



## TALKING SCIENCE AND PHILOSOPHY WITH THE DALAI LAMA

Following her [trip last summer](#) to teach biology to monks in India, Colorado State University Associate Professor of Biology [Meena Balgopal](#) returned to India to teach science workshops for 40 Tibetan Buddhist monastics. During this trip, she had the opportunity to speak with the Dalai Lama as well.

“In the photo, he’s telling me that Indian philosophy plays an important role in shaping Buddhist thoughts, and together with modern science, can help solve many of the world’s problems,” she said.

Balgopal, along with colleagues from Emory University, has been leading workshops on how to teach scientific research methods, with a focus on ecology. There has been a push from the Dalai Lama to train Buddhist monks in scientific processes and thinking. “These monastics are science directors, coordinators, teachers, and leaders at their respective monasteries based all over India,” Balgopal said.

The Dalai Lama visited to see the final research projects. “He spent quite a bit of time discussing how both monastic and science students should be familiar with both modern science and ancient philosophy to have a more complete understanding of logic and reasoning,” she added. “I couldn’t agree more.”

Last summer, with support from the Emory-Tibet Science Initiative, a program sponsored by Emory University and Tibetan spiritual leader the Dalai Lama, Balgopal taught first year biology to 105 Buddhist monks in India. The course lasted for 10 days in June and was located at a monastery in Bylakuppe, a Tibetan community in southern India.

She co-taught with Nicole Gerardo, associate professor of biology at Emory University, who also helped Balgopal conduct research on how the monks think about the concept of life. During their time working with the monks, Balgopal found that she was learning just as much as she was teaching. The experience ultimately made her consider ways to change her approach to teaching at CSU. “I went there thinking that I was going to go and teach and do research,” Balgopal said. “And I was really challenged by some of my own perceptions and biases about how I teach.”

Balgopal and Gerardo taught for eight hours every day, then conducted their research in the evenings. For their research project, they asked the monks to journal about what they already knew on a topic and what they had learned from that day’s lesson. Then Balgopal asked them to write about conflicts between the prior and the new knowledge — and how the monks had resolved the conflict or blended the ideas.

She plans to incorporate these ideas into undergraduate classes she teaches at CSU. For example, she may invite colleagues to model discussions in large lecture classes or assign multiple readings that present different arguments. She said she wants to give students a foundation for engaging in scientific discourse in the same way the scientists test ideas through debate.

“This is not just problem solving,” Balgopal said. “This is about really challenging each other and saying, ‘Why do we know this?’”



# MESSAGE FROM THE CHAIR



Perceptions of what is meaningful and important change over time. For instance, I didn't attend any of my own commencements after graduating high school. At each step along the way, I was impatient to get on to the next thing, and ceremonies just didn't seem that important.

But upon arriving here at CSU 26 years ago, I *had* to attend graduations, pressed into service as part of the faculty contingent attending, each of us taking turn to fulfill duties. This was fine, just OK, part of the job

during the first few years. But over time, that feeling changed. Eventually, students crossing the stage included those who were in my classes or had worked in my laboratory. Their faces beamed with pride and a sense of accomplishment, and possibly relief, but maybe just happy to see a familiar face. Now that I am department chair, I am required to attend all graduations, and I've come to love commencement!

It's become a deeply emotional connection, and the stroll across the stage comes with hugs and shouts and thunders of applause from the families. Among our graduates we have honors students, veterans, botanists, zoologists, soon-to-be doctors, all aspiring to step up to the



next level. These are happy, proud, accomplished people, and I love sharing this moment with them all!

As for me, I come from a family of college graduates, two generations on my mother's side, and a father who was the only one in his family at the time to gain higher education. In my family, this is what we did — we went to college — so it did not seem such a big deal to miss commencement. But now, inevitably, the ceremonies I skipped early in life have gained new meaning. Among all our graduates, I have special pride for those who are first or only in their families to complete a college degree, about 75 of our majors each year. My only regret now is that I missed that chance to thank my parents for supporting me and valuing education, for getting me on the way through their accomplishments.

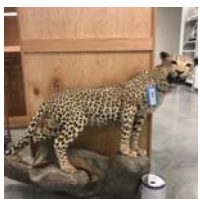
We are honored by the talented and dedicated students who come to study biology with us, working hard to build better lives, embracing the world, broadly exploring and hoping to gain deeper understanding. And the ceremonies, with robes and hats and tassels and jaunts across the stage, give occasions to pause, to mark aspiration and recognize achievement, and to remind us all that much lies ahead, always.

So to our graduates, CONGRATULATIONS, thanks for being here, and we look forward to hearing about your awesome lives!

**Michael F. Antolin**

Professor and Chair

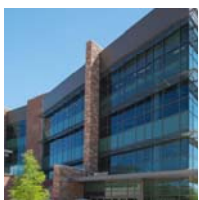
## DEPARTMENT HIGHLIGHTS



### 105 SPECIMENS DONATED TO BIOLOGY DEPARTMENT

Whether smuggled in by container ship to New York, or by passenger plane to LAX, skins and mounts of endangered or exotic animals without paperwork are often confiscated by the U.S. Fish and Wildlife Service — and then shipped to a vast storage warehouse in Colorado. Now, however, such “contraband” items could find a new life in education, in Colorado State University's Department of Biology. Thanks to the hard work of Austin Colter, one of our undergraduate students, and Professor Shane Kanatous, the University recently acquired 105 such specimens for our teaching collections.

Read the full story [here](#).



### BIOLOGY CLIMBS IN LATEST U.S. NEWS AND WORLD REPORT RANKINGS

Colorado State University graduate programs in the sciences are on the rise in *U.S. News and World Report's* [2019 rankings](#) of the nation's best graduate schools. In the highest jump, CSU's biology programs rose 13 spots to rank No. 62 in the nation. The [Department of Biology](#), in the [College of Natural Sciences](#), opened a [new state-of-the-art building](#) in 2017 and offers M.S. and Ph.D. programs in biological science. The department also offers a Professional Science Master's in Zoo, Aquarium, and Animal Shelter Management.

Read the full story [here](#).

## PSM GRADUATE MOVES ON TO SMITHSONIAN CONSERVATION BIOLOGY INSTITUTE



Spring 2018 graduate Molly Corder will be taking her skills and experience to the [Smithsonian Conservation Biology Institute](#) and George Mason University this fall. In the Professional Science Master's in Zoo, Aquarium, and Animal Shelter Management program, Corder completed her capstone project by working with the South-East Zoo Alliance for Reproduction & Conservation in Yulee, Florida. During her project, she learned how to analyze non-invasively collected biological samples for reproductive hormones, which were then used to develop assisted reproductive technologies for endangered and understudied species. She also learned how to cryogenically preserve reproductive cells from endangered species in the "Frozen Zoo" and participated in zoo and aquarium animal reproductive health consultations across the country.

## ACADEMIC SUCCESS CENTER

The Academic Success Coordinators (ASCs) promote student success and retention through a variety of advising and program activities designed to assist students in making critical transitions, developing academic plans, connecting academic units and campus resources, and engaging with learning communities. The ASC team emphasizes and enhances students' abilities through individual and group advising.

Undergraduate enrollment in the department is currently around 1,550, which keeps the ASC team busy. In addition to advising, they design and present workshops and presentations for orientation, Ram Welcome, and curriculum workshops. They also develop and teach first year seminar courses, participate in outreach events throughout the year, assist in coordinating activities and meetings for the Biology and Zoology clubs, and much more! Our ASCs are critical in implementing and shaping the University's student success initiatives.

Biology welcomed three new ASCs over the past year: Liz Menter, Abbie Reade, and Raphael Orozco, and named Liz Hysen as Lead ASC for the department.

## A SPECIAL HELLO TO GRADUATE STUDENT ALUMS!

We would love to know where you have taken your career since graduating from our department. Where do you live, where do you work and where have you been before now? Please take a couple of minutes and share this information with us by following [this link](#).

Thank you!


Rachel Mueller, Associate Professor and Associate Chair for Graduate Studies

Corder will study a blend of endangered species reproduction and clinical research in conservation medicine under advisors Alonso Aguirre and Budhan Pukuzhenthhi. The education of future generations is a driving factor for Corder, as she does not want them to have to learn about endangered species, like rhinos, in the same way she had to learn about the dinosaurs. She believes that conservation solutions are real and extinction can be stopped. CSU fostered her scientific curiosity and helped her figure out how she can make a difference in the world through creative research, management, and conservation medicine.

When describing her experience with CSU and the PSM program, she said, "I was able to receive an exceptional education with distinctly unique curricula in both the biological sciences and non-profit conservation management. I am so glad that I came to CSU for my master's degree. I do not believe any other university in the world could have provided me such strong experience in the biomedical/reproductive sciences, research design, and non-profit administration and management. I'm grateful for my time at CSU and would not be where I am in my professional career without CSU or my mentors Jennie Willis and Linda Penfold."

Read more about Corder [here](#).

Learn more about our Professional Science Master's in Zoo, Aquarium and Animal Shelter Management [here](#).

 Check out the PSM Facebook page to see what the students are up to!

**On average, the ASCs have over 1,000 appointments with students each semester.**

You can learn more about our Academic Success Center [here](#).



*Biology Department ASCs Raphael Orozco, Liz Menter, Liz Hysen, and Abbie Reade*

## CSU ALUMNUS DONATES TO BIOLOGY BUILDING



Fond memories of being an Aggie and a 1950 dendrology course inspired a recent gift to Colorado State University and the Department of Biology. Bob Smutz, a 1953 graduate with a Bachelor of Science in physical sciences, recalls his early days at CSU as a totally different world. At that time, he says Fort Collins was 12,000 people, and the University was 3,000 people — much different than now! An aspiring forester,

Smutz described himself as not the best student at the University, but he was a proud Aggie who was not ready to leave when the time came for him to move on to his next adventure.

After taking many science classes, including Plant Identification (a course still offered at CSU), Smutz decided to go into the advanced

ROTC and graduated as a second lieutenant. After graduation, he spent two years in the Air Force before moving back to the Midwest. Smutz went into the insurance business working with Connecticut Mutual Life before opening his own office.

About four years ago, Smutz decided it was time to start giving back and chose to give to the five entities that have had great impact on his life — CSU, Alpha Tau Omega, Rotary International, the American Youth Foundation, and Webster Presbyterian Church.

At CSU, Smutz donated funds to the biology department to support activities in the new Biology Building as well as funds to install a commemorative bench and tree to honor his father, Harold Smutz, who was also an Aggie before WWI and finished engineering degrees at Washington University in his home city of St. Louis.



## FACULTY NEWS



### PROFESSOR DEBORAH GARRITY AWARDED AS PROFESSOR LAUREATE

Professor [Deborah Garrity](#) was recognized as a 2018-2019 Professor Laureate, the highest academic honor the College of Natural Sciences bestows for outstanding contributions by faculty. Professor Garrity researches the genetics of heart development in zebrafish, serves as Master Teaching Initiative Coordinator in the college, and is director of the campus-wide Life Sciences Core, which delivers life sciences courses serving numerous undergraduate programs. This honor identifies faculty in the college who are exceptional role models. The title is held for three years and includes an honorarium and two years of research funding. Professor Garrity will present her laureate lecture at the College of Natural Sciences Teaching and Mentoring Awards Ceremony this fall.



### PROFESSOR SHANE KANATOUS FUNDED BY NSF TO STUDY LEOPARD SEALS IN ANTARCTICA

The [National Science Foundation](#) awarded Professor [Shane Kanatous](#) funds to study the feeding habits and diving physiology of leopard seals, one of Antarctica's top marine predators. The four-year grant will allow Kanatous and his team to travel to Antarctica for a month every spring from 2018 to 2020. The National Science Foundation grant supports all travel, ship time, and living expenses for Antarctic research, totaling \$3.4 million per year. Kanatous returned from that trip in early May before heading directly to Baja California, Mexico, to teach CSU's field course in marine ecology at the University's Todos-Santos Center. Read the full story [here](#).



### PROFESSOR DIANA WALL ELECTED TO THE NATIONAL ACADEMY OF SCIENCES

Diana Wall is a University Distinguished Professor, Professor of Biology, Senior Research Scientist in the Natural Resource Ecology Laboratory, and Director of the School of Global Environmental Sustainability, and now a member of the National Academy of Sciences. The induction honors her work on global ecosystems and policy, especially for her long-term research of the extreme, and changing, soil ecosystems of the dry valleys of Antarctica. See Professor Wall's research page [here](#) and a full article about her NAS election [here](#).

## SUPPORT

Your support of the department is incredibly valuable. Please consider making a difference to today's students, faculty, facilities, and programs—at whatever level is right for you. Thank you!

For more information on giving, contact Simone Clasen, Executive Director of Development and Operations  
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