

DePaul Biological Sciences

# NICHE ALUMNI NEWSLETTER

## FROM THE DESK OF THE CHAIRS

### THOUGHTS ON THIRTY-ONE YEARS AT DEPAUL

Early in my teaching career at DePaul, I remember a college-wide faculty meeting where retiring faculty members were called upon to say a few words. The first person remarked that, "it was the students who made it all worthwhile." Each subsequent retiring faculty member warmly echoed that sentiment. As an inexperienced teacher, I was not "feeling the love" from my students. Being assigned to teach biology to non-majors, fresh from a three year stint as a post-doctoral researcher, was not a happy fit. But I came to appreciate teaching non-majors for several reasons. In trying to provide a broad introduction to biology I got to talk about aspects of biology that I loved outside my specific area of research. I also found that it made me a better teacher to biology majors. Turns out, the context that non-majors demanded was also appreciated by biology majors.

Learning to mentor undergraduate and graduate students on research projects was also a steep learning curve. One lesson I had to learn over and over, was that each mentor/mentee relationship was unique, but if properly forged, it was mutually rewarding professionally and personally. I have watched with pride as my students have matured into my colleagues.

My time as an Associate Dean in the first years of the new College of Science and Health and, more recently, as Biology Chair has caused me to reflect on the challenges facing higher education and particularly science education. All the current research points to the importance of active learning practices which shift the focus from the "teacher expert" to the student learner. Additionally, we must focus on teaching the process of science and less on transmitting facts. I know that the current Biology Chair, Dr. Timothy Sparkes, is committed to exploring and supporting faculty efforts to incorporate active learning methods and to increasing opportunities for students to be involved in authentic research experiences.

As Biology Chair, I have read every student evaluation of every biology faculty member for the last 4 years. And though these are not the only measure of teaching quality, I have been in awe of the level of faculty dedication that these evaluations demonstrate. This was especially true through the challenges of the pandemic.

I will take a moment to claim credit for hiring the most amazing Administrative Assistant, Damien Rodriguez, and equally amazing Academic Advisor, Jaimie Engle. They are so good in these critically important roles, they make it look easy. I hope that we remember not to take them for granted. I also hired Dr. Tim Sosa, a talented and versatile teacher who contributes to the department on so many levels.

Thirty-one years of teaching college students has not kept me young, but it has been a singular privilege to, year after year, get to interact with bright, smart, motivated young people who are striving to make the world a better place. It is up to us to support them, encourage them, and help them to believe in themselves. Yep, it's the students who have made my 31 years at DePaul worthwhile!

**MARGARET SILLIKER**

Professor Emerita (retired July 1, 2021)



**"Yep, it's the students who have made my 31 years at DePaul worthwhile!"**

## LOOKING FORWARD AND REFLECTING ON WHERE WE HAVE BEEN

As a child, I loved nature and could think of no better way to spend my time than learning about how it all worked. From fishing with my brother (I am the short one in the retro t-shirt that wasn't retro at the time), to flipping rocks at the beach, I could not get enough. Of course, I had no idea what a life studying nature actually meant and even less idea how to make that happen. Decades later, I am the new Chair of Biology and excited to bring my experiences to the position. The journey has not been easy, as is often the case in science, but it has been incredibly rewarding so far and can only get better in the future. I look forward to meeting and working with you all as we come together to build a new normal in both our personal and professional lives. Below, I highlight some of the areas of development for our program that I am confident will enhance the quality of the academic experience for all of our students. Before making that transition, I have also paused a little to consider the positives that emerged during the last year or so. There are many but two that have stood out to me have been the importance of friends and family and thinking deeply about what we are doing each day and why we are doing it. It is clear now, maybe more than ever, that we all need each other and that we want to spend our time doing things we enjoy whenever we can. As Chair, I plan to foster a culture of inclusion, connection and understanding so that every student can achieve their personal and professional goals and feel supported on that journey.

We have several new initiatives in development for our students, which will provide more options for career development, courses and programs, and opportunities to engage in supported research experiences. The research experiences in particular are an area of interest for us since it is widely recognized that they play critical roles in student development, connection and success. In the past, we have typically offered these experiences through faculty mentors, which we will continue to do. In some cases, we have also offered research-intensive courses known as CURE courses (Course-Based Undergraduate Research Experiences). These courses have been very successful and we are developing more options that include microbiology, genetics and molecular biology. Our goal is to provide research experiences to all students with an interest in gaining this type of exposure. In addition to diversifying the research experiences, we are also developing several programs for students with an interest in health careers and new courses that examine the interface between Biology and Art.

### TIMOTHY SPARKES

Chair of Biological Sciences



“As the new Chair, I look forward to navigating the way towards a bright and exciting future in which everyone that wants to come along is welcome”.

## Q & A: FABULOUS TEACHING FACULTY (WHO ARE ALSO DEPAUL ALUMNI)



### RIMA BARKAUSKAS

Senior Instructor

M.S. in Biological Sciences from DePaul University, 2002

Courses Taught: BIO 193, BIO 155 (non-majors), Anatomy, Cellular Biology labs, and Genetics labs

#### What made you choose DePaul for your master's degree?

DePaul's urban setting within Chicago, one of the best cities in the world, provides wonderful research opportunities. The depth and breadth of the Biology Department truly impressed me, and on an individual level, the chance to work in Dr. Tim Sparkes' lab allowed me to be involved in both field work and bench work.

#### What was your favorite memory as a graduate student at DePaul?

I have many fond memories of late nights gathering data, grading lab work, and being knee deep in muddy waters collecting samples before a summer storm. My favorite memory would have to be when I needed to design a cage to hold animals being studied

in their natural habitats. It felt like such an accomplishment to create a design and develop a working product. I will never forget the struggle, challenge, and fun of this project.

#### What is your favorite memory teaching here at DePaul?

I have so many it is hard to pick just one. Once a lab student so enjoyed how I explained the answers to his questions that he decreed DePaul should buy me a new car. He swore he would include that in my teaching evaluations and he was true to his word. I have written letters of recommendation to help deserving students get into medical school, and am always thrilled when they keep in touch on their successes. The DePaul students are so caring and amazing it is a pleasure to work with them and to be a part of their learning journey.



### CLAIRE BEHRENS

Lab Instructor / Lab Coordinator

M.S. in Biological Sciences from DePaul University, 2012

Courses Taught: BIO 191 and 192 Lab

#### What made you choose DePaul for your master's degree?

I always had a strong interest in environmental health and species diversity on a local scale. While looking at graduate programs, Dr. Liam Heneghan, who became my thesis advisor, offered me a spot in his lab studying how aboveground plant diversity and soil health influenced belowground microarthropod diversity within the Chicago Wilderness organization. The opportunity to work with Chicago Wilderness, combined with the teaching experience DePaul's master's program would allow me to gain, greatly influenced my decision to choose DePaul.

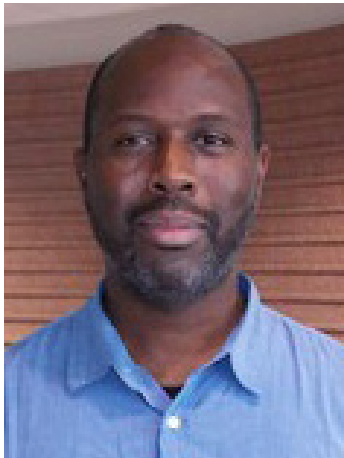
#### What was your favorite memory as a graduate student at DePaul?

My favorite memory was putting together my "Microarthropod Facebook." After hundreds of hours sifting through soil samples under the microscope looking for microarthropods, I created a "Facebook" to offer ecologists a true inside look at the microarthropod diversity present in our Chicago soil. This knowledge of invertebrate animal diversity belowground helps ecologists make the necessary connections between soil health and aboveground plant health.



**What is your favorite memory teaching here at DePaul?**

It would be next to impossible to pick just one, but it would have to be each time I see the “light bulb” turn on in a student’s eyes when they finally understand a difficult concept. Even when it takes explaining a new concept 3-4 different ways to reach this moment, it is always well worth the wait. I hope to be able to keep making new “light bulb memories” with students for a lifetime.

**TERRY FITZPATRICK**

Senior Instructor

PhD in Cellular and Molecular Biology from Northwestern University, 2012

Courses Taught: BIO 155 (non-majors), LSP 112 Focal Point Seminar (Cloning & Biotechnology), BIO 191 Lab, BIO 192 Lab, BIO 193 Lab, and BIO 250 Cellular and Molecular Biology Lab Coordinator

**What made you choose DePaul for your master’s degree?**

Teaching was/is very important to me and I believed DePaul’s MS program was well-suited to help me acquire both teaching and research skills.

**What was your favorite memory as a graduate student at DePaul?**

One of my fondest memories was taking Aquatic Biology with Dr. Tim Sparkes. The course was both fun and engaging and I was reminded of the importance of “hands-on, minds-on learning.” Students fully engage in their classes when they actively participate

in the learning process. Dr. Sparkes very effectively involved students in the learning process.

**What is your favorite memory teaching here at DePaul?**

It’s exciting when students (non-science majors in particular) make connections between biology-related issues and broader issues that impact their daily lives. For example, when teaching non-majors about photosynthesis, someone invariably points out the connections between the absorption of carbon dioxide by plants and trees and the alteration of global climate patterns associated with increased carbon dioxide caused by deforestation.

**KATHERINE SODERSTROM**

Professional Lecturer

M.S. in Biological Sciences from DePaul University, 2005

PhD in Neuroscience from Rush University, 2012

Courses Taught: BIO 126, BIO155, BIO 162, BIO 191, BIO 206, BIO 340, BIO 342, BIO 395, and HON 220

**What made you choose DePaul for your master’s degree?**

I had graduated from Loyola with a BS in psychology. I had really only discovered my interest in what was called ‘biological psychology’ at the time towards the end of my degree. I was looking to take some graduate level neuroscience classes as a student at large to see if it really was something I’d enjoy and found DePaul was a university where I could do so. Once I got here I met Dorothy Kozlowski and fell in love with her and her research. I spoke with her and Dr. Dean (who was the Chair at the time) about the possibility of me taking a number of prerequisite undergrad science courses

(chemistry and physics) and then joining the master’s program.

**What was your favorite memory as a graduate student at DePaul?**

I really loved TA'ing. I knew from the start that I wanted to teach and it was wonderful to be able to actually run a lab and give the introductory lectures. I also had the opportunity to present a poster at the Neurotrauma Conference in San Diego which was my first time attending a large conference and presenting research to my peers. And of course I loved the camaraderie I formed with my lab mates and fellow grad students, many friendships that have lasted to this day.

**What is your favorite memory teaching here at DePaul?**

I've had some really great moments with students where they've thanked me for helping them to understand a concept or manage their responsibilities in a course: those are always really special. I also really love my BIO 162 course (and HON 220 back when I taught it), when we have a mini conference at the end of the quarter where students present posters they've created during the quarter and I make neuro-themed cookies.

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## NEW FACULTY: DR. TIM SOSA

Tim Sosa is an alumnus of the University of Chicago, the University of Minnesota, and the Field Museum. His training is in vertebrate evolution, especially the biogeography and morphology of mammals and freshwater fishes. He worked in a research lab as an undergraduate, learning techniques and analyses to augment those he'd learned in the classroom. This experience made him a more careful thinker, prepared him for graduate school, and served as a springboard for every opportunity that followed. He has since collected specimens in the field in four different countries and dissected more species than he cares to admit. At DePaul, he teaches Ecology as well as general biology courses for both majors and non-majors. Elsewhere, he has taught courses in evolution, comparative anatomy, and plant identification.

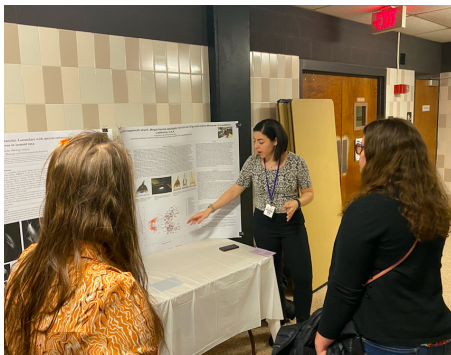


Dr. Sosa joined the DePaul faculty in Fall 2019 on a teaching-only appointment, so he devotes his energy to making sure that students in his courses thrive. His hobbies include drawing and painting fishes and other organisms, and enjoying the incredible cultural amenities of Chicago. If you should pass him in the hall, ask him why he thinks Chicago can be one of the greenest cities in North America.

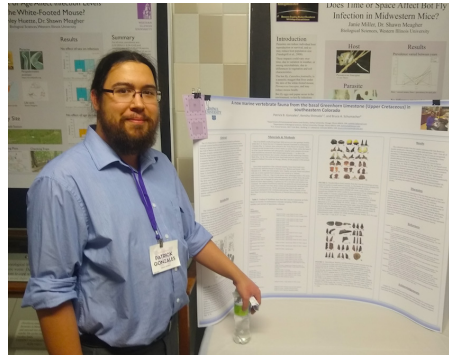
## DEPARTMENT NEWS



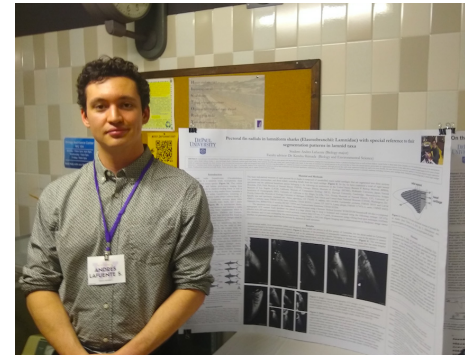
**Back Row:** Andres Lafuente S., Timothy Cronin, Myles Walsh, Isaac Bruns; **Middle Row:** Roberto Cucalon, Riley Hacker, Abigail Leeper, Jasmin Rios, Jessica Barton; **Bottom Row:** Cristian Corona, Jonathan Allen, Dana Hundrieser, Alexandra Krak, Kristin Staub



Alexandra Krak



Patrick Gonzales



Andres Lafuente

### 2020 MIDWEST ECOLOGY AND EVOLUTION CONFERENCE (MEEC)

Nineteen DePaul CSH students participated in the 2020 Midwest Ecology and Evolution Conference (MEEC) held at Western Illinois University in Macomb, Illinois, on February 28 – March 1, 2020. DePaul Students participated in a total of 18 student-led oral and poster presentations reporting their scientific discoveries. Topics of DePaul students' research presentations ranged broadly in the field of ecology and evolution. DePaul participants consisted of undergraduate and M.S. students belonging to Drs. Windsor Aguirre, Jalene LaMontagne, Mark Potosnak, Kenshu Shimada, and Timothy Sparkes's laboratories in CSH. The participating students were: Jonathan Allen, Jessica Barton, Isaac Bruns, Cristian Corona, Timothy Cronin, Roberto Cucalon, Rolando Favela, Daniela Garza, Patrick Gonzales, Medea Gough, Riley Hacker, Dana Hundrieser, Alexandra Krak, Andres Lafuente S., Abigail Leeper, Aarti Mistry, Maria Jazmin Rios, Kristin Staub, and Myles Walsh.



## NEW EXTERNAL GRANT FUNDING

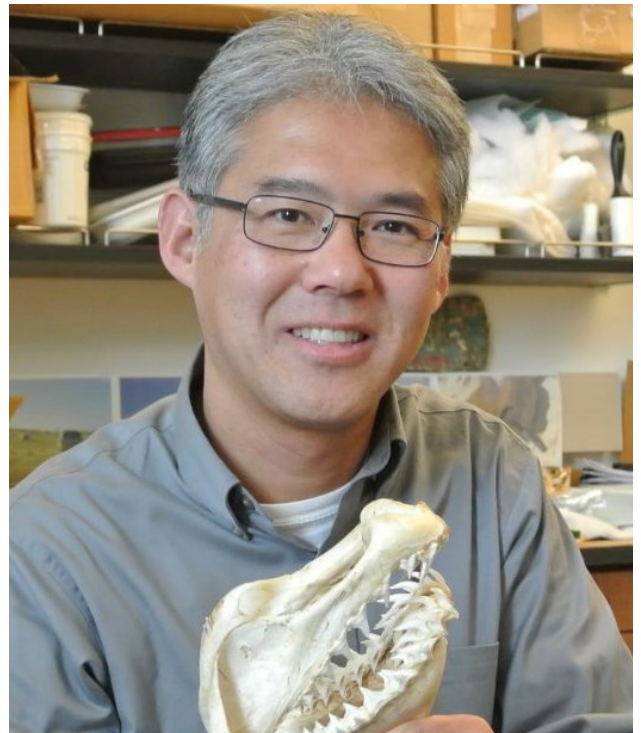
Dr. LaMontagne was awarded a National Science Foundation grant entitled “Collaborative Proposal: MRA: The influence of climatic dipoles on plant and animal populations at climatic scales.” It is funded through the Macrosystems Biology and NEON-Enabled Science Program. This project could transform our thinking about connections between climatic patterns and plant and animal populations at the continental scale. This award is no doubt in recognition of her very productive scholarship. Last year she published research in the journals *Nature Plants*, *Journal of Ecology*, *New Phytologist*, and *Trends in Ecology and Evolution* (her research was featured on the cover of this journal).

## FACULTY SPOTLIGHT: DR. KENSU SHIMADA

This issue’s spotlight is on our very own Dr. Kensu Shimada, who celebrated his 20 years of teaching at DePaul in the 2019-2020 academic year. While Dr. Shimada also has a joint appointment in DePaul’s Department of Environmental Science and Studies, he has taught a variety of courses for Biology, including the ecology and evolution portion of General Biology, Comparative Vertebrate Anatomy, and Topics in Paleobiology. He holds a title of Research Associate at the Sternberg Museum of Natural History in western Kansas and has also served as Chair of the Society of Vertebrate Paleontology’s Government Affairs Committee for nearly 10 years.

Dr. Shimada is a vertebrate paleontologist, who specializes in fossil fishes. Although his expertise is in the biology of extinct sharks, including the Megalodon, he has also published papers on a wide range of fossil vertebrates since 1988, including bony fishes, marine reptiles, birds, and even mammals. In addition, his research also extends to modern-day sharks, where he and his students analyze their anatomy through traditional dissection as well as the use of radiographic (e.g., X-ray and CT scan) technology.

Dr. Shimada has published over 110 peer-reviewed scientific articles, including those coauthored by DePaul undergraduate and M.S. biology students. Besides naming nearly two-dozen new extinct fish, Dr. Shimada’s scientific contributions include deciphering the marine ecology during the ‘Age of Dinosaurs’ (Mesozoic), including the discovery of multiple lineages of extinct plankton-feeding fishes, as well as elucidating the evolutionary history of a shark group called Lamniformes that includes the iconic goblin, sandtiger, thresher, megamouth, basking, mako, and great white sharks. Dr. Shimada particularly enjoys making new discoveries with students in his lab, each of whom has an independent publishable project.



## ALUMNI SPOTLIGHT: THE VOICE OF DR. REBECCA URSIN

I graduated from DePaul in 2015 with a BS in Biology and a minor in Physics. I took all of the required biology classes plus cell biology, virology, microbiology, mammalian reproduction, anatomy, genetics, physiology, and neurobiology. My interests really lied in learning more about developmental and reproductive biology. I was fortunate to spend 2.5 years as an undergraduate researcher in Dr. Jingjing Kipp's lab studying the role of vitamin A and retinoic acid in ovarian follicle development. I was fascinated with the reproductive system and the many signals involved in regulating oocyte output, ovarian health, and the drivers of disease in the female reproductive tract.

During my senior year at DePaul, I applied to many PhD programs but was rejected from every single one. This defeat left me questioning whether I was meant to stay in basic research. Therefore, after graduation, I moved to Washington DC to do a one year masters at Georgetown University in Biotechnology. This program exposed me to the many faces of science: biobusiness, pharmaceutical research and industry, science in government, and basic, bench-based science. It was in this program where my interests in laboratory research were solidified and I applied to PhD programs again with much more success!

After Georgetown, I went to the Johns Hopkins University Bloomberg School of Public Health for my PhD in Biochemistry and Molecular Biology where I studied sex-based differences in immune responses to vaccines like influenza and SARS-CoV-2 in humans and mouse models in Dr. Sabra Klein's lab. After finishing my PhD in fall of 2021, I accepted a post-doctoral fellow position at the Ragon Institute for Immunology at MIT, MGH, and Harvard in Boston. I currently study the mechanistic basis for the sex difference we see in antibody responses to influenza and COVID-19 vaccines, specifically, what germline antibody precursor sequences tell us about why females tend to mount greater, more protective antibody-based responses as compared to males.

I really enjoyed the intimate learning environment in my classes and labs at DePaul. Especially as I moved into the more difficult courses, the class size got smaller and the attention I received increased. I know people hate working in groups and doing presentations, but doing so much of both for my major really helped prepare me for the outside world where research is all about collaboration, teamwork, and communicating your work to others. I also loved how small and tight-knit the biology department felt. I always felt like my professors and instructors invested so much thought and time into their courses as well as their science.

My research experience in Dr. Kipp's lab at DePaul really drove me to seek out more research opportunities and to constantly ask questions about how the human body worked. Being able to be exposed to a real lab setting, presenting my work at conferences, publishing in the DePaul science journal, and designing mouse experiments all before I even started my graduate education was profoundly important in steering my fate as a scientist. Dr. Kipp and my DePaul family equipped me with such critical tools to carry with me to Georgetown, Johns Hopkins, and now Harvard. I also learned a very valuable lesson while I was at DePaul: your grades don't predict your success and they don't reflect your intelligence or work ethic. I did not have a perfect or even decent GPA, but I was curious and hard working in the lab and my mentors saw this and supported me even without the stellar transcript. It's important to believe in students and your peers and appreciate that intelligence comes in many forms!





## BIOLOGY SENIOR AWARDS & SYMPOSIUM 2019, 2020, & 2021

Each year, the Department of Biological Sciences gathers for our Senior Research Symposium and awards ceremony.

### OUTSTANDING SENIOR 2019: MICHAELA JACOB

Michaela had an impressive GPA, and did a remarkable job as office assistant to maintain consistency in unstable times. She was a consistent face during a transition between Administrative Assistants, and helped students plan courses while the Biology Department hired a new academic advisor. She is persistent at accomplishing tasks and eager to apply her broad skill set for the success of the department. She shows compassion and professionalism to all faculty and staff. After graduation, Michaela went on to complete a M.S. in Medical Physiology at the University of Illinois at Chicago. She's currently a Clinical Research Coordinator at Rush University Medical Center. She plans to apply to the University of Illinois College of Veterinary Medicine to obtain a D.V.M. in hopes of working with zoological and aquatic animals around the world, with a focus on repopulation and conservation.

#### 2019 Senior Appreciation Award Recipients

Jessica Barton	Rokas Gerulskis
Debbie Liberman	Jillian Sterman



### OUTSTANDING SENIOR 2020: LUKE DEVEREUX

Luke Devereux joined Dr. Connolly's research lab as a freshman to study small molecule inhibitors of herpesvirus fusion. Luke's oral presentation on their research earned a first-place award at the Chicago Area Undergraduate Research Symposium (CAURS). They have also presented research posters at a city-wide virology conference, Illinois Louis Stokes Alliance for Minority Participation conference, and other national scientific conferences. Over three successive summers Luke participated in research at Tufts University, the University of Chicago, and the University of Oregon. Luke founded a group at DePaul to advocate for LGBTQ students entering STEM fields. They also served as a volunteer, then paid, tutor in the department helping students to analyze their study strategies and to find more active learning approaches. Luke started a PhD program in Biology at Yale University in fall 2020 and is currently doing research in Dr. Sigrid Nachtergaele's lab.

#### 2020 Senior Appreciation Award Recipients

Kyle Kasparian	Alexandra Krak
Morgan Willis	



## OUTSTANDING SENIOR 2021: KAYLA CORCORAN

BIO Senior Symposium Poster Presentation: "DNA Sequencing Using Nanopore Technology"

Kayla Corcoran joined Dr. Windsor Aguirre's lab in autumn 2020. She earned the highest GPA of the Biological Sciences class of 2021. Kayla is a wonderfully thoughtful and kind person with a great enthusiasm for biology. She was nominated by Dr. Aguirre, who said, "Kayla took my Concepts in Evolution course in the Spring of 2020 and stood out because of her academic performance and interest in the subject. She constantly made good points in our discussions and really helped the discussion dynamics. I was so impressed with her performance that I asked if she was interested in a research position. She began work in my lab in Fall 2020 and turned out to be a natural in the lab as well." She then worked on a project developing Nanopore sequencing, a portable and inexpensive third generation genome sequencing platform, for Dr. Aguirre's lab. This was the first time Dr. Aguirre's lab used this platform. Despite the great limitations imposed by working during the pandemic, Kayla was still able to come into DePaul to conduct lab work. Those that worked with Kayla describe her as competent, confident, and enthusiastic about the work she does. Kayla currently works for Wildlife Discovery Center, and remains passionate about studying DNA, genetics, and evolution. She is interested in a career in Wildlife Biology. Before coming to DePaul, Kayla served in the Army as a Wheeled Vehicle Mechanic.



### 2021 Senior Appreciation Award Recipients

Maya Fitzgerald

Ahji Guyn

Marcin Marciniak

Aisha Owens

## RESEARCH OPPORTUNITIES WITHIN THE BIOLOGY DEPARTMENT

### WINDSOR AGUIRRE

Windsor Aguirre's lab is broadly interested in the early stages of evolutionary diversification. Most of the research in his lab involves fishes, and ongoing projects include studying the evolutionary history of Neotropical fishes, how species adapt to human-mediated habitat transformation, and the integration of body form and the axial skeleton during evolution.

### MARGARET BELL

The Bell lab is interested in how the environment can affect brain development, especially during adolescence, in both males and females. Currently, research in the lab is focused on the effects of an environmental contaminant, polychlorinated biphenyls (PCBs), on neuroimmune and dopamine cells using in vivo and in vitro models.

### JOANNA BROOKE

Dr. Brooke's lab investigates infectious diseases. Currently, research in the lab examines the molecular mechanisms of an emerging worldwide opportunistic multidrug-resistant bacterial pathogen, *Stenotrophomonas maltophilia*.

### JASON BYSTRIANSKY

Dr. Bystriansky's lab investigates how animals are adapted to survive in harsh or changing environments. His research program is mainly focused on what limits most fish species to live in either fresh or salt water, while others can tolerate wide ranges of environmental salinity.

**SARAH CONNOLLY**

Dr. Connolly's lab examines how herpesviruses achieve the first step of infection: entering a host cell. They study how proteins on the surface of the virus interact with each other and with cellular receptors to trigger fusion of the viral membrane with the cellular membrane, using virology, cell biology, and molecular biology approaches.

**JOHN DEAN**

Dr. Dean's research primarily involves the study of plant defense chemicals. Specifically, his lab is interested in the enzymes that metabolize these defense chemicals and the membrane transporters that move these chemicals into and out of plant cell organelles.

**PHIL FUNK**

Dr. Funk's research is interested in how cells decide what they will become in a multicellular organism, specifically the B-lymphocyte that produces antibody molecules. Dr. Funk's laboratory is currently studying the role of a molecule called chick B6 (chB6), present on B-lymphocytes in the chicken, which appears to cause a rapid form of cell death when bound by an antibody.

**BILL GILLILAND**

Dr. Gilliland's lab studies chromosome segregation during female meiosis in *Drosophila melanogaster* in order to find out how homologous chromosomes co-orient prior to the reductional first meiotic division. His research program uses genetic and cytological techniques to determine how often errors occur during meiosis, and to try to identify what events cause those errors.

**JINGJING KIPP**

The Kipp laboratory uses a broad spectrum of molecular, cellular, biochemical, genetic, morphological and physiological approaches to investigate hormonal signaling and gene expression in the regulation of ovary development.

**DOROTHY KOZLOWSKI**

The Kozlowski lab is focused on understanding the consequences of Traumatic Brain Injury (TBI) in a rodent model. They currently are examining the long-term consequences of repeat concussions and subconcussions, specifically what causes them and the contributions of genetic risk factors and sex differences.

**JALENE LAMONTAGNE**

Dr. LaMontagne's research program in population ecology investigates patterns and drivers of changes in plant and animal populations to study macrosystems biology and global change, including climate change and urban ecology. Her lab conducts field research in boreal conifer forests, studies impacts of land-use on urban tree-cavity availability, and uses large continental to global scale datasets to address these research questions.

**ELIZABETH LECLAIR**

Dr. LeClair's molecular biology lab specializes in CRISPR/Cas9-mediated mutation and tagging of cytoskeletal proteins in immune cells and tumors. Her lab is currently working in the zebrafish model organism, with previous experience in mouse models and cell lines.

**ERIC NORSTROM**

Dr. Norstrom's lab is focused on the cellular neurobiology related to neurodegenerative diseases such as Alzheimer's disease and prion diseases. By studying the molecular function and processing of proteins involved in these diseases, his research hopes to gain insight into their development and, ultimately, add to the knowledge on how to most effectively and safely treat them.

**TALITHA RAJAH**

Dr. Rajah's research lab focuses on the cellular and molecular mechanistic effects of Gold(I) compounds as efficacious chemotherapeutic agents against human breast cancer cell proliferation, apoptosis, movement and invasion. In addition to cellular behavior, cell signaling proteins that might be affected in these processes will also be identified and quantified in human breast cancer cells.



**KENSHU SHIMADA**

Dr. Shimada's research is interested in the evolution of marine ecosystems over geologic time, particularly by examining the paleobiology of sharks and other marine vertebrates that lived during the 'age of dinosaurs' (Mesozoic). While his lab studies a variety of organisms in the context of paleoecology, his research specialty is in a group of sharks called lamniforms that have been ecologically important in past and present oceans as they include top predators (e.g., mako and great white sharks) and large plankton feeders (e.g., basking and megamouth sharks).

**TIM SPARKES**

Dr. Sparkes' lab works on aquatic behavioral ecology with a local focus on behavior in the parasite-host relationship that occurs between the acanthocephalan parasite (*Acanthocephalus dirus*) and the intermediate host (*Caecidotea intermedius*). His lab also has ongoing projects examining factors that influence the dynamics of mating patterns in both freshwater and marine systems of North America and Europe.

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## GIVING BACK TO STUDENT RESEARCH

### DONATE NOW

**CLICK HERE** to help support undergraduate research in biological sciences

- > **SELECT** designation 'View all College of Science and Health Giving Opportunities'
- > **SEARCH** for 'Fund for Biology'

## THANK YOU DEPAUL ALUMNI!

**ACKNOWLEDGMENTS:**

The New Niche Team Unites

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**Co-editors:** Claire Behrens and Olivia LaMore

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