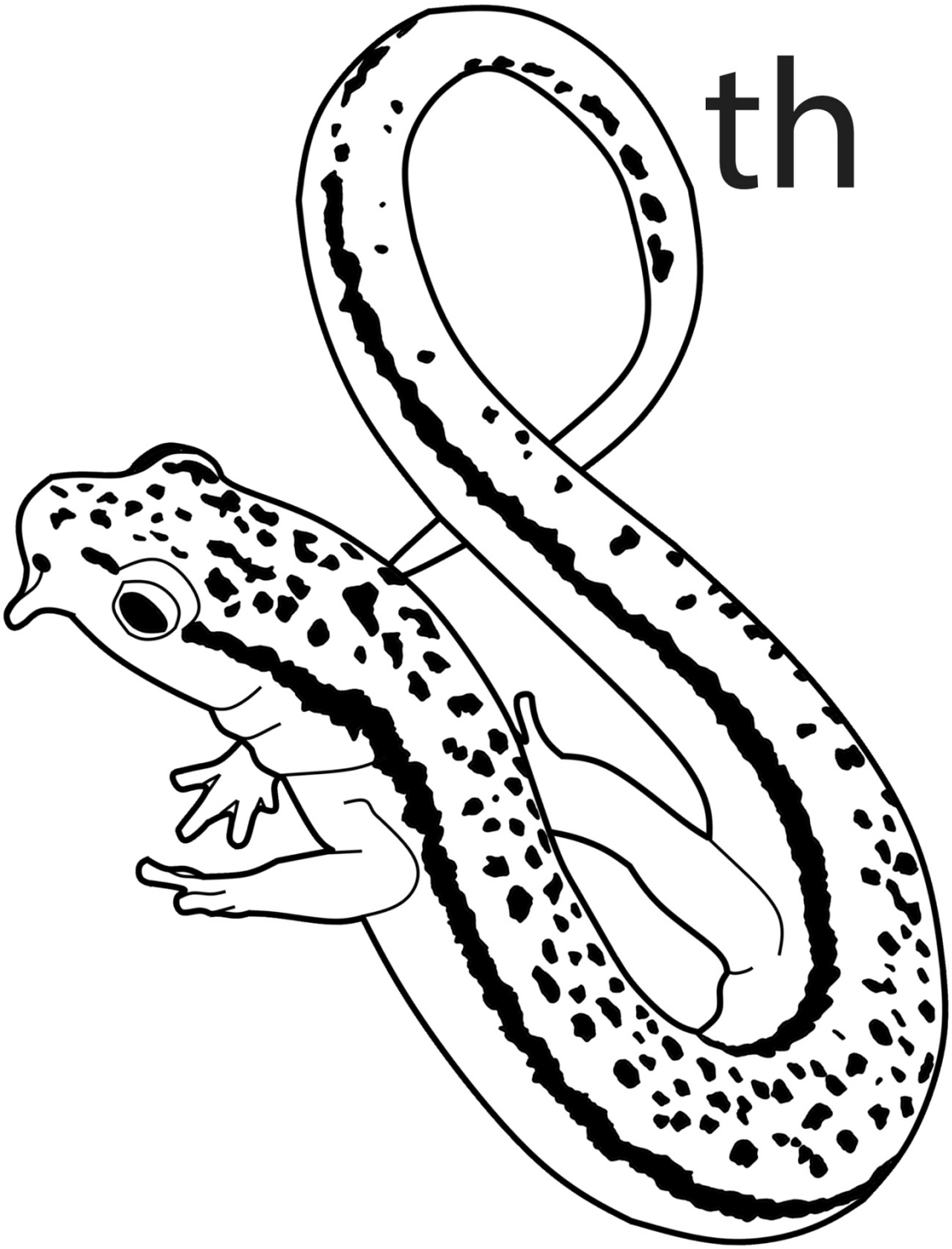

8th Conference on the Biology of Plethodontid Salamanders

We are delighted to welcome you to the 8th Conference on the Biology of Plethodontid Salamanders. If you have any questions or concerns, please reach out to the host or one of the program committee members listed below.

Host

- Dr. Christopher Beachy – christopher.beachy@selu.edu
    - *Southeastern Louisiana University, Department of Biological Sciences*

Program committee

- Dr. Dustin Siegel (Chair) – dsiegel@semo.edu
    - *Southeast Missouri State University, Department of Biology*
- Dr. Ronald Bonett – ron-bonett@utulsa.edu
    - *The University of Tulsa, Department of Biological Sciences*
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    - *Missouri State University, Department of Biology*
- Dr. Nancy Staub – staub@gonzaga.edu
    - *Gonzaga University, Department of Biology*
- Dr. Sarah Woodley – woodleys@duq.edu
    - *Duquesne University, Department of Biological Sciences*

Honoree

- Dr. Richard Bruce
    - *Western Carolina University (Emeritus), Department of Biology*

Oral presentation submission

- Oral presentations can be emailed to Christopher Beachy prior to the conference or brought with presenters on a USB drive for upload up to 30 minutes before each session or during morning breaks.

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Oral presentation schedules

*Presenters in bold

Day 1 Agenda (morning session) – 25 May 2023 – Fayard Hall 101 – Christopher Beachy, Moderator		
Time	Presenter(s)	Title
8:15 AM	**Daniel McCarthy**	Welcome from Dean of College of Science and Technology of Southeastern Louisiana University
8:30 AM	**Christopher Beachy**	Welcome from Planning Committee of the 8th Conference on the Biology of Plethodontid Salamanders
8:45 AM	**Travis Ryan**	Tribute to Dr. Richard C. Bruce
9:00 AM	**The Honorable Richard Bruce**	Pace-of-life in dusky salamanders
9:15 AM	**Leah Rittenburg** and Todd Pierson	Larval life history of *Eurycea cirrigera* across an urban gradient: growth, size, and larval period
9:30 AM	**Enrico Lunghi**	Preliminary data on growth rate and lifespan of the genus *Speleomantes*
9:45 AM	**Nicholas Van Gilder**, Noah Morales, Casey Moss, and Elizabeth Jockusch	Private property, pot grows, and putative species: microendemism in Stanislaus River Canyon *Batrachoseps*
10:00 AM	Break	
10:30 AM	**William Peterman**, Nathan Pope, and Grant Connette	Multiscale assessment of functional connectivity and landscape resistance in a terrestrial salamander
10:45 AM	**Mary Mackey** and Sharyn Marks	Using habitat suitability models to guide survey efforts: a case study using Dunn's salamander (*Plethodon dunni*)
11:00 AM	**Rosemary Ronca** and Jon Davenport	Quantifying habitat parameters for the southern Appalachian endemic, *Plethodon welleri*
11:15 AM	**Elyssa Winterton**, Zach Farris, and Jon Davenport	Investigating occupancy of small terrestrial salamanders (genus *Plethodon*) in the southern Appalachian Mountains
11:30 AM	**Jon Davenport**, Autumn Groesbeck, Rosemary Ronca, Elyssa Winterton, Alan Richardson, Gwendolyn Leggett, Patrick Valente, Saskia van de Gevel, and William Peterman	The effects of forest productivity on plethodontid abundance and biomass
11:45 AM	**Raoul Manenti**, Gentile Ficetola, and Enrico Lunghi	Current perspectives in the study of European plethodontids
12:00 PM	Lunch break	

Day 1 Agenda (afternoon session) – 25 May 2023 – Fayard Hall 101 – Nancy Staub, Moderator		
Time	Presenter(s)	Title
2:00 PM	**Carter Ricks** and Joseph Pechmann	The effects of intraspecific and interspecific aggression in *Plethodon cheoah* and *P. teyahalee* on their elevational distribution
2:15 PM	**Nathan Bendik**	Stream restoration improves habitat for Barton Springs salamanders as indicated by a mark-recapture study
2:30 PM	**Kira McEntire** and John Maerz	Using biophysical and agent-based modeling and field data to explore the role of plant climbing behavior for salamanders
2:45 PM	**Thomas Radomski** and Kenneth Kozak	Using physiology to predict the geographic distr - NOT SO FAST!
3:00 PM	**Brittany Dobbins**, Ruben Tovar, Thomas Devitt, David Hillis, and Dana Garcia	Novel localization of Pax6 in Neuromasts of *Eurycea* salamanders
3:15 PM	**Brendan Enochs** and Elizabeth Jockusch	The role of microhabitat variation in maintenance of an evolutionarily ancient color polymorphism in the red-backed salamander, *Plethodon cinereus*
3:30 PM	**Tyler Brock**	RAG-ONE: A salamander story (aka what we think we know about *Urspelerpes brucei*)
3:45 PM	**María Torres-Sánchez**, George Glen, David Beamer, Jaimi Gray, Samantha Shablin, Amy Wallace, Hannah Vander Zanden, and Ana Longo	Trophic niches across space and time of stream-breeding plethodontids in the Gulf Coastal Plain
4:00 PM	**Winsor Lowe**, Madaline Cochrane, and Brett Addis	Demographic and genetic variation along headwater gradients

Poster set up:

Please set posters up at appropriately numbered poster board in Fayard Hall lobby anytime throughout the day.

Social dinner: 5:00 PM – 8:00 PM

Join in at the Biological Sciences Building (aka Ryan Hall) on Southeastern's campus where food will be served and the Vertebrate Collections Museum will be open for your perusal. The Collections Director (Kyle Piller) will be on hand to answer questions; the collections are quite substantial for a regional teaching university. The Biology Building is a short (5 minute) walk from the presentation location (Fayard Hall). We will also offer shuttle service to the Biology Building from Fayard Hall.

The meal will feature two main items: (1) an authentic chicken-and-sausage-and-shrimp gumbo (yes, these three things can be combined!) and (2) properly-made red beans and rice. The red beans and rice will feature two versions, one with sausage and the other will be vegetarian. There will be beverages provided: soft drinks, waters, beers, and wines.

There will tables and seating in front of and inside the Biology Building.

Day 2 Agenda (morning session) – 26 May 2023 – Fayard Hall 101 – Dustin Siegel, Moderator		
Time	Presenter(s)	Title
8:15 AM	**John Erickson** and Kristin Bakkegard	Additional evidence for prey discrimination by red hills salamanders (*Phaeognathus hubrichti*)
8:30 AM	**Mary Kate O'Donnell**, Enrico Lunghi, and Stephen Deban	Foot size, contact area, and cling performance in *Speleomantes* of Italy and Sardinia
8:45 AM	**Yu Zeng** and David Wake	Biomechanics of nasolabial grooves in plethodontid salamanders
9:00 AM	**Emily Gremling**, Karen Kiemnec-Tyburczy, and John Reiss	Olfactory gross morphology and ultrastructure of select species in Hemidactyliinae
9:15 AM	**Karen Kiemnec-Tyburczy** and Damien Wilburn	Hormone-like peptides expressed in the plethodontid mental gland as potential sexual pheromones
9:30 AM	**Madison Herrboldt**, Michael Steffen, Carissa McGouran, and Ronald Bonett	The impacts of life cycle evolution on reproduction
9:45 AM	**Damien Wilburn**, Christy Kunkel, Richard Feldhoff, Pamela Feldhoff, and Brian Searle	Recurrent co-option and recombination of cytokine and three finger proteins in multiple reproductive tissues throughout salamander evolution
10:00 AM	Break	
10:30 AM	**Henry Camarillo**, Bhart-Anjan Bhullar, and Martha Muñoz	Comparative anatomy of feeding musculature in *Eurycea* and *Desmognathus* salamanders
10:45 AM	**Sean Rovito**, Louis Segarra, and Mayela Ornelas	Erythrocyte enucleation and biological size in bolitoglossine salamanders
11:00 AM	Elizabeth Jockusch and **Christopher Evelyn**	Why does *Batrachoseps* still have legs?
11:15 AM	**Emily Bierbaum**, Matthew Toomey, and Ronald Bonett	Molecular evolution and expression of visual pigments across urodeles
11:30 AM	**Ruben Tovar**, Brittany Dobbins, Thomas Devitt, Dana Garcia, Paul Gignac, and David Hillis	Parallel sensory compensation and subterranean evolution in neotenic salamanders (*Eurycea*)
11:45 AM	**Campbell Eckhardt**, Rhiannon McGlone, Madison Herrboldt, Emily Bierbaum, Sydney Sowell, and Ronald Bonett	Keratin gene evolution and expression across life cycle modes in plethodontids
12:00 PM	Lunch break	

Day 2 Agenda (afternoon session) – 26 May 2023 – Fayard Hall 101 – Ronald Bonett, Moderator		
Time	Presenter(s)	Title
2:00 PM	**Emily Watts**, Brian Waldron, Maggie Hantak, Emily Lemmon, Alan Lemmon, and Shawn Kuchta	Cryptic species within a cryptic species? Species delimitation in the Cumberland Plateau salamander, *Plethodon kentucki*
2:15 PM	**Thomas Devitt**, Hannah Gilbreath, Andrew Gluesenkamp, Paul Chippindale, David Cannatella, Ruben Tovar, Jacob Owen, and David Hillis	New species of *Eurycea* salamanders from the Edwards-Trinity aquifer system of west central Texas
2:30 PM	**Donald Shepard**, Makenzie Meacham, Brock Stevenson, and Kelly Irwin	Historical biogeography and demography of slimy salamanders west of the Mississippi River
2:45 PM	Donald Shepard and **Brock Stevenson**	Evolutionary relationships of slimy salamanders across the Mississippi River: *Plethodon kisatchie* and *Plethodon mississippi*
3:00 PM	**Makenzie Meacham**, Kelly Irwin, and Donald Shepard	Comprehensive sampling clarifies slimy salamander distributions west of the Mississippi River and reveals potential new species
3:15 PM	**Carlos Camp**	Evolution of dusky salamanders (*Desmognathus*) along moisture gradients: a critical look at the evidence
3:30 PM	**Christopher Cousins** and Tiffany Garcia	The evolutionary history of Rhyacotritonidae, Plethodontidae's favorite cousins
3:45 PM	**Todd Pierson**	Genomic, morphological, and ecological investigations into alternative reproductive tactics in *Eurycea*
4:00 PM	Poster Presentations – Fayard Lobby	

Social dinner (AKA, crawfishpalooza): 5:00 PM – fatigue

Join everyone at chez Beachy (505 Sanders Ave. in Hammond) for the most emblematic thing in Louisiana: a crawfish boil. Eating crawfish at a crawfish table is just about the best thing that one ever gets to do. Four Southeastern faculty (Brian Crother, Christopher Murray, Kyle Piller and Sonny Fontenot) will prepare two rounds of mountains of boiled crawfish, along with all the other things that get thrown in the boil: garlic cloves, corn-on-the-cob, sausage, potatoes, brussel sprouts, asparagus, and mushrooms. There will plenty of beverages, including soft drinks and kegs of beer. The first round of crawfish will be ready around 5:30 PM, and the next round will be ready around 7 PM. (Just so you know, you're supposed to eat in both rounds!)

There will be crawfish tables to stand at while eating, and there is also seating at tables as well. The boil is in the backyard: just head in through the gate, garage, or even the front door. There is enough room to host all of you in the backyard, there's ample parking, and instructions on parking and how to eat crawfish will be provided during Christopher Beachy's opening comments on the 25th.

Chez Beachy is located 1.5 miles from Southeastern. It is walkable if you wish; however, we will run on-demand shuttle service to and from Fayard Hall, Beachy's home, and wherever else you need to go (including the dormitory, your hotels, or your Airbnb).

Day 3 Agenda (morning) – 27 May 2023 – Fayard Hall 101 – Sarah Woodley, Moderator		
Time	Presenter(s)	Title
8:15 AM	**David Beamer**	This questing beast: behind the scenes of Dunn's 1926 foreword
8:45 AM	**Shawn Kuchta** and David Wake	Wherefore and whither the ring species?
9:15 AM	**Elizabeth Jockusch**	The causes and consequences of microendemism in slender salamanders (*Batrachoseps*)
9:45 AM	**Ronald Bonett**, Madison Herrboldt, Emily Bierbaum, Campbell Eckhardt, Rhiannon McGlone, Nicholus Ledbetter, Sydney Sowell, and Alexander Hess	Endocrinology of life cycle evolution in plethodontids
10:15 AM	Break	
10:45 AM	**Alex Pyron** and David Beamer	Paradigm shifts in *Desmognathus* systematics and future directions
11:15 AM	**James Hanken**, Zachary Lewis, and Ryan Kerney	Lost and found: lung development in lungless salamanders
11:45 AM	**Tiffany Garcia**, AJ Kroll, Mike Rochelle, Josh Johnson, Claudine Reynolds, and Jessica Homyack	The role of thermal refugia in the persistence of *Batrachoseps* and *Ensatina* salamanders in intensively managed forests
12:00 PM	**Jasmine Williamson** and Tiffany Garcia	A slender surprise: *Batrachoseps* response to timber harvest and extreme wildfire events
12:15 PM	**Sarah Woodley**	Special publication information

Posters presentations titles

*Poster boards are numbered following the below key; presenters in bold

1. Effect of density of snail host on infection intensity by the trematode *Metagonimoides oregonensis* in the southern black-bellied salamander (*Desmognathus amphileucus*)
   - ***Cooper Kework**, Jenna Ash, and Carlos Camp*

2. Relationship between size and foraging in dusky salamanders (genus *Desmognathus*)
   - ***Noah Irwin** and Carlos Camp*

3. The Wake number: a mechanism for expressing the legacy of David Wake's contribution to our understanding of plethodontid biology
   - ***Christopher Beachy**, Ronald Bonett, Shawn Kuchta, and Dustin Siegel*

4. Growth rate variation does not affect metamorphic timing in plethodontid salamanders: an additional example using the three-lined salamander, *Eurycea guttolineata*
   - ***Brittany Maldonado**, Claire Crookston, Corey Samples, Tyler Brock, and Christopher Beachy*

5. Sexual dimorphism and seasonal variation of head shape in *Eurycea chamberlaini*
   - ***Dustin Siegel**, Jon Davenport, David Beamer, and Christopher Murray*

6. Larval life history of *Eurycea cirrigera* at Sandy Hollow WMA
   - *Christopher Beachy, **Anna Lander**, and Diana Taj*

7. Taxonomic and phylogenetic beta diversity of plethodontid salamanders
   - ***Zeltzin Rodriguez-Ortíz**, Sean Rovito, Kenneth Kozak, and Juan Parra*

8. Using pS6-immunoreactivity as a marker of neuronal activity in amphibians
   - *Zoey Brown and **Sarah Woodley***

9. Sperm competition in salamanders
   - *Maya Moore, Michael Kardos, Michael Jensen-Seaman, and **Sarah Woodley***

10. Keep your nose to the shalestone: a distribution wide search for *Plethodon pauleyi*
    - ***Kevin Hutcheson** and Stephen Richter*

11. External nasal gland morphology of *Eurycea bislineata*
    - ***Samantha Trame**, Jacob Denova, Kenzie Pereira, Sara McClelland, Kevin Gribbins, Justin Rheubert, and Dustin Siegel*

12. Using GIS and LiDAR to identify green salamander (*Aneides aeneus*) habitat in Alabama's Cumberland Plateau
    - ***John Erickson** and Jordan Cissell*

13. Estimating time to extinction for the southern dusky salamander in several localities of the Florida panhandle
    - ***George Glen*** *and Maria Torres-Sánchez*

14. Characterizing variation in salamander scent-marking glands
    - ***Michael Kardos*** *and Sarah Woodley*

15. Incipient or ephemeral? Lineage formation and fusion in a widespread terrestrial salamander (*Plethodon cinereus*)
    - ***Brian Waldron****, Emily Watts, Donald Morgan, Maggie Hantak, Alan Lemmon, Emily Lemmon, and Shawn Kuchta*

16. Advancing wildlife connectivity in land use planning: a case study with four-toed salamanders
    - ***Bryce Wade****, Evin Carter, Christopher Derolph, Greg Byrd, Sarah Darling, Lindsey Hayter, Trent Jett, Jamie Herold, and Neil Giffen*

17. Histology and transcriptomics of the oviduct of the Oklahoma salamander (*Eurycea tynerensis*)
    - *Cassie Vestal, Grace Cox, Ha Huyn, Lin McLaury, Nonso Nwakoby, Jillian Palmer, Rebecca Slay, Madison Herrboldt, Ronald Bonett, and* ***Ana Trujano-Alvarez***

18. A tail of two morphs: MHC variation and melanization across *P. cinereus* populations
    - ***Baaqeyah Muhammad****, Annette Evans, Gemma Palomar, Wieslaw Babik, and Elizabeth Jockusch*

19. Behavioral response to simulated environmental conditions in a montane salamander
    - ***Timothy Clay*** *and Matthew Gifford*

20. Linking morphology to performance in plethodontid feeding
    - ***Claire Crookston*** *and Stephen Deban*

21. Localization of components of olfactory signaling pathways in the nasal cavity of desmognathine salamanders
    - ***Giuseppina Lanzilli****, John Reiss, and Karen Kiemnec-Tyburczy*

22. Biomechanics of tongue projection in plethodontid salamanders
    - ***Yu Zeng*** *and Stephen Deban*

23. Influence of body condition on aggressive behavior of Ozark zigzag salamanders
    - ***Alicia Mathis***

24. Population ecology and natural history of *Plethodon glutinosus* in Louisiana
    - ***Florence Wen****, Oliver Ljustina, Brittany Maldonado, and Brandon Hedrick*

25. *Eurycea guttolineata* larvae in central Mississippi
    - ***Melody Chimahusky*** *and Frank Hensley*

Attendees

Nathalie Alomar, Yale University
Carl Anthony, John Carroll University
Joseph Barnett, Oregon State University
Charles Battaglia, Department of Wildlife & Fisheries, LA
Shelby Bauer, University of Georgia
Christopher Beachy, Southeastern Louisiana University
David Beamer, East Carolina University
Nathaniel Bendik, City of Austin
Emily Bierbaum, University of Tulsa
Ronald Bonett, University of Tulsa
Tyler Brock, University of Mississippi
Richard Bruce, Western Carolina University
Henry Camarillo, Yale University
Carlos Camp, Piedmont College
William Carroll, USGS, Lafayette
Evin Carter, Oak Ridge National Laboratory
Dee Ann Chamberlain, City of Austin
Melody Chimahusky, Mississippi DEQ, Mississippi College
Christopher Cousins, Oregon State University
John Crawford, National Great Rivers Center
Claire Crookston, University of South Florida
Brian Crother, Southeastern Louisiana University
Jon Davenport, Appalachian State University
Stephen Deban, University of South Florida
Thomas Devitt, University of Texas at Austin
Brittany Dobbins, Texas State University
Campbell Eckhardt, University of Tulsa
Brendan Enochs, University of Connecticut
John Erickson, Samford University
Chris Evelyn, University of California, Santa Barbara
Anne-Claire Fabre, Universität Bern
Benjamin Fitzpatrick, University of Tennessee, Knoxville
Clifford Fontenot, Southeastern Louisiana University
Darrel Frost, American Museum of Natural History
Tiffany Garcia, Oregon State University
George Glen, University of Florida
Bones Glorioso, USGS, Lafayette
Emily Gremling, Cal Poly Humboldt
Deven Hall, Western Carolina University
James Hanken, Harvard University
Courtney Hendrickson, Oregon State University
Frank Hensley, Mississippi College
Madison Herrboldt, University of Utah
Cari-Ann Hickerson, John Carroll University
Cory Hillard, Western Carolina University
Kevin Hutcheson, University of Georgia
Noah Irwin, Piedmont College
Elizabeth Jockusch, University of Connecticut
Joseph Johnston, Louisiana State University
Basanta Kakurel, Southeastern Louisiana University
Michael Kardos, Duquesne University
Ethan Kessler, Illinois Natural History Survey
Cooper Kework, Piedmont College
Zakaria Khamlijy, University of Tulsa
Karen Kiemnec-Tyburczy, Cal Poly Humboldt
Bee Klahs, Southeastern Louisiana University
Aaron Krivchenia, Louisiana State University
Shawn Kuchta, Ohio University
Anna Lander, Southeastern Louisiana University
Guiseppina Lanzilli, Cal Poly Humboldt
Julia Laterza Barbosa, Yale University
Keri Lejeune, Department of Wildlife & Fisheries, LA
Vivien Louppe, Universität Bern
Winsor Lowe, University of Montana
Enrico Lunghi, Universià degli Studi dell'Aquila
Mary Mackey, Cal Poly Humboldt
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Kira McEntire, University of Georgia
Mackenzie Meacham, Louisiana Tech University
Raoul Manenti, Università degli Studi di Milano
Valeria Messina, Università degli Studi di Milano
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Kyle Piller, Southeastern Louisiana University
Alex Pyron, George Washington University
Thomas Radomski, University of Minnesota
Jean Raffaelli, Penclen, France
John Reiss, Cal Poly Humboldt
Carter Ricks, Western Carolina University
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Rosemary Ronca, Appalachian State University
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Travis Ryan, Butler University
Nadja Schilling, University of South Florida
Donald Shepard, Louisiana Tech University
Dustin Siegel, Southeast Missouri State University
Cailin Sinclair, Oregon State University
Nancy Staub, Gonzaga University
Brock Stevenson, Louisiana Tech University
Stephen Tilley, Smith College
María Torres-Sánchez, University Florida/Univ. Madrid
Samantha Trame, University of Tulsa
Ana Trujano-Alvarez, University of Tulsa
Nicholas Van Gilder, University of Connecticut
Bryce Wade, University of Tennessee/ORNL
Brian Waldon, Ohio University
Emily Watts, Ohio University
Florence Wen, Southeastern Louisiana University
Matthew Westbrook, City of Austin
Damien Wilburn, The Ohio State University
Jasmine Williamson, Oregon State University
Elyssa Winterton, Appalachian State University
Sarah Woodley, Duquesne University
April Wright, Southeastern Louisiana University
Benjamin Zeitler, Oregon State University
Yu Zeng, Chapman University
Matt Zimmerman, Western Carolina University

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SOUTHEASTERN
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