



JMIH 2022

JOINT MEETING OF ICHTHYOLOGISTS AND HERPETOLOGISTS

27-31 July 2022 • Spokane, WA

CONFERENCE PROGRAM



AES



ASIH



HL



SSAR

JMIH Meeting Management and Planning Committee

Henry Mushinsky

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

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

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The Herpetologists' League (HL)
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University of Central Oklahoma

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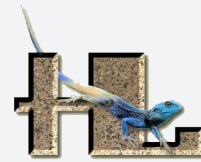
Organizing Societies



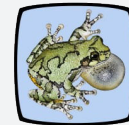
American Elasmobranch Society (AES)



American Society of Ichthyologists and Herpetologists (ASIH)



Herpetologists' League (HL)



Society for the Study of Amphibians and Reptiles (SSAR)



Joint Meeting of Ichthyologists and Herpetologists

CONFERENCE PROGRAM

Spokane Convention Center

334 West Spokane Falls Blvd.
Spokane, WA 99201
509.279.7000
spokanecenter.com

Future Meeting Dates

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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General Meeting Information

All events take place in the Spokane Convention Center, unless otherwise noted.

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, **102 A**, in the Spokane 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:

Wednesday 27 July	1:00 PM – 6:00 PM
Thursday 28 July	9:00 AM – 4:00 PM
Friday 29 July	7:30 AM – 4:00 PM
Saturday 30 July	7:30 AM – 4:00 PM
Sunday 31 July	7:00 AM – 1:00 PM

Speaker Practice Room

If you would like to practice your talk you can use room 102 B and 102 C. There is a sign up sheet on the door.

Registration Desk

The JMIH Registration/Information area is located in the Ballroom Foyer at the Spokane Convention Center. The Registration Desk will be open during the following hours:

Wednesday 27 July	3:00 PM – 6:00 PM
Thursday 28 July	7:00 AM – 4:00 PM
Friday 29 July	7:30 AM – 4:00 PM
Saturday 30 July	7:30 AM – 3:00 PM
Sunday 31 July	7:30 AM – 12:00 PM

Quiet Room

Need to take a break? You can go to Meeting Room 8 at The Davenport Grand.

Message and Job Announcements

A message and employment opportunity bulletin board will be located in the JMIH Registration/Information area. If you have a message for a colleague, please post it to the message board. The Employment Opportunity board is where attendees can post “Positions Wanted” and learn about “Positions Available.” Interested attendees may schedule interviews in the room set aside for that purpose. See a registration desk attendant for assistance..

Coffee Breaks

Coffee break service is available each day of the meeting. There will be a morning service from 9:30 AM – 10:00 AM and an afternoon service from 4:00 PM – 4:30 PM. The coffee breaks will be located in the Exhibit and Poster Area, Ballroom 100.

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.

JMIH Childcare

Subsidized childcare is available with childcare provider, KiddieCorp, in Meeting room 5 at The Davenport Grand. Pre-registration was required, but there may be space for drop-ins.

Mother’s Room

JMIH recognizes that balancing a family and meeting attendance creates unique challenges for parents. There are nursing pods in Meeting Room 6 at The Davenport Grand.

Gender Neutral Bathrooms

Gender neutral bathrooms are located outside of the room 111.

Meeting Highlights

All events take place in the Spokane Convention Center, unless otherwise noted.

Wednesday 27 July

A Hands-on Workshop to Enrich Your Profession Through the Japanese Art of Gyotaku (Fish Printing)

Session #1: 9:00 AM – 12:00 PM, Room 101

Session #2: 1:30 PM – 4:30 PM, Room 101

Experience the Japanese art of Gyotaku or fish printing through a hands-on workshop at JMIH-Spokane. The session integrates significant 1:1 interaction with the instructor, Bruce Koike. Bruce has been actively printing fish since the early 1990's. His works can be viewed at Brucekoike.com.

All of the necessary materials will be provided including real fish! Come with your spirit of adventure and discovery.

Open Mike Night

8:00 PM, Grand A, Davenport Grand

Thursday 28 July

Plenary Session

8:00 AM – 12:00 PM, Ballroom 111BC

SSAR Silent Auction

8:00 AM – 7:00 PM, Room 102D

SSAR/HL Student Research Speed Networking

5:30 PM – 7:00 PM, Room 207

Please join us 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, you will be able 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.

Opening Reception

7:00 PM – 9:00 PM, Riverside Terrace and Lawn

JMIH welcomes you to Spokane with a reception to say hi to old friends or make new ones. See you there!

Friday 29 July

SSAR Silent Auction

8:00 AM – 7:00 PM, Room 102D

Poster Session #1

4:00 PM – 6:00 PM, Ballroom 100

SSAR Student Social - DEI Game Night

8:00 PM – 11:00 PM, Room 207

ASIH Grad Student Social

9:00 PM – 11:00 PM

Terrace Room West, Davenport Grand

Saturday 30 July

SSAR Silent Auction

8:00 AM – 12:00 PM Room 102D

Poster Session #2

4:00 PM – 6:00 PM, Ballroom 100

HL/SSAR Live Auction

9:00 PM, Grand C, Davenport Grand

Sunday 31 July

ASIH Grad Student Workshop: Working in the field: A Seminar

12:00 PM – 1:30 PM

Room 111B

AES Fundraiser Banquet

6:00 PM, Ballroom 100A

2022 Exhibit Hall Floor Plan

Ballroom 100



View the latest floorplan and company profiles on your phone or tablet.
Scan the QR Code or visit jmih2022.expofp.com.

Exhibit Hall Hours

Thursday, July 28
9:00 AM – 6:00 PM

Friday, July 29
9:00 AM – 6:00 PM

Saturday, July 30
9:00 AM – 6:00 PM

Coffee Breaks

AM
9:30 AM – 10:00 AM

PM
4:00 PM – 4:30 PM

Exhibitor Listing

Asclepius Snakebite
Foundation

Booth: 2

Little Pond Nature Prints

Booth: 3

Holohil Systems Ltd

Booth: 1

112 John Cavanaugh Dr
Carp, ON
K0A 1L0 Canada
613-839-0676

Silver Sponsor

The Most Trusted Wildlife Tracking Solutions. Holohil Systems has spent over 35 years redefining the standard for wildlife tracking and telemetry. We know well that the wildlife research community requires consistently reliable equipment that produces precise data. We are proud that we can assist the crucial work of wildlife scientists and it is a responsibility we take seriously.

Wildlife Computers

Booth: 9

8310 154th Ave NE, Suite 150
Redmond, WA 98077
www.wildlifecomputers.com
425-881-3048

Silver Sponsor

Wildlife Computers is the leading provider of advanced wildlife telemetry solutions. Propelled by our mission to promote sustainable use of our global environment, we create innovative tags that empower data-driven decisions while providing unique consultations, an unsurpassed quality commitment, and impeccable customer service to get you the data you need. Learn more at WildlifeComputers.com

Innovasea

Booth: 10

20 Angus Morton Drive
Bedford, Nova Scotia
B4B 0L9 Canada
www.innovasea.com/fish-tracking
902-450-1700

Innovasea is a pioneer in acoustic telemetry, helping researchers worldwide understand behavior and migration of aquatic animals in fresh and saltwater environments.

Our products include various types and sizes of acoustic transmitters, automated receivers for long term behavioral studies, systems that deliver high-resolution position information, and environmental monitoring data loggers.

University Tables

Gonzaga University

502 E Boone Ave
Spokane, WA 99258
gonzaga.edu
509-313-6572

A Catholic Jesuit university with 4,800 undergraduate students from 38 different faiths, Gonzaga offers 49 majors and 58 minors in five undergraduate schools: Arts & Sciences, Business Administration, Education, Engineering & Applied Science, and Nursing & Human Physiology. Gonzaga allows for close student-faculty interaction, research, design projects, and internships.

Schreiner University Biology Field Station

2100 Memorial Blvd
Kerrville, TX 78028
830-792-7470

The Field Station at Schreiner University in the Texas Hill Country invites you to conduct research with us! Our 30-acre upland site, furnished with a dedicated field biology laboratory, complements our 30-acre Guadalupe River frontage. Whether you're collecting supplemental data or conducting a regional experiment, our facilities are available.

Minorities in Shark Sciences

PO Box 10493
Bradenton, FL 34282
www.misselasma.org
803-201-3344

We seek to promote diversity and inclusion in shark science. We also hope to topple the system that has historically excluded people like us and create an equitable path to shark science. We believe diversity in scientists creates diversity in thought, which leads to innovation.

Thank you to the following JMIH 2022 Sponsors



WILDLIFE
COMPUTERS

Schedule-at-a-Glance

All events take place in the Spokane Convention Center, unless otherwise noted.

Wednesday 27 July

SPECIAL EVENTS

	TIME	LOCATION
SSAR Board Meeting	8:00 AM – 4:00 PM	Maple Ballroom, Davenport Grand
AES Executive Committee Meeting	9:00 AM – 12:00 PM	Redwood Boardroom, Davenport Grand
ASIH Executive Committee Meeting	9:00 AM – 12:00 PM	Skybridge Boardroom, Davenport Grand
Fish Printing Workshop: Session #1	9:00 AM – 12:00 PM	Room 101
ASIH Names of Fishes	11:00 AM – 5:00 PM	Room 102C
Fish Printing Workshop: Session #2	1:30 PM – 4:30 PM	Room 101
AES Board of Directors Meeting	2:00 PM – 5:00 PM	Redwood Boardroom, Davenport Grand
ASIH Editorial Policy Committee Meeting	2:00 PM – 5:00 PM	Meeting Room 12, Davenport Grand
HL Board of Trustees	2:00 PM – 6:00 PM	Terrace Room West, Davenport Grand
ASIH Board of Governors (BOG)	5:00 PM – 7:00 PM	Conference Theater
SSAR Mentorship Program Meet & Greet	6:30 PM – 7:00 PM	Ballroom 111A Foyer
SSAR President's Travelogue	7:00 PM – 8:00 PM	Ballroom 111A
Open Mic Night	8:00 PM – 12:00 AM	Grand A, Davenport Grand

Thursday 28 July

PLENARY SESSION

8:00 AM – 12:00 PM Ballroom 111BC

SPECIAL EVENTS

SSAR Silent Auction	8:00 AM – 7:00 PM	Room 102D
AES Equity & Diversity Committee - Ally Skills Workshop	12:00 PM – 1:30 PM	Conference Theater
ASIH Conservation Committee	12:00 PM – 1:30 PM	Meeting Room 12, Davenport Grand
ASIH Endowment & Finance	12:00 PM – 1:30 PM	Skybridge Boardroom, Davenport Grand
ASIH Judges Meeting	12:00 PM – 1:30 PM	Room 207
SSAR Founders Fellow Award Luncheon	12:00 PM – 1:30 PM	Redwood Boardroom, Davenport Grand
SSAR Judges Meeting	12:00 PM – 1:30 PM	Terrace Room East, Davenport Grand
ASIH Diversity, Equity, Inclusion & Belonging Committee	5:30 PM – 6:30 PM	Birch Ballroom, Davenport Grand
SSAR/HL Student Research Speed Networking	5:30 PM – 7:00 PM	Room 207
Opening Reception	7:00 PM – 9:00 PM	Riverside Terrace and Lawn

ORAL PRESENTATIONS

Session 1: SSAR Seibert Ecology	1:30 PM – 2:30 PM	Ballroom 111A
Session 2: General Herpetology I	1:30 PM – 2:45 PM	Ballroom 111B
Session 3: ASIH Stoye General Ichthyology I	1:30 PM – 3:00 PM	Ballroom 111C
Session 4: AES Gruber I	1:30 PM – 2:45 PM	Conference Theater
Session 5: ASIH Stoye Physiology & Physiological Ecology	1:30 PM – 3:00 PM	Room 206C
Session 6: Herpetology Behavior I	1:30 PM – 2:45 PM	Room 206D
Session 7: SSAR Seibert Systematics/Evolution	3:30 PM – 5:00 PM	Ballroom 111A
Session 8: General Herpetology II	3:30 PM – 4:30 PM	Ballroom 111B
Session 9: ASIH Stoye General Ichthyology II	3:30 PM – 4:45 PM	Ballroom 111C
Session 10: AES Gruber II	3:30 PM – 4:45 PM	Conference Theater
Session 11: ASIH Stoye Ecology and Ethology I	3:30 PM – 4:45 PM	Room 206C
Session 12: Herpetology Behavior II	3:30 PM – 4:30 PM	Room 206D

Schedule-at-a-Glance

All events take place in the Spokane Convention Center, unless otherwise noted.

Friday 29 July

SPECIAL EVENT

	TIME	LOCATION
SSAR Silent Auction	8:00 AM – 7:00 PM	Room 102D
AES Graduate Student Workshop: “The Career (Path) Fair”	12:00 PM – 1:30 PM	Conference Theater
DEI Mentorship Lunch	12:00 PM – 1:30 PM	Room 207
ASIH Long Range Planning and Policy Meeting	12:00 PM – 1:30 PM	Room 101
SSAR Long Range Planning Committee	2:00 PM – 4:00 PM	Room 101
ASIH Collections Committee	3:00 PM – 5:00 PM	Redwood Boardroom, Davenport Grand
HL Judges Meeting	4:00 PM – 5:00 PM	Skybridge Board Room, Davenport Grand
Freshwater Fishes of North America Volume 3 editors meeting	6:00 PM – 7:00 PM	Room 101
HL Business Meeting	6:00 PM – 8:00 PM	Room 206C
NIA Business Meeting	6:00 PM – 8:00 PM	Room 206D
SSAR AV Shows	8:00 PM – 10:00 PM	Room 206D
SSAR Student Social - DEI Game Night	8:00 PM – 10:00 PM	Room 207
ASIH Grad Student Social	9:00 PM – 11:00 PM	Terrace Room East, Davenport Grand

ORAL PRESENTATIONS

Session 13: ASIH Stoye General Herpetology I	8:15 AM – 9:15 AM	Ballroom 111A
Session 14: Herpetology Ecology I	8:15 AM – 9:30 AM	Ballroom 111B
Session 15: ASIH Stoye General Ichthyology III	8:00 AM – 9:15 AM	Ballroom 111C
Session 16: AES Behavior/Movement & Distribution I	8:00 AM – 9:30 AM	Conference Theater
Session 17: ASIH Stoye Conservation I	8:00 AM – 9:30 AM	Room 206C
Session 18: Lightning Talks I	8:15 AM – 9:30 AM	Room 206D
Session 19: ASIH Stoye General Herpetology II	10:00 AM – 11:45 AM	Ballroom 111A
Session 20: Herpetology Ecology II	10:30 AM – 11:15 AM	Ballroom 111B
Session 21: ASIH Stoye Genetics, Development, I and Morphology	10:00 AM – 11:30 AM	Ballroom 111C
Session 22: AES Behavior/Movement & Distribution II	10:00 AM – 12:00 PM	Conference Theater
Session 23: ASIH Stoye Conservation II (first 5)/ Stoye Ecology and Ethology II (last 3)	10:00 AM – 11:45 AM	Room 206C
Session 24: Lightning Talks II	10:00 AM – 12:00 PM	Room 206D
Session 25: SSAR Seibert Conservation (first 5)/ Seibert Physiology/ Morphology (last 5)	1:30 PM – 4:00 PM	Ballroom 111A
Session 26: HL Graduate Research Award (first 5)/ Contributed General Herpetology (last 4)	1:30 PM – 4:00 PM	Ballroom 111B
Session 27: ASIH Stoye Genetics, Development, and Morphology II	1:30 PM – 4:00 PM	Ballroom 111C
Session 28: AES Life History (first 5)/ Reproduction (last 4)	1:45 PM – 3:45 PM	Conference Theater
Session 29: ASIH Stoye Ecology and Ethology III (first 8)/ Contributed Ichthyology Physiology & Development (last 2)	1:30 PM – 4:00 PM	Room 206C

POSTER PRESENTATIONS

4:00 PM – 6:00 PM Ballroom 100

Schedule-at-a-Glance

All events take place in the Spokane Convention Center, unless otherwise noted.

Saturday 30 July

SPECIAL EVENTS

	TIME	LOCATION
SSAR Silent Auction	8:00 AM – 12:00 PM	Room 102D
HL Graduate Student Workshop	12:00 PM – 1:30 PM	Ballroom 111A
Journal of Herpetology Editor's Lunch	12:00 PM – 1:30 PM	Room 101
ASIH Graduate Student Business Meeting	12:00 PM – 2:00 PM	Terrace Room West, Davenport Grand
DEI Symposium Workshop	12:15 PM – 1:15 PM	Conference Theater
ASIH Web Content Management Committee	4:00 PM – 6:00 PM	Room 101
ASIH Business and Awards Meeting	6:00 PM – 8:00 PM	Ballroom 111A
SSAR Business Meeting	6:00 PM – 8:00 PM	Ballroom 111B
HL/SSAR Live Auction	9:00 PM	Grand C, Davenport Grand

SYMPOSIA

Symposium: Diversity, Equity & Inclusion in Ichthyology & Herpetology I	8:30 AM – 9:30 AM	Ballroom 111A
Symposium: Biogeography & Diversification of Amphibians & Reptiles - Pacific Northwest & CA Floristic Province I	8:00 AM – 9:30 AM	Ballroom 111B
Symposium: Diversity, Equity & Inclusion in Ichthyology & Herpetology II	10:00 AM – 11:30 AM	Ballroom 111A
Symposium: Biogeography & Diversification of Amphibians & Reptiles - Pacific Northwest & CA Floristic Province II	10:00 AM – 12:00 PM	Ballroom 111B
Symposium: Diversity, Equity & Inclusion in Ichthyology & Herpetology III	1:30 PM – 4:00 PM	Ballroom 111A
Symposium: Biogeography & Diversification of Amphibians & Reptiles - Pacific Northwest & CA Floristic Province III	1:30 PM – 4:00 PM	Ballroom 111B

ORAL PRESENTATIONS

Session 30: General Ichthyology I	8:15 AM – 9:30 AM	Ballroom 111C
Session 31: AES Diversity, Equity, & Inclusion (first 1)/ Fisheries, Conservation and Management I (last 5)	8:00 AM – 9:30 AM	Conference Theater
Session 32: Herpetology Conservation & Management I	8:00 AM – 9:30 AM	Room 206C
Session 33: Ichthyology Conservation & Management	8:30 AM – 9:30 AM	Room 206D
Session 34: General Ichthyology II	10:00 AM – 11:30 AM	Ballroom 111C
Session 35: AES Fisheries, Conservation & Management II	10:00 AM – 12:00 PM	Conference Theater
Session 36: Session 36: Herpetology Conservation & Management II	10:00 AM – 11:45 AM	Room 206C
Session 37: General Ichthyology III (first 3)/ Morphology at NMNH (last 7)	1:30 PM – 4:00 PM	Ballroom 111C
Session 38: AES Fisheries (first 1)/Physiology (first 5)/ Morphology (last 4)	1:30 PM – 3:30 PM	Conference Theater
Session 39: Squamate Ecology (* last talk is morphology)	1:30 PM – 4:00 PM	Room 206C
Session 40: Herpetology Physiology	1:30 PM – 4:00 PM	Room 206D

POSTER PRESENTATIONS

4:00 PM – 6:00 PM	Ballroom 100
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Schedule-at-a-Glance

All events take place in the Spokane Convention Center, unless otherwise noted.

Sunday 31 July

SPECIAL EVENT

	TIME	LOCATION
ASIH Grad Student Workshop: Working in the field: A Seminar	12:00 PM – 1:30 PM	Room 111B
JMIH Meeting and Management and Planning Committee	12:00 PM – 1:30 PM	Room 101
AES Business Meeting	1:30 PM – 3:00 PM	Conference Theater
AES Fundraiser Banquet	6:00 PM	Ballroom 100A

SYMPOSIA

Symposium: Utility of Museum Collections I	8:00 AM – 9:30 AM	Ballroom 111B
Symposium: Exemplary Practices in Herpetological Education I	8:30 AM – 9:30 AM	Ballroom 111A
Symposium: Exemplary Practices in Herpetological Education II	10:00 AM – 11:45 AM	Ballroom 111A
Symposium: Utility of Museum Collections II	10:00 AM – 11:30 AM	Ballroom 111B
Symposium: The Biology of Whiptail Lizards I	10:00 AM – 12:00 PM	Room 206C
Symposium: The Biology of Whiptail Lizards II	1:30 PM – 3:00 PM	Room 206C

ORAL PRESENTATIONS

Session 41: Ichthyology Systematics	8:00 AM – 9:30 AM	Ballroom 111C
Session 42: AES Genetics	8:00 AM – 9:30 AM	Conference Theater
Session 43: Turtle Conservation & Management	8:15 AM – 9:30 AM	Room 206C
Session 44: Herpetology Genetics	8:15 AM – 9:30 AM	Room 206D
Session 45: Ichthyology Ecology	10:00 AM – 12:00 PM	Ballroom 111C
Session 46: AES Environmental Contaminants (first 2)/ Ecology (last 6)	10:00 AM – 12:00 PM	Conference Theater
Session 47: Herpetology Phylogeography & Biogeography	10:00 AM – 11:30 AM	Room 206D
Session 48: Herpetology Morphology, Histology, & Microbes	1:30 PM – 2:45 PM	Ballroom 111B
Session 49: Ichthyology Genetics (first 5)/ Reproductive Biology (last 1)	1:30 PM – 3:00 PM	Ballroom 111C
Session 50: Herpetology Systematics & Biogeography I	1:30 PM – 2:45 PM	Room 206D
Session 51: Herpetology Systematics & Biogeography II	3:30 PM – 4:45 PM	Room 206D
Session 52: Ichthyology Morphology & Histology	3:30 PM – 4:30 PM	Ballroom 111C
Session 53: Amphibian Disease	3:30 PM – 5:00 PM	Ballroom 111B

Thursday 28 July 2022

Thursday 28 July • Plenary Session

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

8:00 AM – 12:00 PM

Ballroom 111BC

Plenary Session

8:00 am		Welcome and Introductory Remarks
8:15 am		SSAR Awards – Founders Fellows
8:30 am	<i>Sammy Matsaw Jr.</i>	JMIH Plenary Address, “Indigenous Research Methodologies and Cultivating Alliances in Natural Resources”
9:20 am	<i>Mikki McComb-Kobza</i>	AES Presidential Address “The Future we Want to See”
9:40 am		ASIH and Multi-society Awards
10:20 am	<i>Edmund D. Brodie III</i>	“Distinguished Herpetologist” Letting the organism lead - wandering the coevolutionary landscape with newts and snakes”
11:05 am	<i>Frank McCormick</i>	ASIH Presidential Address “Confluences”
11:25 am	<i>Susan Walls</i>	HL Past Presidential Address “Salamanders, snakes, skinks, and sea level rise: A call for adaptation strategies under climatic uncertainty”
11:45 am		Herpetologists’ League Awards

Thursday 28 July • Oral Presentations

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

1:30 PM – 2:30 PM

Ballroom 111A

Session 1: SSAR Seibert Ecology

Moderator: Rob Lovich

- | | | |
|---------|---|--|
| 1:30 pm | <i>Sierra Smith, Timothy Colston, Cameron Siler</i> | Venomous Snakes Reveal Ecological and Phylogenetic Factors Influencing Variation in Gut and Oral Microbiomes |
| 1:45 pm | <i>David Ledesma, Melissa Kemp</i> | Changes in Central Texas lizard diversity from the late Pleistocene to the Holocene |
| 2:00 pm | <i>Caroline Honan</i> | Injuries in Herpetofauna and its Possible Relations to Lateralization and Ecology |
| 2:15 pm | <i>Kannon Pearson, Rebecca Tarvin</i> | A Review of Chemical Defense in Harlequin Toads (<i>Bufo</i> spp.: <i>Atelopus</i>) |

1:30 PM – 2:45 PM

Ballroom 111B

Session 2: General Herpetology I

Moderator: Andrew Durso

- | | | |
|---------|---------------------------------------|--|
| 1:30 pm | <i>Jackson Phillips, Molly Womack</i> | The Phylogenetics of Lung Loss in Anuran Larvae with Special Consideration for Toad Evolution. |
| 1:45 pm | <i>Molly Womack</i> | Coevolution of hearing and advertisement calls among frogs and toads |
| 2:00 pm | <i>Andrew Durso</i> | Empty Stomachs are Still Data: Variation in Feeding Frequency in Snakes |
| 2:15 pm | <i>Holger Petermann</i> | Using bone histology to trace organism-environment interactions in squamates |

1:30 PM – 3:00 PM

Ballroom 111C

Session 3: ASIH Stoye General Ichthyology I

Moderator: Lily Hughes

- | | | |
|---------|--|--|
| 1:30 pm | <i>Elyse Parker, Katerina L. Zapfe, Jagriti Yadav, Bruno Frédérich, Christopher D. Jones, Evan P. Economo, Sarah Federman, Thomas J. Near, Alex Dornburg</i> | Periodic Environmental Disturbance Drives Repeated Ecomorphological Diversification in an Adaptive Radiation of Antarctic Fishes |
| 1:45 pm | <i>Gabriel Somarriba, Diego Elías, Pasakorn Saenjundaeng, Prosanta Chakrabarty, Larry Page</i> | Pao! A revision of an enigmatic genus of freshwater pufferfishes |
| 2:00 pm | <i>Elizabeth Burns, Michael Franklin, Larry Allen</i> | Verification of Giant Sea Bass (<i>Stereolepis gigas</i>) Spawning: Through Auditory Observations |
| 2:15 pm | <i>Cole Schmitt, Katherine Bemis, Murilo Pastana</i> | Vertical Orientation and Schooling: Behavioral Description of the Cutlassfish, <i>Trichiurus lepturus</i> |
| 2:30 pm | <i>Soren Johnson, Kyle Piller</i> | Phylogenomic history of the Blacktail Shiner complex (<i>Cyprinella venusta</i> , Cypriniformes: Leuciscidae) and its taxonomic implications |
| 2:45 pm | <i>Tobit Liyandja, Elisabeth Alter, Brian Sildlauskas, Melanie Stiassny</i> | Phylogenomics of African Labeo (Cypriniformes: Cyprinidae): resolving phylogenetic relationships and intrageneric systematics with emphasis on Central African species |

1:30 PM – 2:45 PM

Conference Theater

Session 4: AES Gruber I

Moderator: Michelle Passerotti

1:30 pm	<i>Beth Bowers, Bryan S. Frazier, Stephen M. Kajiura</i>	Migratory Patterns of Female Blacktip Sharks, <i>Carcharhinus limbatus</i> , in the Western North Atlantic Ocean
1:45 pm	<i>Andrew Lyons, Bryan Franks, Eric Reyier, Bonnie Ahr</i>	An assessment of abundance and space use within a multi-species assemblage of sharks around a Georgia barrier island
2:00 pm	<i>Cheston Peterson, Ashley Dawdy, Blake Hamilton, Bryan Keller, Chip Cotton, Dean Grubbs</i>	Effects of Predator and Prey Distribution and Density on Habitat Use of an Intermediately Sized Marine Predator (mesopredator)
2:15 pm	<i>Grace Casselberry, Gregory Skomal, Lucas Griffin, Jacob Brownscombe, Alex Filous, Joseph Dello-Russo, Jeff Kneebone, Aaron Adams, Steven Cooke, Andy Danylchuk</i>	Depredation Rates and Spatial Overlap of Great Hammerhead Sharks (<i>Sphyrna mokarran</i>) and Tarpon (<i>Megalops atlanticus</i>) in a Recreational Fishing Hotspot
2:30 pm	<i>Brooke Talwar, María del Pilar Blanco-Parra, Alejandra Briones, Diego Cardeñosa, John Carlson, Patricia Charvet, Charles Cotton, Zoe Crysler, Danielle Derrick, Michael Heithaus, Katelyn Herman, Olga Koubrak, David Kulka, Peter Kyne, Oscar Lasso-Alcalá, Paola Mejía-Falla, Christopher Avalos-Castillo, Jorge Morales-Saldaña, Beatriz Naranjo-Elizondo, Andrés Navia, Nathan Pacoureau, Juan Pérez-Jiménez</i>	Extinction Risk, Reconstructed Catches, and Management of Chondrichthyan Fishes in the Western Central Atlantic Ocean

1:30 PM – 3:00 PM

Room 206C

Session 5: ASIH Stoye Physiology & Physiological Ecology

Moderator: Emily Taylor

1:30 pm	<i>Nicholas Topping, Nicole Valenzuela</i>	Thermal response of circulating estrogens in an emydid turtle, <i>Chrysemys picta</i> , and the challenges of climate change
1:45 pm	<i>Allison Litmer, Steven Beaupre</i>	Influence of Temperature on Passage Rate and Metabolizable Energy Intake In <i>Sceloporus consobrinus</i> , With Comparison to a Congener
2:00 pm	<i>Calvin Davis, Savannah Weaver, Emily Taylor</i>	Cutaneous Evaporative Water Loss in Lizards Changes Immediately with Temperature
2:15 pm	<i>Emma Siegfried, Darren Johnson</i>	Mortality and Metabolic Rate of Larval California Grunion (<i>Leuresthes tenuis</i>) under a Future Climate Change Scenario
2:30 pm	<i>Hannah Bow, Carly Markowski, Christy Strand</i>	Food for thought: The effects of feeding on the creation of neurons in the python brain
2:45 pm	<i>Kelly Robinson, Haley Moniz, Amber Stokes, Chris Feldman</i>	How do garter snakes (<i>Thamnophis</i>) overcome one of the most lethal poisons in the world? Investigating Tetrodotoxin (TTX) sequestration

1:30 PM – 2:45 PM

Room 206D

Session 6: Herpetology Behavior I

Moderator: Daniel Warner

1:30 pm	<i>Robyn Screen, Amber Wright</i>	Boldness and Behavioral Syndromes Across an Urban Gradient in the Brown Anole (<i>Anolis sagrei</i>)
1:45 pm	<i>Betsie Rothermel, Rebecca McKee, Tracey Tuberville, Amanda West, K. Nicole White, Michael Yuan, Kelly Zamudio</i>	Relative Body Size and Genetic Relatedness Affect Female Social Networks in Gopher Tortoises (<i>Gopherus polyphemus</i>)
2:00 pm	<i>Kristen Cecala, Eli Walker, Belle Morris, Elizabeth Culp, Shawna Fix</i>	The role of headwater fish in limiting the downstream distributions of stream salamanders
2:15 pm	<i>Pete Zani</i>	Microhabitat partitioning by Side-blotched Lizards (<i>Uta stansburiana</i>) and Sagebrush Lizards (<i>Sceloporus graciosus</i>) minimizes competition
2:30 pm	<i>Daniel Warner, Jenna Pruett, Amélie Fargevielle, Randy Klabacka</i>	Do female lizards choose nest sites based on the predictability of substrate moisture?

3:30 PM – 5:00 PM

Ballroom 111A

Session 7: SSAR Seibert Systematics/Evolution

Moderator: Gareth Hopkins

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|---------|--|---|
| 3:30 pm | <i>Brett Butler, Lydia Smith, Oscar Flores-Villela</i> | Exploring Phylogeographic Patterns in Mesoamerica through the Yucatan Banded Gecko |
| 3:45 pm | <i>Madison Herrboldt, Michael Steffen, Carissa McGouran, Ronald Bonett</i> | Pheromone Gene Diversification and the Evolution of Courtship Glands in Plethodontid Salamanders |
| 4:00 pm | <i>Tanner Myers, Pietro de Mello, Paul Hime, Rich Glor</i> | The effects of climate and geography on patterns of genomic variation among Hispaniolan trunk anoles (<i>Anolis distichus</i> species group) |
| 4:15 pm | <i>Cynthia Carter, Todd Pierson, James Martin, John Maerz</i> | Genomic Data Reveal Patterns of Hybridization in Appalachian Salamanders |
| 4:30 pm | <i>Nick Van Gilder, Elizabeth Jockusch, Christopher Norment</i> | Lungless in the desert: Conservation genetics of the Inyo Mountains Salamander, <i>Batrachoseps campi</i> |
| 4:45 pm | <i>Daniel Doucet, Juan Daza</i> | Major and Minor Scales: Thorough Investigation of Integumentary Characters Across Squamate Reptiles |

3:30 PM – 4:30 PM

Ballroom 111B

Session 8: General Herpetology II

Moderator: Andrew Durso

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|---------|---|--|
| 3:30 pm | <i>Luis M. Ceriaco, Mariana Marques</i> | Crocodiles in Paradise: historical and recent arrivals of Crocodiles to São Tomé Island, Gulf of Guinea, Africa |
| 3:45 pm | <i>Peter V. Lindeman, Will Selman, Robert L. Jones</i> | A Sawback is a Sawback is a Sawback: Diet and Habitat-Related Variation in Body Size of the Turtle <i>Graptemys oculifera</i> |
| 4:00 pm | <i>Gregory Watkins-Colwell, Alexander Shepack, Steven Whitfield, Sinlan Poo</i> | The ZooMu Initiative: Enhancing the Value of Zoo Collections to Advancing Biological Sciences by Bridging the Gap Between Zoos & Museums |
| 4:15 pm | <i>El Metler</i> | Online instruction of herpetology for gifted students |

3:30 PM – 4:45 PM

Ballroom 111C

Session 9: ASIH Stoye General Ichthyology II

Moderator: Bruno Melo

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|---------|--|--|
| 3:30 pm | <i>Laurel Nave-Powers, Kyle Piller</i> | Assessing Niche Conservatism and Niche Packing Patterns in African and Southeast Asian Assemblages of Cypriniformes (<i>Cypriniformes</i>) |
| 3:45 pm | <i>Naoko P. Kurata, Melanie L. J. Stiassny, Michael J. Hickerson, S. Elizabeth Alter</i> | Potential Impacts of the Quaternary Climate and Geological Changes on the Diversification of Riverine Cichlids in the Lower Congo River |
| 4:00 pm | <i>Lindsey LaBrie, Jeff Wesner, Hugh Britten</i> | Tracking Movement of Invasive Silver and Bighead Carp in Three Missouri River Tributaries in Eastern South Dakota |
| 4:15 pm | <i>Topher Hockaday, Aaron Geheber</i> | Effects of Stream Gradient on Darter Functional Morphology in an Ozark Stream, USA |
| 4:30 pm | <i>Yzatis Nieves, Sara McClelland</i> | Learning From Nature: Using Play to Learn in a College Course |

3:30 PM – 4:45 PM

Conference Theater

Session 10: AES Gruber II

Moderator: Jim Gelsleichter

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|---------|--|---|
| 3:30 pm | <i>Blake Hamilton, Oliver Shipley, Dean Grubbs</i> | Multi-channel feeding by migratory sharks in a fluvial-dominated estuary – Implications for natural resource management |
| 3:45 pm | <i>Lisa Crawford, Oliver Shipley, Jill Olin, Anne McElroy, Michael Frisk</i> | Linking Mercury Bioaccumulation and Feeding Ecology in Eight New York Bight Shark Species |

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4:00 pm	<i>Julia Smith, Jason van de Merwe, Liesbeth Weijs, Frederic Leusch, William Bennett</i>	Trace elements in shark blood: Can blood be used for non-lethal biomonitoring? WITHDRAWN
4:15 pm	<i>Piper Rackley, Aaron Carlisle, Antonella Preti, Kady Lyons</i>	Organic Contaminants in Two Species of Thresher Sharks
4:30 pm	<i>Abigail M Tinari, Neil Hammerschlag, Austin Gallagher, Steven J. Cooke</i>	Effects of Artificial Light at Night on Nurse and Blacktip Sharks

3:30 PM – 4:45 PM

Room 206C

Session 11: ASIH Stoye Ecology and Ethology I

Moderator: Frank McCormick

3:30 pm	<i>Dylan Maag, Noelle Shaw, Ashana Soni, Zachary Nikolakis, Kathleen Ivey, Todd Castoe, Rulon Clark</i>	Rattlesnake Hunting Behavior: A Case Study Across a Hybrid Zone
3:45 pm	<i>Annika Enloe, Heather Bateman</i>	Feeling Rattled: Linking Attitudes and Habitat Features to Patterns of Snake Occurrence in Urban Landscapes.
4:00 pm	<i>John David Curlis, Daniel Nicholson, Albert Chung, Claire Williams, Noah D. Gripshover, Molly A. Hirst, Hayley L. Crowell, Elissa Connolly-Randazzo, Christian Cox, Michael Logan, W. Owen McMillan, Alison Davis-Rabosky</i>	What makes a morph? Tests of intraspecific variation in phenotypes and genotypes between anoles with divergent dewlap colors
4:15 pm	<i>Steven Hromada, Todd Esque, Amy Vandergast, Derek Friend, Kirsten Dutcher, Kenneth Nussear</i>	The Importance of Dispersal in Mojave Desert Tortoise Genetic Connectivity.
4:30 pm	<i>Alfredo Ascanio, Jason Bracken, Hank Stevens, Tereza Jezkova</i>	Niche Divergence Plane: New conceptual framework to classifying and quantifying ecological niche divergence between taxa

3:30 PM – 4:30 PM

Room 206D

Session 12: Herpetology Behavior II

Moderator: Daniel Warner

3:30 pm	<i>Anna Kase, Danielle Galvin, Jacob Kerby</i>	Effect of Neonicotinoid Exposure on Chemical Cue Detection in False Map Turtles (<i>Graptemys pseudogeographica</i>) and Painted Turtles (<i>Chrysemys picta</i>) WITHDRAWN
3:45 pm	<i>Tiffany Garcia, Evan Bredeweg, Tomas Brodin</i>	Carry-Over and Cumulative Effects of Opioid Exposure in European Common Frogs (<i>Rana temporaria</i>)
4:00 pm	<i>Karl Guyton II, George Middendorf</i>	Ethogram of captive Chinese water dragons (<i>Physignathus cocincinus</i>)
4:15 pm	<i>Talon Jost, Mark Peaden, Jesse Rader</i>	Dietary Preferences of <i>Terrapene ornata</i> and <i>Terrapene carolina</i> <i>triunguis</i> in Isolation

Friday 29 July • Oral Presentations

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

8:15 AM – 9:15 AM

Ballroom 111A

Session 13: ASIH Stoye General Herpetology I

Moderator: Sean Reilly

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|---------|---|---|
| 8:15 am | <i>Himidu Pitigala-Arachchilage, Nayana Wijayathilake, Kanishka Ukuwela</i> | Integrative Approach to Determine Species Boundaries of the Sri Lankan Treefrogs <i>Pseudophilautus popularis</i> and <i>Pseudophilautus regius</i> |
| 8:30 am | <i>Brittany Maldonado, Christopher Beachy</i> | Life History Aspects of the Three-lined Salamander (<i>Eurycea guttolineata</i>) |
| 8:45 am | <i>Claire Crookston</i> | Geographic Variation in the Larval Development and Skeletal Remodeling Sequence of the Southern Two-lined Salamander |
| 9:00 am | | Discussion |

8:15 AM – 9:30 AM

Ballroom 111B

Session 14: Herpetology Ecology I

Moderator: Natalie Claunch

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|---------|--|---|
| 8:15 am | <i>Brian Halstead, Patrick Kleeman, Jonathan Rose</i> | Climate Effects on Adult Occupancy Dynamics and Probability of Reproduction for Three Amphibians in the Sierra Nevada, California |
| 8:30 am | <i>Bryan Juarez, Lauren O'Connell</i> | Climate Ecology as a Driver of Amphibian Breeding Phenology Evolution |
| 8:45 am | <i>Nathalie Jreidini, David M. Green</i> | Environmental unpredictability and stochasticity underlie dispersive movements of a terrestrial amphibian |
| 9:00 am | <i>Abby Dalke, Allie Erickson, Bailey Tasker, Skylar Riley, Paul Hurst, Scott Griffith, Betsy Bancroft</i> | Complex Interactions Among Multiple Stressors: Effects of Climate Change, Invasion, and Conspecifics on Larval Pacific Chorus Frogs (<i>Pseudacris regilla</i>) |
| 9:15 am | <i>Victoria Tawa, David Green</i> | Varying Effects of Anthropogenic and Natural Disturbance Regimes on Amphibian Populations in an Unstable Wetland Landscape |

8:00 AM – 9:15 AM

Ballroom 111C

Session 15: ASIH Stoye General Ichthyology III

Moderator: Prosanta Chakrabarty

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|---------|---|---|
| 8:00 am | <i>Corinthia Black, Jonathan Armbruster</i> | Modularity Drives Diversity in Armored Catfishes |
| 8:15 am | <i>Diego J. Elías, Fernando Alda, Caleb D. McMahan, Jeremy M. Brown, Prosanta Chakrabarty</i> | Investigating Phylogenetic Signal and Exploring Treespace to Illuminate Contentious Relationships in Riverine Radiations: Herichthyine Cichlids as a Case Study |
| 8:30 am | <i>César Fuentes-Montejo, Windsor Aguirre, Caleb McMahan</i> | Niche overlap? Ecology and morphology of sympatric Rocio (Teleostei: Cichlidae) in Guatemala |
| 8:45 am | <i>Sheila Rodriguez-M, Diego J. Elías, Prosanta Chakrabarty</i> | Untangling the Phylogenetic Position of the Endemic Cuban Topminnows Genus <i>Girardinus</i> (Cyprinodontiformes: Poeciliidae) |
| 9:00 am | <i>Darby Finnegan, Joshua Egan, Devin Bloom</i> | Functional Trait Evolution in Diadromous Fishes: a Micro- to Macro-Evolutionary Perspective |

8:00 AM – 9:30 AM

Conference Theater

Session 16: AES Behavior/Movement & Distribution I

Moderator: Chuck Bangley

8:00 am	Yuri Niella, Charlie Huvencuers*	Effects of wildlife tourism on the world's largest marine predator-associative behaviour WITHDRAWN
8:15 am	Kyle Newton, Tobey Curtis, Taylor Chapple	Does the Electromagnetic Field Noise from Offshore Wind Infrastructure Impact the Behavior, Movement, and Distribution of Elasmobranchs?
8:30 am	Lauran Brewster, Michael McCallister, Michelle Edwards, Matthew Ajemian	Tracking young bull shark activity in a coastal lagoon with frequent harmful algal blooms
8:45 am	Michelle Edwards, Michael McCallister, Lauran Brewster, Charles Bangley, Tobey Curtis, Matthew Ogburn, Matthew Ajemian	Multi-Year Assessment of Immature Bull Shark <i>Carcharhinus leucas</i> Residency and Activity Spaces in an Expansive Estuarine Nursery
9:00 am	Andrew K. Wooley, Michael P. McCallister, Matthew J. Ajemian, Sara F. Webb, James A. Whittington, Rachel M. Scharer, Lukas B. Heath, Dylan M. Yakich, Gregg R. Poulakis	Recent Occurrence and Movements of Smalltooth Sawfish in the Southern Indian River Lagoon, Florida: Is a Nursery Re-establishing?
9:15 am	Benjamin Marsaly, Pierpaolo Brena, Eric Clua	Movement Patterns of the Sicklefin Lemon Shark, <i>Negaprion acutidens</i> , around Tahiti and Moorea, French Polynesia, South Pacific WITHDRAWN

8:00 AM – 9:30 AM

Room 206C

Session 17: ASIH Stoye Conservation I

Moderator: Brook Fluker

8:00 am	Ava Ghezelayagh	Species Delimitation of a Conservation Icon: the Snail Darter (<i>Percina tanasi</i>) WITHDRAWN
8:15 am	River Watson, Alexis Culley, Matthew Thomas, Stephanie Brandt, Michael Floyd, Rebecca Blanton	Effects of Instream Barriers on Population Connectivity of the Kentucky Arrow Darter (<i>Percidae</i>)
8:30 am	Alexis Culley, River Watson, Matthew Thomas, Stephanie Brandt, Michael Floyd, Rebecca Blanton	The Effects of Surface Mining on Population Connectivity and Genetic Diversity of <i>Etheostoma sagitta spilotum</i> , the Kentucky Arrow Darter
8:45 am	Austin Mueller, Aaron Geheber	Assessing Topeka Shiner (<i>Notropis topeka</i>) Distribution in Missouri, USA Using Environmental DNA (eDNA)
9:00 am	Anjana Parandhaman, Nathan Byer, Marjorie Matocq, Thomas Dilts, Scott Wright, Derek Friend, Douglas Boyle, Scott Bassett, Amy Vandergast, Todd Esque, Jill Heaton, Kenneth Nussear	Integrating landscape genomics and habitat suitability assessments to understand the adaptive potential for the Mojave Desert Tortoise across its range
9:15 am	Danielle Bradke, Brian Crawford, John Maerz	Evaluating Monitoring Methods to Detect Management Responses in Diamondback Terrapins

8:15 AM – 9:30 AM

Room 206D

Session 18: Lightning Talks I

Moderator: Kevin Conway

8:00 am	Adrian Slade	Effects of solar arrays on wildlife in southwestern deserts: thermal and ecological consequences
8:05 am	Allyson Fenwick	Over 15 Years of Mediterranean Gecko (<i>Hemidactylus turcicus</i>) research at the University of Central Oklahoma: What to do next?
8:10 am	Megan Novak, Kyle Barrett	Abundance and Survival of a Critically Imperiled Salamander Across Discrete Habitat Patches
8:15 am	Danielle Galvin, Jacob Kerby	Survival of Boreal Chorus Frog (<i>Pseudacris maculata</i>) and Northern Leopard Frog (<i>Rana pipiens</i>) Tadpoles Following Ranavirus Exposure.
8:20 am	Chelsea Black, Neil Hammerschlag, Megan McKinzie, Frank Muller-Karger, Enrique Montes, Bill Woodward	BioTrack: Monitoring Marine Biodiversity Hotspots and Migration Corridors of Highly Mobile Species Under Global Change

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8:25 am	<i>Sal Scibetta, Carl Franklin, Viviana Ricardez</i>	First Documentation of wild <i>Macrochelys temminckii</i> nesting and hatching in Texas.
8:30 am	<i>Marley Machara, William Sutton, Sherri Doro-Reinsch, Dale McGinnity, Rebecca Hardman, Brian Flock</i>	Survival and Movement Patterns of Reintroduced Zoo-Raised Eastern Hellbenders WITHDRAWN
8:35 am	<i>Autumn Holley, Philip Campos, Jenifer Walke</i>	The Use of Probiotic Applications in Early Life Stages to Mitigate <i>Batrachochytrium dendrobatidis</i> Infections in <i>Rana luteiventris</i> (Columbia Spotted Frogs)
8:40 am	<i>Mike Knoer, Kyle Barrett*, William Sutton, Gabrielle Graeter, Susan Cameron, JJ Apodaca</i>	Passive Detection Techniques to Estimate Occupancy and Abundance of an Imperiled Turtle

10:00 AM – 11:45 AM

Ballroom 111A

Session 19: ASIH Stoye General Herpetology II

Moderator: Brad Shaffer

10:00 am	<i>Spencer Alascio, Jose Carranza, Amber Wright</i>	Life History Differences Along the Fast-Slow Continuum in Introduced Lizards in Hawaii
10:15 am	<i>Tianqi Huang, Peter Morin, Sara Ruane</i>	Urban Ecology of DeKay's Brown Snake, <i>Storeria dekayi</i>
10:30 am	<i>Leroy Núñez, Frank Burbrink</i>	Ecological Opportunity Drives Morphological Evolution in the Ecologically Diverse Garter and Water Snakes (<i>Thamnophis</i>)
10:45 am	<i>Connor Hughes, Jason L. Jones, C.M. Gienger</i>	Assessing Biogeographic Trends in Body Size of Gila Monsters Using Mechanistic and Correlative Models.
11:00 am	<i>Jackson Roberts, Bulisa Iova, Fred Kraus, Allen Allison, Christopher Austin</i>	Systematics and Biogeography of Australasian Keelback Snakes (Natricidae: <i>Tropidonophis</i> Jan, 1863)
11:15 am	<i>Hayley Crowell, John David Curlis, Hannah Weller, Alison Davis-Rabosky</i>	More than Meets the Eye: Widespread UV Reflectance Across the Snake Tree of Life is Structured by Ontogeny and Ecology
11:30 am	<i>Vivek Cyriac, Sneha Dharwadkar*, Anuja Mital, Ashwini Mohan</i>	Trends in Indian herpetology over the last 70 years: A view from scientific pursuit and gender lenses

10:30 AM – 11:15 AM

Ballroom 111B

Session 20: Herpetology Ecology II

Moderator: Chris Feldman

10:30 am	<i>Jason Bracken, Amelie Davis, Katherine O'Donnell, William Barichivich, Susan Walls, Tereza Jezkova</i>	Testing Assumptions of Historical Occurrence Use in Species Distribution Models Using Flatwoods Salamander Data
10:45 am	<i>Tom Anderson, Jon Davenport, Bill Peterman, Jacob Burkhart, Freya Rowland</i>	Temporal Variation in Occupancy Dynamics of Ringed (<i>Ambystoma annulatum</i>) and Marbled (<i>A. opacum</i>) Salamanders in Missouri
11:00 am	<i>Wayne Osborn, Eric Munscher, J. Daren Riedle, Andrew D. Walde, Tabitha Hootman, Madeleine Morrison, Michael Skibsted*, Andrew S. Weber, Brian Bower, Brian P. Butterfield, J. Brian Hauge</i>	Population and Assemblage Structure of Aquatic Turtles in Two Neighboring Freshwater Springs: A Baseline for Future Studies and Management Decisions

10:00 AM – 11:30 AM

Ballroom 111C

Session 21: ASIH Stoye Genetics, Development, and Morphology I

Moderator: Hank Bart

10:00 am	<i>Andrew Sherman, Kyle Piller</i>	Color by Numbers: Using QuantSeq to Quantify Male Nuptial Color Gene Expression in Rainbow Darters (<i>Etheostoma caeruleum</i>)
10:15 am	<i>Katherine Eaton, Adam Hallaj, James Stoeckel, Moises-Bernal</i>	Ocean warming leads to changes in gene expression and increases in aerobic demand in the pinfish (<i>Lagodon rhomboides</i>) WITHDRAWN
10:30 am	<i>Emily McFarland, Karen Crow-Sanchez</i>	Turning a Skate into a Ray: The Genetic Basis of Modified Pectoral Fins in Manta Rays and their Relatives
10:45 am	<i>Sarah Lamar, Joseph Altobelli, Nicola Nelson, Diane Ormsby</i>	Using Mixed Isotope Models and Morphometric Measures to test Optimal Foraging Theory in an Island Population of Tuatara (<i>Sphenodon punctatus</i>)

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11:00 am	<i>Nazila Koochekian, Alfredo Ascanio, Keaka Farleigh, Daren Card, Drew Schield, Todd Castoe, Tereza Jezkova</i>	A chromosome-level genome assembly and annotation of the desert horned lizard, <i>Phrynosoma platyrhinos</i> , provides insight into chromosomal rearrangements among reptiles
11:15 am	<i>Cooper Campbell, Henry Bart Jr.</i>	Clear as Mud – A First Look at the Phylogeography of the Darter Goby (<i>Ctenogobius boleosoma</i>)

10:00 AM – 12:00 PM

Conference Theater

Session 22: AES Behavior/Movement & Distribution II

Moderator: Kyle Newton

10:00 am	<i>Ashley Dawdy, Dean Grubbs</i>	Movement Behavior and Habitat Use of Cownose Rays (<i>Rhinoptera bonasus</i>) in Apalachicola Bay, FL
10:15 am	<i>Anabelle Gong, Andrew Nosal, Dan Cartamil, Lyall Bellquist, Noah Ben-Aderet, Kayla Blincow, Echelle Burns</i>	Movement patterns of the shovelnose guitarfish (<i>Pseudobatos productus</i>) and California bat ray (<i>Myliobatis californica</i>) in the Southern California Bight
10:30 am	<i>Marta Cambra, Isaac Chinchilla, Geiner Golfín, Mario Espinoza</i>	Ecological drivers shaping elasmobranch assemblages at a near-pristine ecosystem
10:45 am	<i>Kelly Kingon, David Portnoy, Christopher Ragobar, Terry Constantine, Navin Kalpoo, Marc Bejai, Christopher Nakhid, Justin Isaacs, Chelsea Mangaroo, Daniel Naitrum</i>	A Spatial Survey of the Sharks and Rays of Trinidad Highlighting the Threatened Species
11:00 am	<i>Robin Minch, Tracey Smart</i>	Environmental Drivers of Batoid Distribution and Abundance in Long-term Fishery Independent Surveys in the Southeastern United States
11:15 am	<i>Stephen Kajjura, Jordan Waldron</i>	A 10 year aerial survey of seasonal abundance and spatial distribution of blacktip sharks in Southeast Florida
11:30 am	<i>Charles Bangle, Dan Hasselman, Joanna Mills-Flemming, Frederick Whoriskey, Gregory Skomal, Megan Winton, Bryan Franks, Chris Fischer</i>	Presence and distribution of two migratory shark species in an extreme tidal environment
11:45 am	<i>Jacquelyne Reuder, Steven Kessel, David Kerstetter</i>	Vertical and Diel Patterns of Adult Lemon Sharks (<i>Negaprion brevirostris</i>) around the Southeastern Florida and Western Bahamas Coastal Shelves

10:00 AM – 11:45 AM

Room 206C

Session 23: ASIH Stoye Conservation II (first 5)/Stoye Ecology and Ethology II (last 3)

Moderator: Peter Lindeman

10:00 am	<i>Emma Steigerwald, Julianne Oshiro, Julia Chen, Alessandro Catenazzi, Michelle Koo, Vance Vredenburg</i>	Small is Big: A New Conservation Paradigm for Amphibians
10:15 am	<i>Sky Button, Amaël Borzée</i>	An integrative synthesis to global amphibian conservation priorities
10:30 am	<i>Adam McFall, Kiersten Nelson, E. Tucker Stonecypher, Christian Swartzbaugh, Heather Latham, Stacey Lance</i>	Abnormalities in the At-Risk Gopher Frog (<i>Lithobates capito</i>): What We Know and Where We're Going
10:45 am	<i>Corrie Navis, John Maerz</i>	Optimizing Striped Newt Captive Rearing Based on Post-Release Survival and Developmental Outcomes
11:00 am	<i>Ryne Lehman, Molly Wozniak, Hal Halvorson, Ginny Adams, Reid Adams</i>	Fish Assemblage Patterns Across the South Central Plains of Arkansas: A Preliminary Analysis
11:15 am	<i>Jessica Rath, Rebeka Bradford, Sahara Morgan, Chance Garret, Ginny Adams, Reid Adams</i>	Dietary and Morphological Changes in <i>Luxilus pilsbryi</i> in Response to Stream Drying
11:30 am	<i>Darien Satterfield, Thomas Claverie, Peter Wainwright</i>	Body Shape and Mode of Propulsion Do Not Constrain Routine Swimming in Coral Reef Fishes

Session 24: Lightning Talks II

Moderator: Alicia Mathis

10:00 am	<i>Ivy Larkin, Edward A. Myers, Bryan C. Carstens, Lisa N. Barrow*</i>	Predictors of Genomic Diversity within North American Squamates
10:05 am	<i>Tyler Bowling, Gavin Naylor, Lei Yang</i>	Using Genetic Forensics to Identify Shark Species Involved in Human Bites
10:10 am	<i>Luis Amador, Lisa Barrow</i>	Determinants of Intraspecific Genetic Diversity in Neotropical Amphibians
10:15 am	<i>Ayomikun Akinrinade, Jeffrey Jensen</i>	Diet and Gill Raker Morphology in Surfperches (<i>Embiotocidae</i>)
10:20 am	<i>Fernando Melendez-Vazquez, Sara Cartwright*, Michelle Scharer-Umpierre, Kate Overly, Dahiana Arcila</i>	Geographic Range Expansion of the King Snake Eel, <i>Ophichthus rex</i> , to the Caribbean
10:25 am	<i>Allison Bronson, Emily Buck, Marianne Nyegaard</i>	Identification and recovery of a large <i>Mola tecta</i> from the North Coast of California
10:30 am	<i>Gregg R. Poulakis, Andrew K. Wooley, Lukas B. Heath, Dylan M. Yakich, Kevin A. Feldheim</i>	Preliminary Mechanisms of Genetic Dispersal in the Florida Population of Smalltooth Sawfish, <i>Pristis pectinata</i>
10:35 am	<i>Barbara Calegari, Merline Roth, Conor Waldo, Bernhard Wegscheider, Dario Josi, Lukas Rüber, Ole Seehausen</i>	Discovering the Hidden Diversity of Minnows of the Genus <i>Phoxinus</i> (Cypriniformes: Leuciscidae) from Switzerland through an Integrative Taxonomy Approach
10:40 am	<i>Beckah Campbell, Austin Gallagher, James Sulikowski</i>	Preliminary observation of site fidelity of female Caribbean reef sharks (<i>Carcharhinus perezi</i>) in The Bahamas based on mark-recapture
10:45 am	<i>Jacob Barrett, Mollie Cashner</i>	An Investigation of Personality in the Creek Chub (<i>Semotilus atromaculatus</i>)
10:50 am	<i>Christopher Cannon, Christopher Beachy*</i>	Aspects of life-history variation in facultatively paedomorphic Western Tiger Salamanders in the Northern Plains
10:55 am	<i>Lacey Williams, Alexandra Anstett*, Victor Bach-Muñoz, John Chisholm, Chris Fallows, Jonathan Green, Jesús Erick Higuera-Rivas, Gregory Skomal, Megan Winton, Neil Hammerschlag</i>	Sharks As Exfoliators: Widespread Chafing Between Marine Organisms Suggests an Unexplored Ecological Role
11:00 am	<i>Brittany L. McCall, Brook L. Fluker*</i>	Occupancy Modeling and Detection Probability of the Caddo Madtom (<i>Noturus taylori</i>), a Narrowly Distributed Endemic in the Ouachita Highlands
11:05 am	<i>Margaret Huck, Heather Bateman</i>	Linking hydrological and habitat variables to anuran occupancy in Arizona wilderness streams WITHDRAWN
11:10 am	<i>Yara Alshwairikh, A.Z. Andis Arietta, David Skelly</i>	Thermal Performance of Wood Frogs (<i>Rana sylvatica</i>): a case of countergradient variation
11:15 am	<i>Carly Lynn Strange, Antony Scott Harold</i>	Ecological Association of Early Life History Stages of Fishes with Benthic Algae

Session 25: SSAR Seibert Conservation (first 5)/Seibert Physiology/Morphology (last 5)

Moderator: Dave Blackburn

1:30 pm	<i>Jessica Yates, Stephen Mullin</i>	Sneaky Snakes: Detection and Occupancy of Sympatric Watersnakes (Colubridae: Nerodia) in the Brazos River Watershed, Texas
1:45 pm	<i>Devin Edmonds, Raphali Andriantsimanarilafy</i>	Informing the Mantella cowanii Action Plan
2:00 pm	<i>Oscar Umwanzisiwemuremyi</i>	Impact of Human-Snakes Conflict through Cultural and Religious Beliefs on Environment In Rwanda
2:15 pm	<i>Christopher Cousins, Lindsey Thurman, Jennifer Allen, Dede Olson, Brooke Penaluna, Tiffany Garcia, Emily Dziedzic</i>	Evaluating the Efficacy of Environmental DNA Sampling for Two Cryptic Species of Torrent Salamanders
2:30 pm	<i>Ross Hinderer, Lisa Eby</i>	Assessing Climate Change Vulnerability of Amphibians in the North-Central U.S.

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2:45 pm	<i>Savannah Weaver, Tess McIntyre, Taylor Van Rossum, Emily Taylor</i>	Sweating it Out in the Sauna: Heat and Humidity Increase Cutaneous Evaporative Water Loss in Lizards
3:00 pm	<i>Janniry Cabrera-Belen, Sara McClelland</i>	Atrazine and amphibians: Atrazine's impacts on neurodevelopment and behavior in an anuran model
3:15 pm	<i>Erin Saylor</i>	Comparison of Ovaprim and human chorionic gonadotropin on sperm parameters and weight response in Fowler's toads (<i>Anaxyrus fowleri</i>)
3:30 pm	<i>Natasha Stepanova, Daniel Rabosky</i>	A Tale of Two Radiations: Comparing Phenotypic Evolution in Australian and Malagasy Skinks
3:45 pm	<i>Analisa Shields-Estrada, David Cannatella</i>	Spectral Reflectance as a Thermoregulatory Mechanism in Hyla Tree Frogs

1:30 PM – 4:00 PM

Ballroom 111B

Session 26: HL Graduate Research Award (first 5)/Contributed General Herpetology (last 4)

Moderator: Brian Halstead

1:30 pm	<i>Kinsey Brock</i>	Causes and Consequences of Color Polymorphism: from Individuals Isolated on Islands to Species Spanning Continents
1:45 pm	<i>Kathleen C. Webster, Frank Glaw, Mark D. Scherz, Oliver Hawlitschek</i>	More Complex than You'd Skink: Morphological and Molecular Investigation into the Island Biogeography of Flexiseps Skinks in the Comoros Archipelago
2:00 pm	<i>Oleksandra Oskyrko, Nicholas Parry, Daniel Jablonski</i>	No snakes but legless lizards yes in Ireland: the first evidence based on genetic data
2:15 pm	<i>Brian Tornabene, Creagh Breuner</i>	Combining Experiments and Field Surveys to Estimate Comparative Effects Of Energy-Related Saline Wastewaters and Sodium Chloride on Two Amphibian Species
2:30 pm	<i>Josiah Johnson, Samantha Bock, Christopher Smaga, Benjamin Parrott</i>	Effect of Maternally-transferred Mercury on Development, Behavior, and Survival in Alligator (<i>Alligator mississippiensis</i>) Hatchlings
3:00 pm	<i>Haley A Moniz, Sage M Kruleski, Amar D Risbud, Samuel JH Loudon, Roger T Hanlon, Amber N Stokes, Stephanie E Palmer, Chris R Feldman</i>	Is honesty the best policy? Aposematic coloration and tetrodotoxin (TTX) in Pacific newts (<i>Taricha</i>)
3:15 pm	<i>Kaitlyn Murphy, Kendall Preston, Mary Mendonca, Daniel Warner</i>	Maternal influence of microbiota on offspring via diet in an oviparous lizard
3:30 pm	<i>C. Myles Lance, Joseph Pechmann*</i>	Assessing Factors That Increase Dusky Gopher Frog (<i>Rana sevosq</i>) Larval Performance In Open-Canopy Wetlands
3:45 pm	<i>Coral Gardner</i>	Responses of Reptiles to Removal of Woody Plants in the Intermountain West

1:30 PM – 4:00 PM

Ballroom 111C

Session 27: ASIH Stoye Genetics, Development, and Morphology II

Moderator: Stacy Farina

1:30 pm	<i>Zach Heiple, Jonathan Huie, Pam Hart, Christopher Goatley, Dahiana Arcila, Elizabeth Miller</i>	Many Ways to Build an Angler: An Analysis of Feeding Morphologies in Deep Sea Anglerfishes (Ceratioidei: Lophiiformes)
1:45 pm	<i>Gabriel Afonso, Murilo Pastana, Flávio Bockmann</i>	Anatomy and phylogenetic implications of prenasal segments in Carangiformes (Teleostei: Percomorphacea): a character investigation
2:00 pm	<i>Leo MacLeod, Katherine Bemis, Murilo Pastana</i>	First Description of the Osteology of the West African Stargazer, <i>Uranoscopus cadenati</i>
2:15 pm	<i>Rachel Keeffe, David Blackburn</i>	Finite Element Modelling of Limb Bone Fusion in Anurans
2:30 pm	<i>Emily Ladin, Larry Allen</i>	An Analysis of the Developmental Osteology of Giant Sea Bass (<i>Stereolepis gigas</i>)
2:45 pm	<i>Rene Martin</i>	Olfactory Organ Anatomy across Deep-sea Lanternfishes

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3:00 pm	<i>Carmen Pedraza-Marrón, Ricardo R. Betancur</i>	Bridging Macro- and Micro-evolution in Tropical Reef Blennies (Labrisomidae: Malacoctenus)
3:15 pm	<i>Andrew Corso, Jan McDowell, Ellen Biesack, Sarah Muffelman, Eric Hilton</i>	Characterizing the lesser known larval fishes of the Southern Ocean
3:30 pm	<i>Delanie Crabtree, Sara McClelland</i>	Developmental Exposure to Ecologically Relevant Levels of a Carbamate Pesticide Causes Changes in Brain Structure in Amphibians
3:45 pm	<i>Justin Waraniak, David Mushet, Craig Stockwell</i>	Population Connectivity in Agricultural Landscapes: Land Use Effects on Gene Flow in the Northern Leopard Frog in the Prairie Pothole Region

1:45 PM – 3:45 PM

Conference Theater

Session 28: AES Life History (first 5)/Reproduction (last 4)

Moderator: *Kady Lyons*

1:45 pm	<i>Bryan Frazier, Ashley Galloway, Lisa Natanson, Andrew Piercy, Christian Jones, Kristin Hannan, William Driggers</i>	Age and Growth of Great (<i>Sphyrna mokarran</i>) and Scalloped Hammerheads (<i>Sphyrna lewini</i>) in the Western North Atlantic Ocean.
2:00 pm	<i>Elizabeth Vinyard, David Portnoy, William Driggers III, Lisa Natanson, Jill Hendon, Jeremy Higgs, Jim Gelsleichter, Bryan Frazier</i>	Age and Growth of Spinner Sharks, <i>Carcharhinus brevipinna</i> , in the Western North Atlantic Ocean
2:15 pm	<i>Michelle Passerotti, Kenneth Goldman, Sabine Wintner, Joseph Quattro</i>	Exploring the Physicochemical Context of Near Infrared Spectroscopy (NIRS) for Elasmobranch Ageing
2:30 pm	<i>Sarah Gravel, Jennifer Bigman, Sebastian Pardo, Serena Wong, Nicholas Dulvy</i>	The Metabolic Basis of Population Growth Rate Across Marine Fishes
2:45 pm	<i>Brian Moe, Charles Cotton, Dean Grubbs</i>	Reproductive Ecology of <i>Centrophorus uyato</i> in the Northeastern Gulf of Mexico
3:00 pm	<i>Matthew Smukall, Andrew Seitz, Felicie Dhellemmes, Maurits van Zinnicq Bergmann, Vital Heim, Samuel Gruber, Tristan Guttridge</i>	Residency, dispersal, and repeated philopatry of tiger sharks <i>Galeocerdo cuvier</i> at a proposed pupping location in The Bahamas.
3:15 pm	<i>Jennifer Wyffels, Kady Lyons, Lance Adams, Kevin Feldheim</i>	Anamniocentesis: Development of a method to genotype oviparous embryos from perivitelline fluid using Zebra Sharks as a model
3:30 pm	<i>Brooke Anderson, Juliana Kaloczi, Amanda Einig, Courtney Holden, Linda Donaldson, Lisa Natanson, Katherine Viducic, Michelle Passerotti, Heather Bowlby, James Sulikowski</i>	Quantifying Reproductive Hormones in Skeletal Muscle Tissue of Porbeagles (<i>Lamna nasus</i>) Demonstrates the Value of Biological Sample Sharing

1:30 PM – 4:00 PM

Room 206C

Session 29: ASIH Stoye Ecology and Ethology III (first 8)/Contributed Ichthyology Physiology & Development (last 2)

Moderator: *Terry Donaldson*

1:30 pm	<i>Emma Moritoshi, Midori Matsuoka, Tomoki Sunobe, Shinichi Dewa, Gen Kume</i>	The Impact of Social Structure and Female Population Density on Mating Behaviour and Sexual Pattern, Protogynous <i>Pseudanthias rubrizonatus</i>
1:45 pm	<i>Arik Hartmann, María Torres-Sánchez, Ana Longo</i>	Impacts of Asynchronous Emergence of <i>Batrachochytrium dendrobatidis</i> and <i>Ranavirus</i> in Florida Amphibian Assemblages
2:00 pm	<i>Wesley Neely, Gui Becker</i>	Habitat fragmentation influences amphibian skin microbiome composition, helminth parasitism, and disease status in the Brazilian Atlantic Forest
2:15 pm	<i>Troy Neptune, Michael Benard</i>	Photoperiod Effects in an Aquatic Community: Amphibian Larvae Develop Faster and Zooplankton Abundance Increases Under an Early-Season Photoperiod
2:30 pm	<i>Rachel Brubaker, Allison Cochran, William Sutton</i>	The Effects of Pyrophytic Pine Forest Restoration on Herpetofaunal Community Assemblages in Bankhead National Forest
2:45 pm	<i>James Erdmann, Michael Reichert</i>	Effects of simulated soundscapes on calling in Cope's Gray Treefrog

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3:00 pm	<i>Nathaniel Neal, Ashley Coble, Ashley Sanders, Brian Sidlauskas, Dana Warren</i>	Abiotic and biotic predictors of the Coastal Giant Salamander (<i>Dicamptodon tenebrosus</i>) in headwater streams
3:15 pm	<i>Jocelyn Stalker, Jason L. Jones, C.M. Gienger</i>	Assessing Spatial Ecology of a Long-Lived Lizard
3:30 pm	<i>Bianca Prohaska, Anita Kroska, Nathan Wolf</i>	Preliminary Measures of Physiological Stress from Bottom Trawl and Hook-and-Line Captured Pacific Cod in the Eastern Bering Sea
3:45 pm	<i>Aubree Jones, Matthew O'Donnell, Amy Regish, Jacqueline Webb</i>	Does rearing temperature impact lateral line development in brook trout, <i>Salvelinus fontinalis</i> ?

Friday 29 July • Poster Presentations

4:00 PM – 6:00 PM • Ballroom 100

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

AES Carrier Award

Rachel Aitchison, David Ebert, Simon Weigmann

Tuning Guitarfishes of the Southwestern Indian Ocean: Redescriptions of Three Rhinobatos

Taylor Anderson, Emily N. Meese, J. Marcus Drymon, Greg W. Stunz, Brett Falterman, Elias Menjivar, R.J. David Wells*

Diel Vertical Habitat Use of a Scalloped Hammerhead and Bigeye Thresher Shark

Cecilia Hampton, Tonya Wiley, Jayne Gardiner

Immature Bull Shark Habitat Use and Residency in the Manatee River, a Non-Thermally Altered Nursery Area

Michelle Edwards, Adam Schaefer, Malcolm McFarland, Spencer Fire, Christopher Perkins, Matthew Ajemian

Detection of Numerous Algal Toxins in Immature Bull sharks *Carcharhinus leucas* Collected from an Estuary of National Significance

Julia Smith, Erin Woodward, Liesbeth Weijs, William Bennett

Standardizing non-lethal fin clip and biopsy sampling for trace element analysis in bull (*Carcharhinus leucas*) and tiger sharks (*Galeocerdo cuvier*)

AES Contributed

Madeleine Caraway, Kady Lyons, Jennifer Wyffels, Andrew Gentry

Effects of Increased Temperature on Growth and Development of Embryonic Whitespotted Bamboo Sharks, *Chiloscyllium plagiosum*

Emily Sapp, Jim Gelsleichter

Use of Coelomic Fluid as a Noninvasive Indicator of Reproductive Status in Elasmobranchs

Azsha Hudson, Kady Lyons, Chris Mull, Gregory Rouse, Eric Archer, Dovi Kacev

Biotic and Abiotic Drivers of Polyandry in Sharks and Rays

Jackson Bialek, Beth Bowers, Ryan Stolee, Stephen Kajiura

Seasonal movements of blacktip sharks, *Carcharhinus limbatus*, in the Northwest Atlantic

Victoria Goldner, Tonya Wiley, Jayne Gardiner

Effects of Climate Change on the Migration Phenology of Juvenile Blacktip Sharks (*Carcharhinus limbatus*)

Simon Bustetter, Tonya Wiley, Jayne Gardiner

Predicting Elasmobranch Habitat Partitioning in a Florida Coastal River

Khrysdovän Caroll, Tristan Guttridge, Annie Guttridge, Philip Matich

Community interviews from Andros Island, The Bahamas reveals new insights on the distribution and use of Critically Endangered Smalltooth Sawfish

Marta Cambra, Frida Lara-Lizardi, César Peñaherrera-Palma, Alex Hearn, James T. Ketchum, Patricia Zarate, Carlos Chacón, Jenifer Suárez-Moncada, Esteban Herrera, Mario Espinoza

A first assessment of the distribution and abundance of pelagic species at Cocos Ridge seamounts using drifting baited remote cameras

Javon Lo, Charles Bangley, Fred Whoriskey, Rod Bradford, Greg Skomal, Megan Winton, Bryan Franks, Chris Fischer

Prey Availability and Tide Influence on the Movement of Juvenile White Sharks (*Carcharodon carcharias*) in the Minas Basin

Zach Merson, Emily Spurgeon, James Anderson, Brian Stirling, Patrick Rex, Elizabeth Jahn, Sergio Madrigal-Mora, Javier Mata, Haylee Kramar, Matthew Barnes, Chris Lowe

Correlating juvenile white shark eDNA sampling to acoustic telemetry monitoring at a Southern California aggregation site

Charles Romero, Lenia Jordan, Andrew Nosal, Marianne Porter

Swimming Kinematics of Shoaling Leopard Sharks (*Triakis semifasciata*)

Lenia Jordan, Dante Romero, Andrew Nosal, Marianne Porter

Turning Maneuvers of Volitional Swimming Leopard Sharks

Lauren Simonitis, Adam Summers

Getting to Nose You: Understanding Chondrichthyan Nasal Morphology through CAD models

Jake Wood, Kenshu Shimada

Functional implications reflected in neurocranial morphology of lamniform sharks (Elasmobranchii: Lamniformes)

*Ryan Sesler, Lisa Whitenack**

Chomping at the bit: the effects of wear on shark tooth puncture performance and morphology

Olivia Schuitema, Dr. Maria Laura Habegger

Histological Comparison of Shark Dermis Across Various Ecomorphologies

Contributed ASIH Ichthyology

Maria Uribe-Mejia, Delaney Frazier, Aubrey Clark, Dr. Marianne Porter

Let's get moving: a study of toughness and stiffness of the shortfin mako, *Isurus oxyrinchus* vertebrae

Delaney Frazier, Maria Uribe-Mejia, Aubrey Clark, Dr. Marianne Porter

Regional comparison of vertebrae stiffness and toughness across elasmobranch species

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

Parental Analysis of Brood for the Mouthbrooding Marine Catfish, *Ariopsis felis*

Kosuke Oyama, Kenshiro Hikichi, Emma Moritoshi, Gen Kume

Age-based Demography and Reproductive Biology of areolate grouper *Epinephelus areolatus*, southern Japan

*Amanda K. Pinion, Kole M. Kubicek, Ralf Britz, Dustin S. Siegel, Kevin W. Conway**

The larval attachment organ of the Bowfin *Amia calva* (Amiiformes: Amiidae)

ASIH Storer Ichthyology

Patricia Torres-Pineda

The functional morphospace of locomotor morphology of Neotropical poeciliids

Kaleigh Arnold, Windsor Aguirre

The Impact of Temperature Induced Vertebral Anomalies on C-start Swimming Performance in *Astyanax mexicanus* (Teleostei: Characidae)

Aintzane Santaquiteria, Dahiana Arcila, Mark W. Westneat, Giorgio Carnevale, James C. Tyler, Ricardo R. Betancur

The Evolutionary History of Extant and Fossil Surgeonfishes and Relatives (Acanthuriformes)

Fernando Melendez-Vazquez, Ricardo Betancur-R, Dahiana Arcila

Addressing the Evolutionary Relationships of the Deep Sea Fishes of the Order Trachichthyiformes

Caroline Sullivan, Edmund Gerstein, Stephen Kajiura

Orientation of Blacktip Sharks to Underwater Sound in the Acoustic Far-Field

Marta Gomez-Buckley, Luke Tornabene

The Cryptic Taxonomy of Cryptobenthic Reef Fishes in the *Eviota sigillata* Complex

Laurel Nave-Powers, Luke Tornabene

Identification of larval Pacific Sand Lance (*Ammodytes personatus*) and Arctic Sand Lance (*Ammodytes hexapterus*) using COI and morphological characteristics

Emma Moritoshi, Haruka Matsumoto, Midori Matsuoka, Tomoki Sunobe, Shinichi Dewa, Gen Kume

Growth, Maturation, and Primary Male Development of Protogynous *Pseudanthias rubrizonatus* in Kagoshima Bay, Japan

Jordyn Neal, Samantha Rodrigues, Allison Bronson

Chondrocranial and Skeletal Labyrinth Morphology of Four Species of Living Sharks

Nicole Rahman-Garnier, Allison Bronson

Comparative Anatomy of the olfactory organ in Rainbow Trout, *Oncorhynchus mykiss*

Tiffany Inbody, Kevin W. Conway

The skeleton of the smallest livebearer (*Heterandria formosa*) revealed through diaphonization and CT scanning

Gabriel Afonso, Katherine Bemis, Flávio Bockmann

Heterodonty through ontogeny – Tooth development and replacement in the scale feeding fish *Oligoplites saurus* Bloch & Schneider 1801

Melody Tew, Allison Bronson

Development of Bony Scutes in White Sturgeon (*Acipenser transmontanus*)

Nicholas Peoples

A Quantitative Description of the Oral Tooth Diversity of the Lake Tanganyika Cichlid Radiation

Julie Kastanis, Mollie Cashner

Is Red Coloration in *Chrosomus erythrogaster* an Honest Signal?

Friday 29 July 2022

<i>Jessica Rath, Joseph Miller, Ginny Adams, Reid Adams</i>	Distribution and Habitat Associations of Peppered Shiner, <i>Notropis perpalidus</i>
<i>Hilary K. Canada, M. Taylor Perkins, Anna L. George, Bernard R. Kuhajda, Brook L. Fluker</i>	Population Genetic Assessment of the Endangered Cumberland Darter (<i>Etheostoma susanae</i>)
<i>Brittany McCall, Jacob Egge, Brook Fluker</i>	Why so mad: an evolutionary analysis of lineage diversification among madtom catfishes (Siluriformes: Ictaluridae:Noturus)
<i>Chi Jing Leow, Kyle Piller</i>	Comparing Gene Expression Profiles of Killifishes With Different Life Histories (Cyprinodontiformes: Nothobranchiidae).
<i>Abigail M Tinari, Neil Hammerschlag</i>	Investigating the Biologic and Anthropogenic Soundscapes of Biscayne Bay
<i>Susan Thomassie, Olivia M. Guerra, Regina Coeli Champion*, Frank Jordan</i>	Early Invasion Dynamics of the Asian Swamp Eel Amphipnous <i>cuchia</i> in New Orleans, Louisiana
<i>Jackson Pav, Ginny Adams, Reid Adams</i>	Variation in Fish Communities of Boston Mountain Streams in the Ozark National Forest

ASIH Storer Herpetology

<i>Giuseppina Sole Lanzilli, John Reiss, Karen Kiemnec-Tyburczy</i>	Cell Types in the Olfactory Organs of a Plethodontid Salamander
<i>Emily Bierbaum, Matthew Toomey, Ronald Bonett</i>	Molecular evolution and expression of visual pigments across urodeles
<i>Ryan Wagner, William Peterman</i>	Tale of Two Mudpuppy Populations: Impacts of TFM on Ohio's Second Largest Salamander
<i>Jessica Sandoval, Thomas Anderson</i>	Drivers of Life History Variation in a Paedomorphic Salamander
<i>Jasmine Williamson, Chris Cousins, Tiffany Garcia</i>	Comparison of Nocturnal and Diurnal Survey Methodologies for Plethodontid Salamanders in Western Oregon
<i>Clare Yang, Laura Guderyahn, Lauren Chan</i>	Suburban salamanders: the status and origin of slender salamanders of Oregon west of the Cascade Range
<i>Víctor Hugo Colín-Martínez, Leticia Margarita Ochoa-Ochoa</i>	Temporal variation in the functional diversity of amphibians from the Sierra Madre del Sur, Guerrero, Mexico.
<i>Kyle Emerson, Dr. Sarah Woodley</i>	Impacts of the Environmental Microbial Species Pool on the Microbiota-Gut-Brain Axis in Larval Amphibians
<i>Tucker Stonecypher, Linda Lee, Stacey Lance</i>	Quantifying Habitat Degradation and Restoration Potential of Breeding Sites for the Imperiled Carolina Gopher Frog (<i>Rana Capito</i>)
<i>Mariah Mack, Lynne Beaty</i>	American toad (<i>Anaxyrus americanus</i>) Dorsal Coloration Across an Environmental Gradient
<i>Gia LaSalle, Sara McClelland</i>	Changes in Anuran Behavior and Neurodevelopment From Hatching through Metamorphosis
<i>Meryem Assaoui, Lauren Branham, Kai Williams, Allyson Fenwick</i>	Genetic Differentiation of a 70-80 Year Colonization of Mediterranean Geckos (<i>Hemidactylus turcicus</i>) at the University of Oklahoma
<i>Isaac Krone</i>	Super Labeling of Supralabials and Other Advantages of a Network-Based Analysis of Pholidosis
<i>Julianna Hoza, Hayden Davis, Adam Leache</i>	Species Delimitation of a Dwarf Horned Lizard Population (<i>Phrynosoma hernandesi</i>): Genetic Data Support the Single Species Hypothesis
<i>Sawyer Markham, Lila Marlowe, Tiffany Doan</i>	The Heat is On: A Comparative Analysis of Two Different Methods for Measuring CTmax in Squamates
<i>Aracely Herrera, Adam Leache, Sonal Singhal</i>	Morphometric Analysis of Fence Lizards (<i>Sceloporus undulatus</i> Species Group): Are Phylogenetic Groups Morphologically Distinct?
<i>Tess McIntyre, Savannah Weaver, Taylor Van Rossum, Emily Taylor</i>	Watery going to do about Drought Impacts on Lizards?: Osmoregulation of Blunt-Nose Leopard Lizards and Water Availability in their Prey

SSAR Rabb

<i>Scott Kornfeind, Sara McClelland</i>	Tadpole Developmental Rate, Survival, and Behavior when Exposed to Microplastics During Development
<i>Joelis Rodriguez-Santos, Sara McClelland</i>	Using Planarians as a Model for Amphibian Biology: Measuring Tissue Regeneration in Pesticide Contaminated Water
<i>Adam Leaché, Torsten Watkins*</i>	Phylogeography of Northwestern Salamanders (<i>Ambystoma gracile</i>) in the Olympic Mountains
<i>Dylan Bryant, Dane Conley, Matthew Lattanzio</i>	How do Ecomorphological Relationships Influence UV and Temperature Regulation? A Preliminary Study on <i>Sceloporus occidentalis</i>
<i>Matthew Manus, Ava Howard, Gareth Hopkins</i>	Characterizing the Abundance, Diversity, and Composition of Herpetofauna Communities in Contrasting Oregon White Oak (<i>Quercus garryana</i>) Habitats
<i>Michael Skibsted, Greg Pauly</i>	Effects of Habitat Alteration and Co-Occurrence With Introduced Red-Eared Sliders on Southwestern Pond Turtle Basking Site Usage
<i>Laura Lewis, Jamie Oaks, Matthew Buehler</i>	Looking at Morphological Variations in Blue-banded Sea Kraits, <i>Laticauda laticaudata</i>
<i>Samantha Fike, Kristen Cherry, Ashley Mallory, Kyle Root, Jennifer Deitloff</i>	Exposure to silver nanoparticles and the negative effects on the weight and growth of <i>Ambystoma mexicanum</i> (Axolotls)
<i>Kristen Cherry, Samantha Fike, Ashley Mallory, Kyle Root, Jennifer Deitloff</i>	Exposure to silver nanoparticles negatively affects growth and survival of <i>Ambystoma mexicanum</i> (Axolotls)
<i>Matthew Buehler, Jamie R. Oaks, Todd R. Jackman, Aaron M. Bauer</i>	A Complicated Answer to a Complicated Problem: Phylogeography of the <i>Pachydactylus serval/weberig</i> group and the status of <i>P. montanus onscepensis</i>

SSAR Hutchison Evolution, Genetics, Systematics, Physiology, & Morphology

<i>Victor Fitzgerald, Jason Bracken, Tereza Jezkova</i>	Genomic analyses and a common garden rearing experiment bring new insights into the relationship between two sister <i>Ambystoma</i> salamanders
<i>Namia Stevenson, Isabella Burger, Dustin Smith, Carrie Kouba, Andy Kouba</i>	Transferability of Assisted Reproductive Techniques (ART) from Model Anurans to Target Species
<i>Claire Tracy, David Blackburn, Edward Stanley, Todd Jackman, Aaron Bauer</i>	Tympanic Middle Ear Loss and Skull Morphology in African Dwarf Toads of the genera <i>Poyntonophrynus</i> , <i>Mertensophryne</i> , and <i>Capensibufo</i>
<i>Owen Edwards, Dale Edwards, Sarah Duncan, David Laurencio, Jeffrey Goessling</i>	Range Expansion and Dispersal Traits of the Green Treefrog (<i>Hyla cinerea</i>) WITHDRAWN

SSAR Hutchison Ecology, Natural History, Distribution, & Behavior

<i>Andrew Powers, Theodora Pinou</i>	The Impact of Development on Copperheads in Connecticut: A Preliminary Study
<i>Julia Joos, Donald B. Miles</i>	Thermal ecology of desert-living tortoises
<i>Andrew Savage, Derald Harp, Johanna Delgado-Acevedo</i>	Northeast Texas Anuran Composition in an Urban-Rural Gradient
<i>Leah Rittenburg, Todd Pierson</i>	Characterizing Plethodontid Salamander Communities across an Urban Gradient using eDNA
<i>Jonathan M Adamski, Hamlet J Maza-Camacho, James W Tito-Nina, M Isabel Diaz-Huaman, Alessandro Catenazzi</i>	Transmission of <i>Batrachochytrium dendrobatidis</i> in Terrestrial-Breeding Frogs in Andean Montane Forests
<i>Mackenzie Hanna, Stephen Mullin</i>	Responses of Lesser Sirens (Caudata: Sirenidae) to Chemosensory Cues

SSAR Hutchison Conservation & Management

Ally Brown, Devyn Hannon, Natalie Schliekelman, John Maerz

Size and Temperature Affect Detection of Cryptic Herpetofauna by Camera Traps

Robin Bedard, Alex Goode, Tess McIntyre, Maddy Martin, Megan Rottenborg, Emily Taylor

Human-Snake Conflict Mitigation: Policies for Relocating Nuisance Snakes in the U.S.

Savannah Gentry, Jeffrey Lorch, Julia Lankton, Anne Pringle

Generalist fungal pathogens: Experimental confirmation that *Ophidiomyces ophiodiicola* and *Nannizziopsis guarroii* are not as host specific as previously thought.

Natalie Haydt, Emily Bellis, Lori Neuman-Lee

Predicting the Distribution of Soil Microbes Associated with Snake Fungal Disease in Arkansas

Kristin Kabat, Matthew Barnes

~~Detection and Persistence of Dunes Sagebrush Lizard (*Sceloporus arenicolus*) environmental DNA~~ **WITHDRAWN**

Travis Rainey

An update on a threatened anuran (*Acris blanchardi*) in Michigan: persistence and its relationship with landcover

Kiersten Nelson, Raven Bier, Scott Weir, Adam McFall, E. Tucker Stonecypher, Christian Swartzbaugh, Stacey Lance

Headstarting Efforts for the Endangered Carolina Gopher Frog (*Lithobates capito*) Resulting in Developmental Abnormalities: Comparison of Water Quality & Microbial Communities

Anna Humphrey, Jayme Waldron, April Atkinson, Jay Cantrell, Will Dillman, Shane Welch

Effects of Vegetation and Historical Land Use on the Occurrence of Endemic Anurans

Desi Wilson, Ana Ospina, Nigel Brown, Ximena Bernal

Distribution Predicts Global Patterns of Extinction Risk in Toads

ASIH Contributed

*Emily Taylor, Prosanta Chakrabarty**

The Future of ASIH: An open discussion and listening space.

Contributed Herpetology

Jon Davenport, David Burton, Thomas Anderson, Elyssa Winterton, Elyssa Winterton

The effects of food web complexity and phenological variability on pond-breeding salamanders

Saturday 30 July • Symposia

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

8:15 AM – 9:30 AM

Ballroom 111A

Symposium: Diversity, Equity & Inclusion in Ichthyology & Herpetology I

Moderator: *Rob Denton*

8:15 am		Introduction
8:30 am	<i>Lorin Neuman-Lee</i>	Finding the Great Balance: Family and Science
8:45 am	<i>Jennifer Deitloff, Jessica Malisch</i>	How can higher education live up to our diversity, equity, and inclusion goals?
9:15 am	<i>Krista Koeller</i>	An Ecological Approach to Disabilities In Science

8:00 AM – 9:30 AM

Ballroom 111B

Symposium: Biogeography & Diversification of Amphibians & Reptiles - Pacific Northwest & CA Floristic Province I

Moderator: *Gwen Bury*

8:00 am	<i>Bruce Bury</i>	Introduction: Biogeography and Diversification of the Pacific Northwest Herpetofauna
8:15 am	<i>Nicholas Geist</i>	200 Million Years of Violence: How Geologic Upheaval and Glaciation Shaped the Pacific Northwest
8:30 am	<i>Karen Kiemnec-Tyburczy, R. Bruce Bury, Tanya Wahbe, Gwendolynn Bury, Nick Waters, Brian Lavin, Hartwell Welsh</i>	Phylogeography of Endemic Stream Amphibians in the Pacific Northwest Reveal Distinct Species or Clades in Need of Conservation Attention
8:45 am	<i>Mark Leppin, Gwen Bury, R. Bruce Bury</i>	Variation in the mouth parts of the Coastal Tailed Frog (<i>Ascaphus truei</i>)
9:00 am	<i>Erim Gomez</i>	Amphibian Occupancy Modeling of an Inland Northwest Farmed Ecosystem: A Surprising Predictor of Occupancy
9:15 am	<i>Jonathan Richmond, Michael Westphal, Anny Peralta-García, Adam Backlin, H. Brad Shaffer, Bradford Hollingsworth, Elizabeth Gallegos, Robert Fisher</i>	Fraying edges and holes in the fabric: How range disintegration influences genetic structuring in the California red-legged frog <i>Rana draytonii</i>

10:00 AM – 11:30 AM

Ballroom 111A

Symposium: Diversity, Equity & Inclusion in Ichthyology & Herpetology II

Moderator: *Jessica Tingle*

10:00 am	<i>Sinlan Poo</i>	Zoos, Herpetology, and the Scientific Community: an International Perspective
10:15 am	<i>Brittany McCall</i>	Code-switching: countering identity-based discrimination in fieldwork
10:30 am	<i>Earyn McGee</i>	#FindThatLizard: Ecology, Science Outreach, and Supporting Underrepresented Groups in Herpetology and Natural Resources
11:00 am	<i>Fredric Janzen, Daniela Flores, Jeramie Strickland, Lorin Neuman-Lee, Brooke Bodensteiner, Shannon Thol</i>	Turtle Camp Research and Education in Ecology Program
11:15 am	<i>Jeramie Strickland</i>	Promoting Positive Experiences in Nature Through Bird Education

10:00 AM – 12:00 PM

Ballroom 111B

Symposium: Biogeography & Diversification of Amphibians & Reptiles - Pacific Northwest & CA Floristic Province II

Moderator: Chris Feldman

10:00 am	<i>Sean Reilly</i>	Plethodontid Salamander Species Formation and Lineage Boundaries within California's North Coast Ranges and the Klamath Mountains
10:15 am	<i>Elizabeth Jockusch</i>	Aridification and the Diversification of Slender Salamanders (genus <i>Batrachoseps</i>) in Western North America
10:30 am	<i>Shawn Kuchta</i>	Against "Speciation": David Wake on Species and the Biogeography of the Salamander Ring Species <i>Ensatina eschscholtzii</i>
10:45 am	<i>Robert Burroughs, Kenneth Angielczyk, Bryan Stuart, James Parham, Peter Smits</i>	Morphological Species Delimitation of the Cryptic Northern and Southern Pacific Pond Turtles (<i>Actinemys marmorata</i> , <i>Actinemys pallida</i>)
11:00 am	<i>Rory Telemeco</i>	Exploring phenotype divergence among incipient species: A case study from the Southern Alligator Lizard species complex (<i>Elgaria multicarinata</i> spp)
11:15 am	<i>Hayden R. Davis, Simone Des Roches, Roger A. Anderson, Adam D. Leaché</i>	Biogeography and Diversification of Western Fence Lizards at their Northern Extreme in the Pacific Northwest
11:30 am	<i>Jesse Grismer, Peter Scott, Erin Tffelmier, Brian Hinds, Randy Klabacka, Glenn Stewart, Jamie Oaks, H. Bradley Shaffer</i>	Genomic data reveal local endemism in Southern California Rubber Boas and the critical need for enhanced conservation actions WITHDRAWN
11:45 am	<i>Patricia Salerno, Lauren Chan*, Gregory Pauly, W. Chris Funk, Jeanne Robertson</i>	Colonization history and lineage diversification for three lizard taxa inhabiting the California Channel Islands

1:30 PM – 4:00 PM

Ballroom 111A

Symposium: Diversity, Equity & Inclusion in Ichthyology & Herpetology III

Moderator: Jennifer Deitloff

1:30 pm	<i>Michelle Koo</i>	Natural history museums as incubators for student engagement and diversifying skills
2:00 pm	<i>M. Rockwell Parker</i>	Spheres of Influence: Being a Queer Mentor, Advocate, and Activator in Biology and Higher Education
2:30 pm	<i>Sarah Eddy</i>	"It's completely erasure": A qualitative exploration of experiences of transgender, nonbinary, gender nonconforming, and questioning students in biology courses
3:00 pm	<i>Umilaela Arifin, Itzue W. Caviedes-Solis, Sinlan Poo</i>	Global Women in Herpetology Project
3:15 pm	<i>Jessica Tingle</i>	Stereotype threat as a barrier to belonging, and what we can do about it
3:45 pm		Concluding Remarks

1:30 PM – 4:00 PM

Ballroom 111B

Symposium: Biogeography & Diversification of Amphibians & Reptiles - Pacific Northwest & CA Floristic Province III

Moderator: Jon Richmond

1:30 pm	<i>H. Bradley Shaffer, Erin Toffelmier</i>	Genetics versus genomics and what each tells us about western US reptile and amphibian phylogeography
2:00 pm	<i>Robert Fisher, Lee Grismer, Samuel Fisher, Jesse Grismer, Brian Hinds, Jeff Nordland, Jonathan Richmond</i>	The Melting Pot, interpreting the origin of the admixed herpetofauna of coastal southern California
2:15 pm	<i>Joshua Hallas, Thomas Parchman, Chris Feldman*</i>	Landscape patterns of adaptive and neutral variation match between predator (<i>Thamnophis couchii</i>) and prey (<i>Taricha sierrae</i>) in the Sierra Nevada
2:30 pm	<i>Joshua Hallas, Thomas Parchman, Anthony Gilbert, Edmund Brodie III, Michael Pfrender, Edmund Brodie-Jr, Chris Feldman</i>	Historical isolation and connectivity influence coevolutionary patterns of toxin resistance in the aquatic garter snake (<i>Thamnophis atratus</i>)

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| 2:45 pm | <i>Tereza Jezkova, Keaka Farleigh</i> | Genomic Approaches to Detecting Signals of Local Adaptation with Application using Western Herpetofauna |
| 3:00 pm | <i>Amy Vandergast, Dustin Wood, Paul Maier</i> | Applying genetics to inform the three R's (resiliency, redundancy, and representation) for conservation of California's rich diversity of herpetofauna. |
| 3:15 pm | <i>Deanna Olson</i> | Conservation of Endemic Old-Growth Forest-Associated Amphibians in the US Northwest |
| 3:30 pm | <i>Gwen Bury</i> | Projected threats of climate change to stream amphibians of the Pacific Northwest. |
| 3:45 pm | <i>David S Pilliod, Michelle I Jeffries, Robert S Arkle, Deanna H Olson</i> | Predicting Future Hotspots of Squamate Diversity in the Pacific Northwest as the Climate Changes |

Saturday 30 July • Oral Presentations

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

8:15 AM – 9:30 AM

Ballroom 111C

Session 30: General Ichthyology I

Moderator: Brian Sidlauskas

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| 8:15 am | <i>Matthew A. Burnett, John P. Sullivan, Carl D. Hopkins</i> | Three New Species of Electric Fishes (Paramormyrops: Mormyridae: Osteoglossomorpha) with Unbalanced Electric Organ Discharges (EODs) |
| 8:30 am | <i>Dean Hendrickson, John Lundberg, Kyle Luckenbill, Mariangeles H. Arce</i> | Update on taxonomic and conservation status of North American blindcats (<i>Ictaluridae</i>) WITHDRAWN |
| 8:45 am | <i>Bruno Melo, Melanie Stiassny</i> | Phylogeny of Alestidae and Evolution of Paedomorphosis: New Evidence from Genomic Data (Ostariophysi: Characiformes) |
| 9:00 am | <i>Victor de Brito, Devin Bloom</i> | Does Ecological Opportunity Influence Patterns of Phenotypic Evolution Following the Invasion of Freshwaters in Fishes? |
| 9:15 am | <i>Kyle Piller, Chantal Parker, Diego Elias, Caleb McMahan, Wilfredo Matamoros</i> | Genetic variation among populations of Tlalo hildebrandi (<i>Profundulidae</i>) |

8:00 AM – 9:30 AM

Conference Theater

Session 31: AES Diversity, Equity, & Inclusion (first 1)/Fisheries, Conservation and Management I (last 5)

Moderator: Karyl Brewster-Geisz

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| 8:00 am | <i>David Shiffman, Triana Arguedas-Álvarez, Charles Bangley, Reilly Boyt, Isabelle Cote, Toby Daly-Engel, Alexandra Davis, Leo Gaskins, Jasmin Graham, Rachel Graham, Shaili Johri, Catherine Macdonald, Misty Paig-Tran, Alberto Roca, Gail Schwieterman, Lisa Whitenack, Tonya Wiley, Lara Ferry</i> | What can Professional Scientific Societies do to Improve Diversity, Equity, and Inclusion: A Case Study of the American Elasmobranch Society |
| 8:15 am | <i>C. Samantha Sherman, Glenn Sant, Colin A. Simpfendorfer, Eric D. Digel, Patrick Zubick, Grant Johnson, Michael Usher, Nicholas K. Dulvy</i> | M-Risk: A Framework For Assessing Global Fisheries Management Efficacy of Sharks, Rays, and Chimaeras |
| 8:30 am | <i>Teagen Partin, Alberto Gonzalez, Mary Burnham-Curtis</i> | Sharks on a plane: Shark fin seizure shines light on shark exploitation |
| 8:45 am | <i>Karissa Lear, Adrian Gleiss, Jeff Whitty, Steve Beatty, David Morgan, Travis Fazeldean</i> | Sawfish lifeboat springing a leak? Harnessing twenty years of ecological research to guide sawfish conservation and ecosystem management |
| 9:00 am | <i>Karyl Brewster-Geisz</i> | Update on North Atlantic Shortfin Mako Shark Management in the United States |
| 9:15 am | <i>Nick Dulvy, Nathan Pacoureau, Cassandra Rigby, Riley Pollom, Rima Jabado, David Ebert, Brittany Finnucci, Danielle Derrick, Katelyn Herman, Samantha Sherman, Wade VanderWright, Rachel Walls, John Carlson, Patricia Charvet, Kinattumkara Bineesh, Daniel Fernando, Gina Ralph, Jay Matsushiba, Craig Hilton-Taylor, Sonja Fordham, Colin Simpfendorfer, Caroline Pollock, Jessica Cheek</i> | The status of the world's sharks, rays, and chimaeras |

8:00 AM – 9:30 AM

Room 206C

Session 32: Herpetology Conservation & Management I

Moderator: Heather Bateman

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| 8:00 am | <i>Staci Amburgey, Amy Yackel-Adams, Shane Siers, Beth Gardner, Sarah Converse</i> | Optimizing monitoring of invasive brown treesnakes |
| 8:15 am | <i>Heather Bateman, Jeffrey Brown, Kelli Larson, Annika Enloe</i> | Unwanted Residential Wildlife: Evaluating Social-ecological Patterns for Snake Removals |

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8:30 am	<i>Shane Welch, Emily Rothman, Allison Kelley, John Holloway, Jayme Waldron</i>	Scaling Rattlesnake Translocations to Minimize Risk: Intra-Versus Extra Home-Range Translocations WITHDRAWN
8:45 am	<i>Suresh Subedi, Susan Walls*, William Barichivich, Ryan Boyles, Michael Ross, Aaron Hogan, John Tupy</i>	Future changes in habitat availability for two specialist snake species in the imperiled pine rocklands of South Florida
9:00 am	<i>J. Tomasz Giermakowski, Randy D. Jennings, Bruce L. Christman</i>	Distribution of Narrow-headed Gartersnakes (<i>Thamnophis rufipunctatus</i>) in Southwestern New Mexico, USA
9:15 am	<i>Robert Lovich, Matthew Allender, Emilie Ospina, Chris Petersen</i>	Nationwide Department of Defense Snake Fungal Disease Survey Part II

8:30 AM – 9:30 AM

Room 206D

Session 33: Ichthyology Conservation & Management

Moderator: Tom Munroe

8:30 am	<i>Thomas Munroe, Gina Ralph, Christi Linardich</i>	Extinction Risk Assessments for Members of the Flatfish Suborder Pleuronectoidei: A Global Perspective on Conservation Evaluations for a Diverse Taxon
8:45 am	<i>Ryan Burner, Wesley M Daniel, Richard Erickson</i>	Global 'BioLake' Climate Layers for Aquatic Invasive Species Risk Assessment
9:00 am	<i>Taegan Perez, Arturo Angulo, Nathan Lujan, Nathan Lovejoy</i>	Taxonomy of Invasive Hypostomus (<i>Loricariidae</i>) in Costa Rica and the US, using an Integrative Approach
9:15 am	<i>Deimer D. Ramos-Pérez, Juan J. Hernández-Correa, Jesús Vargas-González, Ángel L. Martínez-González, Glenys Tordecilla-Petro, Charles W. Olaya-Nieto, Fredys F. Segura-Guevara*</i>	Length-Weight relationship of Yellow Mojarra <i>Caquetaia kraussii</i> in the Ciénaga Grande de Lórica, Colombia

10:00 AM – 11:30 AM

Ballroom 111C

Session 34: General Ichthyology II

Moderator: Luke Tornabene

10:00 am	<i>Elizabeth Miller, Christopher Martinez, Sarah Friedman, Peter Wainwright, Samantha Price, Luke Tornabene</i>	Alternating Regimes of Shallow and Deep Diversification in Marine Fishes
10:15 am	<i>Sean Trainor, Kory Evans</i>	Scale shape vs Trophic position: Testing form and function relationships in an assemblage of reef fishes
10:30 am	<i>Kory Evans, Olivier Larouche, JoJo West, Samantha Gartner, Mark Westneat</i>	Burrowing Constrains Patterns of Skull Shape Evolution in Wrasses
10:45 am	<i>Breana Goldman, Karen Crow</i>	MYTHBUSTERS: refining what we understand about anal fin variation in surfperches
11:00 am	<i>Thaddaeus Buser, Olivier Larouche, Andres Aguilar, Michael Sandel, Brian Sidlauskas, Adam Summers, Kory Evans</i>	Cranial Evolution of Sculpin Fishes (<i>Superfamily Cottoidea</i>) Shows Rapid Acceleration After Invading Freshwater

10:00 AM – 12:00 PM

Conference Theater

Session 35: AES Fisheries, Conservation & Management II

Moderator: Nick Dulvy

10:00 am	<i>Sara Mirabilio, Richard Brill, Peter Bushnel, Amanda Wilson</i>	Refinement and Testing of a Microprocessor-Based Shark Bycatch Reduction Device (M-B BRD) Using an Academic-Industry Partnership
10:15 am	<i>Jasmin Graham, Andrea Kroetz, Gregg Poulakis, Rachel Scharer, John Carlson, Susan Lowerre-Barbieri, Danielle Morley, Eric Reyier, R. Dean Grubbs</i>	Commercial fishery bycatch risk for large juvenile and adult smalltooth sawfish (<i>Pristis pectinata</i>) in Florida waters
10:30 am	<i>Dylan M. Yakich, Andrew K. Wooley, Lukas B. Heath, Gregg R. Poulakis</i>	Marine Debris and Other Anthropogenic Effects on the Smalltooth Sawfish, <i>Pristis pectinata</i>
10:45 am	<i>Steven Kessel, Jill Brooks, Abby Nease, Bonnie Ahr</i>	High Site-Attachment of Caribbean Reef Sharks (<i>Carcharhinus perezii</i>) and Movements Relative to No-Take Marine Reserve Boundaries

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11:00 am	<i>Tobey Curtis, Daniel Crear</i>	Potential Consequences of Climate Change-Driven Shifts in White Shark Nursery Habitat in the Northwest Atlantic Ocean
11:15 am	<i>Michael McCallister, Lauran Brewster, Marcus Drymon, Cliff Hutt, Matthew Ajemian</i>	Using a Citizen-Science Approach to Characterize Shark Depredation in the Recreational Fisheries of the Southeast United States
11:30 am	<i>Marcus Drymon, Amanda Jefferson, Mandy Karnauskas, Steven Gray, Savannah Swinea, Evan Prasky, Steven Scyphers</i>	Capturing Fishermen's Knowledge to Better Characterize Shark Depredation in the US Gulf of Mexico
11:45 am	<i>Keith Fuller, Cindy Tribuzio</i>	Exploration of Machine Learning as a Tool for Pacific Sleeper Shark Population Assessment

10:00 AM – 11:45 AM

Room 206C

Session 36: Herpetology Conservation & Management II

Moderator: *Michael Benard*

10:00 am	<i>Jason Irwin</i>	Use of Road Crossing Structures by Reptiles and Amphibians in the Snoqualmie Pass Area of Washington State (USA)
10:15 am	<i>Evan S. Grimes, Marissa L. Kneer, Jacob F. Berkowitz</i>	Impacts of Military Activity on Wetlands and Herpetofauna
10:30 am	<i>Michael Dreslik, John Crawford, Andrew Kuhns</i>	Synergies Among Threats and Data Gaps for Herpetofauna of Conservation Concern
10:45 am	<i>Gregory LeClair, Matthew Chatfield, Zachary Wood, Jeffrey Parmelee*, Cheryl Frederick</i>	Influence of the COVID-19 pandemic on amphibian road mortality in Maine.
11:00 am	<i>Hunter Howell, Joel Trexler, Jeffrey Kline, Matthew Pintar, Christopher Searcy</i>	Long-term Declines of Amphibians Across the Everglades Ecosystem
11:15 am	<i>Michael Benard, Kacey Cope, Hilary Rollins, David Dimitrie</i>	A decade of <i>Amybstomasalamander</i> population dynamics in response to wetland creation and terrestrial habitat removal in isolated urban woodlots.
11:30 am	<i>Crysta Gantz, Keith Douville, Julie Tyson, Angela Strecker, Max Lambert</i>	River and Landscape Patterns of Western Toad (<i>Anaxyrus boreas</i>) – A Species of Greatest Conservation Need – in the Chehalis Basin

1:30 PM – 4:00 PM

Ballroom 111C

Session 37: General Ichthyology III (first 3)/Morphology at NMNH (last 7)

Moderator: *Dave Johnson*

1:30 pm	<i>Elizabeth Tristano, Missy Gibbs</i>	Nutrient Contributions from Highly Invasive Armored Catfish to a Florida Spring
1:45 pm	<i>Luke Tornabene, Megan Ewing, Rachel Welicky, Ross Robertson, Carole Baldwin</i>	Invasive Lionfish on Caribbean Deep-Reefs
2:00 pm	<i>Yasin Bakis, Xiaojun Wang, Hank Bart</i>	Updating and Expanding FishNet2 to Sustain Its Use in High Impact, Global, Ichthyological Research
2:15 pm	<i>Alessio Datovo, Paulo Presti, George Vita, Murilo Pastana, Luiz Peixoto</i>	Evolution of the gular muscles in ray-finned fishes
2:30 pm	<i>Vinicius Espindola, David Johnson</i>	What is the sister group of the Saccopharyngoidei (Teleostei: Anguilliformes)?
2:45 pm	<i>Daniel Lumbantobing, Lynne Parenti</i>	Diversity of the Osteology and Myology of the Hyoid Bar in Beloniformes (Teleostei: Atherinomorpha)
3:00 pm	<i>Murilo Pastana, G. David Johnson, Alessio Datovo</i>	The Evolution of Tunas, Mackerels, Snake Mackerels, and Billfishes Based on a Large-Scale Phenotypic Phylogeny
3:15 pm	<i>Katherine Bemis, James Tyler, Atsushi Kaneko, Keiichi Matsuura, Kiyomi Murakumo, Vinicius Espindola, Jean-Lou Justine, Diane Tyler, William Bemis</i>	Pelvic-fan Flaring and Inflation in the Three-Tooth Puffer, <i>Triodon macropterus</i> (Tetraodontiformes: Triodontidae)
3:30 pm	<i>Matthew Girard, Ai Nonaka, Carole Baldwin, G. David Johnson</i>	Larva of the Gargoyle cusk (<i>Xyelacyba myersi</i>) and its relationship with the Bony-eared assfish (<i>Acanthonus armatus</i>)

Saturday 30 July 2022

3:45 pm *G David Johnson, Ed Brothers, Richard Collins*

Putative Batesian Mimicry of Gelata by Larvae of Marine Fishes-
Based on in-situ Images from Blackwater Photographers
WITHDRAWN

1:30 PM – 3:30 PM

Conference Theater

Session 38: AES Fisheries (first 1)/Physiology (first 5)/Morphology (last 4)

Moderator: Kara Yopak

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| 1:30 pm | <i>Jill Brooks, Emma Kent, Jessika Guay, Jacqueline Chapman, Vivian Nguyen, Daniel Tabatabai, Kaytlin Russel, Thomas Gallagher, Steven Cooke, Hannah Medd</i> | The Recreational Shore-based Shark Fishery in Florida, USA: Catch Rates, Mortality Rates, and Updates |
| 1:45 pm | <i>Michael Kelly</i> | Sleeping at the bottom of the sea: The first physiological evidence of sleep in sharks |
| 2:00 pm | <i>Elana Rusnak, Liza Merly</i> | Acute Phase Reactants in the Nurse Shark, <i>Ginglymostoma cirratum</i> |
| 2:15 pm | <i>Wade VanderWright, Jennifer Bigman, Anthony Iliou, Nick Dulvy</i> | Metabolic Morphology and Ecological Lifestyle In Sharks |
| 2:30 pm | <i>Christine Bedore, Emily Sapp, Pierce Folk, Johanne Lewis, Kady Lyons, Alexa Delaune</i> | Liver Biopsy as a Non-lethal Sampling Technique for Laboratory and Field Applications |
| 2:45 pm | <i>Kady Lyons, Jennifer Wyffels, Sonsiray Álvarez-Narváez, Emily Peele, Ryan Freedman, Susan Sanchez</i> | Temporal Microbiome Colonization Dynamics of Zebra Shark Egg Cases |
| 3:00 pm | <i>Gregg R. Poulakis, Jennifer T. Wyffels, P. Eric Fortman, Andrew K. Wooley, Lukas B. Heath*, Patrick W. Wilson</i> | Morphology of the Embryonic Rostral Sheath of the Smalltooth Sawfish, <i>Pristis pectinata</i> |
| 3:15 pm | <i>Kara Yopak, Omar Santana-Morales, Dan Cartamil, Gary Cowin, Shaun Collin</i> | Are Two Heads Better Than One? Brain and Sensory Organization in a Dicephalic Blue Shark Embryo, <i>Prionace glauca</i> |

1:30 PM – 4:00 PM

Room 206C

Session 39: Squamate Ecology (*last talk is morphology)

Moderator: Roger Anderson

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| 1:30 pm | <i>Roger Anderson</i> | Nanohabitat use, behaviors and body temperatures of the lizard, <i>Sceloporus occidentalis</i> along the cool coast of the Salish Sea |
| 1:45 pm | <i>Florence Wen, Oliver Ljustina</i> | Demographics and Microhabitat Use of a Recently Established Population of Invasive <i>Anolis sagrei</i> in Southeastern Louisiana |
| 2:00 pm | <i>James Archie</i> | Demographic Fluctuation of Sky-island Populations of <i>Sceloporus occidentalis</i> on a Mojave Desert Sky Island: Collapse, Recovery, and Persistence |
| 2:15 pm | <i>Amber Wright, Stevie Kennedy-Gold, Carla Piantoni, Emily Naylor, Robyn Screen, Tyler Figueira, Carlos Navas, Timothy Higham</i> | Traits predict multidimensional resource use in an introduced lizard community of anoles and day geckos in Hawai'i. |
| 2:30 pm | <i>Matthew Lattanzio</i> | Beyond "Thermoregulation": Microhabitat Use Impacts Both UV and Temperature Regulation Effectiveness in Tree Lizards |
| 2:45 pm | <i>Luke Frishkoff, Gavia Lertzman-Lepofsky, Luke Mahler</i> | Evolutionary Opportunity and the Limits of Community Similarity in Replicate Radiations of Island Lizards |
| 3:00 pm | <i>Erin Westeen, José Gabriel Martínez-Fonseca, Ian Wang</i> | Diverse phenotypes facilitate niche partitioning in a sky island <i>Sceloporus</i> assemblage |
| 3:15 pm | <i>Alan Jones, Tiffany Bogan, Andrew Grosse, Scott Parker</i> | Habitat Use and Movement Patterns of Northern Pine Snakes (<i>Pituophis melanoleucus</i>) in Coastal South Carolina |
| 3:30 pm | <i>Neil Balchan, Stephen Mackessy</i> | Resistance against rattlesnake venoms in a Great Plains rodent community |
| 3:45 pm | <i>Cliff Fontenot, Nisha Lama</i> | Snake Eyes Contain a Soft, Deformable, Lens: a Game Changer in Accommodating Refractive Error |

Session 40: Herpetology Physiology*Moderator: Brad Carlson*

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| 1:30 pm | <i>Bradley Carlson, William Robinson</i> | Color, Behavior, and Stress Physiology are not linked in Box Turtles |
| 1:45 pm | <i>Jennifer Terry, Emily Field, Lorin Neuman-Lee</i> | Glucocorticoids, Sex Steroids, and Innate Immunity, Oh My!: Examining Reproductive Investment and Physiological Tradeoffs in a Freshwater Turtle |
| 2:00 pm | <i>Michael Finkler, Andrew Pervez</i> | Effects of Shifting Temperatures During Early Incubation on Embryonic Development and Growth in <i>Chelydra serpentina</i> . |
| 2:15 pm | <i>Rysa Thomas, Shannon Richard, Julia Kaiser, M. Rockwell Parker</i> | Castration and Testosterone Replacement Have Dose- and Tissue-Specific Effects in Garter Snakes |
| 2:30 pm | <i>Jorge Lopez-Perez, Christopher Murray</i> | Testing the Immunocompetence Handicap Hypothesis: Environmental Androgens as a Model System for Steroid-Immune Interaction |
| 2:45 pm | <i>Erin Lewis, Karen Kapheim, Alison Webb, Charles Knapp, John Iverson, Frank Oliaro, Dale DeNardo, Susannah French</i> | Tourism-Induced Effects on the Gut Microbiome of Bahamian Rock Iguanas |
| 3:00 pm | <i>Michel Ohmer, Talisin Hammond, Samantha Switzer, Trina Wantman, Jeffery Bednark, Emilie Paciotta, Jordan Coscia, Corinne Richards-Zawacki</i> | Developmental Environment Has Lasting Effects on Amphibian Behavior and Thermal Physiology |
| 3:15 pm | <i>Scott Parker, Ryan Yoder</i> | Hypoxia in ovo effects brain development and exploratory behavior in adult Leopard Geckos (<i>Eublepharis macularius</i>) |
| 3:30 pm | <i>Michael Britton, Maureen Donnelly</i> | Intraspecific variation of resting metabolism across elevation in Neotropical amphibians |
| 3:45 pm | <i>Natalie Claunch, Colin Goodman, Bryan Kluever, Narayani Barve, Robert Guralnick, Christina Romagosa</i> | Thermal factors influencing distribution of Panther chameleons (<i>Furcifer pardalis</i>) in Florida |

Saturday 30 July • Poster Presentations

4:00 PM – 6:00 PM • Ballroom 100

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

Contributed Ichthyology

- Jordan Waldron, Brittany Bottom, Jessica Carroll, Lexi Lindsley, Brian Wingender, M. Laura Habegger*
Otoliths through time: a multidecadal characterization of fish otoliths in a changing climate
- Katie Bennett, Divinity Paterson*, Katherine Maslenikov*
Investment in Otolith Collection Capacity at the UW Burke Museum
- Kalena Kattil-deBrum, Samara Tobey, Luke Tornabene, Holly Barker*
Environmental Justice for Marshall Island Communities: Confronting our Fish Collection's Colonial History
- Emily DeArmon, Thomas Turner*
Conservation Efforts and Preserving Imperiled Ichthyofauna of the American Southwest
- Jeremiah Pouncy, Sarah Handy, Stacy Farina**
Interspecies and Individual Variation in Sculpin Intracranial Pressures During Ventilation
- Reid Adams, Ginny Adams, Willow Newman, Robert Remy, Chance Garrett, Cade Richesin, Matthew Gifford*
Critical Thermal Maxima of Arkansas Stream Fishes Determined Using Field Acclimatization Protocols
- Gina Selig, Jeffrey Drazen, Peter Auster*
Distribution and community structure of deep-sea demersal fishes in the central Pacific
- Michaela Labare*
Assessing Diversity and Interannual Variation of California-Fishes Using DNA Barcoding of Ichthyoplankton WITHDRAWN
- Richard D. Durtsche, Samuel P. Bauer, Mackenzie Danker*
Aerobic Scope in Stream Fishes as a Fitness Indicator of Climate Change Impacts
- Cindy Fajardo, Michael Burns, William Ludt*
Body shape evolution in cryptobenthic reef fishes found in the Tropical Eastern Pacific
- Sara Cartwright, Dahiana Arcila*
Fishes of Oklahoma App
- Antony S. Harold, D. Andrew Baltzegar*
Morphological Study of *Bregmaceros atlanticus* and *B. japonicus* (Bregmacerotidae: Teleostei), with Recognition of a New Species from the Eastern Pacific
- Terry Donaldson, David Burdick*
The Guam Biorepository: a Path Towards Rescuing and Expanding a Fish Collection
- Randy Singer, Terry Grande*, Mark Wilson*
Morphometric and meristic disparity within the zeiform genus *Parazen* correlated with its geographic distribution
- Michael Ghedotti, Kandice Agudo, Flor Gonzalez, Matthew Davis, W. Leo Smith, Benjamin Frable*
The Caudal Bioluminescent Organ of the Pelican Eel, *Eurypharynx pelecanoioides*, and Its Evolution (Anguilliformes).
- Justin Bagley, Rachel Bonner, Christian Braswell, Diego Elias*, Macee Glick, William, Hanson-Regan, Kayla Morrow, Kevin O'Malley, Elyse Parker, Mackenzie Smith, Fernando Alda*
Global Macrogenetic Analysis of Fish Diversity and Demographic History
- Fernando Alda, Taya de Blonk, Juliet Wimberly, Susana Schönhuth, David Neely, Richard Mayden, Michael Blum*
Phylogeography of Stonerollers (*Campostoma*: Cyprinidae) across North America
- Tyler Muller, Andrew Simons*
Systematics of the Pirate Perches, Aphredoderus.
- Leo Smith, H.J. Walker, Matthew Girard, Matthew Davis*
The Phylogeny and Taxonomy of the Stomiiform Bristlemouths and Portholefishes
- Ulises Rosas, Ricardo, Betancur-R., Guillermo Orti*
What is Protacanthopterygii? A Phylogenomic Perspective of Early-branching Lineages of Euteleost Fishes WITHDRAWN
- Calder Atta, Duane Stevenson, James Orr, Alison Deary, Luke Tornabene*
Species delimitation in four putative species pairs of North Pacific flatfishes
- Luke Tornabene, Rachel Manning, Ross Robertson, James Van Tassell, Carole Baldwin*
A New Lineage of Deep-reef Gobies from the Caribbean, Including Two New Species and One New Genus (Teleostei: Gobiidae: Gobiomatini)

Saturday 30 July 2022

<i>Kevin Tang</i>	Phylogeny of Damselfishes (Teleostei: Pomacentridae)
<i>Roberto Reis, Edson Pereira</i>	Unexpectedly high diversity in a small basin again: the genus <i>Pariorhaphis</i> (Siluriformes: Loricariidae)
<i>Mackenzie Woods</i>	Population Structure of Coral Reef Fishes in the Line Islands
<i>Kayla Dye, Kevin Conway, Chris Hollenbeck, Megan Bean, Sarah Robertson, David Portnoy</i>	Conservation genomic assessment of imperiled freshwater fishes endemic to the Pecos and Devils Rivers
<i>Nick Weber, Beverly Barnett, Christopher Hollenbeck, David Portnoy</i>	Population Genomics of Red Grouper (<i>Epinephelus morio</i>) in the Western North Atlantic and Gulf of Mexico
<i>Tony Miskiewicz, Sharon Appleyard, Safia Maher, Ana Lara-Lopez, Paloma Matis, Stewart Fielder, Iain Suthers</i>	Genetic and morphological identification of formalin fixed larval fishes; how long is too long?
<i>Robert Bretzing, Kevin Conway, Chris Hollenbeck, Megan Bean, Sarah Robertson, David Portnoy</i>	Hybridization and Introgression of Two Imperiled Headwater Fishes, Leon Springs Pupfish, <i>Cyprinodon bovinus</i> , and Pecos <i>Gambusia</i> , <i>Gambusia nobilis</i> .
<i>Alison Monroe, Katherine Lanoue, William Patterson, Paul Rudershausen, Jeffrey Buckel, Eric Anderson, Christopher Hollenbeck, David Portnoy</i>	Estimating Atlantic red snapper population size with genetic close-kin mark recapture
<i>Bruce Stallsmith</i>	Significant Female Skew in Six Species of <i>Etheostoma</i> Darters in the Subgenus <i>Simoperca</i>
<i>Prosanta Chakrabarty, Emily Taylor</i>	Where is ASIH headed? An open discussion and listening space.
<i>Barbara Calegari, Maria Laura Delapieve, Marina Mendonça, Rafaela Priscila Ota, Renata Rubia Ota, Karla Soares, Andrea Thomaz</i>	Female participation and representativeness in scientific publications in the journals of the North American and Brazilian Societies of Ichthyology
<i>Olivia Schweikart</i>	Environmental DNA (eDNA) Assessment of Freshwater Fishes from the Guayas River Basin Threatened by Coastal Incursion

ASIH Storer Ichthyology

<i>Esme Macpherson, Frances Hauser, Ahmed Elbassiouny, William Crampton, Belinda Chang, Nathan Lovejoy</i>	Evolution of the Long Wavelength-Sensitive Opsin (LWS) Gene in South American Electric Fishes (Gymnotiformes).
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Contributed Herpetology

<i>Luisa Segovia, Angel Klawiter, Karen Kiemnec-Tyburczy</i>	Characterization of Major Histocompatibility Complex gene diversity in invasive populations of American Bullfrogs (<i>Rana</i> [Lithobates] <i>catesbeiana</i>) in California
<i>Brandon Kong, Sean Reilly</i>	Genetic Variation and Demographic History of the Santa Cruz Black Salamander (<i>Aneides niger</i>)
<i>Anneliese Myers, Jason Irwin*</i>	Genetic Connectivity of the Western Toad (<i>Anaxyrus boreas</i>) Along Interstate-90 in the Snoqualmie Pass Area of Washington State (USA)
<i>Tiffany Bogan, Michelle Barthel, Alan Jones, Andrew Grosse, Scott Parker</i>	eDNA Detection of Northern Pine Snakes, <i>Pituophis melanoleucus melanoleucus</i> WITHDRAWN
<i>Matthew Holding, Laura Haynes, David Siemieniak, Colin Kretz, David Ginsburg</i>	Peptide phage display for high-throughput, unbiased profiles of snake venom function
<i>Fabiola Baeza-Tarin, Tomas Hernandez, Mark Herr, Laine Giovanetto*, David Lazcano, Sean Graham</i>	New Distribution Records of Amphibians and Reptiles of the Sierra Del Carmen, Coahuila, Mexico.
<i>Thomas Marshall, Justin Havird, David Hillis</i>	Investigating Mitonuclear Co-Evolution and Introgression in the North American Cornsnakes (<i>Pantherophis guttatus</i> complex)
<i>Andrea Colton, Michael Dreslik</i>	Determining Best Thermal Mimic
<i>Elizabeth Patton, Stuart Nielsen, Todd Jackman, Aaron Bauer</i>	Phylogenetic Systematics of Ground Agamas (Agama) in Southern Africa
<i>Mariela Osorno, João Tonini, Rafael de Sá</i>	Diversity of the poorly known Neotropical genus <i>Synapturanus</i> (Microhylidae: Otophryninae).
<i>Zach Randall</i>	Access for all: 3D digitization of wet collections using photogrammetry

Saturday 30 July 2022

<i>Daniele Wiley, Jonathan Duran, Najia Cuzmar, Nalanie Miranda, Matthew Atkinson, Anna Savage, Lisa Barrow</i>	Community-Level Detection of Amphibian Host-Pathogen Distributions Using Museum Frozen Tissue Collections
<i>Carol Spencer, Emily Braker, Mariel Campbell, Carla Cicero, Emily DeArmon, Andrew Doll, Lindsey Frederick, J. Tom Giermakowski, Kyndall Hildebrandt, Michelle Koo, Angela Linn, Teresa Mayfield-Meyer, Christopher Witt, Elizabeth Wommack</i>	Arctos: A Collaborative Collection Management Solution For Amphibian, Reptile and Fish Collections
<i>Grace Davis</i>	Metamorphosis of the Tiger Salamander, <i>Ambystoma tigrinum</i>
<i>Charlie Holguin, Nicholas Caruso, Holly Kindsvater</i>	Investigating the Temperature-Size Rule among <i>Eurycea cirrigera</i>
<i>Dustin Siegel, Christopher Murray*</i>	There's Baby Snakes Out There This Big?!?!
<i>Samantha Trame, Jacob Denova, Kenzie Pereira, Sara McClelland, Kevin Gribbins, Justin Rheubert, Dustin Siegel*</i>	External nasal gland morphology of <i>Eurycea bislineata</i> (Amphibia, Urodela, Plethodontidae)
<i>Sara McClelland</i>	Environmental Enrichment During Development: Neurodevelopmental Impacts of Rearing Tadpoles in Either Empty Tanks or an Enriched Tank Environment
<i>Aaron Kaplan, Albina Mikhaylova, Adam Rosenblatt, M. Laura Habegger</i>	The Effect of Drought on Alligators' Eggshell Morphology
<i>Krista Koeller</i>	Limbs, Shoulders, Necks, and Trunks: An Investigation of the Neck-Trunk Boundary in Limbless Squamates
<i>Cristian Hernandez-Morales, Alison Ngo, Leila Abdelhadi, Hannah Falks, Walter E. Schargel, Eric N. Smith, Juan D. Daza</i>	The Skull of the Semi-Aquatic Neotropical Lizard Genus <i>Echinosaura</i> (Gymnophthalmidae: Cercosaurinae) With Comments on Important Characters Within Gymnophthalmoidea
<i>Kelsey Fenner, Aaron Bauer</i>	Comparative Skull Morphology and Body Size Evolution of Mainland African Plated Lizards (Squamata: Gerrhosauridae)
<i>Ryan Cook, Aaron Bauer</i>	Comparative osteology of Western Australian toadlets (Myobatrachidae; Uperoleia)
<i>Kenneth Wang, Kelly-Ann McDonald, Tyshiona Brandon, Todd Pierson</i>	An Evaluation of Sexual Dimorphism in Head Size and Shape in <i>Pseudotriton ruber</i> (Red Salamander)
<i>Emily E. Gremling, Karen, M. Kiemnec-Tyburczy, John, O. Reiss</i>	Morphology of the olfactory organs of the California Slender Salamander (<i>Batrachoseps attenuatus</i>)
<i>Jacob Apjohn, Brad Coupe</i>	Reproductive Behaviors of the Sidewinder Rattlesnake (<i>Crotalus cerastes</i>)
<i>Ricardo Gibert, Dylan Maag*, Rulon Clark</i>	Investigating Personality in Venomous Snakes: Individual Rattlesnakes Exhibit Consistent Behavioral Responses in Defensive and Exploratory Contexts
<i>Zane Cullinane-Walsh, Hannah Olson*, Miranda Clendening, Athena Rycyk</i>	Social Behavior Deficiencies in Captive American Alligators (<i>Alligator mississippiensis</i>)
<i>Lauren A. Nazarian, Eric A. Tillman, Bryan M. Kluever, M. Rockwell Parker*</i>	Skin Lipids Alone Enable Scent Trail Discrimination in an Invasive Reptile, the Argentine Black and White Tegu
<i>Parker Woodward, Jacob Pressler, Siera Stuart, Alison Ossip-Drahos, Julio Rivera, Emilia Martins</i>	The boys in blue: information content of color signals in the eastern fence lizard
<i>Patrick Baker, Paris Williams, Rachel Hughes, Patrick Wolff, Aaron Rice</i>	Calling Phenology of Amphibian Assemblages in the Hudson Highlands
<i>Alicia Mathis, Sarah Heimbach</i>	Do Varying Levels of Predation Risk Affect Territorial Behavior by Male and Female Ozark Zigzag Salamanders?
<i>Courtney Hendrickson, Tiffany Garcia, Andrew Blaustein</i>	Pond community structure and climate change resilience: restoration and management applications in the Willamette Valley, OR
<i>Catherine Renton, Janice Healey, Vincent Farallo*</i>	Below the Undergrowth: Quantifying Soil in the Range of Two Microendemic Plethodontids Compared to the Widespread <i>Plethodon cinereus</i>
<i>Adrian Slade, Tyler Larsen*</i>	Road ecology through the lens of snakes in the Columbia Basin: Patterns of mortality, occurrence, and activity

Saturday 30 July 2022

<i>Grace Wu, Michael J. Dreslik</i>	Patterns Affecting Snake Species Occupancy within a Chronosequence of Tallgrass Prairie Restorations
<i>John Rowe, Tyler Goerge, Chelsea Martin, William Mulligan</i>	Daily and Seasonal Activity of Northern Watersnakes (<i>Nerodia sipedon sipedon</i>) in a Central Michigan Wetland
<i>Shayla Graham, Jillian Fleming, Jennifer Deitloff*</i>	Spatial distribution and population density of <i>Plethodon cinereus</i> using mark-capture-recapture methods
<i>Louise Mead, Kristine Grayson, Caitlin Fisher-Reid, Raisa Hernandez-Pacheco, Alexa Warwick, Tanya Matlaga, Sean Sterrett, Jill Fleming, Chris Sutherland, David Miller, Evan Grant</i>	Testing a Collaborative CURE Model Using a Large-scale Salamander Research Network
<i>Zachary Laughlin, Kirsten Nicholson</i>	Microbiome Characterization and Comparative Diversity Among Biotypes in the Blue-spotted Salamander (<i>Ambystoma laterale</i>) Complex in Central Michigan
<i>Krista Dodd, Philip Campos, Autumn Holley, Angela Denton, Jonah Piovio-Scott, Kimberly Cook</i>	The interactions of <i>Batrachochytrium dendrobatidis</i> infection levels and frog cutaneous microbiomes in Cheney, WA, USA
<i>Calum Devaney</i>	New Insights from Old Specimens: The Autecology of Angolan Snakes
<i>Umilaela Arifin</i>	Preliminary Observation on the Interaction Dynamics of Three Frogs' Genera (Amphibia:Ranidae) Inhabiting Torrential Stream Habitats in Sumatra, Indonesia
<i>Julia Laterza-Barbosa</i>	Exploring Evolution Along the Vertical Dimension: Ground-to-Canopy Microhabitat Selection and Physiological Evolution in Neotropical Tree Frogs (Anura: Hylidae)
<i>Yuanxing Liao, Phillip Skipwith</i>	Ecology of Gekkota: Testing island effects on body size and habitat evolution in geckos
<i>Cass Condray, Lauren Branham, Maryem Assaoui, Danielle Bright, Allyson Fenwick</i>	Are Mediterranean Geckos (<i>Hemidactylus turcicus</i>) Choosing to Hunt Near Lights? Year-Round Light Surveys at the University of Central Oklahoma
<i>Erin Westeen, Isaac Krone*</i>	Evaluating Evidence for Karyotypic Speciation in Spiny Lizards, Genus <i>Sceloporus</i>
<i>Joseph Rangel, André Carvalho, Adam Leaché, Matthew Fujita</i>	Deep Homology of Follicular Glands in Divergent Lizard Clades
<i>Joshua Rivera, André Carvalho, Adam Leaché, Matthew Fujita</i>	Epidermal Gland Evolution in Whiptail Lizards (<i>Aspidoscelis</i>)
<i>Ana Camila Beltran-Urrego</i>	Evaluation of insect inclusion in gel diets for juvenile and adult freshwater turtles (<i>Trachemys</i> spp.) under captivity conditions
<i>Caleb Krueger, Fredric Janzen</i>	ROSIE, a Database of Reptilian Offspring Sex Ratios and Sex-Determining Mechanisms, Beginning with Testudines WITHDRAWN
<i>Tyler Stewart, Michael Dreslik, Andrew Kuhns, John Crawford, Christopher Phillips</i>	Assessing Kirtland's Snake (<i>Clonophis kirtlandii</i>) detection probabilities
<i>Emily Sunnucks, Seth LaGrange, Michael Dreslik</i>	Influence of Nearby Basking Opportunities on Eastern Massasauga Hibernacula Selection
<i>Emily Field, Jennifer Terry, Lorin Neuman-Lee</i>	Unraveling the Relationships Between Immunity, Reproduction, and Stress in Four Species of Watersnake
<i>Dustin Siegel, David Beamer, Jon Davenport*</i>	Reproductive biology and population demographics of <i>Eurycea chamberlaini</i>
<i>Molly C. Womack, Emma Steigerwald, David C. Blackburn, David C. Cannatella, Alessandro Catenazzi, Jing Che, Michelle S. Koo, Jimmy A. McGuire, Santiago Ron, Carol Spencer, Vance T. Vredenburg, Rebecca D. Tarvin*</i>	State of the Amphibia 2020: Five Years of Amphibian Research, Diversity, and Resources
<i>Tess Santoro, Zachary Laughlin, Kirsten Nicholson*</i>	Using Erythrocyte Cell Area or Nuclear Length for Rapid Assessment of Ploidy Level for the <i>Ambystoma laterale</i> Complex

Saturday 30 July 2022

<i>Rysa Thomas, M. Rockwell Parker</i>	Characterization of Steroid Hormone Receptor Expression During a Major Life-History Transition in <i>Thamnophis sirtalis parietalis</i>
<i>Michael Deutsch, David Adams, Matthew Gifford</i>	Examining the Physiological Stress Response of Prairie Lizard, <i>Sceloporus consobrinus</i> , following Extirpation of Keystone Predator, <i>Crotaphytus collaris</i>
<i>Cloe Capalongo, Vincent Farallo, Nicole Freeman</i>	Sizzling Salamanders: Thermal Physiology of <i>Plethodon cinerius</i> from Burned and Unburned Habitats
<i>Nicole Freeman, Vincent Farallo, Cloe Capalongo</i>	The Effect of Burned Habitat on the Metabolism of <i>Plethodon cinerius</i> Salamanders: Can They Stand the Heat?
<i>Alistair Dobson, Lisa Stratton, Kyra Sullivan</i>	Student-lead Coverboard Monitoring following Ecological Restoration
<i>Alexander Burdick, Bella Barker, Denita Weeks</i>	Invasive Bullfrogs in Western Colorado: Dietary Profile and <i>Batrachochytrium dendrobatidis</i> Status of <i>Lithobates catesbeianus</i> Removed From Local Wetlands
<i>Bella Barker, Alexander Burdick, Amanda Schrage-Lavelle, Denita Weeks</i>	Boreal Toad (<i>Anaxyrus boreas</i>) Microbiome Response to Itraconazole Treatment for <i>Batrachochytrium dendrobatidis</i> Infection
<i>John Maerz, Lauren Head, Meghan Bierden, Cynthia Carter, Brian Crawford</i>	Short-Term Responses of Terrestrial Salamanders to the Restoration of Fire in the Southern Appalachian Mountains
<i>Ramlah Zainudin, Elvy Quatrin Deka, Julius Georgy</i>	Prioritizing Conservation Area In Species Management Strategy For The Edible Bornean Giant River Frog <i>Limnonectes leporinus</i>
<i>Erika Nowak, Brian Halstead*</i>	Long-term Trends in Occurrence of a Population of Narrow-headed Gartersnakes
<i>Padraic Robinson, Jason O'Bryhim, David Scott, Adam McFall, Gabriela Rodriguez, Stacey Lance</i>	eDNA Concentration Positively Correlates to Abundance and Biomass in Amphibians
<i>Brock Lorenzen, Andrew Kuhns, Michael Dreslik, John Crawford, Christopher Phillips</i>	Efficacy of Sampling Techniques for Estimating Population Sizes of Ambystomatid Salamanders
<i>Sal Scibetta, Carl Franklin, Viviana Ricardez</i>	Non-Profit use of Social Media and Citizen Science as tools for the conservation and research of turtles in Texas
<i>Brad Glorioso, Hardin Waddle*, Matthew Atkinson, Anna Savage, Robert Mendyk</i>	After the Invasion: Monitoring Long-term Ecological Trends in Nonnative Cuban Treefrogs (<i>Osteopilus septentrionalis</i>) in Louisiana

Sunday 31 July • Symposia

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

8:00 AM – 9:30 AM

Ballroom 111B

Symposium: Utility of Museum Collections I

Moderator: *Hank Bart*

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|---------|--|---|
| 8:00 am | <i>Henry Bart</i> | The special significance of regional fish collections for long-term ecological and environment research |
| 8:15 am | <i>Thomas Turner</i> | Long-term ecological research enabled by regional biodiversity collections, stable isotope analysis, and environmental informatics |
| 8:30 am | <i>Frank McCormick</i> | Exploiting long-term environmental data for retrospective analyses and forecasting. |
| 8:45 am | <i>Carmen G Montana, Erin Shepta, Kevin Mayes</i> | Exploring Niche Overlap Between Native and Invasive Cyprinodontid Fishes: Using Museum Specimens to Complement Contemporary Surveys |
| 9:00 am | <i>Hernán López-Fernández, Karen M Alofs, Katelyn BS King, Michael Lenard, Justin Schell, Randal Singer, Kevin Wehrly, Andrea K Thomer</i> | Coupling historical survey data and museum specimens to understand changing ecological patterns |
| 9:15 am | <i>Andrew Bentley</i> | Extended specimens: Stable isotopes, long-term datasets, and vouchered Ichthyology collections |

8:30 AM – 9:30 AM

Ballroom 111A

Symposium: Exemplary Practices in Herpetological Education I

Moderator: *Theodora Pinou*

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|---------|--|--|
| 8:30 am | | Introduction |
| 8:45 am | <i>Emily Taylor</i> | Research While Teaching: Implementing a Course-based Undergraduate Research Experience (CURE) in the Herpetology Classroom |
| 9:00 am | <i>John Maerz</i> | Student Centered, Active Learning Models in Herpetology |
| 9:15 am | <i>Randy Singer, Anna Monfils, Jennifer Bauer, Elizabeth Leith, Molly Phillips, Julia Robinson, Jessa Waters</i> | The Importance of Community Building Around the Use of Natural History Collections in Education |

10:00 AM – 11:45 AM

Ballroom 111A

Symposium: Exemplary Practices in Herpetological Education II

Moderator: *Theodora Pinou*

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|----------|---|---|
| 10:00 am | <i>Fredric Janzen</i> | Using Long-term Herpetological Data Sets in the Undergraduate, Graduate, and Public Education Classroom |
| 10:15 am | <i>H. Bradley Shaffer</i> | Building a Better Herpetology Course that (Hopefully) Works for Everyone |
| 10:30 am | <i>David Blackburn, Edward Stanley, Jaimi Gray, Jenna Crowe-Riddell, Rachel Keefe, Ramon Nagesan, Daniel Paluh, Zachary Randall, Gary Sansone, Natasha Stepanova, Taylor West, Alison Davis-Rabosky</i> | Using Scientific Specimens and Their Digital Surrogates in Teaching Herpetology |
| 10:45 am | <i>Alison Davis-Rabosky, Joanna Larson, Hayley Crowell, Lisa Walsh</i> | Authentic Research Experience: Integrating Real Data and Student-led Experimental Design in Herpetology Courses |
| 11:00 am | <i>Robert E. Espinoza</i> | Going Live: The Benefits and Challenges of Incorporating Live Animals in Herpetology Courses |
| 11:15 am | <i>Theodora Pinou</i> | Self - Directed Learning in the Herpetology Classroom |
| 11:30 am | | Organize into workshop groups |

10:00 AM – 11:30 AM

Ballroom 111B

Symposium: Utility of Museum Collections II

Moderator: Tom Turner

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|----------|---|---|
| 10:00 am | <i>Allison Pease, Krista Capps</i> | Using Stable Isotope Analysis and Museum Collections to Examine Effects of Flow-Regime Change Across Large Spatial and Temporal Scales |
| 10:15 am | <i>Paula Mabee</i> | Fish Collections, Isotope Data, and Linked Environmental Data from the National Ecological Observatory Network (NEON) |
| 10:30 am | <i>Aubrey Dugger, David Yates, Tom Enzinger, Nina Omani</i> | Prediction of Water Availability with the WRF-Hydro Community Modeling System and Potential Applications in Water Management for Aquatic Ecosystem Health |
| 10:45 am | <i>Casey Dillman, Ryan Lepak, Sarah Janssen, Joel Hoffman, Michael Tate, Jacob Ogorek, Christopher Yarnes, Peter McIntyre</i> | Leveraging Museum-Preserved Fishes for Understanding Spatiotemporal Changes in Mercury Sources to Aquatic Ecosystems |
| 11:00 am | <i>Ryan Lepak, Joel Hoffman, Sarah Janssen, Jacob Ogorek, Michael Tate, Tylor Rosera, Morgann Gordon, Christopher Yarnes</i> | Reconstructing Mercury Trends in Great Lakes Gamefish That Are Complicated by Physical, Biological and Chemical Stressors |
| 11:15 am | | Discussion |

10:00 AM – 12:00 PM

Room 206C

Symposium: The Biology of Whiptail Lizards I

Moderator: Anthony Barley

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|----------|--|---|
| 10:00 am | <i>Peter Baumann</i> | Chromosome Acrobatics in Parthenogenetic Whiptail Lizards |
| 10:15 am | <i>Anthony Barley, Adrián Nieto-Montes-de-Oca, Norma Manríquez-Morán, Robert Thomson*</i> | The evolutionary network of whiptail lizards (<i>Aspidoscelis</i>) reveals predictable outcomes of hybridization |
| 10:30 am | <i>Valentine Patterson, David Ho, Nathaniel Deimler, Peter Baumann</i> | Allele Specific Expression in Asexual Whiptail Lizards (<i>Aspidoscelis neomexicanus</i>) |
| 10:45 am | <i>David Ho, Valentine Patterson, Nathaniel Deimler, Peter Baumann</i> | Genomics of <i>Aspidoscelis</i> Whiptail Lizards |
| 11:00 am | <i>Randy Klabacka, Hailey Parry, Kang Nian Yap, Ryan Cook, Victoria Herron, L. Miles Horne, Matthew Wolak, Jose Maldonado, Matthew Fujita, Andreas Kavazis, Jamie Oaks, Tonia Schwartz</i> | Lower Mitochondrial Respiration in Hybrid Parthenogenetic Lizards (genus <i>Aspidoscelis</i>) |
| 11:15 am | <i>Maggie Grundler, Doug Burkett, Erica Bree Rosenblum</i> | Stable isotope ecology of unisexual and sexual <i>Aspidoscelis</i> whiptail lizards |
| 11:30 am | <i>Kathleen Currie, Matthew Fujita</i> | Microbial Diversity of Sexual and Parthenogenetic Whiptail Lizards (<i>Aspidoscelis</i>) |
| 11:45 am | <i>Megen Kepas, Lise M. Aubry, Spencer B. Hudson, Layne Sermersheim, Anna-Joy Lehmicke, Douglas Eifler, Bryan M. Kluever, Susannah S. French</i> | Physiology, Distribution, and Reproductive Investment in the Colorado Checkered Whiptail (<i>Aspidoscelis neotesselatus</i>) in an Anthropogenically Disturbed Site |

1:30 PM – 3:00 PM

Room 206C

Symposium: The Biology of Whiptail Lizards II

Moderator: Robert Thomson

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|---------|---|--|
| 1:30 pm | <i>Jose Maldonado, TJ Firneno, Alexander Hall, Matthew Fujita*</i> | Mitochondrial Mutation Accumulation in Parthenogenetic Whiptail Lizards (<i>Aspidoscelis</i>) |
| 1:45 pm | <i>Anthony Barley, Adrián Nieto Montes-de-Oca, Norma Manríquez-Morán, Robert Thomson</i> | Species boundaries and pervasive gene flow in the spotted whiptail lizards (<i>Aspidoscelis gularis complex</i>) |
| 2:00 pm | <i>Sam Fisher, Rich Inman, Todd Esque, Kathy Baumberger, Adam Backlin, Monique Wong, Greg Pauly</i> | A plague of lizards: parthenogenetic whiptails are spreading throughout urban Southern California |
| 2:15 pm | | Discussion |

Sunday 31 July • Oral Presentations

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

8:00 AM – 9:30 AM

Ballroom 111C

Session 41: Ichthyology Systematics

Moderator: Tom Munroe

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|---------|---|--|
| 8:00 am | <i>John Bruner</i> | The German common name Sander is not a valid Latin name or scientific name for Walleye, Sauger, and European Pikeperches |
| 8:15 am | <i>Francisco Provenzano, Pablo Argüello*, Ramiro Barriga</i> | The Genus <i>Pseudohemiodon</i> (<i>Siluriformes, Loricariidae</i>) in Ecuador, with the Description of a New Species |
| 8:30 am | <i>Milton Tan, Mark Sabaj, Dahiana Arcila, Lily Hughes, Cláudio de Oliveira, Nathan Lujan, Ricardo Betancur-R, Guillermo Ortí</i> | Higher-Level Relationships of Catfishes (<i>Siluriformes</i>) from Phylogenomic Data |
| 8:45 am | <i>Maxwell Bernt, Melanie Stiassny</i> | Phylogenomic Analysis of the Airbreathing Catfishes (<i>Siluriformes: Clariidae</i>) using Ultraconserved Elements |
| 9:00 am | <i>Michael Young, Rebecca Smith, Kristine Pilgrim, Daniel Isaak, Kevin McKelvey, Sharon Parkes, Jacob Egge, Michael Schwartz</i> | A Molecular Taxonomy of <i>Cottus</i> in Western North America |
| 9:15 am | <i>Lily Hughes, Chloe Nash, Mark Westneat</i> | Congruence and Incongruence in the Phylogenomics of Wrasses and Parrotfishes (Family Labridae) |

8:00 AM – 9:30 AM

Conference Theater

Session 42: AES Genetics

Moderator: Marcus Drymon

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|---------|---|--|
| 8:00 am | <i>Toby Daly-Engel</i> | Long Live the Queens: Patterns of Kinship and Relatedness Indicate the Presence of Shark BOFFFFs |
| 8:15 am | <i>Tessa Morgan, Shannon Barry, Simon Gulak, Marcus Drymon, Emily Seubert, Toby Daly-Engel</i> | Is Blood Thicker than Water? Relatedness and kinship in Bull Sharks (<i>Carcharhinus leucas</i>) |
| 8:30 am | <i>Manav Agarwal, Jasmine Hall*, Eloise Cave, Dean Grubbs, Toby Daly-Engel</i> | Polyandry and Inheritance of Adaptive Immune Genes in Sandbar Sharks (<i>Carcharhinus plumbeus</i>) |
| 8:45 am | <i>Eloise Cave, Michael Criscitiello, Toby Daly-Engel</i> | Allelic Richness of the MHC Gene Complex in Four Species of Sharks |
| 9:00 am | <i>Shannon Barry, Douglas Adams, Charles Bangley, Matthew Ajemian, James Gelsleichter, Neil Hammerschlag, Toby Daly-Engel</i> | Assessing Climate Impacts on the Connectivity of the Bull Shark (<i>Carcharhinus leucas</i>) between Nursery Habitats in the northwestern Atlantic |
| 9:15 am | <i>Gavin Naylor, Shannon Corrigan, Lei Yang, Romuald Lasojadart, Elise Gay, Stefano Mona*</i> | Historical Demography of the World's White Shark Populations |

8:15 AM – 9:30 AM

Room 206C

Session 43: Turtle Conservation & Management

Moderator: Willem Roosenburg

- | | | |
|---------|---|---|
| 8:15 am | <i>Benjamin Phillips, Remmington Moll, Rebecca Rowe, Jennifer Purrenhage</i> | Effects of Human Land Use and Landscape Context on Population Demographics of the Painted Turtle (<i>Chrysemys picta</i>) |
| 8:30 am | <i>Gareth Hopkins, Stephani Symanowicz, Emil Ricci, Summer Broome, Matthew Johnston, Susan Barnes, Jennifer Ringo</i> | Responses of Native and Invasive Freshwater Turtles to Basking and Nesting Habitat Restoration in the Pacific Northwest |
| 8:45 am | <i>Willem Roosenburg</i> | Diamond-backed Terrapin (<i>Malaclemys</i>) Restoration at Poplar Island |
| 9:00 am | <i>Hardin Waddle, Jennifer Moore, Julien Martin, Evan Grant, Jillian Fleming</i> | Using Expert Elicitation to Model Wood Turtle Demography |

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9:15 am *Matthew Chatfield, Gregory LeClair, Hunter Howell, Cheryl Frederick* Population Demography and Viability of Wood Turtles (*Glyptemys insculpta*)

8:15 AM – 9:30 AM

Room 206D

Session 44: Herpetology Genetics

Moderator: *Matt Holding*

- 8:15 am *Stanley-Sessions* Selfish DNA in Salamander Paradise: Genome Size, Regeneration, and EvoDevo **WITHDRAWN**
- 8:30 am *Alyssa Vanerelli, Inbar Maayan, Dan Bock, Jonathan Losos, Anthony Geneva* High-Quality *Anolis grahami* Reference Genome
- 8:45 am *Matthew Holding, Andrew Mason, Erin Westeen, Michael Hogan, Ian Wang, Darin Rokyta* Linking venom gene duplication and snake ecology through comparative genomic analyses.
- 9:00 am *Meghan Parsley, Mallory Bedwell, Ryan Peek, Sarah Mussulman, Caren Goldberg* Genomic Analyses Do Not Indicate Local Adaptation Between Lake and Stream Sierra Nevada Yellow-Legged Frogs **WITHDRAWN**
- 9:15 am *Guin Wogan* Does Environmental Stability Predict Genetic Diversity Among Amphibians and Reptiles? **WITHDRAWN**

10:00 AM – 12:00 PM

Ballroom 111C

Session 45: Ichthyology Ecology

Moderator: *Paul Spruell*

- 10:00 am *José D. Petro-Blanquicet, Lucía M. Herrera-Chimá, Jesús Vargas González Vargas-González, Juan J. Hernández-Correa, Glenys Tordecilla-Petro, Fredys F. Segura-Guevara, Ángel L. Martínez-González, Charles W. Olaya-Nieto** Feeding habits of Moncholo *Hoplias malabaricus* in the Ciénaga Grande de Lórica, Colombia
- 10:15 am *Lina M. Ramos-Morón, Martha M. Lerma-Díaz, Jesús Vargas-González, Fredys F. Segura-Guevara, Glenys Tordecilla-Petro, Charles W. Olaya-Nieto, Ángel L. Martínez-González** Feeding ecology of Yellow Mojarra *Caquetaia kraussii* in the Ciénaga Grande de Lórica, Colombia
- 10:30 am *Christopher Malinowski, Tomas Höök, Jason Doll* Response of Southern Lake Michigan Nearshore Fish Assemblage (1984-2016) to Oligotrophication and Multiple Stressors: Comparison to Other Systems
- 10:45 am *Paul Spruell, Carissa Simpson, Neville Magone* Detection of a Nematode Parasite in an Introduced Population of Brook Stickleback
- 11:00 am *David Adams, Reid Adams, Ginny Adams, David Mitchell* Habitat Associations of Fishes Across a Gradient of Pool Size and Structure in an Ozark River
- 11:15 am *Philip Georgakakos, Gabriel Rossi, Sarah Kupferberg*, Abel Brumo, Mary Power* Pacific Lamprey facilitate juvenile salmonids and Foothill Yellow-legged Frogs
- 11:30 am *Akinori Minagawa, Toru Kobari, Junya Hirai, Satoru Jinno, Kazuhiro Shiozaki, Mutsuo Ichinomiya, Tomohiro Komorita, Gen Kume* Feeding Ecology of Leptocephali in the Satsunan Area, Southern Japan
- 11:45 am *Kirk Winemiller* Evolutionary Convergence: Widespread and Sometimes Remarkable

10:00 AM – 12:00 PM

Conference Theater

Session 46: AES Environmental Contaminants (first 2)/Ecology (last 6)

Moderator: *Bryan Frazier*

- 10:00 am *James Gelsleichter* What do plasma mercury levels tell us about mercury exposure and uptake in sharks and rays?
- 10:15 am *Morgan Lattomus, Bryan Frazier, Ashley Galloway, Gorka Sancho, Barbara Beckingham* The Quantification of Young-of-the-Year Shark Microplastic Ingestion in South Carolina Estuaries
- 10:30 am *Vital Heim, Maurits van Zinnicq Bergmann, Matthew J. Smukall, Tristan L. Guttridge* Multi-year provisioning reduces the local space use of a marine apex predator

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10:45 am	<i>Ashley Galloway, Kady Lyons, Douglas Adams, Eric Reyier, Christine Bedore, Jim Gelsleichter, Amanda Barker, David Portnoy, Bryan Frazier</i>	Maternal Provisioning and Isotopic Influence on Young-of-Year Hammerheads Along the Southeast US Coast
11:00 am	<i>Lauren Meyer, Lisa Hoopes, Charlie Huveneers</i>	The diet of tiger sharks on Norfolk Island inferred from biochemical markers
11:15 am	<i>Julia Saltzman, Easton White</i>	Environmental Influences on Planktivorous Elasmobranchs at Cocos Island, Costa Rica
11:30 am	<i>Jackson Hooten, Bryan Franks, Robert Hueter, Chris Fischer, Nigel Hussey</i>	The Effect of Temperature and Association with Benthic Structure on White Shark Movements in the WNA using Acoustic Telemetry
11:45 am	<i>Michael Byrne, Jeremy Vaudo, Heidi Dewar, Bradley Wetherbee, Mahmood Shivji</i>	Does the Oxygen Minimum Zone Constrain Shortfin Mako Shark Distribution in the Eastern North Pacific?

10:00 AM – 11:30 AM

Room 206D

Session 47: Herpetology Phylogeography & Biogeography

Moderator: *R. Graham Reynolds*

10:00 am	<i>Brian Waldron, Emily Watts, Donald Morgan, Maggie Hantak, Emily Lemmon, Alan Lemmon, Shawn Kuchta</i>	Incipient or Ephemeral? Lineage Formation and Fusion in a Widespread Terrestrial Salamander (<i>Plethodon cinereus</i>)
10:15 am	<i>Stacey Lance, Kevin Enge, Anna Farmer, Stephen Richter, Jeffrey Hall, Peter Beerli, Tom Devitt</i>	Population Subdivision in the Gopher Frog (<i>Rana capito</i>) Across the Fragmented Longleaf Pine-Wiregrass Savanna of the Southeastern USA WITHDRAWN
10:30 am	<i>Ramlah Zainudin, Elvy Quatrin Deka, Nurhidayah Zulkeifli</i>	Genetic Diversity Among Bornean Populations of Peat Swamp Dweller <i>Pulchrana baramica</i> BOETTGER 1900
10:45 am	<i>Danielle Rivera, Ivan Prates, Thomas J Firreno Jr., Janalee Caldwell, Miguel T Rodrigues, Matthew K Fujita</i>	How the Roles of Demographic History and Gene Flow Inform Contrasting Patterns of Phylogenomic Diversity in Neotropical Toads (<i>Rhinella</i>)
11:00 am	<i>Valentina Alvarez, Robert Thomson</i>	Lizards in paradise: How the brown anole made its way to Hawai'i and Southern California
11:15 am	<i>Matthew Murdoch, Jesse Grismer, L. Lee Grismer, Peter Scott, Robert Fisher</i>	Landscape genomics of the Sandstone and Granite Night Lizards in the Anza Borrego State Park

1:30 PM – 2:45 PM

Ballroom 111B

Session 48: Herpetology Morphology, Histology, & Microbes

Moderator: *Alessandro Catenazzi*

1:30 pm	<i>Kenen Goodwin, Jaren Hutchinson*, Zachariah Gompert</i>	Spatiotemporal and Ontogenetic Variation, Microbial Selection, and Predicted Antifungal Function in the Skin-Associated Microbiome of a Rocky Mountain Amphibian
1:45 pm	<i>André L. G. Carvalho, Adriana M. Jeckel, Carolina Nisa, María Celeste Luna, Carla Piantoni, Matthew K. Fujita, Adam D. Leaché</i>	Epidermal Glands and Chemical Communication in Lizards: Novel Gland System and an Emerging Research Program
2:00 pm	<i>Simon Scarpetta, Peter Kloess</i>	Automated 3D morphometrics of alligator lizards
2:15 pm	<i>Daniela Garcia-Cobos, Diego A. Gomez-Sanchez, Patricia LR Brennan</i>	Coevolution of male and female genitalia in <i>Helicops pastazae</i> using 3D morphometrics
2:30 pm	<i>Samantha Johnson, Matt Goode</i>	Changes in the Gut Microbiome of Gila Monsters (<i>Heloderma suspectum</i>) Living in an Urbanizing Environment WITHDRAWN

1:30 PM – 3:00 PM

Ballroom 111C

Session 49: Ichthyology Genetics (first 5)/Reproductive Biology (last 1)

Moderator: *Chris Martin*

1:30 pm	<i>Christopher Martin</i>	How to swim across fitness valleys: the microevolutionary origins of novel trophic specialists in an adaptive radiation of Cyprinodon pupfishes WITHDRAWN
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1:45 pm	<i>Andrew T. Fields, Natalie N. Beeken, Christopher M. Hollenbeck, Dana Wetzel, David S. Portnoy</i>	Epigenetic Evidence of Oil Exposure in Laboratory Reared and Wild Red Drum (<i>Sciaenops ocellatus</i>)
2:00 pm	<i>Kendall Johnson, Luke Tornabene, Frank Pezold</i>	How Long? Examining Selection in the Evolution of Elongation among Gobies
2:15 pm	<i>Brian Sidlauskas, Hakan Aydođan, Samarth Mathur, Andrew Black</i>	Genetic approaches reveal a healthy population and an unexpected origin for Foskett Spring Speckled Dace
2:30 pm	<i>Jeff Eble, Carly McCall, Girish Kumar, Michelle Gaither</i>	Indian River Lagoon eDNA Metabarcoding: Community Structure and Biodiversity Across a Water Quality Gradient
2:45 pm	<i>Yarima J. Valle-Díaz, Ibis P. Espitia-Hernández, Jesús Vargas-González, Juan J. Hernández-Correa, Ángel L. Martínez-González, Fredys F. Segura-Guevara, Charles W. Olaya-Nieto, Glenys Tordecilla-Petro*</i>	Reproductive biology of Moncholo Hoplias malabaricus in the Cienaga Grande de Lórica, Colombia

1:30 PM – 2:45 PM

Room 206D

Session 50: Herpetology Systematics & Biogeography I

Moderator: Kara Yopak

1:30 pm	<i>Benjamin Karin, Jimmy McGuire</i>	Cost-effective Long Amplicon Sequencing of Hundreds of Full Mitochondrial Genomes Reveals an Incredible Radiation of Sulawesi Skinks (<i>Sphenomorphus</i> and <i>Tytthoscincus</i>)
1:45 pm	<i>Todd Jackman</i>	Duplications, Deletions, and Phylogenetic Consistency of the PKDREJ Gene in Squamates
2:00 pm	<i>Aaron Bauer, Todd Jackman, Ross Sadler</i>	A Study in Brown and White: A Revision of the New Caledonian Diplodactylid Geckos of the Genus <i>Bavayia</i>
2:15 pm	<i>Edward Myers, Rhett Rautsaw, Christopher Parkinson</i>	Implications of Introgression on Phylogeny and Diversification in Rattlesnakes
2:30 pm	<i>Javier Torres</i>	Genome Wide Data and Species Delimitation Analyses Reveal Different Species Boundaries Than Current Taxonomy in Green Anoles (<i>Anolis</i> : Squamata) WITHDRAWN

3:30 PM – 4:45 PM

Room 206D

Session 51: Herpetology Systematics & Biogeography II

Moderator: Todd Jackman

3:30 pm	<i>R. Graham Reynolds</i>	The West Indian Boas: Seventeen Years of Research
3:45 pm	<i>Ian Wilenzik, Benjamin Barger, R. Alexander Pyron</i>	A Gondwanan Origin in the Early Jurassic and Subsequent Importance of Africa in Biogeography of Extant Squamata
4:00 pm	<i>João Tonini, Rafael de-Sá</i>	Phylogenetic Systematics, Biogeography, and Diversity of Hemisotidae: An Endemic African Radiation
4:15 pm	<i>Justin L. Lee, Aaron M. Bauer</i>	Systematics of the kukri snake genus <i>Oligodon</i> Fitzinger, 1826 (Reptilia: Squamata: Colubridae) from Myanmar and adjacent regions
4:30 pm	<i>L. Lee Grismer, Attapol Rujirawan, Siriporn Yodthong, Anchalee Aowphol</i>	Delimitation, diagnosis, convergence: taxonomic implications of recurring morphological and phylogenetic discordance among cryptic, arboreal species in the <i>Cyrtodactylus brevipalmatus</i> group

3:30 PM – 4:30 PM

Ballroom 111C

Session 52: Ichthyology Morphology & Histology

Moderator: Allison Bronson

3:30 pm	<i>Sam Ghods, Karly Cohen, Luke Tornabene</i>	Investigating the features that facilitate sexual parasitism in male Anglerfishes (Teleostei, Ceratioidei)
3:45 pm	<i>Shannon Kuznar, James Albert</i>	How many modules does it take to build a brain? Using maximum likelihood to examine integration of the gymnotiform brain.

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4:00 pm	<i>JoJo West, Kory Evans</i>	Catch a Fish, Catch a Ride: How Alternate Methods of Piscivory Drive Divergent Patterns of Skull Evolution
4:15 pm	<i>Kassandra Ford, Mikki Law, Pooja Singh, Kory Evans, Ole Seehausen</i>	Analysis of Craniofacial Evolution in Lake Victoria Cichlids based on CT-scans

3:30 PM – 5:00 PM

Ballroom 111B

Session 53: Amphibian Disease

Moderator: *Alessandro Catenazzi*

3:30 pm	<i>Alessandro Catenazzi, Alexander Shepack, David Burkart, Brandon LaBumbard, M. Isabel Diaz, Alex Ttito, Allison Byrne, Sarah Kupferberg, Elena Grasselli</i>	Role of a disease-tolerant species in amplifying transmission of chytridiomycosis in tropical montane frog communities
3:45 pm	<i>Anat Belasen</i>	Assessing the threat of <i>Batrachochytrium dendrobatidis</i> to ranid frogs of the Western US
4:00 pm	<i>Matthew Grisnik, Matthew Gray, Jonah Piovia-Scott, Davis Carter, William Sutton</i>	Incorporating Species Susceptibilities and Climate Change into Models of <i>Batrachochytrium salamandivorans</i> Risk in the United States
4:15 pm	<i>Anthony Waddle, Simon Clulow, Amy Aquilina, Shannon-Kaiser, Harrison Gallagher, Ivana Dimovski, Erin Sauer, Lee Berger, Lee Skerratt, Jennifer Flegg, Patricia Campbell, Rick Shine</i>	Thermal shelters reduce the impacts of chytridiomycosis in an endangered frog WITHDRAWN
4:30 pm	<i>Luke Linhoff, Brian Gratwicke, Roberto Ibañez</i>	Disease susceptibility within a reintroduction program: mucosome effectiveness and <i>Bd</i> susceptibility in four species of harlequin toad (<i>Bufo</i> spp.)
4:45 pm	<i>Rebecca Hardman, Sherri Reinsch, Wesley Sheley, Marley Machara, Heather Schwartz, Sandy Skeba, Dale McGinnity, Debra Miller, William Sutton</i>	Hellbender mortality post captive-to-wild translocation involves <i>Bd</i> , but it's complicated

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