

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

## Spring 2021!

In this newsletter, you'll find department announcements, recent awards and publications, interviews with first-year EEOB graduate students, and DEI resources. Thank you for taking the time to read UCR EEOB's spring newsletter!

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## Awards and Grants

Graduate Division Outstanding Teaching Assistant Award (OTA) 2020-2021:

- **Chris Cosma**
- **Kristen Edwards**
- **Jared Huxley**
- **Tesa Madsen-McQueen**
- **Annika Rose-Person**
- **Margaret Schmill**

Graduate Division Distinguished Teaching Award (DTA) 2020-2021:

- **Sam Kubica** (Honorable Mention)

SICB Grants-in-Aid of Research (GIAR):

- **Catherine Nguyen**

2021 Cal-SFS (Society for Freshwater Science) Fellowship Program:

- **William Ota** (*How wastewater discharge is structuring communities in the urban Santa Ana River headwaters*)

2021 Early Career Fellow for the Ecological Society of America:

- **Loralee Larios**

NSF Award - Integrative Organismal Systems:

- **Natalie Holt** and **Ted Garland** - *Trade-offs, limits to adaptation, and multiple solutions: rules elucidated by selective breeding for high activity levels* (4-year grant)
- **Wendy Saltzman**, **Khaleel Razak** (CFM in EEOB), **Sachiko Haga-Yamanaka** (Dept. of MCSB), and **Brian Trainor** (UC Davis) - *Sensory Plasticity in Fathers* (4-year grant)

NSF Award - Division of Environmental Biology:

- **David Reznick**, **Ron Bassar** (Williams College), **Joseph Travis** (FSU), and **Tim Coulson** (U Oxford) - *BEE: The Evolution of Fluctuation-Dependent Species Coexistence* (3-year grant)

NSF Postdoctoral Research Fellowship - Biology:

- **Kerianne Wilson** (*The effect of fatherhood on behavioral and neural responsiveness to offspring sensory cues*)

**Congratulations to everyone!!**

# Recent Publications

Arévalo L., Gardner S., & Campbell P. *Haldane's rule in the placenta: Sex-biased misregulation of the Kcnq1 imprinting cluster in hybrid mice.* [Evolution](#)

Cadney M.D., Hiramatsu L., Thompson Z., Zhao M., Kay J.C., Singleton J.M., de Albuquerque R.L., Schmill M.P., Saltzman W., & Garland Jr. T. *Effects of early-life exposure to Western diet and voluntary exercise on adult activity levels, exercise physiology, and associated traits in selectively bred High Runner mice.* [Physiology & Behavior](#)

Castro A.A., Rabitoy H., Claghorn G.C., & Garland Jr. T. *Rapid and longer-term effects of selective breeding for voluntary exercise behavior on skeletal morphology in house mice.* [Journal of Anatomy](#)

Clark C.J. *Ways that animal wings produce sound.* [Integrative and Comparative Biology](#)

Couger M.B., Roy S.W., Anderson N., Gozashti L., Pirro S., Millward L.S., Kim M., Kilburn D., Liu K.J., Wilson T.M., Epps C.W., Disney L., Ruedas L.A., & Campbell P. *Sex chromosome transformation and the origin of a male-specific X chromosome in the creeping vole.* [Science](#)

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

Hazlehurst J.A., Rankin D.T., Clark C.J., McFrederick Q.S., & Wilson-Rankin E.E. *Macroecological patterns of resource use in resident and migratory hummingbirds.* [Basic and Applied Ecology](#)

He K., Eastman T.G., Czolacz H., Li S., Shinohara A., Kawada S.I., Springer M.S., Berenbrink M., & Campbell K.L. *Myoglobin primary structure reveals multiple convergent transitions to semi-aquatic life in the world's smallest mammalian divers.* [eLife](#)

Henderson E.C., & Brelsford A. *Genomic differentiation across the speciation continuum in three hummingbird species pairs.* [BMC Evolutionary Biology](#)

Hillis D.A., Yadgary L., Weinstock G.M., Pardo-Manuel de Villena F., Pomp D., Fowler A.S., Xu S., Chan F., & Garland Jr. T. *Genetic Basis of Aerobically Supported Voluntary Exercise: Results from a Selection Experiment with House Mice.* [Genetics](#)

Horrell N.D., Acosta M.C., & Saltzman W. *Plasticity of the paternal brain: Effects of fatherhood on neural structure and function.* [Developmental Psychobiology](#)

Huxley J.D., & Spasojevic M.J. *Area Not Geographic Isolation Mediates Biodiversity Responses of Alpine Refugia to Climate Change.* [Frontiers in Ecology and Evolution](#)

Keeler A., Rose-Person A., & Rafferty N. *From the ground up: building predictions for how climate change will affect belowground mutualisms, floral traits, and bee behavior.* *Climate Change Ecology.*



Science cover from May 2021 featuring a young creeping vole, the species studied by Polly Campbell in Couger et al. Photo: David Moskowitz

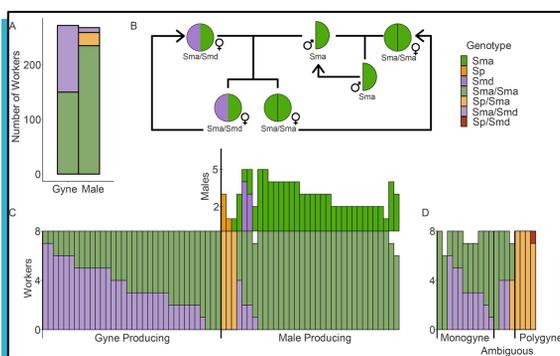


Fig. 4, Lagunas-Robles et al.

Korunes K.L., & Samuk K. *pixy: Unbiased estimation of nucleotide diversity and divergence in the presence of missing data.* [Molecular Ecology Resources](#)

Lagunas-Robles G., Purcell J., & Brelsford A. *Linked supergenes underlie split sex ratio and social organization in an ant.* [bioRxiv](#)

Larios L., & Maron J.L. *Voles mediate trait composition along a resource gradient.* [Functional Ecology](#)

Lamkin D.M., & Garland Jr. T. *Translating preclinical research for exercise oncology: Take it to the VO2max.* [Frontiers in Oncology](#)

McNamara M.P., Singleton J.M., Cadney M.D., Ruegger P.M., Borneman J., & Garland Jr. T. Early-life effects of juvenile Western diet and exercise on adult gut microbiome composition in mice.

[Journal of Experimental Biology](#)

Myers B.M., Burns K.J., Clark C.J., & Brelsford A. *The population genetics of nonmigratory Allen's Hummingbird (*Selasphorus sasin sedentarius*) following a recent mainland colonization.*

[Ecology and Evolution](#)

Nabity P.D., Barron-Gafford G.A., & Whiteman N.K. *Intraspecific competition for host resources in a parasite.* [Current Biology](#)

Nguyen Q.A.T., Hillis D., Katada S., Harris T., Pontrello C., Garland Jr. T., & Haga-Yamanaka S. *Coadaptation of the chemosensory system with voluntary exercise behavior in mice.* [PLOS One](#)

Nguyen C.T., & Saltzman W. *Sex differences in offspring discrimination in the biparental California mouse (*Peromyscus californicus*).*

[Journal of Ethology](#)

Ostevik K.L., Rifkin J.L., Xia H., & Rausher M.D. *Morning glory species co-occurrence is associated with asymmetrically decreased and cascading reproductive isolation.* [Evolution Letters](#)

Quides K.W., Salaheldine F., Jariwala R., & Sachs J.L. *Dysregulation of host-control causes interspecific conflict over host investment into symbiotic organs.* [Evolution](#) + [EurekAlert!](#)

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](#)

Rieser J.M., Li T.D., Tingle J.L., Goldman D.I., & Mendelson III J.R. *Functional consequences of convergently evolved microscopic skin features on snake locomotion.* [PNAS](#)

Rosenthal W.C., McIntyre P.B., Lisi P.J., Prather Jr. R.B., Moody K.N., Blum M.J., Hogan J.D., & Schoville S.D. *Invasion and rapid adaptation of guppies (*Poecilia reticulata*) across the Hawaiian Archipelago.*

[Evolutionary Applications](#)

Sedio B.E., Spasojevic M.J., Myers J.A., Wright S.J., Person D., Chandrasekaran H., Dwenger J.H., Prechi M.L., López C.A., Allen D.A., Anderson-Teixeira K.J., Baltzer J.L., Bourg N.A., Castillo B.T., Day N., Dewald-Wang E., Dick C.W., James T.Y., Kueneman J., Lamanna J., Lutz J.A., McGregor I., McMahon S.M., Parker G.G., Parker J.D., & Vandermeer J. *Chemical similarity of co-occurring trees decreases with precipitation and temperature in North American forests.* [Frontiers in Ecology and Evolution](#)



Fig. 1, Nguyen & Saltzman

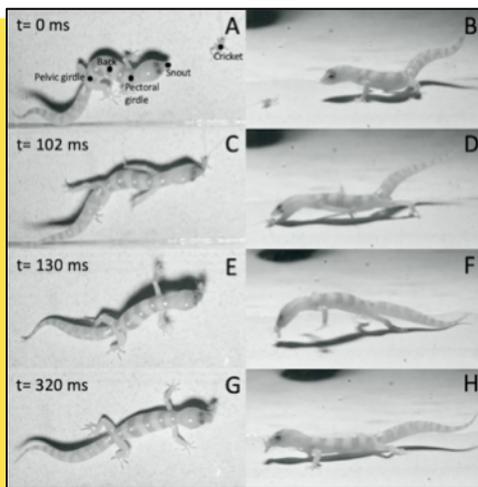


Fig. 1, Vollin & Higham

Shaad K., Souter N.J., Vollmer D., Regan H.M., & Bezerra M.O.

*Integrating ecosystem services information into water resource management: an indicator-based approach.*

[Environmental Management](#)

Springer M.S., Guerrero-Juarez C.F., Huelsmann M., Collin M.A., Danil K., McGowen M.R., Oh J.W., Ramos R., Hiller M., Plikus M.V., & Gatesy J. *Genomic and anatomical comparisons of skin support independent adaptation to life in water by cetaceans and hippos.* [Current Biology](#)

Tingle J.L., & Garland Jr. T. *Morphological evolution in relationship to sidewinding, arboreality and precipitation in snakes of the family Viperidae.* [Biological Journal of the Linnean Society](#)

Vollin M.F., & Higham T.E. *Tail autotomy alters prey capture performance and kinematics, but not success, in banded geckos.*

[Integrative and Comparative Biology](#)

# Meet the first-years!

The first-year graduate students had a bizarre start to their time here in EEOB! With virtual events and home offices, this past year lacked the usual interactions and introductions. Below are interviews with some of the first-years to help introduce everyone.

## Tito Abbo

- Ph.D. student in Amy Litt's lab
- Interested in *plant systematics*, the *evolution of key taxonomic traits*, and *introgression*
- Current and future research projects? *"I am studying the phenotype effects of FRUITFUL transcription factors in tobacco for my first-year project. My dissertation work will focus on the phylogeny of manzanitas, the evolution of their taxonomic characters. High endemism and diversity, apparent phenotypic plasticity, introgression and hybridization has made this group phylogenetically and taxonomically challenging."*
- Highlights from the past year? *Working in the UCR Herbarium and discussing local flora with Andy Sanders and Teresa Salvato*
- When he's not *tagging plants* in the growth chamber, running *phylogenetic analyses*, or *reading papers*, Tito enjoys *picking locks*.
- Contact: tabbo002@ucr.edu

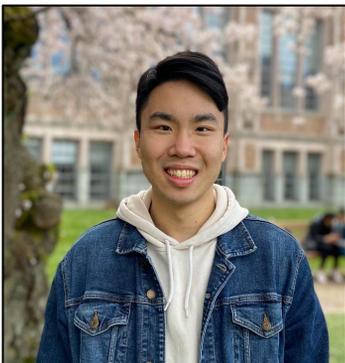


*"My lab mate (Glen) and I went on a multi-day collecting trip along the central coast. We stayed at UC reserves."*

## Allyn (uh-leen) Nguyen

- Ph.D. student in Natalie Holt's lab
- Interested in *muscle physiology*
- First-year project? *"I am quantifying the contractile properties of the control lines of the high runner mice project that Ted Garland runs. We plan to compare these findings with another project that quantified the contractile properties of the high runner mice lines."*
- Future projects? Allyn plans to collect *alligator lizards* to continue her past [research](#) on muscle physiology. She intends to *"uncover the underlying mechanism of fatigue resistance of the jaw-adductor complex during the mating behaviour of the southern alligator lizard."*
- Fun facts? *"I've had alopecia since I was 7, and I have over 10 tattoos, including some on my head!"*
- Working with her *cohort*, *lab mates*, and *PI* made this difficult past year more enjoyable, and she looks forward to getting to know the rest of the graduate students!

Contact: anguy639@ucr.edu



Contact: gqin004@ucr.edu

## Gary Qin

- Ph.D. student in Helen Regan's and Kurt Anderson's labs
- Interested in *freshwater ecology*, *ecosystem services*, and *ecosystem health*
- With his first-year project completed, Gary is continuing his research and is excited to *"start building meaningful relationships with undergraduate students who want to get their foot in the door to research."*
- Favorite UCR course? *"I loved the Organismal Biology class – really opened my eyes to an aspect of biology that I, as an ecologist, never really thought about."*
- In addition to a *low-key obsession with sparkling water*, Gary has also *"discovered the wonders of Skype a Scientist and the ability to share research and what it's like to be a scientist with students from across the country"*, including MA, FL, NJ, and CA. *"The students' curiosity about science is amazing!"*

## Mitchell Coleman

- Ph.D. student in Lou Santiago's lab
- Interested in *everything to do with ecology!*
- For dissertation research, Mitchell plans to focus on the link between *"niche breadth and physiological plasticity/specialization trade-offs, especially in extreme and changing systems."*
- While working at the *Tejon Ranch Conservancy*, he has collaborated on many research projects, including *"silvery legless lizard range delineations, ecology of mesquite in relation to invasive salt cedar, effects of tamarisk beetles as a biocontrol for salt cedar, and a major tick/megafaunal (e.g., elk) co-abundance analysis as driven by climatic variation."*
- Cool story? *"I have been tracking a California condor nest in the Tehachapi Mountains since the pandemic started."*
- Contact: mcole034@ucr.edu



With 3 kids, living in Bakersfield, and field work at Tejon Ranch, the remote nature of the past year has actually worked in Mitchell's favor!



We'd like to extend a warm welcome to all the graduate students who started in EEOB this year!

Marie Palanchon

Matthew Major

Natalie Whitehead

Niveditha Ramadoss (*SDSU joint-doctoral program*)

Rahim Khan

Tamsen Dunn (*SDSU joint-doctoral program*)

## Announcements

### Gear Library:

Several EEOB graduate students (Anna Cassady, Annika Rose-Person, and Catherine Nguyen), who are part of the Center of Conservation Biology, have been working to start a gear library on campus.

The gear library will provide equipment (e.g., boots, backpacks, hats) to undergraduate students, who are interested in taking field courses or partaking in field research. We aim to alleviate the financial barriers to participating in these educational opportunities by lending out gear at low or no costs to students.

*We are planning to have our first donation drive in Fall 2021.*

- If you are interested in donating any lightly used gear, please fill out this [survey](#).

### Canvas:

75% of UCR's courses are expected to be using Canvas by Fall 2021.

- Visit [kepteaching.ucr.edu/canvas](https://kepteaching.ucr.edu/canvas) for more information regarding this switch.

## Resources

Thank you to UCR's Office of Diversity, Equity, and Inclusion for providing the following resources:

- *Supporting Graduate Student Mental Health and Well-being: Evidence-informed Recommendations for the Graduate Community* [CGS & The Jed Foundation](#)
- *Ten simple rules for building an antiracist lab* [PLOS Computational Biology](#)
- *Promoting inclusion in ecological field experiences: Examining and overcoming barriers to a professional rite of passage* [Bulletin Ecological Society of America](#)
- These resources and many others can be found in this [folder](#) and by visiting the Office of DEI's [website](#).

### Graduate Student Funding Opportunities:

- [Repository](#) of funding opportunities created by Johns Hopkins University Research Development Team

## Call for submissions – Summer 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!

[aherb012@ucr.edu](mailto:aherb012@ucr.edu)

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

Have a great summer, EEOB!