

# University of California Riverside Department of Evolution, Ecology, and Organismal Biology



## Summer 2021!

In this newsletter, you'll find department announcements and DEI contributions, plus a review of summer 2021, including photos from Natural Reserve System summer interns and recent awards and publications.

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### Announcements

#### EEOB/Entomology DEI Book Club

- First meeting: Tuesday 10/12 at 10am on Picnic Hill
- Contacts: [Natalie Holt](#) & [Hollis Woodard](#)

#### EEOB DEI committee - open forum

- Monday 10/11 at 9am on [Zoom](#)

#### EEOB's weekly seminar series (BIOL 252)

- Virtual format for the Fall 2021 quarter
- Visit [EEOB Seminars](#) for more info

#### We'd like to welcome the new graduate students who joined EEOB this year!

Miranda Buckley	Haley Cabrera
Marissa Cartee	Jackson Caudle
Connor Christensen	Mayank Kashyap
Conner Lay	Harrison Lin
AJ Lodge	Spencer Peterman
Seth Shirazi	

#### SDSU Joint Doctoral Program:

Ryan Hanscom	Sean Kelly
Michael Remington	Michael Tofflemire

### Awards and Accomplishments

#### 2021 EDI (Environmental Data Initiative)

##### Summer Fellowship

- **Gary Qin**, working with the Niwot Ridge LTER at the University of Colorado Boulder

#### Recent Ph.D. Dissertation Defenses:

- **Holly Andrews** - *Patterns and Mechanisms of Trace Gas Pulses Following Soil Rewetting in Drylands* (Jenerette Lab)
- **Jess Tingle** - *Evolution and Biomechanics of Specialized Locomotion in Snakes* (Garland Lab)
- **Bobby Nakamoto** - *Stable Isotope Analysis of Fish, Invertebrates, and Particulate Organic Matter in the Sacramento-San Joaquin River Delta* (Fogel Lab)

**Congratulations to everyone!!**

# Recent Publications

Ávila-Lovera E., Blanco H., Móvil O., Santiago L.S., Tezara W. Shade tree species affect gas exchange and hydraulic conductivity of cacao cultivars in an agroforestry system. [Tree Physiology](#)

Bassar R. D., Coulson T., Travis J., Reznick D.N. Towards a more precise – and accurate – view of eco-evolution. [Ecology Letters](#)

Brady P.L., Springer M.S. The effects of fossil taxa, hypothetical predicted ancestors, and a molecular scaffold on pseudoextinction analyses of extant placental orders. [PLoS ONE](#)

Clark J., Clark C., Higham T.E. Tail control enhances gliding in arboreal lizards: an integrative study using a 3D geometric model and numerical simulation. [Integrative and Comparative Biology](#)

De Guzman M.E., Acosta-Rangel A., Winter K., Meinzer F.C., Bonal D., Santiago L.S. Hydraulic traits of Neotropical canopy liana and tree species across a broad range of wood density: implications for predicting drought mortality with models. [Tree Physiology](#)

Furness A I., Avise J.C., Pollux B.J.A., Reynoso Y., Reznick D.N. The evolution of the placenta in poeciliid fishes. [Current Biology](#)

Griffing A.H., Sanger T.J., Epperlein L., Bauer A.M., Cobos A., Higham T.E., Naylor E., Gamble T. And thereby hangs a tail: morphology, developmental patterns and biomechanics of the adhesive tails of crested geckos (*Correlophus ciliatus*). [Proceedings of the Royal Society B](#)

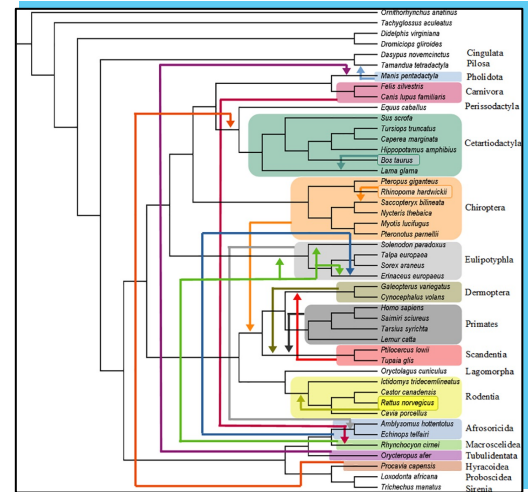


Fig. 2, Brady & Springer

Higham T.E., Ferry L.A., Schmitz L., Irschick D.J., Starko S., Anderson P.S., Bergmann P.J., Jamniczky H.A., Monteiro L.R., Navon D., Messier J. Linking ecomechanical models and functional traits to understand phenotypic diversity. [Trends in Ecology & Evolution](#)

Higham T.E., Zhuang M., Russell A.P. Ankle structure of the Tokay gecko (*Gekko gecko*) and its role in the deployment of the subdigital adhesive system. [Journal of Anatomy](#)

Leduc A.O., Thomas S.A., Bassar R.D., López-Sepulcre A., MacNeill K., El-Sabaawi R., Reznick D.N., Flecker A.S., Travis J. The experimental range extension of guppies (*Poecilia reticulata*) influences the metabolic activity of tropical streams. [Oecologia](#)

Martínez-Vilalta J., Santiago L.S., Poyatos R., Badiella L., de Cáceres M., Aranda I., Delzon S., Vilagrosa A., Mencuccini M. Towards a statistically robust determination of minimum water potential and hydraulic risk in plants. [New Phytologist](#)

Reznick D.N., Travis J., Pollux B.J., Furness, A.I. Reproductive mode and conflict shape the evolution of male attributes and rate of speciation in the fish family Poeciliidae. [Frontiers in Ecology and Evolution](#)

Potter T., Bassar R.D., Bentzen P., Ruell E.W., Torres-Dowdall J., Handelsman C.A., Ghalambor C.K., Travis J., Reznick D.N., Coulson, T. Environmental change, if unaccounted, prevents detection of cryptic evolution in a wild population. [The American Naturalist](#)

Potter T., Reznick D.N., Coulson T. Substantial intraspecific variation in energy budgets: biology or artefact? [Functional Ecology](#)

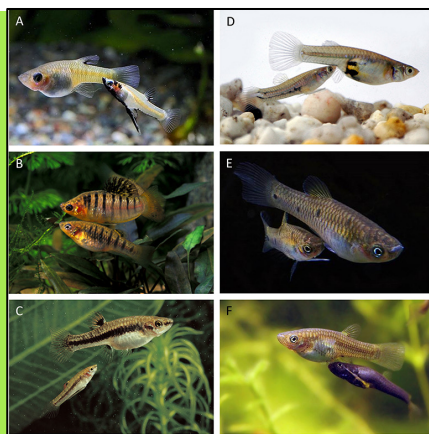


Fig. 3, Reznick et al.

Sandel B., Pavelka C., Hayashi T., Charles L., Funk J., Halliday F.W., Kandlikar G.S., Kleinhesselink A.R., Kraft N.J., Larios L.,

Madsen-McQueen T., ... Spasojevic M.J. Predicting intraspecific trait variation among California's grasses. [Journal of Ecology](#)

Sternes P.C. Book review: Field guide to sharks, rays, & chimaeras of Europe and the Mediterranean , D. A. Ebert & M. Dando, Published by Princeton University Press, Princeton, NJ, 2021.

[Journal of Fish Biology](#)

Underwood E.C., Hollander A.D., Molinari N.A., Larios L., Safford, H.D. Identifying Priorities for Post-fire Restoration in California Chaparral Shrublands. [Restoration Ecology](#)

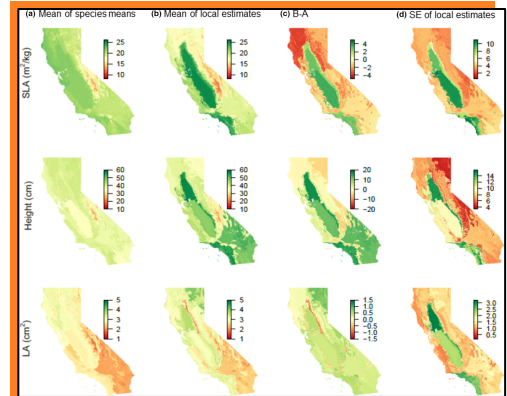


Fig. 6, Sandel et al.

van Kruistum H., Nijland R., Reznick D.N., Groenen M.A., Megens H.J., Pollux, B.J. Parallel Genomic Changes Drive Repeated Evolution of Placentas in Live-Bearing Fish. [Molecular Biology and Evolution](#)

Vieira T.O., Santiago L.S., Pestana I.A., Avila-Lovera E., Silva J.L., Vitoria A.P. Species-specific performance and trade-off between growth and survival in the early-successional light-demanding group.

[Photosyntheticia](#)

## UCR Natural Reserve System Internship

The Rafferty Lab, Spasojevic Lab, Kim Hammond, and Chris Tracy at Boyd Deep Canyon were involved with a Natural Reserve System (NRS) internship program this summer, where undergraduate students completed an independent research project based in the UCR NRS sites for 10 weeks. This internship program provided experience in research and conservation and introduced interns to many of the career paths available for biologists. **Advyth Ramachandran**, an undergraduate student at UCR majoring in biology, participated in the program over the summer and summarized the experience below:



Left: Jared and Advyth taking a break in the forest plot. Right: Advyth on Black Mountain Summit to observe forest composition changes with elevation.

*“This summer I was part of the first group of interns of this unique program organized by Dr. Kimberly Hammond & Dr. Heather Constable of the UCR NRS. I worked with my faculty mentor, Dr. Marko Spasojevic, and graduate student mentor, Jared Huxley, to survey seedlings in the San Jacinto Forest Dynamics Plot at the UCR James San Jacinto Reserve. We established 256 plots within the 4 ha forest plot within which over 500 seedlings were tagged, measured, and identified. We found that there is little pine recruitment in this mixed-conifer forest, which may portend a change in forest composition under climate change. This internship helped me learn field and lab research skills that will help me pursue my goal of graduate study in ecology.”*

Images courtesy of Advyth Ramachandran & Caryn Iwanaga





# EEOB's Contributions to Diversity, Equity, and Inclusion

Over the past year, EEOB's faculty, staff, and students have made endeavors to make the department more committed to diversity, equity, and inclusion. These efforts included a department climate survey, DEI reading group and seminars, involvement with professional society DEI committees, and inclusive internships and grants. Below are some highlights from various labs and personnel in EEOB, and a detailed document can be found [here](#).

## EEOB DEI Committee

- Developed and administered a 'climate' survey for the whole program
- Held a workshop on identifying and avoiding micro-aggressions
- Plans to participate in a DEI reading group, hold open DEI meetings, and continue to organize seminar topics that include DEI relevant material related to science

## Anderson Lab

- *Clara Woodie*, *Ryan Conway*, and *Ben Nyman* (Entomology Ph.D.) mentored students through UCR's Summer RISE Program, which provides research experiences and professional development for students from underrepresented groups in STEM
  - *William Ota* mentored a Riverside-area High School teacher on a lab NSF-funded Research Experiences for Teachers summer project
  - *Matthew Green* and *William Ota* mentored students on University Honors Projects
  - *Clara Woodie* participated in [Letters to a Pre-Scientist](#), which is an organization that matches marginalized students in low-income schools to science professionals to foster their passion for STEM
- Kurt Anderson*
- Life sciences content specialist for the UCR Math Department's California Learning Lab project entitled a "New Math Gateway", which aims to increase math performance in order to increase STEM retention, particularly among UCR's first generation and underrepresented populations
  - Lead faculty advisor for the UCR Chapter of the Ecological Society of America's Strategies for Ecology Education, Diversity and Sustainability (SEEDS) program
    - Multiple EEOB graduate students, including *Annika Rose-Person* and *Jared Huxley*, serve as mentors to undergraduate researchers in this program

## Kurt Anderson, Anne Hilborn, & Helen Regan

- Incorporating DEI concepts into the development of two online courses, Biol 116: Ecology and Conservation Biology and Biol 166: Global Change Biology
  - Improving accessibility in the online classroom – e.g., including closed captions and alternate text
  - Being mindful of the diversity of students' backgrounds, experiences, and socio-economic realities throughout the design of these courses
  - Incorporating examples, case studies, and storylines that connect with the issues of racism, exploitation, colonization, and Indigenous rights that are intertwined with the topics of conservation, ecology, and global change biology

## Kim Hammond & the Natural Reserve System

- With the help of a donor, developed an Inclusivity Internship designed to give NRS access to groups of undergraduates who traditionally do not get exposed to opportunities working in natural settings



# EEOB's Contributions to Diversity, Equity, and Inclusion (cont.)

## Loralee Larios

- Faculty mentor of the graduate student-led DroughtReach group, which presented potential remote learning science lessons at a District Science Teachers Workshop, serving 30 middle and high school teachers in the Inland Empire

## Helen Regan

- Member of the CNAS Leadership Team for Phase 1 of the [HHMI Inclusive Excellence Learning Communities](#)
- Served as a panelist in a forum for the CNAS Graduate Student Affairs Center, UC-HSI Doctoral Diversity Initiative entitled "CUSP: Career Mentoring of Underrepresented STEM Students for the Professoriate"

## Helen Regan & Janet Franklin

- In collaboration with San Diego State University (SDSU) and the Climate Science Alliance (CSA), received a [grant](#) from the California Strategic Growth Council to work on the collaborative project "[Resilient Restoration](#): Advancing Ecological, Cultural, and Community Resilience with Tribal Nations in Southern California", which collaborates with 20 Native American Tribes to promote tribal resilience to climate change by developing knowledge and supporting actions that enhance persistence of cultural practices with a focus on preserving the ecosystems and species that are integral to tribal communities

## Lou Santiago

- Member of the DEI committee for the Association for Tropical Biology and Conservation (ATBC)
- Member of the Re-imagining Academic Programs Committee at the Smithsonian Tropical Research Institute (STRI)

## Call for submissions – Fall newsletter

Do you have announcements to share with the department?

Upcoming events, resources, new publications, grants, awards, stories, photos, etc.?

Please send them to me to be included in the next newsletter!

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*Amanda Herbert, Ph.D. Student UCR EEOB*