

Bio-logue

Spring 2018 Alumni Newsletter



UNIVERSITY OF COLORADO DENVER
DEPARTMENT OF INTEGRATIVE BIOLOGY



Dear Alumni and Friends,

The 2018 Spring Semester was a busy one for the Department. Our department continues to advance the research mission of CU Denver. Our faculty and graduate students traveled nationally and internationally to speak at conferences and present their research. We said farewell to Dr. Leo Bruederle and wish him well in his retirement. But the highlights of the past semester were graduating our first alumna of the Ph.D. program Dr. Adrienne Narrowe, Ph.D., and the recruitment of new faculty, Dr. Brian Buma (Computational Biology) and Dr. Carlos Infante (Developmental Biology).

We'd like to share all the details of the Spring Semester with you below and we'd also like to hear from you, your professional accomplishments and milestones and share these in future newsletters. If you have news to share please email, <mailto:jacki.craig@ucdenver.edu>.

All my best,



John Swallow, Ph.D.
Professor and Chair

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ALUMNI NEWS TO SHARE

Mastin publishes on plant systematics and evolution

Jared Mastin, Integrated Biology BS 2013, and MS 2017, recently published "Evidence for genetic allopolyploidy in *Eutrema edwardsii* (Brassicaceae): implications for conservation" in the international journal [Plant Systematics and Evolution](#). The paper, which is co-authored by [Leo P. Bruederle](#) (Associate Professor of Integrative Biology) and Peter Anthamatten (Associate Professor in Geography and Environmental Sciences), grew out of research initiated while Jared was an undergraduate at CU Denver. Therein, they document the evolutionary origin of the Edward's mock wallflower, a near circumpolar arctic-alpine species, whose closest relative is *Eutrema penlandii*, a federally listed endemic that is restricted in distribution to the Mosquito Range of Colorado.

CU DENVER TODAY

Leading the way in innovation



One research team in this year's group of CRC fellows is made up of [Timberley Roane](#) associate professor of environmental microbiology in the department of Integrative Biology, and Jae Do Park associate professor of electrical engineering. Both researchers share an interest in energy production, renewable energies and the impact of different energy systems on the environment.

In addition to their innovative research, fellowship recipients give talks on their research projects and individual work through a series of talks hosted by the CRC at Inworks. The final fellows talk for this academic year is on April 11 from 5 to 6 p.m. at [Inworks](#), with Roane and Park discussing their collaboration involving the potential of microbial fuel cells as a renewable energy source. Denver's tremendous growth makes it the perfect setting for collaborative research and innovative breakthroughs in energy technologies. "We are bringing together two disciplines that do not commonly work together," Roane said. "The result is a new avenue of research rich with possibilities as we combine our expertise to address the ability of microorganisms to produce electricity." Read more in [CU Denver Today](#).

Faculty team receives \$1 million NSF grant for indigenous lands program



ESIL Partners include (back row, from left) Rosa Burnett, Harmony Spoonhunter, Susan Johnson, Ryan Ortiz and Kim Vanilek, and (front row, from left) David Mays, Timberley Roane, Rafael Moreno and Scott Aikin.

A team of faculty from the College of Engineering and Applied Science and the College of Liberal Arts and Sciences has received a \$1 million National Science Foundation (NSF) S-STEM award to support the new Environmental Stewardship of Indigenous Lands (ESIL) program. This is the second NSF award for the program, which is currently enrolling students for fall 2018.

[Timberley Roane](#), associate professor of integrative biology, David Mays, associate professor of civil engineering, and Rafael Moreno, associate professor of geography and environmental sciences, designed the ESIL program with a focus on land stewardship with the additional goal to recruit Indigenous students and prepare them to serve as liaisons for their tribes and organizations. Two-thirds of the S-STEM grant is earmarked for scholarships, giving full-time undergraduate students in biology, civil engineering, or environmental sciences up to \$10,000 per year for up to five years, depending on their financial need. Read more in [CU Denver Today](#)

CLAS Graduate Programs ran in US News & World Report

On March 19, the US News & World Report announced its yearly rankings of graduate programs and the Department of Integrative Biology ranked #98, and the Department of Mathematical & Statistical Sciences ranked # 117 in Mathematics and #83 in Statistics. Congratulations!

FACULTY NEWS

Tomback on introducing wolves back to Colorado



A photographic exhibit that advocates the reintroduction of wolves into western Colorado will debut this Saturday at the Aspen Airport. According to [Diana Tomback](#), Professor of Integrative Biology and a member of the science advisory committee for the Rocky Mountain Wolf Project, which is sponsoring the event, the exhibit serves a two-fold, inter-related purpose. "The first is to document the lives of wolves to show that they are not the evil creatures they have been made out to be throughout history and, second, to talk about how well suited Western Colorado is for wolf reintroduction," Tomback said. "There is sufficient public land and a more than sufficient prey base to support wolves here. There are an estimated 750,000 elk and deer in Colorado, the highest number of any Western state."

['Living with Wolves' exhibit to debut at Aspen Airport](#)

Aspen Daily, Dec 5

Tomback on righting past wrongs to wolves

Professor in Integrative Biology [Diana Tomback](#) works with the Rocky Mountain Wolf Project on efforts to reintroduce wolves to ecosystems. Tomback acknowledges that part of this process means reckoning with the past, when ranchers drove wolves out of the Central Rockies. "It's time to make it right, but also to recover the benefits we gained from the apex predator," Tomback said.

['Living with Wolves' exhibit highlights family, loyalty](#)

Aspen Public Radio, January 17

Diana Tomback speaker at 10th Montana Plant Conservation Conference

[Diana Tomback](#) was invited to talk on February 21st in Helena, MT, to the 10th Montana Plant Conservation Conference, sponsored by the Montana Native Plant Society, the U.S. Forest Service, and the Montana Natural Heritage Program.

The title of the talk was "Why whitebark pine might be listed under the Endangered Species Act." It was part of a morning symposium where we debated the pros and cons of listing. The symposium including a representative from the U.S. Fish & Wildlife Service talking about the listing process.

Tomback presented Whitebark Pine webinar

On April 2, [Diana Tomback](#), Department of Integrative Biology Professor, presented an invited webinar to the Committee on Forest Health and Biotechnology of the National Academies of Sciences and to the public. The webinar was entitled "[Whitebark Pine Status and the Potential Role of Biotechnology in Restoration](#)," followed by a Q & A session by the committee. Whitebark pine is a rapidly declining high elevation conifer currently being evaluated for listing under the Endangered Species Act. Genome sequencing coupled with genomic applications could speed the search for genetic resistance to exotic disease in this ecologically important species.



Miller comments on Tree of Life

Scientists have devised a method to sequence more microbes, more quickly, which could lead to a better understanding of the origin of complex life.

There you have the chicken-and-egg problem: “Every PCR primer is designed based on a previous sequence out there,” says [Chris Miller](#), a microbiologist at the University of Colorado at Denver who was not involved in the study. “PCR primer bias is big.”

[A New Way to Find the Tree of Life's Missing Branches](#) The Atlantic, Jan 8

Department of Integrative Biology well represented in the Dean's Awards



Outstanding Master of Science

Andrew M. Boddicker, MS Integrative Biology Fall 2017

Mentored by [Annika Mosier](#)



Outstanding Ph.D.

Adrienne Beth Narrowe, PhD Integrative Biology, Spring 2018

Mentored by [Chris Miller](#)



Teaching Excellence Award, Non-Tenure-Track Faculty

[Laurel Beck](#), Senior Instructor, Integrative Biology



Research and Creative Activities Award

[Michael Wunder](#), Associate Professor, Integrative Biology



Retiree

Leo P. Bruederle, Integrative Biology



Integrative Biology at Dean's Awards Ceremony, May 4th 2018. Congratulations everyone!!



Saying farewell to Dr. Bruederle

On April 24, the Department's faculty, staff, students, and colleagues from so many different genres gathered to say farewell to Dr. Leo Bruederle as he steps into retirement from 22 years of teaching.

STUDENT NEWS

Ph.D. Student Laurel Sindewald and M.S. Student Eric Neumeyer receive John W. Marr Grant



Laurel Sindewald and Eric Neumeyer, graduate students in Dr. [Diana Tomback](#)'s forest ecology lab, have been awarded John W. Marr grant funding by the Colorado Native Plant Society for research this summer. Their proposal was titled "A survey of limber pine abundance and ecological role in the

alpine treeline ecotone of Rainbow Curve Overlook, Rocky Mountain National Park, USA." Congratulations, Laurel and Eric, and all of Diana's research team!

Libby Pansing has doctoral research featured in FIRESCIENCE.GOV



Libby Pansing, a PhD student in Dr. [Diana Tomback](#)'s lab had her doctoral research, "Effects of climate change and climate-altered fire regimes on whitebark pine populations" featured in the May 4th issue of the FIRESCIENCE.GOV newsletter. Libby also received a GRIN fellowship from FIRESCIENCE.GOV. To read the full article, please [click here](#)

Le publishes on multicultural science education



Paul T. Le, PhD Candidate in Dr. [Laurel Hartley](#)'s lab, Dept. of Integrative Biology, recently published Towards a truer multicultural science education: how whiteness impacts science education in [Cultural Studies of Science Education](#) with co-author Cheryl Matias from the School of Education and Human Development.

Benjamin Lagasse receives travel award

Benjamin Lagasse, M.S. student advised by [Mike Wunder](#), received a travel award from the Department of Integrative Biology to attend the Russian Far East Shorebird and Waterfowl Workshop sponsored by the Wildlife Conservation Society and held in Terney, Russia. While attending the workshop he taught a half-day session entitled, "Advanced analysis of light-level geolocator data". Generally, this presentation detailed up-and-coming techniques in tracking migratory birds using R statistical software, while also strengthening international collaborations to study migratory shorebirds on the East Asian-Australasian Flyway

2018 RaCAS Award Recipients

Integrative Biology also had several students receive awards at the Research and Creative Activities Symposium (RaCAS) this year in three categories:

Poster – McCall Calvert Adaptive coupling of diapause phenotypes in the apple maggot fly, *Rhagoletis pomonella* Mentor: [Dr. Gregory Ragland](#)

Emerging Scholars - Anastasia Zhiotov, Elizabeth Pansing Age-Height Regression Models for Regenerating Conifers in the Greater Yellowstone Area Mentor: [Dr. Diana Tomback](#)

Interdisciplinary Award - Adnan Syed (UROP 2017-2018 recipient) Equity in the Pre-health Application Cycle: an Analysis of Two Financial Assistance Programs Mentor: [Dr. Charles Ferguson](#)

2018 Spring Outstanding Students Award Reception



On the afternoon of May 4, 2018, Integrative Biology faculty, staff and students gathered to honor our 2018 Spring Outstanding Student Award recipients for their achievements and also to congratulate our first PhD graduate. [Dr. Christopher Phiel](#) presided over the awards presentations and Dr. [Mike Wunder](#) announced exciting news about the Department's fledgling PhD program.

This year's winners had some amazing stories and were truly "Outstanding" in their academic endeavors! Below is a brief explanation of the Smilodon Awards and the recipients.

Smilodon Outstanding Underclassman and Upper Classman Award -

Recipients of this award receive a \$250.00 prize administered by CLAS that may be used to defray expenses related to enrollment at CU Denver. Nominations come from the Departments teaching faculty and include such indicators as motivation, perseverance, enthusiasm, depth and breadth of interest in Biology, academic performance, outreach, and extenuating circumstances. The Department's Awards, Scholarships and Outreach Committee reviews the nominations and votes on the final recipients.

The 2018 Spring awardees are:

Anh Tran, nominated by Dr. Cheri Jones for the Smilodon Outstanding Underclassman Award

Elham Chabbi, nominated by Dr. Christopher Phiel for the Smilodon Outstanding Upperclassman Award

Outstanding Student Awards for the 2018 Spring Semester -

Outstanding Teaching Assistant, **Sarah St. Onge**, nominated by Dr. Tod Duncan

continued...

Outstanding Graduate Student, **Paul Le**, nominated by Dr. Laurel Hartley

Outstanding Graduate Defense, **Dr. Adrienne Narrowe**, nominated by Dr. Chris Miller

Outstanding Undergraduate Research, **Harman Kang**, nominated by Dr. Alan Vajda

Outstanding Service Learning, **Victoria (Tori) Gray**, nominated by Dr. Amanda Charlesworth