



JMIH 2021

JOINT MEETING OF ICHTHYOLOGISTS AND HERPETOLOGISTS

In-person: 21-23 July • Virtual: 26-27 July

PHOENIX, ARIZONA

CONFERENCE PROGRAM



AES



ASIH



HL



SSAR



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Joint Meeting of Ichthyologists and Herpetologists

CONFERENCE PROGRAM

Phoenix Convention Center

100 North Third Street

Phoenix, AZ 85004

602-262-6225

www.phoenixconventioncenter.com

Future Meeting Dates

26-31 July 2022

Spokane Convention Center

Headquarter Hotel: Davenport Grand

Spokane, WA

12-16 July 2023

Norfolk Waterside Marriott

Norfolk, VA

Joint Meeting of Ichthyologists and Herpetologists

950 Herndon Parkway

Suite 450

Herndon, Virginia 20170

Phone: 703-790-1745 • 800-955-1236

FAX: 703-790-2672

Email: JMIH@BurkInc.com

**Meetings Management
by Burk & Associates Meetings**

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JMIH Meeting Management and Planning Committee

Henry Mushinsky

Committee Chair and Representative
American Society of Ichthyologists and Herpetologists (ASIH)
University of South Florida

Kyle Piller

Representative
American Society of Ichthyologists and Herpetologists (ASIH)
Southeastern Louisiana University

Mollie Cashner

Representative
American Society of Ichthyologists and Herpetologists (ASIH)
Austin Peay University

Charles “Chip” Cotton

Representative
American Elasmobranch Society (AES)
State University of New York (SUNY) at Cobleskill

David Green

Representative
The Herpetologists' League (HL)
McGill University

Allyson Fenwick

Representative
Society for the Study of Amphibians and Reptiles (SSAR)
University of Central Oklahoma

Program Officer

Marty Crump

Utah State University

Meetings Director

Lori Strong

Burk & Associates Meetings

Organizing Societies



American Elasmobranch Society (AES)



American Society of Ichthyologists and Herpetologists (ASIH)



Herpetologists' League (HL)



Society for the Study of Amphibians and Reptiles (SSAR)

Welcome to Phoenix, Arizona

The Local Host Committee welcomes our physical and virtual colleagues to Phoenix, Arizona, for the 2021 Joint Meeting of Ichthyologists and Herpetologists. The local committee offers this land acknowledgement in honor of the indigenous people who came before us, and who live with and among us here in the Valley of the Sun today. We recognize and thank the O'odham Jewed, the Akimal O'odham, and Hohokam, among others whose ancestral lands included the city of Phoenix (Native Land Digital), and whose care and keeping of the land allows us to be here today. We honor the history and the people of this place, who continue to make innumerable and immeasurable contributions to the social, cultural, and economic richness of our region.

As we missed seeing one another in Norfolk, it was with much deliberation that the Presidents of our respective societies decided to try a hybrid-virtual meeting this year, and the MMPC has been working hard alongside the Presidents to make this meeting as smooth as possible for all participants in all modalities. The local committee would like to commend these individuals for the incredible dedication and attention given to this process. It is our sincere hope that all participants will be able to enjoy the 2021 JMIH in whatever format allows them to feel safe, supported, and as connected as possible with their peers and colleagues in these unprecedented times. We know there are still some uncertainties with the details of the meeting. We ask that you are patient with us as we work as quickly as possible to determine how many of our members can and will travel to the physical meeting site this year.

The physical meeting will take place at the Renaissance Phoenix Downtown and the Phoenix Convention Center. These main venues are in Downtown Phoenix, much of which has been recently revitalized, including through civic partnerships with Arizona State University. The downtown area is now known for excellent culinary options featuring local, sustainable food sources and farm-to-table options with outdoor seating options. There is also, of course, a rich selection of local microbrews and even wines to enjoy while here. Right within the downtown area are some excellent parks, science museums, and both visual and performing art venues including theaters and comedy clubs. We are pleased to be able to support the local economy and small business owners now, more than ever, however small our physical presence may be.

Of obvious concern to many is how to partake in these venues in a COVID-safe manner. The VisitPhoenix.com website has up-to-the-moment information on current restrictions and safety guidelines. They continue to advise, even in the absence of specific restrictions:

- Carry a face covering with you at all times
- Call ahead to businesses you visit as listed hours online may not be up-to-date
- Continue to avoid close contact and remain six feet apart whenever possible
- Wash your hands often with soap and water for at least 20 seconds

If you have time, Phoenix and its rich desert surrounds offer some truly beautiful and unique experiences, outdoors, and allowing for safe physical-distancing. Some of the attractions a short ride from downtown include The Phoenix Zoo and The Desert Botanical Gardens, both of which are located in Galvin Park, home of some beautiful Arizona red rock formations. Slightly to the west, we also have the Wildlife World Zoo, Aquarium, and Safari Park. And, would you believe, two additional aquariums in the Valley of the Sun? The OdySea Aquarium in Scottsdale, and the Arizona SeaLife Aquarium in Chandler. In the same park with OdySea is the Butterfly Wonderland. We do recommend visiting any of these attractions, with the possible exception of the aquaria, early in the day. Early morning in the desert is full of action, and you are likely to see lots of bird and reptile life out and about. There is an abundance of urban hiking trails in the valley, as well as trails around the perimeter.

If your travel plans allow, you can experience the high desert and mountains of Arizona with just a short drive. It is only about 2.5 hours to Flagstaff, home to cooler temperatures, Northern Arizona University, and to the Lowell Observatory, and the Sunset Crater Volcano National Monument. On the way to Flagstaff you can visit Montezuma's Castle, one of several national parks with dwellings and artifacts from our first nation ancestors, this one from the Sinagua people. The Grand Canyon National Park is just beyond Flagstaff. It is a two-hour drive in the other direction from Phoenix to Tucson, home to University of Arizona. On the way to Tucson you can see the Casa Grande Ruins National Monument. Tucson typically offers slightly cooler summer temperatures than the Valley of the Sun.

And, finally, in the spirit of recent meetings where charitable donation options were provided to offset the carbon footprint of travel to the meetings, we offer this choice in case this is your wish.

The Grand Canyon Trust: The Grand Canyon Trust is grounded in this place, working tirelessly since 1985 to protect the air, water, and wildlife of its slickrock canyons, fragile deserts, and forested mesas. Straddling the Arizona, Utah, Colorado, and New Mexico state lines, the Colorado Plateau spans a rugged expanse of canyons, desert vistas, and alpine peaks. It's dry, colorful, and exceptionally rocky, encompassing iconic landscapes like the Grand Canyon, Zion, and Arches, along with millions of acres more of spectacular public lands. The Colorado Plateau holds a rich archaeological record of the Southwest's earliest people, and it is home to 12 Native American tribes whose culture, traditions, and teachings continue to infuse the region today.

HOSTED BY YOUR LOCAL COMMITTEE:

Lara Ferry, Arizona State University

James Sulikowski, Arizona State University

Thank you to the following JMIH 2021 Sponsors



Biomark – Merck Animal Health

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Biomark is the only fisheries, aquaculture and wildlife specific RFID company in the world that manufactures and distributes its own PIT tags, readers, antennas, software and accessory items. It is this specific focus on conservation and research that enables us to lead the way in services, product development, innovation and installation. We understand that good quality data is essential to the decision-making process and should be accurate, high quality, and uninterrupted. To that end, we provide high quality PIT tag monitoring solutions to meet different application and budgetary needs.



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Princeton University Press is a leading international natural history publisher with an unparalleled range of field guides and identification manuals. Our nature field guides list ranges far and wide in its coverage of the natural world. Conference attendees will receive 30% off online orders with coupon code MIH21.



The University of Chicago Press

1427 E. 60th St.
Chicago, IL 60637
773-702-7897
bit.ly/UCPEXJSIH

Please visit the University of Chicago Press virtual exhibit. We offer books for students, researchers, and all curious readers. Recent and classic titles include Lee Dugatkin's *Principles of Animal Behavior*, Mark O'Shea's stunning *The Book of Snakes*, and Barbara King's *Animals' Best Friends*, which explores our relationships with non-human animals.

General Meeting Information

In-person events take place in the Phoenix Convention Center, unless otherwise noted.
All times shown below are Pacific Daylight Time (PDT). Virtual attendees must adjust for their local time.

Final Program

JMIH does not assume responsibility for any inconsistencies or errors in the abstracts for contributed paper and poster presentations. We regret any possible omissions, changes and/or additions not reflected in this final program.

Speaker Upload Room

All presenters must visit the Upload Room, **West 104AB**, in the Phoenix Convention Center, at least one half day prior to his/her session time. It is highly recommended that you preview your presentation prior to your presentation to guarantee that it will work properly. Each presentation will be loaded onto a master file for each session. You may use your own computer. However, your fifteen minute time slot does not include time for set up and testing. There will be students and audio visual personnel to assist you and to check you in during the following hours:

Tuesday 20 July	1:00 PM – 6:00 PM
Wednesday 21 July	7:00 AM – 5:00 PM
Thursday 22 July	7:00 AM – 5:00 PM
Friday 23 July	7:00 AM – 12:00 PM

Speaker Practice Room

If you would like to practice your talk you can use room West 208 B. There is a sign up sheet on the door.

Registration Desk

The JMIH Registration/Information area is located in the West Building atrium at the Phoenix Convention Center. The Registration Desk will be open during the following hours:

Wednesday 21 July	7:00 AM – 5:00 PM
Thursday 22 July	7:30 AM – 4:00 PM
Friday 23 July	7:30 AM – 3:00 PM

COVID Health Screening



Each morning you will get a reminder at 7:00 AM to answer a series of questions through 42Chat. You will need to answer these questions and show the pass/fail screen to the guard at the entrance to the meeting space. Scan this QR code to download the questions.

Message and Job Announcements

Due to COVID-19 we will not have a message or job board.

Food and Beverage

Refreshments will be available at 8:00 AM and 3:30 PM in the 100 room foyer, Wednesday–Friday.

Lightning Talks

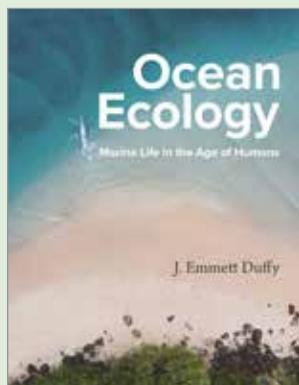
Lightning talks (five minutes in length, 10 slides maximum) provide a good forum for presenting preliminary research or for putting out a call for data, feedback, or collaboration.

Quiet Room

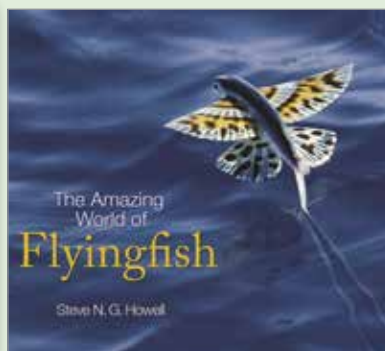
Need to take a break? You can go to room West 208A.

Gender Neutral Bathrooms

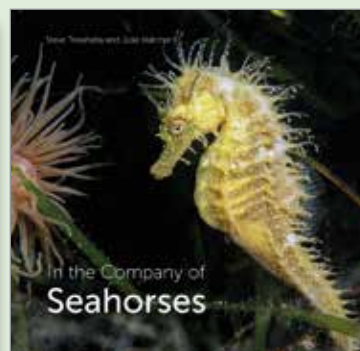
Gender neutral bathrooms are located outside of the 100 pod of rooms.



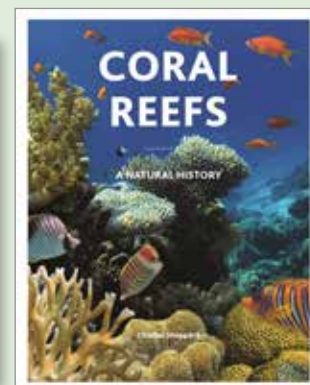
Ocean Ecology
J. Emmett Duffy



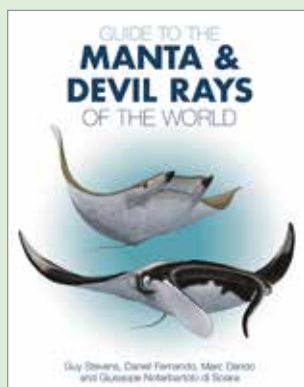
The Amazing World of Flyingfish
Steve N. G. Howell



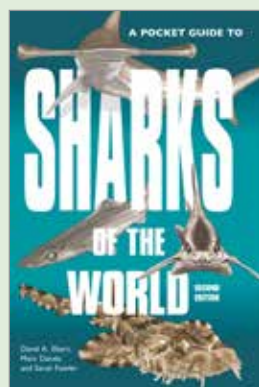
In the Company of Seahorses
Steve Trewhella & Julie Hatcher



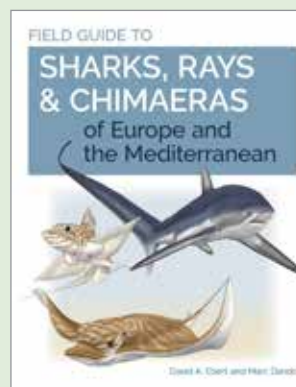
Coral Reefs
Charles Sheppard



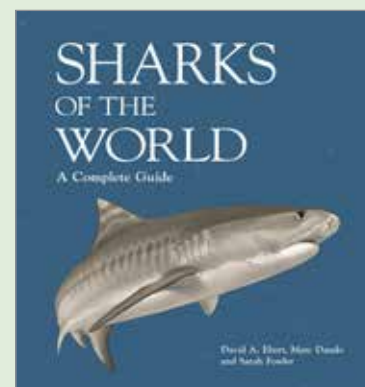
Guide to the Manta & Devil Rays of the World
Guy Stevens, Daniel Fernando,
Marc Dando & Giuseppe
Notarbartolo di Scia



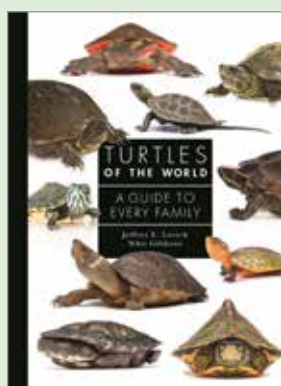
**A Pocket Guide to Sharks
of the World**
David A. Ebert, Marc Dando
& Sarah Fowler



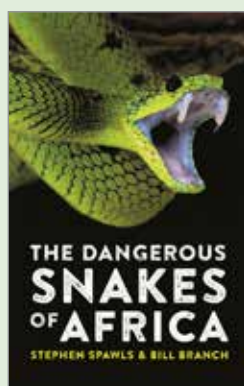
**Field Guide to Sharks, Rays
& Chimaeras of Europe
& the Mediterranean**
David A. Ebert & Marc Dando



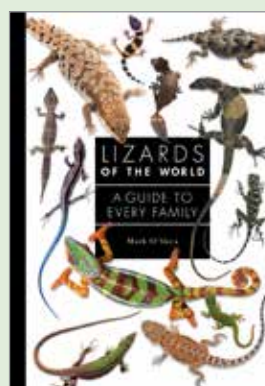
Sharks of the World
David A. Ebert, Marc Dando
& Sarah Fowler



Turtles of the World
Jeffrey E. Lovich
& Whit Gibbons



**The Dangerous Snakes
of Africa**
Stephen Pawls
& Bill Branch



Lizards of the World
Mark O'Shea



**Reptiles and Amphibians
of New Zealand**
Dylan van Winkel, Marleen
Baling & Rod Hitchmough

Meeting Highlights

In-person events take place in the Phoenix Convention Center, unless otherwise noted.
All times shown below are Pacific Daylight Time (PDT). Virtual attendees must adjust for their local time.

Wednesday 21 July

ASIH Graduate Student Workshop: Grantsmanship: Writing, Acquiring, and Navigating Grants

12:15 PM – 1:45 PM, West 105 A

Advancements in Acoustic Telemetry for Fish Tracking

2:30 PM – 3:30 PM, West 105 BC

SSAR President's Travelogue

5:15 PM – 6:15 PM, Virtual

Virtual Happy Hour

5:15 PM – 6:15 PM

Join us in Wonder.me for happy hour, paste the link <https://www.wonder.me/r?id=2a356b64-aaa0-43d5-b8de-d9179735bd06>. Grab the beverage of your choice and say hi to old friends and make new ones. See you there.

ASIH Board of Governors Meeting

5:30 PM – 7:30 PM, Virtual

Thursday 22 July

NSF Workshop

12:15 PM – 1:45 PM, West 105 BC

Virtual Happy Hour

5:15 PM – 6:15 PM

Join us in Wonder.me for happy hour, paste the link <https://www.wonder.me/r?id=2a356b64-aaa0-43d5-b8de-d9179735bd06>. Grab the beverage of your choice and say hi to old friends or make new ones. See you there.

Friday 23 July

SSAR/HL Student Social

5:15 PM – 6:15 PM, Virtual

Please join us on July 23rd at 5:15 pm for the chance to meet officers, editors and committee chairs from SSAR and HL as well as win “door prizes” in a raffle! Following a welcome and brief introductions (use the SignalWire link for JMIH) you will be able to “wander” around Kumospace rooms (link to be provided when we meet in SignalWire) to meet with professional herpetologists to discuss a variety of topics, e.g. issues of diversity and needed support for students in the societies, employment with the federal government, herp adventures in the field, etc. We encourage you to bring a beverage and snacks of your choice and we look forward to doing this in person with catering provided by SSAR and HL in 2022!

Virtual Happy Hour

5:15 PM – 6:15 PM

Join us in Wonder.me for happy hour, paste the link <https://www.wonder.me/r?id=2a356b64-aaa0-43d5-b8de-d9179735bd06>. Grab the beverage of your choice and say hi to old friends or make new ones. See you there.

Monday 26 July

Poster Session 1

4:00 PM – 6:00 PM, Virtual

Tuesday 27 July

ASIH Symposium: Why are there so many kinds of fishes? A showcase of early-career ichthyologists

8:00 AM – 4:00 PM, Virtual

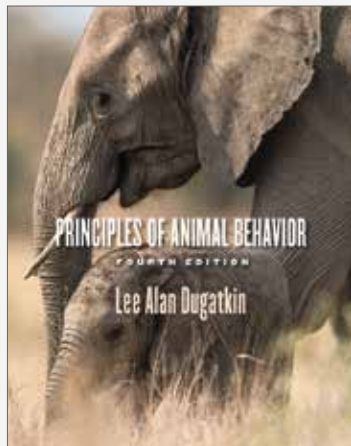
ASIH Business and Awards Meeting

4:00 PM – 6:00 PM, Virtual

Poster Session 2

4:00 PM – 6:00 PM, Virtual

NEW FROM CHICAGO



Principles of Animal Behavior

4th Edition
Lee Alan Dugatkin
Paper \$95.00

We Are All Whalers

The Plight of Whales and Our Responsibility
Michael J. Moore
Cloth \$25.00

Billion-Dollar Fish

The Untold Story of Alaska Pollock
Kevin M. Bailey
Paper \$18.00

Patterns in Nature

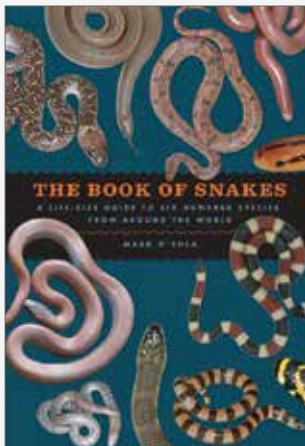
Why the Natural World Looks the Way It Does
Philip Ball
Cloth \$35.00

Nature Remade

Engineering Life, Envisioning Worlds
Edited by Luis A. Campos, Michael R. Dietrich, Tiago Saraiva, and Christian C. Young
Convening Science: Discovery at the Marine Biological Laboratory
Paper \$45.00

Why Study Biology by the Sea?

Edited by Karl S. Matlin, Jane Maienschein, and Rachel A. Ankeny
Convening Science: Discovery at the Marine Biological Laboratory
Paper \$45.00



The Book of Snakes

A Life-Size Guide to Six Hundred Species from around the World
Mark O'Shea
Cloth \$55.00

All the Fish in the Sea

Maximum Sustainable Yield and the Failure of Fisheries Management
Carmel Finley
Paper \$30.00

The Book of Frogs

A Life-Size Guide to Six Hundred Species from around the World
Tim Halliday
Cloth \$55.00

Animals' Best Friends

Putting Compassion to Work for Animals in Captivity and in the Wild
Barbara J. King
Cloth \$25.00

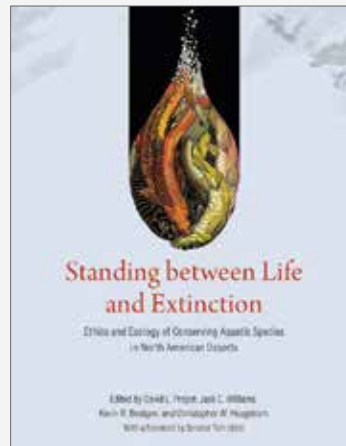
Writing Science in Plain English

Anne E. Greene
Chicago Guides to Writing, Editing, and Publishing
Paper \$17.00

The Chicago Guide to Communicating Science

Second Edition
Scott L. Montgomery
Chicago Guides to Writing, Editing, and Publishing
Paper \$25.00

For a 30% discount on these books and more, to go <https://bit.ly/UCPEXJSIH>



Standing between Life and Extinction

Ethics and Ecology of Conserving Aquatic Species in North American Deserts
Edited by David L. Propst, Jack E. Williams, Kevin R. Bestgen, and Christopher W. Hoagstrom
With a Foreword by Senator Tom Udall
Paper \$65.00

The Evolutionary Origins of Life and Death

Pierre M. Durand
With a Foreword by Eugene V. Koonin
Paper \$35.00

Seahorses

A Life-Size Guide to Every Species
Sara A. Lourie
Cloth \$30.00

The Chicago Guide to College Science Teaching

Terry McGlynn
Chicago Guides to Academic Life
Paper \$18.00

How to Make a Vaccine

An Essential Guide for COVID-19 and Beyond
John Rhodes
Paper \$15.00

A Planet of Viruses

Third Edition
Carl Zimmer
Illustrations by Ian Schoenherr
Paper \$15.00

Plenary Sessions

In-person events take place in the Phoenix Convention Center, unless otherwise noted.
All times shown below are Pacific Daylight Time (PDT). Virtual attendees must adjust for their local time.

Thursday 22 July

Plenary 1: What the ASIH Does and What the ASIH Should Do: Some Stories about the ASIH from Someone that Probably Should Know More about the ASIH.

Christopher Beachy

8:00 AM – 8:30 AM, West 101 ABC

Plenary 2: Splashing Around with Sea Snakes in Paradise.

Richard Shine

8:30 AM – 9:00 AM, West 101 ABC

Plenary 3: Bufonem Ex Machina.

David Green

4:15 PM – 4:45 PM, West 101 ABC

Plenary 4: Chasing Catastrophes Slowly: A Career Studying Turtle Population Patterns.

Jackie Litzgus

4:45 PM – 5:15 PM, West 101 ABC

Friday 23 July

Plenary 5: Sex and the Single Fish: Why Gobbies Evolved Hermaphroditism So Many Times.

Kathleen Cole

8:00 AM – 8:30 AM, West 101 ABC

Plenary 6: Jaws, Lost sharks, and the Legacy of Peter Benchley.

David Ebert

8:30 AM – 9:00 AM, West 101 ABC

Plenary 7: Fifty Years of Anole Censuses at Barro Colorado Island: Density Decline and Biodiversity.

Robin Andrews

4:15 PM – 4:45 PM, West 101 ABC

Plenary 8: Overcoming the Curse of Sisyphus: Progress in Terrapin Conservation.

Willem Roosenburg

4:45 PM – 5:15 PM, West 101 ABC

Schedule At-a-Glance

In-person events take place in the Phoenix Convention Center, unless otherwise noted.
All times shown below are Pacific Daylight Time (PDT). Virtual attendees must adjust for their local time.

Wednesday 21 July

SPECIAL EVENTS

Award Presentations
ASIH Graduate Student Workshop: Grantsmanship:
Writing, Acquiring, and Navigating Grants
Advancements in Acoustic Telemetry for Fish Tracking
Award Presentations
SSAR President's Travelogue
Virtual Happy Hour
ASIH Board of Governors Meeting

TIME

8:00 AM – 9:00 AM
12:15 PM – 1:45 PM

2:30 PM – 3:30 PM
4:15 PM – 5:15 PM
5:15 PM – 6:15 PM
5:15 PM – 6:15 PM
5:30 PM – 7:30 PM

LOCATION

West 101 ABC
West 105 A

West 105 BC
West 101 ABC
Virtual
Virtual
Virtual

ORAL PRESENTATIONS

Reptile Conservation and Management I
ASIH Stoye Award, Ichthyology I
HL Graduate Student Award
AES Gruber I
AES Gruber II
ASIH Stoye Award, Ichthyology II
V: SSAR Seibert Award I
AES Gruber III
ASIH Stoye Award, Herpetology I (Genetics and General Herpetology)
and Reptile Genetics
SSAR Seibert Award II
ASIH Stoye Award, Ichthyology III

9:00 AM – 11:45 AM
9:15 AM – 10:15 AM
9:15 AM – 10:15 AM
9:30 AM – 10:15 AM
10:45 AM – 11:45 AM
10:45 AM – 12:15 PM
11:00 AM – 11:45 AM
1:45 PM – 2:30 PM
1:45 PM – 3:15 PM

1:45 PM – 3:30 PM
1:45 PM – 3:15 PM

West 101 ABC
West 105 A
West 102 ABC
West 105 BC
West 105 BC
West 105 A
West 102 ABC
West 105 BC
West 102 ABC

West 102 ABC
West 105 A

Thursday 22 July

SPECIAL EVENTS

NSF Workshop
Virtual Happy Hour

TIME

12:15 PM – 1:45 PM
5:15 PM – 6:15 PM

LOCATION

West 105 BC
Virtual

PLENARY SESSIONS

Session 1: What the ASIH Does and What the ASIH Should Do:
Some Stories about the ASIH from Someone that Probably
Should Know More about the ASIH. Christopher Beachy
Session 2: Splashing Around with Sea Snakes in Paradise. Richard Shine
Session 3: Bufonem Ex Machina. David Green
Session 4: Chasing Catastrophes Slowly:
A Career Studying Turtle Population Patterns. Jackie Litzgus

8:00 AM – 8:30 AM

8:30 AM – 9:00 AM
4:15 PM – 4:45 PM
4:45 PM – 5:15 PM

West 101 ABC

West 101 ABC
West 101 ABC
West 101 ABC

ORAL PRESENTATIONS

V: ASIH Stoye Award, Ichthyology IV
AES Behavior, Movements & Habitat Use I
ASIH Stoye Award, Herpetology II (Conservation, Ecology and Ethology)
Reptile Morphology and Physiology
AES Behavior, Movements & Habitat Use II
NIA Best Student Paper and Ichthyology I
AES Conservation, Management, Policy
Ichthyology II
Amphibian Conservation and Ecology I
ASIH Stoye Award, Herpetology III (Physiology); Amphibian Ecology and Genetics

9:15 AM – 10:15 AM
9:15 AM – 10:15 AM
9:15 AM – 11:45 AM
9:15 AM – 11:40 AM
10:45 AM – 12:15 PM
10:45 AM – 12:15 PM
1:45 PM – 2:45 PM
1:45 PM – 3:30 PM
1:45 PM – 3:45 PM
1:45 PM – 3:30 PM

West 105 A
West 105 BC
West 102 ABC
West 101 ABC
West 105 BC
West 105 A
West 105 BC
West 105 A
West 101 ABC
West 102 ABC

Schedule At-a-Glance

In-person events take place in the Phoenix Convention Center, unless otherwise noted.
All times shown below are Pacific Daylight Time (PDT). Virtual attendees must adjust for their local time.

Friday 23 July

SPECIAL EVENT	TIME	LOCATION
SSAR/HL Student Social	5:15 PM – 6:15 PM	Virtual
PLENARY SESSIONS		
Plenary Session 5: Sex and the Single Fish: Why Gobbies Evolved Hermaphroditism So Many Times. Kathleen Cole	8:00 AM – 8:30 AM	West 101 ABC
Plenary Session 6: Jaws, Lost sharks, and the Legacy of Peter Benchley. David Ebert	8:30 AM – 9:00 AM	West 101 ABC
Plenary Session 7: Fifty Years of Anole Censuses at Barro Colorado Island: Density Decline and Biodiversity. Robin Andrews	4:15 PM – 4:45 PM	West 101 ABC
Plenary Session 8: Overcoming the Curse of Sisyphus: Progress in Terrapin Conservation. Willem Roosenburg.	4:45 PM – 5:15 PM	West 101 ABC
ORAL PRESENTATIONS		
Reptile Behavior and Ecology I	9:15 AM – 12:00 PM	West 101 ABC
Ichthyology III	9:15 AM – 10:00 AM	West 105 A
AES Ecology	9:15 AM – 10:15 AM	West 105 BC
Reptile Systematics, etc.	9:15 AM – 11:15 AM	West 102 ABC
AES Morphology & AES Physiology I	10:45 AM – 12:00 PM	West 105 BC
Ichthyology IV	10:45 AM – 12:15 PM	West 101 ABC
V: Lightning Talks, Ichthyology	11:45 AM – 12:05 PM	West 102 ABC
Ichthyology V	1:45 PM – 3:15 PM	West 105 A
Amphibian Biogeography and Systematics	1:45 PM – 3:30 PM	West 101 ABC
AES Physiology II & AES Genetics & AES Biogeography	1:45 PM – 3:45 PM	West 105 BC

Monday 26 July

VIRTUAL ORAL PRESENTATIONS		
V: Ichthyology VI	9:00 AM – 10:15 AM	Virtual
V: Reptile Conservation and Management II	9:00 AM – 11:30 AM	Virtual
V: Ichthyology VII	10:45 AM – 12:00 PM	Virtual
V: Lightning Talks: Amphibians	11:45 AM – 12:20 PM	Virtual
V: Ichthyology VIII	1:30 PM – 3:30 PM	Virtual
V: Amphibian Conservation and Ecology II	1:30 PM – 2:45 PM	Virtual
VIRTUAL POSTER PRESENTATIONS	4:00 PM – 6:00 PM	Virtual

Tuesday 27 July

SPECIAL EVENT	TIME	LOCATION
ASIH Business and Awards Meeting	4:00 PM – 6:00 PM	Virtual
VIRTUAL SYMPOSIUM		
ASIH Symposium: Why are there so many kinds of fishes? A showcase of early-career ichthyologists	8:00 AM – 4:00 PM	Virtual
VIRTUAL ORAL PRESENTATIONS		
V: Ichthyology IX	8:00 AM – 9:45 AM	Virtual
V: Reptile Ecology and Behavior II	10:30 AM – 11:45 AM	Virtual
V: Reptile Genetics and Morphology	1:30 PM – 3:30 PM	Virtual
VIRTUAL POSTER PRESENTATIONS	4:00 PM – 6:00 PM	Virtual

New Book Release by

Dr. Neil Ford

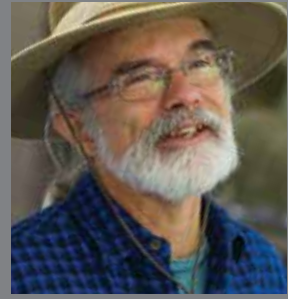
JOURNEYS OF A FIELD BIOLOGIST

ADVENTURES WITH
SNAKES & OTHER CRITTERS

A lifelong passion for snakes has taken biologist Neil Ford to many places around the world, searching for serpents of all shapes and sizes. Everybody loves a snake story, and Ford has a wonderful collection of them – with fascinating tales of fieldwork in remote places with exotic snakes, diverse colleagues and colorful local characters.

—Rick Shine

Professor of Biological Sciences, Macquarie University, and Professor Emeritus, The University of Sydney



Dr. Neil Ford, a professor emeritus at The University of Texas at Tyler, earned his Ph.D. in zoology from Miami University, Oxford, Ohio, and has studied snakes for over 50 years. His primary interest is in life history trade-offs, including factors that affect the number and size of offspring. He has written over 70 peer-reviewed scientific papers, 16 articles and 11 book chapters on that research. He also coauthored the book, “The Garter Snakes, Evolution and Ecology,” which detailed the taxonomy, behavior and ecology of the 30 species that make up this successful group of snakes.



Look for Journeys of a Field Biologist at uttyler.edu/press.

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2021 Awards

In-person events take place in the Phoenix Convention Center, unless otherwise noted.
All times shown below are Pacific Daylight Time (PDT). Virtual attendees must adjust for their local time.

Wednesday 21 July, AM

West 101 ABC

- 8:00 am Welcome – Lara Ferry (in-person and emcee)
- NA Virtual Plenary: Diné Emergence Stories and the Importance of Relationships
Jerome Clark (to be played by audience members at their leisure)
- 8:05 am ASIH Henry S. Fitch Award – Emily Taylor
- 8:10 am ASIH Joseph S. Nelson Award – John G. Lundberg
- 8:15 am ASIH Robert H. Gibbs, Jr. Memorial Award – Henry L. Bart, Jr.
- 8:20 am ASIH Robert K. Johnson Award – Michael Douglas
- 8:25 am ASIH Margaret M. Stewart Award – Christopher Martinez
- 8:30 am ASIH Spiritus – Meredith Mahoney
- 8:35 am HL Raymond D. Semlitsch Research Award – Betsie Rothermel
- 8:40 am HL Award for Distinguished Service to Herpetology – Eric Blackwell
- 8:45 am Meritorious Teaching Award in Herpetology – Emily Taylor
- 8:50 am Meritorious Teaching Award in Ichthyology – Michael J. Pauers

Wednesday 21 July, PM

West 101 ABC

- 4:30 pm ASIH Henry S. Fitch Award – Emily Taylor
- 4:35 pm ASIH Joseph S. Nelson Award – Brian Sidlauskas
- 4:40 pm ASIH Robert H. Gibbs, Jr. Memorial Award – Melanie Stiassny
- 4:45 pm ASIH Robert K. Johnson Award – Eric Hilton
- 4:50 pm ASIH Margaret M. Stewart Award – Christopher Martinez
- 4:55 pm ASIH Spiritus – Katherine Maslenikov
- 5:00 pm ASIH Honorary Foreign Member – David Johnson
- 5:05 pm HL Raymond D. Semlitsch Research Award – Betsie R for Bill
- 5:10 pm Meritorious Teaching Award in Herpetology – Emily Taylor
- 5:15 pm Meritorious Teaching Award in Ichthyology – Michael J. Pauers 204:30 pm

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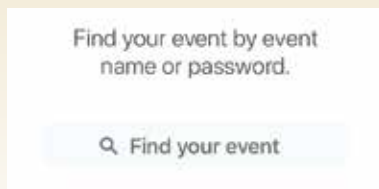


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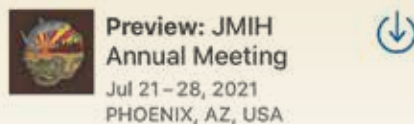
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Wednesday, 21 July • Oral Presentations

Note: Presenter is first author unless noted by an asterisk (*)

9:00 AM – 11:45 AM

West 101 ABC

Reptile Conservation and Management I

Moderator: Henry Mushinsky

- | | | |
|----------|--|--|
| 9:00 am | Jenna N Palmisano, Carson M Bockoven, Marie V Domina, Samantha M McPherson, Heather DS Walden, Robert J Ossiboff, Terence M Farrell | Infection Experiments Indicate Florida Anurans and Lizards Can Serve as Intermediate or Paratenic Hosts for the Invasive Pentastome, <i>Raillietiella orientalis</i> |
| 9:15 am | Terence Farrell, Jenna Palmisano, Alexis Aguilar, Craig Lind, Robert Ossiboff, Heather Walden | The Invasive Pentastome Parasite, <i>Raillietiella orientalis</i> , Pervades the Herpetofauna of Central Florida Habitats |
| 9:30 am | M Rockwell Parker, Andrea F Currylow, Lauren A Nazarian, Isabella MG Bukovich, Charlotte J Robinson, Melia G Nafus, Bryan G Falk, Amy A Yackel Adams | Testing the Role of Hormone-driven Chemical Signals in Burmese Python Trailing Behavior |
| 9:45 am | Abigail Feuka, Melia Nafus, Amy Yackel Adams, Larissa Bailey, Mevin Hooten | Effects of Translocation on Brown Treesnake Movement in an Urban Landscape |
| 10:00 am | Houston Chandler, Christopher Jenkins, Javan Bauder* | A Range-Wide Habitat and Connectivity Model for the Federally Threatened Eastern Indigo Snake (<i>Drymarchon couperi</i>) |
| 10:45 am | Christopher Schalk, Kasey Jobe, Krista Ward, Sarah Ebert, Nicholas Schiwitz, Cory Adams, Daniel Saenz | What a Mesh! Risk, Correlates, and Mitigation of Snake Entanglement in Erosion Control Blankets |
| 11:00 am | Michael Dreslik, John Crawford, Christopher Phillips, Andrew Kuhns | Conservation Action Through Expert Solicitation for Illinois' Amphibian and Reptile Species of Greatest Conservation Need |
| 11:15 am | RJ Rao, Rajesh Gurjwar, Yogesh Singh | Human dimensions in reptilian conservation in the National Chambal Sanctuary, India |
| 11:30 am | Annika Enloe, Heather Bateman | Feeling Rattled: Linking Attitudes and Habitat Features to Patterns of Snake Occurrence in Urban Landscapes |
| 11:35 am | Alison Gainsbury | Conservation Assessment of the Florida Scrub lizard: An Endemic Species Response to Climate Change |
| 11:40 am | Levi Gray, Melia Nafus, Gordon Rodda, Scott Vogt, Robert Reed | Humans likely influence spread of an invasive skink on a Pacific island |

9:15 AM – 10:15 AM

West 105 A

ASIH Stoye Award, Ichthyology I

Moderator: Bill Ludt

- | | | |
|----------|---|---|
| 9:15 am | Emily Troyer, Ricardo Betancur-R, Dahiana Arcila | Role of Paleoclimatic Events on the Evolution of Body Size in Tetraodontiform Fishes |
| 9:30 am | Andrew Sherman, Kyle Piller | The Bold and the Brilliant: Resolving Taxonomic Issues Between the Bold Characodon (<i>Characodon audax</i>) and the Rainbow Characodon (<i>C. lateralis</i>) |
| 9:45 am | Sarah J Ward, Caleb D McMahan, Kyle R Piller | Resolving taxonomic difficulties between <i>Poeciliopsis pleurospilus</i> and <i>Poeciliopsis gracilis</i> (Cyprinodontiformes: Poeciliidae) |
| 10:00 am | Emily McFarland, Carole Baldwin, Ross Robertson, Luiz Rocha, Luke Tornabene | A new species of <i>Chromis damselfish</i> from the tropical western Atlantic (Teleostei, Pomacentridae) |

9:15 AM – 10:15 AM

West 102 ABC

HL Graduate Student Award

Moderator: Rulon Clark

- | | | |
|---------|---|---|
| 9:15 am | Daniel Guerra, Joseph Veech, Todd Esque | Characterization of Texas Tortoise (<i>Gopherus berlandieri</i>) Home Ranges and Habitat Use in Cameron County, Texas |
|---------|---|---|

Wednesday 21 July 2021

9:30 am	<i>Rebecca Chastain, Teresa Patricia Feria Arroyo</i>	Modeling the potential impact of climate change on range expansion in <i>Eleutherodactylus cystignathoides</i>
9:45 am	<i>Nathalie Jreidini, David M Green</i>	Impact of Individual and Population-Level Factors on Daily Movements in <i>Anaxyrus fowleri</i> : Can Dispersive Movements Occur at Random?
10:00 am	<i>Felipe Floreste, Braz Titon Jr, Stefanny Titon, Sandra Muxel, Fernando Gomes, Vania Assis</i>	Time Course of Splenic Cytokines mRNA During an LPS-induced Inflammatory Response in Toads

9:30 AM – 10:15 AM

West 105 BC

AES Gruber I

Moderator: Kady Lyons

9:30 am	<i>Jack May, Chris Lowe</i>	The Influence of Environmental and Social Factors on Aggregation Behavior of the Leopard Shark (<i>Triakis semifasciata</i>)
9:45 am	<i>Cheston Peterson, Dean Grubbs</i>	Temporal community structure and seasonal climatic migration of coastal sharks and large teleost fishes in the northeast Gulf of Mexico
10:00 am	<i>Brianna V Cahill, Charles W Bangley, Matthew B Ogburn, Michael McCallister, Matthew J Ajemian</i>	Assessing mesopredator residency around clam leases in Eastern Florida

10:45 AM – 11:45 AM

West 105 BC

AES Gruber II

Moderator: Bryan Frazier

10:45 am	<i>Michelle Edwards, Michael McCallister, Charles Bangley, Matthew Ogburn, Adam Schaefer, Matthew Ajemian</i>	Potential Exposure of Young Bull Sharks to Multiple Algal Toxins in an Important Florida Nursery
11:00 am	<i>Laura Garcia Barcia, Gina Clementi, Kirk Gastrich, Valerie Hagan, Jack Morris, Heather Moncrief-Cox, Yaniela Lorenzo, Bradley Strickland, Philip Matich, Demian Chapman, Michael Heithaus</i>	Growth, Habitat Use and Movement Patterns As Drivers of Mercury and Methylmercury Tissue Concentrations of Bull Sharks
11:15 am	<i>Leonardo Feitosa, Rosangela Paula Lessa</i>	Habitat use of the daggnose shark <i>Isogomphodon oxyrinchus</i> (Müller & Henle, 1839) based on microchemistry analysis
11:30 am	<i>Brian Moe, Charles Cotton, Dean Grubbs</i>	Using Integral Projection Models to Estimate Population Growth Rates in Elasmobranchs

10:45 AM – 12:15 PM

West 105 A

ASIH Stoye Award, Ichthyology II

Moderator: Megan Osborne

10:45 am	<i>Amanda K Pinion, Daemin Kim, Kevin W Conway</i>	Taxonomic Revision of the Sand shiner, <i>Notropis stramineus</i> (Cope, 1865)
11:15 am	<i>Alex Cameron, Megan Osborne, Thomas Turner</i>	Conservation Genomics of Spikedace (<i>Meda fulgida</i>)
11:30 am	<i>Benjamin Chubak, Mark Steele</i>	Evaluating the Importance of Reef-Based Resources for Reproduction in a Temperate Reef Fish
11:45 am	<i>Jessica Peria, Mark Steele</i>	Seasonal Movement of Giant Sea Bass (<i>Stereolepis gigas</i>) within the Southern California Bight
12:00 pm	<i>Gina Badlowski, Kelly Boyle</i>	Assessment of vessel noise on hearing sensitivity in the soniferous Atlantic croaker (<i>Micropogonias undulatus</i>)

11:00 AM – 11:45 AM

West 102 ABC

V: SSAR Seibert Award I

Moderator: Rulon Clark

- | | | |
|----------|--|---|
| 11:00 am | <i>Richard Kim</i> | Developing Alternative Control Strategies for Invasive American Bullfrogs to Protect Threatened Giant Gartersnakes and Their Native Anuran Prey |
| 11:15 am | <i>Phil Allman, Andrews Agyekumhene, Leyna Stemle*</i> | Gillnet Illumination as an Effective Measure to Reduce Sea Turtle Bycatch |
| 11:30 am | <i>Spencer Siddons, Catherine Searle</i> | The tadpole or the fungus: How host and pathogen condition drive infection dynamics |

1:45 PM – 2:30 PM

West 105 BC

AES Gruber III

Moderator: Marcus Drymon

- | | | |
|---------|--|--|
| 1:45 pm | <i>Dominic Swift, Shannon O'Leary, Dean Grubbs, Bryan Frazier, Jayne Gardiner, Marcus Drymon, Dana Bethea, David Portnoy</i> | Delineation of Blacktip Shark Genetic Stock Structure in the Northern Gulf of Mexico |
| 2:00 pm | <i>Bryan Keller, Nathan Putman, R Dean Grubbs, David Portnoy, Timothy Murphy</i> | Map-like Use of Earth's Magnetic Field in Sharks |
| 2:15 pm | <i>Jennifer Pytka, Adel Heenan, Alec Moore</i> | Caught On The Net: Quantifying the Online Trade of a CITES-Listed Elasmobranch |

1:45 PM – 3:15 PM

West 102 ABC

ASIH Stoye Award, Herpetology I (Genetics and General Herpetology) and Reptile Genetics

Moderator: Robert Espinoza

- | | | |
|---------|--|--|
| 1:45 pm | <i>Emma Steigerwald, Cassandra Gendron, Allison Byrne, Juan C Chaparro, Rosemary Gillespie, Rasmus Nielsen, Erica Bree Rosenblum</i> | Batrachochytrium dendrobatidis at 5400masl: Amphibian Disease in Range-shifting Andean Anurans |
| 2:00 pm | <i>Dillon Jones</i> | Phylogenetic Regionalization of Middle American Herpetofauna |
| 2:15 pm | <i>Matthew Murdoch, Lee Grismer, Todd Jackman, Aaron Bauer</i> | Multilocus Phylogeny of Indo-Burman Hemidactylus Geckos Reveals Major Endemic Radiation in Myanmar with Insights into Asian Biogeographic Patterns |
| 2:30 pm | <i>Leroy Nuñez, Frank Burbrink</i> | Phylogenomics of an Ecologically Diverse Group of North American Snakes (Natricidae: Thamnophiini) |
| 2:45 pm | <i>Grace Capshaw, Jakob Christensen-Dalsgaard, Daphne Soares, Catherine E Carr</i> | Bone conduction hearing in salamanders supports directional sensitivity to airborne sound |
| 3:00 pm | <i>Rachel Keeffe, Richard Blob, David Blackburn, Christopher Mayerl</i> | XROMM Analysis of Feeding Mechanics in Anurans: Interactions of the Tongue, Hyoid Apparatus, and Pectoral Girdle |

1:45 PM – 3:30 PM

West 102 ABC

SSAR Seibert Award II

Moderator: Travis Hagey

- | | | |
|---------|--|---|
| 1:45 pm | <i>Justin Bernstein, John Murphy, Harold Voris, Rafe Brown, Sara Ruane</i> | Muddy Systematics: The Diversity and Biogeography of Mud Snakes (Serpentes: Homalopsidae) |
| 2:00 pm | <i>Natasha Stepanova, Aaron Bauer</i> | The Influence of Phylogenetic History on Fossorial Specialization in the Skulls of African Burrowing Skinks |
| 2:15 pm | <i>Nicole Bisente, Robert Espinoza</i> | Adaptive morphological variation among invasive populations of Mediterranean House Geckos in the USA |

Wednesday 21 July 2021

2:30 pm	<i>Sarah Vasquez, Breanna Putman</i>	Urbanization Affects the Skin Microbiome of Western Fence Lizards (<i>Sceloporus occidentalis</i>)
2:45 pm	<i>Julia Joos, Christiane Wiese, Scott Hillard, Donald B Miles</i>	Thermal Ecology and Activity Patterns of Adult and Juvenile Bolson Tortoises (<i>G flavomarginatus</i>)
3:00 pm	<i>Mickey Parker, Toby Hibbitts, Wade Ryberg, Lee Fitzgerald</i>	Lessons Learned from a Conservation Translocation of a Microendemic Habitat Specialist
3:15 pm	<i>Anjana Parandhaman, Nathan Byer, Thomas Dilts, Scott Wright, Derek Friend, Marjorie Matocq, Douglas Boyle, Scott Bassett, Amy Vandergast, Todd Esque, Jill Heaton, Kenneth Nussear</i>	Using climatically weighted models to determine current and future drivers of habitat suitability for the Mojave Desert Tortoise, <i>Gopherus agassizii</i>

1:45 PM – 3:15 PM

West 105 A

ASIH Stoye Award, Ichthyology III

Moderator: Luiz Rocha

1:45 pm	<i>Patrick Rex, Dr Chris Lowe</i>	The Use of UAVs to Quantify Encounter Rates Between Humans and Juvenile White Sharks (<i>Carcharodon carcharias</i>) in Southern California
2:00 pm	<i>Khalil Russell, Eric Hilton</i>	Rapid Morphological Divergence in Three Introduced Cichlid Species
2:15 pm	<i>Corinthia Black, Jonathan Armbruster</i>	Chew on This: Oral Jaw Shape is not Correlated to Diet Type in Loricariid Catfishes
2:30 pm	<i>Aaron H Fronk, James S Albert</i>	Variation and Diversity in Two Clades of Deep-channel Neotropical Electric Fishes (Gymnotiformes: Apterontidae)
2:45 pm	<i>Sheila Rodriguez-Machado, Prosanta Chakrabarty</i>	Waking the Sleepers: Examining the Genetic Diversity of Eleotris (Eleotridae) in the Neotropics
3:00 pm	<i>Joao Pedro Fontenelle, Fernando Marques, Nathan Lovejoy</i>	Evolution And Diversity In The Neotropical Freshwater Stingrays: A Phylogenomic Perspective

Thursday, 22 July • Oral Presentations

Note: Presenter is first author unless noted by an asterisk (*)

9:15 AM – 10:15 AM

West 105 A

V: ASIH Stoye Award, Ichthyology IV

Moderator: Eric Hilton

- | | | |
|----------|--|---|
| 9:15 am | <i>Aaron Krolow, Aaron Geheber, Kyle Piller</i> | An environmental DNA (eDNA) assessment of fish assemblages on artificial reefs in the northern Gulf of Mexico |
| 9:30 am | <i>Naoko P Kurata, Elizabeth Alter, Melanie Stiassny, Michael Hickerson</i> | Complex Riverscape Processes in Cichlids from the Lower Congo River |
| 9:45 am | <i>Victor de Brito, Ricardo Betancur-R, Michael Burns, Thaddaeus Buser, Kevin Conway, João Paulo Fontenelle, Matthew Kolmann, Tyler McCraney, Christine Thacker, Devin Bloom</i> | (A Lack of) Patterns of Phenotypic Evolution Associated with Marine/Freshwater Transitions in Fishes |
| 10:00 am | <i>Tobit Liyandja, Elizabeth Alter, Yves Mabeki, Melanie Stiassny</i> | Genome-wide Markers and 3D Geometric Morphometrics Reveal Hidden Structure in the Congolese Carp Species <i>Labeo</i> <i>sorex</i> Nichols & Griscom (1917) |

9:15 AM – 10:15 AM

West 105 BC

AES Behavior, Movements & Habitat Use I

Moderator: Brooke Anderson

- | | | |
|----------|--|--|
| 9:15 am | <i>Rob Bullock, Simon Dedman, Ian Cowx, Mike Elliott, Tristan Guttridge</i> | A day in the life: Accelerometry and acoustic telemetry reveal multiple drivers of activity and behaviour of coastal shark species |
| 9:30 am | <i>Braden Ruddy, Delanie Kirwan, Stephen Kajiura, Marianne Porter</i> | Swimming Kinematics of Predatory Great Hammerhead Sharks and their Blacktip Shark Prey |
| 9:45 am | <i>Bryan Franks, John Tyminski, Nigel Hussey, Camrin Braun, Alisa Newton, George Christopher Fischer, Brett McBride, Simon Thorrold, Robert Hueter</i> | Multi-year Tracking of White Sharks (<i>Carcharodon carcharias</i>) in the Western North Atlantic Ocean to Examine Patterns of Residency and Migration |
| 10:00 am | <i>Samantha Andrzejczek, Taylor Chapple, Salvador Jorgensen, Scot Anderson, Michael Castleton, Paul Kanive, Timothy White, Barbara Block</i> | High-resolution vertical movements of sub-adult and adult white sharks on the Californian coast |

9:15 AM – 11:45 AM

West 102 ABC

ASIH Stoye Award, Herpetology II (Conservation, Ecology and Ethology)

Moderator: Chris Beachy

- | | | |
|----------|--|--|
| 9:15 am | <i>Sara Rivera, Joseph Pechmann, Jonathan Micancin, Jaime Smith, John Tupy, James Lee</i> | Improving Detection of Dusky Gopher Frog (<i>Ranasevosa</i>) Advertisement Calls |
| 9:30 am | <i>Emily Urquidi, Breanna Putman</i> | Quantifying Southern Pacific Rattlesnake (<i>Crotalus oreganus helleri</i>) Hunting Behavior Through Community Science |
| 9:45 am | <i>Steven Hromada, Todd C Esque, Amy G Vandergast, Kenneth E Nussear</i> | Modeling Mojave Desert Tortoise Movement Behavior for Inference on Anthropogenic Disturbances |
| 10:00 am | <i>Kelly Robinson, Matthew Holding, Malachi Whitford, Anthony Saviola, John Yates, Rulon Clark</i> | Biochemical Warfare: coevolution of venom and venom resistance among rattlesnake predators and their mammal prey |
| 10:45 am | <i>Ethan Royal, Chelsea Kross, JD Willson</i> | Distribution, occupancy, and habitat associations of grassland-associated reptiles and amphibians in Northwest Arkansas |
| 11:15 am | <i>Anna Kase, Vanessa Weigel, Danielle Galvin, Jacob Kerby</i> | Interactions Between a State Threatened Turtle Species and an Invasive Bivalve |
| 11:30 am | <i>Nina Fresco, Bree Putman</i> | Signaling in an Urbanized World: A Study on Ventral Patch Size and Symmetry in Western Fence Lizards |

9:15 AM – 11:40 AM

West 101 ABC

Reptile Morphology and Physiology

Moderator: Patricia Brennan

9:15 am	Michael Westphal, Mark Statham, Deborah Woollett	Extraction of DNA from from reptile feces: What can we learn?
9:30 am	Jonathan DeBoer, Nathan Byer, Jill Heaton	Across Valleys and Mountains: The Population Genetic Structure of the Herero Girdled Lizard (<i>Namazonurus pustulatus</i>)
9:45 am	Travis Hagey, Rishab Pillai, Jendrian Riedel, Lin Schwarzkopf	3D Imaging of the Lizard Adhesive System via Photogrammetry
10:00 am	Patricia Brennan, Genesis Lara Granados, Juliet Greenwood, Brandon Hedrick, Stephen Secor, Brian Todd	Genital coevolution: 3-D morphology and geometric morphometrics of male and female genitalia in watersnakes (<i>Nerodia</i> sp)
10:45 am	Caleb Loughran, Blair Wolf	Physiological thermoregulation in lizards and implications for distribution using a mechanistic modeling approach
11:00 am	Ellen Haynes, Sarah Baker*, Mark Merchant, Kristin Stanford, Matthew Allender	Innate Immune Function in Lake Erie watersnakes (<i>Nerodia sipedon insularum</i>) with Ophidiomycosis
11:15 am	David Penning, Jillian Hackney	It's All In The Head: Understanding How Constriction Works In Snakes
11:30 am	Andrew P St Julian, Gilberto E Flores, Christopher R Tracy, Robert E Espinoza	Does Access to Hindgut Microbial Symbionts affect the Growth Rate of a Herbivorous Reptile?
11:35 am	Julianna M Lincoln, Megan L Barlowe, M Rockwell Parker	Tissue, Seasonal, and Sex-Specific Steroidogenic Gene Expression in Garter Snakes

10:45 AM – 12:15 PM

West 105 BC

AES Behavior, Movements & Habitat Use II

Moderator: Jeremy Vaudo

10:45 am	Jeremy Vaudo, Bradley Wetherbee, Guy Harvey, Mahmood Shivji	Region-specific movements of oceanic whitetip sharks in the western North Atlantic Ocean revealed by long-term satellite tracking
11:00 am	Benjamin Marsaly, Eric Clua	Movement Patterns of the Tiger Shark, <i>Galeocerdo cuvier</i> , around Tahiti and Moorea, French Polynesia, South Pacific
11:15 am	Brooke Anderson, Neil Hammerschlag, Austin Gallagher, Lisa Natanson, Heather Bowlby, James Sulikowski	Preliminary insights into the movements of pregnant Porbeagles (<i>Lamna nasus</i>) in the Northwest Atlantic
11:30 am	Charles Bangley, Ariana Baldwin, Robert Fisher, Matthew Ogburn	Migration and movement behavior of juvenile cownose rays (<i>Rhinoptera bonasus</i>) from Chesapeake Bay inferred from acoustic telemetry
11:45 pm	Patrick Rex, Chris Lowe	The Use of UAVs to Quantify Encounter Rates Between Humans and Juvenile White Sharks (<i>Carcharodon carcharias</i>) in Southern California.
12:00 pm	Bryan Frazier, Elizabeth Vinyard, Douglas Adams, Dana Bethea, William Driggers III, Marcus Drymon, Andrew Fields, Dean Grubbs, Jill Hendon, Eric Hoffmayer, Robert Hueter, David Wells, David Portnoy	Age, Growth, and Maturity of the Bonnethead, <i>Sphyrna tiburo</i> , in the Gulf of Mexico

10:45 AM – 12:15 PM

West 105 A

NIA Best Student Paper and Ichthyology I

Moderator: Mark Sabaj Perez

10:45 am	Kevin T Torgersen, James S Albert	River Capture Isolated Multiple Low-diversity, Early-branching Clades of Sternopygid Electric Fishes on the Guiana Shield (NIA Student Paper Competition)
11:00 am	Ka'ohinani Kawahigashi	Reproductive Behavior of <i>Gomphosus varius</i> (Labridae) in Relation to Current Patterns at a Spawning Aggregation Site: Implications for Larval Dispersal (NIA Student Paper Competition)

Thursday 22 July 2021

11:15 am	<i>Kelsie Ebeling-Whited</i>	Mating Success of the Six-Bar Wrasse (<i>Thalassoma hardwicke</i> , Labridae) Utilizing Two Mating Strategies
11:30 am	<i>Emily Ladin, Larry Allen, Michael Franklin</i>	Developmental Ontogeny of Giant Sea Bass, <i>Stereolepis gigas</i>
11:45 am	<i>Javier A Pájaro-Ledesma, Isamar Herrera-Higgins, Ángel L Martínez-González, Jesús Vargas-González, Charles W Olaya-Nieto, Fredys F Segura-Guevara, Glenys Tordecilla-Petro*</i>	Length–Weight relationship of Comelón Megaleporinus muyscorum in the San Jorge River System, Colombia
12:00 pm	<i>Kelly Boyle, Crystal L Hightower, T Reid Nelson, Sean Powers</i>	Spatial and Diel Variation of Fish Sounds on Temperate Artificial Reefs in the Northern Gulf of Mexico

1:45 PM – 2:45 PM

West 105 BC

AES Conservation, Management, Policy

Moderator: *Lisa Hoopes*

1:45 pm	<i>Lisa Hoopes, Grant Abel, Tim Carpenter, Alistair Dove, Christine Dudgeon, Mark Erdmann, Catherine Hadfield, Charlie Heatubun, Mochamad Iqbal Herwata Putra, Nesha Ichida, Julie Levans, Kady Lyons, Paolo Martelli, Erin Meyer, Marit Miners, Daniel Oruw, Abraham Sianipar, Jennifer Wyffels</i>	A Novel Conservation Strategy for Elasmobranch Population Reinforcement: the StAR project
2:00 pm	<i>David Shiffman, Jessica Elliott, Catherine Macdonald, Julia Wester, Beth Polidoro, Lara Ferry</i>	Research and Policy Priorities for Threatened and Exploited Chondrichthyan Fishes in United States Waters: A Nationwide Expert Solicitation Survey
2:15 pm	<i>Riley Pollom, Jessica Cheok, Nathan Pacoureau, Katie Gledhill, Peter Kyne, David Ebert, Rima Jabado, Katelyn Herman, Rhett Bennett, Charlene da Silva, Stela Fernando, Baraka Kuguru, Robin Leslie, Meaghen McCord, Melita Samoilys, Henning Winker, Sean Fennessy, Caroline Pollock, Cassandra Rigby, Nicholas Dulvy</i>	Overfishing and climate change elevate extinction risk of endemic sharks and rays in the Southwest Indian Ocean hotspot
2:30 pm	<i>Lisa B Whitenack, Brady Mickley, Julia Saltzman, Stephen M Kajiura, Catherine Macdonald, David Shiffman</i>	Content analysis of 32 years of Shark Week: trends in messaging, subject matter, and portrayal of sharks

1:45 PM – 3:30 PM

West 105 A

Ichthyology II

Moderator: *Kyle Piller*

1:45 pm	<i>Mark Sabaj</i>	Codes for Natural History Collections in Ichthyology and Herpetology
2:00 pm	<i>Thomas Turner, Emily DeArmon, Alexander Cameron, David Camak, Guilherme Caeiro-Dias, Megan Osborne</i>	Building Collections and Genomic Resources for Conservation of Imperiled Fishes
2:15 pm	<i>Kyle Piller, Elyse Parker, Alan Lemmon, Emily Moriarty-Lemmon</i>	Phylogenomics of the Toothcarps (Cyprinodontiformes)
2:30 pm	<i>Luiz Rocha, Hudson Pinheiro, Bart Shepherd, Claudia Rocha, Tyler Phelps</i>	Taxonomy, biogeography, phylogenetic affinities, and conservation status of recently discovered mesophotic fishes
2:45 pm	<i>William Ludt, Kendall Clements, Jean-Paul Hobbs, Giacomo Bernardi, Peter Unmack, Prosanta Chakrabarty</i>	Examining the Evolutionary Relationships of the Terapontoidei using UltraConserved Elements
3:00 pm	<i>Emanuel Duarte-Ribeiro, Lily Hughes, Guillermo Orti, Dahiana Arcila, Ricardo Betancur-R</i>	Deciphering an ancient marine fish radiation: a tale of many threads
3:15 pm	<i>Kendall Johnson, Chenhong Li, Luke Tornabene, Frank Pezold</i>	Using Gene-Capture to Create a Robust Phylogeny Resolving the Lineages of the Family Gobiidae

1:45 PM – 3:45 PM

West 101 ABC

Amphibian Conservation and Ecology I

Moderator: Muhammad Rais

1:45 pm	Royanna Crawford, Jenn Logan, Denita Weeks	Boreal Toads of the Grand Mesa National Forest
2:00 pm	Allison Byrne, Anthony Waddle, Jef Jaeger, Jamie Voyles, Corinne Richards-Zawacki, Bree Rosenblum	Host Species is Linked to Pathogen Genotype for the Amphibian Chytrid Fungus (<i>Batrachochytrium dendrobatidis</i>) in the USA
2:15 pm	Cassandra Thompson, Megan Sweeney, Viorel Popescu	Are Pesticides Problematic? Carryover effects of aquatic Imidacloprid exposure on the wood frog (<i>Rana sylvatica</i>)
2:30 pm	Bradley Nissen, Emily Nolan, William Sutton, Michael Freaake, Rebecca Hardman	Assessing Efficacy of Translocation as a Conservation Strategy for Wild Eastern Hellbenders in Tennessee
2:45 pm	Muhammad Rais, Arooj Batool, Jamal Ahmed, Kirsty Kyle, Waseem Ahmed	Population Estimation and Movement Patterns of Endemic Frogs in Forested Montane Freshwater Wetlands of Pakistan: A Baseline Study
3:00 pm	Thomas Lühring, Lyndsie Wszola, Grant Connette, Christopher Schalk	Larger animals that are more resilient to drought also require more good years to get there
3:15 pm	Jessica Ford, David Green	Perils, precipitation, and pollywogs: how extreme weather events impact the effect of tadpoles on their ecosystem
3:30 pm	Tyler Brock, Christopher Beachy	Life-history of the Rare Patch-nosed Salamander: Revisited

1:45 PM – 3:30 PM

West 102 ABC

ASIH Stoye Award, Herpetology III (Physiology); Amphibian Ecology and Genetics

Moderator: Jaime Smith

1:45 pm	Natalie Claunch, Colin Goodman, Robert Guralnick, Robert Reed, Christina Romagosa, Emily Taylor	When Island Lizards Colonize the Mainland: Thermal Matching, Potential, or Plasticity?
2:00 pm	Cody Godwin, Donald Walker, Andrew Moore, Helen Plylar, Christopher Murray	Leukocyte Profiles of Snakes Infected with <i>Ophidiomyces ophiodiicola</i>
2:15 pm	Whitney Walkowski, Ashley Santana, Twila Gaston, William Gordon, Nicolas Bazan, Hamilton Farris	Endocrine Modulation of Retinal Sensitivity to Different Wavelengths in <i>Hyla cinerea</i>
2:30 pm	Jacob LaFond, Hollis Dahn, Katherine Martin, Jonathan Richmond, Bob Murphy, Njal Rollinson, Anna Savage	Invasive Bullfrogs Maintain High Levels of Immune Gene Diversity Despite Elevated Bd Infection Relative to Native Populations
2:45 pm	Kaitlyn Campbell, Jacob Kerby, PhD	Neonicotinoids Cross Blood-Brain Barrier and Delay Reaction Times in Northern Leopard Frogs, <i>Rana pipiens</i>
3:00 pm	Shashwat Sirsi, David Rodriguez, Michael Forstner	Phylogenetics of Houston Toads (<i>Bufo</i> [= <i>Anaxyrus</i>] <i>houstonensis</i>): Genome-wide ddRADseq data reveal historic connectivity in an endangered relict
3:15 pm	Alyssa Kaganer, Robert Ossiboff, Nicole Keith, Krysten Schuler, Pierre Comizzoli, Matthew Hare, Robert Fleischer, Brian Gratwicke, Elizabeth Bunting	Immune priming prior to pathogen exposure sheds light on the relationship between host, microbiome, and pathogen in disease

Friday, 23 July • Oral Presentations

Note: Presenter is first author unless noted by an asterisk (*)

9:15 AM – 12:00 PM

West 101 ABC

Reptile Behavior and Ecology I

Moderator: Gordon Rodda

9:15 am	Tiffany Doan	Dewlap Brightness and Malaria Infection: a Test of the Hamilton-Zuk Hypothesis
9:30 am	Soledad Valdecantos, Sarah M Wenner, Jeanne M Robertson, Maxwell H Espinoza, Carolina Lobo Terán, Robert E Espinoza*	Why do Mothers Care? Assessing the Benefits of Female–Neonate Associations in a Viviparous Andean Lizard from the Argentine Puna
9:45 am	Rulon Clark, Ryan Hanscom, Dominic DeSantis	The Use of High-Frequency Accelerometry to Quantify Unseen Behaviors of Herps: A Case Study of Prairie Rattlesnakes (<i>Crotalus viridis</i>)
10:45 am	Gordon Rodda	Lizards peak in deserts, snakes are richest in the tropics; do these reflect the environments of their origins?
11:00 am	Oceane Da Cunha, Rio Dominguez, L Miles Horne, Vicente Mata-Silva, Jerry Johnson	The Use of 3D-printed Snake Models to Investigate Predation Risk
11:15 am	John Rowe, Tyler Goerge, Chelsea Martin, William Mulligan	Thermal ecology of Northern Water Snakes (<i>Nerodia sipedon</i>) in a northern wetland in central Michigan
11:30 am	Juan Ramirez Ramirez, Tod Reeder, Marko Spasojevic	Exploring the Role of Long-term Dispersal in Determining the Species Richness and Trait Space of Communities of Neotropical Snakes (Dipsadidae)
11:45 am	Elizabeth Haseltine, Jadya Sethna, Ellen Sproule, Savannah Berry, Marieke Gartner, Joseph Mendelson	Spatial Use and Diel Activity Patterns in Amazon Basin Emerald Tree Boas (<i>Corallus batesii</i>)
11:50 am	Anna Tipton, Dominic DeSantis	Integrating Radio Telemetry and Accelerometry to Examine the Effects of Roadways on the Movement Behavior of Timber Rattlesnakes (<i>Crotalus horridus</i>)
11:55 am	Kathryn Field, Willem Roosenburg	Acting Their Age or Their Shell Size: Habitat Selection in Head-Started Turtles

9:15 AM – 10:00 AM

West 105 A

Ichthyology III

Moderator: Tom Turner

9:15 am	Aintzane Santaquiteria, Ricardo Betancur-R	Is the Indo-Pacific a Museum or a Cradle for Biological Diversity in Seahorses, Dragonets, Goatfishes and Allies (Teleostei: Syngnatharia)?
9:30 am	Kole Kubicek, Ralf Britz, Kevin Conway	A Textbook Heterochronic Shift in the Development of the Catfish Skeleton
9:45 am	Matthew Kolmann, Leo MacLeod, John Racy, Jonathan Huie, Cassandra Donatelli, Adam Summers	Carnivorous Grazers Part Deux! Form and function in scale-feeding and fin-feeding Neotropical fishes

9:15 AM – 10:15 AM

West 105 BC

AES Ecology

Moderator: James Anderson

9:15 am	Blake Hamilton	Community and Trophic Ecology of Elasmobranchs and Large Teleost Fishes in the Apalachicola Bay System, Florida
9:30 am	Marcus Drymon, Simon Dedman, Amanda Jefferson, Sean Powers	Defining Sex-specific Habitat Suitability for a Northern Gulf of Mexico Shark Assemblage

Friday 23 July 2021

9:45 am	<i>Ashley Dawdy, Cheston Peterson, Dean Grubbs</i>	Drivers of Community Structure of Coastal Sharks in Everglades National Park and the Florida Keys
10:00 am	<i>Victor Bach Muñoz</i>	Great Blue Heron (<i>Ardea herodias</i>) Predation on an Abnormal California Butterfly Ray (<i>Gymnura marmorata</i>) and its Ecological Implications

9:15 AM – 11:15 AM

West 102 ABC

Reptile Systematics, etc

Moderator: Mark Merchant

9:15 am	<i>Anthony Pawlicki, Mickey Parker, Matt Goode</i>	Is Science Weighing Lizards Down? Effects of Transmitter Size on a Small Desert Lizard (<i>Phrynosoma mcallii</i>)
9:30 am	<i>Mark Merchant, Andrew Austin, Sarah Baker</i>	Characterization of the McFaddin National Wildlife Refuge Snake Community
9:45 am	<i>Akindele Adeyi, Abideen Omobayo Jimoh, Babafemi Siji Ajisebiola, Olubisi Esther Adeyi, Samuel Metibemu Damilohun</i>	Inhibitory activities of n-hexane fraction of <i>Moringa oleifera</i> leaves(Lam) against phospholipases isolated from <i>Naja haje</i> and <i>Naja nigricollis</i> venoms
10:00 am	<i>Camila Meneses, Cameron Siler, Phillip Alviola, Juancho Balatibat, Juan Carlos Gonzalez, Cheryl Natividad, Rafe Brown</i>	Comprehensive phylogenetic assessments of the highly-endemic herpetofauna of Sibuyan: disentangling the history of community origins to assess conservation implications
10:45 am	<i>Javier Torres</i>	Using Genomic Data to Delimit Species Within the Cuban Green Anoles, <i>Anolis allisoni</i> and <i>A. porcatus</i>
11:00 am	<i>Rachel Alenius-Thalhuber, Dean Williams</i>	Stable isotopes confirm atypical diet of Texas horned lizards (<i>Phrynosoma cornutum</i>) in small towns

10:45 AM – 12:00 PM

West 105 BC

AES Morphology & AES Physiology I

Moderator: Kyle Newton

10:45 am	<i>Krista Laforest, Emily Peele, Kara Yopak*</i>	Older and Wiser? Ontogenetic shifts in brain size and brain organization in the Atlantic sharpnose shark, <i>Rhizoprionodon terraenovae</i>
11:00 am	<i>Aubrey Clark, Tricia Meredith, Marianne Porter</i>	Characterizing Elasmobranch Rosette Morphology Using Two-Dimensional and Three-Dimensional Methods
11:15 am	<i>Jordyn Neal, Allison Bronson</i>	Description of the Inner Ear of Three Elasmobranch Genera
11:30 am	<i>Molly Gabler-Smith, Dylan Wainwright, Greta Wong, George Lauder</i>	Dermal denticle diversity in sharks: novel patterns on the interbranchial skin
11:45 am	<i>Mark Royer, Jeffery Drazen, Danielle Garcia, Kevin Weng, Carl Meyer, Kim Holland</i>	Scalloped hammerhead sharks are metabolically poised for intensive and potentially anoxic deep dives

10:45 AM – 12:15 PM

West 101 ABC

Ichthyology IV

Moderator: Ben Frable

10:45 am	<i>Benjamin Frable, Charlotte Seid, Peter Rask Møller</i>	A New Deep-sea Eelpout Associated With a “Hydrothermal Seep” on the Pacific Margin of Costa Rica
11:00 am	<i>Christopher Goatley</i>	The Hidden Biodiversity of Coral Reefs: Cryptobenthic Fishes from the Coral Sea
11:15 am	<i>Carmen Pedraza-Marrón, Philip Hastings, Peter Hundt, Lily Hughes, Carole Baldwin, Omar Domínguez-Domínguez, Guillermo Ortí, Dahiana Arcila, Ricardo Betancur-R</i>	Tu-be Or Not Tu-be a Blenny: Deciphering The Evolutionary History Of The Enigmatic Genus <i>Stathmonotus</i>
11:30 am	<i>Allison Bronson, Alan Pradel, John Denton, John Maisey</i>	A new species of extinct symmoriiform and a phylogeny of early chondrichthyans

11:45 am	Terry Donaldson	What's Up Front: Mating Territory Location Drives Mating Success by Male Wrasses (Labridae) at a Resident Spawning Aggregation Site
12:00 pm	Megan Osborne, David Portnoy, Andrew Fields, Megan Bean, Christopher Hoagstrom, Kevin Conway	Genomic Assessment of two imperiled Rio Grande basin endemics, Rio Grande Shiner and Speckled Chub

11:45 AM – 12:05 PM

West 102 ABC

V: Lightning Talks, Ichthyology

Moderator: David Lonzarich

11:50 am	Benjamin Colbert, Tanja Schulz-Mirbach, Brian Metscher	Comparative Morphology of Peripheral Hearing Structures in Three Species of Invasive Carps
11:55 am	Samuel Ghods, Luke Tornabene, Karly Cohen	New Insights Into the Morphology and Development of Novel Jaw-like and Tooth-like Structures in Male Deep-Sea Anglerfishes (Teleostei, Ceratioidei)
12:00 pm	Jessica Quinlan, Shannon O'Leary, Andrew Fields, Martin Benavides, Emily Stumpf, Ramon Carcamo, Joel Cruz, Derrick Lewis, Beverly Wade, George Amato, Sergios-Orestis Kolokotronis, Gina Clementi, Demian Chapman	Using fisher-contributed secondary fins to fill critical shark-fisheries data gaps

1:45 PM – 3:15 PM

West 105 A

Ichthyology V

Moderator: Adam Summers

1:45 pm	Simon Dedman, Emil Aalto, Mike Stokesbury, Robbie Schallert, Mike Castleton, Barbara Block	Tagging Reveals Stock Specific Behaviours and Habitat Partitioning of Atlantic Bluefin Tuna <i>Thunnus thynnus</i>
2:00 pm	Kyle Newton, Dovi Kacev, Simon Nilsson, Lavinia Sheets	Zebrafish Pose Estimation, Tracking, and Behavioral Classification: Illuminating the Role of the Lateral Line in Rheotaxis
2:15 pm	Mikki McComb-Kobza, Robert Kobza, Boyd Wright	Northern Redbelly Dace Recovery Project
2:30 pm	Adam Summers, Matt Kolmann	Poachers as models for understanding armor in fishes
2:45 pm	Shannon Kuznar, James Albert	Does Dis-integration of Brain Modules Facilitate Functional Specialization in Gymnotiform Electric Fishes?
3:00 pm	David Portnoy, Shannon O'Leary, Erin Pulster, Steve Murawski, Douglas Adams, R Dean Grubbs	Population structure of the gafftopsail catfish (<i>Bagre marinus</i>) in the US Atlantic and Gulf of Mexico

1:45 PM – 3:30 PM

West 101 ABC

Amphibian Biogeography and Systematics

Moderator: Eli Greenbaum

1:45 pm	Kenzie Pereira, Jenna Mulreany, Sarah Woodley	Effects of Corticosterone on Salamander Immunity and Behavior
2:00 pm	Luke Linhoff, Allison Bryne, Randall Jimenez, Roberto Ibanez, Carly Muletz Wolz, Brian Gratwicke	Lost and found: a 10-year review and analysis of recently rediscovered amphibian species
2:15 pm	Eli Greenbaum, Daniel Portik, Kaitlin Allen, Michael Barej, Nancy Conkey, Legrand Nono Gonwouo, Mareike Hirschfeld, Félix Igunzi Alonda, Chifundera Kusamba, Jesús Reyes, Jacqueline Rivera, Mark-Oliver Rödel, Corey Roelke, Soraya Romero, J Maximilian Dehling	Evolution of African spiny reed frogs (Anura: Hyperoliidae: Afrixalus), with the description of a new species from the Albertine Rift
2:30 pm	Thornton Larson, Thomas Firreno, Amir Hamidy, Nia Kurniawan, Matthew Fujita, Eric Smith	Systematics of the cryptic frog complex <i>Limnonectes kuhlii</i> (Anura: Dicroglossidae) from volcanic regions of Java and Sumatra
2:45 pm	Brian Halstead, Patrick Kleeman, Graziella DiRenzo, Jonathan Rose	Occurrence of Shasta Salamanders (<i>Hydromantes</i> spp.) in Little-Studied Portions of Their Range, with Implications for Optimizing Survey Design

Friday 23 July 2021

3:00 pm	<i>Jeffrey Frederick, Djoko Iskandar, Jim McGuire</i>	Cryptic and Elevational Diversification in Sulawesi Fanged Frogs (Genus: <i>Limnonectes</i>)
3:15 pm	<i>Joshua Rivera, Christopher Murray, Brian Crother</i>	Using Geometric Morphometrics to Evaluate the Diversity Within the Genus <i>Siren</i>

1:45 PM – 3:45 PM

West 105 BC

AES Physiology II & AES Genetics & AES Biogeography

Moderator: Andrew Fields

1:45 pm	<i>James Anderson, Christopher Lowe</i>	High resolution acoustic telemetry reveals swim speeds and inferred field metabolic rates in juvenile white sharks (<i>Carcharodon carcharias</i>)
2:00 pm	<i>Kady Lyons, Katherine Wynne-Edwards</i>	Sex-related metabolic outcomes in wild stingrays with differential exposure to polychlorinated biphenyl exposure from southern California
2:15 pm	<i>Lisa Crawford, Alisa Newton, Lisa Hoopes, James Gelsleichter, Nicholas Fisher, Cheng-Schiuan Lee, Douglas Adams, Maeva Giraudo, Anne McElroy</i>	Associations Between Total Mercury Levels, Trace Minerals, and Blood Health Markers in North Atlantic White Sharks
2:30 pm	<i>Eloise Cave, Michael Criscitiello, Toby Daly-Engel</i>	Methods for Applying MHC Immune Genes into Shark Population Studies
2:45 pm	<i>Derek Kraft, Lauren Meyer, Maryann Webb, Kaylee Scidmore-Rossing, Charlie Huveneers, Eric Clua</i>	Once Bitten Thrice Swabbed: Identifying Species From Transfer DNA In Shark Bite Incidents
3:00 pm	<i>Carly McCall, Toby Daly-Engel</i>	Cryptic speciation and genetic diversity in the genus <i>Squalus</i>
3:15 pm	<i>Shannon Barry, Dean Grubbs, Shawn Larson, Toby Daly-Engel</i>	Genetic evidence of cryptic speciation in deep-water sixgill sharks
3:30 pm	<i>Andrew Fields, William Driggers III, Christian Jones, David Portnoy</i>	Population structure of angel sharks in the western North Atlantic Ocean

Monday, 26 July • Virtual Oral Presentations

Note: Presenter is first author unless noted by an asterisk (*)

9:00 AM – 10:15 AM

Virtual

V: Ichthyology VI

Moderator: Pamela Hart

9:00 am	Patrick Ciccotto	Systematic Overview of Altigena, Bangana, and Incisilabeo(Cyprinidae: Labeoninae) in Southeast Asia
9:15 am	Taegan JM Perez, João Pedro Fontenelle, Arturo Angulo, Nathan R Lovejoy	Integrative Taxonomy As A Tool for Conservation: Exploring Freshwater Fish Diversity of the Barra del Colorado Wildlife Refuge, Costa Rica
9:30 am	Roberto Cucalon, Jonathan Valdiviezo-Rivera, Pedro Jimenez-Prado, Ronald Navarrete-Amaya, Virginia Shervette, Antonmio Torres-Noboa, Natasha Wierzal, Thomas Borders, Nathan Lujan, Windsor Aguirre*	Phylogeography of the Chocó Endemic Rainbow Characin (Teleostei: Rhoadsia)
9:45 am	Krista Ward, Christine Streid, Jake Wright, Thomas Luhring	Fish Presence, Species Richness, and Spatial Distribution in Intermittent Stream Pools
10:00 am	Brian Sidlauskas, Fernando Assega, Bruno Melo, Claudio Oliveira, José Birindelli	Total evidence phylogenetic analysis reveals polyphyly of Anostomoides and uncovers an unexpectedly ancient genus of anostomid fishes

9:00 AM – 11:30 AM

Virtual

V: Reptile Conservation and Management II

Moderator: Allyson Fenwick

9:00 am	Hunter Howell, Giacomo Delgado, Alyssa Wood, Leila Thompson, Eric Cline	A dry future for the Everglades favors invasive herpetofauna
9:15 am	Nick Clark	Monstrous Reptile Narratives and Conservation Ethics
9:30 am	Allyson Fenwick, Briant Nguyen, Maria Nguyen	Where Will It End?: Range Mapping and Population Genetics of Mediterranean Geckos (Hemidactylus turcicus) at the University of Central Oklahoma
10:15 am	Whitney Anthonysamy, Michael Dreslik, Sarah Baker, Mark Davis, Marlis Douglas, Michael Douglas, Christopher Phillips	Limited Gene Flow and Pronounced Population Genetic Structure of Eastern Massasauga (Sistrurus catenatus) in a Midwestern Prairie Remnant
10:30 am	Andrea Currylow, Bryan Falk, M Rockwell Parker, Jillian Josimovich, Austin Fitzgerald, Amy Yackel Adams, Frank Ridgley, Robert Reed, Melia Nafus	Application and Ecological Effects of Hormone Manipulation as Invasive Species Control Tool in Greater Everglades Ecosystem
10:45 am	Eric Nordberg, John Ashley, Alyssa Hoekstra, Sarah Kirkpatrick, Vince Cobb	Small nature preserves do not adequately contain large-ranging snakes: movement ecology and site fidelity in a fragmented rural landscape
11:00 am	Brian Shamblin, Mark Dodd, Michelle Pate, Matthew Godfrey, Sarah Dawsey, Breanna Ondich, James Richardson, Rebecca Bell, Michael Arendt, Ruth Boettcher, Campbell Nairn	Recruitment and Indirect Assessment of Natal Homing in Northern Recovery Unit Loggerhead Turtles Via Genetic Tagging
11:15 am	Ann-Elizabeth Nash	Determinants of Community Structures in the Spiny-tailed Iguana, Ctenosaura similis

10:45 AM – 12:00 PM

Virtual

V: Ichthyology VII

Moderator: Hannah Owens

10:45 am	Murilo Pastana, G David Johnson, Alessio Datovo	Evolution of The Symbiosis Between Fishes And Gelatinous Invertebrates: a Case Study on The Stromateiformes (Teleostei, Percomorphacea)
11:00 am	Elkin D Calderín-González, Karolay Arrieta-Ramírez, Angel L Martínez-González, Glenys Tordecilla-Petro, Charles W Olaya-Nieto, Fredys F Segura-Guevara	Reproductive biology of Comelón Megaleporinus muyscorum in the San Jorge River System, Colombia
11:15 am	José S Pérez-Orozco, Kely J Monterrosa-Jaraba, Fredys, F Segura-Guevara, Glenys Tordecilla-Petro, Charles W Olaya-Nieto, Ángel L Martínez-González*	Feeding ecology of Comelón Megaleporinus muyscorum in the San Jorge River System, Colombia
11:30 am	María P Gómez-Rodríguez, Rosalba Lambertine-Sibaja, Ángel L Martínez-González, Fredys, F Segura-Guevara, Glenys Tordecilla-Petro, Charles W Olaya-Nieto*	Trophic ecology of Nicuro Pimelodus yuma in the San Jorge River Basin, Colombia
11:45 am	Lubabalo Mofu, Tatenda Dalu, Ryan Wasserman, Darragh Woodford, Olaf Weyl	Trophic ecology of co-occurring fishes in the Sundays River valley ponds, assessed using stable isotope and gut content analyses

11:45 AM – 12:20 PM

Virtual

V: Lightning Talks: Amphibians

Moderator: David Green

11:45 am	Richard Lehtinen	Phytotelma-Breeding Frogs of the World – A New Online Resource
11:50 am	Victoria Tawa, David Green	Responses of a Lakeside Anuran Community to Natural and Anthropogenic Disturbance
11:55 am	Megan Novak, Kyle Barrett	Microhabitat Use of a Crevice Dwelling Salamander
12:00 pm	Florine Pascal, Jeanne Robertson, Andres Vega, Maria Akopyan	Color Variation and its Role in Speciation: a Hybrid Perspective
12:10 pm	Randall R Jimenez, Amy Carfagno, Luke Linhoff, Brian Gratwicke, Douglas C Woodhams, Liana Soares Chafra, Molly C Bletz, Barney Bishop, Carly Mulet-Wolz	Inhibitory Bacterial Diversity and Mucosome Function Differentiate Susceptibility of Appalachian Salamanders to Chytrid Fungal Infection
12:15 pm	Richard Stevens	Cutaneous Bacteria of the Spotted Salamander (Ambystoma maculatum) in Western New York

1:30 PM – 3:30 PM

Virtual

V: Ichthyology VIII

Moderator: Tracey Sutton

1:30 pm	Vinicius Espindola, David Johnson	Cephalic and opercular morphology of the Anguilliformes (Teleostei: Elopomorpha)
1:45 pm	Daniel Lumbantobing, Lynne Parenti	Diversity of the Pectoral Girdle and Associated Morphology in Ricefishes (Teleostei: Belontiiformes: Adrianichthyidae)
2:00 pm	Aubree Jones, Kevin Conway, Jacqueline Webb	Cranial Lateral Line System and External Taste Buds in the Silverjaw Minnow, <i>Ericymba buccata</i> : Multimodal Contributions to Foraging Behavior?
2:15 pm	Eric Ste-Marie, Yuuki Watanabe, Jayson Semmens, Marianne Marcoux, Nigel Hussey	Field Metabolic Rate and Prey Consumption Rate of Greenland Sharks (<i>Somniosus microcephalus</i>) Modeled Using Archival Biologgers
2:30 pm	Katherine Giesy, Jake Jerome, Julia Wester, Danielle McDonald, Evan D'Alessandro, Catherine Macdonald	The Physiological Stress Response of Juvenile Nurse Sharks (<i>Ginglymostoma cirratum</i>) to Catch-and-Release Recreational Angling

Monday 26 January 2021

2:45 pm	Wade VanderWright, Jennifer Bigman, Cayley Elcombe, Nicholas Dulvy	Gill Slits Provide a Window into the Respiratory Physiology of Sharks
3:00 pm	Sarah Gravel, Jennifer Bigman, Sebastian Pardo, Serena Wong, Nicholas Dulvy	Integrating physiology into population ecology: parallels between metabolic rates and population growth rates in fishes
3:15 pm	GB Purushottama, M Muktha, KV Akhilesh, Dash Swatipriyanka Sen, L Remya, Shikha Rahangdale, Livi Wilson, V Mahesh, Ambarish P Gop, Subal Kumar Roul, Rajesh Kumar Pradhan, Shoba Joe Kizhakudan, Thomas Sujitha, TM Najmudeen, PP Manojkumar, PU Zacharia	Wedgefish and Guitarfish fisheries of India: addressing sustainability, livelihoods and conservation

1:30 PM – 2:45 PM

Virtual

V: Amphibian Conservation and Ecology II

Moderator: Angela Burrow

1:30 pm	Angela Burrow, Brian Crawford, John Maerz	Ground Cover and Native Ant Predation Influence Survival of Metamorphic Amphibians in a Southeastern Pine Savanna Undergoing Restoration
1:45 pm	Emmeleia Nix, Michael Westphal	Utilizing Partnerships to Create Breeding Habitat for California Red-legged Frogs
2:00 pm	Robert A Villa	Toad Smoke: (Un)Natural History of the Sonoran Desert Toad
2:15 pm	Mia Forsline, Amanda Zellmer	Urban Microhabitats Provide Thermal Refugia for Terrestrial Salamanders
2:30 pm	Regina Spranger, Barry Sinervo	Incubation Temperature and Maternal Effects on Thermal Physiology in <i>Ambystoma mexicanum</i>

Monday, 26 July • Poster Presentations

Virtual • 4:00 PM – 6:00 PM

Note: Presenter is first author unless noted by an asterisk (*)

P1: Ichthyology I

Andreia Garcês, Luis Sousa, Roberto Sargo, Filipe Silva, Isabel Pires

Description of the Case of a Swim Bladder Torsion in Goldfish (*Carassius auratus*, Linnaeus 1758)

*Luis E López-Álvarez, Yhan C Benavides-Morales, William A Pérez-Doria, Glenys Tordecilla-Petro, Jesús Vargas-González, Milena M Arteaga-Vega, Fredys F Segura-Guevara, Charles W Olaya-Nieto**

Reproductive ecology of Cachagua *Trachelyopterus insignis* in the Ciénaga de Ayapel, Colombia

*Angélica C Flórez-Guerra, Javier J Nieves-López, Ángel L Martínez-González, Fredys F Segura-Guevara, Charles W Olaya-Nieto, Glenys Tordecilla-Petro**

Reproductive biology of *Nicuro Pimelodus yuma* in the San Jorge River Basin, Colombia

Milena M Arteaga-Vega, Andrea M Espitia-Galvis, Jesús Vargas-González, Ángel L Martínez-González, Fredys F Segura-Guevara, Charles W Olaya-Nieto

Reproductive ecology of *Mojarra amarilla Caquetaia kraussii* in the Ciénaga Grande de Llorica, Colombia

Bruce Stallsmith

The Stream Leucisid *Luxilus chrysocephalus* (Striped Shiner) Spawns in March to May in North Alabama

*Yulieth E González-Burgos, Jesús Vargas-González, Jesús Vargas-González, Fredys F Segura-Guevara, Glenys Tordecilla-Petro, Charles W Olaya-Nieto, Ángel L Martínez-González**

Length–Weight relationship of *Nicuro Pimelodus yuma* in the San Jorge River Basin, Colombia

Diana P Jiménez-Castillo, Mario A Peña-Polo, Ángel L Martínez-González, Jesús Vargas-González, Glenys Tordecilla-Petro, Fredys F Segura-Guevara, Charles W Olaya-Nieto*

Length–Weight relationship of *Morrúa Geophagus steindachneri* in the Ciénaga de Betancí, Sinu River System

P1: Ichthyology II

Terry Grande, Mark Wilson

A New Cryptic Species of the Primitive Acanthomorph Genus *Polymixia* from Bermuda and the Gulf of Mexico

Lauren Fuelling, Stephen Jacquemin, Gary Stringer, Austin Smith, Charles Ciampaglio*

On the Importance of Fossil Occurrence Data for Understanding the Evolution and Distribution of the Freshwater Drum in North America

David Lonzarich, David May, Leo Lonzarich

Exploring the ecological and morphological consequences of scale-predation on a fish prey species

Katherine Lanoue, Charles Cotton, Dean Grubbs, Elizabeth Hunt, David Portnoy

Parental Analysis of Mouthbrooding Marine Catfish, *Ariopsis felis*

P1: Ichthyology, III

Samuel Bauer, Emily Steele, Olivia Timmerding, Richard D Durtsche

Metabolic Scope in Kentucky Stream Fishes in Response to Varied Thermal Conditions

*Florian Hipper, Carla van Niekerk, Christina Ruopp, Sabine Wintner, Stephanie Ploen, Dirk M Lang**

Detection of Nanoplastics Particles in the Brain of Great White Sharks (*Carcharodon carcharias*)

Kole Kubicek, Heek Hee Ng, Kevin Conway

New record of *Pseudolaguvia shawi* (Sisoridae: Siluriformes) and a reevaluation of *Pseudolaguvia* species native to Nepal

Jeff Peters

Rapid Radiation of Zeiformes Revealed Through Comparison of Jaw Morphology Using a Micro-CT Scanner

Christina Braswell, Kimberlee Denesha, Guy Eroh, Thomas Wye*

Development of Digital Fish Identification and Education Tools

Hannah Owens, Cory Merow, Brian Maitner, Jamie Kass, Vijay Barve, Robert Guralnick

Data, Data, Everywhere, but Not a DOI in Cite

Lindsey Nelson, Eric Hilton, Christian Jones, Jan McDowell

No Bones About It; Variation in the Skeletal Counts of Clearnose Skates Using X-Ray Radiography

P1: ASIH Storer Award, Ichthyology I

Matthew Girard

Evolution of the archerfishes (Toxotidae)

Soren Johnson, Kyle Piller

Hide and Seq: Using genomic techniques (ddRADseq) to assess the population and phylogenetic structure of the Blacktail Shiner (*Cyprinella venusta*)

Elizabeth Hunt, Shannon O'Leary, Kevin Conway, David Portnoy

Genetic Assessment of *Prionotus alatus* and *Prionotus paralatus* in the northern Gulf of Mexico

Nick Weber, Andrew Fields, William Patterson, Beverly Barnett, Christopher Hollenbeck, David Portnoy

Novel Epigenetic Age Estimation in Wild-Caught Northern Gulf of Mexico Reef Fishes

P1: ASIH Storer Award, Ichthyology II

Tiffany D Inbody, Kevin W Conway

Diversity, distribution, and development of the ligastyle, a component of the poeciliine gonopodial suspensory skeleton of uncertain homology

Andrew Sherman, Kyle Piller

The Colors of the Rainbow: Using TagSeq to Investigate Nuptial Coloration Gene Expression in Rainbow Darters (*Etheostoma caeruleum*)

Austin Mueller, Aaron Geheber

Searching for Topeka Shiners (*Notropis topeka*) in Missouri using Environmental DNA (eDNA)

Megan Ewing, Rachel Welicky, Carole Baldwin, Ross Robertson, Luke Tornabene

Trophic analysis of invasive lionfish (*Pterois volitans*) from deep reefs in the Caribbean

Christopher Hockaday, Aaron Geheber, Jaime Smith

Examining Alterations in Darter Functional Morphology along Stream Gradients

Elizabeth Burns, Larry Allen, Michael Franklin

Verification of Giant Sea Bass (*Stereolepis gigas*) Spawning: Through Auditory and Visual Observations

P1: ASIH Storer Award Herpetology

Danielle Galvin, Jacob Kerby

Survey of Ranavirus Across Southeastern South Dakota

Adolfo Rodríguez-Velázquez, María Chardón-Suárez, Alberto Sabat

Social Media; Chats, Friendship, News ... and SNAKES?

Tatiana Joaqui, Daniel Saenz, Cory Adams, Toby Hibbitts, Christopher Schalk

Top Predators Drive Community Structure of Tadpole Assemblages

Megan Zerger, Kelsey Reider, Andrea Darracq, Howard Whiteman

Morph- and sex-specific differences in corticosterone of the Arizona tiger salamander (*Ambystoma mavortium nebulosum*)

P1: SSAR Hutchison Award

Rachel Alenius-Thalhuber, Diane Barber, Nathan Rains, James Gallagher, Tom Thalhuber, Dean Williams

Differential diets, growth rates, and survival of captive-bred hatchling Texas horned lizards (*Phrynosoma cornutum*) at two locations in central Texas

Kristin Kabat, Matthew Barnes

Development of a Species-Specific Environmental DNA Assay to Detect the Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

Madison Harman, Thomas Fieldsend, Caitlin Mothes, Timothy Collins, Melissa Miller, Christina Romagosa

Unexpected Impacts: Non-Native Lizards as Vectors of Introduced Pentastomid Parasites in Florida

Lawrence Bassett, Weston Nowlin, Daniel Foley, Ivana Mali, Michael Forstner

Diet of the Rio Grande Cooter (*Pseudemys gorzugi*) in San Felipe Creek, Texas

Alexander Seymour, Jennifer Lamb

Biofluorescence within Sexually Dimorphic Tree Frogs

Allison Litmer, Steven Beaupre

Influence of Temperature on Passage Rate in *Sceloporus consobrinus*, With Comparison to Congeners

Kyle J Emerson, Samantha S Fontaine, Kevin D Kohl, Sarah K Woodley

The Effects of Microbial Environment and Temperature on Neurodevelopment in Larval Amphibians

Helen Plylar, Akira Mori, Deborah Hutchinson, Alan Savitzky

The Vascular Supply to the Parotoid Glands of the Japanese Toad, *Bufo japonicus* (Bufonidae)

Shanelle Wikramanayake, Florine Pascal, Kim Hoke, Andres Vega, Jeanne Robertson

The Neural Basis of Premating Reproductive Isolation in the Red-eyed Treefrog (*Agalychnis callidryas*)

P1: SSAR Rabb Award

<i>Yucheol Shin, Mi-Sook Min, Amaël Borzée</i>	Distribution modeling of <i>Onychodactylus koreanus</i> predicts drastic decrease of suitable habitats in response to climate change
<i>Aileen Lavelle</i>	Do Buildings and Caging Alter Loggerhead Sea Turtle Hatchling Mortality from Predators on the West Coast of Florida?
<i>Tia Judy, Andy Kraemer, Jennifer Deitloff</i>	Variance in Chromatophore Reflectance of <i>Plethodon cinereus</i>
<i>Midelys Franceschini, Sara Woodley, Sara J McClelland</i>	Chronic Stress Results in Lighter Tadpole Coloration in Northern Leopard Frog Tadpoles
<i>Emily Martin, Spencer Siddons, Paradyse Blackwood, Jessica Hua, Catherine Searle</i>	Plant Leachates Impact Amphibian Infection with a Fungal Pathogen

P1: AES posters

<i>Madeleine Hagood, Marianne Porter</i>	Mechanical Properties of Shark Skin
<i>James Gelsleichter</i>	Are Bull Sharks from Florida Rivers Exposed to Harmful Levels of the "Forever Chemicals?"
<i>Bryan Keller, James Reinhardt, Yonat Swimmer, Craig Brown</i>	The Effect of Terminal Gear Modifications on the Total Mortality of the Shortfin Mako, <i>Isurus oxyrinchus</i>
<i>Samantha McPherson, Megan Winton, Kathryn Ono, John Mohan, James Sulikowski, Gregory Skomal</i>	Validating the Use of Tethered Accelerometry Data Loggers to Study White Shark Predatory Behavior in the Western North Atlantic
<i>Maria Auxiliadora Sabando Plaza, Mi-Ling Li, Aaron Carlisle</i>	Metal heads: Physiological and neurological effects of methylmercury on a small coastal elasmobranch, <i>Mustelus canis</i>

Tuesday, 27 July • Virtual Symposium

Note: Presenter is first author unless noted by an asterisk (*)

8:00 AM – 10:00 AM

Virtual

V: ASIH Symposium: Why are there so many kinds of fishes? A showcase of early-career ichthyologists, I

Moderator: Prosanta Chakrabarty

8:00 am	Elizabeth Miller	Early Career: Why Are There So Many Kinds of Fishes? Two Lessons from Studies of Diversification Rates and Biogeography
8:15 am	Jonathan Chang	Early Career: Perpetual Updates for the Fish Tree of Life
8:30 am	Andrew Furness, Bart Pollux, David Reznick	Early Career: Reproductive mode, sexual selection, and speciation in poeciliid fishes
8:45 am	Milton Tan, Victor Tagliacollo, James Albert	Ecological Evolution and Diversification of Neotropical Freshwater Fishes
9:00 am	Diego J Elías, Caleb D McMahan, Fernando Alda, Carlos García-Alzate, Pamela B Hart, Prosanta Chakrabarty	Phylogenomics and Biogeographic History of Trans-Andean Tetras in the Genus <i>Hyphessobrycon</i> Durbin 1908
9:15 am	Michelle Gaither, Samuel Greaves, Darren Coker, Samuel Payet, Joseph DiBattista, Michael Berumen	The Ecology and Evolution of Color Polymorphism in Hawkfishes of the Genus <i>Paracirrhites</i>
9:30 am	Christopher Martin	Early Career: The origins of novelty in an adaptive radiation of pupfishes: insights from ecology, genomics, behavior, and fitness landscapes
9:45 am	Lily C Hughes, Yamila P Cardoso, Julie Sommer, Roberto Cifuentes, Mariela Cuello, Gustavo M Somoza, Mariano González-Castro, Luiz R Malabarba, Victor Cussac, Evelyn M Habit, Ricardo Betancur-R, Guillermo Ortí, Victoria Tawa*, David Green	Early Career: Biogeography, Habitat Transitions, and Hybridization in a Radiation of South American Silversides Revealed by MtDNA and Genomic Data

10:00 AM – 12:15 PM

Virtual

V: ASIH Symposium: Why are there so many kinds of fishes? A showcase of early-career ichthyologists, II

Moderator: Luke Tornabene

10:00 am	Daniel MacGuigan, Trevor Krabbenhoft, Nathan Backenstose, Tianying Lan, Thomas Near	Genomic architecture of lacustrine speciation and gene flow in the Waccamaw Darter (<i>Etheostoma perlongum</i>)
10:15 am	Catherine Wagner	Early Career: Why are there so many kinds of fishes? The evolution of species richness in fish adaptive radiations
10:45 am	Sam Giles, Stephanie Pierce, Matt Friedman	A Paleontological Perspective on the Early Evolution of the Largest Living Vertebrate Group
11:00 am	John Sime, Jonathan Chang, Michael Alfaro, Lauren Sallan	Mega-phylogenies Elucidate the Pervasiveness and Ecology of the 'Living-Fossil' Phenomenon
11:15 am	Catalina Pimiento	The Fossil Record of Extant Elasmobranchs
11:30 am	Brooke Flammang	Early Career: Fins for the Win
11:45 am	Kayla Hall, Peter Hundt, Matt Kolmann, Adam Summers, Allison Bronson	Early Career: An Evolutionary-Ecological Perspective on the Lives of Charismatic Cartilaginous Fishes
12:00 pm	Dina Navon	Early Career: Flexible Stems and Ecological Opportunities - the Role of Phenotypic Plasticity in Generating Fish Diversity

1:30 PM – 2:30 PM

Virtual

V: ASIH Symposium: Why are there so many kinds of fishes? A showcase of early-career ichthyologists, III

Moderator: Luke Tornabene

- | | | |
|---------|---|---|
| 1:30 pm | <i>Jonathan Huie</i> | Early Career: Evolutionary constraints, a double-edged sword: inhibitor or liberator of fish diversity? |
| 1:45 pm | <i>Christopher Martinez, Sarah Williamson, Edward Burrell, Matthew McGee, Samuel Borstein, Peter Wainwright</i> | Early Career: Piscivory Spurs Kinematic Novelty and Diversity in Neotropical Cichlids |
| 2:00 pm | <i>Kassandra Ford, Maxwell Bernt, Rose Peterson, James Albert</i> | Early Career: Why so many electric fishes? Mosaic Evolution of Craniofacial Morphologies in Apterontidae (Gymnotiformes) and Mormyridae (Osteoglossiformes) |
| 2:15 pm | <i>Kara Feilich</i> | Early Career: What Can and Can't Traits Tell Us About Why There are So Many Fishes? |

2:45 PM – 4:15 PM

Virtual

V: ASIH Symposium: Why are there so many kinds of fishes? A showcase of early-career ichthyologists, IV

Moderator: Elizabeth Miller

- | | | |
|---------|--|--|
| 2:45 pm | <i>Dahiana Arcila</i> | Early Career: Addressing the Ancient Evolutionary Radiation of Tunas, Stromateoids, and Allies (Teleostei: Pelagiaria) |
| 3:00 pm | <i>Pamela Hart, Rachel Arnold, Fernando Alda, Prosanta Chakrabarty</i> | Early Career: Evolutionary Relationships of Anglerfishes (Lophiiformes) Reconstructed using Ultraconserved Elements |
| 3:15 pm | <i>Rene Martin</i> | Early Career: A Dive into Deep-sea Fish Diversity and the Growing Work of Early Career Scientists |
| 3:30 pm | <i>Hudson Pinheiro, Chancey MacDonald, Tyler Phelps, Bart Shepherd, Luiz Rocha</i> | Early Career: Challenges and discoveries studying fishes on mesophotic coral ecosystems |
| 3:45 pm | <i>Jennifer Hodge, Samantha Price</i> | Early Career: Why Are There So Many Kinds of Fishes on Coral Reefs? |
| 4:00 pm | <i>Luke Tornabene, Elizabeth Miller</i> | Why are there so many cryptobenthic reef fishes? |

Tuesday, 27 July • Virtual Oral Presentations

Note: Presenter is first author unless noted by an asterisk (*)

8:00 AM – 9:45 AM

Virtual

V: Ichthyology IX

Moderator: Katriina Ilves

- | | | |
|---------|---|--|
| 8:00 am | <i>Eric Hilton, Lance Grande</i> | New sturgeons from the Late Cretaceous of North America, with notes on the Cretaceous record of the family Acipenseridae |
| 8:15 am | <i>James Albert</i> | Neogene megariver captures and the Great Amazonian Biotic Interchange |
| 8:30 am | <i>Katriina L Ilves, Adela Y Roa-Varon, Dominique Cheb Terrab, Michelle Gangone, Michael DeGidio, Winter Lesnick, Steve W Ross, Andrea M Quattrini</i> | Biodiversity of Fishes in the Deep Gulf of Mexico and southeastern US: Continued Insights from Mitochondrial Barcoding and Voucher Specimens |
| 8:45 am | <i>Tracey Sutton, Kevin Boswell, April Cook, Maëlle Cornic, Rosanna Milligan, Jon Moore, Steven Murawski, Nina Pruzinsky, Jay Rooker, David Wells</i> | Oceanic Fishes of the Gulf of Mexico and the Deepwater Horizon Disaster: A Decadal Synthesis of Research |
| 9:00 am | <i>Lindsey DeHaan, Michael Burns, Joshua Egan, Devin Bloom</i> | The Evolution of Diadromy Drives Elevated Rates of Trait Evolution and Convergence on Multiple Adaptive Peaks |
| 9:15 am | <i>Hannah Owens</i> | Macroecology in Depth: Estimating Marine Fish Biodiversity in Three Dimensions |
| 9:30 am | <i>Nathan Pacoureau, Cassandra Rigby, Peter Kyne, Richard Sherley, Henning Winker, John Carlson, Sonja Fordham, Rodrigo Barreto, Daniel Fernando, Malcolm Francis, Rima Jabado, Katelyn Herman, Kwang-Ming Liu, Andrea Marshall, Riley Pollom, Evgeny Romanov, Colin Simpfendorfer, Jamie Yin, Holly Kindsvater, Nicholas Dulvy</i> | Half a Century of Global Decline in Oceanic Sharks and Rays |

10:30 AM – 11:45 AM

Virtual

V: Reptile Ecology and Behavior II

Moderator: Mark Paulissen

- | | | |
|----------|---|--|
| 10:30 am | <i>Britt White, Iliam Jackson, Melissa Kemp</i> | Effect of congeneric competition on size and shape variation in the <i>Anolis carolinensis</i> clade |
| 10:45 am | <i>Matthew Lattanzio, Maleah Manion, Madison McCann</i> | Geographic Variation in the Ecomorphology and Thermal Ecology of a Widespread Lizard |
| 11:00 am | <i>Kinsey Brock, Marie Claire Chelini, Cole Ayton, Indiana Madden, Cynthia Ramos, Panayiotis Pafilis, Danielle Edwards</i> | Morph identity predicts social behavior and contest outcomes in a color polymorphic lizard, <i>Podarcis erhardii</i> |
| 11:15 am | <i>Dominic DeSantis, Anna Tipton, Reagan Thornton, Rulon Clark, Vicente Mata-Silva, Jerry Johnson, Jorge Diosdado, Amy Wagler</i> | Integrating Radio Telemetry and Accelerometry to Monitor the Spatial and Temporal Movement Patterns of Snakes |
| 11:30 am | <i>Mark Paulissen, Katie Fletcher</i> | Lack of aggression between neonates of the Little Brown Skink lizard; <i>Scincella lateralis</i> |

1:30 PM – 3:30 PM

Virtual

V: Reptile Genetics and Morphology

Moderator: Steven Jasinski

- | | | |
|---------|---|--|
| 1:30 pm | <i>Daniel Hoops, John Sled</i> | Parceling out the brain: allometry and encephalization deconstructed |
| 1:45 pm | <i>Graham Reynolds</i> | Systematics and Evolution of Boas in the West Indies |
| 2:00 pm | <i>Jillian Josimovich, Bryan Falk, Alejandro Grajal-Puche, Emma Hanslowe, Ian Bartoszek, Robert N Reed, Andrea Currylow</i> | Clutch Predicts Growth of Hatchling Burmese Pythons Better Than Food Availability or Sex |

Tuesday 27 January 2021

2:15 pm	<i>Justin Jacobs, James Titus-McQuillan, Alexander Hall</i>	Learning to Swim: Multiple Transitions from Terrestrial to Aquatic Life in Elapids
2:30 pm	<i>Anna Jordan</i>	The Color of Conservation: Analyzing Color Polymorphism in the Giant Gartersnake
2:45 pm	<i>Jadyn Sethna, Ollie Shinn, Megan Wright, Joseph Mendelson</i>	Independent loss of cloacal bursae and age-dependent surfacing postures diamond-backed terrapins (Chelonia: Emydidae: Malaclemys terrapin)
3:00 pm	<i>Steven Jasinski</i>	Distinct Fossil Emydids (Testudines: Emydidae) from Eastern Tennessee and Their Potential Implications for the Evolution of the Emydidae
3:15 pm	<i>Nathan Byer, Brendan Reid</i>	Repeatability in habitat use in spatially and temporally heterogeneous environments: an individual-based approach

Tuesday, 26 July • Poster Presentations

Virtual • 4:00 PM – 6:00 PM

Note: Presenter is first author unless noted by an asterisk (*)

P2: Herpetology: Life History

Brittany Maldonado, Corey Samples, Claire Crookston, Tyler Brock, Christopher Beachy*

Brittany Maldonado

Larval life history of the Three-lined Salamander (*Eurycea guttolineata*) in Louisiana

Geographic variation in larval life history of the Three-lined Salamander (*Eurycea guttolineata*)

P2: Herpetology: Behavior I

Kelsey Garner, Jessica Ryan, Cari-Ann M Hickerson, Carl Anthony

Sarah White, Jami Baker, Alicia Mathis*

John Steffen, Logan Rothstein, Dominick Webster

Lauren A Nazarian, Isabella MG Bukovich, Eric A Tillman, Bryan M Kluever, Andrea F Currylow, Amy A Yackel Adams

Allison M Newhart, April E Hale, Steven J Beaupre, M Rockwell Parker*

Exploratory, Bold, and Aggressive Behavior in Eastern Red-backed Salamanders (*Plethodon cinereus*): Evidence for a Behavioral Syndrome?

Night or Day: Diel Effects on Antipredator Behavior of a Terrestrial Salamander

Colorful turtles lack a preference for carotenoid-based food that maintains stripe and spot color

Redesigning the Quantification of Reptile Behavior in Y-mazes

Quantification of Post-Strike Chemosensory Behaviors in Timber Rattlesnakes in the Field

P2: Herpetology: General Herpetology

Teah Evers, Kelsey Garner, Ryan Mayer

Caroline Honan

Jaime Smith, Joseph HK Pechmann, Robin Overstreet

Angela Burrow, John Maerz

Claire Crookston

Camilo A Linares Vargas, Wilmar Bolivar Garcia, Alexandra Herrera Martinez, Daniel Osorio Dominguez, Oscar E Ospina, Richard Thomas, Juan D Daza

Dispersal and morphology in the Eastern Red-backed Salamander, *Plethodon cinereus*: an evaluation of clade membership, sex, and age group

Injury Distributions in Herpetofauna and How They Relate to Phylogeny

Effect of Dusky Gopher Frog Developmental Stage on Mortality Associated With Exposure to the Protist Parasite *Dermomyxosporium* sp

How Plants Affect Amphibian Populations

The effects of geographic variation and stream site characteristics on the skeletal development of the larval Southern two-lined salamander

A New Anomalepidid Snake from the Northeast of South America

P2: Herpetology: Conservation & Management

Corey Samples, Christopher Beachy

Natalie Claunch, Colin Goodman, Zachary Steele, Diane Episcopio-Sturgeon, Christina Romagosa

Wade Ryberg, Danielle Walkup, Emlyn Smith, Josh Pierce, James Childress, Forrest East, Corey Fielder, Brandon Bowers, Brian Pierce, Toby Hibbitts, Paul Crump, Russell Martin, Krysta Demere

Betsie B Rothermel, Jessica L Fort, Kelly M O'Connor, Jennifer L Beck

The Effects of Feral Swine (*Sus scrofa*) on the Terrestrial Vertebrate Assemblages in Southeastern Longleaf Pine Flatwood/Savanna Habitats

Colorful lizards and the conflict of collection

Searching for a Needle in a Haystack: Using computer algorithms to detect reintroduced Louisiana Pinesnakes captured with camera traps

Gopher Tortoise Abundance and Juvenile Site-Occupancy on a Military Training Range in Southern Florida

Tanner Fundingsland, Trevor Sipe, Abram Wood, Denita Weeks

Amphibian Search & Rescue: Monitoring the Amphibians of McInnis Canyon National Conservation Area in Western Colorado

P2: Herpetology: Behavior II

Calum Devaney, Aaron Bauer

A Review on the Autecology of Angolan Snakes

Christopher Schalk, Connor Adams, Dylan Thompson, Kasey Jobe, Krista Ward, Nicholas Schiwitz, Yuhui Weng, Daniel Saenz

Spatiotemporal Patterns of Upland Snakes in Southern Pine Forests

Sean Farmer, Robert Espinoza

Do Rates of Evaporative Water Loss Explain the Dramatic Declines of Common Garter Snakes (*Thamnophis sirtalis*) in Southern California?

Eric Guerra-Grenier, James B Barnett, David M Green

To Warn or to Hide? Eastern Newts (*Notophthalmus viridescens*) Are Aposematic at Short Range but Camouflaged at Long Range

Nathan Bendik, Dee Ann Chamberlain, Sarah Donelson, Matt Westbrook

Results from 22 years of Austin Blind Salamander (*Eurycea waterlooensis*) surveys

Alondra Medina, Kelsey Reider, T Mitchell Aide

Collared Peccary Wallows and Their Effect on an Amphibian Community in a Lowland Tropical Forest in Costa Rica

P2: Herpetology: Morphology & Histology

David Ledesma, Melissa Kemp

A morphometric analysis of *Ambystoma* vertebrae and implications for the identification of fossil salamanders

Bailey Richards, Jennifer Lamb

Fluorescence Helps Illuminate Anatomy in Tadpoles

Thornton Larson, Justin Jacobs, Amir Hamidy, Nia Kurniawan, Eric Smith

Intrasexual selection drives differences in male skull morphology of closely related species within the *Limnodynastes kuhlii* complex (Anura: Dicroglossidae)

Yuanxing Liao, Aaron Bauer

Gecko Foot Musculature: Using DiceCT Scans in Ecomorphological Analyses

Kelsey Fenner

Comparative Skull Morphology of Mainland African Plated Lizards (Squamata: Gerrhosauridae)

John Jacisin, Corey Fielder, Danielle Walkup*, Toby Hibbitts, Wade Ryberg, Jesse Meik, A Michelle Lawing

Morphological Variation of Cranial Elements in the Western Massasauga

Evan Grimes, Brittany Maldonado

Morphology of *Terrapene carolina* in Coastal Mississippi

P2: Herpetology: Physiology

Stefanny Titon, Braz Titon Jr, Aymam Figueiredo, Felipe Floreste*, Alan Lima, Fernando Gomes, Vania Assis

Day vs Night: LPS Effects on Immunity, Splenic Cytokines mRNA, and Hormone Mediators in Toads

Matthew Mershon, Nilanjana Das, Kathryn McLaughlin, Terence Farrell, Craig Lind

The thermal performance of innate immune function in three species of reptile

Nauera Abou Abdou, Xin Rou Tan*, Craig Lind

The glycemic and glucocorticoid response to acute capture stress in the northern water snake, *Nerodia sipedon*

Julianna M Lincoln, Isabella MG Bukovich, Holly R Rucker, Paige E Baedke, Bryan M Kluever, Ian A Bartoszek, M Rockwell Parker

Skin Lipids in Burmese Pythons: Comparison of Data analysis Approaches to Multidimensional Data

P2: Herpetology: Systematics

Teslin Chaney, Olivier Pauwels, Zoltán Nagy, Václav Gvoždík, Chifundera Kusamba, Gabriel Badjedjea, Franck Masudi, Raffael Ernst, Eli Greenbaum

Phylogenetics and Integrative Taxonomy of African Water Snakes (Squamata: Colubridae: Grayia)

Author Index

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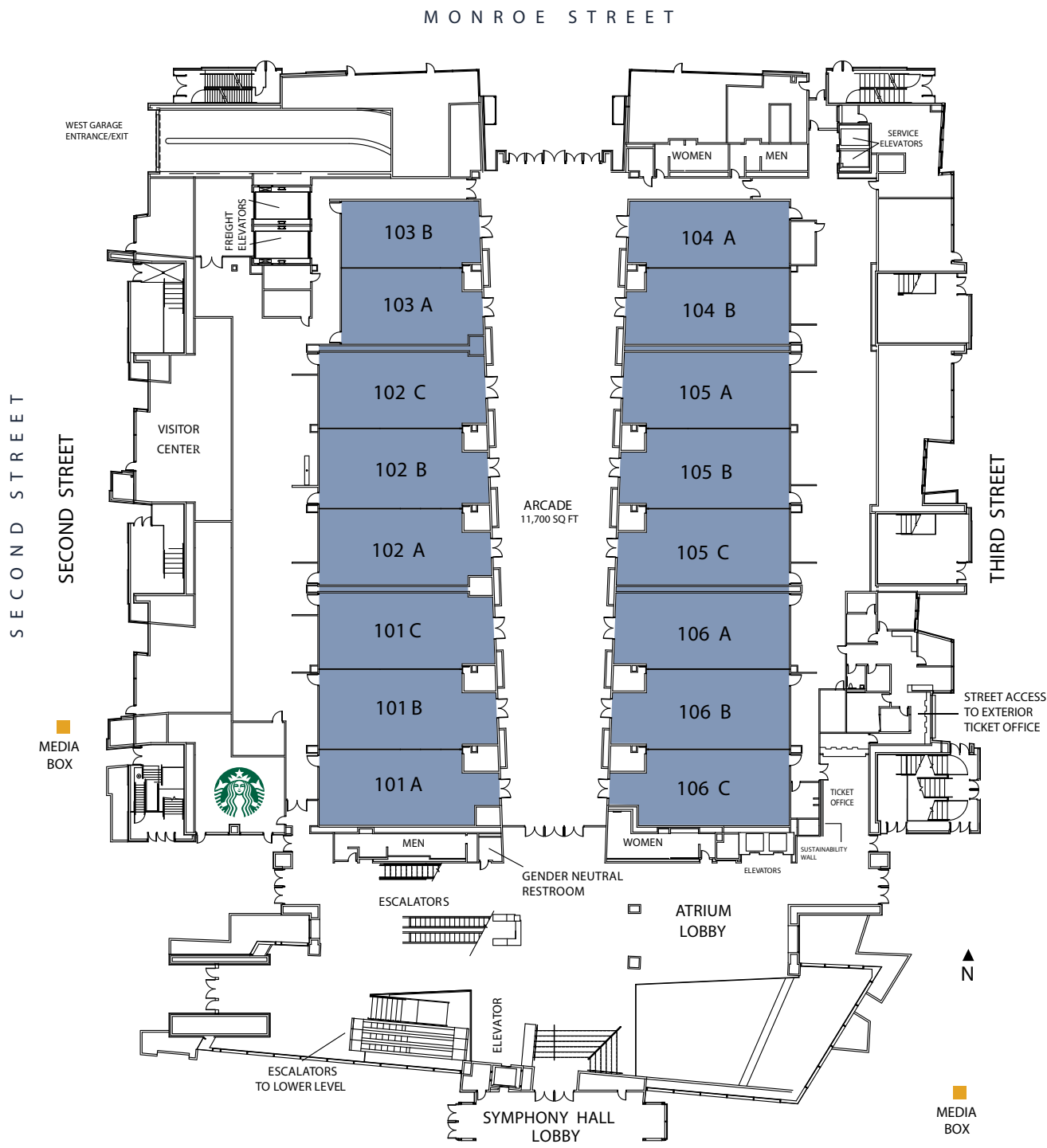


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