



JMIH 2023

JOINT MEETING OF ICHTHYOLOGISTS AND HERPETOLOGISTS

12-16 July 2023 • Norfolk, VA

CONFERENCE PROGRAM



AES



ASIH



HL



SSAR

JMIH Meeting Management and Planning Committee

Kyle Piller

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

Rockwell Parker

Representative
American Society of Ichthyologists and Herpetologists (ASIH)
James Madison University

Charles “Chip” Cotton

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

David Green

Representative
The Herpetologists’ League (HL)
McGill University

Allyson Fenwick

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

Rebecca Blanton Johansen

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

Program Officer

Marty Crump

Utah State University

Meetings Director

Lori Strong

Burk & Associates Meetings

Meetings Manager

Cassidy Burk

Burk & Associates Meetings

Organizing Societies



American Elasmobranch Society (AES)



American Society of Ichthyologists and Herpetologists (ASIH)



Herpetologists’ League (HL)



Society for the Study of Amphibians and Reptiles (SSAR)



Norfolk Waterside Marriott

235 East Main Street
Norfolk, Virginia 23510
757-627-4200
www.marriott.com

Future Meeting Dates

10-14 July 2024
David L. Lawrence Convention Center
& The Westin
Pittsburgh, PA

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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

General Meeting Information

All events take place in the Norfolk Waterside Marriott, 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, **Washington**, at least one half day prior to their session time. It is highly recommended that you preview 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 12 July	12:00 PM – 6:00 PM
Thursday 13 July	7:00 AM – 5:00 PM
Friday 14 July	7:00 AM – 5:00 PM
Saturday 15 July	7:00 AM – 5:00 PM
Sunday 16 July	7:00 AM – 11:00 AM

Speaker Practice Room

If you would like to practice your talk you can use room **Tyler** and **Monroe**. There is a sign up sheet on the door.

Registration Desk

The JMIH Registration/Information area is located in the **Presidential Foyer** and will be open the following hours:

Wednesday 12 July	2:00 PM – 6:00 PM
Thursday 13 July	7:00 AM – 4:00 PM
Friday 14 July	7:30 AM – 4:00 PM
Saturday 15 July	7:30 AM – 3:00 PM
Sunday 16 July	8:00 AM – 12:00 PM

AES and SSAR Store

AES

Thursday 13 July	8:00 AM – 5:00 PM
Friday 14 July	8:00 AM – 6:30 PM
Saturday 15 July	8:00 AM – 6:30 PM
Sunday 16 July	8:00 AM – 4:00 PM

SSAR

Thursday – Saturday	8:00 AM – 5:00 PM
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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 breaks will be located in the Exhibit and Poster Area, **Hampton Ballroom**, Thursday – Saturday, and outside **Marriott 4** on Sunday. Coffee break service is available each day of the meeting, during the following hours:

Thursday 13 July	9:30 AM – 10:00 AM 3:30 PM – 4:00 PM
Friday 14 July	9:00 AM – 9:30 AM 4:00 PM – 6:00 PM
Saturday 15 July	9:30 AM – 10:00 AM 4:00 PM – 6:00 PM
Sunday 16 July	9:30 AM – 10:00 AM

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, A Helping Hand, in **Chesapeake 1-2**. Pre-registration was required, but there may be space for drop-ins.

Lactation & Family Room

JMIH recognizes that balancing a family and meeting attendance creates unique challenges for parents. There are nursing pods in **York**.

Gender Neutral Bathrooms

Gender neutral bathrooms are located near the **Presidential Foyer** on the 3rd floor.

Quiet Room

Need to take a break? You can go to Room **Lynnhaven**.

Meeting Highlights

All events take place in the Norfolk Waterside Marriott, unless otherwise noted.

Wednesday 12 July

Engaging Undergraduates in Monitoring Salamanders Workshop

1:00 PM – 4:00 PM, Shangri La/Yorktown

Our workshop will introduce participants to the protocols used in data collection and provide educational resources for engaging students in data collection at their respective institutions if instructors are interested in setting up plots. We will also share data-based and field-based modules which are not dependent on local plots, and can be used by students to explore additional ecological or evolutionary questions.

This is a FREE workshop, but registration is required.

SSAR Mentorship Program Meet & Greet

6:00 PM – 7:00 PM, 2nd Floor Lobby

SSAR President's Travelogue

7:00 PM – 8:00 PM, Norfolk 1-2

Open Mic Night

8:00 PM, Marriott 1-2

Thursday 13 July

Plenary Session I & AES Address

8:00 AM – 9:30 AM, Marriott 4-7

Keynote Address: Of fish tongues and other cypriniform oddities: Developmental integration and evolutionary history in the origin of trophic novelties. Speaker: Patricia Hernandez, George Washington University

Plenary Session II & HL Address

4:00 PM – 5:00 PM, Marriott 4-7

Bring the noise: Chasing Atrazine's effects in frogs across three continents, twenty years, and six generations. Speaker: Tyrone Hayes

ASIH Cashner Student & Mentor Social

5:00pm-6:00pm, Shangri La/Yorktown

SSAR/HL Student Social Reception

6:00 PM – 7:00 PM, 2nd Floor Lobby

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, Norfolk 1-6

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

Friday 14 July

Plenary Session III & ASIH Address

8:00 AM – 9:00 AM, Marriott 4-7

"Dear Herps and Herpers: A Love Letter." Speaker: Emily Taylor

AES Graduate Student Workshop

12:00 PM – 1:00 PM, Norfolk 4

Poster Session #1

4:00 PM – 6:00 PM, Hampton Ballroom

Jack Musick Symposium Reception (VIMS)

6:00 PM – 8:00 PM, Marriott 4

AES Student Social

7:00 PM – 8:00 PM, Offsite

Neotropical Ichthyological Association

7:00 PM – 8:00 PM, Norfolk 6

SSAR DEI Alcohol-Free Game Night

8:00 PM – 10:00 PM, Marriott 1-2

ASIH Grad Student Social

8:00 PM – 10:00 PM, Marriott 3

Meeting Highlights

All events take place in the Norfolk Waterside Marriott, unless otherwise noted.

Saturday 15 July

AES: A Tribute to Jack Musick Symposium

8:00 AM, Marriott 4

NSF Workshop

12:00 PM – 1:30 PM, Norfolk 1-2

NSF research and training opportunities for ichthyologists and herpetologists with Matthew Herron

Poster Session #2

4:00 PM – 6:00 PM, Hampton Ballroom

SSAR/HL Live Auction

9:00 PM, Marriott 4-7

Sunday 16 July

AES: A Tribute to Jack Musick Symposium

8:00 AM – 4:00 PM, Marriott 4

ASIH Student Workshop: Novel techniques on Museum Specimen based-research

12:00 PM – 1:00 PM, Norfolk 5

Natural history museums are an invaluable research resource for the fields of ichthyology and herpetology alike. However, new tools and techniques are emerging that allow researchers to utilize museum collections in novel ways, while allowing us to explore new research questions and broaden our capacity to get the most out of our specimens and their associated data. This seminar-based workshop will allow graduate students and early-career researchers to hear from those at the forefront in the development and use of these new techniques. Attendees will also participate in a moderated Q&A session.

AES Banquet

6:00 PM, Marriott 1-3

2023 Exhibit Hall Floor Plan

Hampton Ballroom



View the latest floorplan and company profiles on your phone or tablet.

Scan the QR Code or visit jmih2023.expofp.com.

Exhibit Hall Hours

Thursday, July 13

9:00 PM – 4:00 PM

Friday, July 14

9:00 AM – 6:00 PM

Saturday, July 15

9:00 AM – 6:00 PM

Coffee Breaks

Hampton Ballroom

Thursday 13 July

9:30 AM – 10:00 AM

3:30 PM – 4:00 PM

Friday 14 July

9:00 AM – 9:30 AM

*sponsored by Virginia Institute of
Marine Science, William & Mary*

4:00 PM – 6:00 PM

Saturday 15 July

9:30 AM – 10:00 AM

4:00 PM – 6:00 PM

Marriott 4 Foyer

Sunday 16 July

9:30 AM – 10:00 AM

Exhibitor Listing

Cornell University Press

Booth: 7

512 East State Street
Ithaca NY, 14850
607-253-2338
www.cornellpress.cornell.edu

Cornell University Press fosters a culture of broad and sustained inquiry through the publication of scholarship that is engaged, influential, and of lasting significance. Our Comstock Publishing Associates imprint publishes scholarly and general-interest books in life sciences; natural history; and environmental studies; as well as nature writing and field guides.

DataClassroom

Booth: 1

1022 Cottonwood Rd
Charlottesville VA, 22901
434-882-8005

Silver Sponsor

HOLOHIL

Booth: 8

112 John Cavanaugh Drive
Carp Ontario, K0A1L0 Canada
613-839-0676
www.holohil.com

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.

Kodex, Inc.

Booth: 5

160 Park Avenue
Nutley NJ, 07110

North Carolina Herpetological Society

Booth: 4

11 West Jones Street
c/o NC Museum of Natural Sciences
Raleigh, NC 27601
www.ncherps.org

A non-profit dedicated to amphibians and reptiles since 1978.

Conservation: Advise those governing rules and regulations for herp species and habitat.

Land acquisition: Manage properties of significant conservation value.

Education: Organize outreach programs, meetings, field trips, and newsletters.

Research: Award grants supporting diverse herp projects. Protect threatened species through initiatives.

Princeton University Press

Booth: 2

41 William Street
Princeton NJ, 08540
609-258-4900
press.princeton.edu

Founded in 1905, Princeton University Press is a nonprofit publisher with close connections to Princeton University. The Press brings influential voices and ideas to the world stage through their academic scholarship, advancing the frontiers of scholarly knowledge and promoting the human conversation.

Schreiner University Field Station

Booth: 9

2100 Memorial Blvd.
Kerrville TX, 78028
830-792-7470
www.instagram.com/sufieldstation

The Schreiner University Field Station invites you to collect data, teach classes, or explore the Texas Hill Country at our one-of-a-kind facility!

**TAMUCC Genomics
Core Lab**

Booth: 10

6300 Ocean Drive, Unit 5800
Corpus Christi TX, 78412
361-825-2757
genomics.tamucc.edu

The TAMUCC Genomics Core Lab is a cutting-edge laboratory specializing in ecological and evolutionary conservation genomics. Our mission is to provide top-notch research services to academia, industry, and government agencies, with a focus on delivering high-quality DNA sequencing and bioinformatics solutions.

**Virginia Institute of Marine
Science, William & Mary**

Booth: 6

1376 Greate Road
Gloucester Point VA, 23062
804-684-7201

Platinum Sponsor

Women of the Cloud Forest **Booth: 11**

201 North Braddock Ave
Pittsburgh PA, 15213
412-225-7120

www.womenofthecloudforest.com

Unique fair-trade field bags, rainforest jewelry, over 200 species of hand-carved and hand-painted balsa ornaments from our artisan partners in Nicaragua and Nepal.

**Virginia Herpetological
Society**

Booth: 3

613 Sixth Street
Radford VA, 24141
540-505-4767

Thank you to the following JMIH 2023 Sponsors

PLATINUM



SILVER



Schedule-at-a-Glance

All events take place in the Norfolk Waterside Marriott, unless otherwise noted.

Wednesday 12 July

SPECIAL EVENTS

	TIME	LOCATION
SSAR Board of Directors Meeting	8:00 AM – 4:00 PM	James I-III
AES Executive Committee Meeting	9:00 AM – 12:00 PM	Coral Sea Boardroom
Engaging Undergraduates in Monitoring Salamanders Workshop	1:00 PM – 4:00 PM	Shangri La/Yorktown
AES Board of Directors Meeting	2:00 PM – 5:00 PM	Coral Sea Boardroom
ASIH Editorial Policy Committee Meeting	2:00 PM – 5:00 PM	Enterprise
HL Board of Trustees Meeting	2:00 PM – 6:00 PM	Franklin
Student Volunteer Orientation	4:30 PM – 5:00 PM	Norfolk 1-2
ASIH Board of Governors Meeting	5:00 PM – 7:00 PM	Norfolk 3
SSAR Mentorship Program Meet & Greet	6:00 PM – 7:00 PM	2nd Floor Lobby
SSAR President's Travelogue	7:00 PM – 8:00 PM	Norfolk 1-2
Open Mic Night	8:00 PM – 11:59 PM	Marriott 1-2

Thursday 13 July

PLENARY SESSIONS

Plenary Session I	8:00 AM – 9:30 AM	Marriott 4-7
Plenary Session II	4:00 PM – 5:00 PM	Marriott 4-7

SPECIAL EVENTS

SSAR Pre-College Award Luncheon	12:00 PM – 1:30 PM	Offsite
SSAR Long Range Planning Committee	2:00 PM – 4:00 PM	Elizabeth Boardroom
HL Judges Meeting	3:00 PM – 4:00 PM	Franklin
ASIH Cashner Student and Mentor Social	5:00 PM – 6:00 PM	Shangri La/Yorktown
SSAR/HL Student Social Reception	6:00 PM – 7:00 PM	2nd Floor Lobby
Opening Reception	7:00 PM – 9:00 PM	Norfolk 1-6

ORAL PRESENTATIONS

SSAR Seibert Award: Systematics & Evolution and General Herpetology	10:00 AM – 11:15 AM	Norfolk 1-2
ASIH Stoye Award: Ecology & Ethology	10:00 AM – 11:45 AM	Norfolk 3
AES Gruber Award	10:00 AM – 11:45 AM	Norfolk 4
HL Graduate Research Award	10:00 AM – 11:15 AM	Norfolk 6
ASIH Stoye Award: General Ichthyology	10:00 AM – 12:00 PM	Marriott 4-7
ASIH Stoye Award: General Herpetology	1:30 PM – 2:45 PM	Norfolk 1-2
ASIH Stoye Award: Ecology & Ethology	1:30 PM – 2:15 PM	Norfolk 3
AES Gruber Award	1:30 PM – 3:00 PM	Norfolk 4
ASIH Stoye Award: Genetics, Development, & Morphology	1:30 PM – 3:00 PM	Norfolk 6
ASIH Stoye Award: General Ichthyology	1:30 PM – 2:15 PM	Marriott 4-7
Contributed Herpetology: Ecology I	2:30 PM – 3:00 PM	Norfolk 3
NIA Best Student Paper Award	2:30 PM – 3:30 PM	Marriott 4-7

Schedule-at-a-Glance

All events take place in the Norfolk Waterside Marriott, unless otherwise noted.

Friday 14 July

PLENARY SESSION

Plenary Session III

TIME

8:00 AM – 9:00 AM

LOCATION

Marriott 4-7

SPECIAL EVENTS

AES Graduate Student Workshop

12:00 PM – 1:30 PM

Norfolk 4

ASIH Graduate Student Business Meeting

12:00 PM – 1:00 PM

Shangri La/Yorktown

ASIH Long Range Planning and Policy Meeting

12:00 PM – 1:30 PM

Elizabeth Boardroom

HL Business Meeting

6:00 PM – 8:00 PM

Norfolk 1-2

Jack Musick Symposium Reception

6:00 PM – 8:00 PM

Marriott 5-7

Neotropical Ichthyological Association Meeting

7:00 PM – 8:00 PM

Norfolk 6

AES Student Social

7:00 PM – 10:00 PM

Offsite

SSAR DEI Alcohol-Free Game Night

8:00 PM – 10:00 PM

Marriott 1-2

ASIH Grad Student Social

8:00 PM – 10:00 PM

Marriott 3

SYMPOSIA

AES: Elasmobranch Fisheries Management Symposium

9:30 AM – 3:30 PM

Marriott 4

ASIH, HL, & SSAR: The ZooMu Initiative Symposium

1:30 PM – 3:45 PM

Norfolk 4

LIGHTNING TALKS

Lightning Talks A

1:30 PM – 2:20 PM

Norfolk 5

Lightning Talks B

2:20 PM – 3:05 PM

Norfolk 5

ORAL PRESENTATIONS

SSAR Seibert Award: Physiology & Morphology

9:30 AM – 10:15 AM

Norfolk 1-2

ASIH Stoye Award: Conservation

9:30 AM – 11:30 AM

Norfolk 3

AES Behavior

9:30 AM – 11:30 AM

Norfolk 4

Herpetology: Genetics & Development

9:30 AM – 12:00 PM

Norfolk 5

Herpetology: Ecology II

9:30 AM – 11:30 AM

Norfolk 6

SSAR Seibert Award: Ecology

10:15 AM – 11:45 AM

Norfolk 1-2

SSAR Seibert Award: Conservation

1:30 PM – 3:00 PM

Norfolk 1-2

General Ichthyology I

1:30 PM – 4:00 PM

Norfolk 3

Herpetology: Ecology III

1:30 PM – 3:45 PM

Norfolk 6

ASIH Stoye Award: Physiology & Physiological Ecology

3:00 PM – 4:00 PM

Norfolk 1-2

Amphibian Behavior, & Ichthyology Conservation

3:30 PM – 4:00 PM

Norfolk 5

POSTER PRESENTATIONS

Poster Session I

4:00 PM – 6:00 PM

Hampton Ballroom

AES Carrier Award

4:00 PM – 6:00 PM

Hampton Ballroom

AES Contributed

4:00 PM – 6:00 PM

Hampton Ballroom

ASIH Storer Award: Ichthyology

4:00 PM – 6:00 PM

Hampton Ballroom

NIA Student Poster Award

4:00 PM – 6:00 PM

Hampton Ballroom

ASIH Storer Award: Herpetology

4:00 PM – 6:00 PM

Hampton Ballroom

SSAR Hutchison Award: Physiology & Morphology

4:00 PM – 6:00 PM

Hampton Ballroom

SSAR Hutchison Award: Ecology, Natural History, Distribution, & Behavior

4:00 PM – 6:00 PM

Hampton Ballroom

SSAR Rabb Undergraduate Poster Award

4:00 PM – 6:00 PM

Hampton Ballroom

Contributed: Herpetology I

4:00 PM – 6:00 PM

Hampton Ballroom

Schedule-at-a-Glance

All events take place in the Norfolk Waterside Marriott, unless otherwise noted.

Saturday 15 July

SPECIAL EVENTS

	TIME	LOCATION
ASIH Names of Fishes Committee	10:00 AM – 1:00 PM	Franklin
NSF Workshop: Research and training opportunities for ichthyologists and herpetologists	12:00 PM – 1:30 PM	Norfolk 1-2
ASIH IHCC Committee Meeting	1:00 PM – 2:00 PM	Shangri La/Yorktown
AES Business Meeting	4:30 PM – 6:30 PM	Norfolk 4
ASIH Business & Awards Meeting	6:00 PM – 8:00 PM	Norfolk 1-2
SSAR Business Meeting	6:00 PM – 8:00 PM	Norfolk 6
SSAR/HL Live Auction	9:00 PM – 11:59 PM	Marriott 4-7

SYMPOSIA

AES: A Tribute to Jack Musick Symposium	8:00 AM – 4:00 PM	Marriott 4
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ORAL PRESENTATIONS

General Ichthyology II	8:00 AM – 9:30 AM	Norfolk 1-2
Ichthyology: Conservation & Management	8:00 AM – 8:45 AM	Norfolk 3
AES: Habitat & Environment	8:00 AM – 9:00 AM	Norfolk 4
Herpetology: Ecology IV	8:00 AM – 9:30 AM	Norfolk 6
NIA Contributed	10:00 AM – 10:30 AM	Norfolk 1-2
Ichthyology: Ecology	10:00 AM – 12:00 PM	Norfolk 3
AES: General	10:00 AM – 12:00 PM	Norfolk 4
Herpetology: Systematics	10:00 AM – 11:30 AM	Norfolk 5
Amphibian Behavior & Ecology	10:00 AM – 11:15 AM	Norfolk 6
DEI	10:30 AM – 11:45 AM	Norfolk 1-2
Herpetology: Morphology	1:30 PM – 3:45 PM	Norfolk 1-2
Ichthyology: Systematics	1:30 PM – 3:45 PM	Norfolk 3
AES: Morphology, Histology, & Physiology	1:30 PM – 4:15 PM	Norfolk 4
Herpetology: Biogeography & Phylogeography	1:30 PM – 3:00 PM	Norfolk 5
Reptile Behavior & Ecology	1:30 PM – 4:00 PM	Norfolk 6

POSTER PRESENTATIONS

Poster Session II	4:00 PM – 6:00 PM	Hampton Ballroom
Contributed: Ichthyology	4:00 PM – 6:00 PM	Hampton Ballroom
Contributed: Herpetology II	4:00 PM – 6:00 PM	Hampton Ballroom
Contributed: DEI	4:00 PM – 6:00 PM	Hampton Ballroom

Schedule-at-a-Glance

All events take place in the Norfolk Waterside Marriott, unless otherwise noted.

Sunday 16 July

SPECIAL EVENT

	TIME	LOCATION
ASIH Book Pick Up	8:00 AM – 12:00 PM	Presidential Foyer
JMIH Meeting Management and Planning Committee Meeting	12:00 PM – 1:30 PM	Offsite
ASIH Student Workshop: Novel techniques on Museum Specimen based-research	12:00 PM – 1:00 PM	Norfolk 5
AES Banquet	6:00 PM – 11:00 PM	Marriott 1-3

SYMPOSIA

SSAR: Amphibian Vision Symposium	8:30 AM – 4:00 PM	Norfolk 1-2
ASIH: A Tribute to Jack Musick Symposium	8:30 AM – 4:00 PM	Marriott 4

ORAL PRESENTATIONS

AES: Conservation & Management I	8:00 AM – 9:15 AM	Norfolk 4
General Herpetology I	8:00 AM – 9:15 AM	Norfolk 5
Turtle Conservation	8:00 AM – 9:30 AM	Norfolk 6
Ichthyology: Biogeography & Phylogeography	8:15 AM – 9:30 AM	Norfolk 3
General Ichthyology III	10:00 AM – 11:15 AM	Norfolk 3
AES: Conservation & Management II	10:00 AM – 12:00 PM	Norfolk 4
General Herpetology II	10:00 AM – 11:45 AM	Norfolk 5
Herpetology: Conservation I	10:00 AM – 11:45 AM	Norfolk 6
Ichthyology: Genetics	1:30 PM – 3:30 PM	Norfolk 3
AES: Ecology	1:30 PM – 4:45 PM	Norfolk 4
Herpetology: Physiology	1:30 PM – 2:30 PM	Norfolk 5
Herpetology: Conservation II and General	1:30 PM – 3:00 PM	Norfolk 6

Thursday 13 July 2023

Thursday 13 July • Plenary Sessions

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

8:00 AM – 9:30 AM

Marriott 4-7

Plenary Session I

Moderator: *Eric Hilton*

8:00 am	<i>Eric Hilton</i>	Welcome
8:20 am	<i>Lee Fitzgerald</i>	SSAR Founders Fellows
8:25 am	<i>Patricia Hernandez</i>	Keynote Address - Of fish tongues and other cypriniform oddities: Developmental integration and evolutionary history in the origin of trophic novelties
9:10 am	<i>Sonja Fordham; Mikki McComb-Kobza</i>	AES Plenary Address - Scientists influencing conservation

4:00 PM – 5:00 PM

Marriott 4-7

Plenary Session II

Moderator: *Alicia Mathis*

4:00 pm	<i>Alicia Mathis</i>	HL Award for Distinguished Service to Herpetology, Semlitsch Award, and Gans Award
4:15 pm	<i>Tyrone Hayes</i>	HL Distinguished Herpetologist Address - Bring the noise: Chasing Atrazine's effects in frogs across three continents, twenty years, and six generations

Thursday 13 July • Oral Presentations

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

10:00 AM – 11:15 AM

Norfolk 1-2

SSAR Seibert Award: Systematics & Evolution and General Herpetology

Moderator: *Christopher Parkinson*

10:00 am	<i>Ibuki Fukuyama, Masafumi Matsui, Misbahul Munir, Koshiro Eto, Yazid Hossman, Amir Hamidy, Daicus Belabut, Norhayati Ahmad, Ahmad Sudin, Mohamed Maryati, Paul Yambun, Kunio Araya, Hoi-Sen Yong, Jarujin Nabhitabhata, Panupong Thammachoti, Tomohiko Shimada, Kanto Nishikawa</i>	Biogeography and body size evolution inferred from mitogenomic phylogeny of <i>Kalophrynus</i> (<i>Amphibia: Anura: Microhylidae</i>) in Southeast Asia
10:15 am	<i>Thore Koppetsch, Bernat Burriel-Carranza, Benjamin Wipfler, Elizabeth Glynnne, Xiao-Zhu Luo, Dean Adams, Michael Matschiner, Salvador Carranza</i>	Genomic and Morphometric Analyses of Diversification Dynamics in the <i>Pristurus rupestris</i> Species Complex
10:30 am	<i>Tucker Heptinstall, Ramses Rosales-Garcia, Rhett Rautsaw, Christopher Parkinson</i>	Venom Complexity of Garter Snakes (<i>Thamnophis</i>) and the Role of Diet in Toxin Diversification
10:45 am	<i>Ramses Rosales Garcia, Christopher Parkinson, Rhett Rautsaw</i>	Venom Gland Transcriptomics of the Mexican horned pitvipers (<i>Ophryachus</i> and <i>Mixcoatlus</i>)
11:00 am	<i>Jill Fleming</i>	Density Dependence in Space Use of Eastern Red-Backed Salamanders (<i>Plethodon cinereus</i>)

10:00 AM – 11:45 AM

Norfolk 3

ASIH Stoye Award: Ecology & Ethology

Moderator: Hannah Owens

- | | | |
|----------|---|--|
| 10:00 am | <i>Arik Hartmann, Zuania Colón-Piñeiro, Sarah Mcgrath-Blaser, Ana Longo</i> | Ontogenetic and Pathogen Drivers of Skin microbiome Composition in a Facultatively Paedomorphic Salamander |
| 10:15 am | <i>Victoria Assad, Jessica Perelman, Jesse van der Grient, Gina Selig, Tamara Frank, Jeffrey Drazen</i> | Mesopelagic fish community structure in an eastern Clarion-Clipperton Zone (CCZ) mining site, a region with a pronounced oxygen minimum zone |
| 10:30 am | <i>Daisy Xiong, Angela Horner, Breanna Putman</i> | Effects of urbanization on limb length and locomotion of Western Fence Lizards (<i>Sceloporus occidentalis</i>) |
| 10:45 am | <i>Adam Quade, Kelly Boyle, Guillaume Rieucou</i> | Floodplain inundation mediates the abundance, behavior, and size-class distribution of the associated fish community |
| 11:00 am | <i>Stephanie Ruck, Breanna Putman</i> | Response of the Western Fence Lizard (<i>Sceloporus occidentalis</i>) to Post-Fire Disturbances |
| 11:15 am | <i>Emily Urquidi, Breanna Putman</i> | Big City Blues: The Effects of Urbanization on Western Fence Lizard (<i>Sceloporus occidentalis</i>) Body size and Ectoparasites |
| 11:30 am | <i>Elizabeth Burns, Larry Allen, Michael Franklin</i> | Verification of Giant Sea Bass (<i>Stereolepis gigas</i>) Spawning: Through Auditory Observations |

10:00 AM – 11:45 AM

Norfolk 4

AES Gruber Award

Moderator: Jim Gelsleichter

- | | | |
|----------|--|---|
| 10:00 am | <i>Clemency White, Catherine Hobbs, Ben Williams, Andy Radford, Matthew Witt, Catherine Macdonald, Steve Simpson</i> | Sharks and Recreation: Characterising the Soundscape of an Urban Shark Nursery |
| 10:15 am | <i>Paul Clerkin, Jan McDowell, Ellen Biesack</i> | Correlating Environmental DNA and Physical Surveys for Atlantic Shark Species |
| 10:30 am | <i>Zachariah Merson, Matthew Barnes, Christopher Lowe</i> | eDNA Metabarcoding Reveals Differences in Potential Prey Community Between Juvenile White Shark (<i>Carcharodon carcharias</i>) Aggregation and Non-Aggregation Sites |
| 10:45 am | <i>Chelsea Gray, Dale Rothman, Erin Peters-Burton, Cynthia Smith, Chris Parsons, Alexis Garrettson</i> | An Individual-Based Model of Basking Sharks in Ireland |
| 11:00 am | <i>Yamilla Samara, Christopher G. Lowe</i> | Intraspecific Dietary Differences among Juvenile White Sharks (<i>Carcharodon carcharias</i>) in Southern California |
| 11:15 am | <i>Emily N. Meese, Jason Williams, Gregory W. Stunz, Jay R. Rooper, R.J. David Wells</i> | Combining multiple isotope approaches and acoustic telemetry to determine trophic ecology and habitat use of the Atlantic Stingray (<i>Hypanus sabinus</i>) |
| 11:30 am | <i>Maria Auxiliadora Sabando Plaza, Dr. Mi-Ling Li, Dr. Jonathan Cohen, Dr. Aaron Carlisle</i> | Sublethal effects of methylmercury on the physiology of small, coastal elasmobranch, <i>Mustelus canis</i> |

10:00 AM – 11:15 AM

Norfolk 6

HL Graduate Research Award

Moderator: Brian Halstead

- | | | |
|----------|---|---|
| 10:00 am | <i>Callie Golba, Elizabeth Bach, Gary Glowacki, Bill Graser, Kathryn McCabe, Daniel Thompson, Brian Towey, Richard King</i> | What Matters for the Survival of Head-Started Blanding's Turtles? |
| 10:15 am | <i>Jessica Ford, David Green</i> | That changed a tad(pole): differing ecological effects of toad tadpoles with inter-annual variation. |
| 10:30 am | <i>Kelsey Garner, Cari-Ann Hickerson, Carl Anthony</i> | Do Personalities and Behavioral Syndromes of Eastern Red-backed Salamanders (<i>Plethodon cinereus</i>) Explain Historical Range Expansion? |
| 10:45 am | <i>Briar Hunter, David Lesbarrères, Gabriela Mastromonaco</i> | Egg binding in amphibians: insight from Canada's most endangered anuran, the Oregon Spotted Frog (<i>Rana pretiosa</i>) |
| 11:00 am | <i>Anne Sabol, Yiqun Zhou, Alessandro Catenazzi</i> | The impact of carbon nanoparticles on the growth, development, and telomere length of tadpoles |

10:00 AM – 12:00 PM

Marriott 4-7

ASIH Stoye Award: General Ichthyology

Moderator: *Thomas Near*

- | | | |
|----------|---|--|
| 10:00 am | <i>Elyse Parker, Carl D. Struthers, Christopher D. Jones, Thomas J. Near</i> | Comparative phylogeography reveals contrasting patterns of population structure in Antarctic notothenioid fishes |
| 10:15 am | <i>Courtney Weyand, Jonathan Armbruster</i> | Historical connections between river systems revealed through phylogeographic analysis of Western Blacknose Dace |
| 10:30 am | <i>Francesco Janzen, Rodolfo Pérez-Rodríguez, Omar Domínguez-Domínguez, Dean Hendrickson, Mark Sabaj, Gabriel Blouin-Demers</i> | Phylogenetic relationships of the North American catfishes (<i>Ictaluridae</i> , <i>Siluriformes</i>): investigating the origins and parallel evolution of the troglobitic species |
| 10:45 am | <i>Daniel Akin, Courtney Weyand, Matt Buehler, Jonathan Armbruster</i> | Phylogeography of the Guiana Shield Clade of <i>Trichomycterus</i> Pencil Catfishes |
| 11:00 am | <i>Jonas Santos, Lucas Garcia, Marcelo Britto</i> | Museum Specimens Reveal Novel Lateral Line Pattern in Sciaenids |
| 11:15 am | <i>Daniel Sinopoli, Prosanta Chakrabarty, Yahya Terzi, Rafet Ozturk, Dr. Solomon David</i> | Re-Evaluating Species Richness of an Ancient Fish Lineage (<i>Lepisosteidae</i>) |
| 11:30 am | <i>César Fuentes-Montejo, Diego Elías, Pavel García, Caleb McMahan</i> | Distribution patterns of Species Richness of Freshwater Fishes in the Usumacinta River Basin: Is there a Mid-Domain? |
| 11:45 am | <i>Olivia Robson, Simon Geist, David Portnoy</i> | larval fish ingress and vertical distribution in the Aransas Pass Inlet system (TX, USA) |

1:30 PM – 2:45 PM

Norfolk 1-2

ASIH Stoye Award: General Herpetology

Moderator: *Christopher Beachy*

- | | | |
|---------|--|---|
| 1:30 pm | <i>Adam Austin, Tiffany Schriever</i> | Distribution and Phylogeography of Michigan's Lost Salamander - The Western Lesser Siren |
| 1:45 pm | <i>Dakotah Henn, Christopher Murray</i> | The Management of <i>Typha domingensis</i> and its Effects on Amphibian Assemblages Within Palo Verde National Park, Costa Rica |
| 2:00 pm | <i>Carter Ricks, Joseph Pechmann</i> | Competitive Aggression in Cheoah Bald Salamanders |
| 2:15 pm | <i>Tristan Herod, Christopher Murray</i> | Morphological Disparity as a Function of Incubation Environment: Species-Specific Trends in Phenotype-Environment Interaction |
| 2:30 pm | <i>Max Carnes-Mason, Steven Beaupre</i> | Sex-Specific Patterns of Timing and Frequency of Ecdysis in Free-Ranging Timber Rattlesnakes (<i>Crotalus horridus</i>). |

1:30 PM – 2:15 PM

Norfolk 3

ASIH Stoye Award: Ecology & Ethology

Moderator: *Craig Lind*

- | | | |
|---------|---|---|
| 1:30 pm | <i>Khalil Russell, Peter Wainwright</i> | Morphological Study of the Competitive Relationships between Native and Introduced Freshwater Fishes in Florida |
| 1:45 pm | <i>Langston Haden, Jake Schaefer, Scott Clark</i> | Comparing the Movement Dynamics of Three Small-Bodied Fishes in Relation to Culverts |
| 2:00 pm | <i>Zander Perelman, Terence Farrell</i> | Male-male Combat in Free-ranging <i>Sistrurus</i> Rattlesnakes |

AES Gruber Award

Moderator: Brit Finucci

1:30 pm	<i>Benjamin Marsaly, Noah Motz, Dewayne Fox, Danielle Haulsee, Matthew Oliver, Bradley Wetherbee, Aaron Carlisle</i>	Relative Energetic Importance of Different Regions of the U.S. East Coast for the Migratory Sand Tiger Shark
1:45 pm	<i>Brendan Talwar, John Carlson, Lyall Bellquist, Brice Semmens, Michael Heithaus</i>	Informing silky shark management in the western Atlantic and eastern Pacific Oceans
2:00 pm	<i>Beth Bowers, Bryan Frazier, Stephen Kajiura</i>	Walk this way: sexual segregation in the Blacktip Shark, <i>Carcharhinus limbatus</i> , off the United States East Coast
2:15 pm	<i>Sergio Madrigal-Mora, Christopher Lowe, Mario Espinoza</i>	Site fidelity of Pacific nurse sharks (<i>Ginglymostoma unam</i>) to a Marine Management Area in the Costa Rican North Pacific.
2:30 pm	<i>Emily Cormier, Emmanuel Devred, Derek Tittensor, Matthew Smukall, Kristen Wilson, Heike Lotze</i>	Determining impact of two decades of nursery habitat change on juvenile lemon shark survival with satellite remote sensing and mark-recapture.
2:45 pm	<i>Lindsay Mullins, Eric Sparks, Kristine Evans, John Cartwright, John Mareska, Marcus Drymon</i>	The Spatiotemporal Impacts of Habitat Change on an Estuarine Predator, the Juvenile Bull Shark (<i>Carcharhinus leucas</i>)

ASIH Stoye Award: Genetics, Development, & Morphology

Moderator: Stacy Farina

1:30 pm	<i>Chi Jing Leow, Kyle Piller</i>	Killin' Fish and Saving Lives: Examining Gene Expression Profiles of Killifishes with Different Life Histories. (<i>Cyprinodontiformes: Nothobranchiidae</i>)
1:45 pm	<i>Katherine Martin, Kate Mansfield, Anna Savage</i>	Evolutionary Mechanisms Shaping Major Histocompatibility Complex Immune Gene Variation and Trans-Species Polymorphism in Four Species of Sea Turtle
2:00 pm	<i>Helen Bond Plylar, Alan H. Savitzky</i>	Trigeminal Innervation and Blood Supply to Boid and Pythonid Pit Organs
2:15 pm	<i>Amanda Pinion, Daemin Kim, Elizabeth Hunt, David Portnoy, Kevin Conway</i>	The Many Grains of the Sand shiner: Comparing Traditional and High-Throughput Analyses of the <i>Notropis stramineus</i> (Cope, 1865) Species Complex
2:30 pm	<i>Jennifer Hoeflich, Juan Liu</i>	Little Fish, Big Variety: Incredible Diversity in the Weberian Apparatus of <i>Noturus</i> Catfishes
2:45 pm	<i>JoJo West, Rose Faucher, Elizabeth Miller, Guillermo Orti, Lily Hughes, Sanda Alvarez-Carretero, Giorgio Carnevale, Aintzane Santaquiteria, Emily Troyer, Samantha Gartner, Mark Westneat, Carole Baldwin, Ricardo Betancur-R, Dahiana Arcila, Kory Evans</i>	The Perks of Being a Eupercarian: Rapid Skull Shape Evolution in a Massive Radiation of Bony Fishes

ASIH Stoye Award: General Ichthyology

Moderator: Caleb McMahan

1:30 pm	<i>Allison DeLoache, Chris Murray, Kyle Piller</i>	Effects of paper mill effluent on the reproductive axis of the Bullhead minnow, <i>Pimephales vigilax</i>
1:45 pm	<i>Heloisa Caixeta, Claudio Oliveira, Marcelo Melo</i>	DNA Barcoding Sheds Light on Deep-Sea Fish Diversity in the Southern Atlantic
2:00 pm	<i>Thomas Dodson, Kyle Piller</i>	Using Environmental DNA (eDNA) to assess functional diversity indices in three Louisiana Rivers
2:15 pm	<i>Kaleigh Arnold</i>	The Impact of Temperature Induced Vertebral Anomalies on Fast Start Swimming Performance in <i>Astyanax mexicanus</i> (<i>Teleostei: Characidae</i>)

2:30 PM – 3:00 PM

Norfolk 3

Contributed Herpetology: Ecology I

Moderator: *Craig Lind*

- | | | |
|---------|--|---|
| 2:30 pm | <i>Sarah Kupferberg</i> | The Population Level Response of a River Breeding Frog to Dam Removal |
| 2:45 pm | <i>Aidan O'Brien, Dave Cook, Stacy Martinelli, Michael Fawcett, Christopher Searcy</i> | Habitat Factor Impacts on the Sonoma Population of the California Tiger Salamander: Implications for Habitat Conservation Plans |

2:30 PM – 3:30 PM

Marriott 4-7

NIA Best Student Paper Award

Moderator: *Caleb McMahan*

- | | | |
|---------|--|--|
| 2:30 pm | <i>Patricia Torres-Pineda, Thomas D. Morgan, Hernán López-Fernández</i> | Comparative Phylogenetics and Phylogenomics of the genus <i>Limia</i> (Cyprinodontiformes: Poeciliidae) using Next Generation Sequencing |
| 2:45 pm | <i>Esmé Macpherson, Frances Hauser, Ahmed Elbassiouny, William Crampton, Belinda Chang, Nathan Lovejoy</i> | Visual Opsin Evolution and Diversity in South American Electric Fishes (<i>Gymnotiformes</i>) is Associated with Photic Environment |
| 3:00 pm | <i>Shannon Kuznar, James Albert</i> | Mosaic Evolution in Gymnotiform Brains due to Natural Selection and Phylogenetic Constraints. |
| 3:15 pm | <i>Benjamin Nicholas, Hernán López-Fernández</i> | Scanning for Oral and Pharyngeal Jaw Decoupling in Neotropical Cichlids |

Friday 14 July 2023

Friday 14 July • Plenary Sessions

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

8:00 AM – 9:00 AM

Marriott 4-7

Plenary Session III

Moderator: *Prosanta Chakrabarty*

- | | | |
|---------|-----------------------------|---|
| 8:00 am | <i>Emily Taylor</i> | ASIH Presidential Address - Dear Herps and Herpers: A Love Letter |
| 8:20 am | <i>Prosanta Chakrabarty</i> | ASIH Awards |

Friday 14 July • Symposia

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

9:30 AM – 3:30 PM

Marriott 4

AES: Elasmobranch Fisheries Management Symposium

Moderator: *Bryan Keller, Tobey Curtis*

- | | | |
|----------|---|--|
| 9:30 am | <i>Bryan Keller</i> | Introduction to the symposium |
| 9:45 am | <i>Karyl Brewster-Geisz</i> | The Past, Present, and Future of the U.S. Atlantic Shark Fishery: Has Management Been Successful? |
| 10:15 am | <i>Michelle Passerotti</i> | “How old are you?” and other rhetorical questions: solving the age puzzle in elasmobranch fishery management |
| 10:30 am | <i>Christopher Mull</i> | Estimating the Species Composition of Global Shark and Ray Fisheries |
| 10:45 am | <i>Bryan Keller</i> | International fisheries - how science informs conservation and management measures |
| 11:00 am | <i>Colin Simpfendorfer, Cassandra Rigby</i> | Australia’s Shark and Ray Report Card: a unique national approach to sustainability assessment that informs decision making |
| 11:30 am | <i>Dan Crear, Steve Durkee, Tobey Curtis, Tom Warren, John Carlson</i> | An application of habitat modeling to fisheries spatial management |
| 11:45 am | <i>Nathan Pacoureau</i> | Estimating population reduction with JARA — A decision-support tool for IUCN Red Listing |
| 12:00 pm | BREAK | |
| 1:30 pm | <i>Michael McCallister, Luran Brewster, J 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 |
| 1:45 pm | <i>Marcus Drymon, Amanda Jargowsky, Matthew Ajemian, Alena Anderson, Angela Collins, Danielle McAree, Ana Osowski, Evan Prasky, Steven Scyphers, Michael Sipos, Matthew Streich</i> | Case Studies for Involving Stakeholders in the Management of Shark Depredation |
| 2:00 pm | <i>Cami McCandless, Dan Crear, Tobey Curtis, John Carlson, Lisa Natanson</i> | Exploring Index Standardization Using Habitat Suitability and Spatiotemporal Modeling to Improve Model Fit and Biological Plausibility of Scalloped Hammerhead Estimates |
| 2:15 pm | <i>Tobey Curtis</i> | Emerging Satellite Telemetry Applications in Elasmobranch Fisheries Management |

Friday 14 July 2023

2:30 pm	<i>David S. Portnoy, William F. Patterson III, Christopher M. Hollenbeck</i>	The Genomic Toolbox for Fisheries Management
2:45 pm	<i>Bryan Frazier, Ashley Galloway, James Kilfoil</i>	Acoustic Telemetry as a Method to Quantify Post-Release Mortality: a Review of Past Results with Considerations for Future Applications
3:00 pm	<i>Keith Fuller, Cindy Tribuzio</i>	Use of AI Derived Electronic Monitoring Data for Pacific Sleeper Shark Stock Assessment
3:15 pm	<i>Ryan Knotek, Jeff Kneebone, Connor White, Tobey Curtis, Caroline Collatos, Nick Whitney</i>	I like to move it, move it: advances in the application of acceleration data loggers in fisheries research

1:30 PM – 3:45 PM

Norfolk 4

ASIH, HL, & SSAR: The ZooMu Initiative Symposium

Moderator: Alex Shepack

1:30 pm	<i>Gregory Watkins-Colwell, Alexander Shepack, Steven Whitfield, Sinlan Poo</i>	State of the “ZooMu Nation”: progress toward bridging gaps between zoos and museums.
1:45 pm	<i>Michelle S. Koo, Mariel Campbell, Emily Braker, Elizabeth Wommack, Andrew Doll, Lindsey Frederick, Teresa Mayfield-Meyer, Carla Cicero</i>	Arctos: Bridging the gap between museums and zoos with the multidimensional extended specimen
2:00 pm	<i>Lauren Augustine</i>	Collaborating with Museums to improve the Value and Management of the Association of Zoos and Aquariums Cuba Crocodile Population
2:15 pm	<i>Alyssa Hartzheim, Jennifer Terry, Sinlan Poo, Lorin Neuman-Lee</i>	What to do at the Zoo: The Use of Captive Tortoise Populations in Physiological Research
2:30 pm	<i>Steven Whitfield</i>	Perceptions of scientific value of zoo-housed specimens by zoo and museum collections staff
2:45 pm	<i>Dennis McNamara</i>	Creating exciting exhibits for Conservation.
3:00 pm	<i>Jennifer Terry, Alexia Vanoven, Courtney Janney, Virginie Rolland, Sinlan Poo, Lorin Neuman-Lee</i>	Who’s at the Zoo?: A Study of Unaccessioned Freshwater Turtles at the Memphis Zoo
3:15 pm	<i>Allison Bogisich, Karen Candia, Steven B. Reichling, Jessica Cantrell, Cassandra Collins, James R. Lee, Sinlan Poo</i>	Creating a Reintroduced Population Using Captive-Bred Frogs: Wild Establishment by Zoo-Bred <i>L. sevosus</i> and its Research Opportunities
3:30 pm	<i>Patricia Brennan</i>	It’s frustrating being a user: High investment and low yield

Friday 14 July • Lightning Talks

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

1:30 PM – 2:20 PM

Norfolk 5

Lightning Talks A

Moderator: *Alicia Mathis*

1:30 pm	<i>Sean Harrington, Hannah Van Tassel, Frank Burbrink</i>	Population Genomics of the Common Kingsnake Complex
1:35 pm	<i>Cory McKinstry, Arik Hartmann, Faith Dunlap, Tristan Vratil, Robert J. Ossiboff, David Rodriguez, Ana V. Longo</i>	Multi-parasite Surveys in North-Central Florida Reveal Variable Infection Patterns Among Resident Snakes
1:40 pm	<i>Marina Gerson</i>	Did Early Natural History Museum Collectors in California Neglect the Central Valley?
1:45 pm	<i>Sarah Yerrace, Carole Baldwin, Ross Robertson, Katherine Maslenikov, Luke Tornabene</i>	Diet of Deep-reef Lionfish in the Caribbean using DNA Metabarcoding
1:50 pm	<i>Adania Flemming, Larry Page</i>	Does the Bayou Topminnow, <i>Fundulus notti</i> , occur in Florida?
1:55 pm	<i>Aaron Geheber, Robert Hrabik</i>	Establishing a Statewide Fish Collection in Missouri: Current Progress and Future Visions
2:00 pm	<i>Christi Linardich, Kent E. Carpenter</i>	Endemic and Endangered: Conservation of Fishes of the Galápagos
2:05 pm	<i>Shawn Kuchta</i>	Phylogeographic variation in the <i>Plethodon wehrlei</i> complex
2:10 pm	<i>Leroy Nuñez, Frank Burbrink</i>	Macroecological Drivers of Species Diversity in the Ecologically Variable Garter and Water Snakes (<i>Thamnophiini</i>)
2:15 pm	<i>Julia Drennan, James Tumulty</i>	Frogs with a Southern Drawl: Maintenance of Species Boundaries between the Northern and Southern Cricket Frog

2:20 PM – 3:05 PM

Norfolk 5

Lightning Talks B

Moderator: *David Green*

2:20 pm	<i>Michael Garvey, Madison Harman, Carrie De Jesus, Samantha Wisely, Christina Romagosa, Jacob LaFond*</i>	Comparing Variation in Diet, Parasite Load, and Morphometrics Between Invasive Cane Toad (<i>Rhinella marina</i>) Populations in Central and South Florida
2:25 pm	<i>Lauren Faulkner, Christopher Lowe, Radhouane Hamadou, Felipe Torquato, Johan Sorensen, Mathieu Carrara, Alexei Godina</i>	Movement Patterns of Fishes Associated with Qatar Oil Platforms in the Arabian Gulf
2:30 pm	<i>Ashmika Behere, Rayna Bell, Matthew Fujita, David Gower, Michael McGowen, Jeffrey Streicher, Kate Thomas, Ryan Schott</i>	Going in Blind: A Look into the Molecular Evolution of Caecilian Vision
2:35 pm	<i>Arianna Kuhn, Sara Ruane, Isaac Overcast, Frank Burbrink</i>	Historical climate change structures contemporary patterns of diversity in widespread insular snakes
2:40 pm	<i>Matthew Close, Kirsty de Wit</i>	On the Distribution of Oral Sensory Papillae in Snakes
2:45 pm	<i>Carlie Anderson, Oscar Ospina, Peter Beerli, Alan Lemmon, Sarah Banker, Alyssa Hassinger, Mysia Dye, Michelle Kortyna, Emily Moriarty Lemmon</i>	The Population Genetics of Speciation by Cascade Reinforcement
2:50 pm	<i>Stephen Lochetto</i>	(Re)Imagining Snakes: Lessons from a meme
2:55 pm	<i>Jessica Pate</i>	Preliminary Results of Tagged Freckled Guitarfish (<i>Pseudobatos lentiginosus</i>) Reveal High Site Fidelity and a Long-distance Movement
3:00 pm	<i>Stacy Farina</i>	Using Biomechanical Modeling and Fish Survey Data to Predict Microhabitat Usage in Flatfish Species

Friday 14 July 2023

Friday 14 July • Oral Presentations

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

9:30 AM – 10:15 AM

Norfolk 1-2

SSAR Seibert Award: Physiology & Morphology

Moderator: Sarah Woodley

- 9:30 am Kyle Emerson, Sarah Woodley Investigating the Relationship Between the Microbial Environment and Predation Stress in a Larval Amphibian.
- 9:45 am Erin Saylor, Andy Kouba, Carrie Kouba Is Intranasal GnRH Administration an Effective Alternative Method for Hormone Delivery to Stimulate Ovulation and Oviposition in Female Anurans?
- 10:00 am Robin Bedard, Savannah Weaver, Emily Taylor Leaky Moms, Tight Babies: Cutaneous Evaporative Water Loss in Response to Supplemental Hydration in Pregnant Rattlesnakes and Neonates After Birth

9:30 AM – 11:30 AM

Norfolk 3

ASIH Stoye Award: Conservation

Moderator: Alondra Diaz Lameiro

- 9:30 am Daniel Gragson, Jenna Crovo, Carol Johnston Impact of Roundup on Chemoreception in Rough Shiners (*Notropis baileyi*)
- 9:45 am Alexis Culley, River Watson, Catherine Haase, Matthew Thomas, Stephanie Brandt, Michael Floyd, Rebecca Blanton Effects of anthropogenic landscape features on population connectivity of a small-bodied, benthic, headwater specialist fish.
- 10:00 am Baian Lin, Min Liu Understanding Species Composition of Fish Maw in China—for Future Trade Monitoring, Fishery Improvement & ETP Species Conservation
- 10:15 am Danielle Bradke, Brian Crawford, John Maerz Developing Large-Scale Monitoring of Diamondback Terrapin Populations
- 10:30 am Sidney Woodruff, Robert Grasso, Brian Todd Effects of Invasive American Bullfrogs on Western Pond Turtles in Yosemite National Park
- 10:45 am Jenna Palmisano, Terence Farrell, Robert Fitak, Anna Savage Recent Advances in Invasive Pentastome Research to Further Characterize the Threat to Native Snake Populations
- 11:00 am Jessica Yates, Stephen Harding, Dustin McBride, David Rodriguez, Matthew Kwiatkowski, Stephen Mullin Impoundments be dammed: Assessing a threatened watersnake within different habitats of the Brazos River watershed, Texas.
- 11:15 am Noah Hawkins Effects of whole-tissue invasive plant exposure (*Melia azedarach*) to native tadpoles

9:30 AM – 11:30 AM

Norfolk 4

AES Behavior

Moderator: Bryan Franks

- 9:30 am Andrew Nosal, Daniel Cartamil, Lyall Bellquist, Noah Ben-Aderet, Kayla Blincow, Natalie Klinard, Christopher Mull, Brice Semmens, Philip Hastings Persistent Shallow, Low-Amplitude Diel Vertical Migration (DVM) in Tope Sharks, *Galeorhinus galeus*
- 9:45 am Katie Gheysen, Julian Garrison, Jeremy Vaudo, Mahmood Shivji, Brad Wetherbee Relationships Between Horizontal and Vertical Movements of Shortfin Mako Sharks (*Isurus oxyrinchus*) in the Western North Atlantic Ocean
- 10:00 am Emily Spurgeon, Marten Thompson, James Anderson, Kevin Abbott, Mitchell Alexander, Patrick Rex, Brian Stirling, Christopher Lowe The influence of micro-scale habitat on the movements of juvenile white sharks in their Southern California aggregation sites

Friday 14 July 2023

10:15 am	<i>Jayne Gardiner, Cecilia Hampton, Victoria Goldner, Tonya Wiley</i>	Differential responses of juvenile bull and blacktip sharks to tropical cyclones
10:30 am	<i>Bryan Franks, John Tyminski, Nigel Hussey, Camrin Braun, Alisa Newton, Simon Thorrold, George C Fischer, Brett McBride, Robert Hueter</i>	Factors affecting migration timing and periodicity for white sharks (<i>Carcharodon carcharias</i>) in the western North Atlantic Ocean over multi-year scales
10:45 am	<i>Colby Kresge, Jeremy Vaudo, Cami McCandless, Enric Cortes, Mahmood Shivji, Bradley Wetherbee</i>	An Integrative Data Approach to Modeling the Migratory Patterns of the Shortfin Mako in the Western North Atlantic
11:00 am	<i>Daniel Coffey, Carl Meyer, Yuuki Watanabe, Nicholas Payne</i>	Swim-glide Behavior and Optimal Dive Geometry Reduces Energy Expenditure in an Undulatory Rajiform
11:15 am	<i>Joshua Moyer, Jon Dodd</i>	Feeding kinematics and ethology of Blue Sharks, <i>Prionace glauca</i> (<i>Carcharhiniformes: Carcharhinidae</i>)

9:30 AM – 12:00 PM

Norfolk 5

Herpetology: Genetics & Development

Moderator: *Todd Jackman*

9:30 am	<i>John Horne, Amy Frey, Alexander Gaos, Summer Martin, Peter Dutton</i>	Mating Systems and the Maintenance of Genetic Diversity in a Small Sea Turtle Population
9:45 am	<i>Michael Itgen, Robert Denton</i>	Gene Expression Dynamics in Polyploid Unisexual Salamanders
10:00 am	<i>Michael Westphal, Iris Holmes, Ivan Monagan, Paul Johnson, Alison Davis Rabosky</i>	Differential contribution of historical processes to structuring of Central California populations of the desert night lizard, <i>Xantusia vigilis</i> .
10:15 am	<i>L. Caden Comşa, Anthony J. Geneva</i>	Genomic Powerhouse: de novo Assembly and Phylogenetic Analyses of Anolis Mitochondrial Genomes
10:30 am	<i>Alyssa Vanerelli, Jonathan Losos, Anthony Geneva</i>	Is the Parallel Evolution of Large Body Size in <i>Anolis sagrei</i> the Result of Parallel Genomic Changes?
10:45 am	<i>Cleo Falvey, Anthony Geneva</i>	Comparative Evolutionary Genomics of a Novel Strain of Anolis Adenovirus
11:00 am	<i>Jennifer Moore, Alyssa Swinehart</i>	What species are in the feces? DNA metabarcoding reveals the diet of threatened eastern massasauga rattlesnakes
11:15 am	<i>Todd Jackman</i>	The evolution of the sperm receptor PKDREJ in amphibians and squamates
11:30 am	<i>Caleb Krueger, Fredric Janzen</i>	On the Origin of Patterns of Temperature-Dependent Sex Determination
11:45 am	<i>Claudia Crowther, Luke Hoekstra, Fredric Janzen, Lisa Schwanz</i>	Plasticity in Sex Determination of Painted Turtles (<i>Chrysemys picta</i>)

9:30 AM – 11:30 AM

Norfolk 6

Herpetology: Ecology II

Moderator: *Alessandro Catenazzi*

9:30 am	<i>Jeremy Feinberg, Erik Kiviat, Matthew Schlesinger, Joanna Burger</i>	Assessing the status of urban populations of the Atlantic coast leopard frog, <i>Rana (Lithobates) kauffeldi</i> , following hurricane Sandy.
9:45 am	<i>Jeremy Klank, Francesca Protti-Sánchez, Hannah M. Rowland, Federico Bolaños, Jennifer L. Stynoski</i>	Tasting the Rainbow: The Palatability of Poison Frogs Along an Aposematic to Cryptic Gradient and its Relation with Chemical Defenses
10:00 am	<i>Alessandro Catenazzi, M. Isabel Diaz, Jonathan Adamski, Hamlet Maza Camacho, J. William Tito Nina</i>	Chytrid in the Clouds: Two Years of Mark-Recapture of Direct-Developing Frogs in the Amazonian Andes
10:15 am	<i>Brian Halstead, Patrick Kleeman, Jonathan Rose, Robert Grasso</i>	Weather-induced Functional Extirpation of a Meadow Population of Endangered Sierra Nevada Yellow-legged Frogs (<i>Rana sierrae</i>)
10:30 am	<i>Julia E. Earl, Daniel J. Edwards, Joseph Aubert</i>	Effect of Leaf Litter Diversity on Treefrog Oviposition Site Selection
10:45 am	<i>David M Green, Nathalie Jreidini</i>	Distance, Time and Toads: Uncovering the Shape of Dispersal.
11:00 am	<i>Nathalie Jreidini, David M Green</i>	Tracking individual toads: Linking inter-individual variation to population-level partial movement

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11:15 am *Oliver Ljustina, Florence Wen*, Brandon Hedrick*

Stress Responses of *Sternotherus odoratus* to Urbanization in Southeastern Louisiana

10:15 AM – 11:45 AM

Norfolk 1-2

SSAR Seibert Award: Ecology

Moderator: Sarah Woodley

10:15 am *Joseph Cannizzaro IV, Gerlinde Hobel*

Black and Yellow Aposematic Fellow: Evidence for aposematism and unpalatability in the Nearctic Gray Tree Frog (*Hyla versicolor*).

10:30 am *Rachel Prokopius, Alessandro Catenazzi*

Is chytrid avoidance an innate or learned behavior in the strawberry poison frog?

10:45 am *Matthew Atkinson, Erin Brosnan, Anna Savage*

Experimental *Perkinsea* infections cause lethal and sub-lethal disease in three frog families

11:00 am *Ryan Miller, Jennifer Deitloff, Jillian Fleming*

Assessment of Density, Spatial Distribution and Movement Patterns of *Plethodon cinereus* (Eastern Red-backed Salamander) Using Spatial Capture-Recapture

11:15 am *Jessica Sandoval, Thomas Anderson*

Biotic and Abiotic Drivers of Phenotypic Variation in a Paedomorphic Salamander

11:30 am *Mariah Mack*

Plasticity of *Ambystoma texanum* life history traits in response to environmental conditions

1:30 PM – 3:00 PM

Norfolk 1-2

SSAR Seibert Award: Conservation

Moderator: Natalie Claunch

1:30 pm *Travis Rainey, Kirsten Nicholson, Brad Swanson*

Assessing population structure at the range edge of a regionally threatened anuran, *Acris blanchardi*

1:45 pm *Harrison Goldspiel, Jacob Kubel, Erin Grey, Noah Charney, Paula Blanco-Ortiz, Alyssa W. Kaganer, Samara Davis, Mark Y. Stoeckle*

Disentangling a cryptic salamander group with eDNA: a landscape assessment tool for the *Ambystoma laterale-jeffersonianum* complex

2:00 pm *Natalie Haydt, Lorin Neuman-Lee*

Combining Skin Microbiome and Immune Metrics to Assess Snake Fungal Disease Risk in Arkansas Snakes

2:15 pm *Andrew Powers, Theodora Pinou*

A Preliminary Census of Copperheads (*Agkistrodon contortrix*) in Connecticut, USA.

2:30 pm *Anna Humphrey, April Atkinson, Jay Cantrell, Will Dillman, Kyle Palmquist, Shane Welch, Jayme Waldron*

Effects of Vegetation and Historical Land Use on the Occurrence of an Endemic Anuran

2:45 pm *Madison Harman, Nicole Fuller, Benjamin Baiser, Andrea Currylow, Amy Yackel Adams, Bryan Falk, Christina Romagosa*

Drivers of Invasive Tegu Diet Composition in Two Florida Populations

1:30 PM – 4:00 PM

Norfolk 3

General Ichthyology I

Moderator: Dave Johnson

1:30 pm *Harutaka Hata, Sébastien Lavoué*

Resurrection and Redescription of Nominal Species Previously Regarded as Synonyms of *Thrissina mystax* (Bloch & Schneider, 1801) (*Teleostei: Clupeiformes: Engraulidae*)

1:45 pm *Patrick Ciccotto*

Taxonomic Overview of Species of *Cirrhinus* (*Cyprinidae: Labeoninae*)

2:00 pm *Jonathan Armbruster*

Working through Redhorse (*Catostomidae: Moxostoma*)

2:15 pm *Marcelo Melo, Amanda Gomes, Barbara da Silva, Cesar Romero, Flávia Masumoto, Guilherme Faria, Heloisa Caixeta, Julia Ibanhez, Marcos Reis, Pollyana Roque, Rayane França, Rodrigo Caires, Claudio Oliveira*

The Discovery of Some Rare and New Species of Brazilian Deep-Sea Fishes

2:30 pm *Paulo Presti, Murilo Nogueira de Lima Pastana, G. David Johnson, Alessio Datovo*

The Gustatory Filament of the Remo Flounder (*Pleuronectiformes: Oncopteridae: Oncopterus darwini*)

Friday 14 July 2023

2:45 pm	<i>Ai Nonaka, Lisa Palmer, Laurence Dorr</i>	Kako Morita: A Japanese Artist and his Struggle to Survive as a Scientific Illustrator in early 20th century America
3:00 pm	<i>Vinicius Espindoola, G. David Johnson</i>	Comparative anatomy review of the gill arch muscles in the Anguilliformes
3:15 pm	<i>Matthew Girard, Carole Baldwin, Katherine Bemis</i>	Evolution of the Rovers, Redbaits, and Bonnetmouths (<i>Emmelichthyidae</i>)
3:30 pm	<i>Alfredo Carvalho-Filho</i>	Fishes of the Brazilian Coast
3:45 pm	<i>G. David Johnson, Ed Brothers, Richard Collins</i>	Putative Batesian Mimicry of Gelata by Larvae of Marine Fishes Based on in-situ Images from Blackwater Photographers

1:30 PM – 3:45 PM

Norfolk 6

Herpetology: Ecology III

Moderator: *Luke Frishkoff*

1:30 pm	<i>Kristopher Pedersen, Charles Hanifin</i>	Evidence for Partitioning? A Comparison of Thermal Niche in Three Species of Sympatric Lizards in North Eastern Utah
1:45 pm	<i>Luke Frishkoff</i>	Ecological limits of diversity across Anolis lizard communities
2:00 pm	<i>Alexander Murray, Edita Folfas, Morgan Page, Zach Lange, Joe Mruzek, Luke Frishkoff</i>	Competition intensification drives century long declines in a common lizard species, <i>Sceloporus consobrinus</i>
2:15 pm	<i>Karen Caceres, Mark Sandfoss, Natalie Claunch, Zachary Steele, John Whiteman</i>	Do Florida cottonmouth snakes need freshwater?
2:30 pm	<i>Matthew Lattanzio</i>	Where Temperature and UV Collide: Photoregulation Trade-Offs in Divergent Microhabitats
2:45 pm	<i>Edita Folfas, Luke Mahler, Luke Frishkoff</i>	Avian Predator Occurrence Tracks Lizard Prey Diversity Across Island Communities
3:00 pm	<i>Matt Goode, Anthony Pawlicki, Javan Bauder, Ryan Hanscom</i>	Long-Term Research on Species-, Population-, and Community-Level Effects of Urbanization on Snakes and Lizards
3:15 pm	<i>Amanda Martin, Jennifer Sheridan</i>	Body Size Responses to the Combined Effects of Climate and Land Use Changes within an Urban Framework
3:30 pm	<i>Gabriela Bittencourt</i>	Gone with the frogs - the hidden diversity of amphibian parasites

3:00 PM – 4:00 PM

Norfolk 1-2

ASIH Stoye Award: Physiology & Physiological Ecology

Moderator: *Natalie Claunch*

3:00 pm	<i>Allison Litmer, Steven Beaupre</i>	Cycling Temperature Treatments Affect Estimates of Digestive Performance in Prairie Lizards (<i>Sceloporus consobrinus</i>)
3:15 pm	<i>Danilo Giacometti, Glenn Tattersall</i>	Putting the energetic-savings hypothesis underground: Fossorial and non-fossorial amphibians have similar metabolic rates
3:30 pm	<i>Savannah Weaver, Evan Odberg, Tess McIntyre, Taylor van Rossum, Emily Taylor</i>	Cutaneous Evaporative Water Loss of Lizards Consistently Acclimates in Response to Vapor Pressure Deficit
3:45 pm	<i>Emily R. Gray, Stacey Leonatti Wilkinson, Mary Cate Miller, Will Wilkinson, Carissa Adams, Sarah Ebert, Casey Hitchens, John Holloway, Shane M. Welch, Jayme L. Waldron</i>	Osmotic Trends and Reproductive Condition of Mature Female Eastern Diamondback Rattlesnakes (<i>Crotalus adamanteus</i>)

3:30 PM – 4:00 PM

Norfolk 5

Amphibian Behavior, & Ichthyology Conservation

Moderator: *David Green*

3:30 pm	<i>Jen Moss</i>	Disentangling decision rules underlying flexible sex-reversal of parental care in a poison frog
3:45 pm	<i>Bruce Collette</i>	Ten-year update on the status of the worlds' tunas, mackerels, and billfishes

Friday 14 July • Poster Presentations

4:00 PM – 6:00 PM • Hampton Ballroom

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

AES Carrier Award

P1-1	<i>Mackenzie Horton, Nigel Hussey, Ashley Johnson, John Tyminski, Chris Fischer, Brett McBride, Robert Hueter, Bryan Franks</i>	Fine-scale analysis of space use by white sharks (<i>Carcharodon carcharias</i>) in their overwintering residency area in the western North Atlantic
P1-2	<i>Caroline Collatos, Jeff Kneebone, Greg Skomal, Nick Whitney</i>	Sandbar shark (<i>Carcharhinus plumbeus</i>) Preliminary Demographics, Habitat Use, and Movements in Nantucket Sound, MA
P1-3	<i>Eloise Cave, Michael Criscitiello, Jeannine Ott, Toby Daly-Engel</i>	Measuring local adaptation in natural shark populations using immunogenetic diversity
P1-4	<i>Emily Sapp, Jim Gelsleichter</i>	Use of Coelomic Fluid as a Noninvasive Indicator of Reproductive Status in Elasmobranchs
P1-5	<i>Andrea Leontiou, Jonathan Cohen, Aaron Carlisle</i>	Estimating Whole-Body Metabolic Rate from a Point Measurement at the Gills in Sandbar Sharks
P1-6	<i>Jasmine Rodriguez, Jessica Dutton, Faye Grubbs, Brian Bartram, Weston Nowlin</i>	Trophic Ecology and Environmental Conditions Affect Mercury Concentrations in Immature Sharks in Texas Bays.
P1-7	<i>Jack Dales, Jeremy Stalker, Matthew Smukall, Bryan Franks</i>	A Multi-Tissue Stable Isotope Analysis of Juvenile Lemon Sharks, <i>Negaprion brevirostris</i> , From Distinct Nurseries.

AES Contributed

P1-8	<i>Natalie Pitman, Weston Nowlin, Faye Grubbs, Brian Bartram, Brian Jackson, Jessica Dutton</i>	Selenium:Mercury Molar Ratios in Blacktip Sharks (<i>Carcharhinus limbatus</i>) and Bonnethead Sharks (<i>Sphyrna tiburo</i>) in the Lower Laguna Madre, Texas
P1-9	<i>Kileigh Hawk</i>	Juvenile Atlantic Sharpnose Shark (<i>Rhizoprionodon terraenovae</i>) Relative Abundance and Body Condition in Two South Carolina Estuaries Varying in Urbanization
P1-10	<i>Annais Bonilla-Johnson</i>	Histotroph Content and Physiological Effects of Embryonic Maternal Investment in Two Matrotrophic Elasmobranch Species
P1-11	<i>Elizabeth Jahn, Christopher G. Lowe</i>	Density and Abundance of Juvenile White Shark (<i>Carcharodon carcharias</i>) Prey Species along Southern California Beaches
P1-12	<i>Rose Harman, Paul Bourdeau, Jose Marin Jarrin</i>	Effects of aquaculture-based habitat modification on elasmobranch abundance and predation intensity in a large coastal lagoon
P1-13	<i>Ashlynn Kemp, Jim Gelsleichter</i>	Association of Anti-Mullerian Hormone Concentrations in Female Sharks in Relation to Sexual Maturity and Reproduction
P1-14	<i>Jake Wood, Kenshu Shimada</i>	Functional Implications Reflected by Shape Variation in Neurocranial Morphology of Lamniform Sharks (<i>Elasmobranchii: Lamniformes</i>)
P1-16	<i>Pollyana Roque, Otto Gadig, Claudio Oliveira, Marcelo Melo</i>	A new species of deep-sea lantern shark genus <i>Etmopterus</i> Rafinesque 1810 (<i>Etmopteridae: Squaliformes</i>) from the Western South Atlantic
P1-17	<i>Kristina Flanigan, Ryan Lowndes, Erin J. Burge, Abigail Cavaris, Shae Schreckengost, Dan C. Abel</i>	Efficacy of eDNA Methods for Elasmobranch Detection in a Large Estuary Using Three Novel eDNA Primers
P1-18	<i>Lila Xenakis, Megan Winton, Greg Skomal, Toby Daly-Engel</i>	Collecting DNA from Sharks using Non-Invasive Skin Sampling
P1-19	<i>Tatyana Dacostagomez, R. Dean Grubbs, Bryan Frazier, Gretchen Bielmyer-Fraser, Brooke Discher, Jim Gelsleichter</i>	Mercury and selenium concentrations in muscle of the scalloped hammerhead <i>Sphyrna lewini</i> from western North Atlantic waters
P1-20	<i>Elliot McPhatter, Bryan Frazier, Jim Gelsleichter</i>	Mercury concentrations in sharks from southeast U.S. estuaries

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P1-21	<i>Conor O'Meally, Gretchen Bielmyer-Fraser, Bryan Franks, Dean Grubbs</i>	Assessing metal concentrations in muscle tissue of blacktip sharks (<i>Carcharhinus limbatus</i>) from coastal Maryland compared to the Florida Peninsula
P1-22	<i>Jayne Gardiner, Susan Lowerre-Barbieri, Kim Bassos-Hull, Krystan Wilkinson, Tonya Wiley</i>	Residency and philopatry of juvenile great hammerheads, <i>Sphyrna mokarran</i> , in Tampa Bay, FL: evidence of a nursery area
P1-23	<i>Ryan Lowndes, Kristina Flanigan, Craig O'Connell, Abigail Cavis, Shae Schreckengost, Derek Crane, Samuel Gary, Daniel Abel</i>	Deterrent Effects of the Electromagnetic SMARTTMHooks and the Newer "SMARTER" Hooks on Sharks in Recreational Hook-and-Line and Longline Trials
P1-24	<i>John Morris, Demian Chapman, Valerie Hagan</i>	Comparing the Effects of 2 Deterrents (Magnetic and Electronic Pulse) to Reduce Depredation in the Commercial and Recreational Fisheries
P1-25	<i>Bethany Brodbeck, Edward Hale, Aaron Carlisle</i>	Characterization of Elasmobranch At-Vessel and Post-Release Mortality Across Gear Types and Taxonomy
P1-26	<i>Elise Hayden, Vital Heim, Matthew Smukall</i>	Insights from 6 years of Southern Stingray, <i>Hypanus americanus</i> , captures in Bimini, The Bahamas
P1-27	<i>Jessica Pate, Vicky Fong</i>	The Florida Manta Project: Research and Conservation of Florida's Manta Rays
P1-28	<i>David Shiffman</i>	This research is important for the conservation and management of sharks: A framework for making that actually true
P1-29	<i>Sarah Worthington, Jim Gelsleichter</i>	Using Baited Remote Underwater Video (BRUV) to Characterize Shark Nursery Habitat Use in a Low-Visibility Estuarine System
P1-30	<i>Kim Bassos-Hull, Atlantine Boggio-Pasqua, Krystan Wilkinson, Breanna DeGroot, Dean Dougherty, Peter Hull, Greg Byrd, Matthew Ajemian, Jessica Valek, Alexander Fogg, Michael Norberg, Tabitha Siegfried, Kirsty Ballard, Jeffery Guertin, Cody Mott, Frédéric Ménard</i>	First Insights into the Movement Ecology of the Western Atlantic Pygmy Devil Ray Using Passive Acoustic Telemetry
P1-31	<i>Jasmine Nyce, Matthew Smukall, R. Dean Grubbs, Curry Cunningham, Debra Abercrombie, Andrew Seitz</i>	Analysis of Large Bull Shark (<i>Carcharhinus leucas</i>) Movement and Distribution in the Northwest Atlantic
P1-32	<i>Shannon Barry, Matthew Ajemian, Charles Bangle, Laura Garcia Barcia, Jayne Gardiner, Marcus Drymon, Bryan Frazier, James Gelsleichter, Dean Grubbs, Neil Hammerschlag, Michael Heithaus, Matthew Smukall, Bradley Strickland, Tonya Wiley, Toby Daly-Engel</i>	Local Adaptation and Climate Impacts on Habitat Use of the Bull Shark (<i>Carcharhinus leucas</i>)
P1-33	<i>Brett Sweezey, Jay Rooker, Brett Falterman, R. J. David Wells</i>	Evaluating Ecosystem Connectivity of Three Common Shark Species in a National Marine Sanctuary
P1-34	<i>Kathy Liu, Jasmin Graham, Jayne Gardiner, Sora Kim, Hyejoo Ro, Tonya Wiley, Catherine Macdonald</i>	Bonnethead shark (<i>Sphyrna tiburo</i>) morphology and trophic ecology: A comparison across geographies, sex, and maturity
P1-35	<i>Jessica Dehn, Dean Grubbs</i>	Characterizing ontogenetic dietary shifts in young-of-year Atlantic sharpnose, <i>Rhizoprionodon terraenovae</i>
P1-36	<i>Krystan A. Wilkinson, Randall S. Wells, Robert E. Hueter, John Morris, Lisa A. Hoopes, Judith Bakker, Maurits P.M. van Zinnicq Bergmann, Sam Rossman, Theresa-Anne Tatom-Naecker, Valerie N. Hagan</i>	Food fight? Assessing the trophic overlap of resident bottlenose dolphins (<i>Tursiops truncatus</i>) and coastal shark species off Sarasota, Florida
P1-37	<i>Alexander Rubin, Aaron Carlisle, Sunita Shah Walter, John Mohan</i>	Accounting for lipid and urea content when analyzing elasmobranch plasma for stable isotope analysis
P1-38	<i>Kaitlyn Cisz, Lindsey Nelson, Christian Jones, Eric Hilton, Jan McDowell, Christian Jones</i>	Morphological and Genetic Analysis of <i>Rostroraja</i> in the Gulf of Mexico

ASIH Storer Award: Ichthyology

P1-39	<i>Laurel Nave-Powers, Luke Tornabene, Alison Deary</i>	Spawning Phenology of Larval Pacific Sand Lance (<i>Ammodytes personatus</i>) and Arctic Sand Lance (<i>A. hexapterus</i>)
P1-40	<i>Cameron Olsen, Kevin W. Conway</i>	Anatomical Survey of the Olfactory Apparatus in the Walking Catfishes (<i>Siluriformes: Clariidae</i>)
P1-42	<i>Lee Burrows, Levi Lewis, Malte Willmes, Andrew Rypel, Gabe Singer, Kyle Murphy</i>	Age, Growth, and Origin of Kokanee Salmon in California Lakes and Reservoirs

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P1-43	<i>Amanda Pinion, Kevin Conway</i>	Tuberculation in the North American chub genus <i>Macrhybopsis</i>
P1-44	<i>Derrick Leong, Zehua Zhou, Juan Liu</i>	Quantitatively Exploring Morphological Patterns of the Cephalic Lateral Line among Major Lineages of Osteichthyes: A Preliminary Finding
P1-46	<i>Hannah Alloway, Benjamin Keck, Thomas Near, Rebecca Blanton</i>	Documenting darter diversity: systematic evaluation of <i>Etheostoma duryi</i> , Blackside Snubnose Darter, and <i>Etheostoma flavum</i> , Saffron Darter (<i>Percidae</i>)
P1-47	<i>Sheila Rodríguez Machado, Diego J. Elias, Kyle R. Piller, Caleb McMahan, Prosanta Chakrabarty</i>	Incomplete Lineage Sorting and Reticulate Evolution Obscure Major Diversification Events Within Poeciliidae (<i>Teleostei: Cyprinodontiformes</i>)
P1-48	<i>Camden Oathout, Kyle Piller</i>	Short Term Environmental DNA Variation Using Active and Passive Sampling Techniques in the Tangipahoa River, Louisiana
P1-49	<i>Tanner Bahm, Kyle Piller</i>	Assessing fish biodiversity in living shoreline reefs with environmental DNA in Lake Calcasieu, Louisiana
P1-50:	<i>Gaelyn Gros, Kyle Piller</i>	Are you still there? Assessing the historic and contemporary conservation status of <i>Ammocrypta clara</i> (<i>Percidae</i>) in Louisiana river systems
P1-52	<i>Heloísa Caixeta, Claudio Oliveira, Marcelo Melo</i>	<i>Polymixia</i> (<i>Polymixiiformes: Polymixiidae</i>) in the Western South Atlantic: a New Chapter on the Taxonomy of this Enigmatic Group of Fishes
P1-53	<i>Hannah Willis, Olivia Schweikart, Caleb McMahan, Windsor Aguirre</i>	Assessing Diversity and Abundance of Seven Taxonomic Freshwater Fish Orders in The Guayas River Basin using New Genetic Reference Library
P1-54	<i>Leo MacLeod, Murilo Pastana</i>	Descriptive Myology of Stargazers, Genus <i>Uranoscopus</i> (<i>Percomorphacea; Uranoscopidae</i>)
P1-55	<i>D. Cooper Campbell, Henry Bart Jr.</i>	A Tail of Two Gobies: Comparative Differential Gene Expression between Two Euryhaline Co-Occurring Gobiiformes
P1-56	<i>Ayomikun Akinrinade, Sarah Friedman, Christopher Martinez</i>	Understanding the Drivers and Consequences of Live Birth in Fishes
P1-57	<i>Jemelyn Grace P. Baldisimo, Christopher E. Bird, Kent E. Carpenter</i>	Investigating centennial changes in genetic diversity and demography for <i>Sphaeramia nematoptera</i> using low coverage whole genome sequencing
P1-58	<i>Christian Ching, Jeffery W. Streicher</i>	Developing New Systems for Riparian Ecosystem Monitoring
P1-59	<i>Rowan Ward, Emmy Delekta, Devya Hemraj, Autumn Magnuson, Morghan McCool, Matt Kolmann</i>	The Restoration and Digitization of a Neglected Ichthyology Collection
P1-60	<i>Shing-Lai Ng, Katherine Bemis, Kwang-Ming Liu, Shoou-Jeng Joung</i>	Re-examination on two closely related <i>Etmopterus</i> species, <i>E. decacuspidatus</i> & <i>E. evansi</i> : Is the cusplet number stable to separate lanternshark species?
P1-61	<i>John Whalen, Rebecca Ruiz, Abner Bucol, Chris Bird, Kent Carpenter</i>	The Influence of Marine Protected Areas on Decadal Changes in Fish Diversity in the Center of Marine Diversity
P1-62	<i>Jacquelyn Galvez, Christian Lizaso, Jack Tseng</i>	Damming evidence for morphological consequences of artificial barriers in riverine steelhead trout
P1-63	<i>Hailey Conrad, Holly Kindsvater</i>	Latitudinal differences in summer flounder sex ratio possible evidence for temperature-induced sex-reversal

NIA Student Poster Award

P1-64	<i>Roy Roberts, Sharon F Magnuson, Christopher E Bird</i>	Whole Genome Sequencing of Century-Old Philippine Reef Fishes
P1-66	<i>Anthony Rajkumar, Belinda Chang, Nathan Lovejoy</i>	An Investigation of Low-coverage Whole Genome Sequencing as a Tool for Studying Osmoregulatory Evolution in Potamotrygonid Rays

ASIH Storer Award: Herpetology

P1-67	<i>Jacob Barthelemy, Christopher Murray, Dr. Clifford Fontenot</i>	Lineage-Specific Effects of Incubation Temperature on Phenotypic Disparity
P1-68	<i>Julia Thulander, Tatyana Natal, Jason Bracken, Joshua Hall</i>	Thermal Adaptation of Streamside Salamanders (<i>Ambystoma barbouri</i>) across a Latitudinal Gradient
P1-69:	<i>Tess McIntyre, Savannah Weaver, Michael Westphal, Emily Taylor</i>	Watery Having for Dinner? Variation in Blunt-nosed Leopard Lizard Dietary Water
P1-70	<i>Santoshi Mutyala, Delanie Crabtree, Sara McClelland</i>	Impacts of a common organophosphorus insecticide on amphibian development
P1-71	<i>Houston Chandler, George Brooks, Yan Jiao, Carola Haas</i>	Predicting the long-term viability of Reticulated Flatwoods Salamander (<i>Ambystoma bishopi</i>) populations under future climate changes
P1-72	<i>Julianne Jones, Erik Yando</i>	Habitat Utility by Herpetofauna at the Northern Terminus of Longleaf Pine Ecosystem with Comparison to Adjacent Habitats
P1-73	<i>Viannka Galarza, Dani Bright, Mari Nguyen, Meryem Assaoui, Cass Condray, Kai Williams, Lauren Branham, Allyson Fenwick</i>	Evaluating Population Genetic Structure of Mediterranean Geckos (<i>Hemidactylus turcicus</i>) with Increased Sampling Across the University of Central Oklahoma
P1-74	<i>Langston Haden, Grady Leek, Haley Kudson, Will Selman</i>	Behavioral Ecology of Three-Toed Box Turtles (<i>Terrapene carolina triunguis</i>) in an Urban Mississippi Park
P1-75	<i>Emmeleia Nix, Nicole Gaudenti, Michael Westphal, Emily Taylor, Brian Todd, Kathleen Ivey, Paul Maier, Nargol Ghazian, Malory Owen, Mario Zuliani</i>	Factors Affecting Home Range Size in the Blunt-nosed Leopard Lizard (<i>Gambelia sila</i>)
P1-76	<i>Adolfo Rodríguez-Velázquez, Alberto Sabat</i>	Movement Patterns and Home Ranges of the Puerto Rican Racer (<i>Borikenophis portoricensis</i>)
P1-77	<i>Danielle Bradke, Dare Scott, John Maerz</i>	Updated Diamondback Terrapin Nesting Frequency Estimates and Population Projections

SSAR Hutchison Award: Physiology & Morphology

P1-78	<i>Mackenzie Nichols, Lorin Neuman-Lee, Stephen Mullin</i>	Short-term Tissue Regeneration Rates in Lesser Sirens (<i>Caudata: Sirenidae</i>)
P1-79	<i>Savannah Weaver, Shane Siers, Rachel Jolley, Jeried Calaor, Emily Taylor</i>	Fasted, Fed, or Dead? Dorsum, Ventrum, or Head? Cutaneous Evaporative Water Loss Differs By Physiology, Body Region, and Measurement Method
P1-80	<i>Justin Lee, Aaron Bauer</i>	Comparative Osteology of the Kukri Snake genus <i>Oligodon</i> Fitzinger, 1826 (<i>Squamata: Colubridae</i>)
P1-81	<i>Natasha Stepanova, Xinchun Liu, Alison Davis Rabosky, Daniel Rabosky</i>	Disc-functional Families: Vertebral Evolution Across Squamates

SSAR Hutchison Award: Ecology, Natural History, Distribution, & Behavior

P1-82	<i>Andreanna Schultz, Matthew Lattanzio</i>	Ultraviolet Light and Body Temperature Regulation Trade-Offs in Tree Lizards along an Elevation Gradient
P1-83	<i>Josiah Johnson, Christopher Smaga, Samantha Bock, Benjamin Parrott</i>	Maternal Provisioning Interacts with Incubation Temperature to Affect Mercury Exposure in Hatchling American Alligators (<i>Alligator mississippiensis</i>)
P1-84	<i>Eli Bieri, Andrew Rubio, Kyle Summers</i>	Beyond Color and Pattern: Elucidating the Factors Associated with Intraspecific Aggression in the Mimic Poison Frog (<i>Ranitomeya imitator</i>)
P1-85	<i>Ke'alani Sison, Matthew Lattanzio</i>	Impact of Urbanization on the Escape Behavior and Ecomorphology of Tree Lizards
P1-86	<i>John Arnett, Neeta Connally, Michael Ravesi, Theodora Pinou</i>	Effects of Urbanized Roads on Northern Diamondback Terrapins (<i>Malaclemys terrapin terrapin</i>)
P1-87	<i>Marlena Hamilton, Matthew Lattanzio</i>	Variation in Behavior and Physiology of Red-Backed Salamander Populations Across an Elevation Gradient
P1-88	<i>Zachary Vegso, Ryan Kerney, Sharyn Marks</i>	Algal Symbiosis in North American Ranids

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P1-89	<i>Madison Harman, Jason Blackburn, Melissa Miller, Benjamin Baiser, Andrea Currylow, Amy Yackel Adams, Bryan Falk, Christina Romagosa</i>	Spatial Analysis of Invasive Pentastomes Infecting Two Populations of Invasive Tegus in Florida
P1-90	<i>John Moore</i>	The Effect of Sexual Dimorphism in Mosquitofish on Predation of Amphibian Larvae
P1-91	<i>Hayley Crowell, Samuel Borstein, Jenna Crowe-Riddell, Alison Davis Rabosky, Haley Martens, Ramon Nagesan, Randy Singer</i>	Beyond the Sea(snake): Reviving Historical Collections for New Lessons in Collaboration and Beyond

SSAR Rabb Undergraduate Poster Award

P1-92	<i>Dylan Bryant, Matthew Lattanzio</i>	Influence of Recent Climate Change on Morphology of a Widespread Lizard, <i>Sceloporus occidentalis</i>
P1-93	<i>Ron Alesker, Rayna Bell, Matthew Fujita, David Gower, Jeffrey Streicher, Kate Thomas, Ryan Schott</i>	Molecular Evolution of Lens Crystallin Genes in Frogs
P1-94	<i>Caitlin Doughton, Ralph Saporito, Vincent Farallo</i>	The Effects of Alkaloid Sequestration on Poison Frog Metabolism
P1-95	<i>Sarah Kelso</i>	Population Survey of <i>Necturus punctatus</i> in a Perennial Stream within the Duke Forest
P1-96	<i>Sydney Stahl, Jennifer Deitloff</i>	Seasonal variation in salamander abundance and species diversity in relation to distance from a trail.
P1-97	<i>Trevor Rallo, Thomas Anderson</i>	Intraspecific Priority Effects in Smallmouth Salamanders: Effects on Larval Body Size and Survival
P1-98	<i>Madelene Grullon, Scott Kornfeind, Sara McClelland</i>	Plastics in our ponds and aquatic habitats: How are microplastics impacting larval amphibians

Contributed: Herpetology I

P1-99:	<i>Haley Moniz</i>	Physiological changes in the skin of Pacific newts (<i>Taricha</i>) along a terrestrial-to-aquatic life history shift
P1-100	<i>Drew R. Davis</i>	Diversity and Occurrence of Introduced Hemidactylus in the Rio Grande Valley of south Texas, USA
P1-101	<i>Ryan Singer, Emily Taylor, Scott Boback, Eddie Tu, Brandon Kong</i>	Do You See What I See? Cryptic snakes and the accuracy of citizen scientists
P1-102	<i>Sean Sterrett, Rebecca Berzins, Rachel Katz</i>	Evaluating the Use of Unmanned Aerial Systems to Study Diamond-backed Terrapin (<i>Malaclemys terrapin</i>) Populations
P1-103	<i>Divia Feinstein, Mary O'Donnell</i>	Observational Study on Gravid Timber Rattlesnakes
P1-104	<i>Elmer Gutierrez, Breanna Putman</i>	Temperature Fluctuations Under Cover Boards Along a Gradient of Urbanization
P1-105	<i>Michael Meyer</i>	Twelve Years of Field Surveys
P1-106	<i>Faith Dunlap, Cory McKinstry, Arik Hartmann, Kuttichantran Subramaniam, Ana Longo</i>	Chelonian community surveys following a mortality event of Florida softshell turtles (<i>Apalone ferox</i>) in an isolated wetland
P1-107	<i>Rachel Weaver, Thanchira Suriyamongkol, Sierra Shoemaker, Joshua Gonzalez, Ivana Mali</i>	Home Range and Movement Patterns of Ornate Box Turtle (<i>Terrapene ornata</i>) in Eastern New Mexico
P1-108	<i>Brandon Kong</i>	One Man's Crime is Another's Study: Using confiscated snakes to study extreme starvation
P1-109	<i>Parker Woodward, Rob Denton</i>	The four million year heist: The evolutionary history of unisexual salamanders and their relatives (<i>genus Ambystoma</i>)
P1-110	<i>Thais Condez, Tetsuto Miyashita, Hillary Maddin</i>	Contributions to the developmental biology of the terrestrial red-backed salamander <i>Plethodon cinereus</i>

Saturday 15 July • Symposia

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

8:00 AM – 4:00 PM

Marriott 4

AES: A Tribute to Jack Musick Symposium

Moderators: *Dean Grubbs, Charles Cotton*

8:00 am	<i>Dean Grubbs</i>	Introduction to the symposium
8:15 am	<i>Charles Cotton</i>	Introduction to the symposium
8:30 am	<i>Jeffrey Carrier</i>	Jack of All Trades: AES President, Editor, Tarpon Whisperer
8:45 am	<i>Ricardo Rosa, Otto Gadig, Rafael Menezes</i>	Jack Musick and his Ties to Elasmobranch Research in Brazil
9:00 am	<i>Ana Veríssimo, Arnaud Gaigher, Tereza Almeida, Martin Flajnik, Yuko Ohta, Fabiana Neves, Antonio Munoz, Alessia Rota, Filipe Castro, André Machado, Pedro Esteves, Teresa Moura, Bárbara Serra-Pereira</i>	A Peep into Chondrichthyan Immunogenetics and its Relevance to Evolution, Management and Conservation
9:15 am	<i>Jim Gelsleichter, Bryan Frazier, R. Dean Grubbs, John Bowden</i>	Are sharks on the U.S. east coast exposed to harmful levels of the “forever chemicals?”
9:30 am	BREAK	
10:00 am	<i>David S. Portnoy, Dominic G. Swift, Christopher M. Hollenbeck, R. Dean Grubbs, Neil Hammerschlag, Tristan L. Guttridge</i>	Conservation Genomics of the Great Hammerhead in the Western North Atlantic
10:15 am	<i>Dominic Swift, Andrew Fields, Dean Grubbs, Kevin Feldheim, Jayne Gardiner, Marcus Drymon, David Portnoy</i>	Assessing for MHC-Associated Mate Choice in the Blacktip Shark (<i>Carcharhinus limbatus</i>)
10:30 am	<i>Sonja Fordham</i>	Beyond Science: Jack Musick’s Exemplary Role in Shark Conservation
10:45 am	<i>R. Dean Grubbs</i>	From fisheries to climate change, the use of fishery-independent surveys as tools for monitoring changes in shark populations.
11:30 am	<i>Cheston Peterson, Blake Hamilton, Ashley Dawdy, Dean Grubbs</i>	Biotic factors affecting habitat use in multiple life stages of sympatric coastal sharks
11:45 am	BREAK	
1:30 pm	<i>Ashley Dawdy, Dean Grubbs</i>	Movement Behavior of Large Juvenile and Adult Smalltooth Sawfish (<i>Pristis pectinata</i>) in the Florida Keys and Everglades National Park
1:45 pm	<i>Alyssa Andres</i>	Identifying species hypoxic limits at the intersection of physiology and long-term species monitoring
2:00 pm	<i>Harold Pratt Jr., Theo Pratt, Ryan Knotek, Jeffrey Carrier, Nick Whitney*</i>	Long-term Use of a Shark Breeding Ground: Three Decades of Mating Site Fidelity in the Nurse Shark, <i>Ginglymostoma cirratum</i>
2:15 pm	<i>Charles F. Cotton, R. Dean Grubbs, Brian J. Moe</i>	Deep on Runnin’ – Jack Musick’s 50-year Journey of Deepwater Chondrichthyan Discoveries Continues to Inspire New Generations of Scientists
2:30 pm	<i>Brian Moe, Charles Cotton, Dean Grubbs, Joseph Travis</i>	When the data run dry: how Bayes’ Theorem can crack the life-history code of data-poor populations
2:45 pm		Closing Remarks
3:00 pm		Open Mic Discussion

Saturday 15 July • Oral Presentations

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

8:00 AM – 9:30 AM

Norfolk 1-2

General Ichthyology II

Moderator: *Corinthia Black*

- | | | |
|---------|--|---|
| 8:00 am | <i>Corinthia Black, Milton Tan</i> | Not Too Sharp: Evolutionary Consequences of Venom in Catfish Fin Spines. |
| 8:15 am | <i>Adam Summers, Matt Kolmann, Cassandra Donatelli, Meg Vandenberg</i> | Armored fishes - plate design offers insight into dangers. |
| 8:30 am | <i>Rene Martin</i> | Investigation of the Anatomy and Morphology of Bioluminescent Light Organs |
| 8:45 am | <i>Jacqueline Webb</i> | Distinguishing Pattern from “Chaos”: Assessing the Structural and Functional Organization of Superficial Neuromasts in Fishes |
| 9:00 am | <i>Matthew Kolmann, Matt Friedman</i> | Out of breath? Modularity & diversification in the air-breathing fishes and their allies |
| 9:15 am | <i>Autumn Magnuson, João Pedro Fontenelle, Matthew Kolmann</i> | Diversification and convergence following the transition from saltwater to freshwater in stingrays |

8:00 AM – 8:45 AM

Norfolk 3

Ichthyology: Conservation & Management

Moderator: *Lesley de Souza*

- | | | |
|---------|--|---|
| 8:00 am | <i>Justin Clause, Matthew Young, Nicholas Buckmaster, Veronica Violette, Steve Parmenter</i> | What happens when you bring the seasons back: food-web and fish responses to restoration of variable flows. |
| 8:15 am | <i>Robert Bretzing, Andrew Fields, Elizabeth Hunt, Megan Bean, Ryan Smith, Kevin Conway, Christopher Hollenbeck, David Portnoy</i> | Patterns and Consequences of Hybridization in an Imperiled Headwater Fish, the Leon springs pupfish, <i>Cyprinodon bovinus</i> . |
| 8:30 am | <i>Kearstin Findley, Daniel Magoulick</i> | Evaluating the Effects of Drought on Yellowcheek (<i>Nothonotus moorei</i>) and Yoke Darter (<i>Nothonotus juliae</i>) survival, growth, and behavior |

8:00 AM – 9:00 AM

Norfolk 4

AES: Habitat & Environment

Moderator: *Charles Bangle*

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|---------|---|---|
| 8:00 am | <i>Jasmin Graham, Breanna Degroot, Jayne Gardiner, Ryan Schloesser, Krystan A. Wilkinson, Kim Bassos Hull</i> | Analysis of movement patterns of mobile predators in Sarasota Bay in response to Florida Red Tide |
| 8:15 am | <i>John Tyminski, Cade Roach, Bryan Franks, Alisa Newton, Fabián Pina Amargós, Brett McBride, Chris Fischer, Robert Hueter</i> | Movement of Western North Atlantic White Sharks through the Straits of Florida and Gulf of Mexico |
| 8:30 am | <i>Kyle Oliveira, Megan Winton, Damian Brady, Nicholas Record</i> | Dispersal of <i>Carcharodon carcharias</i> eDNA through space and time in a coastal ecosystem |
| 8:45 am | <i>Charles Bangle, Javon Lo, Daniel Hasselman, Frederick Whoriskey, Joanna Mills Flemming, Darren Porter, Gregory Skomal, Megan Winton, Bryan Franks, Chris Fischer</i> | Acoustic Telemetry Reveals Movement Behavior and Distribution for Two Shark Species in the World’s Most Extreme Tides |

8:00 AM – 9:30 AM

Norfolk 6

Herpetology: Ecology IV

Moderator: Carly Muletz-Wolz

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|---------|---|---|
| 8:00 am | <i>Patrick Baker, Rachel Hughes, James Hughes</i> | Degree Day Accumulation and the Onset of Spring Activity by Amphibians in Ithaca, NY |
| 8:15 am | <i>John Maerz, Cynthia Carter</i> | Climate may drive salamander variation in size at maturity with life history and demographic constraints on responses to climate change |
| 8:30 am | <i>Carly Muletz-Wolz, Randall Jimenez, Owen Osborne, Allison Byrne, Brian Gratwicke, Amy Ellison</i> | Eco-evolutionary processes in community assembly of Appalachian salamander skin microbiomes from a pathogen-protective trait view |
| 8:45 am | <i>Thomas Anderson, Mariah Mack, Jessica Sandoval</i> | Life history traits of ringed and marbled salamanders in response to hydroperiod variation |
| 9:00 am | <i>Steve Kutos, Randall Jiménez, Owen Osborne, Amy Ellison, Brian Gratwicke, Timothy Cleland, Carly Muletz-Wolz</i> | Antimicrobial Host-defense Peptides in Appalachian salamanders |
| 9:15 am | <i>Toby Covill, William Rosenthal, Catherine Wagner, Sean Harrington</i> | The Decoy Hypothesis in Juvenile <i>Plestiodon multivirgatus</i> |

10:00 AM – 10:30 AM

Norfolk 1-2

NIA Contributed

Moderator: Melanie Stiassny

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|----------|---|---|
| 10:00 am | <i>Lesley de Souza, Nigel Pitman, Nicholas Kotlinski, Anna Ormiston, Jake Bicknell, Andrew Snyder, Jonathan Armbruster, Donald Taphorn, Michelle Thompson, Matt Hallett, Burton Lim, Doug Stotz</i> | Using vertebrate species distributions to identify freshwater conservation priority areas for Guyana |
| 10:15 am | <i>Sophie Picq, Caleb McMahan, Lesley de Souza</i> | Advancing eDNA Sampling to Monitor Neotropical Fish Communities within a Natural History Museum Context |

10:00 AM – 12:00 PM

Norfolk 3

Ichthyology: Ecology

Moderator: Tracey Sutton

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|----------|--|---|
| 10:00 am | <i>Tracey Sutton, Kevin Boswell, April Cook, Tamara Frank, Jon Moore, Heather Bracken-Grissom, Rosanna Milligan</i> | In Search of... Mesopelagic Boundary Communities. What Are They, Why Just Hawaii, and Could They Occur in the Atlantic? |
| 10:15 am | <i>Zach Crum, Noah Bressman*</i> | Feeding and Trophic Ecology of Invasive Blue Catfish in the Nanticoke River, MD/DE |
| 10:30 am | <i>April Cook, Tracey Sutton</i> | Spiny-rayed fishes have not succeeded in the deep-pelagic ocean? The use of large midwater trawls challenges this paradigm. |
| 10:45 am | <i>Matthew Schumm, Katherine Bemis, Dan Okamoto, Lynne Parenti</i> | Evaluating Long-Term Shifts in Diet in Harvested Chesapeake Bay Fishes |
| 11:00 am | <i>Richard Harrington, Thomas Near</i> | Percidae's Picky Eaters: Phylogenetic analyses of darter diet reveal complex patterns of trophic niche evolution. |
| 11:15 am | <i>Holly Kindsvater, Maria José Juan-Jordá, Cat Horswill, Jason Matthiopoulos, Marc Mangel</i> | The physiological and ecological drivers of diversity in tuna life histories |
| 11:30 am | <i>Katriina Ilves, André Martel, Tim Haxton, Noel Alfonso, Annie Paquet, Benjamin Aubrey, Hans-Frédéric Ellefsen</i> | Fish-Mussel Relationships in the St. Lawrence & Ottawa Rivers: Are Lake Sturgeon the (only) Host Fish for the Endangered Hickorynut Mussel? |

10:00 AM – 12:00 PM

Norfolk 4

AES: General

Moderator: Kady Lyons

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|----------|---|---|
| 10:00 am | <i>Jennifer Wyffels, Kady Lyons, David Portnoy, Christine Dudgeon, Kevin Feldheim</i> | Unprecedented rates of parthenogenesis in ex situ zebra sharks |
| 10:15 am | <i>Kady Lyons, Lance Adams, Jennifer Wyffels</i> | Costs of Parthenogenesis in the Zebra Shark |
| 10:30 am | <i>Steven Byrum, Gareth Fraser, Gavin Naylor</i> | Development of the Bonnethead shark (<i>Sphyrna tiburo</i>) |
| 10:45 am | <i>John Swenson, Elizabeth Brooks, Dovi Kacev, Charlotte Boyd, Michael Kinney, Benjamin Marcy-Quay, Anthony Sévêque, Kevin Feldheim, Lisa Komoroske</i> | Accounting for Population Growth, Intermittent Breeding, and Aging Error in Close-Kin Mark-Recapture Assessments for Long-Lived Elasmobranchs |
| 11:00 am | <i>Alexander Rubin, Michelle Passerotti, John Carlson</i> | Using FT-NIRS as a tool to age blue shark <i>Prionace glauca</i> from the northwest Atlantic Ocean |
| 11:15 am | <i>Shing-Lai Ng, Nicolas Straube, Kwang-Ming Liu, Shouu-Jeng Joung</i> | Integrated approaches show taxonomic uncertainties in two lanternshark species <i>Etmopterus burgessi</i> and <i>E. molleri</i> , with implications for future taxonomic work |
| 11:30 am | <i>Lei Yang, Pierre Lesturgie, John Denton, Shannon Corrigan, Jeff Kneebone, Stefano Mona, Gavin Naylor</i> | Evolutionary History and Population Genetic Structure of the Commercially Important Thorny Skate (<i>Amblyraja radiata</i>) |
| 11:45 am | <i>Andrew T. Fields, William B. Driggers III, Bryan S. Frazier, Elizabeth A. Vinyard, James Gelsleichter, Jill M. Hendon, Jeremy M. Higgs, David S. Portnoy</i> | Evidence for independent breeding groups in the highly vagile spinner shark found in putatively adaptive loci |

10:00 AM – 11:30 AM

Norfolk 5

Herpetology: Systematics

Moderator: Matthew Heinicke

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|----------|--|--|
| 10:00 am | <i>João Tonini, Rafael de Sá</i> | Phylogenetic Systematics and Species Diversity of South American Fossorial Frogs (<i>Microhylidae: Elachistocleis</i>) |
| 10:15 am | <i>Miranda Sherlock, Jeffrey Streicher, David Gower, Simon Maddock, Ronald Nussbaum, Oommen V Oommen, Ana Serra-Silva, Julia Day, Mark Wilkinson</i> | ddRADSeq bridges Population Genetics and Deep Phylogeny in an Ancient Amphibian Radiation. |
| 10:30 am | <i>Alondra Diaz-Lameiro</i> | A New Species of <i>Sphaerodactylus</i> from the Northwest Limestone Region of Puerto Rico |
| 10:45 am | <i>Matthew Heinicke, Juan Daza, Cristian Hernandez Morales, Maria Diago-Toro</i> | A Phylogeny of the Gekko group Based on Long Exon Data. |
| 11:00 am | <i>Aaron Bauer, Philip Skipwith, Eli Greenbaum, Daniel Portik</i> | Skins of a Different Stripe: Order out of Chaos in the <i>Trachylepis striata</i> Complex of African Mabuyine Skinks |
| 11:15 am | <i>Elizabeth Patton, Stuart Nielsen, Todd Jackman, Aaron Bauer</i> | Systematics of Southern African Ground Agamas (<i>Genus: Agama</i>) |

10:00 AM – 11:15 AM

Norfolk 6

Amphibian Behavior & Ecology

Moderator: Rebecca O'Brien

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|----------|--|---|
| 10:00 am | <i>Rebecca O'Brien, Groffen Jordy, Ashley Dayer, William Hopkins</i> | Eastern Hellbender Reproductive Behavior and Responses to Anthropogenic Threats |
| 10:15 am | <i>Jennifer L. Stynoski, Francesca Protti-Sánchez, Jeremy Klank, Hannah Rowland</i> | Does Behavior Complement the Chemical Defenses of Cryptic and Aposematic Poison Frogs? |
| 10:30 am | <i>Maldonado Brittany, Claire Crookston, Tyler Brock, Corey Samples, Christopher Beachy*</i> | Larval Growth Rate and Amphibian Metamorphosis: how Plethodontid Salamanders are Exceptional |
| 10:45 am | <i>Charlie Holguin, Nicholas Caruso, Holly Kindsvater</i> | Investigating the potential for the Temperature-Size Rule in <i>Eurycea cirrigera</i> and <i>Plethodon cinereus</i> |
| 11:00 am | <i>Johana Goyes Vallejos, Jose Sandoval Siles, Viky Calero, Noemi Rodriguez</i> | Effect of Female Removal on Offspring Survival in a Glass Frog: New Methods, New Terms, New Insights |

10:30 AM – 11:45 AM

Norfolk 1-2

DEI

Moderator: *Melanie Stiassny*

- 10:30 am *Adania Flemming* Discovering Ichthyology and Herpetology through a course model to intentionally increase the diversity of students in STEM
- 10:45 am *Lameace Hussain* “From Herps to Humans”: How Human Dimensions and Outreach Can Help Shape the Future of Herpetology
- 11:00 am *Maisie G. MacKnight, Allyson B. Muth* Building Safe and Inclusive Spaces in Field Settings: You have a Right to Know!
- 11:15 am *Paula Sánchez Duarte, Ángela Gutiérrez, Ana Clara Sampaio Franco, Vanessa Correa, Sandra Correa, Juliana Herrera, Andrea Polanco, Juliana M. Wingert, Daniela Nunez Rodriguez, Carla Pavanelli, Alicia Álvarez, Gladys Garrido, Nivia Sousa, Cacilda Rocha, Luisa Maria Sarmiento-Soares, Luz Fernanda Jiménez S, Malu Araújo, Mayara Neves* Global Network of Women in Ichthyology
- 11:30 am *Wanda Ortiz* Development of Educational Resources About the Shark species of Puerto Rico as a Gateway to Inform the Local Public

1:30 PM – 3:45 PM

Norfolk 1-2

Herpetology: Morphology

Moderator: *Rachel Keeffe*

- 1:30 pm *Elizabeth Glynn, Dean Adams* Allometry of sexual size dimorphism in geckos
- 1:45 pm *Kelsey Fenner, Aaron Bauer* Comparative Skull Morphology and Miniaturization in Mainland African Plated Lizards
- 2:00 pm *Deepak Veerappan, Natalie Cooper, David Gower* Natricine Snakes a non-model system in Macroevolutionary studies
- 2:15 pm *Christopher Zobek, Conner Verhulst, Anmol Sethi, Alec Wilken, Casey Holliday* Palatal Muscle Diversity in Reptiles and their Significance for Cranial Kinesis
- 2:30 pm *Jessica Tingle, Derek Jurestovsky, Henry Astley* The relative contributions of multiarticular snake muscles to movement in different planes
- 2:45 pm *Alan Savitzky, Helen Bond Plylar, Takumi Yamamoto, Mamoru Toda* Observations on the Soft Tissues and Vasculature of Sea Snakes (*Hydrophiinae*)
- 3:00 pm *Theodora Pinou, Panayiota Kotsakiozi, Melina Kohilakis, Aristeidis Parmakelis* Snake Hemipenes Delineate Heterodon Species
- 3:15 pm *Rachel Keeffe, Ian Bartoszek, Ian Easterling, Brandon Hedrick, Patricia Brennan* Female and Male Genital Shape of Invasive Burmese Pythons in the Florida Everglades
- 3:30 pm *Peter Uetz, Dustin Zelif, Sahil Sewani, Trang Ly, James Cahall, Yaa Adarkwa Darko, Alex Lupton, Olaf Voß* Towards complete morphological descriptions of all reptile species

1:30 PM – 3:45 PM

Norfolk 3

Ichthyology: Systematics

Moderator: *Bill Ludt*

- 1:30 pm *Melanie Stiassny, Bruno Melo* Phylogenetics of African characiforms – resolved – but where’s the morphology at?
- 1:45 pm *Elizabeth Miller, Rose Faucher, Pamela Hart, Melissa Rincon-Sandoval, Aintzane Santaquiteria, Ricardo Betancur-R, Luke Tornabene, Kory Evans, Dahiana Arcila* Opening Pandora’s box: Phylogenomics reveals continuous innovation in a deep-sea radiation (*Lophiiformes*)
- 2:00 pm *Allison Bronson, John Denton, Alan Pradel, John Maisey* Resolving Phylogenetic Conflicts Among Paleozoic, Mesozoic, and Living Chondrichthyans

Saturday 15 July 2023

2:15 pm	Maxwell Bernt, Melanie Stiassny	Utility of Ultraconserved Elements from Formalin-fixed Fish Specimens: A Case Study of Enigmatic African Catfishes
2:30 pm	Kole Kubicek, Heek Hee Ng, Kevin Conway	Which Species of <i>Pseudolaguvia</i> (<i>Sisoridae: Siluriformes</i>) are Present in Nepal?
2:45 pm	Juan Liu, Jiangyong Zhang	A Revision of Paleocene Catfish from Sanshui Basin, South China
3:00 pm	Caleb McMahan, Dylan Maddox, Sophie Picq, Josué García-Pérez, Diego Elías	Systematics of cichlids in the genus <i>Chuco</i> (<i>Teleostei: Cichlidae</i>) from Northern Middle America
3:15 pm	Bruno Melo, Melanie Stiassny	Phylogeny and species delimitation in the African genus <i>Bryconaethiops</i> (<i>Characiformes: Alestidae</i>): evidence from mitogenomes
3:30 pm	William Ludt, Peter Unmack, Michael Sandel, Jean-Paul Hobbs, Giacomo Bernardi, Thomas Near, Prosanta Chakrabarty	Resolving the Evolutionary Relationships of the Order Centrarchiformes using Genomic Data and Dense Taxonomic Sampling

1:30 PM – 4:15 PM

Norfolk 4

AES: Morphology, Histology, & Physiology

Moderator: Kara Yopak

1:30 pm	Charles Edelson, Lisa Crawford	Discovery of Potential Novel Biomarkers of Mercury Bioaccumulation using Supervised Machine Learning in a Keystone Predator
1:45 pm	Lisa Crawford, Nolwenn Dheilly, Charles Edelson, Anne McElroy	Mercury Bioaccumulation is Linked with Immunosuppression in the Northwest Atlantic White Shark (<i>Carcharodon carcharias</i>)
2:00 pm	Chestina Craig, Christine Bedore, Kady Lyons, Johanne Lewis	Assessing the Physiological Response of Sand Tiger Sharks (<i>Carcharias taurus</i>) to Longline Capture
2:15 pm	Christopher Will, Jake Jerome, Julia Wester, Evan D'Alessandro, Danielle McDonald, Catherine MacDonald	The Recovery Potential of Juvenile Nurse Sharks (<i>Ginglymostoma cirratum</i>) to Catch-and-Release Recreational Angling
2:30 pm	Joseph Miguez, Gavin Naylor	An assessment of osmoregulatory gene regulation in two populations of the Atlantic stingray, <i>Hypanus sabinus</i>
2:45 pm	Carl Luer, Cathy Walsh, Craig Douppnik	Preliminary Characterization of Crude Venom from Spines of the Atlantic Stingray, <i>Hypanus sabinus</i>
3:00 pm	Brooke Anderson, Juliana Kaloczi, Courtney Holden, Amanda Einig, Linda Donaldson, Hunter Malone, Michelle Passerotti, Lisa Natanson, Heather Bowlby, James Sulikowski	Using Reproductive Hormones Extracted from Archived Muscle Tissue to Assess Maturity and Reproductive Status in Porbeagles <i>Lamna nasus</i>
3:15 pm	Kat Mowle, Linda Penfold, Michael Hyatt	Using a synthetic GnRH agonist to modulate aggression in male cownose rays (<i>Rhinoptera bonasus</i>): Evaluating effectiveness with an enzyme-linked immunoassay
3:30 pm	Derek Sauer	What inner ear anatomy can tell us about hearing in elasmobranchs
3:45 pm	Ryan L. Sesler, Lisa B. Whitenack*	The Effects of Wear on the Morphology and Puncture Force of Shark Teeth
4:00 pm	Kara Yopak, Omar Santana Morales, Dan Cartamil, Gary Cowin, Shaun Collin	Are Two Heads Better Than One? Brain and Sensory Organization in a Dicephalic Blue Shark Embryo, <i>Prionace glauca</i>

Herpetology: Biogeography & Phylogeography

Moderator: Edward Myers

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|---------|---|---|
| 1:30 pm | <i>Diogo Parrinha, Aaron Bauer, Luis Ceriáco</i> | Insights into the biogeography of southwestern Angola: lessons from lizards |
| 1:45 pm | <i>Luis Ceriáco, Mariana Marques, Diogo Parrinha, Arthur Tiutenko, Jeffrey Weinell, Brett Butler, Aaron Bauer</i> | Skink's country: integrative taxonomy of Angola <i>Trachylepis</i> (<i>Squamata: Scincidae</i>) |
| 2:00 pm | <i>Justin M. Bernstein, Harold K. Voris, Bryan L. Stuart, Daryl R. Karns, Jimmy A. McGuire, Rafe M. Brown, Marcelo Gehara, Camilo A. Calderon-Acevedo, Angelo Soto-Centeno, Sara Ruane</i> | A phylogenomic investigation of the evolution and biogeography of a widespread Southeast Asian snake (<i>Homalopsidae: Hypsiscopus</i>) |
| 2:15 pm | <i>Eugene Vaughan, Eli Greenbaum, Wolfgang Wüster, Olivier Pauwels, Zoltán Nagy, Lotanna Micah Nneji, Abiodun Onadeko, Adeola Ayoola, Segun Oladipo, Vašek Gvoždík, Raffael Ernst, Laurent Chirio, Jean-François Trape, Chifundera Kusamba, Stefan Lötters, Aaron Bauer, Lauren McFarland, Vergie Musni, Philip Lavretsky</i> | Evolution on the Forest Floor: Patterns of Diversification of Vipers (<i>Bitis: Macrocerastes</i>) in the African Rainforest |
| 2:30 pm | <i>Edward Myers, Kevin de Queiroz, Rayna Bell</i> | Genomic Data Provide Insight into Adaptation and Demographic History of South American Rattlesnakes |
| 2:45 pm | <i>Molly Wierman, João Tonini, Rafael de Sá, Grace Davis</i> | Phylogenetic Analyses Reveal New Potential Species Within <i>Syncope</i> , A Subgenus Of <i>Chiasmocleis</i> |

Reptile Behavior & Ecology

Moderator: Nicola Nelson

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|---------|---|--|
| 1:30 pm | <i>Nicola Nelson, Susan Keall, Linlin Liu</i> | Aging tuatara (<i>Sphenodon</i>): complexities for population management |
| 1:45 pm | <i>Melanie Denommé</i> | Examining the motivation for repetitive barrier interactions in bearded dragons (<i>Pogona vitticeps</i>). |
| 2:00 pm | <i>Bree Putman, Daniel Blumsetin, Greg Pauly</i> | Does fear of humans filter animals from urban areas? A case study of Southern California lizards |
| 2:15 pm | <i>Mark Paulissen</i> | Little difference in personality among different sexes and age-classes of the Little Brown Skink lizard, <i>Scincella lateralis</i> (<i>Scincidae</i>) |
| 2:30 pm | <i>Ann-Elizabeth Nash</i> | Humans Disappear, Predators Move In: Anthropause Outcomes from a Stable Aggregation of Spiny-tailed Iguanas, <i>Ctenosaura similis</i> |
| 2:45 pm | <i>Chelsea Martin, Gerad Fox, Breanna Putman, William Hayes</i> | Social Security: Can rattlesnakes reduce acute stress through social buffering? |
| 3:00 pm | <i>Terence Farrell, Henderson Gull, Frederick Boyce</i> | Ritualized Male-Male Combat Resulting From Intraspecific Food Competition in Three Species of <i>Agkistrodon</i> |
| 3:15 pm | <i>Frederick Boyce, Terence Farrell</i> | Sneaky Male Strategies (<i>Kleptogamy</i>) Recorded in Cottonmouths, <i>Agkistrodon piscivorus</i> |
| 3:30 pm | <i>Allyson Beard, Donald Brown, Eric Hileman, Christopher Lituma, Michael Jones</i> | Influence of Temporary Emigration on Wood Turtle (<i>Glyptemys insculpta</i>) Detection and Abundance Estimates |
| 3:45 pm | <i>Kristine Grayson</i> | The Long-Term Effects of Sex Ratio Bias in an Island Population of Tuatara (<i>Sphenodon punctatus</i>) |

Saturday 15 July • Poster Presentations

4:00 PM – 6:00 PM • Hampton Ballroom

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

Contributed: Ichthyology

P2-1	<i>Marta Hess, Peter Wainwright</i>	Convergent Specialization of the Suction Feeding Mechanism in Zooplanktivorous Fishes
P2-2	<i>William E. Bemis, Gabriel Vinicius Felix Afonso*, Hilton Eric, Robert Shepherd, Katherine E. Bemis</i>	Trunk Morphology and Swimming Modes of the Giant Oarfish, <i>Regalecus glesne</i> (<i>Lampriformes: Regalecidae</i>)
P2-3	<i>Emily Carr, John Sparks</i>	Biofluorescent diversity in marine Teleosts and Elasmobranchs
P2-4	<i>Miguel Montalvo, Laura Habegger, Kaitlyn Cisz, Katherine E. Bemis, Eric J. Hilton</i>	Morphology, ontogeny, and replacement of teeth on the bills and lower jaws of billfishes (<i>Istiophoriformes</i>)
P2-5	<i>Michael Ghedotti, Kandice Agudo, Flor Gonzalez, Kurt Riggan, Matthew Davis, W. Leo Smith, Benjamin Frable</i>	Anatomy and Evolution of Bioluminescence in the Gulper Eels (<i>Anguilliformes</i>).
P2-6	<i>Larson Palmgren, Miguel Montalvo, Eric Hilton</i>	Comparative anatomy of the eye muscles and heater organ of Istiophoridae
P2-7	<i>Kaleigh Arnold</i>	The Impact of Temperature Induced Vertebral Anomalies on Fast Start Swimming Performance in <i>Astyanax mexicanus</i> (<i>Teleostei: Characidae</i>)
P2-8	<i>Olivia Schweikart</i>	Environmental DNA Assessment for Freshwater Fishes in the Guayas River Basin using New 12s, 16s, and COI Metabarcoding Reference Library
P2-10	<i>Cameron Davis, Samuel Davis, Christi Linardich, Kent E. Carpenter</i>	A Global Review of the Conservation Status of Microgobies
P2-11	<i>Tracey Sutton, Jon Moore, April Cook, Andrea Bernard, Mahmood Shivji</i>	An Ongoing Mission of DEEPEND research: an “Oceanic Fishes of the Gulf of Mexico” Compendium for Stakeholders and Resource Managers
P2-12	<i>Norhafiz Hanafi</i>	Revision on taxonomic, zoogeographical, and evolutionary systematics of the genus <i>Johnius</i> (<i>Perciformes; Sciaenidae</i>) in the South China Sea.
P2-13	<i>Mark Wilson, Terry Grande, Carole Baldwin, Ross Robertson, Jesus Leal</i>	Cryptic species add to diversity of the acanthomorph fish genus <i>Polymixia</i> in the Atlantic, Caribbean, and Gulf of Mexico
P2-14	<i>Kyoji Fujiwara, Gento Shinohara, Hiroyuki Motomura</i>	Taxonomic status of <i>Lissonanchnus lusheri</i> and <i>Briggsia hastingsi</i> (<i>Gobiesocidae</i>), with notes on their osteological characters revealed by micro-CT scans
P2-15	<i>Elizabeth Miller, JoJo West, Rose Faucher, Sandra Alvarez-Carretero, Giorgio Carnevale, Aintzane Santaquiteria, Emily Troyer, Carole Baldwin, Mark Westneat, Guillermo Ortí, Lily Hughes, Kory Evans, Ricardo Betancur-R, Dahiana Arcila</i>	A novel phylogenomic hypothesis of Eupercaria, the new bush at the top
P2-16	<i>Kevin Tang</i>	Phylogeny of Rabbitfishes (<i>Siganidae</i>)
P2-17	<i>Leo Smith, Michael Ghedotti, Matthew Davis</i>	The Limits and Relationships of the Deep-water Basses (<i>Percomorpha: Acropomatiformes</i>)
P2-18	<i>Jonas Santos, Ricardo Rosa, Telton Ramos</i>	Reappraisal of <i>Stellifer punctatissimus</i> reveals trends in species complex misidentification
P2-19	<i>Tyler Muller, Andrew Simons</i>	Taxonomic Elevation of Two Pirate Perch Subspecies and Three New Species
P2-20	<i>Kevin Duclos, Terry Grande*</i>	Modular partitioning of the Weberian apparatus in siluriform fishes
P2-21	<i>Elizabeth P. Hunt, Kevin W. Conway, David S. Portnoy</i>	Phylogenetic relationships among the New World sea robins (<i>Triglidae: Prionotinae</i>) inferred from UCE loci
P2-22	<i>Sarah C. Muffelman, Eric J. Hilton, Deborah K. Steinberg</i>	Diversity of Ichthyoplankton Collected Inside and Outside of Eddies in the Sargasso Sea

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P2-23	<i>Katherine E. Bemis, James C. Tyler</i>	ROV observations of the rare spikefish, <i>Hollardia cf goslinei</i> (<i>Triacanthodidae</i>)
P2-24	<i>Katherine E. Bemis, Matthew G. Girard, Mudjekeewis D. Santos, Kent E. Carpenter, Jonathan R. Deeds, Diane E. Pitassy*, Nicko Amor L. Flores, Elizabeth S. Hunter, Amy C. Driskell, Kenneth S. Macdonald III, Lee A. Weigt, Ned Rose, Jeffrey T. Williams</i>	Biodiversity of Philippine Fishes: A DNA barcode reference library based on voucher specimens highlights remaining taxonomic questions in the region
P2-25	<i>Francis Chilel-Lopez, Noah Bressman*</i>	Effects of Northern Snakehead (<i>Channa argus</i>) mucus and scales on terrestrial friction during amphibious behaviors
P2-26	<i>Tony Miskiewicz, Kerryn Parkinson, Graham Short</i>	Comparison of the juvenile morphology and ontogenetic changes in morphology of three species of seahorses <i>Hippocampus</i> spp. from south-eastern Australia
P2-27	<i>Sarah Gibson, Spencer Ott</i>	Previously Unidentified Biodiversity of Fish Fauna in the Upper Triassic Dockum Group of Western Texas
P2-28	<i>Matthew Davis, Emily DeArmon, W. Leo Smith</i>	Systematics of Dragonfishes and the Evolution of Bioluminescent Structures
P2-29	<i>Jenna N. O'Del, Jacqueline F. Webb*</i>	Relationship of Lateral Line Scale Meristics to Neuromast Patterning and its Variation among Fishes
P2-30	<i>Claudia Kern</i>	Modular organization of the Weberian apparatus in Cypriniform fishes
P2-31	<i>Michael Westphal, Kristine Lesyna, Benson Chow, Mark Okihiro, Jesús Jimenez, Ken Oda</i>	Comparative tank study of two species of Amphistichinid surfperches: the redbtail surfperch, <i>Amphistichus argenteus</i> , and the calico surfperch, <i>A. koelzi</i> .
P2-32	<i>Mayara Neves, April Hugl, Simon Brandl, Kory Evans</i>	Ontogeny Recapitulates Phylogeny in the Development of the Parrotfish Skull (<i>Labriformes: Scarus iseri</i>)
P2-33	<i>Bruce Stallsmith</i>	An Examination of Spawning Season Sex Ratios and Weight-Length Relationships in 83 Collections of <i>Etheostoma caeruleum</i> , the Rainbow Darter
P2-34	<i>Prosanta Chakrabarty</i>	Where is ASIH headed? An open discussion and listening space.
P2-35	<i>Hannah Owens, Carsten Rahbek</i>	voluModel: Modelling species distributions in three-dimensional space
P2-36	<i>David Boyd, Prosanta Chakrabarty, Christopher Austin</i>	Louisiana State University Museum of Natural Science Ichthyology and Herpetology Collections
P2-38	<i>Ellen Biesack, Christian Jones, Jan McDowell</i>	Genetic Population Structure of bullnose ray <i>Myliobatis freminvillii</i> Lesueur, 1824 in the Western North Atlantic
P2-39	<i>Michaela Labare, Alison Monroe, Katherine Lanoue, Christopher Hollenbeck, David Portnoy</i>	Assessing populations of spotted seatrout in the Texas bay systems using genotyping-in thousands by sequencing.

Contributed: Herpetology II

P2-40	<i>Andressa Viol, Luis Zaman, Alison Davis Rabosky</i>	Xantusia revisited: Social network analysis of a kin-based social system in lizards
P2-41	<i>Ryan Schott</i>	Molecular Evolution of Visual Opsin Genes in Side-neck and Hidden-neck Turtles
P2-42	<i>Katherine Porras-Brenes, Gabriella Church, Elizabeth Clark, Anna Fellenstein, Ralph Saporito</i>	Stiff-legged Behavior in the Green and Black Poison Frog (<i>Dendrobates auratus</i>) in Response to Simulated Predation
P2-43	<i>Joshua Rivera, Joseph Rangel, André Carvalho, Adam Leaché, Matthew Fujita</i>	Femoral Gland Gene Expression in Parthenogenetic and Sexually Reproducing Lizards of the Genus <i>Aspidoscelis</i>
P2-45	<i>Emily Plant, Rocky Parker</i>	Investigating Sex Differences in Skin Lipid Synthesis Genes in Red-sided Garter Snakes (<i>Thamnophis sirtalis parietalis</i>)
P2-46	<i>Karen A. Paniagua Torres, Erin Brosnan, Matthew S. Atkinson, Katie Martin, Brad M. Glorioso, Hardin Waddle, Anna Savage</i>	Cyt-b gene investigation into the origins of a Louisiana Cuban treefrog invasion
P2-47	<i>Aslin Almeda Castro, Alberto Puente Rolón, Alondra Díaz Lameiro</i>	First report of Reptarenavirus in the invasive Red-tail boa (<i>Boa constrictor</i>) from Puerto Rico

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P2-48	<i>Marissa Knight, Stephanie Coster*, Kristine Grayson</i>	The Relationship Between Relatedness, Distance, and Local Density in Red-backed Salamanders (<i>Plethodon cinereus</i>)
P2-49	<i>Ryan Cook</i>	Comparative Osteology of Western Australian Toadlets (<i>Myobatrachidae</i> ; <i>Uperoleia</i>)
P2-50	<i>Paula Valchi, Maria Elena Ailin O'Donohoe, Eleonora Regueira, Lucila Nuñez Gorostidi, Alejandro Farias, Gladys Noemí Hermida</i>	Parotoid Macroglad of <i>Phyllomedusa sauvagii</i> (Boulenger, 1882)
P2-51	<i>Lauren A. Craige, Alan H. Savitzky, Helen Bond Plylar</i>	Hypothesized Morphological Correlates of Slug-eating in Contia, Compared with Related Dipsadine Snakes
P2-52	<i>Tatyana Natal, Julia Thulander, Joshua Hall</i>	The effects of incubation temperature on larval morphology of the locally endangered Streamside Salamander (<i>Ambystoma barbouri</i>)
P2-53	<i>Kodiak Hengstebeck, Christina Romagosa</i>	Investigating the Potential for Morphological Change in Invasive Snakes
P2-54	<i>John Maerz, Jade Samples*, Danielle Bradke, Shelby Bauer, James Martin, Vanessa Terrell, Cassandra Waldrop, Elizabeth McCarty</i>	Estimating the Effects of Hemlock Imidacloprid Treatment on Terrestrial Salamander Abundance
P2-55	<i>Emily Langer, Matthew Gacheny, Jayme Waldron, Shane Welch, Emily Gaydos</i>	Monitoring the Population Status of <i>Crotalus adamanteus</i> in North Carolina Using the AHDriFT Camera Trap System
P2-57	<i>Morgan Page, Anna McCallum, Jayme Waldron</i>	Examining the Factors Contributing to the Decline of Range Edge <i>Ambystoma</i> in West Virginia
P2-58	<i>Krista Koeller</i>	Long Dead Lizard Shows Critically Endangered Species Engages in Cannibalism
P2-59	<i>Zira MacFarlane, Shannon McCauley</i>	Combining Long-Term Datasets to Answer Landscape Level Questions: Opportunities with the North American Amphibian Monitoring Program Data-Set.
P2-60	<i>Coleman Sheehy III, Robert Robins, David Blackburn, Jaimi Gray, Marcel Kouete, Magalie Zoungrana</i>	Establishment of Aquatic Caecilians (<i>Gymnophiona</i> , <i>Typhlonectidae</i> , <i>Typhlonectes natans</i>) in Florida, with Notes on their Relative Abundance, Distribution, and Natural History
P2-61	<i>Benjamin W. Genter, Aaron R. Krochmal, Travis J. LaDuc, Timothy C. Roth II, Drew R. Davis</i>	LED light baits fail to improve aquatic turtle capture success
P2-62:	<i>Carissa Adams, Emily Gray, Sarah Ebert, Matthew Gacheny, John Holloway, Shane Welch, Jayme Waldron</i>	Comparing Computer Assisted Pattern Recognition Software using Eastern Diamondback Rattlesnake (<i>Crotalus adamanteus</i>) Photographs
P2-63	<i>Cory Adams, Daniel Saenz, Christopher Schalk, David Rosenbaum, Joseph Apodaca</i>	Is eDNA an Effective Method for Detecting Alligator Snapping Turtles
P2-64	<i>Shelby Timm, Alexander Wolf, Xiaoming Gao, Kenneth Kellner</i>	Assessing multi-scale habitat relationships and responses to forest management for cryptic herpetofauna in the Missouri Ozarks, USA.
P2-66	<i>Nicole Bednarik, Rayna C Bell, Matthew K Fujita, David J Gower, Ryan K Schott, Jeffrey W Streicher, Kate N Thomas</i>	Salamander eye size and investment correlate with ecology and life history
P2-67	<i>Kortney Jaworski</i>	Urban Red-Backed Salamander Population Monitoring as a Vehicle for Public Science Outreach
P2-68	<i>Thomas Anderson, Jacob Burkhart, Kenzi Stemp, Arianne Messerman, Jon Davenport</i>	Variation in emigration phenology and climate affect juvenile salamander demography
P2-69	<i>Mikayla Sague, Vilma Dudaitis, Lilja Plumert, Kate D.L. Umbers, Ralph A. Saporito*, J.P. Lawrence</i>	Alkaloid-based Chemical Defenses and Diet in Six Species of Australian Poison Frogs in the genus <i>Pseudophryne</i>
P2-70	<i>Matthew Lattanzio</i>	DIY Herpetology: Using Hobby Electronics to Enhance Innovation and Accessibility in Scientific Research
P2-71	<i>Ayley Shortridge, Fredric Janzen</i>	Effects of Flash Drought during Incubation on Common Snapping Turtle (<i>Chelydra serpentina</i>) Phenotype and Fitness
P2-72	<i>Ana Grace Sapp, Sierra Shoemaker, Thanchira Suriyamongkol, Ivana Mali</i>	Nesting Ecology of the Rio Grande Cooter (<i>Pseudemys gorzugi</i>) in Southeast New Mexico

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P2-73	<i>Kameron Voves, Betsie Rothermel</i>	Using Distance Sampling to Characterize Landscape-level Variation in Gopher Tortoise Densities on Avon Park Air Force Range, Florida
P2-74	<i>Blaine Hiner, Michael Dreslik</i>	Extrinsic Factors Influencing Hibernacula Occupancy of the Eastern Massasauga
P2-75	<i>Michael Dreslik, Sarah Baker, John Crawford, Andrew Stites, Ethan Kessler</i>	Relating Habitat Parameters to Population Abundances in the Eastern Massasauga
P2-76	<i>Chad Montgomery</i>	Factors Affecting Digestive Efficiency in Three North American Snakes
P2-77	<i>Shannon Horvath, Jamie DeShazo, Haim Flores Cinnamon, Cassie Valenti, Andrew Durso</i>	Discovering the Detrimental Effects of the Novel Invasive Parasite <i>Railietiella orientalis</i> on Native Florida Snake Populations
P2-78	<i>Molly Wierman, Grace Davis, João Tonini, Rafael de Sá</i>	Phylogenetic Analyses Reveal Potential New Species Within <i>Pseudopaludicola</i> (<i>Anura: Leptodactylidae</i>)
P2-79	<i>Lacey Bishop, Jordan Valentine, Matthew Heinicke</i>	Phylogeny and Patterns of Diversification in Angolan Geckos
P2-80	<i>Mustafa Erkaya, Aaron M. Bauer, Todd R. Jackman</i>	Population Analysis of Geckos of the Genus <i>Bavayia</i> (<i>Diplodactylidae</i>) Using Rapidly Evolving Long Exon Capture (RELEC) Datasets
P2-81	<i>Brandon Thomason, Holland Galloway, João Tonini*, Mariela Osorno Muñoz, Rafael de Sá</i>	Molecular systematics and species identification of <i>Dendropsophus</i> (<i>Anura: Hylidae</i>) in Colombia
P2-82	<i>Isabella Foust, João F. R. Tonini, Mariela Osorno Muñoz, Rafael O. de Sá</i>	Phylogenetics and Species Discovery of <i>Rhinella</i> in Colombia
P2-83	<i>Megan Serr, Kara Solomon, Sophia Bogan</i>	Investigating the impacts of stress and Bd on Raleigh, North Carolina amphibian populations
P2-84	<i>Natalie Claunch, Zuania Colón-Piñeiro, Arik Hartmann, Anja Julian, María Torres-Sánchez, Ana Longo</i>	Metabolic Costs of Losing Microbial and Immune Defenses in Coqui Frogs (<i>Eleutherodactylus coqui</i>)
P2-85:	<i>Tori Engler, Carola Haas, Nicholas Caruso, George Brooks</i>	Tracking the decline and recovery of salamanders in Appalachian forests for 30 years following timber harvest
P2-86	<i>Daniel Saenz, Kelsey Reider, Cory Adams, Lee Fitzgerald</i>	Calling Phenology of High-Andean Anurans at the Edge of the Cryosphere
P2-87	<i>Courtney Silver-Peavey</i>	Bioaccumulation of Imidacloprid in Hemlock Leaf Litter in the Hocking Hills of Southeast Ohio
P2-88	<i>Rachael Harris, Katie Duryea</i>	The Influence of Soil Moisture on the Color Morph of the Eastern Red-backed Salamander, <i>Plethodon cinereus</i>
P2-89	<i>Michael Tambascio, John Michael Arnett, Theodora Pinou</i>	Species Diversity Coverboard Assessment in Western Connecticut Restored Ecosystem
P2-90	<i>Jennifer L. Stynoski, Noé Chaves-Chaves, Katherine Porras-Brenes</i>	Uncovering Developmental and Transcriptional Mechanisms of the Early Synthesis of Toad Chemical Defenses
P2-91	<i>Caleb Krueger, Fredric Janzen</i>	ROSIE, a Database of Reptilian Offspring Sex Ratios and Sex-Determining Mechanisms
P2-92	<i>Zoë Müller, Matthew Fujita</i>	Comparing protein evolution in sexual versus parthenogenic whiptail lizards (<i>Aspidoscelis</i>)
P2-93	<i>Danielle Rivera, Nathan Hostetter, Jaime Collazo, Rayna Bell</i>	Assessing Species Boundaries in Antillean Four-lined Skinks (<i>Spondylurus</i>) Using Whole Genome Data
P2-94	<i>Carl Anthony, Cari-Ann Hickerson, Teah Evers, Kelsey Garner, Ryan Mayer</i>	Sexually Dimorphic Biofluorescence of the Postcloacal Gland in the Terrestrial Salamander, <i>Plethodon cinereus</i>
P2-95	<i>Kristin A. Bakkegard</i>	<i>Eleutherodactylus rogersi</i> (Bahamian Flat-headed Frog): Body size, dorsal patterns, and habitat on San Salvador, The Bahamas
P2-96	<i>Brittany Nunn, Ariana Aronis, Kamryn Richard, Andrew Gluesenkamp</i>	Comparison of Semen Collection Methods in the Texas Horned Lizard (<i>Phrynosoma cornutum</i>)
P2-97	<i>Emma Wilson, Laramie Mahan, Ivana Mali</i>	Evaluation of Physical Abnormalities in Freshwater Turtles of the Lower Pecos River, New Mexico
P2-98	<i>Scott Kornfeind, Sara McClelland*</i>	Impacts of Microplastics Exposure on Tadpole Digestive Tracts

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P2-99	<i>Michael Iacchetta, Bethany K. Kunz, Danielle Cleveland, Jo Ellen Hinck</i>	Native Spadefoot Toads (<i>Spea multiplicata</i>) in Uranium Mine Containment Ponds: Bioaccumulation and Potential Trophic Transfer of Metals
P2-100	<i>Alexa Warwick, Louise Mead, Tracy Melvin, Kristine Grayson, Caitlin Fisher-Reid, Raisa Hernández Pacheco, Tanya Matlaga, Sean Sterrett, David Miller</i>	Testing a Connected Classroom Course-based Research Experience Using a Large-scale Salamander Research Network, SPARCnet
P2-101	<i>Michelle Koo, Carol Spencer, Vance Vredenburg, Rebecca Tarvin, Ann Chang, Joyce Gross, Rayna Bell, Molly Womack, Emma Steigerwald, David Blackburn, David Cannatella, Alessandro Catenazzi, Kyle Summers, Jodi Rowley, Jimmy McGuire</i>	AmphibiaWeb: Connecting Amphibian Lovers to Data
P2-102	<i>Steven Whitfield, Sheila Poo, Gregory Watkins-Colwell, Alex Shepack</i>	ZooMu Network: Integrating Zoos and Natural History Museums to Enhance Capacity for Biological Collections Research
P2-103	<i>Allyson Fenwick, Beth Allan, Liz Lane-Harvard, Mike Nelson</i>	Herpetological Research and Teacher Education: An Example Using Mediterranean Geckos (<i>Hemidactylus turcicus</i>) in Central Oklahoma

Contributed: DEI

P2-104	<i>Camila Caceres, Traci English-Clarke, Triana Arguedas, Jasmin Graham</i>	Minorities In Shark Science (MISS) Impact Study and Evaluation
P2-105	<i>Allison Bogisich, Umilaela Arifin, Itzue W Caviedes-Solis, Sinlan Poo</i>	The Global Women in Herpetology Project: Putting a Spotlight on the Diversity of Women Working with Amphibians and Reptiles
P2-106	<i>Patrick Ciccotto</i>	Teaching Phylogenetic Comparative Methods Using Experiential Learning Practices Through the Lens of Promoting Diversity, Equity, and Inclusion

Sunday 16 July • Symposia

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

8:30 AM – 4:00 PM

Norfolk 1-2

SSAR: Amphibian Vision Symposium

Moderators: *Matthew Fujita, Jeffrey Streicher, Rayna Bell*

8:30 am	<i>Matthew Fujita, Rayna Bell, David Gower, Ellis Loew, Ryan Schott, Samuel Shrimpton, Jeffrey Streicher, Kate Smith</i>	Amphibian Vision: The Roles of Ecology and Ontogeny in the Evolution of a Key Sensory System
9:00 am	<i>Courtney Whitcher</i>	Evidence for Ecological Tuning of Novel Anuran Biofluorescent Signals
9:15 am	<i>James Tumulty</i>	Reverse Sexual Dichromatism in Golden Rocket Frogs
9:30 am	BREAK	
10:00 am	<i>Amartya Mitra, Molly Womack, David Gower, Jeffrey Streicher, Brett Clark, Rayna Bell, Ryan Schott, Matthew Fujita, Kate Thomas</i>	Ocular lens morphology is influenced by ecology and metamorphosis in frogs and toads
10:15 am	<i>David J. Gower, Ron H. Douglas, Rayna C. Bell, Jeffrey W. Streicher*, Ryan K. Schott, Matthew K. Fujita, H. Christophe Liedtke, Caitlyn Rich, Rachel C. Quock, Célio F. B. Haddad, C. Guilherme Becker, Christian L. Cox, Renato A. Martins, Kate N. Thomas</i>	Ecology Explains Variation in Lens Transmission and Pupil Shape of Amphibians
10:30 am	<i>Jeffrey Streicher, Rayna Bell, Matthew Fujita, David Gower, Ellis Loew, Ryan Schott, Kate Thomas</i>	Exploring anuran photoreceptor diversity with unsupervised machine learning
10:45 am	<i>Whitney Walkowski, Corinne Richards-Zawacki, William Gordon, Nicolas Bazan, Hamilton Farris</i>	Determining the Relationship Between Spectral Signals and Retinal Sensitivity in Dendrobatid Frogs
11:00 am	<i>Carola Yovanovich</i>	How Colourful is the Nocturnal World for Different Frogs?
11:15 am	<i>Kelly Tseng</i>	Probing Conserved Regenerative Pathways in Frog Eye Regeneration
11:30 am	<i>Mark Wilkinson</i>	Caecilian Vision
11:45 am	BREAK	
1:30 pm	<i>Ryan Schott, Matthew Fujita, David Gower, Jeffrey Streicher, Kate Thomas, Leah Perez, Matthew Kwiatkowski, Vance Imhoff, Jennifer Gumm, Rayna Bell</i>	Molecular evolution of visual opsins across anurans: duplication, loss, and adaptation to distinct light environments
2:00 pm	<i>Christian Ching, Kate N. Thomas, David J. Gower, Ryan K. Schott, Ryan K. Schott, Jeffery W. Streicher, Jeffery W. Streicher</i>	Rhodopsin Exon 1: Variation across the Anuran Tree of Life
2:15 pm	<i>Taegan Perez, Camille Lavoie, Rayna C Bell, Matthew K Fujita, David J Gower, Jeffery W Streicher, Kate N Thomas, Ryan K Schott</i>	Beyond the Visual Field: Identifying Shifts in Selective Pressures on Anuran Phototransduction Genes across Differing Photic Environments
2:30 pm	<i>John L. Boyette, Rayna C. Bell, Matthew K. Fujita, Kate N. Thomas, Jeffrey W. Streicher, David J. Gower, Ryan K. Schott</i>	Molecular evolution of non-visual opsin genes across environmental, developmental, and morphological adaptations in frogs
2:45 pm	<i>Rayna Bell, Jeanne Robertson, Ellis Loew, Matthew Fujita, David Gower, Ryan Schott, Jeffrey Streicher, Kate Thomas</i>	Vision in dim light and the evolution of colorful, nocturnal frogs
3:15 pm		Closing Remarks & Discussion

ASIH: A Tribute to Jack Musick Symposium

Moderators: *Eric Hilton, Patrick McGrath, Andrij Horodysky*

8:30 am	<i>Eric J. Hilton, R. Dean Grubbs, Charles F. Cotton</i>	The Natural History of Jack Musick (1941–2021)
9:00 am	<i>Kenneth Able</i>	The Value of Long-Term Time-Series for Fishes: The Naturalist's Revenge
9:15 am	<i>Myra Brouwer, Walter Bublely, Claudia Friess, Sarah Goldman, Kimberly Hendricks, Adam Lytton, Kelly Robinson, George Sedberry*, Byron White, David Wyanski, Sean Yeckley</i>	Fisheries for Teleosts Associated with Deep-Sea Sponge-Coral Ecosystems on the Blake Plateau off the Southeastern U.S.
9:30 am	BREAK	
10:00 am	<i>Kate Mansfield</i>	Rethinking the Sea Turtle “Lost Years”
10:30 am	<i>Vincent Saba</i>	Climate change impacts on sea turtles
11:00 am	<i>William E. Bemis, Ethan France</i>	The Biology of Latimeriachalumnae and Evolution of Coelacanth
11:30 am	<i>Edward Heist, Richard Flaimo Jr., Junman Huang</i>	Conservation Genomics of the Endangered Pallid Sturgeon
11:45 am	BREAK	
1:30 pm	<i>Patrick McGrath, Eric Hilton</i>	Seasonal Movements of Bowfin (<i>Amia calva</i>) and Northern Snakehead (<i>Channa argus</i>) in Virginia: Comparison of Native and Invasive Species
1:45 pm	<i>Jason Romine, Craig Haskell, Connor Cunningham, Todd Newsome, Russ Byington, Aimee Taylor</i>	Movement and survival of adfluvial Bull Trout in the Yakima Basin, Washington
2:15 pm	<i>Jan R. McDowell, Nadya R. Mamoozadeh, Jackson L. Martinez, John E. Graves</i>	Using Genetics to Further the Understanding of Istiophorid Billfishes: How Far Have We Come?
2:30 pm	<i>Matthew Girad, Jacque Carter*, David Johnson</i>	New species of <i>Monomitopus</i> (<i>Ophidiidae</i>) from Hawai'i, with the description of a larval coiling behavior.
2:45 pm	<i>Thomas Munroe, Gina Ralph, Christi Linardich</i>	Extinction Risk Assessments for members of the Flatfish Suborder Pleuronectoidei (<i>Pleuronectiformes</i>): Global Perspective on Conservation Evaluations for a Diverse Taxon
3:15 pm	<i>Ning Labbish Chao, Ming Liu, Meng-Hsien Chen, Chi-Wei Chang, Ying Giat Seah</i>	Diversity and conservation of large and rare Sciaenidae species (<i>Sciaenoidei, Acanthuriformes</i>).
3:45 pm	<i>Andrij Z. Horodysky, Richard W. Brill, John A. Musick</i>	Sciaence or Séance? A Legacy of Comparative Sensory Investigations of Sciaenid Fishes and Their Competitors in Chesapeake Bay.

Sunday 16 July • Oral Presentations

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

8:00 AM – 9:15 AM

Norfolk 4

AES: Conservation & Management I

Moderator: David Shiffman

- | | | |
|---------|---|--|
| 8:00 am | <i>Ann Williamson, Guy DuBeck, Karyl Brewster-Geisz, Carrie Soltanoff</i> | Revision of Atlantic Shark Management in the United States |
| 8:15 am | <i>David Shiffman, Amani Webber-Schultz, Toby Daly-Engel, Dean Grubbs, Lara Ferry</i> | A Review of the Biology, Ecology, and Conservation of the Sandbar Shark (<i>Carcharhinus plumbeus</i>) |
| 8:30 am | <i>Kaitlyn O'Brien, Robert Latour</i> | Data-limited Assessment Methods for unassessed Large and Small Coastal Sharks along the US Southeast Atlantic Coast and Gulf of Mexico |
| 8:45 am | <i>Mischa Schultz, Eric R. Hoffmayer, James A. Sulikowski, Michael Byrne*</i> | At-vessel and Post-release Mortality of Shortfin Mako Sharks in the US Atlantic Pelagic Longline Fishery |
| 9:00 am | <i>Tonya Wiley, Matthew McDavitt, Lukas Heath, Sonja Fordham</i> | Selling Out Sawfish: Closing Loopholes in U.S. State-Level Protections that Leave Endangered Species at Risk |

8:00 AM – 9:15 AM

Norfolk 5

General Herpetology I

Moderator: Cathy Bevier

- | | | |
|---------|---|---|
| 8:00 am | <i>Julia Laterza Barbosa</i> | Does arboreality influence the evolution of hydrothermal physiology in neotropical frogs? |
| 8:15 am | <i>Sara McClelland, Janniry Cabrera Belen</i> | Atrazine Causes Changes in the Brains of Larval Amphibians |
| 8:30 am | <i>Robert Brodman, Brittany Tillman</i> | Does exposure to roundup affect regeneration in salamanders? |
| 8:45 am | <i>Jennifer Deitloff, Kristen Cherry, Kyle Root</i> | Exposure to silver nanoparticles negatively affects growth and survival of <i>Ambystoma mexicanum</i> (<i>Axolotls</i>) |
| 9:00 am | <i>Sarah Woodley, Gabriela Agostini, Devin Jones, Rick Relyea</i> | The Effects of Pesticides and Salinization on Brain Shape of Larval Northern Leopard Frogs |

8:00 AM – 9:30 AM

Norfolk 6

Turtle Conservation

Moderator: Gareth Hopkins

- | | | |
|---------|---|---|
| 8:00 am | <i>Clay Noss, Brian Henen, Scott Hillard, Robert Johnson, Lynn Sweet, Kenneth Nagy</i> | Effect of Head-starting on Survival and Movement of Mojave Desert Tortoises |
| 8:15 am | <i>Willem Roosenburg, Julia Joos, David Jenkins, Alayna Tokash, Paul Converse, Nicholas Smeenck</i> | Long-term Demographic Comparison of Head-start vs. Natural Release Diamond-backed Terrapin Hatchlings |
| 8:30 am | <i>Brian Todd, Mark Peaden, Kurt Buhmann, Tracey Tuberville</i> | A Requirement Not a Band-Aid: The Role of Head-Starting in Recovering Mojave Desert Tortoise Populations |
| 8:45 am | <i>Andria K. Salas, Alyssa M. Capuano, Michele A. Sims, Craig A. Harms, Wendy E.D. Piniak, T. Aran Mooney</i> | Temporary Noise-Induced Underwater Hearing Loss in Freshwater Turtles (<i>Trachemys scripta elegans</i> and <i>Chrysemys picta picta</i>) |
| 9:00 am | <i>James Van Dyke, Donald McKnight, Deborah Bower, Ricky-John Spencer</i> | Blunting a thousand cuts: integrated approaches to save Australian freshwater turtles |
| 9:15 am | <i>Gareth Hopkins, Joshua Kesling, Blake Looney, Ashley D'ntonio</i> | Herpetology meets Recreation Ecology: A Tale of Two Reptiles |

8:15 AM – 9:30 AM

Norfolk 3

Ichthyology: Biogeography & Phylogeography

Moderator: Allison Bronson

- | | | |
|---------|--|--|
| 8:15 am | <i>Hannah Owens, Carsten Rahbek</i> | A New View of Marine Biodiversity |
| 8:30 am | <i>Diego J. Elías, Fernando Alda, Prosanta Chakrabarty, Caleb D. McMahan</i> | Phylogenomic uncertainty and its implications for understanding the evolutionary history of Middle American Cichlids |
| 8:45 am | <i>Makenna Beehler, Ivy Baremore, Rachel Graham, Toby Daly-Engel</i> | Phylogeography of Deep-Water Snappers in Honduras and Belize |
| 9:00 am | <i>Daemin Kim, Maya Stokes, Sandy Ebersole, Thomas Near*</i> | Exhumation of carbonate rock facilitates dispersal-mediated allopatric speciation in freshwater fishes |
| 9:15 am | <i>Milton Tan, Jonathan Armbruster</i> | Ecology and Biogeography of the Diversification of Minnows (<i>Cypriniformes: Leuciscidae</i>) of the Holarctic |

10:00 AM – 11:15 AM

Norfolk 3

General Ichthyology III

Moderator: Rene Martin

- | | | |
|----------|--|---|
| 10:00 am | <i>Kenneth Thompson</i> | C-Metaphase Karyotypes of <i>Lepomis punctatus</i> and <i>L. miniatus</i> (<i>Teleostei, Centrarchidae</i>). |
| 10:15 am | <i>Zachery Zbinden, Marlis Douglas, Tyler Chafin, Michael Douglas</i> | A community genomics approach to natural hybridization |
| 10:30 am | <i>Nick Weber, Andrew Fields, Derek Chamberlin, William Patterson, David Portnoy</i> | Influence of Tissue Type and Biological Information on the Development and Accuracy of Epigenetic Clocks in a Deepwater Scorpionfish |
| 10:45 am | <i>Daphne Siciliani</i> | Effects of dietary lipid level and environmental temperature on lipid metabolism and choline requirement in Atlantic salmon parr |
| 11:00 am | <i>Amanda Salmoiraghi, Ellen Biesack, Jan McDowell</i> | Determining Relatedness of Juvenile Atlantic Striped Bass (<i>Morone saxatilis</i>) in Chesapeake Bay Using Microsatellite Markers. |

10:00 AM – 12:00 PM

Norfolk 4

AES: Conservation & Management II

Moderator: Catherine Macdonald

- | | | |
|----------|--|---|
| 10:00 am | <i>Catherine Macdonald, Kela McEntee, Julia Wester</i> | Values, Attitudes, and Media Exposure: US Public Perception of Sharks and Shark Conservation |
| 10:15 am | <i>Taylor Gamble</i> | You're Gonna Need a Bigger Boat: Sharks as a Holotype of the Sociological Model for Conservation |
| 10:30 am | <i>Julia Wester, Dylann Turffs, David Shiffman, Catherine Macdonald</i> | 'A human values issue': Actors, Arguments, and Regulatory Change in the Florida Land-based Shark Fishery |
| 10:45 am | <i>Evan Prasky, Marcus Drymon, Alena Anderson, Sarah Gibbs, Amanda Jargowsky, Danielle McAree, Ana Osowski, Savannah Swinea, Steven Scyphers</i> | Characterizing Anglers' Responses to Reported Increases in Shark Depredation Across the Gulf of Mexico |
| 11:00 am | <i>Raquel Braun, Julia Wester, Catherine Macdonald, Jessica Pate</i> | Perceptions Regarding the Recreational Cobia Fishery in Relation to Manta Ray Conservation |
| 11:15 am | <i>Gretchen Kruizenga, Deborah Menna, Cassandra Scott, Hannah Medd</i> | The Scientific and Conservation Value of Collaborating with Shark-based Ecotourism Operators in Florida, USA. |
| 11:30 am | <i>Christopher G. Lowe, James Anderson, Patrick Rex, Emily Spurgeon, Yamilla Samara-Chacon, Zachary Merson, Elizabeth Jahn, Corina Silva, Gabriella Hancock, Katie Dudley, Dede Long</i> | The California Shark Beach Safety Program – Using Research, Education and Outreach to Assess Shark-Human Injury Risk and Reduce Economic Impacts. |
| 11:45 am | <i>Brittany Finucci, Cassandra L. Rigby, Rima W. Jabado</i> | The next generation of Red Listing |

10:00 AM – 11:45 AM

Norfolk 5

General Herpetology II

Moderator: Rocky Parker

- | | | |
|----------|--|--|
| 10:00 am | <i>Catherine Bevier, Matthew Chatfield, Cheryl Frederick, Tristan Burgess</i> | Monitoring Sublethal Effects of Chytrid and Ranavirus Infection in Green Frogs, <i>Rana clamitans</i> |
| 10:15 am | <i>Amadeus Waluga, Kira McEntire*</i> | Efficient Identification of Marbled Salamanders (<i>Ambystoma opacum</i>) Using Wild-ID |
| 10:30 am | <i>Christopher Howey, Anne Royer</i> | Male Spatial Use Drives Gene Flow in Timber Rattlesnakes (<i>Crotalus horridus</i>) |
| 10:45 am | <i>David J. Gower, Silke Haverkamp, Bruno F. Simões, Pavel Nemeč, Einat Hauzman</i> | Retinal Diversity in Non-Caenophidian Snakes |
| 11:00 am | <i>Rysa Thomas, Rocky Parker*</i> | Life-History Transitions and the Molecular Stress Response of Garter Snakes |
| 11:15 am | <i>Matthew Holding, Hao Hao Pontius, Laura Haynes, David Ginsburg, Jordan Shavit</i> | Fluorescent fish shed light on the adaptive evolution of cottonmouth venom |
| 11:30 am | <i>Christopher Parkinson, Rhett Rautsaw, Edward Myers</i> | The genomic landscape and the evolution of the Viperidae and their venoms with a focus on New World Pitvipers. |

10:00 AM – 11:45 AM

Norfolk 6

Herpetology: Conservation I

Moderator: Brian Gratwicke

- | | | |
|----------|---|---|
| 10:00 am | <i>Allison Julien, Carrie Kouba, Andrew Kouba, Isabella Burger, Diane Barber</i> | Successful Development and Reproduction of <i>Anaxyrus houstonensis</i> F1 and F2 Offspring Produced from Cryopreserved Sperm |
| 10:15 am | <i>Brian Gratwicke, Blake Klocke, Roberto Ibanez</i> | An adaptive management approach to amphibian reintroductions in Bd positive world |
| 10:30 am | <i>Maisie MacKnight, Samantha Bryn, David Miller</i> | Tag, you're it: Chasing down considerations for using tag and survey methodologies in wildlife systems |
| 10:45 am | <i>George Brooks, William Hopkins, Holly Kindsvater</i> | Concurrent Threats Jeopardize the Viability of Virginia's Hellbender Populations |
| 11:00 am | <i>Cory Hillard, Joseph Pechmann, Jaime Smith, James Lee, John Tupy, Angie Dedrickson, Scott Hereford, Linda LaClaire, Michael Sisson, Danna Baxley, Allison Bogisich, Sinlan Poo</i> | The Status and Recovery of the Critically Endangered Dusky Gopher Frog <i>Rana Sevosa</i> |
| 11:15 am | <i>Bruna S. Santos, Luis M. P. Ceriáco</i> | Lack of country-wide systematic Herpetology Collections threatens future research and conservation |
| 11:30 am | <i>David Marsh, Ian Kinney, Thomas Finnegan, Cecily Stern, Sellers Smith</i> | Changes in reptile and amphibian communities across urbanization gradients in northeastern North America |

1:30 PM – 3:30 PM

Norfolk 3

Ichthyology: Genetics

Moderator: Kara Million

- | | | |
|---------|--|---|
| 1:30 pm | <i>Kara Million, Curt Lively</i> | Rare MHC Alleles Are Associated with Lower Burdens of a Specialist Gill Parasite in Darters |
| 1:45 pm | <i>Marta Gomez-Buckley, Carmen Pedraza-Marron, Mark Erdmann, Luke Tornabene*</i> | An integrative approach to species delimitation of the dwarf goby <i>Eviota sigillata</i> , a tiny fish with a giant geographic range |
| 2:00 pm | <i>Kent Carpenter, Angel Alcalá, Pinsky Malin, Christopher Bird, Abner Bucol, Eric Garcia, Brendan Reid, Sharon Magnuson, Mudjekeewis Santos, Rene Abesamis, Jeffrey Williams, Cleto Nanola Jr., Richard Muallil, Whalen John, Jemelyn Baldisimo, René Clark, Ivan Lopez, Martin French, Roy Roberts, Kyra Fitz, Jordan Rodriguez, Chandy Jablonski, Marial Malabag, John Schaefer</i> | Genetic Time Travel in Philippine Fishes |

Sunday 16 July 2023

2:15 pm	<i>Sharon Magnuson, Chris Bird</i>	DNA sequencing of marine fishes preserved in ethanol for 115 years
2:30 pm	<i>Rafet Çağrı Öztürk, İlhan Aydın, Şirin Fıridin, Melike Alemdağ, Yahya Terzi, Oğuzhan Eroğlu</i>	Genetic connectivity of flatfishes in the Black Sea
2:45 pm	<i>Kayla Dye, Kevin Conway, Megan Bean, Amanda Pinion, Sarah Robertson, Christopher Hollenbeck, David Portnoy</i>	Conservation Genomics of the Proserpine Shiner, <i>Cyprinella proserpina</i> .
3:00 pm	<i>Eric Garcia, Roy Roberts, Brendan Reid, Rene Clark, Jemelyn Baldisimo, John Whalen, Abner Bucol, Ivan Lopez, Malin Pinsky, Kent Carpenter, Chris Bird</i>	Short-read genome assembly for spatiotemporal genetic analysis of contemporary and century-old museum fishes from the epicenter of marine biodiversity
3:15 pm	<i>Brendan Reid, Allison Fink, Abigail Ethridge, Eryka Molino, Eric Garcia, Rene Clark, John Whalen, Jemelyn Baldisimo, Roy Roberts, Chandy Jablonski, Marial Malabag, Abner Bucol, Chris Bird, Kent Carpenter, Malin Pinsky</i>	Novel genomes from Coral Triangle fishes reveal correlates of past demographic processes in the epicenter of marine biodiversity

1:30 PM – 4:45 PM

Norfolk 4

AES: Ecology

Moderator: *Grace Casselberry*

1:30 pm	<i>Devon Scott, Edward Hale, Dewayne Fox, Camilla McCandless, Suni Shah-Walter, Aaron Carlisle*</i>	Characterizing the ecological role of sharks in Delaware Bay, USA
1:45 pm	<i>Brianna Cahill, Ryan Eckert, Breanna DeGroot, Kim Bassos-Hull, Joshua Voss, Matthew Ajemian</i>	Diet and Feeding Ecology of the Whitespotted Eagle Ray (<i>Aetobatus narinari</i>) from Florida Coastal Waters Revealed via DNA Barcoding
2:00 pm	<i>Oliver Shipley</i>	Energetic Connectivity of Diverse Elasmobranch Populations – Implications for Ecological Resilience
2:15 pm	<i>Julian Garrison, Daniel Daye, Jeremy Vaudo, Mahmood Shivji, Bradley Wetherbee</i>	Modeling shortfin mako shark habitat suitability via machine learning methods
2:30 pm	<i>Patrick Rex, Christopher G. Lowe</i>	Patterns of Overlapping Habitat Use of Juvenile White Shark and Human Recreational Water Users
2:45 pm	<i>Mikayla Beeson, Ara McClanahan, Shawn Harper, Carol Price</i>	Habitat Use and Reproductive Ecology of Sand Tiger Sharks, <i>Carcharias taurus</i> , in the Northwest Atlantic
3:00 pm	<i>Bethany DeLoof, Dewayne Fox, Danielle Haulsee, Jeff Kneebone, Greg Skomal, Matt Oliver, George Madave, Joseph Barney, Brad Wetherbee</i>	Migratory Patterns of Sand Tiger Sharks (<i>Carcharias taurus</i>) Along the US East Coast
3:15 pm	<i>Jarius Bradley, Nigel Hussey, Aaron Carlisle</i>	Deep Dwellers: Understanding the Residency Patterns and Space Use of Arctic Skates (<i>Amblyraja hyperborea</i>) in Scott Inlet Canada
3:30 pm	<i>Grace Casselberry, Gregory Skomal, Lucas Griffin, Jacob Brownscombe, John Finn, Joseph Dello Russo, Steven Cooke, Andy Danylichuk</i>	Migratory variability and seasonal habitat use of great hammerhead sharks in the Florida Keys
3:45 pm	<i>Vital Heim, Tristan L. Guttridge, Philip Match, Matthew J. Smukall, Annie E. Guttridge, Simon Dedman</i>	Should I stay or should I go: differential residency of great hammerheads, <i>Sphyrna mokarran</i> , from Andros and Bimini, Bahamas
4:00 pm	<i>James Anderson, Patrick Rex</i>	Horizontal and Vertical Movement Patterns of Female Scalloped Hammerhead Sharks (<i>Sphyrna lewini</i>) in Hawaii
4:15 pm	<i>Jeremy Vaudo, Pelayo Salinas de León, Ryan Logan, Jenifer Suarez-Moncada, Bradley Wetherbee, Mahmood Shivji</i>	Long-term movements of silky sharks, <i>Carcharhinus falciformis</i> , in the Eastern Tropical Pacific Ocean
4:30 pm	<i>Daniel Daye, Julian Garrison, Rafael de la Parra, Jeremy Vaudo, Guy Harvey, Jessica Harvey, Mahmood Shivji, Bradley Wetherbee</i>	Tracking Four Years in the Life of a Female Whale Shark Reveals Consistent Migrations in the Gulf of Mexico

1:30 PM – 2:30 PM

Norfolk 5

Herpetology: Physiology

Moderator: Hayley Crowell

- | | | |
|---------|---|---|
| 1:30 pm | <i>Ethan Livingston, Anya Shevchik, Alyssa Head, Brooke Bodensteiner, Eric Gangloff</i> | Swimming beneath the Sahara: the thermal biology of <i>Scincus scincus</i> , the sand-swimming skink. |
| 1:45 pm | <i>Craig Lind, Joseph Agugliaro, Jason Oretaga, Jenna Palmisano, Terence Farrell</i> | Seasonal Physiological Responses to Experimental Immune Challenge in a Snake Population Afflicted with Ophidiomycosis. |
| 2:00 pm | <i>Joseph Agugliaro, Craig Lind, Jason Ortega, Terence Farrell</i> | Interactive Energetic Costs of an Immune Response in Ectotherms: Thermal and Metabolic Consequences of Apparent Ophidiomycosis in a Winter-active Snake |
| 2:15 pm | <i>Jason Ortega, Steven Beaupre</i> | The Effect of Meal Type on Specific Dynamic Action in the Western Cottonmouth (<i>Agkistrodon piscivorus leucostoma</i>) |

1:30 PM – 3:00 PM

Norfolk 6

Herpetology: Conservation II and General

Moderator: Jayme Waldron

- | | | |
|---------|--|---|
| 1:30 pm | <i>Elizabeth Livingston, Karina Cocks, Mariana Jones, Erika Nowak*</i> | Evaluating the Physiological and Environmental Benefits of Creating Naturalistic Enclosures for Federally Threatened Captive Snakes |
| 1:45 pm | <i>Jayme Waldron, Elizabeth Johnson, Kevin Oxenrider, Shane Welch</i> | Can scaling rattlesnake translocations to activity ranges improve mitigation outcomes? |
| 2:00 pm | <i>Michael Dreslik, Tyler Stewart, Tom Beauvais, John Crawford</i> | The Continued Decline of the Eastern Massasauga in Illinois, from Distribution to Population Scales |
| 2:15 pm | <i>Rory Telemeco, Lynn Myers, Mark Halvorsen, Steven Sharp, Michael Westphal</i> | Loss and Impending Recovery of Blunt-nosed Leopard Lizards (<i>Gambelia sila</i>) in California's Panoche Hills. |
| 2:30 pm | <i>RJ Rao</i> | Conservation of Gharial (<i>Gavialis gangeticus</i>) in National Chambal Sanctuary, India |
| 2:45 pm | <i>Amanda Picelli</i> | High Parasitism on Amazonian Diving Lizards <i>Uranoscodon superciliosus</i> (Linnaeus, 1758) is Influenced by Stream Characteristics |

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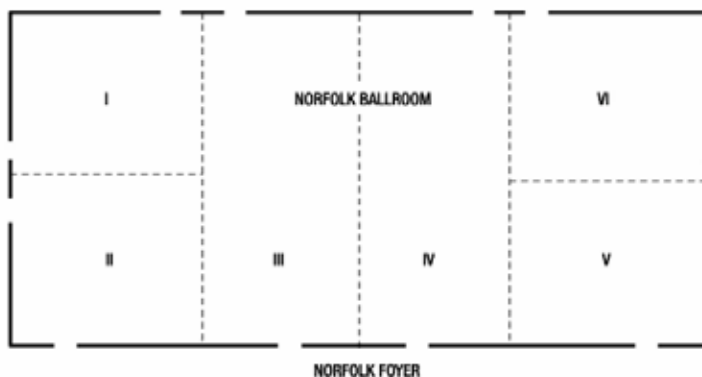
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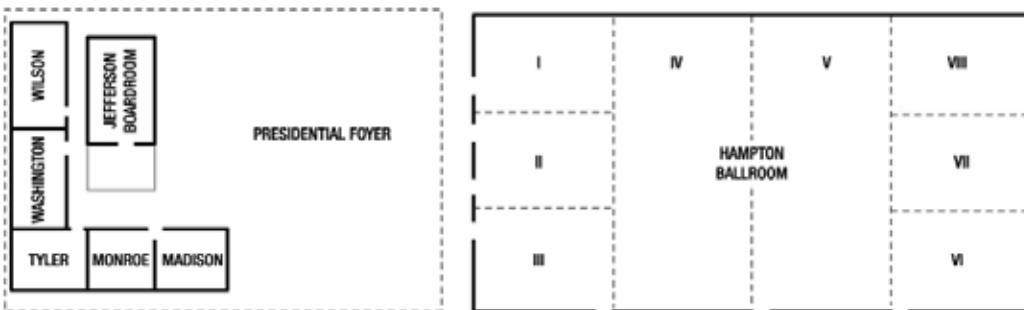
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