

UNIVERSITY OF ROCHESTER DEPARTMENT OF

BIOLOGY

Summer Newsletter 2019



SCHOOL OF
ARTS & SCIENCES
UNIVERSITY *of* ROCHESTER



Cover photo: An aphid rests on a fava bean plant in the lab of Associate Professor Jenn Brisson (at left). She and her former postdoctoral fellow Benjamin Parker, now an assistant professor of microbiology at the University of Tennessee, studied phenotypically plastic traits in pea aphids and uncovered, for the first time, genes that influence whether aphids produce wingless or winged offspring in response to their environment.

Contents

- 3** Message from the Chairs
- 5** Graduating Student Profiles
- 7** Biology Department Helps MAPS Send Students to the Annual Medical Education Conference (AMEC)
- 9** Profiling New Faculty
- 12** Faculty Headlines
- 14** Institutional News
- 15** Alumni Updates
- 16** Research on disease pathogens earns two alumni membership in the National Academy of Sciences
- 18** Graduate Student News
- 19** Graduate Students Play Kickball to Unwind and Give Back to the Rochester Community
- 20** Heavy Lifting at the Bench
- 22** Spotlight on New Staff
- 23** Brenna Rybak receives Meliora Award for Outstanding Service
- 24** News from the Diversity Committee
- 26** Department of Biology Annual Retreat—Letchworth State Park
- 27** Howard Bryant Endowed Scholarship Fundraiser
- 28** Support the Department to Help Create Academic and Research Opportunities

Supporting the Department of Biology is easy!

Watch for opportunities in this issue.

Gifts to the biology department help create academic and research opportunities for students and faculty that will have a profound effect on human health. To make your gift or discuss opportunities to support the department, please contact

Kate Clyde
Associate Director of Advancement
(585) 273-2050
kate.clyde@rochester.edu

Or donate online at
rochester.edu/giving/biology

A Message from the Outgoing Chair



Michael Welte

Dear friends of the Department of Biology,

One of the great pleasures of being a member of our department is that everybody is inspired by the University's motto of *Meliora* and strives to do ever better. This attitude is particularly obvious in

the research conducted in our laboratories where we try to answer important biological questions with ever improved instrumentation, experimental approaches, and theoretical concepts. It is also evident in our dedicated staff who work tirelessly to make the life of faculty and students easier and more efficient. Today, I would like to particularly highlight ongoing innovations in undergraduate teaching because during the last year, a number of new, exciting initiatives have reached critical stages and will over the coming years transform the teaching of biology at the University of Rochester.

To truly understand biology, students have to engage in hands-on experiences, critically reflect on their own observations and integrate them with their previous knowledge. The value of such experiential learning has long been recognized in our curriculum, and about half of our graduating seniors engage in independent research in laboratories on the River Campus or at the Medical Center. But not all students feel prepared to jump directly from their coursework to independent research or find the existing opportunities congenial. To solve the first challenge, Associate Director of Student Affairs Danielle Presgraves and Elaine Sia, a professor in biology, are spearheading two separate initiatives that will be implemented over the next couple of years: the [***Supporting Professional and Research Competencies***](#) program will be a series of one-credit courses in which students learn modular discipline-specific technical skills, general career and science communication skills, and skills that will ease transition into a research laboratory; the program *Immersive Preparation for Undergraduate Research* will be a structured

course in which research faculty lead small groups of students in semester-long projects in a real research laboratory. And to broaden the menu of experiential learning opportunities, two new types of courses will be offered starting in 2020: Anne Meyer, an associate professor in biology, has developed a multi-semester opportunity to prepare students to take part in the *International Genetically Engineered Machines* competition; here students will design and carry out a synthetic biology project of their own choosing. Floria Mora-Kepfer Uy, an assistant professor in biology, will lead a Study Abroad Experience in the Galapagos, with hands-on field trips and research experiences, where students design and execute field experiments, coupled with a strong conceptual background in ecology, evolution, and conservation. As you can see, our faculty are bursting with new ideas for making the experience of our students ever better. My hope is that eventually all of our undergraduate students interested in research will be able to take advantage of such opportunities.

Over the last year, we also realized another area ripe for improvements, namely our communication and interaction with you, the alumni and friends of the department. We know that many of you have fond memories of your times in the department and are eager to learn about what we are up to. Last spring, University Trustee and alumnus Nathaniel Wisch and his wife, Helen, hosted an alumni event in New York City, entitled *The Genomics Revolution: Exciting Research Directions in Biology*. It featured Jack Werren, a professor in biology, Amanda Larracuenta, an assistant professor in biology, and two of our undergraduate researchers. It was a smashing success, and we hope to bring similar *Faculty Conversations* to other cities in the coming years. If you are interested in hosting or attending such an event, please reach out to [***Kate Clyde***](#), associate director of advancement. And for those of you coming back to campus this Meliora Weekend, please join us for a special Department of Biology event, our [***Scavenger Hunt and Research Showcase***](#) in the Robert B. Goergen Hall for Biomedical Engineering and Optics on Friday, October 4, from 4:30 to 6 p.m. Here, you will be able to explore the groundbreaking research of undergraduates and

faculty through an interactive and entertaining scavenger hunt, fascinating demonstrations, hands-on experiences, and more! We are stoked to tell you more about us in a fun and relaxing atmosphere.

Annually, the University recognizes staff members whose work performance and dedication particularly exemplify *Meliora*. I am thrilled that this year our own department administrator Brenna Rybak was honored with one of these Meliora Awards in a ceremony presided over by President Feldman. Rybak is a spectacular administrator who does countless things in front of and behind the scenes to make sure that our department not only functions efficiently but also is a friendly and welcoming place. Many department members have told me that it would be hard to imagine the department without her. She also makes important contributions across the University, from serving on the Commission on Women and Gender Equity in Academia to working with countless offices to update policies and processes and to resolve misunderstandings and confusion. Rybak always thinks of ways to make the University and the department more inclusive, more just, and more efficient, and she always projects a friendly and professional attitude, perfectly embodying the spirit of *Ever better*.

As you can see from this overview and the rest of the newsletter, there is always lots of news from the department, and you don't have to wait for the next newsletter to stay in touch with us—we are always delighted to hear from you. In addition, you can follow the latest news, as well as coverage of ongoing research projects and other departmental activities, on our [website](#). Please feel free to pass our newsletter on to friends, classmates, and fellow alumni.

On a personal note, I will be on leave for the coming academic year, and Elaine Sia has graciously stepped in as chair. Not only does Sia make critical contributions to research and teaching in our department, she has also previously served the department and the University in numerous capacities, including as codirector of the Undergraduate Program in Biology and Medicine. Sia works tirelessly for the good of the department and cares deeply about the success of our students, staff, and faculty. I greatly appreciate her taking on this additional responsibility, and I know that the department will be in good hands.

Michael Welte

A Message from the Incoming Chair



Elaine Sia

the University in 2000, I have seen remarkable improvements in the campus, the diversity of the student body, the curriculum in my department, and across the college. I have had the privilege of working with a dedicated group of faculty and

The Department of Biology has been my home for nearly 20 years. The enthusiasm and dedication of the students, staff, and faculty are inspiring. They are what makes this University such a fantastic place to work. Since my arrival as a member of the faculty at

students in the department who pursue world-class, innovative research and at the same time value our roles as educators. Our collective goal to move the boundaries of scientific knowledge and create a program that will best prepare graduate and undergraduate students to be leaders of the future in biology and medicine is an exciting one. I am honored by the opportunity to take a leadership position in the department at this time, as we add new research programs, majors, and courses. I have seen what can be accomplished within our department, and I am enthusiastic about what is possible in the future. I strive to be a part of what makes the University of Rochester and the Department of Biology “ever better.”

Elaine Sia

Graduating Student Profiles



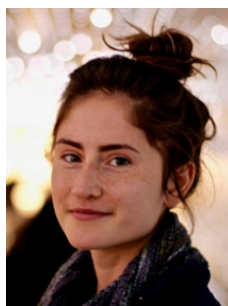
Haley Chang '19 Cell and Developmental Biology

As a high school student, whatever my teachers told me I took to be fact. Studying biology at the University of Rochester has challenged this assumption for me. Professors in the Department of Biology always encouraged students to ask why—to be curious. The faculty constantly challenged me to go back to the literature and interpret the data for myself. The department has taught me to always question everything. I am thankful for this, as these critical thinking skills will be vital to both my career and personal life as I try to navigate our world going forward. I implore future biology majors to think critically about what is presented to you. Ask questions; do your own research. Furthermore, be proactive in your own education. Visit with professors during office hours, go to the talks the department hosts. Learn and gather all the evidence that you can. Take the time to experience all the opportunities afforded to you as a student of this University. Eat it up, for this time is yours and yours alone. It will be what you make of it.



Roisin (Rosie) Flanagan '19 Molecular Genetics

The most important thing I've learned studying and working with biology here is that everything is so much more dynamic than I previously thought. Biological processes and structures are in constant motion and reaction with the environment around them. These tiny yet intricate mechanisms are constantly at work together within living things in order to allow us to even comprehend what we are. Biology at the University of Rochester has taught me that we are so beautiful and ever-changing. The program has exposed me to a large variety of topics within the biological field, such as aging, epigenetics, development, etc., which has helped me harness my passions and direct them into the specific area of study that I love. I will go into graduate school with a greater understanding of why I love epigenetics and what no one knows about it yet, but that I might one day discover. When studying and working with biology, the desire to figure out the mechanisms of life has to supersede the disappointment when things do not work out as planned. You must ask questions regardless of whether or not the answer has real-world application; regardless even of whether or not you know you will find the answer in a timely manner. During my tenure here, I had a decent amount of spare time. When I was not studying or working with biology in the lab, I was doing a great amount of acting (in [TOOP](#)) and singing (in [No Jackets Required](#)) on campus. I find that the performing arts allow me to access the nature of life from a different angle.



Audrey Goldfarb '19 Biology

Working with and speaking to scientists studying a variety of topics in biology, I have grown to appreciate the value in making connections between fields. Therefore, communication between experts in different fields is paramount. I think about biology in a much more informed and creative way and have transformed as a student and scientist during my four years in the biology department. I will be pursuing a PhD in biological sciences at The Rockefeller University. Participating in undergraduate research was key in determining my career path. My advice to future biology majors is to pursue the most rigorous education possible until you find what you love, and then completely

dedicate yourself to your newfound passion. There are incredible opportunities available to students who work hard and have a strong interest in biology, so put yourself out there and take them. Almost everyone in the biology department I've interacted with has surprised me with how eager they are to help undergraduates develop as scientists, and this has made me fall in love with the mentorship culture of academia. During my time here, I wrote for [Campus Times](#), played varsity volleyball for my first two years, and club ultimate frisbee for my last three years. I was also a teaching assistant for four courses and served as a peer advisor—positions that were personally rewarding and helped me become more connected to the biology department.



Ania Stolarczyk '19

Microbiology

The most important thing I learned studying biology is that biology has a vast number of applications and can easily be translated into research and the clinical setting. The University of Rochester is a collaborative environment that allows undergraduates the amazing opportunity to access these research and clinical experiences that prepare them for their future careers whilst expanding their knowledge of biology. The biology program has increased my confidence and professional skills by providing ample opportunity to present my research as well as network and learn from professors, doctors, researchers, and fellow students. These skills and the mentorship afforded to me by the UPBM program have prepared me for my medical education, which I will begin in August 2019. I would advise students to take advantage of the information offered on the UPBM website, as it provides valuable information on how to pursue research and defend a Senior Thesis in Research, as well as information on unique opportunities for UPBM majors such as fellowships, certificates, and study abroad programs. I highly recommend motivated students interested in research to pursue a Senior Thesis, as it leads to the development of a richer understanding of the research being done and is a very rewarding process. I also pursued both clinical and bench research in various departments of the University of Rochester Medical Center, namely Emergency Medicine, the Center for Musculoskeletal Research, psychiatry, and the allergy/immunology department. I completed my senior thesis in research in the Jarvinen-Seppo lab in the allergy/immunology department, where I investigated the development of food allergies in rural versus urban environments by studying gut-associated immune cells. Aside from research, I was a member of the Phi Sigma Sigma sorority and a volunteer for the HELP program at Highland Hospital.



Isaac Wong '19

Computational Biology

The most important thing I have learned studying biology is how rewarding the scientific process is. All the hard work and time put into research and studying is more than worth it for all the results and knowledge afterwards. I can't think of a single thing this program has not prepared me for. The biology department really cares about its students and gives them every opportunity to succeed. I am really proud to be a biology major. My advice to others pursuing a major in biology is to find a research mentor as soon as possible who really cares about your success. Also, take as many additional computer science and statistics classes as you can to help round out your biology skills. During my free time, I worked in the Larracuenté lab for almost three years and was a libero on the men's club volleyball team.

Interested in our Grads?

[Click here](#) for a list of our recent graduates and to read the *Undergraduate Program in Biology and Medicine* e-Newsletter.

Biology Department helps MAPS send students to the Annual Medical Education Conference (AMEC)

The [*Minority Association of Pre-Medical Students \(MAPS\)*](#) is a premedical organization at the University of Rochester whose mission is to provide all underserved and underrepresented pre-health students with the necessary tools and resources to be competitive applicants for their intended fields. Each year, MAPS endeavors to send students to the [*Annual Medical Education Conference \(AMEC\)*](#) without the added burden of cost and debt. The Department of Biology sponsored two biology students at the conference on April 17–21, 2019, in Philadelphia, Pennsylvania. Students learned about the medical field, helpful programs, internship opportunities, and were provided the chance to network.



Veronica Imbert '21
Biology

My time at the Annual Medical Education Conference (AMEC) was absolutely amazing. The opportunities, networking events, potential mentors, and empowering activities were life-changing and caught me off guard as soon as I stepped into the Marriott Hotel in Downtown Philadelphia. While there, I spent my first day attending general interest programs that covered interesting topics such as postbaccalaureate programs, gender inequality in the medical field, dealing with challenging patient interactions, and helpful steps to follow before medical school. One of the meetings that had an impact on me was Ana E. Núñez, MD's "Shattering the Glass Ceiling in the #MeToo Era."

I learned the overall history of unequal pay between genders and how we, the next generation, can improve this as we become physicians. Attending this conference has given me more than any premedical advisor could give me. I had the opportunity to attend a mixer and connect with current medical students, professors, admissions staff, and alumni from the University of Rochester's Medical Center. I spoke with them about being unsure of which major I should choose. As a first-generation college student, it is hard to talk to anyone in my family about college, let alone about choosing a major. The programs, luncheons, and activities provided by AMEC were all networking opportunities and I left with contact information for people that I can reach out to for advice and inspiration. In addition, I met other premedical students that asked me for advice! Because of this conference I returned to campus more educated, enlightened, and motivated to finish this semester and continue on with my premedical journey.



Karyssa Harris '21
Biology

Last year, a medical student told me that I needed to attend AMEC if I ever had the chance. She never really explained why, but she seemed so passionate about it. As I got ready to attend this year's conference, I did not really know what to expect. However, by the time I left I knew exactly why that student was so passionate last year. I really enjoyed the networking workshop I attended on the first day because it set me up for the following days. I also attended panels and I was able to hear many minority-specific details about medicine that I



know I would never find on the internet. The workshop warned me about what to look for (in terms of minority support) going into medical school. Furthermore, I attended a Black Medical History session where we were taught about the history of blacks in medicine. It was very nice to learn collaboratively about blacks in medicine rather than just researching the topic on my own. The conference had many honest workshops as well. I attended a cultural humility workshop and a “tips for crucial communication” workshop where the leaders were very raw and honest about situations that we are likely to come across in medicine—especially as minorities. A black Chief Medical Officer told a story about how he saved a white police officer’s life while the police officer repeatedly whispered derogatory remarks to the doctor. The crucial conversation workshop gave us tips about how to deal with racist situations. There was such an honest and caring atmosphere in the room that I feel would be hard to recreate in a room full of a majority. These situations are not addressed or talked about enough, so it was kind of a wake-up call for me. Overall, it was just inspiring to see so many people that looked like me pursuing a similar dream. All of the workshops and speeches were led by minority figures and that is not something I had ever experienced. I never realized how much I needed to see it until I did see it. The last night, I was so inspired as I watched the hundreds of black people who graduated from medical school walk across the stage. Representation is so important, and AMEC definitely provided me with an opportunity to witness representation while learning how to represent.

Interested in directly affecting the experience of our undergrads?

- Help move the **lab experience** to the next level by providing resources to support people and state-of-the-art equipment and facilities.
- Contribute funds to enhance the **innovative workshop program** that enables peer-to-peer learning and one-to-one interactions for students, teaching assistants, and professors—even in large lecture classes.

Help to fund the department’s **community outreach program** or **essential instrumentation** that makes computational biology and bioinformatics possible and keeps Rochester competitive.

Profiling New Faculty

J. Albert Uy

By Nancy Chen



With a lifelong love of animals and the outdoors, J. Albert (Al) Uy, a new associate professor in the biology department, seeks to understand the origin and maintenance of species. His research combines molecular approaches with fieldwork to answer questions regarding sexual selection and speciation in diverse study organisms, but mostly birds. Al is currently the Aresty Chair in Tropical Ecology at the University of Miami and will be joining the faculty of the Department of Biology in January 2020.

Al has loved animals ever since he was a child and was always bringing home frogs or snakes to hide in his closet. He was born and raised in the Philippines, until his family moved to Anaheim, California, during the People Power Revolution against President Marcos in the 1980s. As an undergraduate at the University of California–Berkeley, Al, who was interested in trying to understand the meaning of life, double-majored in biology and comparative religion. He was pre-vet until junior year, when he took a popular and influential vertebrate zoology class taught by Harry Greene, Ned Johnson, and Jim Patton. That course showed Al for the first time that one could have

a career as a field biologist, and this realization changed his life. Much to the chagrin of his parents, who wanted him to go to medical school, Al decided to take a semester off to go to Australia and study bowerbirds. Bowerbirds are a group of songbirds in Australia and New Guinea that are named for the decorative structures—bowers—that males build to attract mates. Al's experience in the field cemented his desire to pursue a career in research.

Al continued to study bowerbirds for his PhD, which he completed in Gerry Borgia's lab at the University of Maryland, College Park. He started by spending a few months studying mate choice in two diverging subspecies of bowerbirds in Papua New Guinea. That project prompted Al's interest in the role of sexual selection in speciation. Unfortunately, that part of Papua New Guinea became politically unstable, making it unsafe for Al to return to his original field site. He therefore switched projects and ended up studying movement ecology and mate choice in female satin bowerbirds in Australia.

Following his PhD, Al received an NSF Bioinformatics Postdoctoral Fellowship to work on speciation in New Guinean kingfishers with John Endler at the University of California–Santa Barbara. What he actually ended up working on was plumage evolution in manakins in Central America. This postdoctoral project would later form the first primary focus of the Uy lab. Al was a faculty member at San Francisco State University and then Syracuse University before moving to the University of Miami in 2011.

As an advisor, Al encourages his students and postdocs to come up with their own projects. Research projects in the Uy lab therefore span a variety of study systems and approaches, all conceptually centered on understanding the role of sexual selection and mating signal diversification in the evolution of reproductive isolation. For instance, Al had a student who studied how natural selection and sexual selection interacted to maintain color polymorphism in fish. Other students have worked on plumage and song evolution and how divergence in these traits contributes to speciation in different species of birds. A recent postdoc started a project on



blood-feeding behavior in vampire finches in the Galapagos. A current student is studying how urbanization affects the persistence of different color morphs of anoles in Miami.

The project dearest to AI is his ongoing project investigating signal divergence and speciation in Chestnut-bellied Monarchs (*Monarcha castaneiventris*) in the Solomon Islands. AI has been interested in these birds since graduate school, especially after reading Ernst Mayr's 1942 book *Systematics and the Origin of Species*, but he had to wait years for the Solomon Islands to become politically stable before it was finally safe to work there in 2006 (AI admits he has a penchant for systems in politically unstable regions). The Chestnut-bellied Monarch, despite its name, varies in plumage color throughout the Solomon Islands. One subspecies on Makira Island does indeed have a chestnut belly, but another subspecies on nearby satellite islands is entirely blue-black in color. AI and his collaborators found that a single nonsynonymous mutation in the melanocortin-1 receptor was responsible for

this plumage difference. They then presented taxidermied birds of each color to live birds in the field and recorded how angry each bird became. Chestnut-bellied birds reacted more aggressively to chestnut-bellied mounts, and vice versa, suggesting that this plumage difference may be involved in species recognition. The evolution of the darker morph is repeated on island after island in a predictable fashion, with smaller islands having more dark individuals. You can learn more about AI's work in the Solomon Islands by watching the documentary [Islands of Creation](#) on the Smithsonian Channel.

At Rochester, AI will continue to integrate field experiments, genomics, proteomics, and developmental biology to further elucidate the genetic and ecological factors underlying divergence in song and plumage color across island populations, and the subsequent impact of these phenotypic differences on speciation. He is particularly excited about expanding into functional genomics and revisiting some previous work—and exploring bigger questions—with more advanced tools. “We really are at a cool time in science,” AI says, because “the insights you get from combining field and omics (technologies) is amazing and unparalleled.”

AI will be replacing John Jaenike as the instructor for BIO 263, Ecology. He also hopes to continue teaching a summer field course on island ecology, evolution, and conservation in the Solomon Islands and may contribute to the new study abroad course in the Galapagos as well.

In December, AI will be moving to Rochester with his wife, Floria Mora-Kepfer Uy, who co-runs the Trop Bio Lab with AI and will be joining the department as an assistant professor of instruction. His graduate students are close to finishing and will stay in Miami. AI and Flo will be bringing two dogs and two cats with them. They may acquire some chickens once they're settled. Outside of work, AI loves hiking as well as birding while he hikes. He used to play the guitar and draw (his artwork has been featured on journal covers) and is looking forward to picking up those hobbies once again.

Floria Mora-Kepfer Uy

By Danielle Presgraves



Why would any organism sacrifice its own immediate fitness to enhance the fitness of others? The intrigue of that broad question, whose answer is implied by the diversity of social systems present in animal populations, has proven irresistible to Floria Mora-Kepfer Uy. Floria, who will join our faculty in January 2020, has spent her research career probing the behavior and reproduction of social insects to solve the riddle of how evolution has balanced the costs and benefits of cooperation in social groups.

Originally from Costa Rica, Floria found fertile ground at the University of Costa Rica to expand on her self-described “childhood bug enthusiasm” by studying entomology and animal behavior. She completed a master’s degree studying the behavior of parasitoid wasps under the supervision of Paul Hanson and Bill Eberhard. She then moved to the University of Miami to study animal behavior and completed her PhD with Keith Waddington.



Over the course of her career, Floria’s research interests have shifted from open-ended “why” questions to more tractable “how” questions. She began her academic career

asking evolutionary questions such as “Why do some organisms live solitary lives whereas other species live in groups that engage in cooperation and conflict.” During her doctorate, she expanded her interests to ask mechanistic questions involving brain plasticity. Now, as a research associate at Cornell University, she asks questions such as “What gene expression differences underlie recognition and assessment of group members in social insects?” Her ultimate research goal is to identify the genetic changes that mediate the evolution of brain development and cognition in social versus nonsocial behavioral phenotypes.

Despite working on temperamental social insects, Floria has nevertheless established an impressive record of mentoring undergraduate researchers who, after assisting her with fieldwork, often appear as coauthors on her papers. In particular, Floria has a keen appreciation for the robust environment of inquiry that results from the inclusion of diverse backgrounds and prioritizes opportunities for women and underrepresented minorities in the biological sciences.

Floria is also an enthusiastic advocate for field research as a tool for teaching crucial skills in the next generation of scientists. The inherently unpredictable nature of field research requires researchers to be flexible and resourceful as they extemporaneously refine their problem-solving abilities to deal with emerging issues. Authentic immersion in the natural world and the value of becoming a naturalist while working through thoughtfully designed experiments to query the cause of biological phenomenon are challenging to acquire without fieldwork opportunities. With her collaborator (and husband) Albert Uy, Floria has received a grant that will fund six students for a three-week immersive summer field research experience in the Solomon Islands until 2021. One of Floria’s other teaching responsibilities at the University of Rochester will be to develop and direct a new semester-in-the-Galapagos program, anticipated to launch in fall 2020. The Galapagos program will include courses taught by University of Rochester faculty that directly fulfill requirements for biology majors at Rochester.

Floria will arrive in Rochester accompanied by her husband and multiple rescue canine and feline companions. As someone who grew up in the tropics, she looks forward to improving her in-country skiing skills and using these new skills to commute to work.

Faculty Headlines

Anne Meyer Describes How to Produce Graphene on a Large Scale (July 11, 2019)

In order to create new and more efficient computers, medical devices, and other advanced technologies, researchers are turning to nanomaterials: materials manipulated on the scale of atoms or molecules that exhibit unique properties.

[Read more...](#)

Jennifer Brisson Uncovers Genes that Help Determine if Pea Aphids Get Their Wings (June 17, 2019)

Many of an organism's traits are influenced by cues from the organism's environment. These features are known as phenotypically plastic traits and are important in allowing an organism to cope with unpredictable environments.

[Read more...](#)

Amanda Larracuate Sequences the Genome's Elusive Centromere (May 15, 2019)

Researchers from the University of Rochester, along with their colleagues at the University of Connecticut, have now discovered the centromeres of the model genetic organism *Drosophila melanogaster* (fruit fly), sequencing the most repetitive parts of genome and unlocking one of the "last frontiers of genome assembly," says [Amanda Larracuate](#), an assistant professor of biology at Rochester and colead author on the study. The research, published in the journal [PloS Biology](#), sheds light on a fundamental aspect of biology, and shows that selfish genetic elements may play a larger role in centromere function than researchers previously thought.

[Read more...](#)

Researchers Say 'Longevity Gene' Responsible for More Efficient DNA Repair (April 22, 2019)

[In a new paper](#) published in the journal *Cell*, the researchers—including Vera Gorbunova and Andrei Seluanov, professors of biology; Dirk Bohmann, professor of biomedical genetics; and their team of students and postdoctoral researchers—found that the gene sirtuin 6 (SIRT6) is responsible for more efficient DNA repair in species with longer lifespans, illuminating new targets for anti-aging interventions and could help prevent age-related diseases.

[Read more...](#)

Meyer Lab Creates Artificial Mother-of-Pearl Using Bacteria (April 19, 2019)

The strongest synthetic materials are often those that intentionally mimic nature.

[Read more...](#)

Amanda Larracuate Recipient of National Science Foundation's Prestigious Faculty Early Career Development (CAREER) Award (April 11, 2019)

Amanda Larracuate, an assistant professor of biology, will investigate the function and evolution of centromeres in fruit flies. Centromeres, which vary in size and complexity across organisms, are regions of the chromosome that are essential in ensuring chromosomes separate properly during cell division. Variations in centromeres can have an impact on genome evolution, speciation, and human disease. Larracuate will study the variation of centromeres within and between species to gain insights into their DNA sequences. She will also examine how a class of selfish genetic elements called retrotransposons shape aspects of centromeres.

[Read more...](#)

Do you have fond memories of a University of Rochester professor?

Help support our faculty: endowed professorships help to attract and retain faculty of the exceptional talent. They are also visible honors recognized across the University and by other top institutions. An endowed professorship can link your—or your loved one's—name to academic excellence and innovation.

Justin Fay Unravels the Origin Story of Beer Yeast (April 8, 2019)

[Justin Fay](#) has brewed wine and beer from dozens of different types of yeast. But not necessarily for drinking pleasure. It's all in the name of scientific research.

[Read more...](#)

Gorbunova and Seluanov Labs Say 'Selfish' Genetics Amplify Inflammation, Age-related Diseases (March 15, 2019)

Aging affects every living organism, but the molecular processes that contribute to aging remain a subject of debate. While many things contribute to the aging process, one common theme in animal aging is inflammation—and this may be amplified by a class of selfish genetic elements. The human genome is littered with selfish genetic elements—repetitive elements that do not seem to benefit their hosts, but instead seek only to propagate themselves by inserting new copies into their host genomes. A class of selfish genetic elements called LINE1 retrotransposons are the most prevalent retrotransposon selfish genetic elements found in humans; approximately 20 percent of both human and mice genomes are composed of LINE1s.

[Read more...](#)

Fay Lab Discovers Beer Yeast Is a True International Collaboration (March 12, 2019)

A new study led by Justin Fay, an associate professor of biology, indicates that brewer's yeast is a combination of European grape wine and Asian rice wine strains.

[Read more...](#)

Fay Lab Finds Modern Beer Yeast Is a Mixture of Strains Used to Make Grape Wines and Asian Rice Wines (March 8, 2019)

A team of researchers led by Justin Fay, an associate professor of biology, have investigated the ancestry of strains of "brewer's yeast," finding that they are derived from a mixture of varieties used to make European grape wines and Asian rice wines.

[Read more...](#)

Nancy Chen Receives Sloan Fellowship (February 21, 2019)

Nancy Chen is among this year's recipients of the prestigious [Sloan Research Fellowships](#).

[Read more...](#)

Amanda Larracuenta Says the Male Y Chromosome Is Not a Genetic Wasteland (February 7, 2019)

Y chromosomes are sex chromosomes in males that are transmitted from father to son; they can be important for male fertility and sex determination in many species. Even though fruit fly and mammalian Y chromosomes have different evolutionary origins, they have parallel genome structures, says Larracuenta, who co-authored the paper with her PhD student, Ching-Ho Chang. "*Drosophila melanogaster* is a premier model organism for genetics and genomics and has perhaps the best genome assembly of any animal. Despite these resources, we know very little about the organization of the *Drosophila* Y chromosome because most of it is missing from the genome assembly."

[Read more...](#)

Daven Presgraves Explains What Makes a Species Different (January 7, 2019)

Most evolutionary biologists distinguish one species from another based on reproductivity: members of different species either won't or can't mate with one another, or, if they do, the resulting offspring are often sterile, unviable, or suffer some other sort of reduced fitness.

[Read more...](#)

Jennifer Brisson and Patrick Oakes Recipients of the National Science Foundation's Most Prestigious Recognition for Junior Faculty Members: the Faculty Early Career Development (CAREER) Award (September 4, 2018)

Eight University of Rochester researchers are among the latest recipients of the National Science Foundation's most prestigious recognition for junior faculty members: the Faculty Early Career Development (CAREER) award.

[Read more...](#)

Institutional News

Gloria Culver reappointed Dean of the School of Arts & Sciences



Gloria Culver has been appointed to a new five-year term as dean of the [School of Arts & Sciences](#). “Dean Culver’s dedication to the success of our students, faculty, and staff, and her tireless commitment to the School of Arts & Sciences are reflections of the way she lives the University’s vision and values,” says Donald Hall, the Robert L. and Mary L. Sproull Dean of the Faculty of Arts, Sciences & Engineering. “Her efforts to promote the humanities, celebrate scholarship, and ensure equity for underrepresented groups across the arts and sciences and STEM fields have contributed significantly to the continued growth and success of AS&E. I value her as a key member of the AS&E leadership team, and I look forward to continuing our work together.” The Board of Trustees approved Culver’s deanship renewal at its May meeting.

[Read more...](#)

Katherine Schaefer to be awarded Goergen Award for Excellence in Undergraduate Teaching



The [Goergen Award for Excellence in Undergraduate Teaching](#) recognizes the distinctive teaching accomplishments and skills of faculty in Arts, Sciences & Engineering. The award aims to acknowledge the

full scope of work that contributes to excellence in undergraduate education. It can be given for distinguished teaching in large introductory courses or advanced seminars. In addition to being given for superior classroom performance, it can recognize innovation in course design or teaching methods, the creative use of educational technology, the integration of research and teaching, the capacity to elicit superior work from students, or the mentoring of students in independent study projects and senior essays.

Katherine Schaefer, associate professor in the Writing, Speaking, and Argument Program and the Writing in the Majors Coordinator will be honored on October 22, 2019, at a ceremony and reception in Rush Rhees Library. Schaefer has worked closely with many faculty and students in the Department of Biology. For eight years, she worked with Cheeptip Benyajati, an associate professor in biology, to coteach and collaborate on multiple upper-level biology writing classes, and she has since become the biology writing specialist, supporting several upper-level biology courses. She also created and has taught Communicating Your Professional Identity in Biology since 2011. Her teaching efforts now reach hundreds of undergraduate students in the biological science majors. Schaefer’s reach is extensive and is widely appreciated by her students. Throughout the years, she has developed documents elaborating on various writing tips and tricks and freely distributes them to interested students and alumni. The Department of Biology is honored to collaborate with Schaefer on such important work and we offer our heartfelt congratulations for this well-deserved recognition.

Alumni Updates



Paul Frost '95

Ecology and Evolutionary Biology

I'm writing from across Lake Ontario in Peterborough, Ontario, where I am a professor in the Department of Biology at Trent University. This is a great place to work as an aquatic ecologist as we have access to thousands of lakes and rivers that vary greatly in size and morphology, water chemistry, and food webs. Most of my recent research examines how nutrients, like nitrogen and phosphorus, affect lakes and their food webs. I'm more specifically interested in how nutrients affect interactions between food and invertebrates in lakes. Part of my program involves interacting with lake cottagers and stewards to sample water from their lakes and to share knowledge with them about water quality and lake health. This usually has me answering questions about slimy algae, decomposing leaves, and oxygen concentrations. Beyond that though, my students and I once wrote and distributed a small booklet that explained algal communities to lake users. More academically, I am the founder and current editor-in-chief of a relatively new science-based newsletter, *Ratios Matter*. Our primary aim is to distribute news to colleagues and other interested ecologists about ecological stoichiometry, which is a research area I've been focused on for a number of years. We electronically publish several issues of *Ratios Matter* each year that contain an interesting mix of paper summaries, researcher profiles, opinion pieces, and even cartoons all on ecological stoichiometry.

Three alumni awarded NSF Graduate Research Fellowships for 2019

The NSF Graduate Research Fellowship Program (GRFP) helps ensure the vitality of the human resource base of science and engineering in the United States and reinforces its diversity. The program recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines who are pursuing research-based master's and doctoral degrees at accredited United States institutions.

- **Aryel Clarke '17**
Microbiology
University of Wisconsin–Madison
- **Benjamin Gerstner '17**
Biology
University of New Mexico
- **Zachary Quirk '17**
Ecology & Evolutionary Biology
University of Michigan–Ann Arbor

Alumni, we want to hear from you! Please send us your news.

[Click here](#) to submit an update by emailing the department with your news or feedback. We would love to hear from you.

Research on disease pathogens earns two alumni membership in the National Academy of Sciences

Interviews by Lindsey Valich



Paul Turner
(Photo courtesy of Yale University)



Harmit Malik
Hutchinson Research Cancer Center
(Photo courtesy of Susie Fitzhugh)

What are you currently working on?

Turner: My group's current research broadly concerns the evolutionary biology of microbes, especially bacteriophages—viruses that kill bacteria—and mosquito-borne viruses that can infect humans. I am fascinated by the potential of viruses to overcome environmental challenges, including their ability to “emerge” by adaptively shifting from their original host species onto a novel host, such as humans. It remains challenging to accurately predict when and where virus emergence will occur next, and a main goal of our work is to refine the predictive power of evolutionary biology.

Malik: I study conflicts that occur in our genomes as different genetic entities try to maximize their evolutionary success. My team and I use *Drosophila* (fruit flies) as a model organism to study centromeres, which are crucial for chromosomal stability during cell division; mobile genetic elements, a type of selfish genetic elements, which can impact host fitness and genome organization; and proteins that evolve rapidly due to their involvement in host-parasite interactions.

What interested you in this career path?

Turner: I greatly benefited from the University of Rochester's requirement that undergrad majors in biology should meet regularly with faculty in the discipline. I was able to express my interest and enthusiasm for the subjects of ecology and evolutionary biology in discussions with my mentors Andrew Dobson and John Jaenike.

Malik: I first became interested in this concept by reading Richard Dawkins' book *The Selfish Gene*. Having the benefit of complete ignorance in biology, I decided that this concept was worthy of a lifetime of study.

What did you study at Rochester?

Turner: I entered the University of Rochester in 1984 with the expectation of obtaining a bachelor's degree in biomedical engineering. However, I took courses in other disciplines, and by the time I entered my junior year, I became convinced I should focus my studies instead on biology, which was my favorite subject since childhood. In particular, I was intrigued by the

courses in biodiversity, ecology, and evolutionary biology offered by the terrifically inspiring professors in the biological sciences.

Malik: I trained previously as a chemical engineer but became interested in selfish DNA. During my PhD studies in Tom Eickbush's lab, I studied both the molecular biology and evolution of retrotransposons ("jumping genes"). One of the best things about doing PhD studies in a relatively small department was the very close relationships formed not only with my PhD advisor but with many professors.

What are some of the future directions for your work?

Turner: My research increasingly focuses on the rise of antibiotic resistance, where it is evident that these drugs are often no longer capable of usefully controlling bacterial diseases. One possibility is to turn our attention to an old idea called "phage therapy," where bacteriophages are utilized alone or in combination with chemical antibiotics to target and kill bacteria. My research is taking a renewed approach to phage therapy, by discovering naturally occurring bacteriophages that infect bacteria by binding to proteins associated with bacterial virulence or those responsible for drug resistance.

Malik: I am fascinated by how pervasive genetic conflicts are and how they have shaped and continue to shape fundamental aspects of our biology. My lab is currently captivated by the (still unproven) concept that we can use past history of adaptation to design novel genes that might give us a leg up over our most insidious pathogens.



How You Can Help:

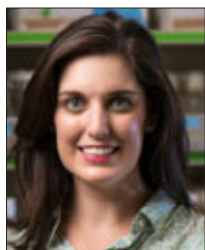
Supporting the Department of Biology is easy!

Gifts to the biology department help create academic and research opportunities for students and faculty that will have a profound effect on human health. To make your gift or discuss opportunities to support the department, please contact

Kate Clyde

Associate Director of Advancement
(585) 273-2050, kate.clyde@rochester.edu

Graduate Student News



Cara Brand selected as cowinner of the 2019 Outstanding Dissertation Award for the Division of Natural Sciences in AS&E

Each year Arts, Sciences & Engineering and the School of Medicine and Dentistry recognize outstanding research and dissertations by PhD students. This award is a testament to Brand's exceptional work as a graduate student.



Ching-Ho Chang awarded Messersmith Dissertation Fellowship for 2019-2020

The Messersmith Fellowship is a one-year fellowship for students in the preclinical departments of the School of Medicine and Dentistry or in biology, chemistry, optics, or physics. Appropriate candidates have passed the qualifying exam and are in the process of writing their dissertations or are at least engaged in full-time research. The fellowship provides stipend support for the student and is highly competitive.



Marcus Kilwein awarded NIH Ruth Kirschstein NRSA Predoctoral Fellowship (F31)

The purpose of the fellowship is to enable promising predoctoral students to obtain individualized, mentored research training from outstanding faculty sponsors while conducting dissertation research. This three-year fellowship provides an annual stipend, tuition, and an institutional allowance and will support Kilwein's work on "Effects of cellular lipid droplet allocation on lipid droplet consumption and *Drosophila* embryogenesis."



Jie Luo finds molecular "switch" to prolong survival of prostate cancer

[Wilmot Cancer Institute](#) scientists believe they have figured out why a commonly used drug to treat late-stage prostate cancer often stops working after four or five months and appears to have a dual function that later turns the cancer into a relentless aggressor. [Read more...](#)



Omid Saleh Ziabari offered National Science Foundation Graduate Research Fellowship

Five University of Rochester graduate students and one undergraduate have been offered [National Science Foundation Graduate Research Fellowships](#), part of a federally sponsored program that provides up to three years of graduate study support for US students pursuing doctoral or research-based degrees in STEM, STEM education, and social science fields. [Read more...](#)

Consider a Gift that Keeps on Giving—Support Graduate Education

Are you more interested in our PhD program? Create or contribute to a **graduate scholarship**. Competitive graduate fellowships and stipends help us to attract the most qualified students.

Check out some of the [existing Graduate Fellowships and Awards](#).

Graduate Students Play Kickball to Unwind and Give Back to the Rochester Community

By Kyle Sworick



The [Kickball League of Rochester](#) (KLOR) is a coed social league for adults in the greater Rochester, New York, area. It's all about having fun, getting outside, helping people expand their social networks, and giving back to the greater Rochester community.

A few of the graduate students in our department have participated on teams in the past, and we thought it would be a great idea to put together a team comprised solely of graduate students from the Department of Biology. It would be an amazing way for graduate students to unwind after a long day in the lab and to get to know each other better.

During the summer of 2018, the Department of Biology generously sponsored our team, which allowed us to give even more graduate students the opportunity to participate. Each week, teams of 11 or more faced off in a game of kickball with

rules nearly identical to those from grade school. It proved to be an amazing way to meet up with other students who we may not see on a daily basis and for everyone to get to know each other better—especially since there is really no better way to bond than to play a team sport in the rain and mud! After each game, teammates enjoyed hanging out together, unwinding, and getting a bite to eat. And we had the satisfaction of knowing that we were helping the KLOR to support [Best Buddies of New York](#).

Overall, it was an amazing experience and it was great to have fun with other graduate students outside of the laboratory setting. We all made a ton of memories, both during and after the games, and we all became closer friends. All of that was possible because of our amazing department!

We are playing kickball again this year with a team that has even more students than last year (hopefully we'll improve our record!), and I hope that this becomes a tradition that the graduate students in the biology department continue well after I leave.

Sincere thanks to our department and we'll see you on the field!



Top (L-R): Jenna Lentini, Nick Kruder, Chris Prevost, Nilima Walunjar, Omid Saleh Ziabari, Chuck Hutti, Marcus Kilwein, Kyle Sworick, Roxan Stephenson, Pakinee Phromsiri, Kim Dao. Bottom (L-R): John Bettinger, Cara Brand, Jillian Ramos, Stephanie Hao



Top (L-R): Marcus Kilwein, Kyle Sworick, Chris Prevost, Omid Saleh Ziabari (in distance), Nicole Dawney, Ethan Walker, Ching-Ho Chang, Chuck Hutti, Kim Dao, Nilima Walunjar. Bottom (L-R): Jillian Ramos, Pakinee Phromsiri, Stephanie Hao, Emery Longan, Jenna Lentini

Heavy Lifting at the Bench

By David Goldfarb

Jillian Ramos, a graduate student in Dragony Fu's lab in the Department of Biology, has been doing the heavy lifting at her lab bench on a project aimed at understanding the molecular basis for a mutation that causes intellectual disability in humans. Jillian's project has focused on human ADAT3, which is a member of a deaminase enzyme complex that converts adenosine to inosine at the wobble position of tRNAs. Jillian has uncovered the biochemical defects in the enzyme resulting from a single missense mutation in the ADAT3 gene. This mutation is the most common cause of intellectual disability in Saudi Arabia, with a carrier frequency of 1 percent. Jillian is currently deciphering the proteins that are dependent upon inosine modification to unravel how protein synthesis is linked to ADAT3 function. Her studies combine classic enzyme kinetics with cutting-edge proteomics to provide insight into the biological functions of a key RNA modification. Importantly, her studies suggest a potential means for restoring proper inosine modification levels in individuals with neurodevelopmental disorders linked to ADAT3.

In addition, Jillian is also doing heavy lifting for heavy lifting's sake, recently setting New York State records in the power lifting disciplines of squat, bench, and deadlift. Competing in the United States Powerlifting Association (USPA) Drug Tested ROC Grand Prix Competition in March, Jillian won the "Raw Division" for her weight class, meaning she lifted without aids such as special support-providing shirts or suits. Competing in the 52kg/114lb weight class, Jillian lifted a total of 300 kg/661.38lbs, qualifying her as a national-level elite athlete: Squat: 102.5kg/225.97lb, Bench: 60kg/132.28lb, Deadlift: 137.5kg/303.13lbs. Don't try this at home.

Her PhD advisor Dragony Fu, an avid runner himself, commented, "Whether in the lab or gym, I see how Jillian's diligent approach and focused mentality have been instrumental in her achieving success both academically and athletically. Moreover, she is constantly pushing the bar higher for herself by learning new scientific skills or setting new lifting goals."



Jillian Ramos in the gym. She recently set New York State records in the power lifting disciplines of squat, bench, and deadlift

Jillian sat for some questions about her sport and how she is able to succeed both at the lab bench and lifting bench.

How did you get started in powerlifting? When did you first realize you were "strong"?

When I started graduate school, I weighed about 130 lbs which was heavy for my five-foot frame. I knew I had to lose the weight I had gained in college and I had a friend who was going to the gym every morning at 5 a.m. I asked him if I could start going with him, because I wanted to start getting into the good habit of waking up early and going to the gym. He was the one who taught me how to lift weights and about proper form.

One day I missed the gym in the morning and instead performed a workout (squats) at the University of Rochester weight room. A student approached me and mentioned that I was really strong and should consider competing in powerlifting. That student, Bruce, provided me with all the details about powerlifting and about the federation I would later compete in.

How do you balance training and graduate work?

As I have learned throughout my years of schooling, the key is time management, but also recognizing and asking yourself what it is that you find important and what you are willing to sacrifice to make yourself successful at what you find important. Since both my sport and graduate work are important to me, I've had to sacrifice lower priority activities, such as hanging out with friends past 9 p.m. if I am planning to train the next morning.

Currently I wake up at 4:50 a.m. to get to the gym by 5:30 a.m. I finish with my workout by 7 a.m., giving myself enough time to get home and leave for the lab by 8:10 a.m. During my second year of graduate school I was getting to the gym as early as 4:30 a.m. to make time for all my commitments. My friends and colleagues are well aware that I am very strict about time management and that I will rarely change my schedule.

What are your goals in the sport?

I really enjoy powerlifting because it is a sport about competing against yourself. You always aim to get a higher combined total or to lift a little bit more in one of the three disciplines.

My goal for this past meet was to obtain "Elite" status, which meant I needed a 660 lb total in my weight class, which I happily achieved. My next goal is to qualify to compete at the Arnold Schwarzenegger Fitness Expo in Columbus, Ohio. I would need to obtain a 720 lb total, which will take some time.

What do you advise for those interested in getting into powerlifting for fitness or competition?

For those just starting out I would advise beginning with lighter weights and focusing on learning and executing the lifts with proper form. Lifting heavy weights can be dangerous. I advise beginners to record videos of their lifts for technique review and to never hesitate to ask others in the gym for help even though it may feel like you are bothering them (I promise that you are not). You want to set a strong foundation for when you are ready to attempt maximum lifts. Ask around for different perspectives and training approaches, which are informed by each person's body type, conformation, and goals. For example, "proper" foot placement during squats is not the same for everyone.

For those who have weightlifting experience and would like to try a competition but feel uncertain, know that you will never feel 100 percent ready. It is best to try the first time with no expectations. Be prepared to not perform as well as you do in the gym. Everyone at powerlifting meets is so friendly and willing to help. I helped many first-timers this past meet.

Do you feel that your commitment to your sport makes you a better scientist in any way, or are they completely independent endeavors?

I see my sport and my research as exclusive parts of my life. Usually, if things aren't going well in research, I've already completed something successful in the gym that morning. Sometimes, it's the other way around. If the gym didn't go as planned, I know I need to feel good about my day in the lab. I believe it is important to have an outlet and I enjoy powerlifting because I still get a sense of accomplishment like I do in research.

Spotlight on New Staff

The Department of Biology has welcomed several new administrative staff to our team! Each of them has contributed quickly and in countless ways and we take a moment here to highlight them.



Fiona Palardy

Data Entry Clerk, Business Office

March 2019

I was born and raised here in Rochester, New York, but lived in Southern Maryland for a few years. I came back to Rochester about seven years ago. I have two beautiful children—Gavin is almost 10, Delaney is almost 5—and I was married this past June to the love of my life, Justin, an incredible stepfather to our kids. When not at work, I keep pretty busy with my children’s extracurricular calendars (Go Renegades!). I absolutely love cooking and will spend far too much time watching any and all programs related to food. I feel very fortunate to have landed my position here at the University of Rochester. My coworkers are some of the kindest, most thoughtful people I’ve ever met, and I truly love the work that I do. Fun fact: I’ve had type 1 diabetes since age 4. I wear a CGM (continuous glucose monitor) and an insulin pump. If you see me with funny stickers on my arms, that’s what they are! My kitchen is filled with various cooking gadgets and tools, my laundry’s never done, I couldn’t live without coffee, I unintentionally take a really long time to respond to texts, I’m an equality ally, and I love the Lord. That sums me up!



Regina Shannon

Purchasing Agent, Business Office

March 2018

I grew up in the Utica, New York, area and moved to Rochester in 1989. I live in Fairport with my husband, Tom, and two children. Our daughter Elizabeth will be a junior at SUNY Oswego in the fall and our son Zachary will be a junior at Fairport High School. I enjoy gardening, biking, bowling, and traveling with my family, especially on our annual trip to the Outer Banks. I am grateful for the opportunity to be part of the biology department and to work with such amazing people!

We Also Welcomed

- **Chad Stewart**
IT Specialist
January 2019
- **Cathleen Febles**
Stockroom Clerk
March 2019

Brenna Rybak receives Meliora Award for Outstanding Service



“Her attention to detail and skill at managing interviews has been noted by many candidates, and it cannot be overlooked that the number of hires during Brenna’s time has increased.”

-Gloria Culver

Each spring the University celebrates outstanding staff members for their significant and longstanding contributions.

The recipients of this year’s staff awards were recognized at an April 25 reception in Helen Wood Hall. Their names will also be inscribed on plaques in the Medical Center and in Wallis Hall on the River Campus.

The Meliora Award recognizes staff members whose work performance and dedication during the preceding few years exemplify the University’s motto, Meliora.

As Department of Biology administrator, Brenna Rybak is responsible for many aspects of the department’s day-to-day and long-term operations.

Colleagues say she’s an innovative and creative problem solver and her level of service to faculty,

staff, and students in the department consistently exceeds expectations. Rybak is considered a thoughtful advisor to many members of the department and has helped counsel them through a variety of issues and questions.

“Brenna is a star, a terrific asset to the department and the University, and is a joy to work with,” wrote Michael Welte, chair of the Department of Biology, who nominated her for the award. “She communicates effectively in person and in writing, is an active listener, and a problem solver. She interacts well with all members of the department, has profound people skills, and is excellent at both managing conflict and encouraging people to do their best.”

Rybak is essential to the department’s faculty recruitment efforts, organizing and scheduling interviews and ensuring the process is carried out seamlessly. She also plays a critical role in training and mentoring new staff members.

“Her attention to detail and skill at managing interviews has been noted by many candidates, and it cannot be overlooked that the number of hires during Brenna’s time has increased,” wrote Gloria Culver, a professor of biology and dean of the School of Arts & Sciences, in a letter supporting Rybak’s nomination. “Brenna’s work in this area has been so strong that other departments now use it as a model for organizing and communicating with candidates.”

Colleagues applaud Rybak’s vision and excellent judgment. She worked with the web team to completely redesign the department’s website and continues to ensure that the site is kept up to date. She also volunteered to take responsibility for, and make improvements to, the department’s newsletter, raising the department’s visibility to alumni and others at the University.

Rybak has also made contributions outside of the department. She was an original member of the Arts, Sciences & Engineering Administrative Council and she serves on the Commission on Women and Gender Equity in Academia.

[Read more...](#)

News from the Diversity Committee

The Department of Biology is committed to diversity and inclusion, and our Diversity Committee has been working to put this commitment into action.

The committee is currently composed of four faculty members (Dan Bergstralh, Jenn Brisson, Justin Fay, Danielle Presgraves), one administrative staff person (Brenna Rybak), one postdoc (Anusha Naganathan), and one PhD student (Roxan Stephenson). In the fall, two undergraduate students (Brendon Courteau and Emily Hartman) will also join us, bringing their important perspectives. Our goal is to make sure that all of the relevant populations are represented on the committee, so that these populations have a voice for affecting change. During our monthly meetings, discussions center around identifying areas in need of improvement for all groups, including but not restricted to women, LGBTQ, parents and families, first-generation students, and those with disabilities.

The diversity committee has been busy over the last year. Now as you walk the halls in Hutchison, you'll see indications of our work. "Safe Space" decals now hang on the outside of many offices, signaling that the occupant has been trained in providing a safe, inclusive environment for LGBTQ + allied people. On the third floor, you'll find a map with pins showing the diverse geographic origins of our department members. And throughout the third and fourth floors, you'll see posters addressing disability issues.

In addition to these visible reminders of our diversity, the committee has been working behind the scenes. Last July, we were proud to open a lactation room in Hutchison Hall, which is now being used by members of the University community—and getting rave reviews. We adjusted our graduate recruiting process, making GRE scores optional for applications to our graduate program. We required a diversity statement as part of faculty candidate applications, and we are currently working on ways to improve parental leave policies for graduate students and postdocs.



Safe Space decals on office and lab doors and windows throughout the department signal that the occupant has been trained in providing a safe, inclusive environment for LGBTQ+ allied people.



A map on the third floor of the department shows the diverse geographic origins of our department students, faculty, and staff.

In addition, we developed a diversity statement that puts our values into words:
We in the Department of Biology value integrity and workplace inclusivity. We strongly believe that our ability to excel in research and educating students is deeply rooted in engaging a diverse community. Therefore, we welcome and value students, faculty, and staff who represent all axes of diversity. We are committed to providing a safe and welcoming environment for everyone—including undergraduate and graduate students, researchers of all levels, staff, and faculty—to learn, work, and go about their daily business. We believe that we all have a role to play in building and maintaining a respectful environment and we do not tolerate discrimination or harassment. For more information about the University of Rochester's policies on diversity and inclusion, visit www.rochester.edu/diversity.

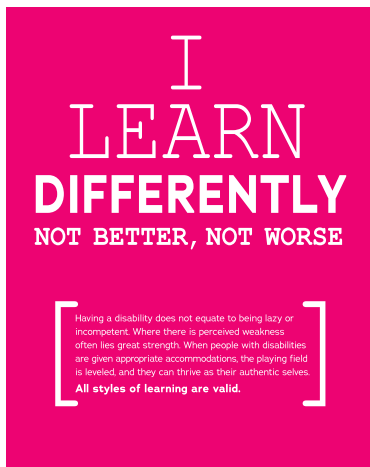
We suggested similar language about diversity and sexual harassment resources be included in syllabi and in the graduate student handbook.

Committee chair, Jennifer Brisson, also helped to launch a ***Women in Biological Sciences*** (WIBS) series this past November. This group is an informal opportunity for students, postdocs, staff, and faculty to get together in a supportive and fun environment to discuss various topics surrounding women in science such as work-life balance, improving diversity in the workplace, and mentoring. WIBS meetings are open to the whole community and welcome people of all gender identities and career stages.
 In the spring, the committee met with the assistant vice provost for diversity and the director of diversity programming to learn more about what is happening on campus and what resources are available. The committee also met with the faculty diversity and development officer to discuss upcoming initiatives and to identify areas where we can help.

Our diversity committee is always looking for new perspectives and ideas about how to promote an inclusive, supportive environment in the Department of Biology. If you have suggestions, please contact us—no matter how big or small the idea. We look forward to hearing from you and to a productive year ahead.



More information about disability services and support
ROCHESTER.EDU/DISABILITY
This message was brought to you by the University of Rochester's Disability Awareness Campaign



More information about disability services and support
ROCHESTER.EDU/DISABILITY
This message was brought to you by the University of Rochester's Disability Awareness Campaign



More information about disability services and support
ROCHESTER.EDU/DISABILITY
This message was brought to you by the University of Rochester's Disability Awareness Campaign



More information about disability services and support
ROCHESTER.EDU/DISABILITY
This message was brought to you by the University of Rochester's Disability Awareness Campaign

Posters hung on the third and fourth floors address disability issues.

Department of Biology Annual Retreat— Letchworth State Park

August 21, 2018



On August 21, 2018, the Department of Biology held our annual retreat at Letchworth State Park just south of Rochester. Renowned as the “Grand Canyon of the East,” Letchworth Park features three major waterfalls that roar through the park as part of the Genesee River. Faculty, students, and staff were treated to breathtaking panoramic views, lush forests, and an abundance of science. The timing of the retreat also provided a perfect opportunity to introduce the first-year graduate students to the department. Moreover, the retreat served as an introduction for two of our newest faculty members, Nancy Chen and Anne Meyer.

The retreat featured short talks by faculty members as well as scientific presentations from individual labs. The faculty talks addressed the question: “What is a key scientific challenge in your field and how is your lab going to solve it.” Through this talking point, the department was introduced to the major challenges and potential solutions in diverse areas of biology that ranged from evolutionary genetics to aging to synthetic biology.

The lab presentations featured a number of creative productions that were generated by students and postdocs. In each case, the labs showcased how they turned obstacles into insight. The presentation methods ranged from homemade videos to research haiku!

Following the talks, attendees were treated to lunch on the patio overlooking one of the magnificent waterfalls. Afterwards, second-year graduate students presented a parody video of the PBS series, *Planet Earth*. In this video, the second-years presented the “wild” life of graduate students and their brave journey through the “longest parking lot in North America.” The festivities continued as many students, faculty, and staff camped out overnight and enjoyed a barbecue feast. Overall, the retreat provided a wonderful beginning to the academic year and introduced incoming students and faculty to the rest of the department with a fun day of science and social activities.

How You Can Help:

Supporting the Department of Biology is easy!

Gifts to the biology department help create academic and research opportunities for students and faculty that will have a profound effect on human health. To make your gift or discuss opportunities to support the department, please contact

Kate Clyde

Associate Director of Advancement
(585) 273-2050, kate.clyde@rochester.edu

Howard Bryant Endowed Scholarship Fundraiser



Friday, June 7, 2019



The Department of Biology held its second annual Cornhole Tournament on June 7, 2019, and was proud to have over 80 people in attendance. Held in the Roundhouse at Genesee Valley Park, the tournament fielded 28 teams and raised over \$8,700 for the scholarship fund. It's a game that everyone can play. Teams were composed of department members and their families, members of the Mount Vernon Baptist Church, and many vendors and friends of the department and the University. We were also very pleased to have Tim Anderson '94, Ecology and Evolution, and his son Thomas, a current University student, in attendance.

Labs were encouraged to decorate the cornhole boards and participants from Nancy Chen's lab wowed the crowd with their beautiful paintings of the Florida Scrub-Jay—the endangered species of bird that the lab studies.



For the second year in a row, Dan Leyrer, a long-standing Howard Bryant committee member, and his teammate Dave Maynes placed first in the tournament, with Justin Fay and his son Eitan coming in at a close second. First- and second-place medals were awarded.

Members of the Chen Lab were given this year's Spirit Award for their enthusiasm and for creating the prettiest cornhole board ever used in a tournament setting. Ghaemmaghami lab undergraduate student, Leon Harvey, won the four-bag challenge and cash prize of \$100.

The afternoon was a fantastic way to celebrate Howard Bryant's legacy and to raise funds for the scholarship. We look forward to next year's fundraising event with great anticipation! If you'd like to attend next year's event or you'd like more information about it, please contact [Brenna Rybak](#) for details.



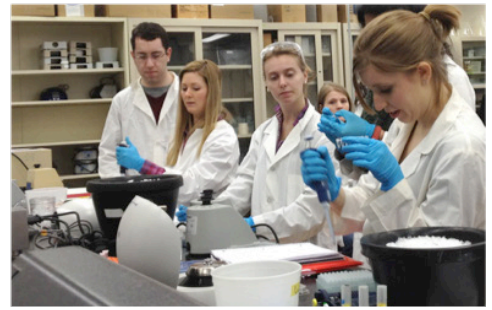
Michael Welte, James Williams, a friend of Howard Bryant's, and Tom Eickbush



Dan Leyrer, Dave Maynes, Justin Fay, and Eitan Fay



Leon Harvey, undergrad and winner of the 4-bag challenge



Support the Department to Help Create Academic and Research Opportunities

It is our mission to provide our faculty and students with the support they need to compete on a global stage. Currently, with fewer federal funds and grants available, the need for support from our alumni, parents, and friends could not be greater. Donations to Biology Gift Fund, which is overseen by the department chair, are used to quickly respond to the urgent academic and research needs of our faculty and students. By supporting the **Biology Gift Fund**, you can help to create new opportunities for students and improve our teaching activities. Please know that gifts of any amount that are meaningful to you are meaningful to us.

Donate Online
rochester.edu/giving/biology

To make a gift, please mail this form with your contribution to the address below or visit our [secure website](#) to donate by credit card. Those interested in making a legacy gift, a donation through a Donor Advised Fund, or with appreciated securities, please contact our department liaison, Kate Clyde at kate.clyde@rochester.edu or call her directly at (585) 273-2050. Thank you for your consideration!

I Support the Biology Department!

Enclosed is \$ _____

Please make checks payable to the University of Rochester

I wish to contribute to the following fund:

_____ Biology Gift Fund (A10671) _____ Other: Please specify _____

Name (please print): _____ **Email:** _____

Address: _____ **City:** _____

State: _____

Signature: _____ **Date:** _____

_____ **This is a joint gift.** **Spouse/Partner's Name:** _____

Appeal Code: 20C02

Mail to: *University of Rochester, Office of Gift and Donor Records
 300 East River Road, Box 270032, Rochester, NY 14627*

DEPARTMENT OF

BIOLOGY

Outgoing Chair

Michael Welte

Email: michael.welte@rochester.edu

Phone: (585) 276-3897

Incoming Chair

Elaine Sia

Email: elaine.sia@rochester.edu

Phone: (585) 275-9275

Administrator

Brenna Rybak

Email: brenna.rybak@rochester.edu

Phone: (585) 275-8837

Newsletter Committee

Brenna Rybak

Cheetip Benyajati

Daniel Bergstralh

Department of Biology

402 Hutchison Hall

Box 270211

Rochester, NY 14627-0211

Phone: (585) 275-3835

Fax: (585) 275-2070

*Alumni, we want to hear from you!
Let us know what you've been up to.*



Send Us Your News!

Submit news or
feedback



SCHOOL OF
ARTS & SCIENCES
UNIVERSITY *of* ROCHESTER