

BIOLOGICAL SCIENCES NEWSLETTER



Fall 2019 Volume 8, Issue 1

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HIGHLIGHTS FOR FALL 2019

- Department welcomes two new faculty members.
- Dept. signs articulation agreement with Smithsonian-Mason School of Conservation.
- Biomedical Sciences track under review.

DEPARTMENT WELCOMES TWO NEW FACULTY

The department is thrilled to welcome two new faculty this fall, **Dr. Swati Agrawal** and **Dr. Ginny Morriss**! Before joining UMW, Dr. Agrawal was a Visiting Assistant Professor at Washington College where she taught Cell Biology, Genetics and Introductory Biology for non-majors. While there, she developed classroom tools using augmented reality to improve molecular visual literacy of students and make learning about protein and DNA structure a lot of fun in the classroom! She is excited to use these lessons in her classes here at UMW. She also comes with extensive experience in molecular biology research, especially the CRISPR-cas9 genetic modification system. For her doctoral work, she studied the protein targeting pathways in the "cat parasite" *T. gondii*'s apicoplast. At UMW, she looks forward to engaging students in research focusing on *T. gondii* and *Crithidia fasciculata* as model organisms to study fascinating oddities in eukaryotic cells by targeting genes using the CRISPR-cas9 system.



Dr. Swati Agrawal

Dr. Morriss comes to us from a post-doctoral position in Baylor University's College of Medicine where she studied mechanisms of muscle wasting in myotonic dystrophy mouse models. She also served as an adjunct faculty member for University of Houston's Downtown Campus where she taught courses in genetics and embryology. Before that, she earned her Ph.D. at the University of New Mexico. In addition to teaching Biological Concepts and the Research Process, she looks forward to teaching Genetics each spring. Her research program, which will advance understanding of muscle development, also has applicability to diseases such as muscular dystrophy. It will build on her work at Baylor University and will now create exciting new research opportunities for UMW students



Dr. Ginny Morriss

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TWO STUDENTS WIN 2019 WILLIAM A. CASTLE AWARD

The department recognized two exceptional members of the Class of '19 with the William A. Castle Outstanding Senior Award last May, **Sara Fioretti** and **Anna Rinko**. And these two had a lot more than that in common! Both students were members Phi Beta Kappa, earned University Honors, and graduated Summa Cum Laude. Additionally, both students completed research projects and presented their results at conferences. Anna studied anhedonic behavior in bulbectomized mice, while Sara studied the combined effects of statins and chemotherapeutic agents on cancer cells. As a double major, Anna earned Honors in Biology and English and also won the Outstanding Communication and Digital Studies award. Additionally, she was the recipient of a prestigious Washington Scholarship, one of the university's highest honors. Congratulations to both students, and best of luck in your future endeavors!



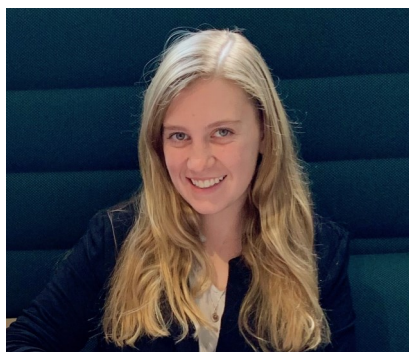
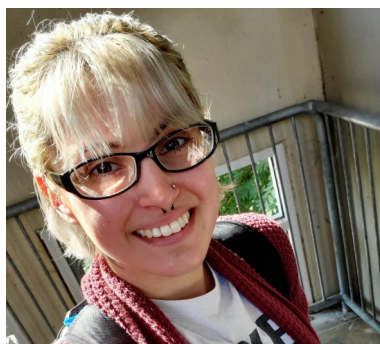
Anna Rinko and Sarah Fioretti two Castle Award winners in 2019

2019 STUDENT SCHOLARSHIP WINNERS

The department distributed nearly \$16,000 in scholarships to six different students for the 2019-2020 academic year! Most scholarships defray tuition and fees, while the Piscopo Rodgers Fellowship II provides funding for research equipment and supplies. Students apply for Biological Sciences sponsored scholarships through the university's Online Scholarship Manager, maintained by the Office of Financial Aid. Students majoring in either biology or environmental science are eligible for the Thyra V. Valade Conservation Leadership Scholarship.

Congratulations to the following!

- **Rachel Summers**: Rebecca Culberson Stuart Memorial Scholarship (top right)
- **Jennifer Bosserman** (not pictured) and **Tamara Natouor** (middle right): Irene Piscopo Rodgers '59 and James D. Rodgers Student Research Fellowship II
- **Elisabeth Heras** (bottom right) and **Meredith LeBel** (not pictured): Biology Scholarship.
- **Elisabeth Heras** also won the Thyra V. Valade Conservation Leadership Scholarship
- **Crystal Cabrera** (below left): John Cope '83 Memorial Scholarship
- **Laura O'Dea** (below middle): Debra Stanley Leap '72 Scholarship in Biology. She also won a Chi Beta Phi Scholarship (story below).



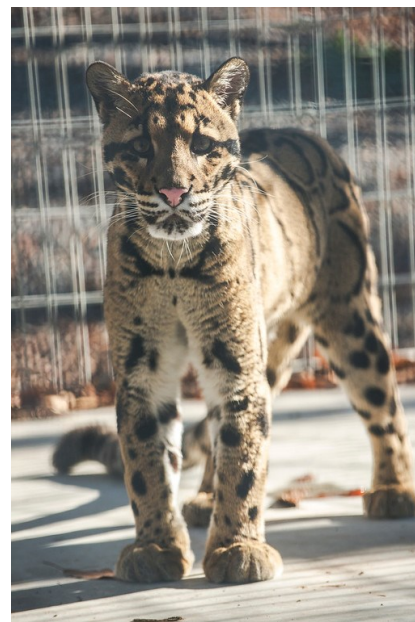
STUDENT WINS CHI BETA PHI SCHOLARSHIP

Congratulations to **Laura O'Dea**!

"Since joining Chi Beta Phi, I have been able to participate in two leadership positions, including being the Publicity Chair and now the Vice President. On the executive board, I have had many responsibilities from taking pictures at CBP events to helping lead meetings for the society. Through these positions on the executive board, I have gained a new outlook for how a society and club functions behind the scenes to ensure all events and meetings run smoothly. This experience gave me a renewed appreciation for other club leaders and professors here at UMW. Also, Chi Beta Phi has taught me to be a better leader and to realize how important teamwork is, especially when it comes to science. Whether you turn your biology degree into becoming a researcher, a professor, or a physician, teamwork is vital to ensuring accurate results and information. Lastly, I have become a better public speaker, which has helped me considerably in my classes and will continue to do so as I start my final year at Mary Washington. Chi Beta Phi is not only a place to share the love of science with peers but also a platform to help better oneself and be more prepared for college and life afterward. " -Laura O'Dea

UNIVERSITY SIGNS ARTICULATION AGREEMENT WITH SMITHONIAN-MASON SCHOOL OF CONSERVATION

UMW students interested in pursuing careers in conservation biology can now have the best of both worlds! As an optional supplement to their UMW degree, they can “study away” for a semester at the Smithsonian Conservation Biology Institute (SCBI) in Front Royal, Virginia. The sprawling, historic SCBI property is home to the National Zoo’s highest-profile endangered species captive breeding and recovery programs. Clouded leopard, Prezewalski’s horse, red panda, whooping crane, among many other endangered species, are bred and studied there with the aim of recovering their free-ranging populations. The SCBI campus also contains state-of-the-art research labs and teaching facilities. It also features a newly constructed dormitory and dining hall. While taking classes full-time, students can work along side some of the world’s top conservation geneticists, endocrinologists, and population ecologists. Students can choose one of three 16-credit hour programs: Wildlife Ecology and Conservation; Endangered Species Conservation; or Conservation, Biodiversity, and Society. Each program, administered by the Smithsonian-Mason School of Conservation (SMSC) includes both classroom instruction and mentored individual research. Credits are transferable back to UMW as either specific course equivalents or electives. It will be especially valuable for students in the biology major’s new Conservation Biology Track! **Dr. Alan Griffith** (agriffit@umw.edu) is the UMW coordinator for this UMW-SMSC partner program.



Clouded leopard (photo courtesy of George Mason University)



Maned wolf (photo courtesy of George Mason University)



SMSC students practicing radiotelemetry (photo courtesy of George Mason University)

FACULTY NOTES

- **Andrew Dolby** co-authored a poster titled “Assessing the presence and concentrations of microplastics in the gizzards of Virginia waterfowl” presented by his research student, **Thomas Bustamante**, at the 2019 Annual Meeting of the Society of Environmental Toxicology and Chemistry held in Toronto in November. The poster was also co-authored by several other UMW students and faculty in the Depts. of Earth and Environmental Sciences and Chemistry.
- **Deborah O'Dell** co-presented “Craft(Y) faculty development workshops: teachers as learners” with Suzanne Sumner, Dept. of Mathematics, at the DKG International Conference: Arts and Humanities, Asheville, NC in June.
- **Parrish Waters** co-presented research with his student collaborator, **Anna Rinko**, on changes in physical activity levels in mouse models of human depression at the Society for Neuroscience Annual Meeting in Chicago, IL in October.
- **April Wynn** presented a poster titled “Impact of pre-matriculation research experience on student success” at the Association of American Colleges and Universities’ meeting, Transforming STEM Higher Education” in Chicago, IL in November. It was co-authored by **Dianne Baker** and Nicole Crowder, Dept. of Chemistry.



Department of Biological Sciences
Jepson Science Center
University of Mary Washington
1301 College Avenue
Fredericksburg, Virginia 22401

Phone: 540-654-1182

Fax: 540-654-1081

URL: <http://cas.umw.edu/biology>

SPECIAL THANKS TO OUR RECENT UMW FOUNDATION AND SCHOLARSHIP DONORS:

- Richard Graham, Catharpin, VA
- Sally Brannan Hurt, Midlothian, VA.
- David & Carole Valade, Easthampton, MA

The mission of the biology program at the University of Mary Washington is to provide a strong undergraduate education in the fundamental principles of biology and train students in the basic research methods and techniques used by biologists. The program is designed to prepare undergraduates for careers in research, teaching and related professions, conservation biology, medicine, dentistry, and other allied health fields.

For further information about the biology program, please contact Lynn Lewis, Chair, Department of Biological Sciences, at llewis@umw.edu or 540-654-1415.



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Questions about this newsletter? Contact the editor: Andrew Dolby at adolby@umw.edu

UMW

WE'RE IN!

Class are now underway in Jepson's new wing! Students and faculty are reaping the benefits of well-designed, technologically enhanced classrooms, and no more need to walk across campus for anatomy lecture. Two larger rooms hold a maximum of 50 students, while several others fit 30. One room (JEPS 229, pictured right) is designed to allow high-tech interactive teaching. For example, students can work on small-group activities, such as problem solving, then project their solutions on screens positioned around the room. Different solutions can then be compared by the whole class and further discussed, thus dramatically increasing engagement by all.

In addition to classrooms, biology students are enjoying new interaction spaces and quiet nooks and crannies for a little reading or studying between classes. Although the Depts of Earth & Environmental Science and Physics have been assigned the new wing's laboratory spaces, biology students and faculty have a lot more elbow room. Research no longer spills into teaching labs, and the department now has access to rooms within the building which can be used for meetings and test-taking. (Alumni may remember taking a make-up test in a research lab at one time or another!). "The new molecular lab space encompasses everything that student researchers need in one open, collaborative room," notes senior, Rachel Summers.

Out back, the building has a new loading dock with convenient access to an expanded field equipment storage room. A glassy College Avenue façade completes its modern look.



Dr. Josephine Antwi teaches BIOL 210 in JEPS 229.



Jepson's new welcome mat facing Pollard Hall.