

DEPARTMENT OF

BIOLOGY

Summer Newsletter 2015



SCHOOL OF
ARTS & SCIENCES
UNIVERSITY OF ROCHESTER



Specimen Collection

Rediscovering our history and dedicating our future to preserving the past!

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Message from the Chair

Dear Biology Alumni and Friends,

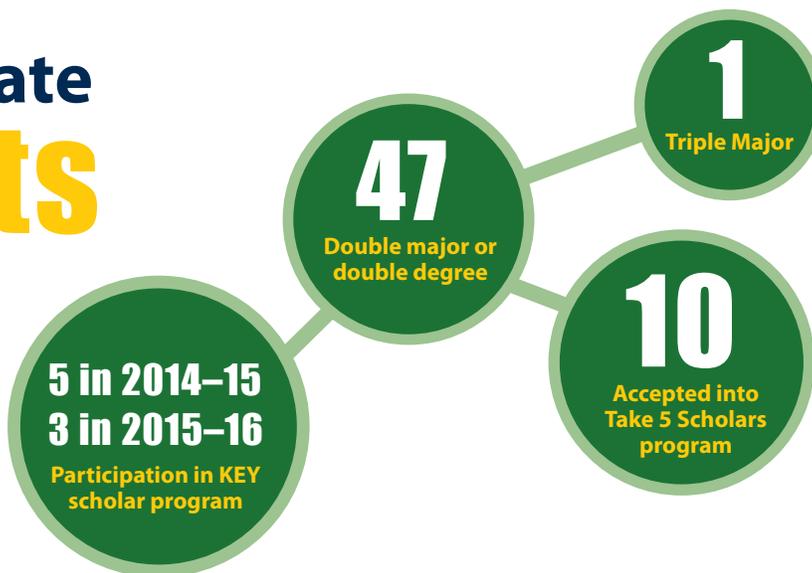


First of all, I would like to congratulate the Class of 2015, whose recent graduation marks both our recognition of their academic achievements here at Rochester and the beginning (commencement) of one of the major transitions in life. We welcome you to the community of Rochester alumni and wish you well on your journey forward in life. I also want to acknowledge and thank the parents and other family members who have supported our graduating seniors in so many ways.

This year, 223 students graduated with degrees in areas covered by the Undergraduate Program in Biology and Medicine (UPBM), including the BA in biology and the BS degrees in molecular genetics, cellular and developmental biology, ecology and evolutionary biology, microbiology, neuroscience, and biochemistry.

Remarkably, 50 percent of this year's graduating UPBM majors have carried out independent research. This high percentage illustrates the commitment of both students and faculty to research and the importance of this discipline to understanding current biology. As a department, we are particularly gratified that we can offer our students the opportunity to conduct research firsthand in world-class laboratories. It is not only a wonderful experience for our undergraduates but also for our graduate students, who often mentor their junior colleagues, and for the faculty members. Working one on one with undergraduates is one of the most satisfying experiences in academia. Here are some other interesting stats on our graduates:

Graduate Stats



Two individuals have joined our faculty in the past year. Christian Rabeling joined the department in July 2014. Christian obtained his PhD at the University of Texas and did postdoctoral research as a postdoctoral fellow at the Smithsonian and as a Junior Fellow at Harvard. Christian works on tropical ants, studying a variety of aspects of their natural history, including asexual reproduction and social parasitism of one ant species by a closely related species. Amanda Larracuenté joined the department this past January. Amanda earned her PhD at Cornell and then was a postdoctoral fellow in our department, working in the lab of Daven Presgraves. Amanda's research focuses on selfish DNA (genes or genomic regions that subvert normal Mendelian processes, thus interfering with adaptive evolution), intragenomic conflict, and genome evolution in *Drosophila*.

In other departmental news, I am very happy to report that in the past year, Andrei Seluanov has been promoted to associate professor with tenure; Xin Bi, Elaine Sia, and Michael Welte have been promoted to the rank of full professor; and Vera Gorbunova has

been appointed as the Doris Johns Cherry Professor. For her long service to the department and the University, Kathy Giardina (the department's senior accountant) was selected as one of this year's recipients of the University's Witmer Award for Distinguished Service. Kathy exemplifies the extraordinary commitment of all of our outstanding staff, without whom the rest of us would have a much harder time doing our jobs. Congratulations to all these individuals for their achievements and contributions.

The Department of Biology has for many years administered the BA in biology and the BS degrees in cell and developmental biology, ecology and evolutionary biology, and molecular genetics. This year, with approval from New York State, we have added another BS degree—in computational biology. This degree recognizes the dramatic changes occurring in many areas of biology with the advent of technologies and computational methods for generating and analyzing massive amounts of data. The new major meshes well with the University's new emphasis on data science, and we expect this to be an area of growing importance in the years to come.

In the category of you-have-to-see-it-to-appreciate-it, Bob Minckley initiated a major discovery and restoration project of the department's zoological collections. Many of the specimens that Bob has found date from the 19th century and the days of the great natural history explorers. Some belong to species that have vanished from the face of the earth. Although this is a work in progress, we encourage you to peruse the hallways of the second floor of Hutchison Hall to see displays of some of these treasures.

Finally, I would like to mention that our department has undertaken several significant outreach efforts in recent years, of which I will mention just two. A major departmental objective is to develop a program that supports first-generation and/or low-income Rochester School District students, beginning as early as elementary school with the ultimate goal of gaining admission to college. This includes in-class presentations by biology faculty and graduate students, visits by students to our department for lab demonstrations, and weekend tutoring of an honors eighth grade biology class. In addition, professors Jennifer Brisson and Sina Ghaemmaghami co-organize a two-week, on-campus summer course for high school students in the Upward Bound program, an initiative of the David T. Kearns Center. Plans are in the works to expand both of these programs in the coming years. If you are interested in supporting these programs, please contact our administrator, Brenna Rybak (brenna.rybak@rochester.edu), or David Richardson, assistant director of advancement (david.richardson@rochester.edu) for more information.

We hope that you enjoy this issue of the newsletter and learning about the exciting things happening in our department. For "breaking news" as well as coverage of ongoing research projects and other departmental activities, be sure to check our departmental website at www.rochester.edu/College/BIO/. As always, we'd be delighted to hear from you and would like to pass on your news to friends, classmates, and fellow alumni.

John Jaenike, Chair

WANT TO GET INVOLVED?

**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. *Read [Biology's Meliora Challenge Campaign summary](#) for more information.*

To make your gift or discuss opportunities to support the department, please contact

David Richardson '10E

Assistant Director of Advancement
(585) 276-7423, david.richardson@rochester.edu

Gloria Culver

Appointed Dean of the School of Arts & Sciences



Gloria Culver has been appointed dean of the School of Arts & Sciences, effective immediately. Peter Lennie, the Robert L. and Mary L. Sproull Dean of the Faculty of Arts, Sciences & Engineering, made the announcement following a yearlong national search. Culver has been serving as interim dean since July 1, 2014.

"This is an outstanding appointment," said President Joel Seligman. "Gloria Culver has done an excellent job as interim dean. I look forward to working with her in the years to come."

Culver became interim dean in July 2014 following Joanna Olmsted's retirement, after three years chairing the Department of Biology.

"I asked Gloria to be interim dean because she had done a marvelous job leading a large and complex department," said Lennie. "As interim dean, Gloria quickly mastered the much broader portfolio of Arts & Sciences, where she has done a remarkable job in hiring and retaining faculty and in supporting the departments. The search process confirmed that she was the right choice."

William FitzPatrick, the Gideon Webster Burbank Professor of Intellectual and Moral Philosophy, chaired the search committee.

"Gloria obviously brings a wealth of talent and experience to this position," he said, "but what also came up repeatedly was the thoughtfulness and genuineness people experience in their interactions with her. She's the same person whether you're meeting her in the biology department, the dean's office, or just around campus, and that down-to-earth transparency and openness to honest discussion has inspired trust as well as respect among the faculty."

"The committee was equally impressed by the way Gloria combines outstanding research accomplishments in the sciences with an understanding and appreciation of the distinctive value and needs of the humanities, arts, and social sciences," FitzPatrick said. "It was important to the committee that the new dean have a broad and supportive vision for Arts & Sciences as a whole, and Gloria embraces that inclusive perspective, with a commitment, for example, to finding ways to increase the profile of the humanities here in a time of decreasing enrollments nationwide. We're very pleased to have the School of Arts & Sciences in such good hands going forward."

A professor of biology, Culver joined the Rochester faculty in 2007. Her research centers on the assembly of ribosomal machinery essential for growth of all cells. By focusing on bacterial ribosome, she has contributed to understanding how infections might be controlled through selective inhibition of specific control points of ribosomal assembly, which has implications for reducing harmful bacteria, including "super-bugs." Her research has been funded by the National Institutes of Health, the American Cancer Society, and the National Science Foundation. She currently chairs the NIH Molecular Genetics A Study Section.

"I am excited and honored to become the next dean of the School of Arts & Sciences," Culver said. "The disciplines encompassed in the school are at the core of the University. We have an outstanding faculty and amazing environment for research, scholarship, and teaching. I look forward to working with faculty, students, and staff to take the school to the next level!"

"My immediate goals are to establish a Humanities Center to foster interdisciplinary work and an Institute for the Performing Arts to encourage River Campus undergraduates to participate in music, dance, and theater. Both of these initiatives are critical for faculty and student recruitment, retention, and scholarship."

Before coming to Rochester, Culver served as assistant and associate professor in the Department of Biochemistry, Biophysics and Molecular Biology at Iowa State University. She received a PhD in biochemistry from the University of Rochester in 1994, after earning a bachelor's degree in 1988 from Ithaca College.

Lennie thanked all who interviewed candidates and participated in the search process, including the search committee, Board of Trustees chair Ed Hajim, the President's cabinet, AS&E department chairs, AS&E faculty council, representative student leaders, diversity and AS&E administrative staff, and the AS&E National Council, chaired by Trustee Nomi Bergman. "They all gave generously of their time, and the process benefitted greatly from their thoughtful comments," he said.

The School of Arts & Sciences includes the following departments in the humanities and arts, social sciences, and natural and physical sciences: anthropology, art and art history, biology, brain and cognitive sciences, chemistry, clinical and social sciences in psychology, earth and environmental sciences, economics, English, history, linguistics, mathematics, modern languages and cultures, music, philosophy, physics and astronomy, political science, and religion and classics.

(Adapted from www.rochester.edu/newscenter/gloria-culver-appointed-dean-of-the-school-of-arts-sciences)



Gloria Culver at the 2015 University of Rochester College of Arts and Sciences commencement ceremony.

WAYS TO HELP

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.

Or 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.

Or help to fund the department's **community outreach program** or **essential instrumentation** that makes computational biology and bioinformatics possible and keeps Rochester competitive within the rapidly growing field of data science.

Kathy Giardina

Receives the Witmer Award for Distinguished Service



Kathy Giardina's position requires her to manage complex budgetary matters within the department—including 30 research grants, faculty start-up accounts, capital equipment accounts, as well as departmental operating and teaching budgets.

She does it all “with the highest level of professional competence, integrity, and good-natured personal attention to every single individual she deals with,” writes John Jaenike, professor and chair of the Department of Biology, who nominated Giardina for the award.

Giardina has been with the department for more than 40 years and in her current role since 2007. She manages funding streams that support faculty research in the department and is lauded for her ability to ensure that the funds are being used appropriately and efficiently.

She continues to make notable contributions, Jaenike says, including the coordination of the budgetary side of a successful \$12 million grant proposal from Vera Gorbunova and Andrei Seluanov—the largest grant ever received by the department.

Giardina has also put together a forward-looking teaching lab budget and identified a way to expand funding for undergraduate research.

Numerous faculty members applauded her professionalism, efficiency, patience, and kindness. “She is valued by all for her abilities, her character, and for her unfathomable institutional knowledge acquired during 40 years of dedicated service,” says Daven Presgraves, professor of biology. “Kathy sets a standard of professionalism, dedication, and integrity that pervades the department’s administrative staff.”

(Adapted from www.rochester.edu/currents/V42/N08/outstanding.html)



Witmer Award for Distinguished Service recipient Kathy Giardina, senior accountant with the Department of Biology, after receiving the award from Meliora/Witmer Selection Committee Co-Chair Paul Burgett and University Board of Trustees Chair Emeritus G. Robert Witmer.

Graduating Student Profiles



ALLISON EBERHARDT '15 (Molecular Genetics)

One of the most important things I learned while studying biology was how to apply the things I learned in lectures to a real-world setting. The intro classes focused mostly on presenting information and explaining how things work, but once the courses became more advanced, the professors were great at showing how the science applied to nature. I feel very prepared for my job as a laboratory technician, both from the general knowledge and the hands-on experience I gained during my time in the department.

My biggest piece of advice for students pursuing a biology major would be to take advantage of independent research and consider defending a thesis. For my junior and senior years, I took three lecture courses and did a four-credit research project as my fourth class. Although the idea of writing a thesis and defending it in front of a committee can be intimidating, I learned invaluable skills from the process and feel extremely prepared to continue my career in research. As long as you budget your time wisely, you'll still have plenty of time to be involved in other things; I double-majored in psychology, I was the musical director of Vocal Point, and I was actively involved in No Jackets Required, and Colleges Against Cancer. Overall, I had a great experience in the biology department, and I hope all of the students to come experience the same thing.



CLAIRE HART '15 (Molecular Genetics)

Throughout my four years at the University of Rochester as both a biology student and a research assistant, I have learned the importance of collaboration and teamwork. Whether it be working with mentors and professors on research or studying with fellow students through different ways of thinking and studying methods, collaboration and teamwork are crucial for the future involvement in the health professions or research.

This summer, I will begin graduate school for my doctorate in physical therapy. The importance of teamwork is essential in order to develop interprofessional and global collaboration that can aid in solving various cases in the medical field. This invaluable knowledge from my undergraduate career will be extremely beneficial for my role as a health care professional.

My advice to students pursuing a biology major is to not be discouraged by the introductory courses with large class sizes and broad information. Set time aside for study, but don't forget to have fun too! I always encourage study groups in order to observe various methods of studying and finding the perfect one for you. Once the introductory courses are over, make sure you select courses that you find interesting and are rewarding in the long run!

In my spare time, I was the captain of the University cheerleading team for two years as well as a research assistant at the University of Rochester Baby Lab and Project TRAIN at the Mount Hope Family Center. I also enjoy kayaking, hiking, yoga, and spending time with friends!

UNDERGRADUATE EDUCATION

Consider a gift that keeps on giving . . .

Supporting students is one of the highest priorities at Rochester. Create a new **undergraduate scholarship** or contribute toward an existing one as these are of vital importance.

Check out some of the existing Undergraduate Fellowships and Awards.



ALISA JOHNSON '15 (Ecology and Evolutionary Biology)

I have gained perspective by being exposed to courses covering some of the many major areas within biology, including microbiology, genetics, biochemistry, and evolution. I can appreciate how biology as a broad natural science is made up of so many complex and interrelated disciplines.

As a freshman, I knew I would major in biology, and as the years passed I found the BA option, as well as the more specific BA major tracks, to be an excellent path to narrow my focus slightly in a way that allowed me to pursue my individual interests further. The UPBM program was very encouraging and facilitated planning independent study courses and a thesis defense so that I was able to graduate with distinction in research. Marianne and Jenn in the UPBM office are incredible—they consistently go out of their way to make time to help their students plan course schedules and achieve success. There is also a strong sense of community and willingness to help among faculty and other students that has been a great source of support. I have been able to learn about biology beyond lectures in Hubbell Auditorium by reaching out to faculty members at URM. Three years of cell and developmental biology research at URM has been a major highlight of my time as an undergraduate and prepared me well for academic, research, and clinical opportunities in my future career. In August 2015, I look forward to beginning dental school at the University at Buffalo School of Dental Medicine.

I encourage students pursuing biology majors to study abroad! Between the UPBM and study abroad offices there is always a way to make it happen. It may involve pushing a required science course into another semester, or even the summer, but whether you can go abroad for the summer or a semester, I would say take full advantage of all the opportunities, plan ahead, and it can be done . . . you will be glad you did!

Outside of biology, I was a member of the UR Student Health Advisory Committee (URSHAC), part of the Society of Undergraduate Biology Students (SUBS) E-board, involved with the SA Government, and volunteered regularly at the nearby Ronald McDonald House of Rochester. I also received a Kauffman Entrepreneurial Year (KEY) Program Scholarship for a fifth year of undergraduate study to pursue business and entrepreneurial studies.



JUNNE PARK '15 (Cell and Developmental Biology)

During my years as a biology major, I learned the importance of continuously challenging knowledge presented to us. Many of the facts we believed as truths now can be proven incorrect or be given different interpretations 10 years later. My biology major guided me in systematically questioning known facts in all possible angles and critically evaluating the evidence in great detail.

I realized that, even though many of the things I learned in my undergraduate years may not be applicable 10 years down the road, the way I learned to consume and process information will definitely be helpful in the future. As a doctor, I will definitely use my skills as a scholar and a thinker to properly diagnose and treat my future patients.

Do not try to memorize biology. Not only is that impossible, but it is not helpful to anything you do in the future. Instead, learn the how and the why in biology because biology is one of the least understood fields and it is up to us to fill in the blanks.

In my spare time, I worked in the Perkins lab at the Medical Center on characterizing the MECOM gene, which is known to cause leukemia. I also wrote a paper "More Access, Less Abortions: The Case of the Netherlands," which will be published this year. I was also a layout editor for the *Journal of Undergraduate Research* and a freshman fellow for three years.



ROBERT RIEMEIJER '15 (Biochemistry)

I arrived in Rochester already interested in studying biochemistry. Four years here nurtured that interest and galvanized my pursuit of an academic career. Most significantly, working in a lab for two years impressed the culture of academia upon me. While working in the Ermolenko lab, I was treated like a scientist, which was immensely formative in my decision to pursue an academic career.

Minimal, flexible core course requirements and the ability to overload were the reasons I chose the University of Rochester, and they served me well. The biochemistry major itself is comprehensive and versatile in and of itself. But it is demanding. The flexibility of the college allowed me to successfully pursue a major in biochemistry, while also taking an optics course, a three-course cluster in Philosophy of Science and Mind, and four graduate biology courses in the School of Medicine and Dentistry. This has prepared me to pursue a PhD in biophysics at UC Berkeley in the fall.

Biology is studied on a vast scale—ranging from nano to macro to ecosystems—and comprises a seemingly overwhelming and unrelated amount of measurements and relationships. It really helps to ask a few questions to contextualize the new information you're learning. On what level is this information relevant? How does this information fit within the context of larger systems? In other words, how is this new information connected to what you already know about biology? Biology is one of the largest remaining unfinished puzzles humankind has to solve, so don't be discouraged if you feel overwhelmed while studying it. Just keep asking questions that will help you solve the puzzle!

My father told me I would find myself with more spare time than ever before in college, but I didn't find this to be the case. Besides working in a lab for two years, I have been active in the on-campus community as a Neighborhood Ambassador and active in the Greek community as a brother and treasurer of Phi Kappa Tau fraternity.



MICHAEL SUMNER '15 (Cell and Developmental Biology)

My time here at the University of Rochester has been shaped greatly by the faculty who mentored me in my academic and professional career. While the lessons conveyed in our conversations were invaluable, the amount of time they dedicated to meeting with me is what truly means the most. Whether it was helping me update a protocol, put the finishing touches on a paper, or general life management, those who mentored me were available with the guidance I needed to succeed.

Assistance for any facet of collegiate life was available as long as I was willing to seek it out. When difficulty struck and I felt my goals would have to be put aside, my mentors inspired me to continue and I can now proudly say I will be attending a PhD program in the fall that was heretofore just a dream.

To those who have the opportunity to be an advisor, it can make an immeasurable positive influence in a student's collegiate career. By helping more students reach their full potential, we will have more graduates who meet and exceed the expectations of a profession in science.

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



HARRIS WEBER '15 (Cell and Developmental Biology)

While at one point I could effortlessly recite the Krebs Cycles and all its intermediates, the most important thing I learned is how to understand and break down a dynamic system. Additionally, pursuing research at the Medical Center taught me vital life skills, like how to deal with bosses and how to manage diverse project-focused teams.

Next year, I plan on working in investment banking at J.P. Morgan in the health care group, a distinct realm from the field of biology that I know and love. Seemingly distinct that is. Understanding the basics of biology helps, but by thinking like a biologist, I act inherently curious, which leads me to questions that my peers and supervisors don't even think of asking.

I would advise all freshmen to seek out research opportunities as soon as possible; it's never too early to start. By fully engaging in a research lab, I learned much more at a much faster pace than I could have in a classroom, all at the cutting edge of the field. Also, involve yourself in what you're passionate about in the present. Through my job/internship networking, I've realized no one who is successful took a linear path to get there but took one moment at a time and was at his or her best in that moment. In addition, I was the president of the Society of Undergraduate Biology Students, president of Meliora Capital Management, Vice President of Club Tennis, a member of Delta Upsilon, worked as a research assistant in the Nedergaard lab, and currently work at Vaccinex.



JOHN WILSON '15 (Molecular Genetics)

I graduated from the University of Rochester with dual degrees in molecular genetics (BS) and psychology (BA) in May 2015. After graduating, I accepted a job offer at the University of Rochester Medical Center and became a research analyst in the Department of Psychiatry. In August, I will begin a one-year AmeriCorps VISTA fellowship at Anthony Jordan Health Center at Community Place in Rochester. As a volunteer, I will conduct community assessment projects to determine community needs and implement an outreach campaign to promote the clinic's services to medically underserved individuals. I am currently applying to medical school and plan to earn my MD and potentially an MPH as well. I would like to thank the UPBM faculty, especially Professor Benyajati, for their support and mentorship during my studies at Rochester!



KATHRYN WOODWORTH '15 (Molecular Genetics)

While an undergraduate at the University of Rochester, I learned to be a freethinker and look beyond what was presented in lecture. The professors here don't hold your hand but rather challenge you to think outside the box and come to your own conclusions. As demanding as the biology classes are at Rochester, I have gained invaluable experience that will surely help me in the real world.

The biology program has taught me to look at a topic from various perspectives and go beyond the surface to ask questions. This lesson can be applied to all facets of life and will be particularly helpful as I work on an independent project with the New York State Department of Health.

My advice to current biology students is don't expect to understand everything right away. Biology is a complicated subject, especially when you're learning about current research, so take the time to study and explore the material. It'll be well worth the extra time in the end.

While at Rochester, I was a member of the varsity cross country and track and field teams, a member of Colleges Against Cancer, and an intern at the NYS Department of Health.

New Faculty Profiles



AMANDA LARRACUENTE

By Jack Werren, PhD

From the macroscopic to the microscopic, Amanda Larracuenté is fascinated with nature. Amanda officially joined the faculty of the biology department in January 2015. However, she is no stranger to western New York. Amanda was born and raised in Buffalo. Even at an early age she was interested in science and nature, exploring the outdoors and collecting rocks and fossils. She “really enjoyed thinking about geological history.” Fortunately for us, Amanda took those interests and directed them toward a career in biology. One pivotal event for her came in high school, when she was “floored” to learn that mitochondria, the energy producing structure in the cells of animals and plants, evolved from ancient symbiotic bacteria.

Amanda expanded her newfound interest in biology as an undergraduate at Canisius College. There, Professor Sara Morris was influential in promoting her excitement about biological research and discovery through studies of migratory birds. This is also how Amanda developed her favorite hobby—bird watching! Professor John Kalb helped to hone her critical thinking skills by encouraging her to read the original science literature. Let’s give a shout out to these two educators. Finally, she was able to take a natural history trip to the Galapagos Islands and this “natural laboratory” of biological diversity sealed her interest in the mechanisms of evolution.

For graduate school, Amanda worked in the lab of Andy Clark at Cornell University. This is one of the premiere evolutionary genetic groups in the world. At Cornell, she learned to combine genetics and computers, skills relevant to the emerging fields of genomics and computational biology. She began to study the structure and variation in sex chromosomes in fruit flies. Many species have chromosomes that play a role in determining sex and also that differ dramatically in their DNA content. She studied how differences in the rates of recombination between regions of these sex chromosomes affect the rates by which genes upon them changed during evolution of fruit fly species. But her “real passion was in the enigmatic parts of the genome that were inaccessible to traditional genomic techniques at the time,” nonrecombining regions on the sex chromosomes (particularly the Y chromosome) that contain large blocks of repeating DNA sequences with few protein coding genes. Some researchers have referred to this as “Junk DNA,” but Amanda felt that there were pearls to be found in these

“Her real passion was in the enigmatic parts of the genome that were inaccessible to traditional genomic techniques at the time,” nonrecombining regions on the sex chromosomes (particularly the Y chromosome) that contain large blocks of repeating DNA sequences with few protein coding genes.”



long stretches of apparent nonfunctional DNA. Some of this “junk” can play roles in regulating the cellular environment and gene expression, and can also be “DNA parasites,” also known as “selfish DNA.” She continued to pursue her interests in postdoctoral positions at the Whitehead Institute and then in the Daven Presgraves laboratory at the University of Rochester, before joining the faculty as an assistant professor in the biology department.

Amanda is notable for her ability to combine diverse methods to approach her studies, including outstanding microscopic techniques to visual chromosomes, computational approaches to study genomes, and classical genetic methods. She is interested in intragenomic conflict and how it shapes the biology of organisms. The genome is the sum of all DNA in an organism. Although most genes within the genome cooperate to produce living cells and organisms, a subset of genes are parasitic or “selfish.” They make extra copies of themselves and therefore accumulate but can be harmful to the organism. A current focus of her lab is the selfish chromosome called Segregation Distorter (SD) found in *Drosophila melanogaster*. SD occurs in natural populations and biases its transmission by killing sperm bearing sensitive copies of its target, thus giving it a “drive” in meiosis. Selfish systems like Segregation Distorter are harmful to the host and suppressors have evolved all over the genome to shut the system down and restore fair meiosis. Amanda wants to understand the molecular mechanism of how it kills sperm to better reveal how selfish genes can exploit vulnerabilities in spermatogenesis to gain a transmission advantage to the next generation. Such selfish genetic elements are common in most species and, therefore, can have a major influence on genomes and spermatogenesis.

A related focus of the Larracunte laboratory is “satellite DNA.” Although less conspicuously selfish, these are abundant, tandemly repeated sequences that can make up a large fraction of eukaryotic genomes and tend to get caught up in intragenomic conflict. Satellite DNA was once thought to be just “junk” or filler in the genome, but growing evidence indicates that they can affect chromosome segregation, nuclear organization, and gene expression. Some satellites even make RNA, although what effects they have on the cell remains unclear. Satellites evolve rapidly and this rapid evolution may contribute to genetic incompatibilities between closely related species. It has been traditionally difficult to study these satellite DNAs because of their repetitiveness. Amanda is now using the latest genome sequencing methods to investigate these enigmatic portions of the genome in ways not previously possible. We wish her luck in these exciting and pioneering explorations of the genome.

Amanda and husband Mark Huefner live in Brighton with their two boys, six-year-old Quinn and one-and-a-half-year-old Everett. They are frequently observed strolling Brighton neighborhoods with binoculars in hand (except for Everett).



CHRISTIAN RABELING

By Bob Minckley, PhD

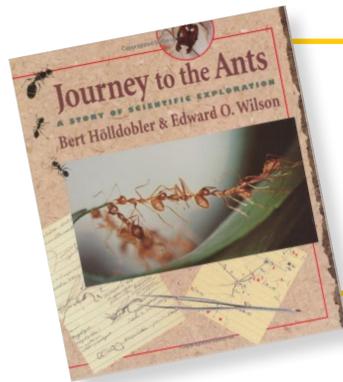
Christian Rabeling is a new colleague in the biology department. He is an organismal biologist and spends as much time as possible (after his family) exploring questions concerning ants—their social behavior, patterns of species formation, nuances of ant agriculture, and even why some ants parasitize the colonies of other species.

Christian has been lucky enough to spend time and become fluent in languages of several parts of the world. He was born and grew up in Germany. There he did what budding naturalists do—ventured outside to collect insects, made skeletons from road kill, and played with his dog. He decided early on a career focused on ants after he read the book, *Journey to the Ants: A Story of Scientific Exploration*, by Bert Holldobler and E. O. Wilson in high school, both scientists that would later become colleagues and

mentors. Remarkably, he remained focused on ants despite that few scientists in Germany worked on this group at the time.

His undergraduate years were at Eberhard Karls Universität in Tübingen, Germany. There he was lucky enough to take a study abroad in Brazil where it was warm, humid, and full of very different ants from those of Germany. Particularly fascinating to him were the fungus-growing ants that use plant leaves to grow fungus—probably the first form of agriculture in the history of life. Work on this group was the basis for his degree (an equivalent to a master's degree) from the same university in 2004.

After Germany and Brazil, Christian headed to the University of Texas in Austin for his PhD. His advisor, Ulrich Mueller has spent his career studying the interactions of ants, fungi, and their associated microorganisms so the fit was a natural for him. During his dissertation work, Christian returned often to tropical South America and his keen eye uncovered a new species of ant that is thought to be one of the earliest branches in the group, as well as new species of ant parasites—some that reproduce asexually. The evolution of asexual reproduction in ants is a topic he plans to pursue into the future.



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Since graduating, Christian spent time at the Smithsonian Institution and at Harvard University, where he was lucky enough to collaborate with E. O. Wilson, the greatest ant biologist alive today and a stalwart of modern-day conservation biology. Besides interactions at Harvard, he and Ed Wilson traveled to the Pacific island chain of Vanuatu for two, month-long trips to collect ants. As far as we can tell, Vanuatu is the only language that Christian has been exposed to that he cannot speak fluently.

In July 2014, Christian moved to Rochester with his wife Simone and son Theo. Since they arrived, Theo has a roommate named Maya, who can't wait to play with her brother as soon as she can crawl. Christian has spent the last year setting up a new lab and has already attracted two graduate students, a postdoctoral associate, and several undergraduate students. All of them, are working on ants. In the near future, two more postdocs will be joining the lab. The research focus of the Rabeling lab is a welcome addition to the Department of Biology, adding an entirely new dimension to the department and further broadening research interests of future students.



SIMONE CAPPELLARI RABELING

By Bob Minckley, PhD

Simone Cappellari Rabeling has been a postdoctoral fellow in the Department of Biology since July 2014. Her research focuses on evolutionary ecology of plant-pollinator communities from tropical South America. In the communities she studies, some bees have the strange habit of collecting resin and oil along with pollen from flowers rather than nectar and pollen as most bees do. Why do these bees harvest oils? As with anything in biology, it depends; some bee species she studies feed the oils to their offspring, others use the oils to make nests. At the same time that Simone is studying the behavior of oil-collecting bees, she is asking questions about the structure and dynamics of plant-pollinator communities with large percentages of specialized pollinators. In addition, she investigates how specialized interactions influence diversification in plants that produce oils in their flowers, and what are the advantages of these kinds of pollinator rewards over the rewards most plants use (=nectar).

Simone started her undergraduate work in southern Brazil at the Pontifícia Universidade Católica do Rio Grande do Sul and later transferred to the Eberhard-Karls Universität in Tübingen, Germany, after being awarded a DAAD fellowship for studies abroad. She graduated in Tübingen and remained in Germany for her master's degree, which was focused on foraging behavior and chemical ecology of tropical orchid bees that collect fragrances from plants, fungi, and other sources that are used as "perfumes" to attract mates. In 2005, she started her PhD with Beryl Simpson and Jack Neff at the University of Texas in Austin. There she began to

investigate evolutionary ecology of specialized plant-pollinator interactions at the community level. For this, she used communities of oil-collecting bees and oil-producing flowers from the Brazilian Cerrado, the world's most diverse savanna, as model systems. After receiving her PhD, Simone took a postdoctoral position at Harvard University where she focused primarily on chemical ecology of floral oils and evolutionary relationships of plants in the family Malpighiaceae, a group composed of many species that use floral oils as a pollinator reward. Simone has continued her work on Malpighiaceae, focusing on hybridization and speciation mechanisms since she arrived at the University of Rochester. She is also starting a collaborative project with Bob Minckley that will compare community structure of bees in the Chihuahuan Desert of North America with the Cerrado of Brazil. Besides research, she is lucky enough to have a great family including Christian (see above article), son Theo, and a new daughter Maya.



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Some of our current endowed professors:

Vera Gorbunova, Allen Orr, and Jack Werren



PHOTOS COURTESY OF JOHN JAENIKE

John Jaenike

Joins Rochester Delegation to University of Ghana

Faculty members and University leaders often visit other universities to give talks, engage in research collaborations, or explore student exchanges. It is less common, however, for a whole delegation to visit a foreign university.

At the end of March, 12 representatives from the University of Rochester spent three days at the University of Ghana in Accra, Ghana, exploring how the two universities could work together. The delegation laid the groundwork for undergraduate, graduate, and faculty exchanges; public health fieldwork; and research partnerships.

“The visit was extremely productive,” said Wendi Heinzelman, the dean of graduate studies in arts, sciences, and engineering and a professor of electrical engineering, who helped organize the visit. “We came away from the visit genuinely energized about the possibilities for continued engagement. Actually being at the University of Ghana allowed us to learn about their programs, interact with their faculty and students, and determine where we might partner with them most effectively for both universities.”

Heinzelman said she and her colleagues were “quite impressed” by the facilities and resources that would be available for faculty and student exchanges, as well as their current high level of research.

The delegation consisted of faculty members from a range of disciplines, from political science to biology and anthropology to engineering. After meeting with their counterparts in Ghana, the delegation reported a number of areas where collaborations could be set up. Heinzelman said that these included continuing the existing visits from Ghanaian graduate students to Rochester, Rochester faculty visiting Ghana and vice versa, research collaborations, offering advice for Ghana’s faculty evaluation process, undergraduate exchanges, and public health student internships.

Some examples of the potential collaborative projects that were discussed were

- joint research with Rochester’s archaeology, technology and structures group into structures in Ghana, including the castles and forts along the coast, as well as the adobe structures in the northern regions of Ghana.
- joint supervision of students within the growing PhD programs of the computer engineering and computer science departments in Ghana.

“Since our visit, we have learned that the University of Ghana will join the Worldwide Universities Network (WUN), of which we are also a member,” said Jane Gatewood, associate provost for global engagement. “We’re thrilled to have this strong and growing university as the newest member of a network of world-class research institutions. We look forward to growing our collaboration with them bilaterally as well as through the WUN.”

The universities have had an exchange agreement for five years now, and for the past four years, two graduate students from Ghana have spent an academic year in Rochester. Heinzelman explained that this model was set up to address concerns that



sometimes students from developing countries go abroad for their PhD and do not return back home. This one-year visitation program allows the students to be exposed to a different system and access different resources, including developing relationships with University of Rochester faculty, and then return to Ghana and share what they have learned with their colleagues there. At the same time, these visits can establish groundwork for ongoing research partnerships when the students return to Africa.

The delegation consisted of Solomon Abiola, public health and computer science; Paul Ampadu, electrical and computer engineering; Kristin Doughty, anthropology; Paul Funkenbusch, mechanical engineering and material science; Jane Gatewood, Office of Global Engagement; Chunlei Guo, optics and physics; Robin Harding, political science; Wendi Heinzelman, Dean's Office, electrical and computer engineering, and computer science; John Jaenike, biology; LaRon Nelson, nursing; Beth Olivares, Kearns Center; and Renato Perucchio, mechanical engineering and archaeology, technology and structures. Engineering faculty represented a majority of the delegation, as the University of Ghana was particularly interested in hearing from members of the Hajim School of Engineering & Applied Sciences since engineering is an area that they are focusing on developing.

University researchers interested in learning more about possible initiatives in collaboration with the University of Ghana may contact Jane Gatewood at global@rochester.edu.

(Adapted from www.rochester.edu/newscenter/university-of-rochester-delegation-visits-university-of-ghana-looking-for-synergies-99882/)

Faculty Press Releases



An extra protein gives naked mole rats more power to stop cancer

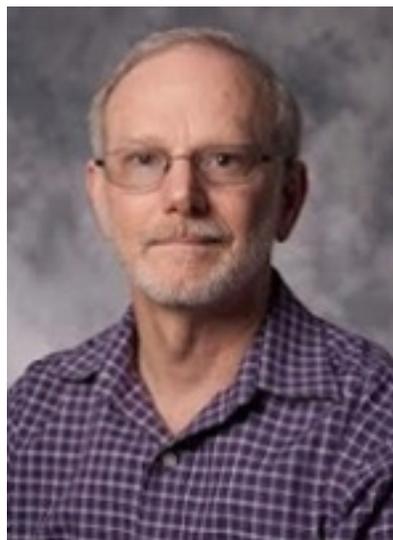
February 5, 2015

A protein newly found in the naked mole rat may help explain its unique ability to ward off cancer.

The protein is associated with a cluster of genes (called a locus) that is also found in humans and mice. It's the job of that locus to encode—or carry the genetic instructions for synthesizing—several cancer-fighting proteins. As Vera Gorbunova, a professor of physics, explains, the locus found in naked mole rats encodes a total of four cancer-fighting proteins, while the human and mouse version encodes only three proteins.

The findings by the Seluanov and Gorbunova research team have been published in the *Proceedings of the National Academy of Sciences*.

[Read More...](#)



Jack Werren interviewed by BBC—Earth

February 12, 2015

We humans tend to assume we rule the Earth. With our advanced tool making, language, problem-solving and social skills, and our top-predator status, we like to think of ourselves as the dominant life form on the planet.

[Read More...](#)

Graduate Student News



CARA BRAND

Received the Messersmith Fellowship for 2015. The Messersmith Fellowship is a one-year fellowship for students in biology, chemistry, optics, physics, or the pre-clinical departments of the School of Medicine and Dentistry. 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. Past winners from the Department of Biology include

- 2014—Xiao Tian
- 2010—Christopher Hine
- 2009—Zhiyong Mao
- 2004—Qun Yu
- 2002—Miriam Barlow
- 2001—Andrea Betancourt
- 2000—Daven Presgraves



ANTHONY GENEVA

Awarded an NSF Doctoral Dissertation Improvement Grant (DDIG) in 2015. The National Science Foundation awards the DDIG in selected areas of the biological sciences. Proposals must fall within the scope of any of the clusters in the Division of Environmental Biology (DEB) or the Behavioral Systems Cluster in the Division of Integrative Organismal Systems (IOS). These grants provide partial support of doctoral dissertation research for improvement beyond the already existing project. Allowed are costs for doctoral candidates to participate in scientific meetings, to conduct research in specialized facilities or field settings, and to expand an existing body of dissertation research.



MATTHEW JOHNSON

Awarded the Edward Peck Curtis Award for Excellence in Teaching by a Graduate Student. Awardees are selected by the vice provost and University dean of graduate studies based on evidence of outstanding teaching, such as student and faculty evaluations, faculty letters of support, and student recommendations. With this award, Matt is recognized for his outstanding performance as a teaching assistant in BIO 268, his tutoring work through the Kearns Center, as a mentor for undergraduate researchers in the laboratory of Michael Welte, and his work to develop workshops for BIO 110.

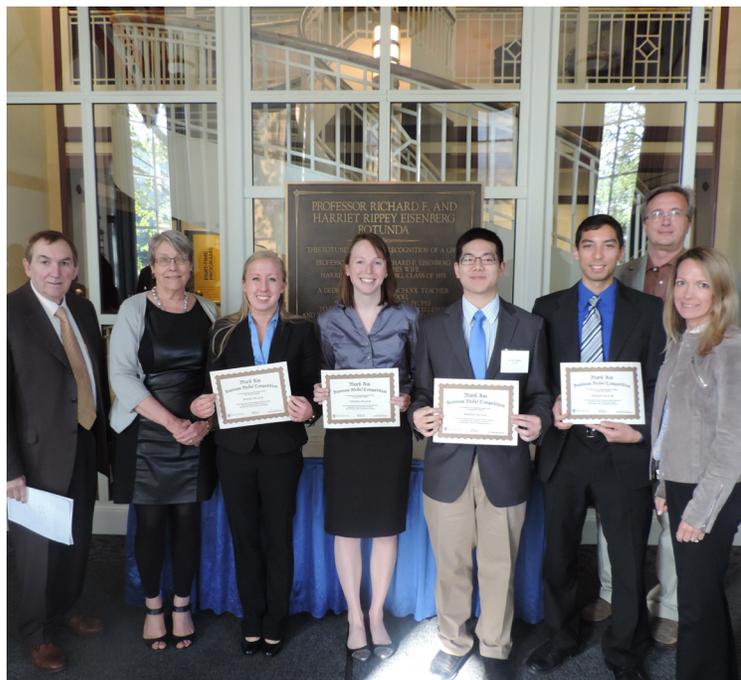
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Check out some of the existing Graduate Fellowships and Awards.

Alumni Profiles



ELIE FARAH '11 (Molecular Genetics)

Graduating from the University of Rochester in 2011 with a degree in molecular genetics, I transitioned to a laboratory technician position in the lab of Professor Dmitri Ermolenko in the biochemistry and biophysics department at the University of Rochester Medical Center. My efforts with the scientific projects in the Ermolenko lab exemplify my postgraduate career, having been a contributing author to three scientific publications. In addition, as a benefit of being a full-time University of Rochester employee, I have been fortunate to simultaneously develop interdisciplinary skills by completing a nearly fully funded MBA program at the Simon Business School. This fosters the growth of quantitative skills that complement the scientific analytical focus, which aided in my team's recent accomplishment of placing third in the Mark Ain Business Competition at the University. These abilities enable a breadth and depth of understanding in diverse fields, allowing for different perspectives and creativity whenever approaching a problem or formulating hypotheses.

Since coming to Rochester, my scientific and academic growth has been, and always will be, a significant part of my life. Rather than reiterating my résumé, I wanted to share how life in Rochester has also allowed me to cultivate many additional values; among them are community service, physical health, cultural diversity, and mentorship. These create opportunities where I meet people who share my values, and I am able to teach and share my experiences with them. This not only promotes social and cultural diversity, it also expands my own and contributes to my personal growth.

Community Service

I am a regular volunteer builder at the local chapter of Habitat for Humanity. I genuinely enjoy giving back to my community, and I am glad that I have the chance to provide aid to low-income families of Rochester. Being a regular also gives the opportunity to teach new volunteers novel skills and the value of helping their neighbors build a better life for themselves.

Physical Health

When Richard Branson (founder of Virgin Group) was asked "what's the fastest way for someone to improve their inner game?" he famously replied with, "improve your outer game." I frequent a gym that is quite unique to Rochester. It is a parkour gym that focuses on balance and mobility as much as it focuses on power and speed. Through running, climbing, vaulting, rolling, and swinging, parkour is about overcoming and adapting to obstacles, whether they are physical, mental, or emotional. Parkour also teaches the value of perseverance and shares a value akin to Bruce Lee's: that there are no limits, there are plateaus, and you must constantly go beyond them.

Cultural Diversity

“The world is a book and those who don’t travel read only one page”—St. Augustine. During my tenure at Rochester, I traveled to Japan and Lebanon, backpacked alone through China, Thailand, and Australia, as well as driven across the United States. Traveling with only one carry-on has greatly enhanced my organizational and planning skills and has also taught me a lesson in knowing what really matters. Most importantly, traveling gave me the chance to meet new people I would not have met otherwise, expanding my comfort zone and mind. Because of my travels, I hold a deep respect and admiration of cultures different from my own, and I hope to continue to build these feelings throughout my life.

Mentorship

I would be remiss if I did not acknowledge my mentors from my time in Rochester. My personal history would have been very different without their continuous help and support. They have always given me feedback and criticism, correcting me whenever I went astray, and keeping me humble and forever a student. I have been blessed with multiple mentors ever since coming to Rochester. Peter Gibbs, a research associate professor, helped to shape my research skills in undergrad. Ermolenko continues to mentor me and shape my scientific skills postgrad. Benyajati contributed to my professional and scientific growth and development greatly—her mentorship abilities continue to amaze me. These mentors helped me through my journey through life and changed it for the better, and it is my hope that one day I can achieve even a fraction of the impact that these mentors have had on me.

The next chapter of my life starts this fall at UC San Diego, where I will pursue a PhD in biomedical sciences. I am eternally grateful to all of the people who helped and supported me during my time in Rochester, from the numerous people at the University, the departments of biology and biochemistry and biophysics, to the various people within the Rochester community, the list is too long to enumerate. Rochester will forever be my home and the lifelong friends I have made here will forever be part of my family.



JYOTHI PURUSHOTHAM '13 (Molecular Genetics, Minor in Anthropology, Cluster in Art History)



While growing up, one of my favorite paintings was Caspar David Friedrich’s *Wanderer above the Sea of Fog* (1818). It depicts a man on the edge of a rocky precipice gazing out at mountains and forests blanketed in heavy mist. Although his face is obscured, I vividly imagined the wanderer’s eyes, staring hungrily at the vast stretches of uncharted territory, searching for his next adventure.

I have recalled this painting often over the past several years, feeling a distinct sense of kinship with its subject. I have felt like a wanderer myself, traversing multiple disciplines, foreign locations, and new experiences on a desperate hunt for knowledge and self-awareness.

My quest began at the University of Rochester in 2009. As an undergraduate, I hoped to gain a deeper understanding of human life and society as a whole. The University’s flexible curriculum, encouraging both breadth and depth of coursework across fields, provided the

ideal space for me to probe these topics from multiple perspectives. My primary focus in biology informed me of the intricate, molecular processes governing the functioning and welfare of the human body. Meanwhile, through coursework in anthropology and art history, I was able to study human interaction, culture, and visual representations of the human experience across the world.

The coalescence of these topics led me to consider a future in medicine, research, and global health. But I was intimidated by the nonspecific and expansive nature of this pursuit. Without strong goals defining my ambitions within these fields, I was not ready to commit to postgraduate studies anytime soon. Instead, I chose to further explore the intersection of these three disciplines firsthand, with the hope of gaining some clarity.

Following my graduation in 2013, I voyaged overseas as a Fulbright Scholar to India. I joined clinicians at the L. V. Prasad Eye Institute to develop a protocol for a stem-cell transplant to treat corneal blindness. This not-for-profit eye hospital captured my attention because it has been able to treat millions free of charge, through the design of cost-effective medical procedures and through a unique system of health care delivery. While working closely with the hospital's ophthalmologists and scientists on the project, I was able to observe the adaptation of complex therapies for implementation in developing communities. Doing so necessitated the fusion of biomedical, public health, cultural, political, and economic considerations.

From that point on, I became preoccupied with the following question: How can we successfully couple biomedical advances to sustainable health outcomes in resource-limited settings? Arriving at this question was an important milestone for me. Identifying an issue that I found intriguing, challenging, and worthwhile provided me with much needed direction and purpose in planning my next step.

Since returning to the United States, I have been grappling with this question while surveying the interface between technology and community health at the University of Rochester Medical Center Flaum Eye Institute. I am helping to establish a telemedicine initiative providing diabetes-management education and diabetic retinopathy screening for low-income patients, particularly immigrants and refugees. This position has afforded me the valuable opportunity to step out of the laboratory and work directly with patients in the community. Interacting with affected populations has enabled me to better understand the barriers to good health and health care access, which is the first step in conceptualizing how to address them. It has also been fascinating to consider how low-cost digital and mobile technology can be exploited to tackle these critical issues. At the same time, I have been overwhelmed and perplexed by the myriad of challenges to successful health intervention amongst underprivileged populations.

This research, in conjunction with my Fulbright experience, has taught me that a solid foundation in public health and international development is useful for the effective design of diagnostic tools and treatments for use in resource-limited settings. In order to gain specialized training in these disciplines, I will be crossing the ocean again, this time to complete an MS in international health and tropical medicine at the University of Oxford.

I am enthralled by the prospect of a new adventure and grateful for the opportunity to travel and study alongside scholars from across the globe. Moreover, I am eager to see how this experience further sculpts my academic and professional interests. As of right now, I plan to apply to medical school for admission in 2017, with the ultimate goal of serving as a clinician-scientist. But, who knows what will happen between now and then? If my wandering these few years has taught me anything, it has been to leave ample space in my plans for evolution and transformation. And if I were to give advice to my former self—or any young person—it would be just that. Overtime, the trajectory mapped from your pursuits should be reflective of your development and maturation, not static and unchanging. This notion is beautifully captured in a line from Paulo Coelho's *The Alchemist*, which reads, "Making a decision is only the beginning of things. When someone makes a decision, he is really diving into a strong current that will carry him into places he had never dreamed of when he first made the decision."

Let yourself to be swept up by new opportunities and influenced by the people that you meet along your journey. Allow them to inspire you, challenge the way that you think, shape your ideas, and alter your plans. I could never have predicted that the past few years would turn out as they have. Yet I cannot imagine that I would have developed the same resolve and purpose without this particular sequence of experiences. Remember that success is not prescriptive—neither in the way that it is defined nor the way that it is achieved. It does not really matter whether you choose to go to graduate school, medical school, or begin a full-time job right after college, or whether—like me—you find that you need some time to explore other options. There are no rules. Reflect upon what it is that you need and want, choose opportunities accordingly, and be secure in the decisions that you have made. As long as you strive to do something—anything—that you find inspiring, enriching, and worthwhile, you will be just fine.

Alumni Updates

ZHIHUAN LI '14 (PhD)

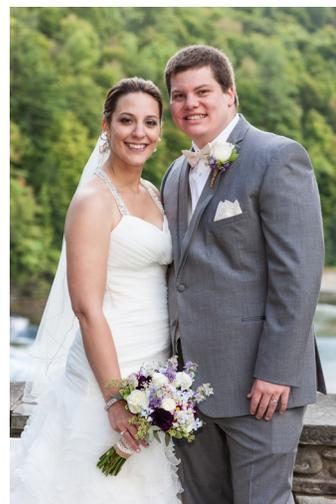
At the 2015 Annual *Drosophila* Research Conference, it was announced that Zhihuan was one of two runners-up for the 2015 Larry Sandler award. The Larry Sandler award is given for the best PhD thesis in *Drosophila* research in the previous year.

JYOTHI PURUSHOTHAM '13

The Nuffield Department of Medicine at Oxford University nominated Jyothi for a graduate fellowship; and she has been awarded a full scholarship to pursue the MSc in international health and tropical medicine.

REBECCA DOMALSKI '10 AND NICHOLAS FARRIS '10

We wanted to share that we (Rebecca Domalski, BS ecology and evolutionary biology, and Nicholas Farris, BS molecular genetics) were married this past September 2014. Currently, we are both medical students in NYC and anticipate graduating next May!



Rebecca Domalski and
Nicholas Farris

SAMANTHA FALK '08

Samantha is the first author of a just-published work in *Science* (May 2015). Sam was the recipient of the Nathaniel and Helen Wisch Endowed Undergraduate Scholarship in 06–07 and 07–08. (*This scholarship provides income that supports a promising junior or senior undergraduate student or students majoring in biology at the University of Rochester. It was created through a gift from Nathaniel Wisch '55, MD, and Helen Wisch.*)

MICKY SOFER '06

I graduated in 2006 with a BS in cell and developmental biology. I graduated from medical school in 2010 and am now finishing anesthesia residency at NYU, graduating this June 2015. I will be continuing my training with a pediatric anesthesia fellowship at Children's Hospital of Philadelphia (CHOP) in July. So, yeah, still using some of the biology I learned in college!

EVA FUNG ARMFIELD '03

I took "pre-vet" courses at Rochester and graduated with a BS in ecology and evolutionary biology in 2003. I love the faculty there. I especially enjoyed having Orr and Jaenike as my professors. Jaenike was also a great mentor for my independent research. I went to Iowa State University College of Veterinary Medicine to obtain my Doctorate of Veterinary Medicine. Then I went to the Chi Institute to become certified in veterinary acupuncture and herbal medicine. I've been working as a small-animal veterinarian in New York City. Recently, I became the owner of the Patchogue Animal Hospital (www.patchogueanimalhospital.com). I practice integrative veterinary medicine, which offers the best treatment from eastern and western medicine. I am grateful for the experience that I had at the University of Rochester, which has helped me to get to where I am today.

ERIC J. SUNDBERG '94

I graduated from the University of Rochester with a BS in biochemistry in 1994 and pursued a typical academic career path immediately following my graduation—PhD at Northwestern University, postdoc at the University of Maryland, first faculty position at Boston Biomedical Research Institute, and more recently returned to the University of Maryland (this time at the School of Medicine), where I am a tenured associate professor amongst other things. My lab website (www.sundberglab.org) describes my research program in more detail.

BOB DARDANO '77

I'm afraid I haven't used my biology degree in a long time. My first jobs out of college were in laboratories in the Center for Visual Science on campus and two research labs in the Department of Radiation Biology and Biophysics at the Medical Center. By 1981, I had changed gears and gotten an MA in French language and civilization from New York University. I had a few odd jobs in Rochester before moving to Washington, DC, in late 1986. In 1987, I started working for the Library of Congress, acquiring material from several western and northern european countries for the collections. From 1989–2008, I focused on acquisitions from

Germany and the other Germanic countries of Europe (that's right, not France), and from 2008-14, I acquired material from Italy. In December 2014, I was reassigned as a Senior Collection Development Analyst in the Collections Development Office. Now I'll be doing research on our collections, looking at what we're acquiring, where we're acquiring it from, and at what cost. Now I'll get to be involved in acquisitions from countries all over the world and will be making recommendations regarding what we collect, which is pretty exciting.

KAREN WHEDON GREEN '68

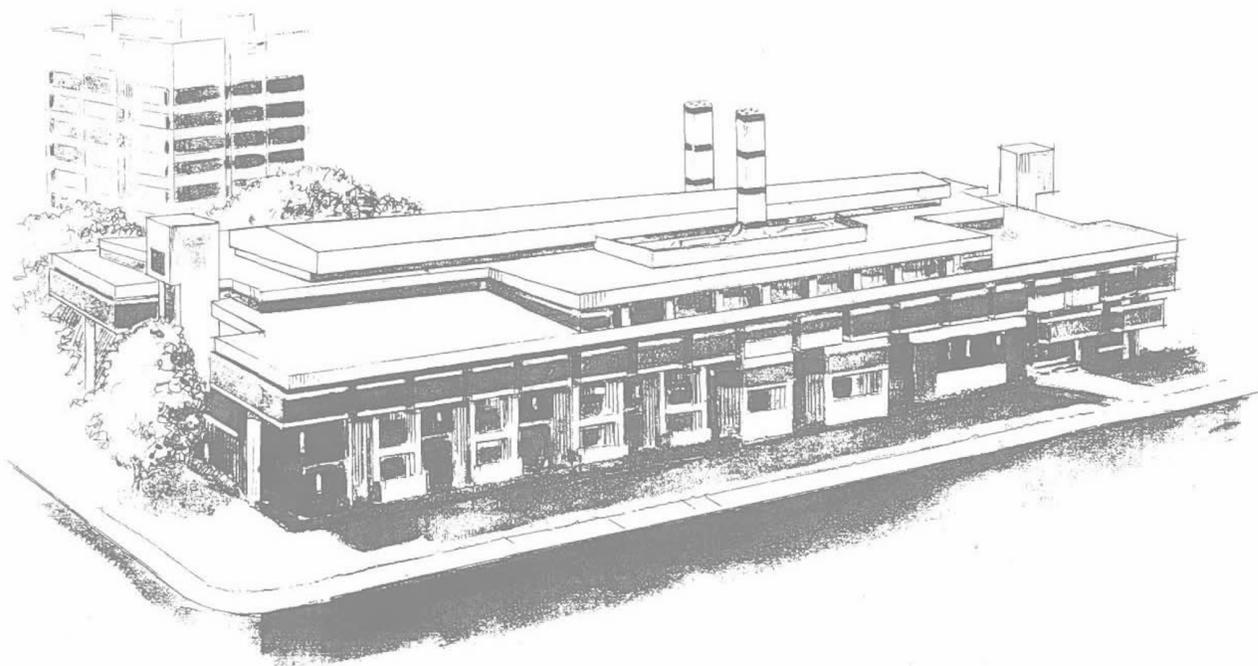
This year I was awarded the University of Massachusetts Medical School Chancellor's award for Clinical Excellence and on July 1, I am retiring and will become professor emeritus of OB/GYN at UMass.

RICHARD D. JOFFE '65

I'm retired now from a career as a programmer. I'm out just about every night of the week contra dancing and English Country Dancing. I volunteer as a performance dancer (English Country Dancing) at Gadsby's Tavern Museum and Dumbarton House. I even got to dance with "Dolley Madison" at a couple of balls. I visit the Smithsonian, the National Gallery of Art, Mt. Vernon, and Gadsby's Tavern Museum frequently, as well as many other museums and historical sites in the Greater Baltimore–Washington Metropolitan Area. I frequently wear a University of Rochester tee shirt while I'm dancing, and this has led me to meet several Rochester grads, a couple of people from Buffalo, and one guy who went to RIT. I hope to be in Rochester in October for my 50th Reunion.

JOSEPH T. BAGNARA '52

When I found your newsletter today, it suggested that perhaps some of the biology graduates among the 60 plus classes that followed mine, might be interested in how it was all those years ago. If so, they might be interested in a memoir that I wrote a year or so ago. It is *Unfinished Business: A Biologist in the Latter Half of the 20th Century*. It was published by Wheatmark in 2013 and is available from Amazon. They have also listed authors' reviews of the book. Notification of the book's publication was indicated in an issue of the alumni magazine, *Rochester Review*, about a year ago.



Help Support

Our Specimen Collection and Archives



The second floor corridors of Hutchison Hall hold a treasure trove of antique specimens. Cabinets filled with the skeletons and skulls of mammals, birds, fishes, and lizards help to illustrate amazing adaptations. These skeletons are only a small portion of the material in the department's possession—and are the vestige of a very large collection once housed at the University until the late 1950s. Packed into a room no more than 90 square feet were more than 300 skeletons and taxidermy specimens, jars of specimens preserved in fluids, and boxes of fossils and vintage microscope slides from the 1800s. Some of these specimens are of species that are rare today and others are of considerable lasting scientific interest. Most are from regions far distant from Rochester and New York State.

Although the specimens we have are no longer alive, they need attention and the material here in Hutchison Hall has long been ignored. Many specimens were found in original hand-blown jars made sometime in the 1860s. Over the years, fluids had evaporated and some of the specimens had dried out completely. With the help of a local glass blower/sculptor, we were able to re-curate the specimens, make new seals for the jars, and greatly extend the educational lifespan of these amazing archives.

Many of the skeletons and taxidermy specimens are also in need of restoration and a careful cleaning. These have been

temporarily moved into glass-front cabinets to minimize the possibility of further damage. We hope to secure funding that will allow us to rearticulate the broken parts and present clean, useful specimens to students, alumni, and the public. As humans lose access to outdoor spaces and more of us live in crowded urban areas, the opportunities to see the colors and anatomy of diverse organisms from throughout the world cannot be replaced digitally. The University of Rochester now has the capability to fill that void.

What began as an effort to reclaim much-needed office space, has led to a rediscovery of our department's history and a new vision of how old and new teaching collections can live side



by side in the classroom and beyond. To display our collection properly, we will need student and staff involvement at all levels—building and installing appropriate cabinetry and lighting, development of a database and website, and further research on the biology and conservation status of these animals. It is evident that no one expected so much would come out of a storage room and there is much more to do.

We encourage you to stop by our department whenever you are in town. With advance notice, we are always happy to give tours and we welcome the opportunity to tell you more about our plans for the collection. Please join us in October, when we host an annual open house for Meliora Weekend and our collections are often featured. For more information about our specimen collection, please contact our department administrator, Brenna Rybak, at brenna.rybak@rochester.edu.

[Read the entire article...](#)

[View the online specimen catalog...](#)

If you are interested in making a gift or discussing opportunities to support the department, please contact

David Richardson '10E

Assistant Director of Advancement

(585) 276-7423, david.richardson@rochester.edu



Howard Bryant Memorial Golf Tournament



Howard Bryant Memorial Golf Tournament June 2016

Summer Newsletter Pre-Registration

If you think you might like to join us, please fill out the form below and we'll send you the registration brochure in January!

Check out photos from last year's tournament at
www.rochester.edu/College/BIO/HB/HB_2014photos.mov

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- Closest to Pin
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"anonymous" on the memo line
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Thank you for your support!

*Checks should be made payable to the
University of Rochester and mailed to
Kathy Giardina
P.O. Box 270211
Rochester, NY 14627-0211*

Howard Bryant

Howard was a beloved member of the biology department at the University of Rochester for over 40 years.



All proceeds from this tournament benefit the Howard Bryant Memorial Scholarship Fund. The Fund was established in 2004 to honor Howard's legacy of caring and support by providing aid to students in need of financial assistance and who are interested in pursuing a career in science or engineering.

Pre-Registration Form

Name: _____

Address: _____

**Yes, please send me
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about the Howard
Bryant Memorial Golf
Tournament!**



DEPARTMENT OF BIOLOGY
OPEN HOUSE

FRIDAY, OCTOBER 9, 2015

2 – 4 P.M.

HUTCHISON 316

ALL ALUMNI, PARENTS, STUDENTS,
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Phone: (585) 275-0009

Administrator

Brenna Rybak
Email: brenna.rybak@rochester.edu
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