology, Wuhan University, China, 2004
B.S. in Biological Sciences, Qufu Normal University, China, 2001

Dr. Ruijie Liu arrives at GVSU from the Cincinnati Children's Hospital Medical Center, where he was a research fellow in the Howard Hughes Medical Institute at the Medical Center. Ruijie has excelled as a researcher in the field of molecular and cellular cardiology focusing on the molecular signaling mechanisms in heart failure. He has made a number of significant contributions that have been published in first-rate peer-reviewed journals, including *Nature*, *J Biological Chemistry*, *PLOS One*, and *J Molecular and Cellular Cardiology* to name a few. He has been funded by the National Institutes of Health for his work at Cincinnati Children's Hospital. And he has previous teaching experience in Human Anatomy and Physiology, Microbiology, Molecular Biology, and Cell Biology with Miami University, OH and the University of Illinois.



In addition to the three new tenure track faculty joining the BMS Department, we are also fortunate to welcome five new visiting faculty members for this academic year that are primarily teaching anatomy and physiology courses.

Professor Jennifer Bourbina received her M.H.S. degree from the Biomedical Sciences Department at Grand Valley State University. Jenn's **research** was in the area of neurogenesis. Prior to returning to GVSU she had been teaching biology as well as anatomy and physiology at Grand Rapids Community College.

Dr. Ying Chen earned her Ph.D. in Pediatrics from Shanghai Second Medical University. Ying also has a M.S degree in Pediatrics from Shanghai Second Medical University. Prior to GVSU she was a research assistant professor at Michigan State University in the Department of Obstetrics, Gynecology and Reproductive Biology. She was also an adjunct professor at Ferris State University and taught Diagnostic Microbiology.

Professor Michael Clarke earned his M.S. degree from Western Michigan University in Biological Sciences. His thesis work was in the area or reproductive endocrinology. Michael has prior teaching experience as an adjunct professor at Kalamazoo Valley Community College and Kellogg Community College where he taught Anatomy and Physiology as well as Human Anatomy.

Dr. Santanu De earned his Ph.D. in Physiology from Kent State University. Prior to joining the BMS Department he was a postdoctoral fellow with both Purdue University and Yale-NUS College. Santanu also has a M.S. degree from the University of Calcutta in Biophysics, Molecular Biology and Genetics. Much of his research has been in the area of embryonic

development. He was also an adjunct instructor at Kent State where he taught Human Physiology.

[Dr. Ashley Hannah Sanderlin](#) earned her Ph.D. from Michigan State University in Neuroscience. For her research, she has been working in the area of neurological diseases that cause cognitive impairments, such as Alzheimer's disease. At GVSU she will primarily be teaching anatomy and physiology.

Science on Tap

[From the Lanthorn on 9/16](#)



Put together beer and science and what do you get? Either a hangover or a newfound interest in primate sex. [Cynthia Thompson](#), an assistant professor in the Biomedical Sciences (BMS) Department at Grand Valley State University, led a presentation entitled

“Monkey Sex: Who’s Doing It and Why” Thursday, Sept. 8 as part of the GVSU-sponsored “[Science on Tap](#)” series.

“The laid back and casual atmosphere is part of the community-based initiative to where you (make it) fun for people,” Thompson said. “Other than seeming like work or the arduous task of going to class, then more people are likely to partake and enjoy.” Open to the greater Grand Rapids community, the Science on Tap series is on the second Thursday of every month at 8 p.m. at the SpeakEZ Lounge in downtown Grand Rapids. A knowledgeable expert hosts a discussion about current scientific topic—such as Ebola virology, the measuring of humor, mating habits in the animal kingdom, or how to make beer—in order to create an informal setting for individuals to indulge their academic interests.

“It was sort of like teaching an undergraduate class except maybe a little bit funnier in terms of sneaking in a bit more jokes,” Thompson said. “It was basically about not hardcore research, but about basic understandings of how things happen in the wild and how they operate while people drink around you.”

[Laura Stroik](#), an assistant professor in the BMS department at GVSU and the co-organizer of the Science on Tap series, said having a mixture of the Western Michigan community attend the series reinforces the goal of bringing science to a more approachable forum. Primarily, she said, the BMS Department wants to create a forum where different types of research or theories can be discussed by anyone who wants to share their ideas. “Science here doesn’t necessarily mean hard science,” Stroik said. “It really is science in a looser science in terms of the topics that we discuss.”

[Melissa Tallman](#), an assistant professor in the BMS Department at GVSU and the other co-organizer of Science on Tap, said the next event in the series is “Empathy: What is it Good For?” Hosted by Heather Tafel, an associate professor of political science at GVSU, the Oct. 13 event is a way to discuss the disintegration of empathy, how it has contributed to political problems in many countries, and to note if the U.S. is immune to such problems. The discussion will be held at 8 p.m. in the SpeakEZ Lounge. The event, she also said, is the way to showcase how hard political and social scientists work in collecting data and doing hard analyses. “It seemed topical to have something more like a political science person talk since the elections are coming up,” Tallman said. “It’s not going to be a partisan talk, it’s really more of the process and the way people think and the way they vote.”

As the series continues throughout the academic year, the series lecturers will aim to contribute to a more informed community within Grand Rapids. “The kind of variety that Science on Tap’s had is one of its strong suits because it’s not like you’re walking into a lecture hall or seeing a professor on a Grand Valley campus to talk,” Stroik said. “It is starting to become a community event.”

The next Science on Tap on 11/10 will be with [Dan Bergman](#), associate professor and chair of BMS. His doctorate is in Neuroscience from Bowling Green State University and was a postdoctoral researcher at the University of Kentucky. His research is focused on sensory physiology and disorders and has been funded by the National Institutes of Health and the National Science Foundation.

Our sensory systems give us great insight into the world by acquiring stimuli and allowing our brains to synthesize the information into sensations and perceptions. Yet we know there is an immense amount of variability in normal functioning senses, to the point that our perceptions of the external world can be quite different from others’. In addition, differences and changes in our senses over time can be used to diagnose and even potentially treat or prevent various neurological disorders. In this Science on Tap, Dr. Bergman will explain how the senses work and conduct a variety of interactive demonstrations to reveal how each of our senses individually differ and what those differences mean.

Two BMS Graduate Students Receive Presidential Research Grants

BMS Graduate students **Brian Cutler** and **Samantha MacKay** both earned Presidential Research Grants for their proposed research studies in 2016. Both students presented their proposals at the [BMS Seminar Series](#) this fall semester.

Brian Cutler’s proposal was entitled *Effects of Aging and Dietary Phytoestrogens on Sperm Production in Sprague Dawley Rats*, and he is working in the lab of [Dr. Chris Pearl](#).

Samantha MacKay's proposal was entitled *Chronic Effects of Nonylphenol on Reproductive Behavior, Physiology, and Development of Crayfish*, and she is working in the lab of [Dr. Dan Bergman](#).

2016 Student Summer Scholars

In 2016, five BMS undergraduate students were funded as part of the Student Summer Scholars (S3) program at GVSU. S3 program provides funds for a student and faculty mentor to devote about twelve weeks/400 hours to a research and/or creative project during the spring/summer semester. Through these grants and the mentorship of a faculty member, S3 program offers a unique opportunity for undergraduate students to do hands-on, professional research and creative practice in their chosen field. Combining academics, field work, and a reflection component provides students with a meaningful learning experience that helps to prepare them for graduate school and future careers.

With guidance from faculty mentors, students identify a research question or an area of creative practice and shape the structure of their project.



The value of mentorship is an important part of S3. Experienced faculty mentors act as support and sounding board for their students. University-funded stipends cover materials and travel expenses, allowing participants to fully immerse themselves in the new learning environment.

BMS Awardees:

[Daniel Beachnau, S3](#)

Regional localization of gut-specific histamine and effect of histamine on gut pH in Drosophila larvae

Faculty Mentor: [Martin Burg](#)

[Allison Hoppe, MS3](#)

Investigating a novel type of protein degradation

Faculty Mentor: [Derek Thomas](#)

[Jenna Koelsch, MS3](#)

If we are what we eat, does the nutritional supplement DHA affect the ability of the brain to make neurons?

Faculty Mentor: [Merritt Taylor](#)

[Kelsey Rogers, MS3](#)

Fatty acid receptor 4 reduces endothelial cell CX43 expression

Faculty Mentor: [David Kurjiaka](#)

[Eric Sheffield, S3](#)

Variation in thickness and density of human cranial dura mater using computerized tomography

Faculty Mentor: [Chris Reed](#)

BMS Distinguished Alumna in Residence

As part of the 2016 [College of Liberal Arts in Sciences Alumni-in-Residence](#) program, the Biomedical Sciences Department recently featured alumna **Dr. Ebony Parker Featherstone** for the event. The CLAS Distinguished Alumni-in-Residence Program provides a venue for departments to invite outstanding alumni of their undergraduate programs back to campus to share their post-graduation experiences with the GVSU community. Through the program, our distinguished alumni have the opportunity to share their insights about what constitutes strong academic preparation for students.

Dr. Ebony Parker-Featherstone is a 2002 graduate of the Grand Valley State University where she earned a B.S. and cum laude honors. She went on to earn her medical degree from the University of Michigan Medical School in 2006, and she completed her residency training with the Department of Family Medicine at the University of Michigan Health System in 2009. Ebony completed a women's health fellowship with the University of Michigan, Department of Obstetrics in 2010. Her research interests are in adolescent health and family planning, and she has published multiple research papers in this area. Ebony is the current medical director at Briarwood Family Medicine, where she provides the full spectrum of family medicine including prenatal and obstetric care. She also has joint appointments with the Department of Family Medicine and the Department of Obstetrics and Gynecology at the University of Michigan as a clinical assistant professor. She now lives in Ann Arbor with her husband, Freddie Featherstone (GVSU class of 2001), and their two children Aiden and Addisyn.



From L to R – Steve Hecht, Dan Bergman, Ebony Parker-Featherstone, Tim Strickler

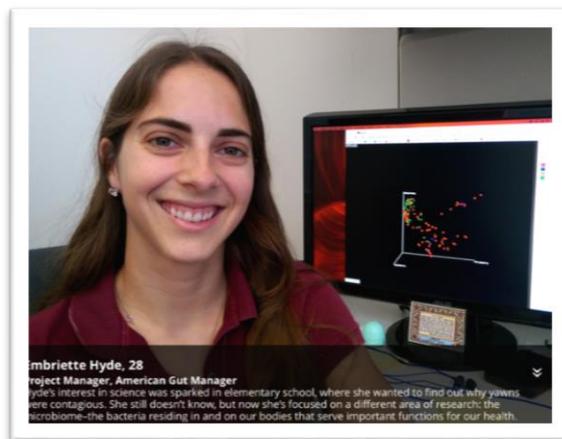
BMS Alumna Research Featured by the Smithsonian Magazine and Forbes

Dr. Embriette Hyde is a Biomedical Sciences alumnus that earned her Ph.D. from the Integrative Molecular and Biomedical Sciences Graduate Program at Baylor College of

Medicine, Houston, TX. Embriette is currently an Assistant Project Scientist at the University of California at San Diego. She was featured on the 2016 Forbes **30 under 30** in the Health and Science category. Forbes 30 Under 30 is a set of lists issued annually by *Forbes* magazine and the 2016 lists recognize 30 young business and/or industry figures in twenty different industries each.

In the article on Smithsonian.com, Embriette's recent research work on Komodo dragons is featured. It is noted from the work that Komodos could be the perfect model for studying host-microbe interactions. "This study reflects a growing trend of trying to connect the microbiomes on various plants and animals to the microbiomes of the human built environments in which these organisms reside," says Jonathan Eisen, a biology professor at the University of California at Davis who was not involved in the new research. "We need to start to study this in more detail in order to better understand how to optimize the built environment to promote the health of residents—whether human, other animals, plant, or other."

On her website, Dr. Hyde states, "When I was in elementary school growing up in small town Wayland, Michigan, I decided to obtain my Ph.D. so that I could study and figure out why yawns are contagious. While I did eventually get that Ph.D., I still don't know why yawns are contagious! By the time I started my undergraduate degree at Grand Valley State University (GVSU) in Allendale, Michigan, I had decided that I wanted to work as a geneticist, possibly a genetics counselor. I took classes during the summer semester so that I could learn all that I could about the field. Having a passion for traveling and for the Spanish language, I decided to double major in Biomedical Sciences and Spanish. I studied abroad in Spain during my third year of undergrad, pushing back a number of classes for my science curriculum while fulfilling the curriculum for my Bachelor of Arts degree.



Upon returning to the United States, I reached out to a GVSU professor—[Dr. Martin Burg](#)—doing genetics work with fruit flies. We wrote a proposal together and I clinched a summer fund through the GVSU [Student Summer Scholars Program](#) for doing research in his laboratory. I continued working in the Burg lab until I graduated. Nevertheless, it was during a basic microbiology course that was a requirement for the Biomedical Science degree—which I had pushed back due to my year abroad—that I fell in love with microbiology and my career goals took a sharp turn. I decided to obtain the microbiology emphasis option on my degree, and graduated with the goal to combine my love for genetics and newfound passion for microbiology while pursuing my doctorate degree at Baylor College of Medicine (BCM) in Houston, Texas.

It was at BCM where I first learned about the microbiome—the entirety of microbes (and their gene products) that live in and on the human body. I learned how to characterize microbial communities through marker gene sequencing, and began to see human diseases as a complex interplay between several factors—both genetic and environmental—rather than as a consequence of a single gene mutation or anomaly, as I had learned to think. I joined the laboratory of Dr. Joseph Petrosino, director of the Alkek Center for Metagenomics and Microbiome research, where I learned to use state of the art software tools developed by the Rob Knight and Curtis Huttenhower laboratories to analyze microbial communities. I worked with a variety of sample types—from stool to oral to skin of cadavers—thus becoming a well-rounded microbiome researcher with experience across a large variety of sample types. I obtained my PhD on the human microbiome in less than four years and joined the lab of one of the elite microbiome researchers in the world, Dr. Rob Knight. It was in his lab where I began to really study the intricate ways the microbiome can affect our health, and what it means to be human. I became especially interested in how our western lifestyles have affected our microbial exposures, and in turn, our health.

After nearly a year and a half as a postdoctoral researcher in Rob Knight’s lab, I took my career to the next level by accepting the role of Project Manager for the American Gut project, the largest crowd sourced citizen science project in existence. With this job role I can continually exercise my obsession with organization to help the project be as successful as it possibly can, and, importantly, I can not only further microbiome research, but I can bring science to the public while doing so, facilitating a general appreciation for science. What is even more exciting about my job is that the science I help see through has an incredibly personal effect on many people, and has the potential to change the world of medicine in the very near future. Evidence of the fact that microbiome research—and how it may affect health and medicine—is growing in reach is my recent selection as one of *Forbes* magazine's 30 Under 30 in Science, an honor that should bring recognition to and appreciation for American Gut—not to me.

New Plastination Lab!

In the picture on the right, student dissectors are busy at work in the new Plastination Lab in Padnos Hall. This newly renovated space provides much more room for dissecting and processing specimens. The quality of the final product depends first on excellent dissections requiring many hours of careful and sometimes tedious work. There are currently five undergraduates and one Graduate Assistant engaged in dissection of a variety of specimens. For more information on the Plastination Lab, please contact [Dr. Tim Strickler](#).



Laker Effect – Justin Tarahomi

Justin Tarahomi is a BMS Alumnus, former member of the [Crayfish Neuroscience Lab](#) with [Dr. Bergman](#), and former president of the pre-medical club at GVSU. He was recently featured as a student that has made a “Laker Effect” while at GVSU.



What is the Laker Effect? Playing off the familiar meteorological term "Lake Effect," Grand Valley launched the Laker Effect campaign in February 2016 to showcase the collective impact of the Grand Valley community. The Laker Effect is the collective impact of the Grand Valley community on individual students, West Michigan, our state, and beyond. The Laker Effect is a force for positive change.

Lakers are driven by our passion for learning and using that knowledge for the common good. We make a difference by focusing on others and making lasting contributions. The Laker Effect sets us apart as leaders, problem solvers, entrepreneurs, and advocates that help shape the future.

BMS Scholarship Awardees



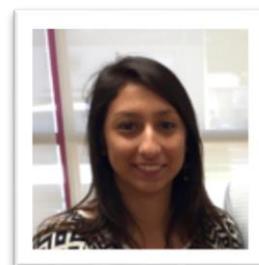
The awardees for this year's [Duke Tanaka Jr Anatomy Scholarship](#) in **Biomedical Sciences** are **Samantha Powers** (pictured on the left with Dr. Stickler and Barbara Tanaka and below) and **John Grofvert** (pictured below). The scholarship was established by [Dr. Tim Stickler](#), professor of **Biomedical Sciences**, in the hope that students will share in the passion of anatomy and **biomedical sciences** as Duke Tanaka Jr demonstrated.

Duke Tanaka was a classmate of Dr. Strickler's in graduate school and taught anatomy at the College of Veterinary Medicine at Michigan State University. The scholarship benefits outstanding students who have taken comparative or human anatomy.



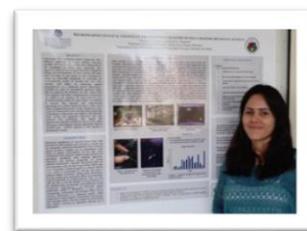
National Sciences Foundation – Research Experiences for Undergraduates

As part of an NSF-REU program in 2016 at the Annis Water Resource Institute, [Dr. Dan Bergman](#) worked with **Kathy Bonilla** from East Carolina University. The main goals of the program are to give students a solid research experience, provide them with a set of quantitative skills that are valuable in research, and encourage them to think about the possibility of pursuing graduate degrees in science—and to have some fun in the process. As part of the program, Kathy spent 10 weeks of the summer in at Grand Valley State University conducting research on the chemical communication system of crayfish.



In Kathy's work, she used a solution of 0.1% sodium fluorescein that was dissolved in dechlorinated water or crayfish saline and injected at a dose of 0.01 ml/g of body mass into the pericardial region of the crayfish. To inject crayfish, she used 1-ml syringe with a 26.5-gauge needle to inject the fluorescein solution at the second dorsal curvature. The goal of her research was to visualize the urine release from a diurnal species of crayfish to see if it communicated differently from a nocturnal species of crayfish.

Last year's participant in the NSF-REU was **Naymar Franqui-Diaz** from the University of Puerto Rico. In Naymar's work she studied adrenergic and cholinergic-related compounds to examine how the compounds influence aggression in various animals, including crayfish.



Update: The History of Biomedical Sciences at Grand Valley

Professor Shel Kopperl continues his work on the History of Biomedical Sciences, formerly “**Health Science**”. He asks that anyone that would be willing to share anyone memories (both good and not so good) to do so either by email at kopperls@gvsu.edu or by writing to him care of the **BMS Department**. Thank you in advance for your assistance. It is his goal to make the work available to the wider public via Scholar Works, an open website administered by members of our library staff.

BMS Faculty Spotlight: Ian Cleary

“Be open to exploring different career paths as you gain experience and are exposed to new ideas, interests and opportunities,” is Professor [Ian Cleary](#)’s advice to GVSU students both in the Biomedical Sciences major and beyond. A recent addition to the BMS Department, Cleary received a B.S. and a Ph.D. in Molecular Biology and Genetics, both from the University of Alberta.

His main research focus is on the regulation of the morphological transition in the opportunistic fungal pathogen *Candida albicans*. While he’s still establishing his research at GVSU, he’s enjoyed working with research students in the past on various research projects and conference presentation, and he’s looking forward to having similar experiences here in the GVSU BMS Department.



When he isn’t researching or working within the department, Cleary enjoys exploring Grand Rapids and becoming more familiar with the GR area.

Grand Forum – Pain “in” the Brain

In October, [Dr. Dan Bergman](#) presented at the Grand Forum in downtown Grand Rapids. He presented a seminar entitled “Pain ‘in’ the Brain.” In the presentation, Dr. Bergman talked about how pain being a very subjective/personal experience. Yet we all universally recognize painful stimuli. Pain tells us a lot about the external environment and our internal state, and we use this information to inform us as to what types of activities or substances we should avoid. In this talk Dr. Bergman discussed the topic of nociception (sense of pain), the neuroscience of pain, as well as the assessment and treatment of pain.



Grand Forum is an educational outreach program for adults 55 and older. Grand Forum provides the opportunity for individuals of diverse backgrounds to meet in an academic setting for the purpose of intellectual stimulation and social exchange. Led by university faculty and administrators, community leaders, Grand Forum members, independent scholars and local professionals, topics are offered in such fields as the arts, business, current events, history and science. Through

presentations and discussions, held both on and off campus, Grand Forum provides a broad spectrum of stimulating programs in a setting that encourages lively discussion. An interest in learning is an essential part of membership.

If you have any questions about Grand Forum, or are interested in joining, please email Judy Palmer or call the office at (616) 331-6615.

Former and Current Student News

- **Alyssa Kulesza** (left, BMS Graduate of Distinction 2016) and **Stephany Zahl** (right, BMS Graduate of Distinction 2015), pictured with [Dr. Shel Kopperl](#), receive their white coats at the Michigan State University College of Human Medicine's ceremony. Dr. Kopperl said, "these are two of the University's, BMS's, and Meijer Honors College's best and brightest on their way to an exciting career in medicine."
- **Josh Berwanger**, BMS and Biochemistry double major and former member of the [Bergman lab](#), was accepted to the Biochemistry Ph.D. program at the University of Notre Dame.
- **Andrea Nicholson**, BMS alumna, recently graduated from the Ohio University College of Osteopathic Medicine.
- **Cody Ciaramitaro**, BMS Graduate of Distinction in 2015 and former member of the [Sylvester lab](#), was accepted into the Central Michigan University College of Medicine.
- **Christine Klingert**, was accepted into Wayne State University School of Medicine.
- **Clare Carlson**, BMS major, was named to the CoSIDA Academic All-District team. Clare is a recipient of the honor for the second straight year. She is a current member of the women's soccer team at GVSU.



Interesting and Significant Items to Share

The [BMS Department](#) would love to hear what you have been doing since leaving **Grand Valley** (i.e. internships, professional school matriculation, employment, etc...). Please send us your news, announcements, and photos to biomeddept@gvsu.edu or share on social media at our [Facebook](#), [Twitter](#) or [LinkedIn](#) pages. You can also send [Dr. Dan Bergman](#), Chair and Associate Professor, a message at bergmand@gvsu.edu.