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Future Meeting Dates

Charleston, South Carolina, January 3-7, 2012

San Francisco, California, January 3-7, 2013

Austin, Texas, January 2-6, 2014

Message from the President - Welcome to Salt Lake City

Happy New Year and welcome to Salt Lake City. This year we have more of the same (an outstanding line-up of talks, workshops, symposia, contributed papers and posters) and something new (an expanded full four-day schedule). The meeting kicks off with the Plenary Talk featuring our own Tom Daniel (Monday evening) and finishes with a Friday double-header of the Moore Lecture (Scott Freeman) and our Society-wide social. The expanded schedule is the result of our own success, both in bringing in quality symposia and in experiencing a third consecutive year of high meeting attendance. Once again, our membership numbers have shown a significant increase despite the national and international financial situation. For this, I thank all of you for your loyalty to our Society. Further, I'd like to thank everyone for their generosity in helping build our various endowments as we had a wonderful year of donations. Most of all, though, I'd like to once again thank all members who have given their time by serving in the various elected and appointed positions at the society and division levels. Look for the ribbons on the nametags of these individuals and give them a thank-you because they are the ones who keep the Society running. Enjoy the meeting. Enjoy the Science. And enjoy Salt Lake City.

Rich Satterlie
SICB President

Message from the Program Officer - Welcome to Salt Lake City

You will be a part of the third largest SICB meeting on record! Welcome to the first-timers, and 'Welcome Back' to our returning members! With more than 1080 presentations over four days, you are sure to find more fascinating research than you will have time to see. These presentations are organized into 11 symposia plus 10 complementary sessions, 74 oral sessions, and 3 days of poster presentations.

We will start the SICB Conference with the Plenary Lecture on the Grand Challenges in Organismal Biology entitled "Complex, Computational and Collaborative: Challenges of Integrative Research and Education" presented by Tom Daniel. Successive evenings will hold the Bartholomew Lecture (Tuesday, Jan 4), by Robert Cox; the Bern Lecture (Wednesday, Jan 5) by NSF IOS Division Director and SICB Past-President, John Wingfield; AMS Lecture (Wednesday, Jan 5) by Craig Young; and we will conclude the meeting with the Moore Lecture (Friday, Jan 7 @ 3 PM) by Scott Freeman. Our Society-wide Social in Honor of Students and Post-Docs will immediately follow the Moore Lecture Friday afternoon. There are several events of special interest to students and post-docs, including the Student/Post-Doc-Docoral Affairs Committee Workshop "Importance of Mentorships in Science Careers" on Thursday, Jan 6; the Broadening Participation Workshops (a) "Balancing Life and Academic Career" Jan 5 @ noon; and (b) "Issues Facing New Faculty" Jan 6 @ noon.

I can't encourage you enough to attend your Division Business meeting to provide input into improving our organization, developing new symposia, and discussing issues with NSF representatives, who will be attending most Division Business meetings.

I would like to thank the Program Committee (Division Program Officers, and TCS and AMS program reps), 2011 Symposium Organizers, the SICB Officers, Sue Burk and the Burk & Associates team for putting this fantastic meeting together.

Brian Tsukimura
SICB Program Officer

Society for Integrative and Comparative Biology

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Co-Sponsoring Societies

American Microscopical Society (AMS)
Animal Behavior Society (ABS)
The Crustacean Society (TCS)

The co-sponsoring society presentations are integrated into the program to minimize the potential conflicts of similar presentations being scheduled at the same time.

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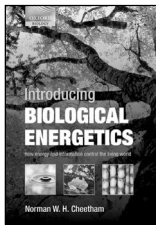


Integrative and Comparative Biology (ICB)

Formerly *American Zoologist*, this is the official journal of the Society for Integrative and Comparative Biology. It publishes 6 issues a year (from July to December). SICB membership includes a subscription to ICB, including access to its entire archive right back to Volume 1 Issue 1 of *American Zoologist*. Currently ranked 18/127 in *ZOOLOGY* (ISI, 2009), ICB is one of the most highly respected

and cited journals in the field of biology. ICB publishes book reviews, reports, and special bulletins, and its peer-reviewed symposia provide first class syntheses of the top research in a field, perfect for classes or a quick update. Visit the journal website to find out more, view current and Advance Access content, and sign up for our electronic alerting services.

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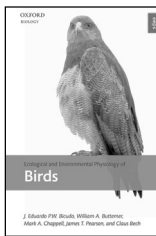


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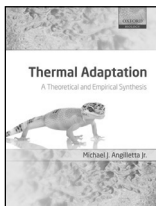
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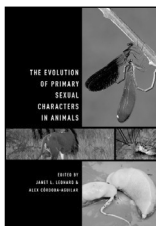


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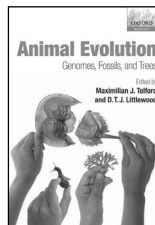
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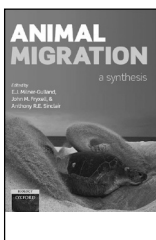


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MEETING HIGHLIGHTS/SOCIAL EVENTS

Monday, January 3

Plenary Session - Ballroom EFGH, 7:30-8:30 pm

The Plenary Address will be given by Tom Daniel from the University of Washington. His talk is "Complex, computational and collaborative: challenges of integrative research and education."

Welcome to Salt Lake City Reception - Ballroom ABCD, 8:30-10:00 pm

The Society for Integrative and Comparative Biology welcomes you to Salt Lake City with a reception on Monday, January 3. The Welcome Reception will follow the Plenary lecture. Light snacks will be provided.

Thursday, January 6

AMS Business Meeting - Boardroom, Convention Center, 10:30-11:45 am

The AMS Business Meeting will be followed by the AMS Luncheon (ticket purchase required) from Noon-1:00 pm, Room 253 AB.

SICB Society Meeting & Awards Presentation - 150 G, 5:15-6:15 pm

Friday, January 7

Society-Wide Social in Honor of Students and Postdocs - Registration Foyer, 4:00-6:00 pm

Join your fellow SICB members for a Society-Wide Social. Wine, cheese and fruit will be served.

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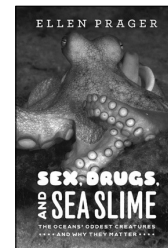
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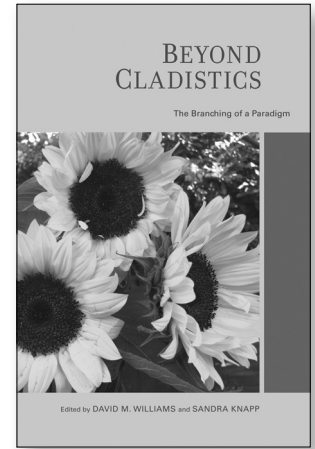
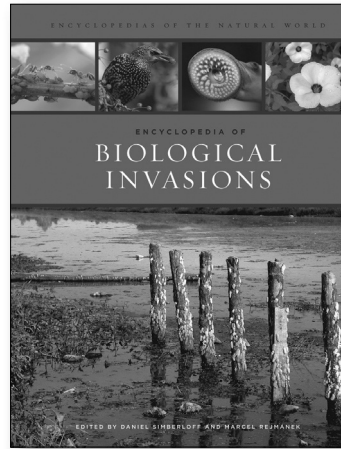
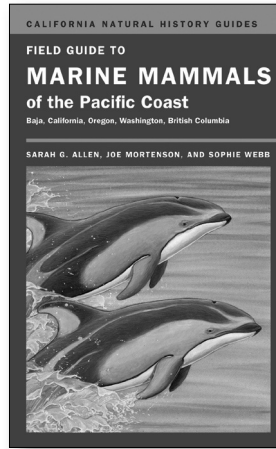
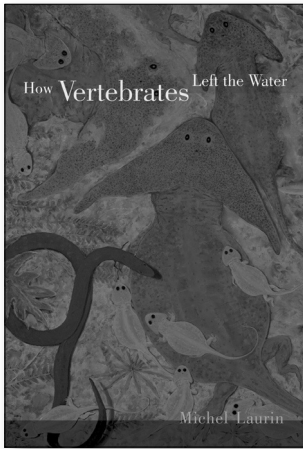
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SPECIAL LECTURES

George A. Bartholomew Award/Lecture - Tuesday, January 4, Ballroom AC - 6:30-7:30 pm

The George A. Bartholomew Award lecture, "Two genders, one genome: an integrative perspective on sexual conflict and the costs of reproduction" will be given by Robert M. Cox.

Howard Bern Lecture - Wednesday, January 5, Ballroom B - 6:30-7:30 pm

The Bern Lecturer is John C. Wingfield from the University of California, Davis. The title of his presentation is, "Putting the brakes on reproduction. Implications for conservation? Global climate change?"

AMS Keynote Lecture - Wednesday, January 5, 150 G - 7:30-8:30 pm

The Keynote Lecturer is Craig Young. His talk is titled, "The discovery and naming of marine larval forms: shallow and deep, then and now."

John A. Moore Lecture - Friday, January 7, Ballroom B - 3:00-4:00 pm

The John Moore Lecture this year "Evidence-based Teaching in Introductory Biology" will be given by Scott Freeman from the University of Washington.

SYMPOSIA

- S1: I've Got Rhythm: Neuronal Mechanisms of Central Pattern Generators (Tuesday 1/4)
- S2: Synthesis of Physiologic Data from the Mammalian Feeding Apparatus Using FEED, the Feeding Experiments End-User Database (Tuesday 1/4)
- S3: Speciation in Marine Organisms(Tuesday 1/4)
- S4: Neuroecology: Neural Determinants of Ecological Processes from Individuals to Ecosystems (Wednesday 1/5)
- S5: Bioinspiration: Applying Mechanical Design to Experimental Biology (Wednesday 1/5)
- S6: Bridging the Gap Between Ecoimmunology and Disease Ecology (Wednesday 1/5)
- S7: Population Dynamics of Crustaceans (Thursday 1/6)
- S8: Environmentally-Cued Hatching Across Taxa: Embryos Choose a Birthday (Thursday 1/6)
- S9: A Synthetic Approach to the Response of Organisms to Climate Change: The Role of Thermal Adaptation (Friday 1/7)
- S10: Environment, Energetics & Fitness: Symposium Honoring Donald W. Thomas
- S11: The Biomechanics and Behavior of Gliding Flight (Friday 1/7)

The **Exhibits** will open on
Tuesday, January 4, at 9:30 am.
Exhibit Hall A in the Salt Palace Convention Center, will be the
location for coffee breaks on
Tuesday, Wednesday and Thursday mornings from 9:30-10:30 am and 3:00-5:00 pm during
the poster sessions.

WORKSHOPS AND PROGRAMS

Monday, January 3

Grad Student/Post Docs Welcome and Meeting Orientation, “How to get the most out of your SICB meeting.” Room: 250 ABC - 5:30-6:30 pm

- How to find relevant talks/posters during the meetings
- How to find everyone at the meetings
- How to approach a “big guy or gal”
- How to enter or leave a room/move between rooms
- How to plan your meeting
- How to get involved in SICB or attend business meetings and the importance of attending the meetings (exposure, recognition).

This will be followed by a lightning round of first timers’ questions.

Tuesday, January 4

Grand Challenges Workshop; Room: Ballroom J, Noon-3:00 pm

The first 40 minutes of this workshop will have a series of short presentations (≤ 10 min each), and the final 2+ hours will be for directed discussion of some key questions. The primary objective is to get SICB membership involved and to share a summary of the workshop at the SICB business meeting. Presenters were selected on the basis of their involvement with SICB and GCOB efforts, and include Marvalee Wake, Dianna Padilla, Mark Denny, Sheila Patek and Jonathon Stillman. The Workshop will start with the need for Organismal Biology and the Grand Challenges, and the need for larger scale research directions (M.Wake). A brief history of how other groups organized around their ‘grand challenges’ and NSF response (D. Padilla) will follow. Mark Denny and Jonathon Stillman will present a generic outline of structure to address the GCOB’s and present some examples of options for pursuing a particular direction. In addition, they will give examples of 2-3 key questions that can be used in the subsequent discussion. Sheila Patek will then orchestrate a series of ‘breakout’ discussion groups where workshop participants will be able to tackle the key question in GCOB in small groups. The outcomes of the discussions will be shared amongst the participants and summarized for the SICB Business meeting and in a subsequent article of the ICB.

Phylogenetics for Dummies, “Phylogenetic Comparative Methods in R;” Room: Deer Valley (Marriott), 8:00 pm

The Division of Evolution and Systematic Biology will host a workshop on Phylogenetic Comparative Methods in R as part of the Phylogenetics for Dummies series. R is a powerful, free(!), high-level statistical computing language with a number of well-developed packages that focus on tree manipulation and comparative analysis. In R it is easy to

- perform independent contrasts analysis,
- test for correlation of traits on a tree or across a distribution of tree under many different evolutionary models
- reconstruct ancestral states
- examine correlated patterns of trait evolution and lineage diversification,
- simulate character evolution.
- create publication-quality plots of trees and graphs

The workshop will provide an overview R language essentials, and show you how to get your data into R, manipulate trees and tip data, and cover a range of comparative analyses including: Brownian and OU models of character evolution, diversification analysis, ancestral reconstruction, and simulation methods.

Participants are encouraged to bring their own data sets (in nexus and/or csv format) as well as a laptop computer. If you are interested in attending please email michaelalfaro@ucla.edu so that we can better gauge the interests and experience levels of the attendees.

Instructors: Michael Alfaro (UCLA, michaelalfaro@ucla.edu) and Todd Oakley (UCSB, oakley@lifesci.ucsb.edu).

WORKSHOPS AND PROGRAMS

Wednesday, January 5

SICB Broadening Participation Workshop for Graduate Students, Post-Docs, and New Professors: “Balancing Life and an Academic Career;” Room: 251 C, Noon-1:00 pm

Presented by: Greg Florant, Colorado State University and Nora Espinoza, Clemson University. This workshop will explore issues concerning time management techniques, conflict resolutions, and negotiations in academia as they pertain to your life and successful career. The presenters will share some of their experiences and then questions and issues from the audience will be entertained.

SICB Public Affairs Workshop: “Communicating With the Media;” Room: 250 C, Noon-1:30 pm

You’ve spent endless hours sweating in the lab and field, but how do you communicate your ground-breaking results to the broader public? This workshop aims to help you learn and refine skills for getting your message out. Topics include how to find the right media outlet, discovering what journalists are really looking for, and how to best work with your university press office. This workshop will be led by a diverse and distinguished panel of journalists and a media-savvy SICB member. Carl Zimmer is a science writer who has written many outstanding books with themes in organismal biology and has scores of credits in publications such as The New York Times, Discover magazine, and National Geographic. Lee Siegel is a science writing specialist for the University of Utah Public Relations whose previous work includes time with the Associated Press and experience on a staff that won a Pulitzer Prize for coverage of the Mount St. Helens eruption. Mimi Koehl is not only a prolific and creative biomechanist who has won the MacArthur “genius” award, but is an outstanding communicator whose work has garnered copious media attention.

Thursday, January 6

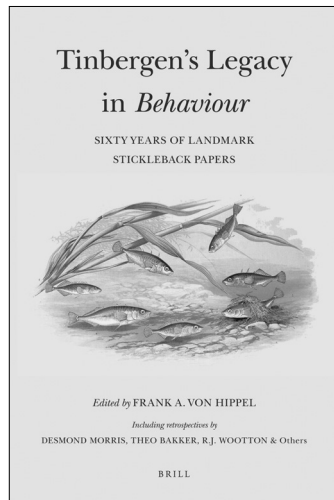
SICB Broadening Participation Workshop for Post-Docs and New Professors: “Issues Facing New Faculty;” Room: 251 C, Noon-1:00 pm

This workshop is intended for postdoctoral fellows and junior faculty. A panel of four faculty members will cover topics from achieving tenure at an R-1 institution to balancing work-life issues. The panel consists of Dr. Peggy Biga, Assistant Professor North Dakota State University; Dr. Hannah Carey, Professor, University of Wisconsin; Dr. Michele Nishiguchi, Professor and Department Head New Mexico State University; and Dr. Scott McWilliams, Professor, University of Rhode Island. Each panelist will provide a brief summary of suggestions; most of the time will be allocated for discussion with the panel and the audience.

Student/Postdoc Workshop, “Importance of Mentorships in Science Careers” Room: Ballroom B, 6:30-8:30 pm

The Student/Postdoctoral Affairs Committee will host a workshop focusing on the importance of mentorships at all stages of scientific careers. Please join us and bring a bag dinner to hear from leaders in several biological fields about setting up successful mentorships, why they are important, what to look for in a mentor, and how to approach a mentor or a mentorship. We will also spend time discussing specific topics in mentorships, such as seeking a mentor with specific experiences you might be facing (being a minority in your field of study, raising a family as a scientist, etc.). We will also have a question/answer session and hope to address questions you might have in regards to successful mentorship.

Tinbergen's Legacy in Behaviour Sixty Years of Landmark Stickleback Papers



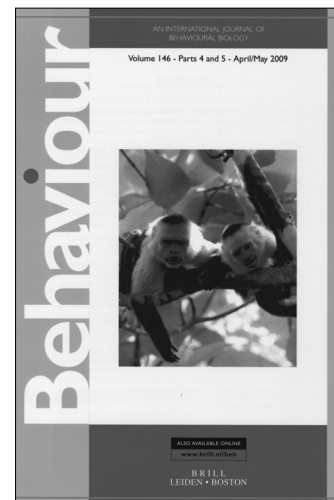
Edited by
Frank von Hippel

- 2010
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- SICB Offer Price EUR 75.- / US\$ 115.-
(valid until 31 January 2011, quoting action code 48502)

In a flurry of post-war productivity, Niko Tinbergen re-established his lab in Leiden, wrote landmark papers and his famous book *The Study of Instinct*, and founded the journal *Behaviour* to serve the burgeoning field of ethology. Tinbergen and his senior assistant, Jan van Iersel, published their classic paper, 'Displacement reactions in the three-spined stickleback,' in the first issue of his new journal in 1948. Stickleback are now a powerful model in the fields of behavioural ecology, evolutionary biology, developmental genetics, and ecotoxicology - an extraordinary development for a small fish that began its modeling career among an enthusiastic core of Tinbergen students in the 1930s. From a series of clever experiments with painted model fish to the use of the sequenced genome to analyze the genetic basis of courtship, stickleback science progressed in leaps and bounds, often via seminal studies published in the pages of *Behaviour*. *Tinbergen's Legacy in Behaviour* traces sixty years in the development of science using stickleback as a model, with 34 original articles covering topics ranging from homosexuality and cannibalism to genetics and speciation. Desmond Morris, Theo Bakker, Robert Wootton, Michael Bell, Tom Reimchen, Boyd Kynard, Harman Peeke, and Iain Barber provide fresh retrospectives on their republished works. Commentary by Frank von Hippel accompanies the articles and explains the roles they played in the frontiers of science as researchers falsified or expanded upon one another's ideas.

Behaviour

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Behaviour publishes original research pursuing Tinbergen's four questions and questions resulting from the interrelationship among the four. In addition, the editorial board encourages reviews of behavioural biology that illuminate emergent trends and new directions in behavioural research. Niko Tinbergen shared, with Konrad Lorenz and Karl von Frisch, the 1973 Nobel Prize for Medicine or Physiology for contributions to the study of behavioural biology. Tinbergen was at heart an experimentalist who, more than Lorenz and von Frisch, applied the scientific method to the field of animal and human behaviour. It is his experimental approach to the study of behaviour that lasts to this day. That is why Tinbergen listed questions and not answers (theorems or laws). The answers (or at least some of them) are published in *Behaviour*, the journal Tinbergen co-founded with W. H. Thorpe in 1948.

Thomson Scientific's Journal Citations Report for 2009 ranks *Behaviour* with an Impact Factor of 1.471.

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GENERAL INFORMATION

Final Program

SICB 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 Ready Room

We strongly encourage each presenter to visit the Ready Room, 252 AB, Convention Center, at least one half day prior to his/her session time. It is highly recommended that you preview your presentation prior to your presentation to guarantee that it will work properly. Each presentation will be loaded onto a master file for each session. You may use your own computer, however, your twenty 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:

<u>Day</u>	<u>Date</u>	<u>Time</u>
Monday	1/3	Noon-7 pm
Tuesday-Thursday	1/4-1/6	7 am-5 pm
Friday	1/7	7-10 am

Business Centers

If you need to use a fax, use a computer, make photocopies or require office supplies, there is a Business Center located in the Convention Center on the second floor and staffed for designated hours Monday to Saturday. The center provides full professional service to attendees. The use of the business center is at your own expense.

Coffee Breaks

Coffee break service is available each day of the Meeting. There will be a morning service from 9:30-10:30 am and an afternoon service from 3:30-4:30 pm. The coffee breaks will be located in Exhibit Hall A, Tuesday-Thursday.

Committee Meetings/Business Meetings

Please refer to the Schedule of Events on the first page of each day's listing for committee meetings and business meetings of your division or co-sponsoring society.

Employment Opportunities

The Employment Board is located in the SICB Registration area. The Employment Board provides a place for attendees to post "Positions Wanted" and learn about "Positions Available" and to schedule possible interviews. If you would like to schedule an interview in a private room, please ask SICB Registration Desk personnel for a room assignment.

Future Meeting Dates

Charleston, South Carolina, January 3-7, 2012

San Francisco, California, January 3-7, 2013

Austin, Texas, January 2-6, 2014

Keyword Index

Refer to the keyword index located at the end of this program for easy access when looking up a specific subject matter. Each author who is presenting an abstract has supplied up to three keywords for your reference.

Registration

The SICB Registration area is located on the lower level of the Convention Center in the Ballroom Lobby. The Registration Desk will be open during the following hours:

Monday, January 3	3:00-8:30 pm
Tuesday, January 4	7:00 am-5:00 pm
Wednesday, January 5	7:30 am-5:00 pm
Thursday, January 6	7:30 am-3:00 pm
Friday, January 7	7:30 am-3:00 pm

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Booth: 210

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Booth: 204

Booth: 103

Booth: 208

Booth: 108

The Crustacean Society

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The Crustacean Society will be available in the booth area to discuss membership, journal submissions and coming meetings. We would like you to join us in Hawaii in June 2011. Please visit our websites at <http://web.vims.edu/tcs/> for society news and happenings and at http://timssnet.allenpress.com/ECOMCRSO/timssnet/common/tnt_frontpage.cfm for online membership information and applications.

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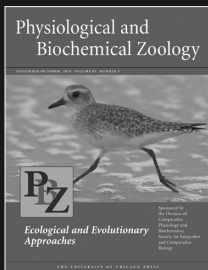
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Monday Schedule of Events

All events take place in the Salt Palace Convention Center unless noted as (M) for Marriott Hotel

<u>EVENT</u>	<u>TIME</u>	<u>LOCATION</u>
Registration	3:00-8:30 PM	North Foyer
Exhibitor Setup	Noon-8:00 PM	Exhibit Hall A
Poster Session 1 Setup	5:30-7:30 PM	Exhibit Hall A
<u>SPECIAL LECTURE</u>		
SICB Opening Plenary Session	7:30-8:30 PM	Ballroom EFGH
<u>COMMITTEE & BOARD MEETINGS</u>		
Executive Committee	2:30-5:30 PM	Deer Valley (M)
Broadening Participation: Mentor/Mentee Meeting	6:30-7:30 PM	Boardroom
<u>WORKSHOPS AND PROGRAMS</u>		
Student First Timer/Worker Orientation	5:30-6:30 PM	250 ABC
<u>SOCIAL EVENTS</u>		
SICB Welcome Reception	8:30-10:00 PM	Ballroom ABCD

Undergraduate Poster Display

The SICB Educational Council is trying something new this year to highlight the contributions that undergraduates make to the research of their laboratories and to SICB. Posters being presented by undergraduates will be on display in the area near the registration desk and plenary session on the day of arrival, Monday, January 3rd. Please stop by for a “pre-view” of the posters that these students will later present in their scheduled poster sessions.

Tuesday Schedule of Events

All events take place in the Salt Palace Convention Center unless noted as (M) for Marriott Hotel

<u>EVENT</u>	<u>TIME</u>	<u>LOCATION</u>
Registration	7:00 AM-5 PM	North Foyer
Exhibit Hall	9:30 AM-5:00 PM	Exhibit Hall A
Poster Session 1 Even Numbers Viewing	3:00-4:00 PM	Exhibit Hall A
Poster Session 1 Odd Numbers Viewing	4:00-5:00 PM	Exhibit Hall A
Poster Session 1 Teardown	5:00-5:30 PM	Exhibit Hall A
Coffee Break/PM Poster Session Cash Bar	9:30-10:30 AM; 3:00-5:00 PM	Exhibit Hall A
<u>SPECIAL LECTURE</u>		
George A. Bartholomew Award Lecture	6:30-7:30 PM	Ballroom AC
<u>SYMPOSIA ORAL PRESENTATIONS</u>		
S1: I've Got Rhythm: Neuronal Mechanisms ...	8:00 AM-3:00 PM	150 ABC
S2: Synthesis of Physiologic Data from Mammalian Feeding ...	8:00 AM-3:00 PM	150 DEF
S3: Speciation in Marine Organisms	8:00 AM-3:00 PM	150 G
<u>CONTRIBUTED PAPER ORAL PRESENTATIONS</u>		
Session 1: Macroevolution I - Methods and Character Evolution	8:00-9:40 AM	151 ABC
Session 2: Macroevolution II - Diversification and Disparification	10:00-11:40 AM	151 ABC
Session 3: Scaling and Growth I	8:00-10:00 AM	151 DEF
Session 4: Tissue Mechanics I	10:20 AM-Noon	151 DEF
Session 5: Stress Endocrinology	8:00-10:00 AM	151 G
Session 6: Energetics & Metabolism I	10:20 AM-Noon	151 G
Session 7: Comp Session: Ecoimmunology & Disease Ecology ...	8:00-10:00 AM	250 AB
Session 8: Comp Session: Ecoimmunology & Disease Ecology ...	10:20-11:40 AM	250 AB
Session 9: Air Flow and Flight I	8:20-9:40 AM	250 DE
Session 10: Air Flow and Flight II: Birds and Bats	10:00 AM-Noon	250 DE
Session 11: Community Ecology/Symbioses	8:00-10:00 AM	251 AB
Session 12: Marine Larval Ecology	10:20 AM-Noon	251 AB
Session 13: Evo-devo - Sensory and Neural Development	8:20-10:00 AM	251 F
Session 14: Reproductive Behavior I	10:20 AM-Noon	251 F
Session 15: Cardiac and Respiratory Physiology	8:00-9:40 AM	250 F
Session 16: Macroevolution III - Evolutionary Innovation	1:00-2:40 PM	151 ABC
Session 17: Tissue Mechanics II	1:00-3:00 PM	151 DEF
Session 18: Energetics & Metabolism II	1:00-3:00 PM	151 G
Session 19: Comp Session: Ecoimmunology & Disease Ecology ...	1:00-3:00 PM	250 AB
Session 20: Adhesion and Locomotor Substrate Effects	1:00-3:00 PM	250 DE
Session 21: Evo-Devo - Morphogenesis-Head and Trunk	1:00-3:00 PM	251 AB
Session 22: Evo-devo - Growth, Regen, Metamorphosis & Repro	1:00-2:20 PM	251 F
Session 23: Reproductive Behavior II	1:00-3:00 PM	250 F
<u>COMMITTEE & BOARD MEETINGS</u>		
Broadening Participation Committee Meeting	7:00-8:00 AM	Boardroom (M)
DPOs & Symposium Organizers for Charleston	Noon-1:00 PM	253 AB
Division Chairs President/President-Elect	Noon-1:00 PM	Boardroom
SICB Nominating Committee	8:00-9:00 PM	Cottonwood (M)
TCS Board Meeting	5:15-10:00 PM	Exec Boardroom (M)
AMS Executive Committee	8:00-11:00 PM	Ballroom A (M)
<u>BUSINESS MEETINGS</u>		
DAB Meeting	5:15-6:00 PM	Boardroom
DCPB Meeting	5:15-6:15 PM	151 G
DCB Meeting	5:15-6:15 PM	150 DEF
DEDB/DDCB Meeting	5:15-6:15 PM	151 DEF
DEE Meeting	5:15-6:15 PM	151 ABC
<u>WORKSHOPS AND PROGRAMS</u>		
Implementation of the Grand Challenges	Noon-3:00 PM	Ballroom J
Introduction to Comparative Methods in R	8:00-10:00 PM	Deer Valley (M)
<u>SOCIAL EVENTS</u>		
Companion Orientation Program/Continental Breakfast	9:00-10:00 AM	Solitude (M)
DAB/DNB Social	6:00-7:30 PM	Upper Concourse
DCPB Social	7:30-8:30 PM	Registration Foyer

TUESDAY PROGRAM SYMPOSIA

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

8:00 AM-3:00 PM
150 ABC

Symposium S1: I've Got Rhythm: Neuronal Mechanisms of Central Pattern Generators

Supported by: DAB, DCB, DNB, American Microscopical Society, National Science Foundation

Organized by: Duane McPherson

8:00 AM	S1.1	<i>Calabrese RL; Emory University</i>	Coping with variability in small neuronal networks
8:30 AM	S1.2	<i>Li W, Roberts A, Soffe SR; The University of St Andrews, The University of Bristol</i>	Brainstem neurons switch each other into pacemaker mode to drive movement by activating NMDARs
9:00 AM	S1.3	<i>Berkowitz A, Hao Z-Z; University of Oklahoma</i>	Spinal circuits that generate multiple kinds of rhythmic limb movements in turtles
9:30 AM	S1.4	<i>Mulloney B, Smarandache CR; University of California, Davis</i>	Passing phases: structure of a neural circuit that couples modular neural oscillators

10:00 AM BREAK IN EXHIBIT HALL

10:30 AM	S1.5	<i>Quinlan KA, Heckman CJ; Northwestern University Feinberg School of Medicine</i>	Persistent inward currents in mouse spinal motoneurons: subcellular origins, postnatal development and neuropathology
11:00 AM	S1.6	<i>Buchanan JT; Marquette University</i>	Flexibility in the patterning and control of axial locomotor networks in lamprey
11:30 AM	S1.7	<i>Ramakrishnan S, Yashina I, Murphy AD*; University of Illinois at Chicago</i>	Forty years of gastropod feeding: multiple buccal motor patterns but conservation of apparently homologous neuronal circuitry in rasping heterobranchs

NOON LUNCH BREAK

1:00 PM	S1.8	DNB	<i>Ramirez JM, Zanella S, Garcia III AJ, Koch H, Doi A; University of Washington, Seattle, Seattle Children's Research Institute</i>	Neuronal control of breathing: rhythms within rhythms, networks within networks
1:30 PM	S1.9	DNB	<i>Gosgnach S; University of Alberta, Canada</i>	The role of genetically-defined lamina VIII interneurons in generating the mammalian-locomotor rhythm
2:00 PM	S1.10		<i>Zhong G, Husch A, Harris-Warrick R; Cornell University Ithaca</i>	The frequency dependent recruitment of interneurons in the rodent spinal cord
2:30 PM			All Speakers	Discussion

8:00 AM-3:00 PM
150 DEF

Symposium S2: Synthesis of Physiologic Data from the Mammalian Feeding Apparatus Using FEED, the Feeding Experiments End-User Database

Supported by: DCPB, DNB, DESB, DVM

Organized by: Susan Williams, Christine Wall, Rebecca German, Christopher Vinyard

8:00 AM	S2.1	DVM	<i>Wall CE, Vinyard CJ, Williams SH, German RZ, Gapeyev V, Liu X; Duke University, NEOUCOM, Ohio University, Johns Hopkins University, NESCent</i>	Introduction: overview of the Feeding Experiments End-User Database (FEED)
8:30 AM	S2.2	DVM	<i>Druzinsky RE, Doherty AH, De Vree F; University of Illinois, Chicago, Ohio University College of Med. and Pharma, University of Antwerp, Belgium</i>	Mammalian masticatory muscles: homology, nomenclature, and diversification

TUESDAY PROGRAM SYMPOSIA

9:00 AM	S2.3	DVM	<i>Konow N, Herrel A, Williams S, Ross CF, De Vree F, Crompton AW, German RZ, Sanford CPJ, Gintof C; Brown University, CNRS/MNHH, Ohio University, University of Chicago, University of Antwerp, Harvard University, Johns Hopkins University, Hofstra University</i>	Shifts in muscle activity patterns during the evolution of feeding in gnathostomes
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9:30 AM BREAK IN EXHIBIT HALL

10:00 AM	S2.4	DVM	<i>Williams SH, Vinyard CJ, Crompton AW, Hylander WL; Ohio University, Athens, NEOUCOM, Rootstown, Harvard, Duke University</i>	Patterns of jaw-muscle recruitment evolution in mammals
10:30 AM	S2.5	DCB	<i>Vinyard CJ, Doherty AH, Wall CE, Williams SH, Ross CF, Herring SW, Crompton AW, Hylander WL; NEOUCOM, Duke University, Ohio University, University of Chicago, University of Washington, Harvard University</i>	Patterns of functional integration in the mammalian masticatory apparatus
11:00 AM	S2.6	DVM	<i>Crompton AW, Williams SH*; Harvard University, Ohio University</i>	Masticatory motor patterns of herbivorous marsupials
11:30 AM	S2.7	DVM	<i>Campbell-Malone R, Crompton AW, Thexton AJ, German RZ; Johns Hopkins University, Harvard University, King's College, London</i>	The development and evolution of mammalian swallowing

NOON LUNCH BREAK

1:00 PM	S2.8		<i>Langenbach GEJ, Van Wessel T; ACTA, Amsterdam, University of Twente, Enschede</i>	The ontogeny and physiology of daily oral behaviors
1:30 PM	S2.9	DVM	<i>Herring SW, Rafferty KL, Liu ZJ, Lemme M; University of Washington, Seattle</i>	Mastication and the postorbital ligament: dynamic strain in soft tissues
2:00 PM	S2.10	DCB	<i>Iriarte-Diaz J, Reed DA, Ross CF; University of Chicago</i>	Determinants of variance in 3-D jaw kinematics in two species of primates
2:30 PM	S2.11		<i>Terhune CE, Iriarte-Diaz J, Taylor AB, Ross CF; Duke University, University of Chicago</i>	The mandibular instantaneous center of rotation in non-human primates and its relation to gape

8:00 AM-3:00 PM
150 G

Symposium S3: Speciation in Marine Organisms

Supported by: DSEB, DIZ, DEDB, DEE, American Microscopical Society

Organized by: Maria Miglietta, Francesco Santini, Anuschka Faucci

8:00 AM	S3.1	DEE	<i>Miglietta MP, Faucci A, Santini F; University of Notre Dame, University of Hawaii at Manoa, University of California at Los Angeles</i>	Speciation in the sea: an introduction to the symposium
8:30 AM	S3.2		<i>Lessios H; Smithsonian Tropical Research Institute</i>	What have DNA molecules told us about speciation in the sea?
9:00 AM	S3.3	DEE	<i>Phillips N; Arcadia University</i>	Speciation in the sea from an algal perspective

9:30 AM BREAK IN EXHIBIT HALL

10:00 AM	S3.4		<i>Bernardi G; University of California, Santa Cruz</i>	Sympatric speciation in the sea
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TUESDAY PROGRAM SYMPOSIA

10:30 AM	S3.5	DEE	<i>Bird CE, Holland BS, Bowen BW, Toonen RJ; University of Hawai'i at Manoa</i>	Diversification of sympatric broadcast-spawning limpets (<i>Cellana</i> spp.) within the Hawaiian archipelago
11:00 AM	S3.6	DEE	<i>McCartney MA, Schmidt VS; University of North Carolina, Wilmington, Woods Hole</i>	Assortative fertilization across hybrid genotypes promotes reproductive isolation in a bimodal hybrid zone between <i>Mytilus</i> blue mussels
11:30 AM	S3.7		<i>Puebla O, Guichard F, Bermingham E; Smithsonian Tropical Research Institute, McGill University</i>	Pairing dynamics and the origin of species

NOON LUNCH BREAK

1:00 PM	S3.8	DSEB	<i>Jablonski D, Berke SK, Krug AZ, Tomasovych A, Roy K, Valentine JW; University of Chicago, University of California, San Diego, University of California, Berkeley</i>	Range expansion and speciation in the dynamics of the marine latitudinal diversity gradient
1:30 PM	S3.9		<i>Maggs CA, Mineur F; Queen's University Belfast</i>	Speciation in red algae: current challenges
2:00 PM	S3.10	DSEB	<i>Rundell RJ, Leander BS; University of British Columbia</i>	Speciation in marine microeukaryotes
2:30 PM	S3.11	DEE	<i>Rocha LA; University of Texas at Austin</i>	Next-generation sequencing and population genomics: an outlook for the future of speciation studies

TUESDAY PROGRAM MORNING SESSIONS

8:00-9:40 AM

151 ABC

Session 1: Macroevolution I - Methods and Character Evolution

Chair: Graham Slater

8:00 AM	1.1	DSEB	<i>Slater GJ, Harmon LJ, Revell LJ, Alfaro ME; University of California, Los Angeles, University of Idaho, Moscow, NESCent</i>	Estimating evolutionary rates from incomplete phylogenies and data using approximate Bayesian computation
8:20 AM	1.2		<i>Boettiger CD, Ralph PL, Coop G; University of California, Davis</i>	Is your phylogeny informative? Measuring the power of comparative methods
8:40 AM	1.3	DSEB	<i>Dornburg A, Townsend J, Sargis E, Near TJ; Yale University</i>	Signal, noise, and molecular divergence time estimates
9:00 AM	1.4	DEE	<i>Hagey T, Harmon L; University of Idaho</i>	Dynamics of gecko evolution
9:20 AM	1.5	DEE	<i>McBrayer L, Miles D; Georgia Southern University, Ohio University</i>	Morphological diversification in three southern African radiations of lizards

9:40 AM BREAK IN EXHIBIT HALL

10:00-11:40 AM

151 ABC

Session 2: Macroevolution II - Diversification and Disparification

Chair: Samantha Price

10:00 AM	2.1		<i>Price SA, Holzman RA, Near TJ, Wainwright PC; University of California, Davis, University of Tel-Aviv, Yale University</i>	Coral reefs promote the evolution of morphological diversity and ecological novelty in labrid fishes
10:20 AM	2.2	DSEB	<i>Marcroft TA, Modlin J, Santini F, McPeck MA, Alfaro ME; University of California, Los Angeles, Dartmouth College</i>	Evolutionary dynamics of boxfish carapace I: phylogenetic diversity

TUESDAY PROGRAM MORNING SESSIONS

10:40 AM	2.3	DSEB	<i>Alfaro ME, Marcroft TA, Van Wassenbergh S, Slater GS; University of California, Los Angeles, University Antwerpen</i>	Evolutionary dynamics of the boxfish carapace II: functional diversity
11:00 AM	2.4	DVM	<i>Westneat M; Field Museum of Natural History</i>	Evolutionary trends in functional morphology across a phylogenetic megatree for all fishes
11:20 AM	2.5	DCB	<i>Anderson P, Friedman M, Brazeau M, Rayfield EJ; University of Bristol, UK, Oxford University, UK, Museum fur Naturkunde, Berlin</i>	What's so great about jaws? Functional disparity of the early gnathostome radiation

8:00-10:00 AM

151 DEF

Session 3: Scaling and Growth I

Chair: Morgan Burnette

8:00 AM	3.1	DVM	<i>Heers AM, Baier DB, Jackson BE, Dial KP; University of Montana, Providence College</i>	Developing skeletons in motion: the ontogeny of skeletal form and function in a precocial ground bird (<i>Alectoris chukar</i>)
8:20 AM	3.2	DCB	<i>Kilbourne BM; University of Chicago</i>	The scaling of limb rotational inertia in cursorial mammals
8:40 AM	3.3	DCB	<i>Birn-Jeffery AV, Daley MA; The Royal Veterinary College, UK</i>	The effects of uneven terrain on <i>Galliformes</i> running mechanics
9:00 AM	3.4		<i>Wiktorowicz-Conroy AM, Pickering P, Schmitt DO, Doube M, Shefelbine SJ, Hutchinson JR; The Royal Veterinary College, University of London, Duke University, Imperial College London</i>	The scaling of postural mechanics in Felidae and Artiodactyla
9:20 AM	3.5	DVM	<i>Edsall SC, Franz-Odenaal TA; Dalhousie University, Canada, Mount Saint Vincent University, Canada</i>	Fish in space: effects of simulated microgravity on skeletal development in <i>Danio rerio</i>
9:40 AM	3.6		<i>Burnette MF, Gibb AC; Northern Arizona University</i>	Feeding kinematics of a juvenile cyprinid predator, <i>Ptychocheilus lucius</i> , are characterized by negative allometry

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon

151 DEF

Session 4: Tissue Mechanics I

Chair: Daniel Dudek

10:20 AM	4.1	DCPB	<i>Smith AM, Bradshaw A, Salt M, Bell A, Litra N; Ithaca College</i>	Cross-linking by protein oxidation in gastropod glues
10:40 AM	4.2	DCB	<i>Dudek DM, Lv S, Cao Y, Balamurali MM, Gosline JG, Li H; Virginia Tech, University of British Columbia</i>	Dynamic mechanical properties of a mimetic muscle protein
11:00 AM	4.3	DCB	<i>King RJ, Dudek DM; University of Utah, Virginia Tech</i>	Dynamic mechanical properties of resilin through the glass transition
11:20 AM	4.4		<i>Sutton GP, Burrows M; University of Cambridge</i>	Preventing damage: absorption of kinetic energy in locust kicks
11:40 AM	4.5		<i>Gibson LJ, Ashby MF; MIT, Cambridge University</i>	Cellular materials in nature

TUESDAY PROGRAM MORNING SESSIONS

8:00-10:00 AM

151 G

Session 5: Stress Endocrinology

Chair: Kevin Kelly

8:00 AM	5.1	DCE	<i>Kelley KM, Hamilton AW, Waggoner CM, Reyes JA; California State University, Long Beach, Institute for Integrative Research on Materials, Environment and Society, Pacific Coast Environmental Conservancy</i>	Thyroid endocrine alterations in wild fish —San Francisco Bay region studies
8:20 AM	5.2	DCE	<i>Waggoner CM, Reyes JA, Armstrong JL, Kelley KM; California State University, Long Beach, Pacific Coast Environmental Conservancy, Ocean Monitoring Division, Orange County Sanitation District</i>	Hepatic protein expression and endocrine disruption in contaminant-exposed English sole in the Southern California Bight
8:40 AM	5.3	DCE	<i>Causey DR, Reyes JA, Waggoner CM, Hamilton AW, Armstrong JL, Kelley KM; California State University, Long Beach, Pacific Coast Environmental Conservancy, Orange County Sanitation District</i>	Disrupted stress endocrine axis in wild fish from polluted California marine environments. characterization studies
9:00 AM	5.4	DAB	<i>Schrandt MN, Lema SC; University of North Carolina Wilmington</i>	Linking habitat and intraspecific variation in the stress physiology of a coral reef fish, <i>Stegastes partitus</i>
9:20 AM	5.5		<i>De Bruijn R, Boeke E, Romero LM; Tufts University, Medford</i>	Physiological and behavioral responses of European starlings to a rapid, mild change in temperature
9:40 AM	5.6	DCPB	<i>Crino OL, Johnson EE, Breuner CW; University of Montana</i>	Proximity to a high traffic road: does traffic noise explain increased nestling stress?

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon

151 G

Session 6: Energetics & Metabolism I

Chair: Scott McWilliams

10:20 AM	6.1	DCPB	<i>McWilliams SR, Bauchinger U, Pierce B, Boyles M, Langlois L, Gerson A, Price E, Guglielmo C; University Rhode Island, Sacred Heart University, University Western Ontario</i>	Effect of dietary fatty acids, dietary antioxidants, and training on exercise performance of migratory birds
10:40 AM	6.2	DCPB	<i>Olson J, Allport K, Kealey P, McWilliams S, Bauchinger U; Villanova University, University of Rhode Island</i>	Effect of diet and training on ketone body metabolism in starlings
11:00 AM	6.3	DCPB	<i>Price ER, Bauchinger U, McWilliams SR, Boyles ML, Langlois LA, Gerson AR, Guglielmo CG; University of Western Ontario, University of Rhode Island</i>	Effects of exercise training and diet on avian muscle biochemistry
11:20 AM	6.4	DCPB	<i>Contreras HL, Davidowitz G; University of Arizona</i>	The importance of nectar sugar content in <i>Manduca sexta</i> flight performance and cost
11:40 AM	6.5	DCPB	<i>Lee JW, Meyer E, Manahan DT; University of Southern California</i>	Protein metabolism and genotype-dependent differential growth of bivalve larvae

TUESDAY PROGRAM MORNING SESSIONS

8:00-10:00 AM
250 AB

Session 7: Complementary Session: Ecoimmunology & Disease Ecology - Infection and Transmission Dynamics

Chair: Erin Lehmer

8:00 AM	7.1	DEE	<i>Budischak SA, Jolles AE, Ezenwa VO; University of Georgia, Oregon State University</i>	Direct and indirect costs of co-infection in the wild: linking GI parasite communities, host hematology, and immune function
8:20 AM	7.2		<i>Kubinak JL; University of Utah</i>	The influence of host genetic diversity on patterns of pathogen adaptation and virulence evolution
8:40 AM	7.3	DCPB	<i>Adelman JS, Muñoz SA; Princeton University, The Max Planck Institute for Ornithology</i>	Could helminths drive geographic patterns in vertebrate eco-immunology?
9:00 AM	7.4		<i>Varner JM, Dearing MD; University of Utah</i>	Estimating duration of infection using antibody avidity assays: a potential limitation
9:20 AM	7.5	DAB	<i>Dizney L, Varner J, Zolka T, Dearing MD; University of Utah, Salt Lake City</i>	Transmission dynamics among host populations
9:40 AM	7.6	DEE	<i>Lehmer EM, Korb J, McLean N, Ghachu J, Hart L, Donnelan S, Hileman S, Wright K, O'Brien C, McCarthy A, Jones Z, Herring E; Fort Lewis College</i>	The interplay of plant and animal disease in a changing landscape: the role of sudden aspen decline in moderating sin nombre virus prevalence in natural deer mouse populations

10:00 AM BREAK IN EXHIBIT HALL

10:20-11:40 AM
250 AB

Session 8: Complementary Session: Ecoimmunology & Disease Ecology - Conservation and Community Ecology

Chair: Anna Jolles

10:20 AM	8.1		<i>Pask JD, Rollins-Smith LA; Vanderbilt University Medical Center</i>	Dynamics of antimicrobial peptide secretion in the skin of leopard frogs
10:40 AM	8.2		<i>Gorsich EE, Jolles AE, Ezenwa VO; Oregon State University, University of Georgia</i>	Disease invasion: tuberculosis and brucellosis in African buffalo
11:00 AM	8.3	DEE	<i>Beechler BB, Ezenwa VO, Jolles AE; Oregon State University, College of Veterinary Medicine, Odum School of Ecology, College of Veterinary Medicine, University of Georgia</i>	Disease dynamics of bovine tuberculosis and Rift Valley fever: a possible role for immune mediated interactions in coinfecting African buffalo (<i>Synce-rus caffer</i>)
11:20 AM	8.4	DEE	<i>Jolles AE, Broughton H, Govender D; Oregon State University, South African National Parks</i>	Feline immunodeficiency virus in African lions: clinical, immunological and coinfection patterns

8:20-9:40 AM
250 DE

Session 9: Air Flow and Flight I

Chair: Stacey Combes

8:20 AM	9.1	DCB	<i>Combes SA, Crall JD, Rundle DE, Iwasaki JM, Holt KC; Harvard University</i>	Aerial predation in dragonflies: environmental and mechanical determinants of a complex flight behavior
8:40 AM	9.2	DCB	<i>Henningsson P, Bomphrey RJ; University of Oxford</i>	A view of dragonfly and damselfly aerodynamics through high-speed stereo PIV

**TUESDAY PROGRAM
MORNING SESSIONS**

9:00 AM	9.3	DCB	<i>Greeter JSM, Hedrick TL; University of North Carolina at Chapel Hill</i>	Pitch perturbation recovery in free-flying hawk-moths
9:20 AM	9.4	DCB	<i>Mountcastle AM, Daniel TL; Harvard University, University of Washington</i>	Vortexlet models of flapping flexible wings show tuning for force production and control

9:40 AM BREAK IN EXHIBIT HALL

**10:00 AM-Noon
250 DE**

Session 10: Air Flow and Flight II: Birds and Bats

Chair: Bret Tobalske

10:00 AM	10.1		<i>Schunk C, Chiu C, Bahlman JW, Bergou A, Cheney J, Waldman RM, Curet O, Albright E, Swartz SM, Breuer KS; Brown University, University of Maryland</i>	Time-resolved measurements of the velocity field over the wing of a bat during flight
10:20 AM	10.2		<i>Bergou AJ, Riskin DK, Taubin G, Swartz SM, Breuer K; Brown University</i>	"Falling with style" - the role of wing inertia in bat flight maneuvers
10:40 AM	10.3	DCB	<i>Bahlman JW, Swartz SM, Breuer KS; Brown University</i>	Measuring performance associated with increasing kinematic complexity in a robotic bat wing
11:00 AM	10.4	DCB	<i>Ros IG, Badger MA, Pierson AN, Bassman LC, Biewener AA; Harvard University, University of California, Berkeley, Harvey Mudd College</i>	Translational and rotational components of low speed turning in the pigeon <i>Columba livia</i>
11:20 AM	10.5	DCB	<i>Clark CJ, Elias D, Feo T, Prum R; Yale University, University of California Berkeley</i>	Mechanics of feather-generated courtship display sounds of some "bee" hummingbirds
11:40 AM	10.6	DCB	<i>Tobalske BW, Warrick DR, Heers AM, Dial TR, Crandell KE; University of Montana, Oregon State University, University of Utah</i>	Effects of wing morphology on aerodynamics in birds revealed using revolving-wing models

**8:00-10:00 AM
251 AB**

Session 11: Community Ecology/Symbioses

Chair: Kenneth Halanych

8:00 AM	11.1	DIZ	<i>Halanych KM, Thornhill DJ, Schander C, Fielman KT, Kocot KM, Cannon JT, Santos SR; Auburn University, Bowdoin College, University of Bergen</i>	Comparative transcriptome analyses of Siboglinid annelids with special interest in mechanisms maintaining symbiosis
8:20 AM	11.2	DEE	<i>Cease A, Elser J, Hao S, Kang L, Harrison J; Arizona State University, Institute of Zoology, Chinese Academy of Sciences</i>	Locusts prefer nitrogen-poor plants in overgrazed pastures
8:40 AM	11.3	DEE	<i>Turner KR, Sebens KP; University of Washington</i>	Predatory fishes' impacts on benthic community structure in the San Juan Islands, WA
9:00 AM	11.4		<i>Dunn PH; University of Oregon</i>	Finding refuge: factors influencing the estuarine distribution of the nemertean egg predator <i>Carcinonemertes errans</i> on its crab host, <i>Cancer magister</i>
9:20 AM	11.5	DEE	<i>Rowe RJ, Terry RC, Rickart EA; University of Utah, Stanford University</i>	Environmental change and declining resource availability for small mammal communities in the Great Basin

TUESDAY PROGRAM AFTERNOON SESSIONS

9:40 AM 11.6 Whittle TK, Battles AC, Johnson MA; Trinity University; At which scale? Macrohabitat, not microhabitat, influences parasite load in green anole lizards (*Anolis carolinensis*)

10:00 AM BREAK IN EXHIBIT HALL

**10:20 AM-Noon
251 AB**

Session 12: Marine Larval Ecology

Chair: Molly Jacobs

10:20 AM	12.1	DIZ	<i>Jacobs MW, Shuttari N, Christmas AF, Gallagher S, Depperman J, Atema J; McDaniel College, Boston University, Western Washington University, Woods Hole Oceanographic Institution, University of Oldeburg, Germany</i>	Timing, terrain, and thermoclines: explorations of swimming and sheltering behavior in larval and postlarval lobsters
10:40 AM	12.2	DEE	<i>Chan KYK, Grønbaum D, O'Donnell MJ; University of Washington</i>	Effects of ocean acidification on swimming performance in larval sand dollars and oysters
11:00 AM	12.3		<i>Castro DA, Podolsky RD; College of Charleston</i>	Plasticity in the design and attachment strength of egg mass tethers in response to variation in water motion
11:20 AM	12.4	DIZ	<i>Johnson CH; Harvard University</i>	Larval settlement preference maximizes genetic mixing in the marine bryozoan <i>Bugula stolonifera</i>
11:40 AM	12.5	DIZ	<i>Ginsburg DW, Manahan DT; University of Southern California</i>	It's not what you make; it's what you keep: biochemical "taxation" helps explain the gap between laboratory and field measurements of sea urchin larval growth

**8:20-10:00 AM
251 F**

Session 13: Evo-devo - Sensory and Neural Development

Co-Chairs: Billie Swalla, Mark Martindale

8:20 AM	13.1	DEDB	<i>Swalla BJ, Luttrell S, Byrne A, Collin P, Mardashova M, Lavrova E, Sopher K, Andrienas K, Nikitin M, Citarella M, Kohn AB, Moroz LL; FHL, University of Washington, Whitney Lab for Marine Biosciences, University of Florida</i>	Genomic basis of neural organization in a hemichordate, <i>Saccoglossus bromophenolosus</i> : do hemichordate have a central nervous system?
8:40 AM	13.2	DEDB	<i>Sylvester JB, Rich CA, Yi C, Strelman JT; Georgia Institute of Technology</i>	Competing signals drive telencephalon diversity
9:00 AM	13.3	DEDB	<i>Smith FW, Angelini DR, Jockusch EL; University of Connecticut, American University</i>	Developmental genetics and evolution of flour beetle (<i>Tribolium</i>) antennal morphology
9:20 AM	13.4	DEDB	<i>Simmons D, Pang K, Ryan J, Baxevanis A, Martindale MQ; University of Hawaii, Genome Technology Branch, NIH</i>	The genomic complement of the ctenophore nervous system
9:40 AM	13.5	DEDB	<i>Passamaneck YJ, Furchheim N, Hejnol A, Martindale MQ*, Lüter C; Kewalo Marine Laboratory, University of Hawaii, Museum Für Naturkunde, Berlin, Sars International Centre for Marine Molecular Biology</i>	Ciliary photoreceptors in the brachiopod <i>Terebratalia transversa</i>

10:00 AM BREAK IN EXHIBIT HALL

TUESDAY PROGRAM MORNING SESSIONS

10:20 AM-Noon

251 F

Session 14: Reproductive Behavior I

Chair: Patricia Brennan

10:20 AM	14.1	DCE	Brennan P, Gereg I, Goodman M, Stewart R, Prum R; Yale University/UMASS Amherst, LRWC, Indiana State University	Patterns of DHT variation in waterfowl and their relationship with social environment and genital morphology
10:40 AM	14.2	DCE	Miranda RA, Krueger AJ, Natkin LD, Owolabi AA, Propper CR; Northern Arizona University	Interaction between hCG and arginine vasotocin in the induction of sexual behavior in an anuran amphibian
11:00 AM	14.3		Speares P, Johnston C; Auburn University	The effects of conspecific playbacks on behavior and hormone modulation in <i>Etheostoma crossop-terum</i>
11:20 AM	14.4	DAB	Brazeal KR, Hahn TP; University of California, Davis	The effect of testosterone on molt in house finches (<i>Carpodacus mexicanus</i>)
11:40 AM	14.5	DCE	Ouyang JQ, Sharp P, Dawson A, Hau M; Princeton University, University of Edinburgh, UK, Centre for Ecology and Hydrology, UK, Max Planck Institute for Ornithology, Germany	Hormone levels predict individual differences in reproductive success in a passerine bird

8:00-9:40 AM

250 F

Session 15: Cardiac and Respiratory Physiology

Chair: Charles Booth

8:00 AM	15.1	DCPB	Slay CE, Hicks JW; University of California, Irvine	Environmental hypoxia amplifies postprandial cardiac hypertrophy in the American alligator (<i>Alligator mississippiensis</i>)
8:20 AM	15.2	DCPB	Diaz S, Hammond K, Orgeig S; University of California, Riverside, University of South Australia	Effects of high altitude on lung surfactant lipids in <i>Peromyscus maniculatus</i>
8:40 AM	15.3	DCPB	Hedrick MS, Hillman SS, Drewes RC, Withers PC; California State University, East Bay, Portland State University, California Academy of Sciences, University of Western Australia	Variation in pulmonary compliance and volume in anuran amphibians is driven by lymph mobilization and not gas exchange
9:00 AM	15.4	DCPB	Waters JS, Fewell JH, Harrison JF; Arizona State University	Metabolic and behavioral integration in social insect colonies
9:20 AM	15.5	DCPB	Förster TD, Hetz SK; Humboldt Universität Berlin, Germany	Spiracle control by CO

9:40 AM BREAK IN EXHIBIT HALL

TUESDAY PROGRAM AFTERNOON SESSIONS

1:00-2:40 PM

151 ABC

Session 16: Macroevolution III - Evolutionary Innovation

Co-Chairs: Patricia Hernandez, Natalia Taft

1:00 PM	16.1	DVM	Macesic LJ; Florida Atlantic University	Hips don't lie: how the batoid pelvic girdle shape correlates with locomotion and phylogeny
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TUESDAY PROGRAM MORNING SESSIONS

1:20 PM	16.2	DVM	<i>Taft NK, Shubin N, Lauder G; University of Chicago, Museum of Comparative Zoology, Harvard University</i>	New data on the morphological changes in the pectoral fin rays during the fin to limb transition
1:40 PM	16.3	DVM	<i>Herrel A, Vanhooydonck B, Cruz F; CNRS/MNHN, University of Antwerp, CONICET</i>	You are what you eat: an analysis of morphological specializations to diet in iguanian lizards
2:00 PM	16.4	DVM	<i>Hernandez LP, Martin CH, Wainwright PC, Adriaens D, Masschaele B, Dierick M; George Washington University, University of California Davis, Ghent University</i>	Functional innovations in the feeding mechanism of a Bahamian pupfish radiation
2:20 PM	16.5	DEE	<i>Parnell N, Streebman JT; Georgia Tech</i>	Complex genetic interactions for sex and color in malawi cichlids

1:00-3:00 PM

151 DEF

Session 17: Tissue Mechanics II

Chair: Marianne Porter

1:00 PM	17.1	DCB	<i>Dellinger SB, Vlachos PP, De Vita R, Socha JJ; Virginia Tech</i>	When gliding is a stretch: an investigation of material properties of 'flying' snake skin
1:20 PM	17.2	DVM	<i>Cheney JA, Bearnot A, Breuer KS, Swartz SM; Brown University</i>	Form and function in the wing membrane of bats
1:40 PM	17.3	DCB	<i>Riede T, Goller F; University of Utah, Salt Lake City</i>	Connective tissue design, sonic tissue vibration and sound production in songbirds
2:00 PM	17.4	DCB	<i>Horton JM, Gosline JM, Carrington E; University of Washington, University of British Columbia</i>	The material properties of the intestinal tissue in the shiner perch, <i>Cymatogaster aggregata</i>
2:20 PM	17.5	DVM	<i>Hopkins BA, Homberger DG; Louisiana State University, Baton Rouge</i>	The complex construction of the mandibulo-gular wall of the American alligator
2:40 PM	17.6	DCB	<i>Porter ME, Diaz C, Sturm JJ, Summers AP, Long JH; Vassar College, University of Washington</i>	Mechanical tuning in a composite structure: vertebral centra and intervertebral joints act together as a spring during swimming in the spiny dogfish shark, <i>Squalus acanthias</i>

1:00-3:00 PM

151 G

Session 18: Energetics & Metabolism II

Chair: Heidy Contreras

1:00 PM	18.1	DCPB	<i>Chappell MA, Savard JF, Siani J, Coleman SW, Borgia G; University of California, Riverside, University of Maryland</i>	Age and sex effects and long-term repeatability of aerobic capacity in a wild population of satin bow-erbirds (<i>Ptilonorhynchus violaceus</i>)
1:20 PM	18.2	DCPB	<i>Boozalis T, Lasalle L, Davis J; Rhodes College</i>	Good as new? Morphological and biochemical analyses reveal variation between original and re-generated lizard tails
1:40 PM	18.3	DCPB	<i>Durant SE, Hopkins WA, Amanda AF, Hepp GR; Virginia Tech, Auburn University</i>	The early developmental environment affects the energetic cost of homeothermy in ducklings
2:00 PM	18.4		<i>Liu J-N, Karasov WH; University of Wisconsin-Madison, Taiwan Endemic Species Research Institute</i>	Energetics, thermoregulation, and energy expenditure during winter in the subtropical hibernating bat <i>Hipposideros terasensis</i>
2:20 PM	18.5		<i>Lewden A, Vézina F; Université du Québec à Rimouski (UQAR)</i>	How does social dominance influence seasonal acclimatization and winter metabolic performance in black-capped chickadees?

TUESDAY PROGRAM AFTERNOON SESSIONS

2:40 PM	18.6	DCE	<i>Upton KR, Riley LG; University of California, Fresno</i>	Neuroendocrine regulation of food intake during acute stress in the tilapia, <i>Oreochromis mossambicus</i>
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1:00-3:00 PM

250 AB

Session 19: Complementary Session: Ecoimmunology & Disease Ecology - Immunocompetence and Reproductive Success

Chair: Robert Srygley

1:00 PM	19.1		<i>Srygley RB; USDA-Agricultural Research Service</i>	Ontogenetic changes in immunity in Mormon crickets
1:20 PM	19.2	DEE	<i>Sears BF, Rohr JR, Martin LB; University of South Florida</i>	The contribution of anti-parasite behavior to resistance and tolerance of trematode infections in anuran tadpoles
1:40 PM	19.3	DEE	<i>Horrocks NPC, Wheeler E, Matson KD, Hegemann A, Tieleman BI; University of Groningen, University of Illinois at Urbana-Champaign</i>	Concentrations of antibacterial proteins in eggs: an index of environmental microbial pressure?
2:00 PM	19.4	DEE	<i>Patterson JEH; University of Calgary</i>	Ectoparasite removal improves reproductive success and body condition in a territorial tree squirrel
2:20 PM	19.5		<i>Koop JAH, Knutie SA, Owen JP, Clayton DH; University of Utah, Washington State University</i>	Fitness consequences of a parasite specific immune response in Darwin's finches
2:40 PM	19.6	DEE	<i>O'Neal DM, Jolles AE, Ezenwa VO; University of Georgia, Oregon State University</i>	Exploring the effects of pregnancy on Th1/Th2 immune tradeoffs in the African buffalo

1:00-3:00 PM

250 DE

Session 20: Adhesion and Locomotor Substrate Effects

Chair: Andrew Clark

1:00 PM	20.1	DCB	<i>Dirks JH, Federle W; Trinity College Dublin, University of Cambridge</i>	Surface dependent attachment in fluid-based smooth adhesive pads of insects
1:20 PM	20.2		<i>Labonte D, Bullock JMR, Federle W; University of Applied Sciences, Bremen, University of Cambridge</i>	Attachment in smooth insect pads: the influence of surface energy
1:40 PM	20.3	DVM	<i>Clark AJ, Higham TE; College of Charleston, Clemson University</i>	Slipping, sliding, and stability: locomotor strategies for overcoming unexpected low-friction surfaces
2:00 PM	20.4	DCB	<i>Li C, Lau LK, Hsieh ST, Umbanhowar PB, Goldman DI; Georgia Tech, Temple University, Northwestern University</i>	The effect of substrate properties on hind foot use during locomotion of the zebra-tailed lizard
2:20 PM	20.5	DCB	<i>Olberding JP, Higham TE, McBrayer LD; Clemson University, Georgia Southern University</i>	How gait influences obstacle negotiation in lizards: is bipedal better?
2:40 PM	20.6	DCB	<i>Wilshin S, Kelleher CN, Byrnes G, Seipel J, Spence AJ; Royal Veterinary College, University of Cincinnati, Purdue University</i>	Dogs on springs: do trotting dogs adjust their virtual leg stiffness on compliant surfaces?

TUESDAY PROGRAM AFTERNOON SESSIONS

1:00-3:00 PM

251 AB

Session 21: Evo-Devo - Morphogenesis-Head and Trunk

Co-Chairs: Daniel Medeiros, Scott Gilbert

1:00 PM	21.1	DEDB	<i>Medeiros DM, Cattell MV, Sauka-Spengler T, Bronner M, Yu B, Cerny R; University of Colorado, Boulder, Caltech, Charles University in Prague</i>	The prepattern/cooption model for the evolution of the vertebrate jaw
1:20 PM	21.2	DEDB	<i>Adachi N, Kuratani S; RIKEN CDB Kobe</i>	Molecular and morphological development of the shark head cavity
1:40 PM	21.3	DEDB	<i>McCauley DW; University of Oklahoma</i>	SoxE genes and the role of neural crest in cartilage evolution and development
2:00 PM	21.4	DEDB	<i>Moustakas JE, Cebra-Thomas NK, Kaljonen A, Lewis K, Hämäläinen K, Jernvall J, Gilbert SF; Institute of Biotechnology, University of Helsinki, Finland, Swarthmore College</i>	How the turtle got its spots
2:20 PM	21.5	DEDB	<i>Dickson JM, Webb JF; University of Rhode Island</i>	Comparative post-embryonic development of the cranial lateral line canal system in cichlid fishes: temporal and spatial patterns
2:40 PM	21.6	DDCB	<i>Eckalbar WL, Infante C, Denardo D, Losos J, Rawls A, Wilson-Rawls J, Kusumi K*; Arizona State University, Harvard University, University of Georgia</i>	Different ways to build a backbone: notch regulation of somitogenesis in the lizard <i>Anolis carolinensis</i> is highly divergent from birds and mammals

1:00-2:20 PM

251 F

Session 22: Evo-devo - Growth, Regeneration, Metamorphosis and Reproduction

Co-Chairs: Yale Passamaneck, Günter Wagner

1:00 PM	22.1	DEDB	<i>Passamaneck YJ, Martindale MQ; Kewalo Marine Laboratory, University Hawaii</i>	Cell proliferation is required for regeneration in the cnidarian <i>Nematostella vectensis</i>
1:20 PM	22.2	DEDB	<i>Dubuc TQ, Martindale MQ; University of Hawaii Manoa, Honolulu</i>	The evolution of wound healing in <i>Nematostella vectensis</i>
1:40 PM	22.3	DEDB	<i>Lynch VJ, Wagner GP*; Yale University</i>	Genomic evolution of a novel cell type: the endometrial stromal cell of placental mammals
2:00 PM	22.4	DCPB	<i>Dubansky B, Whitaker B, Galvez F; Louisiana State University</i>	The influence of host physiology and infection intensity on the metamorphosis of freshwater mussel larva

1:00-3:00 PM

250 F

Session 23: Reproductive Behavior II

Chair: Michele Johnson

1:00 PM	23.1	DAB	<i>Johnson MA, Lopez MV, Whittle TK, Wade J; Trinity University, Michigan State University</i>	Reproductive morphology and behavior in <i>Anolis</i> lizards: a comparative analysis
1:20 PM	23.2	DAB	<i>Wright ML, Caldwell RL; University of California Berkeley</i>	Monogamy in the sea: social monogamy in two mantis shrimp species inhabiting coral backreefs
1:40 PM	23.3	DIZ	<i>Bauer RT, Thiel M; University of Louisiana, Lafayette, University Católica del Norte, Chile</i>	First description of a pure-search mating system and protandry in the caridean genus <i>Rhynchocinetes</i>

TUESDAY PROGRAM
AFTERNOON SESSIONS

2:00 PM	23.4		<i>Hofmeister JK, Alupay JS, Ross R, Caldwell RL; University of California, Berkeley, California Academy of Sciences</i>	Observations on mating behavior and development in the lesser Pacific striped octopus, <i>Octopus chierchiae</i> (Jatta, 1889)
2:20 PM	23.5		<i>Pruitt JN, Riechert SE; University of California, Davis, University of Tennessee, Knoxville</i>	Practice makes perfect: non-conceptive sexual experience as juveniles diminishes individuals' latency to copulate when mature
2:40 PM	23.6	DEE	<i>Zohdy S, Tecot S, Wright PC, Jernvall J; University of Helsinki, Finland, University of Arizona, Tucson, Stony Brook University, Long Island</i>	Testing the immunocompetence handicap hypothesis (ICHH) in both sexes in wild brown mouse lemurs (<i>Microcebus rufus</i>)

6:30-7:30 PM

Room: Ballroom AC

George A. Bartholomew Lecture

Cox RM; Dartmouth College

Two genders, one genome: an integrative perspective on sexual conflict and the costs of reproduction

TUESDAY POSTERS SESSION P1

Exhibit Hall A, 3:00-5:00 PM

Even # Posters - Authors present from 3:00 - 4:00 pm

Odd # Posters - Authors present from 4:00 - 5:00 pm

Behavioral Ecology: Condition

- P1.1 DCPB *Burdett KA, Healy JE, Buck CL, Florant GL; Colorado State University, Institute of Arctic Biology, University of Alaska Fairbanks* Torpor patterns and non-esterified fatty acids (NEFA) levels in golden-mantled ground squirrels (*Callospermophilus lateralis*) under natural conditions
- P1.2 DAB *Lasalle L, Goss J, Boozalis T, Davis J; Rhodes College* Adding insult to injury: primary and secondary costs of tail loss in lizards
- P1.3 DAB *Warner DA, Lovern MB; Iowa State University, Oklahoma State University* Maternal diet affects offspring quality via its effect on egg investment in the lizard *Anolis sagrei*
- P1.4 DEE *Patel KV, Williams K, Frick M, Rostal DC; Georgia Southern University* Seasonal variation in egg size in the loggerhead sea turtle: resource partitioning in the nesting female
- P1.5 *Lewis CM, Battles AC, Sparks MN, Johnson MA; Trinity University, San Antonio* Food supply affects territory size, but not social display behavior in green anole lizards (*Anolis carolinensis*)

Biophysical Ecology

- P1.6 DEE *Suss JS, O'Connor MP, Spotila JR; Drexel University* Loggerhead turtle nest metabolism and gas exchange in Greece
- P1.7 DEE *Burnett NP, Lima FP, Wetthey DS; University of South Carolina, Centro de Investigaçao em Biodiversidade e Recursos Genéticos* Biomimetic desiccation loggers for intertidal mollusks
- P1.8 *Levy O, Dayan T, Kronfeld-Schor N*, Porter WP; Tel-Aviv University, University of Wisconsin, Madison* Biophysical modeling of the temporal niche: from first principles to the evolution of activity patterns
- P1.9 *Wilson JK, Potter KA, Woods HA, Förster TD; University of Montana* Oases in the desert: leaf microclimates in two host plants of *M. sexta*
- P1.10 DCPB *Potter KA, Wilson K, Woods HA; University of Montana, Missoula* Dried eggs: consequences of plant microclimate for *Manduca sexta* embryos

Biodiversity

- P1.11 *Kimokeo BK, Gaither M, Toonen RJ; University of Hawaii, Manoa, Hawaii Institute of Marine Biology* The hybridization of endemic and alien damselfish species on Hawaiian reefs
- P1.12 DIZ *Atherton S, Hochberg R; University of Massachusetts, Lowell* Marine gastrotricha of Bocas del Toro archipelago, Panama
- P1.13 DIZ *Strohl RD, Demaintenon MJ*; University of Hawaii, Hilo* Effects of the invasive alga *Gracilaria salicornia* on coastal benthic molluscan species diversity in east Hawaii
- P1.14 DIZ *Goulding T, Cohen CS; Romberg Tiburon Center, SFSU* Phylogeography of an abundant marine parasite: are there cryptic species of thorny-headed worms in mole crabs?

Cardio Respiratory Physiology

- P1.15 *Valls JH, Burggren WW; University of North Texas* Cardiac and ventilatory circadian responses to the solar cycle in *Xenopus laevis* larvae
- P1.16 DCPB *Mika TL, Reiber CL; University of Nevada, Las Vegas* Ventilatory response to temperature extremes in the grass shrimp, *Palaemonetes pugio*
- P1.17 DCPB *Green TL, De Miranda MA, Kanatous SB; Colorado State University* Hearts of a feather? Classifying the enzymatic properties of cardiac tissue from farm-raised emus (*Dromaius novaehollandiae*) from northern Colorado

P1.18		<i>Ingebretsen S, Schachner E, Farmer CG*</i> ; University of Utah	Unidirectional airflow in the lungs of American alligators
P1.19	DCPB	<i>Waters JS, Heinrich SM*, Harrison JF</i> ; Arizona State University	Anatomy of the tracheole system supplying <i>Drosophila</i> flight muscle
P1.20	DCE	<i>Pryce K, Knight J, Catapane EJ, Carroll MA; Medgar Evers College, Kingsborough Community College</i>	Pharmacological study of the effects of octopamine on heart rate of <i>Crassostrea virginica</i>
P1.21	DCPB	<i>McEnroe M, Rivera L, La Fortune B, Miller A, Forostyan T; Purchase College, SUNY</i>	Gill morphology and oxygen diffusion distance in juvenile striped killifish

Complementary to Symposium: Speciation in Marine Organisms

P1.22	DEE	<i>MacDuff S, Anson JY*, Neth L</i> ; University of Hawaii	Quantifying changes in sediment transport following removal of the invasive mudweed, <i>Avrainvillea amadelpa</i> , in Maunaloa Bay, Oahu, Hawaii
P1.24		<i>Pertilla MV, Ruiz M, Martins EP</i> ; Tuskegee University, Indiana University	Lipids affect the behavior of some strains of zebrafish: geographic origin plays a role

Coral Reef

P1.25	DCPB	<i>Twum D, Nieto-Rosas I*, Schwarz J; Vassar College</i>	Corals need their vitamin C too: effect of antioxidants on the bleaching response
P1.26	DIZ	<i>Hanes SD, Kempf SC</i> ; Auburn University	Hyperthermic stress-induced autophagy in the tropical anemone, <i>Aiptasia pallida</i>
P1.27	DCPB	<i>Grauman P, Eberhardt E, Garrett T, Schwarz J; Vassar College</i>	Corals coping with climate change: identifying components of heat stress response in symbiotic cnidarians
P1.28	DCPB	<i>Schwarz J, Jones R, Venn A, Noyes T, Mitchellmore C; Vassar College, Australian Institute of Marine Science, Centre Scientifique de Monaco, Bermuda Institute of Ocean Sciences, Chesapeake Biological Laboratory</i>	Transcriptome-level responses of corals to copper

Endocrinology of Growth and Energetics

P1.29	DCE	<i>Khambadakone D, Durica DS, Hopkins PM</i> ; University of Oklahoma, Norman	Regulation of ecdysteroid biosynthesis in the fiddler crab, <i>Uca pugnator</i>
P1.30	DCPB	<i>Labere SM, Gunderson JL, Maclea KS, Chang ES, Mykles DL</i> ; Colorado State University, University of California, Davis, Bodega Marine Lab	Effect of eyestalk ablation on expression of NO synthase and guanylyl cyclases in the Y-organ from green and red color morphs of <i>Carcinus maenas</i>
P1.31	DCPB	<i>Abuhagr AM, Pitts NL, Maclea KS, Chang ES, Mykles DL</i> ; Colorado State University, University of California, Davis	Cloning and expression of mTOR signaling components in the Y-organ of decapod crustaceans
P1.32	DCE	<i>Chen H-Y, Dillaman RM, Roer RD, Watson RD*</i> ; University of Alabama at Birmingham, University of North Carolina at Wilmington	Changes in intracellular calcium concentration in crustacean (<i>Callinectes sapidus</i>) Y-organs: relation to the hemolymphatic ecdysteroid titer
P1.33		<i>Walock CN, Martin LE, Kittilson JD, Sheridan MA</i> ; North Dakota State University, Fargo	Differential effects of growth hormone on the expression of insulin-like growth factors 1 and 2
P1.34	DCE	<i>Reindl KM, Kittilson J, Jones E, Bergan H, Sheridan MA*</i> ; North Dakota State University, Fargo	The hepatic growth hormone receptors of rainbow trout differentially link to signal transduction pathways
P1.35	DCE	<i>Price ER, Bauchinger U, Zajac DM, Cerasale DJ, McFarlan JT, Gerson AR, McWilliams SR, Guglielmo CG</i> ; University of Western Ontario, University of Rhode Island, Cornell University, University of Guelph	Seasonal myostatin expression patterns in migratory birds
P1.36	DCE	<i>Johnson KM, Lema SC*</i> ; University of North Carolina, Wilmington	Thyroid hormone regulation of iodothyronine deiodinase and thyroid hormone receptor transcripts in parrotfish

Environmental Immunology

P1.37		<i>Coombs JM, Skopec MM; Weber State University</i>	Production of tannin binding proteins in prairie voles (<i>Microtus orchrogaster</i>)
P1.38	DEE	<i>Zysling DA, Boonstra R, Boutin SA, Humphries MM, McAdam AG, Place NJ; Cornell University, University of Toronto, Canada, University of Alberta, Canada, McGill University, University of Guelph</i>	Applying eco-immunological techniques to a free-ranging population of red squirrels in the Yukon of Canada
P1.39		<i>Altrichter AM, Fassbinder-Orth CA; Creighton University</i>	Comparative avian immunogenetics: an exploration of antiviral genes in several wild bird species
P1.40	DIZ	<i>Martin GG, Martin AM, Tsai WLE, Watanabe K; Occidental College, Los Angeles</i>	Immune properties of the hemolymph of the giant keyhole limpet, <i>Megathura crenulata</i>
P1.41	DCPB	<i>Lindner KL, Rubalcava J, Haring JS, Greenlee KJ; North Dakota State University, Northern Arizona University</i>	The role of matrix metalloproteinases in phagocytosis in the caterpillar, <i>Manduca sexta</i>
P1.42	DIZ	<i>Martin AM, Martin GG, Tsai WLE, Butler R; Occidental College, Los Angeles, Cal Tech, Pasadena</i>	Rhagocytes of the giant keyhole limpet, <i>Megathura crenulata</i>
P1.43	DIZ	<i>Taraska NG, Boettger SA; West Chester University of Pennsylvania</i>	Identification of age limitations in hemic neoplasia development in the soft shell clam <i>Mya arenaria</i>
P1.44	DCE	<i>Charging MJ, Billing SR, Biga PR; North Dakota State University</i>	Tissue distribution of akirin genes in several vertebrate species, including fish and rodents
P1.45	DEE	<i>Kidd LC, Coon C, Liebl A, Martin L; University of South Florida</i>	Captivity affects acute phase responses in house sparrows

Evo-devo: Morphogenesis/Organogenesis

P1.48	DDCB	<i>Moustakas JE, Kallonen A, Harjunmaa E, Salazar CI, Hämäläinen K, Jernvall J; University of Helsinki, Finland, Universitat Autònoma de Barcelona, Spain</i>	Tooth cusps feel the force
P1.49	DEDB	<i>Esteva-Sanders A, Hernandez LP; George Washington University</i>	The effects of cyclopamine disruption of the hedgehog pathway on early morphogenesis of musculoskeletal structures of the branchial arches
P1.50	DEDB	<i>Fritz AE, Paulson A, Seidel C, Gibson MC; University of Kansas Medical Center, Stowers Institute for Medical Research</i>	The molecular logic of tentacle development in the sea anemone, <i>Nematostella vectensis</i>
P1.51	DEDB	<i>Namigai EK, Shah MV, Suzuki Y; Wellesley College</i>	The role of Wnt and Decapentaplegic signaling on postembryonic leg development and lipid homeostasis in the flour beetle <i>Tribolium castaneum</i>
P1.52		<i>Kemp AD, Thorington, Jr RW, Jernvall J; University of Helsinki, Smithsonian (NMNH)</i>	Development and evolution of varition in the autopod
P1.53		<i>Handberg-Thorsager M, Tomer R, Arendt D; EMBL, Germany</i>	Evolutionary conserved regulation of Hox genes by RA pathway, hints from <i>Platynereis dumerillii</i>
P1.54	DEDB	<i>Miller MA, Shapiro MD*; University of Utah</i>	Mc1r does not play a major role in pigmentation variation among domestic pigeons
P1.55	DEDB	<i>Barnett AA, Thomas RH; Southern Illinois University Carbondale</i>	Building a model organism: major embryological events of the mite <i>Archezogetes longisetosus</i>
P1.56	DEDB	<i>Hamilton MA, Ward AB; Adelphi University</i>	Determining the relationship between temperature, somite development, and the genetics of somitogenesis in zebrafish (<i>Danio rerio</i>)
P1.57	DEDB	<i>Moran MM, Thewissen JGM; Northeastern Ohio Universities Colleges of Medicine and Pharmacy</i>	Intervertebral disc ontogeny in land mammals and cetaceans

P1.58	DDCB	Sze CC, Suzuki Y; Wellesley College	The role of BTB proteins Abrupt and Bric-a-brac in the establishment of tarsal segmentation and larval leg regeneration in the flour beetle, <i>Tribolium castaneum</i>
P1.59	DDCB	Chernyavskaya Y, Ebert A, Milligan E, Garrity D; Colorado State University	Reduced cardiomyocyte proliferation and adhesion in embryos depleted for voltage-gated calcium channel beta subunit CACNB2
P1.60		Minear KJ, Kurnath P, Farmer CG, Schachner E; University of Utah, Salt Lake City	Pulmonary development in American alligator, <i>Alligator mississippiensis</i>
P1.61		Kerney R, Lewis Z*, Hanken J; Dalhousie University, Canada, Harvard University	Lung development in lungless salamanders!
P1.62	DDCB	Parrie LE, Chernyavskaya YA, Garrity DM; Colorado State University	Deficiency of Tbx5a during zebrafish development results in altered cardiomyocyte morphology
P1.63	DEDB	Cebra-Thomas JA, Terrell A, Yin M, Shah SP, Betters E, Doles T, Gilbert SF*; Millersville University, Swarthmore College	Late emerging trunk neural crest cells form the turtle plastron

Evolutionary Ecology and Life History

P1.64	DEE	Appleby L; University of Houston	Plasticity in resource allocation in new harvester ant colonies
P1.65	DEE	Cardall BL, Gitlin AR, Walker FM, Durben RM*, Smith DS, Avery L, Jaffe BD, Dudley T, Mobley KB, Allan GJ, Whitham TG, Shuster SM; Northern Arizona University, University of California, Santa Barbara, Umea University, Sweden	Genetic and evolutionary processes of biological invasion
P1.66	DEE	Orr TJ, Ortega-Reyes J, Medellin R, Hammond KA; University of California, Riverside, Instituto Politécnico Nacional, UNAM	Does embryonic diapause help maintain of milk quality? A case study in bats
P1.67	DEE	Welch AM, Thomas JE, Witkowski NL; College of Charleston	Evaluating body condition in metamorphic gray tree frogs (<i>Hyla chrysoscelis</i>)
P1.68	DAB	Barbosa FA; University of Missouri	Do female soldier flies select for longer copulations by increasing their investment in number of eggs laid?
P1.69	DVM	Cunningham CB, Carrier DR; University of Utah	Post-cranial adaptation of primates for agonistic physical conflict
P1.70	DIZ	Schwab DB, Allen JD; College of William and Mary	The effect of maternal size on egg deposition in the mud snail, <i>Ilyanassa obsoleta</i>
P1.71	DIZ	White CF, Allen JD; College of William and Mary	The effect of egg capsule clustering on embryonic survival in the dogwhelk <i>Nucella lapillus</i>
P1.72	DEE	Evancho BJ, Gerard NR, Hranitz JM, Klinger TS, Corbin CE; Bloomsburg University	Island toads mature at smaller sizes than mainland toads on three Atlantic coast barrier islands
P1.73	DEE	Wang MY, Deering CM, Butler LK; The College of New Jersey	Site contrasts in molt dynamics of the Carolina chickadee
P1.74		Gastecki ML, Reed WL; North Dakota State University	Development of stress response in fast (<i>Coturnix japonica</i>) versus slow (<i>Callipepla gamelii</i>) growing species
P1.75		Fronstin MM, Williams TD; Simon Fraser University	Specific estrogenic activity and intra-specific variation in avian egg size: application of an ER-CALUX bioassay
P1.76	DEE	Merrill L, Rothstein SI, O'Loughlen AL, Wingfield JC; University of California, Santa Barbara, University of California, Davis	Seasonal, sex and age differences in immune function and corticosterone in red-winged blackbirds (<i>Agelaius phoeniceus</i>)

Evolutionary Morphology

P1.77	DVM	<i>Claeson KM; Ohio University</i>	Development of the Batoid Synarcual
P1.78	DVM	<i>Corbin CE, Miles DB; Bloomsburg University</i>	Small clade peripheralization in three flycatcher radiations
P1.79	DEE	<i>Hsieh ST, Kulathinal RJ; Temple University</i>	<i>lizardbase</i> : A new collaborative GIS and genomic resource for the scientific community
P1.80	DVM	<i>O'Brien HD, Dufeu D, Stevens NJ; Ohio University</i>	The evolution of cranial vasculature in ruminant artiodactyls
P1.81		<i>Maia R, D'Alba LA, Shawkey MD; The University of Akron</i>	What makes a feather shine? A nanostructural basis for glossy black colors in feathers
P1.82		<i>Stinnett HK, Stewart JR, Ecay TW, Pyles RA, Thompson MB; East Tennessee State University, University of Sydney, Australia</i>	Calcium provision in a placentotrophic lizard: structural differentiation reflects functional specialization
P1.83		<i>Weed MD, Munoz EE, Harrison JF, Vandembrooks JM; Arizona State University</i>	The effect of hypoxia and hyperoxia on dragonfly development: a link between paleozoic oxygen levels and insect gigantism
P1.84	DVM	<i>Lujan SL, Middleton KM, Owerkowicz T, Eelsey RM, Hicks JW; California State University, San Bernardino, University of California, Irvine, Rockefeller Wildlife Refuge</i>	Hypoxia-induced alterations in limb bone growth and geometry in <i>Alligator mississippiensis</i>
P1.84A	DVM	<i>Eckert K, Curtis AA, Van Valkenburgh B; University of California, Los Angeles</i>	Getting inside a weasel's head: frontal sinus size and shape in mustelidae

Evolutionary Physiology

P1.85	DEE	<i>Williams TD; Simon Fraser University, Burnaby</i>	Oxygen transport: a physiological integrator of phenotypic variation and life-histories?
P1.86	DEE	<i>Rajpurohit S, Oliveira CC, Etges WJ, Gibbs AG; University of Nevada, Las Vegas, University of Arkansas, Fayetteville</i>	Functional genomics of desiccation tolerance in cactophilic <i>Drosophila mojavensis</i>
P1.87		<i>Reynolds LA, Gibbs AG; University of Nevada, Las Vegas</i>	Physiological and life history consequences of starvation selection in <i>Drosophila</i>
P1.88		<i>Jalli IS, Nijhout HF; Duke University</i>	Stabilization of <i>Escherichia coli</i> methionine cycle upon simulated insertion of <i>Arabidopsis Thaliana</i> MMT enzyme
P1.89	DCPB	<i>Hood WR; Auburn University</i>	Locomotor stress and mineral mobilization from the maternal skeleton
P1.90	DEE	<i>Cooper BS, Hammad LA, Karty JA, Montooth KL; Indiana University</i>	Evolution of membrane acclimation in experimentally evolved populations of <i>Drosophila melanogaster</i>

Locomotion, Movement and Adhesion

P1.91		<i>Garner YL, Litvaitis MK; University of New Hampshire</i>	The effects of artificial epibionts and wave exposure on the byssal thread production in the blue mussel, <i>Mytilus edulis</i>
P1.92	DCB	<i>Stover KK, Burnett LE, McElroy EJ, Burnett KG; College of Charleston</i>	Hexapedal locomotion and reproductive ability after fatigue in the Atlantic blue crab, <i>Callinectes sapidus</i> (Rathbun)
P1.93	DCB	<i>Moll K, Federle W, Roces F; University of Cambridge, University of Würzburg</i>	Metabolic cost of transport in grass-cutting ants depends on load shape
P1.94	DCB	<i>Channon AJ, Daley MA; Royal Veterinary College, UK</i>	The energetics of bipedal locomotion over uneven terrain
P1.95	DVM	<i>Moritz S, Arnold D, Scholle H-C, Schilling N; Friedrich-Schiller-Universität Jena</i>	Function of the epaxial musculature in the desert lizard, <i>Dipsosaurus dorsalis</i>
P1.96	DAB	<i>Hoefer M, Byrnes G, Jayne BC; University of Cincinnati</i>	Comparative performance of bridging gaps in three dimensions for phylogenetically diverse snakes

P1.98	DCB	Schmidt A; Ohio University, Athens	Functional differentiation of the trailing and leading forelimbs during terrestrial and arboreal locomotion in the European red squirrel (<i>Sciurus vulgaris</i> , Rodentia)
P1.99		Maki JM, Pontzer H; Washington University in Saint Louis	The relative contributions of the body and the throwing arm to throwing velocity in softball and baseball players
P1.100		Linn FC, Kang JCY, Mersey B; University of California, Berkeley	Maintaining stability: the biomechanics of rooting during interactive <i>t'ai chi</i> push-hands practice
P1.101	DVM	Pham TT, Dahal BK, Lin K, Liew CW, Root RG, Long Jr JH; Lafayette College, Vassar College	A digital simulation of a carangiform fish: self-propulsion and autonomous navigation
P1.102		Akland MK, Gibb AC; University of Northern Arizona	How do small teleost fishes respond to being stranded on land? Terrestrial movements by <i>Danio rerio</i> and <i>Gambusia affinis</i>
P1.103	DCB	Hurbon AN, Gibb AC; Northern Arizona University	A new movement pattern produces terrestrial jumping in fully-aquatic fishes
P1.104	DVM	Ashley-Ross MA, Long JH, Gibb AC; Wake Forest University, Vassar College, Northern Arizona University	Modifications of the vertebral column for enhanced energy storage in jumping fish
P1.105	DVM	Neubarth NL, Williams IV R, Hale ME; University of Chicago	Pectoral fin innervation and sensation of movement
P1.106		Liu Y-C, Bailey I, Hale ME; University Chicago	Two distinct escape responses in the larval zebrafish, the C-start and S-start, show variability in a well-studied behavior

Movement through and of Fluids

P1.107	DCB	Waldrop LD, Hann M, Henry A, Kim A, Punjabi A, Koehl MAR; University of California, Berkeley	Fluid dynamics of discrete odor sampling of the shore crab <i>Hemigrapsus oregonensis</i> during ontogeny
P1.108	DNB	Gallagher CA, Rohozinski D, Stanton K, Murray JA, Cain SD; California State University East Bay, University of Washington, Eastern Oregon University	Description of a novel chemosensory organ in the nudibranch <i>Tritonia diomedea</i>
P1.109	DCB	Dollinger M, Santhanakrishnan A, Miller L; University of North Carolina, Chapel Hill, Georgia Tech	Characterization of the fluid motion generated by upside-down jellyfish
P1.110	DCB	Rodriguez T, Hamlet C, Gyoerkoe M, Miller L; University of North Carolina at Chapel Hill	Markov models of jellyfish pulse cycles and the resulting fluid flows
P1.111	DVM	Dahal BK, Pham TT, Lin K, Liew CW, Root RG, Long Jr JH; Lafayette College, Vassar College	An evolutionary simulation of predator-prey interactions in early fish-like vertebrates
P1.112	DCB	Clemente CJ, Richards C; Harvard University	Development of a hydrodynamic sensor for measuring time varying forces during a robotic frog kick in water
P1.113	DCB	Jafari F, Socha JJ; Virginia Tech	Theoretical modeling of flying snake glide trajectories
P1.114	DCB	Lim JL, Winegard TM; Harvard University, University of Guelph	Very bendable bodies: a kinematic analysis of hagfish swimming
P1.115	DCB	Verheggen H, Geng L, Root R; Lafayette College	Attitude is everything: extending models of fish kinematics to maneuvers
P1.116	DCB	Wigton RA, Scott LE, Krueger PK, Bartol IK; Old Dominion University, Southern Methodist University	Turning performance in cuttlefish <i>Sepia pharaonis</i>

P1.117		<i>Blair JT, Iwasaki T; University of Virginia</i>	The role of wing geometry on batoid gait selection
P1.118	DCB	<i>Fontanella JE, Fish FE, Rybczynski N, Nweeia M, Ketten DR; West Chester University, Canadian Museum of Nature, Canada, Harvard University, Woods Hole Oceanographic Institution</i>	Three-dimensional geometry of the narwhal (<i>Monodon monoceros</i>) flukes in relation to hydrodynamics
P1.119		<i>Maeda M, Ozawa S, Nakata T, Yanaoka K, Liu H; Chiba University, HitachiSoft</i>	Effect of wing deformation on butterfly takeoff
P1.120	DCB	<i>Kumar Manikkam D, Berg O, Muller UK*; California State University Fresno</i>	A biomimetic flapping machine that models asynchronous flight-muscle activation in insects
P1.121	DCB	<i>Nakata T, Liu H; Chiba University, Japan</i>	Size effect on wing deformation and aerodynamics in insect hovering flight
P1.122	DCB	<i>Robinson AK, Kim D, Gharib M; California Institute of Technology</i>	Real-time mapping of insect wing deformation
P1.123	DAB	<i>Zeng Y, Chang S*, Nguyen N, Kazi C, Dudley R; University of California, Berkeley</i>	The behavioral correlates of directed aerial descent in larval stick insects

Neurobiology: Neural Integration and Neuroethology: Invertebrates

P1.124	DNB	<i>Krueger K, Stafstrom JA, Murray JA*; University of Washington, California State University, East Bay, Friday Harbor Labs</i>	Potential egg laying role of asymmetric white cells of <i>Armina californica</i>
P1.126		<i>Lee S-G, Poole K, Linn Jr CE, Vickers NJ; University of Utah, Cornell University</i>	Behavioral and physiological studies of sex pheromonal olfaction in interspecific antennal imaginal disc transplants
P1.127	DNB	<i>Brown JW, Catanho MJ, Gillette R; University of Illinois at Urbana-Champaign</i>	Chemotactile integration in the peripheral nervous system of a predatory sea slug
P1.128		<i>Sunada H, Horikoshi T, Sakakibara M; Tokai University</i>	Neuronal mechanisms of aversive taste conditioning in <i>Lymnaea stagnalis</i>
P1.129	DNB	<i>Tahir U, Schroer ML, Murray JA, Cain SD*; Georgia State University, Northern Arizona University, California State University, East Bay, Eastern Oregon University</i>	Mucociliary interactions in the foot of the sea slug <i>Tritonia diomedea</i>
P1.130	DAB	<i>Grasso FW; The City University of New York</i>	Modeling neural control of a muscular hydrostat system: squid tentacle strike
P1.131	DAB	<i>Clinton JM, Huynh M, Murray JA; Washington State University, California State East Bay, Friday Harbor Labs</i>	Effect of light on locomotor activity in the marine nudibranch mollusk <i>Tritonia diomedea</i>
P1.132	DNB	<i>Eichinger JM, Satterlie RA; University of North Carolina Wilmington</i>	Role of the frenula in cubomedusan directional swimming
P1.133	DNB	<i>Huynh M, Andrienas KK, Murray JA; California State East Bay, Friday Harbor Labs, University of Washington</i>	The effect of ocean acidification on the nudibranch mollusk <i>Tritonia diomedea</i>
P1.134	DNB	<i>Satterlie RA, Eichinger JM, Tillery J; University of North Carolina Wilmington</i>	Microelectrode electroporation of fluorescent dyes: identification of small neurons and muscle cells

Osmoregulation

P1.135	DCPB	<i>Moeller KT, Denardo DF; Arizona State University</i>	Life stage affects water loss in the Gila monster, a desert dwelling lizard
P1.136	DEE	<i>Tracy CR, Tixier T, Le Noene C, Martin S, Christian KA; Charles Darwin University</i>	Variation in field hydration state among species of Australian hylid frogs
P1.137	DCPB	<i>Lemenager LA, Tracy CR; University of Nevada</i>	Seat patch water potentials of two anuran species, <i>Lithobates pipiens</i> and <i>Pseudacris cadaverina</i>
P1.138		<i>Lane RS, Powers DR, Schmitt JM; George Fox University</i>	Localization and quantification of Aquaporin 1, 2, and 4 expression in ventral skin of the rough-skinned newt (<i>Taricha granulosa</i>)

P1.139 DCPB Kapper MA; Central Connecticut State University Subcellular localization of Aquaporin-2 during salinity adaptation in the ribbed mussel

Paleobiology

- P1.140 Hegna TA; Yale University Fossil insights on notostracan limb differentiation & evolution
- P1.141 Porter NC, Alemseged Z; Barnard College, New York, California Academy of Sciences, San Francisco Early hominin evolution: a review of major morphological adaptations and problems in applying cladistics
- P1.142 DVM Lavender Z, Loewen M, Claessens L; College of the Holy Cross, Utah Museum of Natural History New ornithomimid forelimb material from the late cretaceous kaiparowits formation
- P1.143 Poynter JM, Adam PJ; Northwest Missouri State University Dental microwear analysis as a predictor of feeding types in predatory mesozoic marine reptiles
- P1.144 DCB Schachner ER, Sarrazin JC, Bates KT; University of Utah, University of Liverpool The biomechanics of pillar-erect suchian archosaurs: convergence and disparity in bipedal archosaur locomotion

Reproductive Behavior: Hormonal Mechanisms

- P1.146 DAB Bohorquez KL, Smith GT; Indiana University, Bloomington Realistic social experience and social rank influence hormones and communication signals in a weakly electric fish
- P1.147 Ego CL, Esselburn KM, Rhodes HJ; Denison University Arginine vasotocin alters male-male interactions in *Xenopus laevis*
- P1.148 DCE Garcia NW, Burmeister SS, Pfennig KS; University of North Carolina, Chapel Hill Leptin modulates mate choice permissiveness in the Plains spadefoot toad (*Spea bombifrons*)
- P1.149 DCE Deviche PJ, Davies S, Fokidis B, Hurley L; Arizona State University Testosterone and aggression in free-ranging male Cassin's sparrows, *Poecile cassinii*
- P1.150 Small TW, Moore IT; University of Memphis, Virginia Tech Light Intensity, not photoperiod, stimulates the reproductive system of equatorial Rufous-collared sparrows (*Zonotrichia capensis*)
- P1.151 DAB Hahn TP, Cornelius JM, Watts HE*, Kelsey TR; University of California, Davis, Max Planck Institute for Ornithology, Germany, Loyola Marymount University, National Audubon Society "Cream skimming" versus "best of a bad situation:" are all reproductive opportunists alike?
- P1.152 DAB Greives TJ, Beltrami G, Hau M; Max Planck Institute for Ornithology, Germany, University of Ferrara, Italy Effect of melatonin manipulation on circadian behavior and reproduction in a wild bird
- P1.153 Eikenaar C, Whitham M, Komdeur J, Van Der Velde M, Moore IT; Virginia Tech, Blacksburg, Rijks Universiteit Groningen Testosterone, plumage coloration and extra-pair paternity in North American barn swallows
- P1.154 DAB Wack CL, Lovern MB, Woodley SK; Duquesne University, Oklahoma State University Acute elevation of corticosterone via a dermal patch has no effect on behavior in the red-legged salamander

Social Behavior

- P1.155 Bespalova I, Waters J; Mount Holyoke College, Arizona State University Variable success of two colony founding strategies: a case study using the California seed-harvester ant
- P1.156 DEE Moyano M; University of Utah Ants on the move
- P1.157 DIZ Parissenti L, Pam M, Pearse V*; Hopkins Marine Station of Stanford University Aggression in the clonal intertidal sea anemone *Anthopleura dowii*
- P1.158 DAB Kardon A, Warne RW, Crespi EJ; Vassar College Hatching time and behavior underlie size hierarchy formation in wood frog tadpoles
- P1.159 DAB Fairbanks BM, Alexander KS, Hawley DM; Virginia Tech Leadership behavior in banded mongooses (*Mungos mungo*)

P1.160		<i>Egge AR, Swallow JG*; University of South Dakota</i>	Winner and loser effects in stalk-eyed flies (Diptera)
P1.161	DEE	<i>Condon C, Edwards J, Lailvaux S; The University of Queensland, Australia, University of New Orleans</i>	Losing reduces the maximum performance of traits that underlie winning
P1.162		<i>Cusick JA, Herzog DL; Florida Atlantic University, Wild Dolphin Project</i>	The dynamic of interspecies aggression: a methodological approach to the study of underwater aggressive behavior

Stress: Acute Effects on Physiology and Behavior

P1.163		<i>Barkowski NA, Lochmann SE, Fuller A, Haukenes AH; University of Arkansas at Pine Bluff, USDA-ARS HKD Stuttgart National Aquaculture Research Center</i>	Investigations into the relationship between post-stress metabolic rates and growth of fishes
P1.164	DCPB	<i>Marshall H, Field L, Sepulveda C, Bernal D; University of Massachusetts Dartmouth, Pflieger Institute of Environmental Research</i>	Post-capture blood chemistry of sharks in the family Lamnidae indicates a potentially higher vulnerability to fishing pressure
P1.165	DCE	<i>Bliley JM, Woodley SK*; Duquesne University</i>	Repeated handling reduces activity but not mating in a Plethodontid salamander

Wednesday Schedule of Events

All events take place in the Salt Palace Convention Center unless noted as (M) for Marriott Hotel

<u>EVENT</u>	<u>TIME</u>	<u>LOCATION</u>
Registration	7:30 AM-5:00 PM	North Foyer
Exhibit Hall	9:30 AM-5:00 PM	Exhibit Hall A
Poster Session 2 Setup	7:00-8:00 AM	Exhibit Hall A
Poster Session 2 Even Numbers Viewing	3:00-4:00 PM	Exhibit Hall A
Poster Session 2 Odd Numbers Viewing	4:00-5:00 PM	Exhibit Hall A
Poster Session 2 Teardown	5:00-5:30 PM	Exhibit Hall A
Coffee Break/PM Poster Session Cash Bar	9:30-10:30 AM; 3:00-5:00 PM	Exhibit Hall A
<u>SPECIAL LECTURE</u>		
Howard Bern Lecture	6:30-7:30 PM	Ballroom B
AMS Lecture	7:30-8:30 PM	150G
<u>SYMPOSIA ORAL PRESENTATIONS</u>		
S4: Neuroecology: Neural Determinants of Ecological Processes ...	7:45 AM-3:00 PM	150 G
S5: Bioinspiration: Applying Mechanical Design to Experimental Biology	7:50 AM-3:00 PM	151 G
S6: Bridging the Gap Between Ecoimmunology and Disease Ecology	8:00 AM-3:00 PM	Ballroom B
<u>CONTRIBUTED PAPER ORAL PRESENTATIONS</u>		
Session 24: Complementary Session: Speciation in Marine Organisms	8:00-10:00 AM	150 ABC
Session 25: Evolutionary Ecology I: Invasion and Response	10:20 AM-Noon	150 ABC
Session 26: Phylogenetics I	8:00-10:00 AM	150 DEF
Session 27: Phylogenetics II	10:20 AM-Noon	150 DEF
Session 28: Muscle Physiology and Biochemistry I	8:00-10:00 AM	151 ABC
Session 29: Muscle, Temperature & Immunology	10:20 AM-Noon	151 ABC
Session 30: Energetics, Circulation, and Ventilation	8:00-10:00 AM	151 DEF
Session 31: Scaling and Growth II	10:20 AM-Noon	151 DEF
Session 32: Ecomorphology of Feeding I	8:00-10:00 AM	250 AB
Session 33: Ecomorphology of Feeding II	10:20 AM-Noon	250 AB
Session 34: Behavioral Ecology	8:00-10:00 AM	250 DE
Session 35: Environmental Endocrinology	10:20 AM-Noon	250 DE
Session 36: Evo-devo - Body Plan Development	8:20-10:00 AM	251 AB
Session 37: Sexual Selection I	10:20 AM-Noon	251 AB
Session 38: Mate Choice & Parental Investment	8:00-9:40 AM	251 DE
Session 39: Life History	10:00-11:40 AM	251 DE
Session 40: Evolutionary Ecology II: Performance & Sexual Dimorph ...	1:00-3:00 PM	150 ABC
Session 41: Evo-devo - Evo-devo and Population Genetics	1:00-3:00 PM	150 DEF
Session 42: Muscle Physiology and Biochemistry II	1:00-3:00 PM	151 ABC
Session 43: Evolutionary Morphology: Shells, Skulls, and Scans	1:00-3:00 PM	151 DEF
Session 44: Locomotion - Gait and Stability, Ground to Trees	1:00-3:00 PM	250 AB
Session 45: Conservation Biology	1:00-3:00 PM	250 DE
Session 46: Sexual Selection II	1:00-2:40 PM	251 AB
Session 47: Social Behavior	1:00-2:40 PM	251 DE
<u>COMMITTEE & BOARD MEETINGS</u>		
SICB Division Secretaries	Noon-1:00 PM	Boardroom
Educational Council/DLAB	Noon-1:00 PM	253 AB
Student Support Committee	8:00-10:00 PM	Exec Boardroom (M)
Advisory Committee	8:00 PM	Satterlie Suite
<u>BUSINESS MEETINGS</u>		
DCE Meeting	5:15-6:15 PM	150 ABC
DVM Meeting	5:15-6:15 PM	151 G
DIZ Meeting	5:15-6:15 PM	251 AB
DNB Meeting	5:15-6:15 PM	150 DEF
DSEB Meeting	5:15-6:15 PM	151 ABC
<u>WORKSHOPS AND PROGRAMS</u>		
Broadening Participation Workshop	Noon-1:00 PM	251 C
Public Affairs Workshop	Noon-1:30 PM	250 C
<u>SOCIAL EVENTS</u>		
SRC Breakfast	6:30-8:00 AM	Marriott Restaurant
Neuroecology Symposium & Biological Bulletin Social	5:00-6:30 PM	254 B
DIZ/DEE/AMS/TCS Social	6:15-8:15 PM	Upper Concourse
DCE Social	7:30-10:00 PM	Registration Foyer
DVM/DCB/DEDB/DSEB Social	8:00-10:00 PM	Ballroom D

WEDNESDAY PROGRAM SYMPOSIA

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

7:45 AM-3:00 PM
150 G

Symposium S4: Neuroecology: Neural Determinants of Ecological Processes from Individuals to Ecosystems

Supported by: DNB, DEE, DAB, American Microscopical Society, Marine Biological Laboratory, The Biological Bulletin, National Science Foundation

Organized by: Charles Derby, Richard Zimmer

7:45 AM			<i>Derby C, Zimmer R</i>	Introduction
8:00 AM	S4.1	DAB	<i>Zimmer R; University of California, Los Angeles</i>	The 'neuroecology' of sperm-egg interactions
8:30 AM	S4.2		<i>Ryan MJ; University of Texas/STRI</i>	Perceptual biology and social ecology
9:00 AM	S4.3		<i>Tricas TC; Hawaii Institute of Marine Biology, University Hawaii at Manoa, Honolulu</i>	Variation, selection, and ecological constraints in the sensory-motor systems of fishes

9:30 AM BREAK IN EXHIBIT HALL

10:00 AM	S4.4	DNB	<i>Derby C; Georgia State University</i>	The neuroecology of chemical defenses
10:30 AM	S4.5		<i>Riffell JA; University of Washington</i>	Neural basis of a pollinator's buffet: olfactory specialization and learning in the <i>Manduca sexta</i> moth
11:00 AM	S4.6		<i>Appel HM; University of Missouri</i>	Behavioral ecology of chemical communication in plants
11:30 AM	S4.7		<i>Steinberg PD; University of New South Wales</i>	Integrating the "neuroecology" of bacteria and eukaryotes

NOON LUNCH BREAK

1:00 PM	S4.8		<i>Buskey EJ, Lenz PH, Hartline DK, Gemmell B, Bradley C, Sheng J, Strickler JR; University of Texas at Austin, University of Hawaii, University of Minnesota, University of Wisconsin, Milwaukee</i>	Sensory perception, behavioral adaptations and the neuroecology of predator avoidance in planktonic copepods
1:30 PM	S4.9		<i>Grether G; University of California, Los Angeles</i>	The neuroecology of competitor recognition
2:00 PM	S4.10	DEE	<i>Nevitt G; University of California, Davis</i>	Global climate regulators as info-chemicals: stories from birds and fishes
2:30 PM	S4.11		<i>Leis JM, Siebeck U, Dixson DL; Australian Museum, Sydney, University of Queensland, St Lucia, James Cook University, Townsville</i>	How Nemo finds home: neuroecology of larva dispersal and population connectivity in marine, demersal fishes

7:50 AM-3:00 PM
151 G

Symposium S5: Bioinspiration: Applying Mechanical Design to Experimental Biology

Supported by: DCB, DVM, DIZ

Organized by: Brook Flammang, Marianne Porter

7:50 AM	S5.1	DCB	<i>Flammang BE, Porter ME; Harvard University</i>	Introduction
8:00 AM	S5.2		<i>Leduc P; Carnegie Mellon University</i>	Linking mechanics to biochemistry in molecular and cellular behavior through systems based approaches
8:30 AM	S5.3		<i>Tanaka H, Wood RJ; Harvard University</i>	At-scale artificial insect wings by microfabrication techniques

WEDNESDAY PROGRAM SYMPOSIA

9:00 AM	S5.4	DCB	<i>Dabiri JO; California Institute of Technology</i>	Jellyfish-inspired propulsion
9:30 AM BREAK IN EXHIBIT HALL				
10:00 AM	S5.5		<i>Winter, VAG, Deits RLH, Dorsch DS, Hosoi AE, Slocum AH; Massachusetts Institute of Technology</i>	Razor clam to roboclam: biologically inspired mechanisms for subsea burrowing
10:30 AM	S5.6	DCB	<i>Long JH, Hirokawa J, Roberts S, Krenitsky N, Frias C, De Leeuw J, Porter ME; Vassar College</i>	Testing biomimetic structures in bioinspired robots
11:00 AM	S5.7	DCB	<i>Tangorra J, Esposito C, Phelan C, Lauder G; Drexel University, Harvard University</i>	The development of biorobotic models of highly deformable fins and fin sensory systems
11:30 AM	S5.8	DCB	<i>Swartz SM, Breuer KS; Brown University</i>	How can bats inspire robotic fliers and micro air vehicles?
NOON LUNCH BREAK				
1:00 PM	S5.9	DCB	<i>Full RJ, Jayaram K, Mongeau JM, Birkmeyer P, Hoover A, Fearing RS; University of California, Berkeley</i>	Role of robustness in running: bio- and bio-inspired exoskeletons
1:30 PM	S5.10	DCB	<i>Lee DV, Biewener AA; University of Nevada Las Vegas, Harvard University</i>	Biomechanical analyses of goats and dogs in the bigdog project
2:00 PM	S5.11	DCB	<i>Fish FE; West Chester University, Pennsylvania</i>	The humpback whale flipper for application of bio-inspired tubercle technology
2:30 PM	S5.12	DCB	<i>Pell C; Duke University</i>	Perspective on biomechanics and biomimetics: successes, gaps and regions unexplored

8:00 AM-3:00 PM Ballroom B

Symposium S6: Bridging the Gap Between Ecoimmunology and Disease Ecology

Supported by: DCE, DEE

Organized by: Susannah French, Denise Dearing, Gregory Demas

8:00 AM	S6.1		<i>Klasing KC; University of California, Davis</i>	Environmentally induced stochasticity of adaptive immunity. Good, bad, or ugly?
8:30 AM	S6.2	DCPB	<i>Rollins-Smith LA, Ramsey JP, Reinert LK, Woodhams DC; Vanderbilt University Medical Center, University of Zurich, Switzerland</i>	Amphibian immune defenses against chytridiomycosis: impacts of changing environments
9:00 AM	S6.3	DCE	<i>Demas GE, French SS; Indiana University, Utah State University</i>	The energetics of immunity: leptin as a physiological mediator of energetic trade-offs in eco-immunology

9:30 AM BREAK IN EXHIBIT HALL

10:00 AM	S6.4	DCE	<i>Martin LB, Leibl AL, Coon CAC, Richards CL, Schrey AW; University of South Florida, Integrative Biology</i>	Physiological mechanisms of range expansion in Kenyan house sparrows
10:30 AM	S6.5	DEE	<i>Owen JC; Michigan State University, East Lansing</i>	What is the functional significance of reduced immune function in migrating birds?
11:00 AM	S6.6		<i>Ezenwa VO, Etienne RS, Jolles AE; University of Georgia, University of Groningen, Oregon State University</i>	Ecological consequences of parasite-parasite interactions and the role of host immunity
11:30 AM	S6.7	DCPB	<i>Tieleman BI, Horrocks NPC, Matson KD, Grizard S, Salles JF; University of Groningen</i>	How microbes shape birds and their eggs: matching pathogen pressure and protection

WEDNESDAY PROGRAM

MORNING SESSIONS

1:00 PM	S6.8	DEE	<i>Dearing MD, Lehmer EM; University of Utah, Fort Lewis College</i>	Integrating eco-immunological measurements into disease ecology models
1:30 PM	S6.9		<i>Hawley DM; Virginia Tech</i>	Individual heterogeneity in house finch immunity and disease resistance: what can physiology tell us about epidemiology?
2:00 PM	S6.10		<i>Keesing F; Bard College</i>	Can immunology predict host quality for disease transmission?

8:00-10:00 AM
150 ABC

Session 24: Complementary Session: Speciation in Marine Organisms

Chair: Michael McCartney

8:00 AM	24.1	DEE	<i>Dawson MN; University of California, Merced</i>	Speciation, in the sea?
8:20 AM	24.2		<i>Horne JB, Van Herwerden L, Choat JH; James Cook University</i>	Just because the shoe fits doesn't mean you should wear it: complex evolutionary patterns in the reef fish genus <i>Naso</i>
8:40 AM	24.3	DSEB	<i>Michonneau F; University of Florida</i>	Patterns of speciation in sea cucumbers
9:00 AM	24.4	DIZ	<i>Maliska ME, Swalla BJ; University of Washington, Friday Harbor Laboratories</i>	<i>Molgula pugetiensis</i> is a Pacific tailless ascidian within the Roscovita clade of molgulids
9:20 AM	24.5	DIZ	<i>Kesaniemi JE, Knott KE*; University of Jyvaskyla</i>	Divergence of Baltic Sea populations of the poecilogonous polychaete <i>Pygospio elegans</i> reflects barriers to dispersal and predominant developmental mode
9:40 AM	24.6	DEE	<i>Whitney JL, Karl SA; Hawai'i Institute of Marine Biology, University of Hawai'i, Mānoa</i>	Indications of incipient ecological speciation in a polymorphic coral reef fish

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
150 ABC

Session 25: Evolutionary Ecology I: Invasion and Response

Chair: Aaren Freeman

10:20 AM	25.1	DEE	<i>Cohen AA; Université de Sherbrooke</i>	The evolution of physiological systems and the emergent properties of regulatory networks
10:40 AM	25.2	DEE	<i>Smith DS, Shuster SM, Turk P, Whitham TG; Northern Arizona University, West Virginia University</i>	Evolution as an ecological force: evolution of inflorescence size causes a shift in the plant-associated insect community
11:00 AM	25.3		<i>Pease KM, Wayne RK; University of California, Los Angeles</i>	The response of Pacific tree frog (<i>Pseudacris regilla</i>) tadpoles to invasive predatory crayfish: a comparison of anti-predator traits between naïve and exposed tadpoles
11:20 AM	25.4		<i>Freeman A, Wright J, Szeto K, Koob E, Hewitt C, Campbell M; Adelphi University, Australian Maritime College, University of New Hampshire</i>	Biogeographic comparisons of prey responses to the invasive marine crab <i>Carcinus maenas</i> ?
11:40 AM	25.5	DEE	<i>Price RM; University of Washington, Bothell</i>	Elevated sea water temperatures could result in rapid local adaptation of an intertidal predator

WEDNESDAY PROGRAM MORNING SESSIONS

8:00-10:00 AM

150 DEF

Session 26: Phylogenetics I

Chair: Todd Oakley

8:00 AM	26.1	DEDB	<i>Wolfe JM, Legg DA; Yale University, Imperial College London</i>	Chelicerate tagmosis: inferred homeotic development in extinct taxa
8:20 AM	26.2	DSEB	<i>Kocot KM, Cannon JT, Todt C, Kohn AB, Citarella MR, Meyer A, Schander C, Santos SR, Moroz LL, Lieb B, Halanych KM; Auburn University, University of Bergen, Whitney Laboratory for Marine Biosciences, Johannes Gutenberg University, University of Bergen</i>	Phylogenomic investigation of molluscan evolutionary relationships
8:40 AM	26.3	DSEB	<i>Cannon JT, Kocot KM, Santos SR, Swalla BJ, Halanych KM; Auburn University, University of Washington</i>	Phylogenomics of hemichordata within deuterostomia
9:00 AM	26.4		<i>Sperling EA, Pisani D, Peterson KJ; Yale University, National University of Ireland, Dartmouth College</i>	Molecular paleobiological insights into the origin of the Brachiopoda
9:20 AM	26.5		<i>Hegna TA; Yale University</i>	Living fossils? The phylogeny and fossil record of brachiopod crustaceans
9:40 AM	26.6	DSEB	<i>Oakley TH, Lindgren AR, Wolfe JM, Zaharoff AK, Juarez B; University of California, Yale University</i>	Phylogeny and divergence times of Pancrustacea based concatenated analysis of 200 genes and morphology

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon

150 DEF

Session 27: Phylogenetics II

Chair: Chris Boyko

10:20 AM	27.1		<i>Ryan JF, Pang K, Moreland RT, Nguyen A, Nisc, Wolfsberg TG, Mullikin JC, Martindale MQ, Baxevanis AD; National Human Genome Research Institute (NH-GRI), NIH, University of Hawaii</i>	The genome of the Ctenophore <i>Mnemiopsis leidyi</i> and its implications on the history of animals
10:40 AM	27.2	DIZ	<i>Boyko CB, Moss J, Williams JD, Shields JD; Dowling College, Virginia Institute of Marine Science, Hofstra University</i>	Molecular phylogeny of isopoda bopyroidea and insights into host/parasite coevolution
11:00 AM	27.3		<i>Audisio TL, Ledford JM, Griswold CE; California State University, Sacramento, California Academy of Sciences, San Francisco</i>	The depths of divergence: a phylogenetic analysis of troglomorphic spiders in the genus <i>Usofila</i> (Araneae, Telemidae)
11:20 AM	27.4	DSEB	<i>Streicher JW, Flores-Villela O, Smith EN; University of Texas, Arlington, UNAM, Mexico</i>	Barking frogs and flowing genes: molecular phylogenetics of the <i>Craugastor augusti</i> complex (Anura: Craugastoridae)
11:40 AM	27.5	DSEB	<i>Rivera JA, Butler M; University of Hawaii, Manoa</i>	Molecular phylogenetics of Papuan microhylids

Wednesday

WEDNESDAY PROGRAM MORNING SESSIONS

8:00-10:00 AM

151 ABC

Session 28: Muscle Physiology and Biochemistry I

Chair: Jenna Monroy

8:00 AM	28.1	DCPB	<i>Sciortino A, Prehoda-Wyers MM, Dearolf JL; Hendrix College</i>	Effects of glucocorticoid administration on the contractile properties of the fetal guinea pig diaphragm
8:20 AM	28.2	DDCB	<i>Schroeder JR, Prehoda-Wyers MM, Dearolf JL; Hendrix College</i>	The effects of betamethasone on myosin expression patterns of fetal <i>Cavia porcellus</i> hindlimb and ventilatory musculature
8:40 AM	28.3	DCB	<i>Powers KL, Monroy JA, Gilmore LA, Nishikawa KC; Northern Arizona University</i>	The relative contributions of titin and collagen to passive tension
9:00 AM	28.4	DCPB	<i>Monroy JA, Powers KL, Gilmore LA, Uyeno TA, Nishikawa KC; Northern Arizona University</i>	Ca ²⁺ -activation of skeletal muscle: not just the thin filament?
9:20 AM	28.5	DCB	<i>Tanner BCW, Miller MS, Miller BM, Lekkas P, Irving TC, Maughan DW, Vigoreaux JO; University of Vermont, Illinois Institute of Technology</i>	Truncating the C-terminus of flightin disrupts flight muscle ultrastructure and reduces mechanical performance in <i>Drosophila</i>
9:40 AM	28.6	DCPB	<i>Ayme-Southgate A, Bear S, Schilder R, Marden J, Turner L; College of Charleston, Penn State College of Medicine, Penn State University</i>	Analysis of projectin isoforms and biomechanics of insect flight muscles

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon

151 ABC

Session 29: Muscle, Temperature & Immunology

Chair: Brent Sinclair

10:20 AM	29.1	DCPB	<i>Sinclair BJ, Marshall KE, Zhang J; The University of Western Ontario</i>	The impacts of repeated cold exposure in insects
10:40 AM	29.2		<i>Applebaum SL, Ginsburg DW, Manahan DT; University of Southern California</i>	Genes underlying amino acid transport differences in echinoderms from contrasting polar and temperate environments
11:00 AM	29.3	DCPB	<i>Mueller IA, O'Brien KM; University of Alaska, Fairbanks</i>	Oxidative stress occurs in cardiac muscle of some Antarctic icefishes in response to an increase in temperature
11:20 AM	29.4	DCPB	<i>Johnson NG, Burnett LE, Burnett KG; College of Charleston</i>	Characterization of the bacterial properties that impair respiration in the Atlantic blue crab, <i>Callinectes sapidus</i>
11:40 AM	29.5		<i>Kubli S, Macdougall-Shackleton EA; The University of Western Ontario, Canada</i>	Song complexity in the song sparrow (<i>Melospiza melodia</i>) as an indicator of constitutive immune function

WEDNESDAY PROGRAM MORNING SESSIONS

8:00-10:00 AM

151 DEF

Session 30: Energetics, Circulation, and Ventilation

Chair: Tomasz Owerkowicz

8:00 AM	30.1	DCB	<i>Dorgan KM, Lefebvre SC, Stillman JH, Koehl MAR; University of California, Berkeley, Romberg Tiburon Center for Environmental Studies, San Francisco State University</i>	Energetics of burrowing by the cirratulid polychaete, <i>Cirriformia moorei</i>
8:20 AM	30.2	DCB	<i>Barbano DL, Nishikawa KC, Uyeno TA; Northern Arizona University</i>	The function of trabeculae in the accessory heart wall of squid
8:40 AM	30.3	DVM	<i>Owerkowicz T, Spikings T, Eelsey RM, Hicks JW; University of California, Irvine, Rockefeller Wildlife Refuge</i>	Origin of the in-series circulation in amniotes
9:00 AM	30.4	DVM	<i>Markley JS; University of Utah</i>	Running guinea fowl prefer to expire at foot down: coordination patterns of step and ventilatory cycles
9:20 AM	30.5		<i>Cox LM, Socha JJ; Virginia Tech</i>	Patterns of pressure in the thorax of a carabid beetle
9:40 AM	30.6	DCB	<i>Pendar H, Socha JJ; Virginia Tech</i>	Do gut movements induce tracheal collapse in carabid beetles?

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon

151 DEF

Session 31: Scaling and Growth II

Chair: John VandenBrooks

10:20 AM	31.1	DSEB	<i>Vandenbrooks JM, Munoz EE, Weed MD, Harrison JF; Arizona State University</i>	The role of atmospheric oxygen in the evolution of insect body size
10:40 AM	31.2		<i>Callier V, Nijhout HF; Duke University</i>	Respiratory physiology and the initiation of molting in the tobacco hornworm, <i>Manduca sexta</i>
11:00 AM	31.3	DEE	<i>Helm BR, Davidowitz G; University of Arizona</i>	Tracheal growth and plasticity in 5th instar <i>Manduca sexta</i>
11:20 AM	31.4	DEDB	<i>Munoz EE, Weed M, Harrison JF, Vandenbrooks JM; Arizona State University</i>	Interspecific allometry of cockroach tracheal systems and the impact of oxygen on their tracheal development
11:40 AM	31.5	DCB	<i>Gravish N, Garcia M, Umbanhowar PB, Goodisman MAD, Goldman DI; Georgia Tech, Northwestern University</i>	Worker size effects on the tunneling performance of the red imported fire ant

8:00-10:00 AM

250 AB

Session 32: Ecomorphology of Feeding I

Chair: Kristopher Lappin

8:00 AM	32.1	DCB	<i>Sandusky PE, Deban SM; University of South Florida, Tampa</i>	Temperature insensitivity of prey-capture dynamics in <i>Rana pipiens</i> reveals an elastic recoil mechanism
8:20 AM	32.2	DAB	<i>Lambert EP, Motta PJ; University of South Florida</i>	Modulation in the strike kinematics of the ant-lion larvae, <i>Myrmeleon crudelis</i>
8:40 AM	32.3		<i>Montuelle SJ, Herrel A, Libourel P-A, Daillie S, Bels V; Ohio University, Museum National d'Histoire Naturelle, Paris</i>	Modulation of the movements of the trophic and locomotor systems in response to prey size and velocity in lizards

WEDNESDAY PROGRAM

MORNING SESSIONS

9:00 AM	32.4	DVM	<i>McGee MD; University of California, Davis</i>	Dimorphic feeding kinematics in an ancestral threespine stickleback population
9:20 AM	32.5	DVM	<i>Lappin AK, Jones MEH; California State Polytechnic University, University College London</i>	Empirical standardization of bite-force performance
9:40 AM	32.6	DVM	<i>Staab KL, Holzman R, Hernandez LP, Wainwright PC; George Washington University, University of California Davis</i>	Do convergent means of premaxillary protrusion produce similar flows during suction feeding?

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon 250 AB

Session 33: Ecomorphology of Feeding II

Chair: Paul Gignac

10:20 AM	33.1	DCB	<i>Habegger ML, Motta PJ, Mullins G, Stokes M, Winters D; University of South Florida</i>	Feeding mechanics in billfishes (Xiphiidae and Istiophoridae): inferring the use of the bill from its mechanical properties
10:40 AM	33.2	DVM	<i>La Croix S, Zelditch ML, Shivik JA, Lundrigan BL, Holekamp KE; Michigan State University, East Lansing, University of Michigan, Ann Arbor, USDA/WS/ National Wildlife Research Center and Utah State University, Logan</i>	Variation in coyote skull morphology, biomechanics, and feeding behavior due to early bone processing opportunities
11:00 AM	33.3	DVM	<i>Santana SE, Dumont ER; University of Massachusetts Amherst, University of California Los Angeles</i>	Functional correlates of tooth structure in bats
11:20 AM	33.4	DVM	<i>Self CJ, Payne AA; University of Washington, Seattle</i>	Root surface area in relation to diet in rodents: a CT method for evaluating tooth surface area
11:40 AM	33.5	DCB	<i>Gignac PM, Erickson GM; Stony Brook University, Florida State University</i>	The ontogeny of dental form and tooth pressures in the American alligator (<i>Alligator mississippiensis</i>)

8:00-10:00 AM 250 DE

Session 34: Behavioral Ecology

Chair: Jerry Husak

8:00 AM	34.1	DAB	<i>Rivers TJ, Sirota MG, Shah NA, Gutten-tag AI, Beloozerova IN; Barrow Neurological Institute, University of California, Los Angeles</i>	Gaze behaviors of freely walking cats
8:20 AM	34.2		<i>Barske J, Fusani L, Wikelski M, Schlinger B; University of California, Los Angeles, University of Ferrara, Italy, Max Planck Institut for Ornithology, Germany</i>	Heart rate as an index of increased metabolic output in a bird with a complex courtship display
8:40 AM	34.3	DEE	<i>Sprague JC, Woods HA; The University of Montana</i>	Costs and benefits of pupal chamber construction by the hawkmoth <i>Manduca sexta</i> (<i>Lepidoptera: Sphingidae</i>)
9:00 AM	34.4	DAB	<i>Kuo CY, Irschick DJ; University of Massachusetts Amherst</i>	The effect of physical perturbation on behavior: an example from yellow-chinned anole (<i>Anolis gundlachi</i>)
9:20 AM	34.5	DEE	<i>Sesterhenn TM, Reardon EE, Chapman LJ; University of Kentucky, Lexington, McGill University, Canada</i>	Lost gills and low oxygen: respiratory ecology of damselfly larvae

WEDNESDAY PROGRAM MORNING SESSIONS

9:40 AM 34.6 *Garcia MJ, Earley RL; University of Alabama* Mechanisms driving winner and loser effects in the green anole lizard (*Anolis carolinensis*)

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon

250 DE

Session 35: Environmental Endocrinology

Chair: Frances Bonier

10:20 AM	35.1	DCE	<i>Bonier F, Moore IT; Queen's University, Virginia Tech</i>	The stress of parenthood? Relationships between reproductive investment and glucocorticoid concentrations in tree swallows
10:40 AM	35.2		<i>Williams CK, Marra PP, Ezenwa VO, Breuner CW; University of Montana, Smithsonian Migratory Bird Center, University of Georgia</i>	Parasite release in an urban colonizer
11:00 AM	35.3	DCE	<i>Hanson AM, Sheridan MA; North Dakota State University</i>	Effects of environmental estrogens on organismal growth and the growth hormone-insulin-like-growth factor system of rainbow trout
11:20 AM	35.4	DCE	<i>Neuman-Lee LA, Baumgartner KA, Voorhees JM, Gaines KF, Mullin SJ; Utah State University, Eastern Illinois University</i>	Using multiple endpoints to determine the effects of atrazine ingestion on gravid female water-snakes and their offspring
11:40 AM	35.5	DCE	<i>Breuner CW, Sprague RS, Woods HA; The University of Montana, National Marine Fisheries Service, NOAA</i>	Environment, behavior and physiology: a role for barometric pressure in predicting storms?

8:20-10:00 AM

251 AB

Session 36: Evo-devo - Body Plan Development

Co-Chairs: Elaine Seaver, Neva Meyer

8:20 AM	36.1	DEDB	<i>Seaver EC, Boyle MJ, Meyer NP; University of Hawaii, Smithsonian Marine Station at Fort Pierce</i>	Evolution of the annelid body plan: developmental insights from the unsegmented sipunculan worm <i>Themiste lageniformis</i>
8:40 AM	36.2		<i>Wijesena N, Kumburegama S, Xu R, Wikramanayake A; University Miami, University Hawaii at Manoa, Honolulu</i>	Wnt signaling in the cnidarian <i>Nematostella vectensis</i> : insights into the evolution of gastrulation
9:00 AM	36.3	DEDB	<i>Schmidt K, Starck JM; Ludwig Maximilians University of Munich (LMU)</i>	Pattern of variation during the phylotypic stage of zebra fish, <i>Danio rerio</i>
9:20 AM	36.4		<i>Huang Y, Hadfield M; University of Hawaii, Manoa</i>	Bacterial genes and larval settlement of the tube worm <i>Hydroides elegans</i>
9:40 AM	36.5	DEDB	<i>Santagata S; Long Island University</i>	The diverse roles of larval musculature and microfilaments during the initial stages of metamorphosis of marine bryozoans

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon

251 AB

Session 37: Sexual Selection I

Chair: Robert Cox

10:20 AM	37.1	DEE	<i>Friesen CR, Mason RT; Oregon State University</i>	Not just a chastity belt: the role of copulatory plugs in red-sided garter snakes revisited
10:40 AM	37.2		<i>Lyons SM, Morris MR; Ohio University</i>	Influence of environment during development on variation in female mate preference

WEDNESDAY PROGRAM

MORNING SESSIONS

11:00 AM	37.3	DAB	<i>Husak JF, Ribak G, Wilkinson GS, Swallow JG; University of South Dakota, Technion University, University of Maryland</i>	Compensation for exaggerated eyestalks in stalk-eyed flies (Diopsidae)
11:20 AM	37.4	DAB	<i>Kelly NB, Foster SA, Alonzo SH; Yale University, Clark University</i>	The effect of condition on courtship and parental care in threespine stickleback, <i>Gasterosteus aculeatus</i>
11:40 AM	37.5	DEE	<i>Cox RM, Duryea MC, Calsbeek R; Dartmouth College</i>	Adaptive sex-ratio bias and the resolution of intra-locus sexual conflict

8:00-9:40 AM

251 DE

Session 38: Mate Choice & Parental Investment

Chair: Whitney Miller

8:00 AM	38.1	DEE	<i>Gillespie S, Tudor S, Moore A, Miller C*; University Florida, University Exeter</i>	Mating decisions vary according to environmental context, but in different ways for males and females
8:20 AM	38.2		<i>Stahlschmidt ZR, Lourdais O, Lorioux S, Butler MW, Denardo DF; Arizona State University, Centre National de la Recherche Scientifique (CNRS), France</i>	Intrinsic costs underlying parental investment: insight from a capital breeder
8:40 AM	38.3		<i>Ryan CP, Anderson WG, Hare JF; Simon Fraser University, Canada, University of Manitoba</i>	Struggling mothers, strong sons: optimization and sex allocation in Richardson's ground squirrels (<i>Spermophilus richardsonii</i>)
9:00 AM	38.4	DAB	<i>Cunningham CB, Chase K, Ruff J, Carrier DR; University of Utah</i>	Social dominance ability is heritable in male house mice
9:20 AM	38.5		<i>Nelson AC, Potts WK; University of Utah</i>	More than meets the nose: rapid adaptation to social complexity in laboratory-reared wild mice may be mediated by epigenetic inheritance

9:40 AM BREAK IN EXHIBIT HALL

10:00-11:40 AM

251 DE

Session 39: Life History

Co-Chairs: Joseph Williams, Timothy Wright

10:00 AM	39.1	DVM	<i>Lailvaux S, Gilbert R; University of New Orleans</i>	Effects of dietary restriction on dewlap size and bite force development in <i>Anolis carolinensis</i>
10:20 AM	39.2	DVM	<i>Werning S, Irmis RB; University of California, Berkeley, University of Utah; Utah Museum of Natural History</i>	Reconstructing growth of the basal archosauromorph <i>Trilophosaurus</i>
10:40 AM	39.3	DCPB	<i>Hood WR; Auburn University</i>	Limits on bone mobilization during reproduction
11:00 AM	39.4	DCPB	<i>Williams JB, Miller RA, Harper JM, Ro J, Wang M; Ohio State University</i>	Fibroblasts from long-lived bird species are resistant to multiple forms of stress
11:20 AM	39.5	DAB	<i>Wright TF, Schirtzinger EE, Young AM, Hobson EA, Eberhard JR; New Mexico State University, Louisiana State University</i>	Mitochondria and aging: do duplicated mtDNA control regions confer longer lifespans in parrots?

WEDNESDAY PROGRAM AFTERNOON SESSIONS

1:00-3:00 PM

150 ABC

Session 40: Evolutionary Ecology II: Performance & Sexual Dimorphism

Chair: Donald Miles

1:00 PM	40.1	DCPB	<i>Hoffman GG, Suzuki T, Ellington WR*</i> ; <i>Florida State University, Tallahassee, Kochi University, Japan</i>	Creatine kinase is present in an alveolate protozoan
1:20 PM	40.2	DEE	<i>Condon CH, Chenoweth SF, Wilson RS</i> ; <i>The University of Queensland, Australia</i>	The evolution of acclimation of thermal performance
1:40 PM	40.3	DEE	<i>Miles DB</i> ; <i>Ohio University</i>	Coevolution of morphology and locomotor performance in <i>Urosaurus ornatus</i>
2:00 PM	40.4	DVM	<i>Irschick DJ, Langerhans B</i> ; <i>University of Massachusetts Amherst, North Carolina State University</i>	Microevolution of seasonal dimorphism in morphology and performance of a lizard
2:20 PM	40.5	DEE	<i>Berns CM, Adams DC</i> ; <i>Iowa State University, Ames</i>	Phenotypic evolution of sexual dimorphism in hummingbird bills
2:40 PM	40.6	DEE	<i>Cameron SF, Ortiz-Barrientos D, Wilson RW</i> ; <i>The University of Queensland</i>	Sexual dimorphism of morphology and functional traits of the introduced Asian house gecko (<i>Hemidactylus frenatus</i>) across a latitudinal cline

1:00-3:00 PM

150 DEF

Session 41: Evo-devo - Evo-devo and Population Genetics

Chair: Mihaela Pavlicev

1:00 PM	41.1	DEDB	<i>Pavlicev M, Cheverud JM</i> ; <i>University of Oslo, Norway, Washington University</i>	Evolution by genetic interaction at loci affecting shape or allometry
1:20 PM	41.2	DEDB	<i>Mulroy E, Record D, Guernsey M, Stringham SA, Aldenhoven JT, Osborne EJ, Shapiro MD*</i> ; <i>University of Utah</i>	Endless pigeons most beautiful and most wonderful
1:40 PM	41.3	DEDB	<i>Bloom SK, Infante CR, Everly AW, Hanken J, Nascone-Yoder NM*</i> ; <i>North Carolina State University College of Veterinary Medicine, Harvard University</i>	Developmental basis of novel gut morphology in frogs
2:00 PM	41.4		<i>Siebert S, Robinson M, Smith SA, Tintori SC, Helm RR, Goetz F, Haddock SH, Cartwright P, Dunn CW</i> ; <i>Brown University, Walter and Eliza Hall Institute of Medical Research, Melbourne, Monterey Bay Aquarium Research Institute, Moss Landing, University of Kansas, Lawrence</i>	Cross validation of next-generation sequencing platforms for gene expression studies in non-model organisms
2:20 PM	41.5	DEDB	<i>Brazeau MD</i> ; <i>Museum fuer Naturkunde, Leibniz Institute for Research on Evolution and Biodiversity</i>	Before and beyond congruence: using phylogenetic homology to infer evolutionary process
2:40 PM	41.6	DEDB	<i>Nnamani M, Meiler J, Mizoue L, Wagner G</i> ; <i>Yale University, Yale Institute for Systems Biology, Center for Structural Biology, Vanderbilt University</i>	Critical regulatory domain of the Abdominal B (AbdB)-like transcription factor HoxA-11

WEDNESDAY PROGRAM AFTERNOON SESSIONS

1:00-3:00 PM

151 ABC

Session 42: Muscle Physiology and Biochemistry II

Chair: Maria De Boef Miara

1:00 PM	42.1	DCB	<i>Monroy JA, Uyeno TA, Nishikawa KC*; Northern Arizona University</i>	Is titin a "winding filament" in active muscle? A new twist on muscle contraction
1:20 PM	42.2		<i>Williams CD, Regnier M, Daniel TL; University Washington, Seattle</i>	Myosin's big radial force: axial and radial tensions are similar in contracting muscle
1:40 PM	42.3	DVM	<i>Hazimihalis PJ, Butcher MT*; Youngstown State University</i>	Myosin isoform fiber type in the tail of the Virginia opossum (<i>Didelphis virginiana</i>)
2:00 PM	42.4		<i>Gilmore LA, Monroy JA, Nishikawa KC; Northern Arizona University</i>	Complex interactions between length and force in the elastic behavior of active muscle
2:20 PM	42.5	DCB	<i>De Boef Miara M, Lee SM, Wakeling JM, Biewener AA; Harvard University, Simon Fraser University, Canada</i>	Force-length properties, pinnation angle and mechanical advantage of the goat medial and lateral gastrocnemius in relation to in vivo contractile function and muscle models
2:40 PM	42.6	DCB	<i>Thompson JT, Taylor KR, Gentile CM; Franklin & Marshall College</i>	Non-uniform muscle strain and strain rate in the hollow muscular organs of soft-bodied animals

1:00-3:00 PM

151 DEF

Session 43: Evolutionary Morphology: Shells, Skulls, and Scans

Chair: Patrick O'Connor

1:00 PM	43.1	DCB	<i>Whitenack LB, Herbert GS, Simkins, Jr DC; Allegheny College, University of South Florida</i>	Snail versus crab: the biomechanics and evolution of shell ornamentation in <i>Strombus</i>
1:20 PM	43.2	DVM	<i>Melstrom KM, Angielczyk KD; University of Michigan, Field Museum</i>	Morphological integration of the turtle shell
1:40 PM	43.3	DSEB	<i>O'Connor PM, Sertich JJW, Stevens NJ; Ohio University, Stony Brook University</i>	Craniodental specialization in notosuchian Crocodyliformes: linking morphology with ecology during the Cretaceous Period
2:00 PM	43.4	DVM	<i>Maddin HC, Wake MH, Kristensen E; University of Calgary, University of California, Berkeley</i>	The influence of fossoriality on cranial architecture in caecilian amphibians (<i>Gymnophiona</i>)
2:20 PM	43.5	DVM	<i>Curtis AA, Van Valkenburgh B; University of California, Los Angeles</i>	Cats and dogs in 3D: a quantitative study of canid and felid frontal sinuses using CT technology
2:40 PM	43.6	DEDB	<i>Brakora KA, Davis EB, Lee AH; University of California, Berkeley, Museum of Natural and Cultural History, University of Oregon, Midwestern University</i>	Phylogenetics, evolution, and development of ruminant cranial appendages: insights into hypotheses of homology

1:00-3:00 PM

250 AB

Session 44: Locomotion - Gait and Stability, Ground to Trees

Chair: Jesse Young

1:00 PM	44.1		<i>Qiao M, Jindrich D; Arizona State University</i>	Comparing stride local stability during walking and running
1:20 PM	44.2	DCB	<i>Clifton G, Hong C, Geyer H, Biewener AA; Concord Field Station, Harvard University, CFS, Robotics Institute, Carnegie-Mellon University</i>	Limb swing dynamics of wild turkeys as a function of speed and gait

WEDNESDAY PROGRAM AFTERNOON SESSIONS

1:40 PM	44.3	DCB	<i>Lammers AR, Sufka KM; Cleveland State University</i>	Turning the corner in arboreal locomotion: the kinetics of changing direction in the Siberian chipmunk (<i>Tamias sibiricus</i>)
2:00 PM	44.4	DVM	<i>Young JW; NEOUCOM</i>	The biomechanics of arboreal stability in cebid monkeys
2:20 PM	44.5	DCB	<i>Miller CE, Schmitt D; Duke University</i>	Tail use in primates: balancing the variables
2:40 PM	44.6	DCB	<i>Byrnes G, Jayne BC; University of Cincinnati</i>	Three-dimensional trajectories affect gap bridging in brown tree snakes (<i>Boiga irregularis</i>)

1:00-3:00 PM

250 DE

Session 45: Conservation Biology

Chair: Michael Hadfield

1:00 PM	45.1	DIZ	<i>Hadfield MG, Sisco DR; University of Hawaii at Manoa</i>	Endangered snails on a Threatened Island
1:20 PM	45.2	DIZ	<i>Olivier TJ, Bauer RT; University of Louisiana, Lafayette</i>	Impacts of river control structures on the juvenile migration of the amphidromous river shrimp <i>Macrobrachium ohione</i> : possible solutions for the restoration of upstream populations
1:40 PM	45.3	DEE	<i>Pascua MT, Sisco DR, Holland BS, Hadfield MG; University of Hawaii - Manoa</i>	Investigation of inbreeding in captive versus wild populations of the Hawaiian tree snail <i>Achatinella mustelina</i>
2:00 PM	45.4	DEE	<i>Zelnio KA, Jarvis LK, McCartney MA; University of North Carolina, Wilmington</i>	AFLP fingerprinting confirms that hybridization contributes genetic diversity to natural populations of pitcher plants
2:20 PM	45.5		<i>Kidwell SM, Tomasovych A; University of Chicago</i>	Dead-shell assemblages as a means of detecting ecological changes and baseline conditions: a test on the urban southern California continental shelf
2:40 PM	45.6	DEE	<i>Mahon AR, Jerde CL, Chadderton WL, Lodge DM; University of Notre Dame, The Nature Conservancy</i>	Using environmental DNA to elucidate the Asian carp (genus <i>Hypophthalmichthys</i>) invasion front in the Chicago Area Waterway System

1:00-2:40 PM

251 AB

Session 46: Sexual Selection II

Chair: Matthew Shawkey

1:00 PM	46.1	DAB	<i>Williams TH, Mendelson TC; University of Maryland, Baltimore County</i>	Preferences for color and pattern may explain reproductive isolation in sympatric darter species
1:20 PM	46.2	DEE	<i>Oufiero CE, Jugo K, Yau T, Chappell MA, Garland T; University of California, Riverside</i>	Does the evolution of a sexually selected trait compromise sprint and endurance performance in <i>Xiphophorus</i> swordtails and their close relatives?
1:40 PM	46.3	DSEB	<i>Musser JM, Barker FK, Prum RO; Yale University, University of Minnesota</i>	Measuring sexual selection from genetic estimates of effective population size in lekking manakins (Aves: Pipridae)
2:00 PM	46.4		<i>Eliason CM, Shawkey MD; University of Akron</i>	Rapid, reversible response of iridescent feather color to ambient humidity
2:20 PM	46.5		<i>Narvaez AE, Ron SR, Hoke KL, Trillo PA; Pontificia Universidad Catolica del Ecuador, Colorado State University, Universidad Nacional Mayor de San Marcos</i>	Nest building in two species of <i>Engystomops</i> from Ecuador: direct benefits in sexual selection?

WEDNESDAY PROGRAM EVENING SESSIONS

1:00-2:40 PM

251 DE

Session 47: Social Behavior

Chair: Ryan Earley

1:00 PM	47.1	DAB	<i>Earley RL, Huang S-P, Fuller A, Hanninen A, Garcia M; University of Alabama</i>	Sex differences in the endocrine response to social challenge despite genotypic uniformity in the mangrove rivulus (<i>Kryptolebias marmoratus</i>)
1:20 PM	47.2	DAB	<i>Chadwell BA, Hristov NI, Allen LC, Breuer KS, Swartz SM; Guilford College, Center for Design Innovation/Winston-Salem State University, Salem College, Boston University, Brown University</i>	Methods for describing and analyzing group behavior in bats: a case study in the Brazilian free-tailed bat
1:40 PM	47.3		<i>Sasaki T, Pratt SC; School of Life Sciences Arizona State University</i>	Emergence of group rationality from irrational individuals in ants
2:00 PM	47.4	DAB	<i>Hristov NI, Hedrick TL, Allen LC, Chadwell B, Kunz TH, Breuer KS, Swartz SM; Center for Design Innovation, Winston-Salem State University, University of North Carolina, Chapel Hill, Salem College, Guilford College, Boston University, Brown University</i>	Flight formation and group behavior in the highly gregarious Brazilian free-tailed bat <i>Tadarida brasiliensis</i>
2:20 PM	47.5		<i>Fuller AB, Earley RL; University of Alabama, Tuscaloosa</i>	The effects of social environment on behavioral and morphological development in isogenic strains of the mangrove rivulus (<i>Kryptolebias marmoratus</i>)

6:30-7:30 PM

Room: Ballroom B

Howard Bern Lecture

DCE	<i>Wingfield JC; University of California, Davis</i>	Putting the brakes on reproduction. Implications for conservation? Global climate change?
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7:30-8:30 PM

Room: 150G

AMS Lecture

<i>Young CM; Oregon Institute of Marine Biology, University of Oregon</i>	The discovery and naming of marine larval forms: shallow and deep, then and now
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WEDNESDAY POSTERS SESSION P2

Exhibit Hall A, 3:00-5:00 PM

Even # Posters - Authors present from 3:00 - 4:00 pm

Odd # Posters - Authors present from 4:00 - 5:00 pm

Adaptation

- P2.1 *Robbins TR, Mushinsky HR, McCoy ED; The Pennsylvania State University, University of South Florida* Habitat-specific adaptations in growth rates play a role in species distribution of *Sceloporus* lizards in Florida
- P2.2 DEE *Urban AM, Martin LB, Coon CAC, Liebl AL; University of South Florida* Does immune suppression occur to free resources in the house sparrow, *Passer domesticus*?
- P2.3 DEE *Judge JL, Lindberg DR; University of California, Berkeley* A phylogenetic perspective on the molluscan lineages in chemosynthetically-based ecosystems in the deep sea
- P2.4 *Lampe RI, Oakley TH; University of California, Santa Barbara* Examining predation as a cause of sexual dimorphism in two species of *Euphilomedes* ostracods
- P2.6 *Smithers CA, Hsieh ST; Temple University, Philadelphia* Sexually-dimorphic niche and character displacement of the green anole (*Anolis carolinensis*) in the presence of the invasive Cuban brown anole (*Anolis sagrei*)
- P2.7 DEE *Salomon R, Musolf B; Clayton State University* Induced host shift effects on morphology in the bean beetle, *Callosobruchus maculatus*
- P2.8 DIZ *Hochberg R; University of Massachusetts, Lowell* On false mouths and pharyngeal architecture: the interesting case of *Pseudostomella* (Gastrotricha, Macrotrichida)
- P2.9 *Henry AR, Waite JL, Clayton DH; University of Utah* The effect of the malaria parasite *Haemoproteus columbae* on blood-meal digestion by its vector

Animal Communication: Reproductive Behavior

- P2.10 DAB *Drucker CB, Westerman EL*, Monteiro A; Yale University* Sex ratio influences courtship behavior in the butterfly *Bicyclus anynana*
- P2.11 DAB *Love EK, Bee MA; University of Minnesota, Twin Cities* Can frogs turn it up to 11? A test of voice amplitude regulation in Cope's gray treefrog
- P2.12 DAB *Henderson JJ, Gerhardt HC; University of Missouri-Columbia* Behavioral test of complex signal rules and novel appendage attractiveness in gray treefrogs, *Hyla versicolor*
- P2.13 DAB *Murray EM, Humfeld SC; Missouri State University, University of Missouri* Condition-dependent mate choice in female gray treefrogs (*Hyla versicolor*)
- P2.14 *Lattanzio MS, Miles DB; Ohio University* Dominance, endurance, and color patch asymmetry within a population of eastern fence lizards (*Sceloporus undulatus*) in Ohio
- P2.15 DAB *Baxter CA, Hammond TT, Wright ML, Caldwell RL; University of California Berkeley* Chemosensory recognition in *Pullosquilla litoralis*
- P2.16 DAB *Uhrig EJ, Hermanson R, Lemaster MP, Mason RT; Oregon State University, Western Oregon University* Evidence for a prevailing role of methyl ketones in mediating reproduction in garter snakes of the genus *Thamnophis*

Behavioral Ecology: Habitat Selection

- P2.17 DAB *Greif S, Siemers BM; Max Planck Institute for Ornithology, Germany* Sensory basis of habitat recognition in echolocating bats
- P2.18 DVM *Mansfield KL, Wyneken J*; Florida Atlantic University* The first long term oceanic tracks of neonate loggerhead sea turtles
- P2.19 DAB *Endres CS, Butler R, Stapput K, Lohmann KJ; University of North Carolina, Chapel Hill* Orientation of hatchling sea turtles to ocean waves: a virtual reality approach

P2.20	DAB	<i>Scoular KM, Zani PA*; Lafayette College, Whitman College</i>	Site fidelity and geographic variation in home-range ecology of side-blotched lizards, <i>Uta stansburiana</i>
P2.21	DCE	<i>Roberge T, Coleman A, Wibbels T*, Marion K; University of Alabama at Birmingham</i>	Evaluating the home range of adult female diamondback terrapin in the salt marshes of Alabama

Behavioral Ecology: Hormonal Mechanisms

P2.22	DAB	<i>Baugh AT, Van Oers K, Hau M; Max Planck Institute for Ornithology</i>	The relationship between behavioral profiles and corticosterone in great tits <i>Parus major</i>
P2.23	DAB	<i>Torregrossa A-M, Eckel LA; Florida State University, Tallahassee</i>	Behavioral effects of phytoestrogens in male and female rats
P2.24	DAB	<i>Ruiz M, Hite R, Martins EP; Indiana University Bloomington</i>	Food and social stress interact to produce long-term effects on behavior, but not hormones, in zebrafish
P2.25	DCE	<i>Salli BM, Ashley NT, Buck CL; University of Alaska, Anchorage</i>	Effect of testosterone on the synchronization of activity rhythms to low amplitude zeitgebers in an arctic-breeding songbird
P2.26		<i>Ostrom CE, Healy JE, Florant GL; Colorado State University, Fort Collins</i>	Annual changes in activity budgets, body composition, and serum leptin of golden-mantled ground squirrels

Complementary to Symposium: Bioinspiration: Applying Mechanical Design to Experimental Biology

P2.27		<i>Pratt SC, Berman S, Kumar V, Lindsey Q, Sakar MS; Arizona State University, Harvard University, University of Pennsylvania</i>	Collective transport by ants as a model for robot teams
P2.28	DCB	<i>Demir A, Samson EG, Mongeau J-M, Jayaram K, Full RJ, Cowan NJ; Johns Hopkins University, University of California, Berkeley</i>	A tunable, multisegmented robotic antenna for identifying and testing biomechanical design principles

Complementary to Symposium: Ecoimmunology and Disease Ecology

P2.29	DCPB	<i>Jankowski M, Kimball D, McCabe K, Fair J; Los Alamos National Laboratory</i>	Investigating influenza and malaria host range by surveying avian sialic acid
P2.30	DEE	<i>Hanselmann R, Jolles A; Oregon State University</i>	Comparative wild rodent immunology: how does life history relate to immunity?
P2.31	DCPB	<i>Nyerges G, Dunn SE*, Pramuk HE, Scholnick DA; Pacific University, Forest Grove</i>	Bacterial infection in the Dungeness crab, <i>Cancer magister</i>
P2.33	DCPB	<i>Vleck D, Vleck C, Winkler D; Iowa State University, Cornell University</i>	Carrying an instrument package adversely affects immune function in tree swallows
P2.34	DCPB	<i>Lang SA, Kristan DM; California State University San Marcos</i>	Calorie restriction increases mouse immune response but does not decrease susceptibility to repeated parasite inoculations
P2.35	DEE	<i>Rohr JR, Halstead NT, Johnson SA, Raffel TR, McMahon T, Martin LB*; University of South Florida, Integrative Biology, University of Florida, IFAS Plant City</i>	Pesticide exposure during development increases mortality to infections in adulthood
P2.36		<i>Cary TL, Ortiz-Santaliestra ME, Schmidt ND, Karasov WH; University of Wisconsin, Madison</i>	Assessment of development and immune status of northern leopard frogs (<i>Rana pipiens</i>) following polybrominated diphenyl ether (PBDE) exposure
P2.37	DCPB	<i>Zimmerman LM, Vogel LA, Bowden RM; Illinois State University</i>	Age-related changes in antibodies of the red-eared slider, <i>Trachemys scripta</i>
P2.38	DCE	<i>Moore IT, Small TW; Virginia Tech, University of Memphis</i>	Testosterone slows wound healing, independent of body condition, in equatorial Rufous-collared sparrows
P2.39		<i>Eisner-Pryor LJ, Casto JM; Illinois State University</i>	Ectoparasites, immune function, and development in European starlings

Complementary to Symposium: Neuroecology: Neural Determinants of Ecological Processes from Individuals to Ecosystems

P2.40		Shaffer ZS, Pratt S, Sasaki T; Arizona State University	Mapping social networks in house-hunting ants
P2.41		Lenz PH, Hartline DK; University of Hawaii at Manoa	Distribution of calanoid copepods: the role of myelin
P2.42	DAB	Langdon Q, Schumer M, Wood K, Renn SCP; Reed College	Comparative gene expression in sex-role phenotypes
P2.43		Groom KLB, Tricas T*; University of Hawaii at Manoa	Potential sites for arginine vasotocin modulation of sensory systems differ with phase in a sex changing teleost (<i>Thalassoma duperrey</i>)
P2.44		Araneo-Yowell J, Miller M, Farmer CG; University of Utah, Salt Lake City	The visual learning ability and effect of temperature on the spatial learning ability of juvenile alligators

Education, Outreach, and Policy

P2.45	DAB	Wassmer G, Amin Z, Corbin C, Hansen C, Henry K, Hess AR, Hrantiz J, Rier S, Surmacz C, Till M, Wood M; Bloomsburg University	Building a biology learning community in a campus residence hall
P2.46	DCPB	Shiosaki MG, Lamure CY, Rodnick KJ; Idaho State University, Pocatello	Erythrocyte size and relative percentages of blood cells in different size rainbow trout, <i>Oncorhynchus mykiss</i>
P2.47	DCPB	Roark AM, Graybeal CD, Lettau LMB; Hood College	Technology in the college classroom: current trends, opportunities, and limitations
P2.48	DEE	Price RM; University of Washington, Bothell	Teaching natural selection through performance
P2.49	DCPB	Dickson JM, Spangler SB, Rodnick KJ, Anderson CW; Idaho State University, Pocatello	Canine gait in water and on land and mechanisms for increasing speed
P2.50	DIZ	Jensen BH; The College of Saint Rose	The rich benthic community found in fish tanks is an ideal tool for teaching upper level biology laboratories
P2.51	DEE	Chan KYK, Grönbaum D; University of Washington	A model of estuary flow and biology for the high school marine science classroom
P2.52	DCPB	Carroll MA, Skeete D, Catapane EJ; Medgar Evers College	STEP into science at Medgar Evers College, a successful strategic plan

Evo-devo: Metazoan Evolution

P2.53		Khalili S, Magie CR; California State University, Fresno	Function and expression dynamics of <i>Rho</i> , <i>Rac</i> and <i>Cdc42</i> genes in the starlet sea anemone, <i>Nematostella vectensis</i>
P2.55		Nawrocki AM, Johnson AB, Cartwright P; The University of Kansas	Re-emergence of coloniality in Tubulariidae (Cnidaria: Hydrozoa: Aplanulata): insights from morphology, life history and developmental gene expression

Evo-devo: Reproduction, Larval Development, Metamorphosis, Regeneration

P2.57		Flores EB, Swalla BJ; College of Charleston, University of Washington	Effects of <i>Wnt</i> pathway activation on larval cloning in the sand dollar, <i>Dendraster excentricus</i>
P2.58	DIZ	Davis-Berg EC, Rock MO*, Wilson BA; Columbia College Chicago, Texas A&M International University	Larval development in the sea urchin <i>Arbacia punctulata</i> is effected by sodium hypochlorite, an environmental toxin
P2.59	DEDB	Miller E, Moore D, Orlowski S, Tekelenburg S, Romano L*; Denison University	Isolation of genes required for the ingression, patterning, and differentiation of cells that give rise to the larval skeleton in the pencil urchin, <i>Eucidaris tribuloides</i>
P2.60	DDCB	Johnson J, Gardner E, Menon J*; William Paterson University, New Jersey	Nitric oxide is involved in metamorphic process in anuran tadpoles, <i>Xenopus laevis</i>

P2.61		Greene RG, Noss CF, Landberg T, Vonesh JR, Warkentin KM; University of Victoria, University of Florida, Boston University, Virginia Commonwealth University	Behavior and development of red-eyed treefrogs during metamorphosis
P2.62	DDCB	Tweeten KA, Vang C; St. Catherine University	Observations on sexual reproduction in <i>Lumbriculus variegatus</i>

Evolution of Form and Function

P2.63		Tuval I, Drescher K, Goldstein RE; IMEDEA, Spain, DAMTP, University of Cambridge, UK	The fidelity of adaptive phototaxis
P2.64	DIZ	Hofstee JC, Pernet B; California State University Long Beach	Simplified velar ciliation in nonfeeding larvae of <i>Littorina</i>
P2.65		Bird DJ, Green P, Van Valkenburgh B; University of California Los Angeles	Does cribriform morphology predict olfactory function?
P2.67	DVM	Davis JS, Williams SH; Ohio University	The relationship between relative jaw size and shape and tooth size in selenodont artiodactyls
P2.68	DVM	Olsen AM, Westneat MW; University of Chicago, Field Museum of Natural History	The evolution of bird skull shapes and modeling the mechanisms of beak function
P2.69	DVM	Rose CS, Edmonds WR, Vergara MF, Nashimoto K; James Madison University	The cellular basis of growth and shape change in frog cranial cartilage
P2.70		Nicodemo P, Jayne BC; University of Cincinnati	Longitudinal variation in the axial muscles of colubrid and booid snakes
P2.71		Schilling N, Hesse B, Neufuss J, Thorpe SKS; Friedrich-Schiller-University Jena, Germany, University of Birmingham, UK	Functional morphology of the perivertebral muscles in great apes - are humans unique ?
P2.72	DVM	Wallace IJ, Garland Jr T, Wallace SA, Middleton KM, Kelly SA, Judex S, Demes B*; Stony Brook University, University of California, Riverside, University of Pennsylvania, California State University, San Bernadino, University of North Carolina, Chapel Hill	Genetic and epigenetic effects on diaphyseal morphology in selectively bred mice with the mini-muscle allele
P2.73	DCB	Coats BC, Middleton KM, Kelly SA, Garland JR T; California State University, San Bernardino, University North Carolina Chapel Hill, University California, Riverside	Cross-sectional limb bone geometry in mice bred for high levels of voluntary wheel running
P2.74	DVM	Simons ELR, O'Connor PM; Midwestern University	Whole bone and cross-sectional morphology of the wing skeleton in procellariiform seabirds: implications for differences in flight behavior
P2.75	DIZ	Jamil A, Socha JJ, Yager DD*; University Maryland, College Park, Virginia Tech, Blacksburg	3D reconstruction of tracheal systems in one-eared and two-eared praying mantises
P2.76	DVM	Rade CM, Ward AB; George Washington University, Adelphi University	Functional fin morphology of aquatic substrate-based locomotion in ogocephalid fishes (Lophiiformes;Ogocephalidae)

Growth and Scaling

P2.77	DNB	Willis KL, Potter K, Carr CE; University of Maryland, Armed Forces Institute of Pathology	Allometry of the middle ear cavity in <i>Trachemys scripta elegans</i>
P2.78		Dill AK, Johnson MA; Trinity University	Plasticity in limb development in the green anole lizard, <i>Anolis carolinensis</i>
P2.79	DCPB	Killpack TL, Stone K, Karasov WH; University of Wisconsin, Madison, MMSD High School Science Research Internship Program	Body composition and developmental maturity in chronically restricted nestling house sparrows

P2.80		<i>Potvin J, Goldbogen JA, Shadwick RE; Saint Louis University, University of California, San Diego, University of British Columbia</i>	Computer simulations of engulfment drag by small and large lunge-feeding rorquals
<u>Larval Ecology</u>			
P2.81		<i>Segarra GC, Podolsky RD; College of Charleston</i>	Are anti-predatory defenses of molluscan egg masses adjustable?
P2.82	DIZ	<i>Podolsky RD; College of Charleston, Grice Marine Lab</i>	Effects of light exposure on pH gradients inside invertebrate egg masses
P2.83	DEE	<i>Cahill AE; Stony Brook University</i>	The role of adult density in larval settlement of <i>Crepidula fornicata</i> and <i>C. plana</i>
P2.84	DIZ	<i>Smoot SC, Plante CJ, Podolsky RD; College of Charleston</i>	Antimicrobial activity of molluscan egg masses in the San Juan Islands, Washington
P2.85	DEE	<i>Hy KL, Jones AL, Moir C, Fisher K, Krumm JL, Goodrich KR; Widener University</i>	Impact of host plant species on larval success of <i>Epimecis hortaria</i>
P2.86	DVM	<i>Ka'apu-Lyons CA, Gibb AC; Northern Arizona University</i>	The Great Mouth Migration: a tale of two Arizona fish
P2.87		<i>Pia TS, George SB; Georgia Southern University, Statesboro</i>	Salinity fluctuations induce morphological changes in larvae of <i>Pisaster ochraceus</i>
P2.88	DCPB	<i>Ricker T, Poesnecker R, Deats S, Biggers WJ; Wilkes University</i>	Biochemical regulation of settlement and metamorphosis of larvae of <i>Capitella teleta</i> by serotonin
<u>Metabolic Physiology</u>			
P2.89	DVM	<i>Kielhorn CE, McLellan WA, Pabst DA; University of North Carolina Wilmington</i>	Locomotor muscle profiles of cetaceans: a comparison of deep- vs. shallow-diving cetaceans
P2.90		<i>Cuevas LM, Kanatous SB; Colorado State University</i>	Fueled by fat: Weddell seal cell width as an indicator of growth
P2.91		<i>Kelly KL, Dillaman RM, Kinsey ST; University of North Carolina Wilmington</i>	Structural and functional changes in the Ca ²⁺ cycling system during growth in fish white muscle
P2.92	DCPB	<i>Jimenez AG, Dillaman RM, Kinsey ST; University of North Carolina, Wilmington</i>	The influence of muscle fiber size on the cost of ion transport
P2.93	DCPB	<i>Robinson AM, MacLea KS, Cho IG, Chang ES, Mykles DL; Colorado State University, University of California Davis Bodega Marine Lab</i>	Cloning of FKBP12, an inhibitor of mTOR-regulated protein synthesis, and its expression in crustacean skeletal muscle
P2.94	DCPB	<i>Pitts NL, Abuhagr AM, MacLea KS, Covi JA, Bader BD, Chang ES, Mykles DL; Colorado State University, University of California Davis Bodega Marine Lab</i>	Rheb, an activator of the mTOR complex, in the blackback land crab, <i>Gecarcinus lateralis</i> : cloning and effects of molting on expression in skeletal muscle
P2.95	DCPB	<i>Cosenza KS, MacLea KS, Chang ES, Mykles DL; Colorado State University, University of California Davis Bodega Marine Lab</i>	Molt inhibition by limb bud autotomy in the blackback land crab, <i>Gecarcinus lateralis</i> : effects on hemolymph ecdysteroid titers and expression of myostatin and R-Smad in skeletal muscle
P2.96		<i>Lachowicz CA, Cho IG, MacLea KS, Chang ES, Mykles DL; Colorado State University, University of California Davis Bodega Marine Lab</i>	Long-term effects of eyestalk ablation and multiple limb autotomy on myostatin expression in skeletal muscle of <i>Carcinus maenas</i>
P2.97	DCPB	<i>Froehlich JM, Biga PR; North Dakota State University</i>	Characterization of giant danio and rainbow trout primary myoblast culture systems
P2.98	DCPB	<i>Roberson SA, Calcutt MW, Berner NJ*; Sewanee: University of the South, Vanderbilt University</i>	Skeletal muscle cardiolipins in the Eastern red spotted newt (<i>Notophthalmus viridescens viridescens</i>)
P2.99	DCPB	<i>Billing SR, Biga PR; North Dakota State University, Fargo</i>	Expression of akirin isoforms during muscle regeneration in response to muscle injury in rainbow trout (<i>Oncorhynchus mykiss</i>)

P2.100	DCE	<i>Christensen DJ, Pakala KP, Biga PR; North Dakota State University</i>	Expression of myostatin and akirin isoforms in mice (<i>mus musculus</i>) fed a high fat diet
P2.101	DCPB	<i>Reiser PJ, Ferry LA; Ohio State University, Arizona State University</i>	Masticatory myosin expression in jaw adductor muscles of the ghost shark, <i>Callorhynchus callo-rhynchus</i>

Metabolic Stress

P2.102	DIZ	<i>Okazaki RK, Ye W, Richardson M, Yamashita T; Weber State University, Shanghai Normal University, China</i>	Induction of heat shock proteins and comparison of shell characteristics of two species of the Utah land snail, <i>Oreohelix</i>
P2.103	DCPB	<i>Huang K, Huang H, Nicholas Z, Hutchinson A, Desroches R, Catapane EJ, Carroll MA; Medgar Evers, Kingsborough</i>	The effects of manganese on mitochondrial aconitase and cytochrome c oxidase in the gill of the bivalve <i>Crassostrea virginica</i>
P2.104	DDCB	<i>Gestl EG, Taraska NG, Terkowski SM, Giovenella RC, Boettger SA*; West Chester University of Pennsylvania</i>	Validating a potential pre-clinical cancer model: Inactivation of the tumor suppressor p53 in colon carcinoma cell lines
P2.105	DCPB	<i>Bateman JL, Healy JE, Florant GL, Handa RJ; Colorado State University, Ft. Collins, University of Arizona College of Medicine, Phoenix</i>	AMP-activated protein kinase: state-dependent changes in expression in the golden-mantled ground squirrel, <i>C. lateralis</i>
P2.106	DCPB	<i>Toombs CA, Jost JA, Frederich M; University of New England, Biddeford</i>	Differential hypoxia tolerance and AMPK activity in two color morphs of the green crab, <i>Carcinus maenas</i>
P2.107	DCPB	<i>Hardy KM, Follett CR, Birk MA, Burnett LE, Lema SC; Medical University of South Carolina, University of North Carolina Wilmington, College of Charleston</i>	HIF-1 α and HIF-1 β gene transcription exhibits tissue-dependent responses to hypoxia and hypercapnic hypoxia in the Atlantic blue crab, <i>Callinectes sapidus</i>
P2.108	DCPB	<i>Harrison JF, Ramsey KA, Dohrenwend S, Heinrich S, Farzin M, Greenlee KJ; Arizona State University, North Dakota State University</i>	HIF-mediated growth suppression in <i>Drosophila melanogaster</i> reared in moderate hypoxia
P2.109	DCPB	<i>Darling CL, Sharp NJ, Burnett KG, Burnett LE; College of Charleston</i>	Impacts of hypoxia and hypercapnic hypoxia on the transcription of key antioxidants and protein synthesis genes in the shrimp <i>Litopenaeus vannamei</i>
P2.110		<i>Hale AJ, Skopec MM, Dearing MD; Weber State University, University of Utah</i>	Detoxification enzyme expression in nasal epithelium of woodrats
P2.111		<i>Wheeler MS, Kelley K, Tapley DW, Crockett EL; Salem State University, University of Maine, Ohio University and MDI Biological Laboratory</i>	Rates of mitochondrial H ₂ O ₂ production and non-heme iron contents in selected tissues from cold- and warm-acclimated striped bass (<i>Morone saxatilis</i>)
P2.112	DCPB	<i>Santin AE, Rodnick KJ; Idaho State University, Pocatello</i>	Measurement of glycated hemoglobin in rainbow trout
P2.113	DCE	<i>Tamone SL, Morado JF; University of Alaska Southeast, US National Oceanic & Atmospheric Administration</i>	Changes in glucose metabolism in Tanner crabs <i>Chionoecetes bairdi</i> infected with <i>Hematodinium</i> sp:
P2.114	DCPB	<i>Elder LE, Seibel BA; University of Rhode Island, Kingston</i>	Vertical migration in oxygen minimum zones: the physiological consequences for the hyperiid amphipod <i>Phronima</i>
P2.115	DCPB	<i>Förster TD, Sprague JC, Woods HA; University of Montana, Missoula</i>	The underground chambers of <i>Manduca sexta</i> - curse of the oxygen or treasure troves?

Neurobiology: Nervous System Structure and Function

P2.116	DNB	<i>Hedrick MS, Klingler MJ, Blake AJ, Williams JC, Johnson SM; California State University, East Bay, University of Wisconsin</i>	Using microfluidics to localize the brainstem respiratory oscillator of the bullfrog (<i>Lithobates catesbeianus</i>)
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P2.117	DNB	Valdez M, Beitzel C, Shahidizadeh A, Valdez J, Martinez B, Spurgin K, Kaprielian A, Abad C, Waschek J, Curras-Collazo M; University of California, Riverside, Moreno Valley Community College, University of California Los Angeles	Vasopressin and pituitary adenylate cyclase-activating polypeptide (PACAP) participate cooperatively in behavioral and neuroendocrine responses to environmental demands
P2.118	DCPB	Coughlin DJ, Lykens NM, Reddi JM, Lutz GJ, Tal- lent MK; Widener University, Drexel University	Manipulation of alternative splicing in multiexon genes: altering the kinetics of synaptic transmission by hippocampal CA-1 neurons
P2.119		Taylor E, Miller M, Araneo-Yowell J, Farmer CG; University of Utah, Salt Lake City	Behavioral evidence of magnetoreception in American alligators
P2.120	DNB	Meredith T, Hansen A; Florida Atlantic University, University of Colorado, Denver, Anschutz Medical Campus	Olfactory hemi-bulb organization in the elasmobranch brain
P2.121	DNB	Soares DS; University of Maryland	The lateral line of the southern cavefish, <i>Typhlichthys subterraneus</i>
P2.122	DVM	Farina SC, Song J; Cornell University, Smithsonian National Museum of Natural History	Lateral line anatomy in deep-water benthic anglerfish, <i>Chaunax suttkusi</i>
P2.123	DNB	Swartz A, Soares DS; University of Maryland	Comparative startle responses of <i>Astyanax mexicanus</i>
P2.124	DNB	Johnson JI, Buchanan KJ, Winn BM, Fobbs AJJR, Sudheimer KD; Michigan State University, East Lansing, National Museum of Health and Medicine, Armed Forces Institute of Pathology, Stanford University	Brains of bottlenose dolphins <i>Tursiops truncatus</i> : interactive online atlas of MRI images and stained sections in the horizontal plane
P2.125		Campbell JM, Thorgaard G; Washington State University Pullman	Aggressive behavior and brain morphologies in clonal rainbow trout lines (<i>Oncorhynchus mykiss</i>) with varying domestication histories
P2.126	DCE	Dickens MJ, Cornil CA, Balthazart J; University of Liège	Acute stress alters brain aromatase activity in Japanese quail (<i>Coturnix japonica</i>) in a sex-specific manner
<u>Phylogenetics</u>			
P2.127	DSEB	Li C, Broughton RE, Orti G, Zhang F*; University of Nebraska, University of Oklahoma, George Washington University	14 genes resolve basal ray-finned fish relationships
P2.129	DSEB	Jansen N, Mooi R; University of Pennsylvania, Philadelphia, California Academy of Sciences, San Francisco	The astriclypeidae: phylogenetics of Indo-Pacific, super-flat, holey sand dollars
P2.130		Lyson TR, Sperling EA*, Gauthier JA, Heimberg AM, Peterson KJ; Yale University, Dartmouth College	MicroRNAs support a Testudines-Lepidosaur clade
P2.131	DSEB	Vollrath K, Mooi R; San Francisco State University, California Academy of Sciences	Further advances in our understanding of the origin and phylogeny of the earliest sea urchins
<u>Population and Community Ecology</u>			
P2.132	DEE	Little DR, Rostal DC; Georgia Southern University, Statesboro	Population structure, movement patterns and reproduction in the gopher tortoise (<i>Gopherus polyphemus</i>) from Southeast Georgia
P2.133	DEE	McCann MJ; Stony Brook University	Using mark-recapture to study the population biology of a non-native aquatic invader
P2.134		Allen L, Grace J, Chadwell B, Wikelski M, Anderson D; Salem College, Wake Forest University, Max Planck Institute for Ornithology, Germany	Poor foraging not breeding explains reproductive decline in a long-lived seabird
P2.135		Malinowski CR, Herzing DL; Florida Atlantic University, The Wild Dolphin Project	Nutrition and habitat based diet of wild dolphins in the Bahamas as a model for understanding prey selection

P2.136	DEE	<i>Barthell JF, Redd JR, Clement ML, Hranitz JM, Petanidou T, Wells H; University Central Oklahoma, Bloomsburg University Pennsylvania, University Aegean, University Tulsa</i>	Nectar levels of a highly invasive flowering plant species correlate with pollinator size within island ecosystems in America and Eurasia
P2.137	DCPB	<i>Johnson A, Grisham M, Khan A, Boyle S, Luque L, Davis J; Rhodes College</i>	An integrative assessment of snake parasitism across an urban-rural gradient
P2.138	DEE	<i>Danner RM, Greenberg R, Walters JR; Virginia Tech, Smithsonian Migratory Bird Center</i>	Winter food limits the body condition, survival, and molt of a migratory sparrow

Regulation of Reproduction: Sex Determination and Gonadal Function

P2.139	DEDB	<i>Bieser K, Wibbels T; University of Alabama Birmingham</i>	DMRT1 as the potential male sex determining factor in the red-eared slider turtle (<i>Trachemys scripta</i>) a species with temperature-dependent sex determination
P2.140	DCE	<i>Clairardin SG, Paitz RT, Bowden RM; Illinois State University</i>	Interference of estradiol metabolism during embryonic development: a mechanism of action for Bisphenol-A
P2.141	DIZ	<i>Tran MC, Tsukimura B; California State University, Fresno</i>	The role of methyl farnesoate as a reproductive regulator in the tadpole shrimp, <i>Triops longicaudatus</i>
P2.142		<i>Edmonds KE; Indiana University Southeast</i>	Compensatory gonadal hypertrophy in the marsh rice rat (<i>Oryzomys palustris</i>)
P2.143		<i>Guardado D, Bentley GE, Perfito N; University of California, Berkeley</i>	Investigating hypothalamic control of puberty in zebra finches

Stress and Reproduction

P2.144		<i>James KO, Riso GL, French SS, Strand CR; California Poly State University, San Luis Obispo, Utah State University, Logan</i>	Stress affects song control nuclei growth in adult male house finches, <i>Carpodacus mexicanus</i>
P2.145	DCE	<i>Lee JE; Southeastern Louisiana University</i>	Stress, reproduction and adrenal modulation in the red-ear slider turtle
P2.146	DCE	<i>Klukowski M; Middle Tennessee State University, Murfreesboro</i>	Effects of breeding season, testosterone and ACTH on the corticosterone response of free-living male fence lizards (<i>Sceloporus undulatus</i>)

Symbioses

P2.147	DIZ	<i>Iyengar EV, Konicki WS, Voltzow J; Muhlenberg College, University of Scranton</i>	Catching a ride snail-style: symbiotic interactions between the snails <i>Crepidula convexa</i> with their hermit crab and snail hosts
P2.148	DIZ	<i>Mazzillo Mays M, Kempf S; Auburn University</i>	Mucilage variation among <i>Symbiodinium</i> strains
P2.149	DEE	<i>Williams BL, Tchourbanov A, Nishiguchi MK; New Mexico State University</i>	Genomic comparison of symbiotic and free-living luminescent bacteria (<i>Vibrio</i> sp.) from different geographical locations: does environment or host matter?
P2.150		<i>Jackson A, Vansyoc R; California Academy of Sciences, San Francisco, University of California, Berkeley</i>	Barnacle and sponge symbiosis: host specificity and systematics of <i>Acastinae</i> from the Philippines

Thursday Schedule of Events

All events take place in the Salt Palace Convention Center unless noted as (M) for Marriott Hotel

<u>EVENT</u>	<u>TIME</u>	<u>LOCATION</u>
Registration	7:30 AM-3:00 PM	North Foyer
Exhibit Hall	9:30 AM-5:00 PM	Exhibit Hall A
Poster Session 3 Setup	7:00-8:00 AM	Exhibit Hall A
Poster Session 3 Even Numbers Viewing	3:00-4:00 PM	Exhibit Hall A
Poster Session 3 Odd Numbers Viewing	4:00-5:00 PM	Exhibit Hall A
Poster Session 3 Teardown	5:00-5:30 PM	Exhibit Hall A
Coffee Breaks/PM Poster Session Cash Bar	9:30-10:30 AM; 3:00-5:00 PM	Exhibit Hall A
<u>SYMPOSIA ORAL PRESENTATIONS</u>		
S7: Population Dynamics of Crustaceans	8:00 AM-3:00 PM	150 ABC
S8: Environ-Cued Hatching Across Taxa: Embryos Choose a B-Day	8:00 AM-3:00 PM	150 DEF
<u>CONTRIBUTED PAPER ORAL PRESENTATIONS</u>		
Session 48: Comp Session: Ecoimmunology & Disease Ecology ...	8:00-10:00 AM	150 G
Session 49: Comp Session to Bioinspiration: Biomechanics, ...	10:20 AM-Noon	150 G
Session 50: Muscle Structure and Function I	8:20-10:00 AM	151 ABC
Session 51: Muscle Structure and Function II	10:20 AM-Noon	151 ABC
Session 52: Biophysical Ecology	8:00-10:00 AM	151 DEF
Session 53: Sensorimotor Integration and Modeling	8:00-10:00 AM	151 G
Session 54: Swimming: Form and Function	10:20 AM-Noon	151 G
Session 55: Population Genetics	8:00-9:40 AM	250 AB
Session 56: Regulation of Reproduction: Sex Steroids	10:00 AM-Noon	250 AB
Session 57: Locomotor Evolution	8:00-9:40 AM	250 DE
Session 58: Ecomorphology of Locomotion I	10:00 AM-Noon	250 DE
Session 59: Animal Communication - Receiver Psychology	8:00-10:00 AM	251 AB
Session 60: Animal Communication - Honest Signalling	10:20 AM-Noon	251 AB
Session 61: Neurobiology - Sensory Biology and Neuroethology	8:00-9:40 AM	251 F
Session 62: Neurobiology - Motor Control and Locomotion	10:00 AM-Noon	251 F
Session 63: Comp Session to Neuroecology - Chemicals, Signals ...	8:20-9:40 AM	250 F
Session 64: Comp Session to Neuroecology - Communication, ...	10:00 AM-Noon	250 F
Session 65: Comp Session to Bioinspiration: Locomotion	1:00-3:00 PM	150 G
Session 66: Muscle Structure and Function III	1:00-3:00 PM	151 ABC
Session 67: Water Balance, Energetics and Performance	1:00-3:00 PM	151 DEF
Session 68: Swimming: Models, Stability, Maneuverability	1:00-3:00 PM	151 G
Session 69: Regulation of Reproduction - Seasonality	1:00-3:00 PM	250 AB
Session 70: Ecomorphology of Locomotion II	1:00-3:00 PM	250 DE
Session 71: Thermal Physiology	1:00-3:00 PM	251 AB
Session 72: Neurobiological Control of Behavior	1:00-2:40 PM	251 F
Session 73: Education, Outreach and Policy	1:00-3:00 PM	250 F
<u>COMMITTEE & BOARD MEETINGS</u>		
Public Affairs Committee	Noon-1:00 PM	254 A
SICB Editorial Board	Noon-1:00 PM	250 C
<u>BUSINESS MEETINGS</u>		
AMS Business Meeting	10:30-11:45 AM	Boardroom
SICB Society Business Meeting & Awards Presentation	5:15-6:15 PM	150G
TCS Meeting	6:30-7:30 PM	150 ABC
<u>WORKSHOPS AND PROGRAMS</u>		
Broadening Participation Workshop	Noon-1:00 PM	251 C
Student/Post Doc "Importance of Mentorships in Science Careers"	6:30-8:30 PM	Ballroom B
<u>SOCIAL EVENTS</u>		
AMS Luncheon	Noon-1:00 PM	253 AB
Broadening Participation Social	8:00-10:00 PM	Deer Valley (M)

THURSDAY PROGRAM SYMPOSIA

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

8:00 AM-3:00 PM
150 ABC

Symposium S7: Population Dynamics of Crustaceans

Supported by: DIZ, American Microscopical Society, The Crustacean Society

Organized by: Jen Buhay

8:00 AM	S7.1		<i>Seitz RD, Knick KE, Westphal M; Virginia Institute of Marine Science, The College of William and Mary, University of Alaska Fairbanks, School of Fisheries and Ocean Sciences</i>	Diet preferences and bottom-up control of blue crabs in Chesapeake Bay
8:30 AM	S7.2	DEE	<i>Derry AM; University of Quebec at Montreal</i>	Evolving crustacean metacommunities in aquatic ecosystems
9:00 AM	S7.3		<i>Cristescu ME; University of Windsor</i>	The genetics of habitat transitions: lessons from invasion biology
9:30 AM	S7.4		<i>Hardy SM, Albrecht G, Hundertmark K, Bluhm B, Huettmann F; University of Alaska, Fairbanks</i>	Assessing distribution and structure of unexploited snow crab populations in Alaskan waters

10:00 AM BREAK IN EXHIBIT HALL

10:30 AM	S7.5		<i>Goetze E; University of Hawaii at Manoa</i>	Population differentiation in the open sea
11:00 AM	S7.6		<i>Campos J; University of Porto</i>	The ecogeography of brown shrimp <i>Crangon crangon</i>
11:30 AM	S7.7		<i>Sullivan KA, Bakian AV; Utah State University</i>	How scientific societies can include, promote and retain women members

NOON LUNCH BREAK

1:00 PM	S7.8		<i>Buhay JE; USDA</i>	Leading researchers to water: assembling multidisciplinary collective networks for the study of crustacean populations
1:30 PM	S7.9			Open Forum

8:00 AM-3:00 PM
150 DEF

Symposium S8: Environmentally-Cued Hatching Across Taxa: Embryos Choose a Birthday

Supported by: DAB, DCPB, DDCB, DEDB, DIZ

Organized by: Karen Martin, Karen Warkentin, Richard Strathmann

8:00 AM	S8.1	DAB	<i>Warkentin KM; Boston University, MA</i>	Introduction to the Symposium - Eggs as organisms: environmentally cued hatching and adaptive embryo responses to risk and opportunity
8:30 AM	S8.2	DCPB	<i>Martin KL, Bailey KJ, Moravek CL, Carlson KA; Pepperdine University</i>	Taking the plunge: how do California grunion embryos respond so quickly to sudden changes in the environment? Physiology of the response to hatching triggers for a teleost fish
9:00 AM	S8.3		<i>Ishimatsu A, Graham JB; Nagasaki University, Japan, University of California, San Diego</i>	Roles of oxygen and tidal cycle for embryonic incubation and hatching
9:30 AM	S8.4		<i>Doody JS; Monash University, Melbourne, Australia</i>	Evidence for environmentally-cued hatching in reptiles

10:00 AM BREAK IN EXHIBIT HALL

10:30 AM	S8.5	DAB	<i>Warkentin KM; Boston University</i>	Hatching plasticity in amphibians: evolution, trade-offs, cues and mechanisms
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THURSDAY PROGRAM SYMPOSIA

11:00 AM	S8.6	DAB	<i>Christy JS; Smithsonian Tropical Research Institute, Panama</i>	Timing of hatching in Brachyuran crabs: patterns and control
11:30 AM	S8.7	DEE	<i>Reed WL, Clark ME; North Dakota State University, Fargo</i>	Beyond maternal effects on avian development: embryonic responses to the environment.ail

NOON LUNCH BREAK

1:00 PM	S8.8	DIZ	<i>Miner BG, Donovan DA, Morgan C; Western Washington University</i>	Predator and conspecific induced hatching in a marine snail
1:30 PM	S8.9	DIZ	<i>Oyarzun FX, Strathmann RR; University of Washington</i>	Plasticity in stage at hatching that controls pelagic duration and dispersal in marine invertebrate larvae
2:00 PM	S8.10		<i>Whittington ID, Kearn GC; South Australian Museum, University of Adelaide, Australia, University of East Anglia, UK</i>	Hatching strategies in parasitic monogeneans (platyhelminths) that facilitate host infection
2:30 PM	S8.11		<i>Strathmann RR</i>	Roundtable Discussion

THURSDAY PROGRAM MORNING SESSIONS

8:00-10:00 AM
150 G

Session 48: Complementary Session: Ecoimmunology & Disease Ecology - Stress, Energetics & Immunity

Co-Chairs: William Hopkins, Craig Frank

8:00 AM	48.1	DCE	<i>Hopkins WA, Durant SE, Moser WE; VA Tech, Smithsonian Institution</i>	Ectoparasitism, innate immunity, and stress physiology of eastern hellbenders (<i>Cryptobranchus alleganiensis</i>) from stream reaches with differing habitat quality
8:20 AM	48.2		<i>Seddon R, Klukowski M; Middle Tennessee State University</i>	The effects of acute stress on corticosterone, leukocytes, testosterone, and prostaglandin E2 in male southeastern five-lined skinks (<i>Plestiodon inexpectatus</i>)
8:40 AM	48.3	DCE	<i>Peterson JD, Steffen JE, Appel AG, Rollins-Smith LA, Mendonca MT; Auburn University, Troy University, Penn State Erie, Vanderbilt University</i>	Chytridiomycosis is metabolically costly and induces sickness behavior and immune effects that are linked to increased corticosterone secretion
9:00 AM	48.4	DCE	<i>Lucas LD, French SS; Utah State University</i>	Stress and immunity in a free-living lizard across an urban landscape
9:20 AM	48.5	DCPB	<i>Kristan DM; California State University San Marcos</i>	Why does a strong immune response not protect against parasite infection?
9:40 AM	48.6	DCPB	<i>Frank C, Brigham RM, Hicks A, Kunz T, Rudd R, Reichard J; Fordham University, University of Regina, NY D.E.C., Boston University, NY D.O.H.</i>	The relationship between dietary fatty acids and WNS susceptibility in bats

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
150 G

Session 49: Complementary Session to Bioinspiration: Biomechanics, Signals and Sensors

Chair: Laura Miller

10:20 AM	49.1	DCB	<i>Miller L, Hamlet C, Santhanakrishnan A; University of North Carolina, Chapel Hill</i>	Rolling up with the flow to reduce drag and flutter: a study of broad leaves
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**THURSDAY PROGRAM
MORNING SESSIONS**

10:40 AM	49.2	DCB	<i>Mongeau J-M, Jayaram K, Demir A, Sampson EG, Cowan NJ, Rull RJ; University of California, Berkeley, Johns Hopkins University</i>	Biomechanics of tactile sensor for wall following and spatial mapping
11:00 AM	49.3	DCB	<i>Nelson JM, Mellon DeF, Reidenbach MA; University of Virginia</i>	Effects of antennule morphology and flicking kinematics on flow and odor sampling by the freshwater crayfish, <i>Procambarus clarkii</i>
11:20 AM	49.4	DCB	<i>Pravin S, Mellon D, Reidenbach M; University of Virginia</i>	Numeric simulation of convective-diffusive odor transport to chemosensory hairs of the crayfish, <i>Procambarus clarkii</i>
11:40 AM	49.5	DCB	<i>Ruder WC; Boston University, Harvard Wyss Institute, HHMI</i>	Synthetic cellular biomechanics

**8:20-10:00 AM
151 ABC**

Session 50: Muscle Structure and Function I

Chair: Nick Gidmark

8:20 AM	50.1	DVM	<i>Gidmark NJ, Konow N, Rainbow M, Brainerd EL; Brown University</i>	Bite force varies with pharyngeal jaw orientation and adductor muscle length in common carp: XROMM and 3D modeling approaches
8:40 AM	50.2	DVM	<i>McCord C, Westneat M; University of Chicago, Field Museum of Natural History</i>	Diversification of triggerfish (Teleostei: Balistidae) cranial shape and jaw biomechanics
9:00 AM	50.4	DCB	<i>Pace CM, Monroy JM, Metoyer A, Aldridge C, Wang J, Nishikawa KC; Northern Arizona University</i>	Does genetic variation in titin affect mouse locomotion?
9:20 AM	50.5	DVM	<i>Gerry SP, Ellerby DJ; Wellesley College</i>	The effects of serotonin on leech muscle mechanics
9:40 AM	50.6		<i>Moore AL, Butcher MT; Youngstown State University</i>	Forelimb muscle architecture of the American badger (<i>Taxidea taxus</i>) and groundhog (<i>Marmota monax</i>)

10:00 AM BREAK IN EXHIBIT HALL

**10:20 AM-Noon
151 ABC**

Session 51: Muscle Structure and Function II

Chair: Brandon Jackson

10:20 AM	51.1	DCB	<i>Springthorpe D, Fernandez MJ, Hedrick TL; University of North Carolina at Chapel Hill</i>	Neuromuscular control of yaw turns in the hawkmoth <i>Manduca sexta</i>
10:40 AM	51.2	DCB	<i>Berg Robertson AM, Biewener AA; University of Houston, Harvard University</i>	Wing muscle function in the pigeon (<i>Columba livia</i>) during short free-flights
11:00 AM	51.3	DCB	<i>Jackson BE, Tobalske BW, Dial KP; University of Montana, Missoula</i>	Pectoralis contractile activity during WAIR and flight in pigeons

THURSDAY PROGRAM MORNING SESSIONS

11:20 AM	51.4	DCB	<i>George NT, Hsu HM, Irving TC, Daniel TL; University of Washington</i>	Molecular and structural evidence for temperature dependent elastic energy storage in <i>Manduca sexta</i>
11:40 AM	51.5	DVM	<i>Anderson CV, Deban SM; University South Florida, Tampa</i>	Effects of temperature on in vitro muscle dynamics of chameleon feeding muscles

8:00-10:00 AM

151 DEF

Session 52: Biophysical Ecology

Chair: Mike O'Connor

8:00 AM	52.1	DCPB	<i>Honarvar S, O'Connor M*; Drexel University</i>	Tidal ventilation of sea turtle nests
8:20 AM	52.2	DEE	<i>Booher Schmidt CM, Hood WR; Auburn University, Alabama</i>	Dietary calcium, maternal skeletal condition and lifetime reproductive performance of white-footed mice (<i>Peromyscus leucopus</i>)
8:40 AM	52.3	DCB	<i>Denny M, Dorgan K, Evangelista D, Hettinger A, Leichter J, Ruder W, Tuval I; Stanford University, University of California, Berkeley, University of California, Davis, Scripps Institution of Oceanography, Boston University, Mediterranean Institute for Advanced Studies</i>	Anchor ice and Antarctic benthic ecology: the role of interspecific variation in ice nucleation
9:00 AM	52.4	DEE	<i>Johnsen S, Marshall NJ; Duke University, University of Queensland</i>	Using sunglasses to find the best burger in town: polarization vision as a camouflage breaker in pelagic predators
9:20 AM	52.5	DCB	<i>Loudon C, Bradley TJ; University of California, Irvine</i>	Warming up and cooling down after a very large hot drink by blood-sucking bugs (<i>Rhodnius prolixus</i>)
9:40 AM	52.6	DIZ	<i>Carrington E, Kull K; UW Friday Harbor Laboratories</i>	Foraging activity of the whelk <i>Nucella ostrina</i> in manipulated tidal regimes

10:00 AM BREAK IN EXHIBIT HALL

8:00-10:00 AM

151 G

Session 53: Sensorimotor Integration and Modeling

Chair: Gary Gillis

8:00 AM	53.1		<i>Volyanskyy K, Webster DR, Weissburg MJ; Georgia Institute of Technology, Atlanta</i>	Neuroadaptive control algorithms for autonomous chemical plume tracking
8:20 AM	53.2	DVM	<i>Ryerson WG, Schwenk K; University of Connecticut</i>	Kinematics of tongue-flicking in garter snakes (<i>Thamnophis sirtalis</i>)
8:40 AM	53.3		<i>Proctor JL, Holmes P; Princeton University</i>	Reflexes and running: modeling neural feedback in a running cockroach
9:00 AM	53.4	DVM	<i>Gillis GB, Tierney C; Mount Holyoke College</i>	The role of vision in coordinating forelimb muscle activity patterns during toad landing
9:20 AM	53.5	DCB	<i>Uyeno TA, Gilles B, Sueda S, Lee D, Wilkinson K, Giszter SF, Pai DK, Nishikawa KC; NAU, UBC, UNLV, Drexel University</i>	Building a virtual biomechanical model of the bullfrog skeleton
9:40 AM	53.6	DCB	<i>Feitl KE, Ngo V, McHenry MJ; University of California, Irvine</i>	Escape responses of larval fish to a predator's strike

10:00 AM BREAK IN EXHIBIT HALL

THURSDAY PROGRAM MORNING SESSIONS

10:20 AM-Noon

151 G

Session 54: Swimming: Form and Function

Chair: Ian Bartol

10:20 AM	54.1	DCB	<i>Bartol IK; Old Dominion University</i>	Effect of funnel aperture variation on jet dynamics of squid
10:40 AM	54.2	DVM	<i>Maia A, Wilga CD; University of Rhode Island</i>	Dorsal fin muscle activity during steady swimming in two shark species
11:00 AM	54.3		<i>Russo RS, Blemker SS, Fish F, Moored K, Bart-Smith H; University of Virginia, West Chester University</i>	Form-function relationship between ray skeletal architecture and ray locomotion
11:20 AM	54.4	DVM	<i>Danos N, Ward AB; Harvard University, Adelphi University</i>	Effects of body shape on myoseptal tendon ossification in teleost fishes
11:40 AM	54.5	DCB	<i>Nowroozi BN, Brainerd EL; Brown University</i>	Intervertebral joint kinematics during the startle response in striped bass, <i>Morone saxatilis</i>

8:00-9:40 AM

250 AB

Session 55: Population Genetics

Chair: Lisa Horth

8:00 AM	55.1		<i>Horth L; Old Dominion University</i>	The association between sex ratio, melanism and numerical abundance in mosquitofish
8:20 AM	55.2	DEE	<i>Cox CL, Davis AR; The University of Texas, Arlington, The University of California, Berkeley</i>	The population genetic structure of ground snakes (<i>Sonora semiannulata</i>)
8:40 AM	55.3	DSEB	<i>Bossu CM, Near TJ; Yale University</i>	The role of postmating isolating barriers in the hybridization of orangethroat darters
9:00 AM	55.4	DEE	<i>Fox AM, Schrey AW, McCoy ED, Mushinsky HR; University of South Florida</i>	Comparison of genetic structure of the Florida sand skink, <i>Plestiodon reynoldsi</i> in homogeneous and heterogeneous scrub on Lake Wales Ridge in central Florida
9:20 AM	55.5		<i>Wang VH, Cohen CS; Romberg Tiburon Center for Environmental Studies, San Francisco State University</i>	Recently established populations of <i>Botryllus schlosseri</i> (Ascidiacea) show high diversity at the fusion/histocompatibility locus

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon

250 AB

Session 56: Regulation of Reproduction: Sex Steroids

Chair: Morgan Benowitz-Fredericks

10:00 AM	56.1	DCE	<i>Benowitz-Fredericks ZM, Hodge M, Chow J, Haussmann M; Bucknell University</i>	Uptake and consequences of yolk androstenedione in male and female chicks
10:20 AM	56.2	DCE	<i>Wong SC, Earley RL; University of Alabama</i>	Color in context: female convict cichlids alter carotenoid-based traits in response to predation risk and changes in breeding status
10:40 AM	56.3	DCE	<i>Duncan CA, John-Alder HB; Rutgers University</i>	Testosterone inhibits hepatic IGF-I message in <i>Sceloporus undulatus</i> , a female-larger species of lizard
11:00 AM	56.4	DCE	<i>Deviche PJ, Burin Des Roziers M, Gao S; Arizona State University, University of Poitiers, France</i>	Acute stress-induced inhibition of plasma testosterone in male songbirds: time course, reversibility, and specificity

THURSDAY PROGRAM MORNING SESSIONS

11:20 AM	56.5	DCE	<i>Anderson EM, Navara KJ; University of Georgia, Athens</i>	Seminal plasma progesterone influences sperm hole penetration in white leghorns
11:40 AM	56.6	DCE	<i>Pinson SE, Navara KJ; University of Georgia, Athens</i>	Elevated testosterone during meiotic segregation stimulates laying hens to produce more sons

8:00-9:40 AM 250 DE

Session 57: Locomotor Evolution

Chair: *Brigette Demes*

8:00 AM	57.1	DVM	<i>King HM, Shubin NH, Coates M, Hale ME; University of Chicago</i>	Benthic walking in the African lungfish (<i>Protopterus annectens</i>)
8:20 AM	57.2	DVM	<i>Jorgensen ME, Reilly SM; Ohio University</i>	Evolution of locomotor systems in frogs
8:40 AM	57.3	DVM	<i>Scales JA; University of Hawaii, Manoa</i>	The evolution of locomotor capabilities in lizards
9:00 AM	57.4	DVM	<i>Demes B, O'Neill MC; Stony Brook University</i>	Two and four-legged locomotion in capuchin monkeys: implications for the evolution of human bipedalism
9:20 AM	57.5	DCB	<i>Zeng Y, Dudley R; University of California, Berkeley</i>	Functionality of wings in flight and gliding of stick insects

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon 250 DE

Session 58: Ecomorphology of Locomotion I

Chair: *Dave Ellerby*

10:00 AM	58.1	DCB	<i>Gilman CA, Irschick DJ; University of Massachusetts Amherst</i>	The effects of perch stability on jumping performance and kinematics in green anole lizards (<i>Anolis carolinensis</i>)
10:20 AM	58.2	DVM	<i>Anderson RA, Baldwin KS; Western Washington University, Monmouth College</i>	Scrub lizard sprinting performance in field and lab
10:40 AM	58.3	DVM	<i>Liao JC, Taguchi M; Whitney Lab, University of Florida Gainesville</i>	Velocity-dependant energetics hierarchy for trout swimming in vortical flows
11:00 AM	58.4	DVM	<i>Perlman BM; Moss Landing Marine Laboratories</i>	Just swim away: the C-start escape response in four species of surfperches (Embiotocidae) from central California
11:20 AM	58.5		<i>Feilich KL, Gerry SP, Ellerby DJ; Wellesley College</i>	A three-dimensional approach to morphological variation in bluegill
11:40 AM	58.6	DCB	<i>Ellerby DJ, Gerry SP; Wellesley College</i>	Do bluegill ecomorphs differ in steady swimming performance and energy economy?

8:00-10:00 AM 251 AB

Session 59: Animal Communication - Receiver Psychology

Chair: *Sarah Humfeld*

8:00 AM	59.1	DAB	<i>Bee MA, Nityananda V; University of Minnesota, Twin Cities</i>	Source segregation based on spectral cues: a mechanism for hearing in mixed-species frog choruses?
8:20 AM	59.2	DAB	<i>Gunderson AR, Leal M; Duke University</i>	A test of a model of visual signal efficacy under natural conditions using Anolis
8:40 AM	59.3	DAB	<i>Westerman EL, Monteiro A; Yale University</i>	Butterflies learn to like novel wing patterns, but learning that more is better is easier than learning that less is more

THURSDAY PROGRAM MORNING SESSIONS

9:00 AM	59.4		<i>Leal M; Duke University</i>	Associative learning and pattern discrimination in lizards
9:20 AM	59.5	DEE	<i>Walguarnery JW, Butler MA; University of Hawaii, Manoa</i>	Morphological constraint and behavioral adaptation in the visual ecology of <i>Megalagrion</i> damselflies
9:40 AM	59.6	DAB	<i>Trueblood LA, Seibel BA; La Sierra University, University of Rhode Island</i>	Body patterns of the Humboldt squid <i>Dosidicus gigas</i> : diversity in a uniform world

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon 251 AB

Session 60: Animal Communication - Honest Signalling

Chair: Rebecca Safran

10:20 AM	60.1		<i>Safran RJ; University of Colorado, Boulder</i>	The dynamics of physiology-trait relationships: implications for honest signal theory
10:40 AM	60.2	DEE	<i>Bywater CL, White C, Wilson RS; The University of Queensland</i>	The physiological basis of dishonest signals of strength in males of the fiddler crab <i>Uca vomeris</i>
11:00 AM	60.3		<i>Young AM, Wright TF; New Mexico State University</i>	Analyzing the costs and benefits of vocal matching in Budgerigars: a test of the password hypothesis
11:20 AM	60.4	DAB	<i>Reichert MS; University of Missouri, Columbia</i>	Call timing in the treefrog <i>Dendropsophus ebraccatus</i> : the role of the aggressive call
11:40 AM	60.5	DEE	<i>David GK, Wilson RS, Ortiz-Barrientos D; The University of Queensland</i>	Diving in soccer: when does it pay to be dishonest?

8:00-9:40 AM 251 F

Session 61: Neurobiology - Sensory Biology and Neuroethology

Chair: Kathleen Lynch

8:00 AM	61.1	DNB	<i>Battelle B-A, Parker A, Gaddie C, Kempler K; Whitney Laboratory, University of Florida</i>	Biochemical responses of <i>Limulus</i> photoreceptors to darkness with and without circadian clock input
8:20 AM	61.2	DVM	<i>Kohl T, Young BA*; University of Bonn, University of Massachusetts Lowell</i>	Electrophysiology of the snake retina
8:40 AM	61.3		<i>Tucker SA, Bentley GE; University of California, Berkeley</i>	Downstream regulation of melatonin receptor in a forebrain vocal control nucleus
9:00 AM	61.4	DNB	<i>Leininger EC, Kelley DB; Columbia University</i>	The neuromuscular bases of vocalization in <i>X. borealis</i> and <i>X. boumbaensis</i> : insights into the evolution of simple advertisement call patterns in <i>Xenopus</i>
9:20 AM	61.5	DAB	<i>Lynch KS, Ball GF; Johns Hopkins University</i>	Song perception in female songbirds: how do they avoid errors in song discrimination?

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon 251 F

Session 62: Neurobiology - Motor Control and Locomotion

Chair: Simon Sponberg

10:00 AM	62.1	DCB	<i>Sponberg S, Fechko AS, Daniel TL; University of Washington</i>	The control potential of power muscles in a flying insect
10:20 AM	62.2		<i>Haspel G, O'Donovan MJ; NINDS</i>	Iterative connections reveal functional segments in <i>Caenorhabditis elegans</i> locomotion network

THURSDAY PROGRAM MORNING SESSIONS

10:40 AM	62.3	DCB	Ramos CD, Lim CK, Ahn AN*; Harvey Mudd College	<i>In vitro</i> control of muscle actuators to understand animal movement
11:00 AM	62.4	DNB	Green MG, Hale ME; University Chicago	Motoneurons, muscles and movement: neural control of the pectoral fins during slow and fast swimming
11:20 AM	62.5		Kagaya K, Takahata M; Hokkaido University, Japan	Characterization of brain neurons involved in spontaneously initiated walking in crayfish
11:40 AM	62.6	DNB	Steinmetz SM, Ding Y, Goldman DI; Georgia Institute of Technology	Sandfish model predicts muscle activation pattern during subsurface sand diving

8:20-9:40 AM
250 F

Session 63: Complementary Session to Neuroecology - Chemicals, Signals and Ecology

Chair: Ashlee Rowe

8:20 AM	63.1		Prada PA, Nevitt G, Furton KG; University of California, Davis, Florida International University	A preliminary analysis of naturally occurring volatile organic compounds associated with nest-sites and feathers from Leach's storm-petrels, <i>Oceanodroma leucorhoa</i>
8:40 AM	63.2	DEE	Ferrier GF, Kim SJ, Loo JA, Zimmer CA, Zimmer RK; University of California, Los Angeles	Sensory mechanisms driving community ecological interactions
9:00 AM	63.4		Aggio JF, Derby CD; Georgia State University	To eat or not to eat: mechanisms of chemical deterrence in food rejection in the blue crab, <i>Callinectes sapidus</i>
9:20 AM	63.5	DEE	Rowe AH, Rowe MP, Zakon HH; University of Texas, Austin, Sam Houston State University, Huntsville	Coevolution between bark scorpion pain-inducing toxins and grasshopper mice pain receptors

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon
250 F

Session 64: Complementary Session to Neuroecology - Communication, Migrations, Neurobiology & Hormones

Chair: Russell Easy

10:00 AM	64.1		Velez A, Bee MA; University of Minnesota, Twin Cities	Dip listening: do frogs do it?
10:20 AM	64.2	DAB	Putman NF, Lohmann KJ; University of North Carolina, Chapel Hill	Loggerhead sea turtle migrations and secular variation: navigating through an ever-changing geomagnetic environment
10:40 AM	64.3	DAB	Ladage LD, Roth TC, Pravosudov VV; University of Nevada, Reno	Hippocampal neurogenesis is associated with migratory behavior in adult but not juvenile sparrows (<i>Zonotrichia leucophrys</i> ssp.)
11:00 AM	64.4	DAB	Chancellor LV, Roth TC, Ladage LD, Pravosudov VV*; University of Nevada Reno	The effect of environmental harshness on hippocampal neurogenesis: a large-scale comparison
11:20 AM	64.5	DCE	Calisi RM, Bentley GE*; University of California, Berkeley, Helen Wills Neuroscience Institute	Season- and context-dependent sex differences in melatonin receptor activity in a forebrain song control nucleus: studies from the lab and semi-natural environments
11:40 AM	64.6	DNB	Easy RH, Adamo SA; Dalhousie University	Biogenic amine receptor gene expression in the immune system and nervous system of the Texas field cricket (<i>Gryllus texensis</i>)

THURSDAY PROGRAM AFTERNOON SESSIONS

1:00-3:00 PM

150 G

Session 65: Complementary Session to Bioinspiration: Locomotion

Chair: George Lauder

1:00 PM	65.1	DCB	<i>Jayaram K, Merritt C, Cherian A, Full RJ; University of California, Berkeley</i>	Running without feet: the role of tarsi during high-speed horizontal locomotion in cockroaches
1:20 PM	65.2	DCB	<i>Maladen RD, Ding Y, Umbanhowar PB, Masse A, Goldman DI; Georgia Tech, Atlanta, Northwestern University, Illinois</i>	The effects of head shape on drag and lift during subsurface sand-swimming
1:40 PM	65.3	DCB	<i>Mazouchova N, Umbanhowar P, Goldman DI; Georgia Institute of Technology, Northwestern University</i>	Importance of wrist rotation for high performance terrestrial locomotion of a sea turtle inspired physical model
2:00 PM	65.4		<i>Kemp T, Bart-Smith H, Moored K; University of Virginia, Princeton University</i>	Understanding batoid propulsion through artificial structures
2:20 PM	65.5	DCB	<i>Blevins EL, Lauder GV; Harvard University</i>	Ground effects on undulating fins: robotic modeling of stingray locomotion
2:40 PM	65.6	DCB	<i>Lauder G, Witt C, Anderson E; Harvard University, Grove City College</i>	Biorobotic analysis of the functional significance of fish tail shapes

1:00-3:00 PM

151 ABC

Session 66: Muscle Structure and Function III

Chair: Nicolai Konow

1:00 PM	66.1	DCB	<i>Libby T, Full RJ; University of California, Berkeley</i>	Active muscle enhances rapid perturbation recovery in an insect limb
1:20 PM	66.2	DVM	<i>Konow N, Roberts TJ; Brown University</i>	Energy absorption by muscle during steady and non-steady movement
1:40 PM	66.3	DCB	<i>Lee SSM, Biewener AA, Deboef MM, Wakeling JM; Simon Fraser University, Burnaby, Canada, Harvard University</i>	Neuromuscular activation dynamics from different types of motor units for predicting muscle forces during locomotion
2:00 PM	66.4	DCB	<i>Nelson RL, Uyeno TA, Wheeler MD, Yeo SH, Wilkinson KC, Pai DK, Nishikawa KC; Northern Arizona University, University of British Columbia</i>	SARCOMOVER: Towards a sarcomere inspired linear actuator
2:20 PM	66.5		<i>Titze IR, Riede T; University of Utah, Salt Lake City</i>	The muscle activation plot as a graphic unit interface for voice simulation across species
2:40 PM	66.6	DCB	<i>Richards CT, Clemente CJ; Harvard University</i>	Using bio-robotic tools to explore muscle force-length and force-velocity properties in aquatic locomotion

1:00-3:00 PM

151 DEF

Session 67: Water Balance, Energetics and Performance

Chair: Harvey Lillywhite

1:00 PM	67.1	DCPB	<i>Lillywhite HB, Sheehy III CM; University of Florida, Gainesville, University of Texas, Arlington</i>	Freshwater drinking requirement in a pelagic sea snake, <i>Pelamis platurus</i>
1:20 PM	67.2		<i>Wright CW, Jackson M, Denardo D; Arizona State University, Tempe</i>	Examining the chronic and acute impacts of food intake on hydration state in the Gila monster, <i>Hemidodermis suspectum</i>
1:40 PM	67.3	DCPB	<i>Gerson AR, Guglielmo CG; University of Western Ontario</i>	High evaporative water loss during endurance flight results in elevated lean mass catabolism in Swainson's thrushes (<i>Catharus ustulatus</i>)

THURSDAY PROGRAM AFTERNOON SESSIONS

2:00 PM	67.4	DCPB	<i>Wagner DN, Green D, Cooper JM, Beauchesne S, Williams TD; Simon Fraser University, Cooper, Beauchesne, & Associates LTD</i>	Impact of water level management on the condition of migratory songbirds
2:20 PM	67.5		<i>Petit M, Lewden A, Vezina F; Université du Québec à Rimouski, Canada</i>	Short-term adjustments of metabolic performance in wintering black-capped chickadees: is phenotypic flexibility fast enough to cope with daily climatic variations?
2:40 PM	67.6	DCPB	<i>Ocobock C, Pontzer H, Gookin J, Baynes S; Washington University in St. Louis, The National Outdoor Leadership School</i>	A new multivariate model for predicting daily energy expenditure in active human populations

1:00-3:00 PM

151 G

Session 68: Swimming: Models, Stability, Maneuverability

Co-Chairs: Eric Tytell, Frank Fish

1:00 PM	68.1	DCB	<i>Tytell ED, Hsu C-Y, Williams TL, Cohen AH, Fauci LJ; Johns Hopkins University, Tulane University, Princeton University, University of Maryland, College Park</i>	Interactions between internal forces, body stiffness, and fluid environment in a neuromechanical model of lamprey swimming
1:20 PM	68.2	DCB	<i>Sefati S, Mitchell T, Fortune ES, Cowan NJ; Johns Hopkins University</i>	An experimentally validated fluid dynamic model of ribbon-finned propulsion reveals how thrust is controlled by counter-propagating waves
1:40 PM	68.3		<i>Pederzani J-N, Moored K, Fish F, Hajhariri H; University of Virginia, West Chester University</i>	A numerical investigation of the hydrodynamic signature of batoid swimming
2:00 PM	68.4		<i>Moored KW, Quinn DB, Fish FE, Hajhariri H, Bart-Smith H; Princeton University, West Chester University, University of Virginia</i>	Analytical model to describe pectoral fin kinematics of the <i>Manta birostris</i> : implications for bio-inspired design
2:20 PM	68.5	DVM	<i>Hoffman JL, Fish FE, Bart-Smith H; West Chester University, Pennsylvania, University of Virginia, Charlottesville</i>	Examining behavioral responses for stability of batoids in response to waves
2:40 PM	68.6	DCB	<i>Fish FE, Nichols RH, Dudas MA, Moored KW, Bart-Smith H; West Chester University, Dudas' Diving Duds, Princeton University, University of Virginia, Charlottesville</i>	Kinematics of swimming in the manta ray (<i>Manta birostris</i>): 3D analysis of open water maneuverability

1:00-3:00 PM

250 AB

Session 69: Regulation of Reproduction - Seasonality

Chair: George Bentley

1:00 PM	69.1	DCE	<i>Bentley GE; University of California Berkeley</i>	Thyroid hormones and seasonality: the DIO2 conundrum
1:20 PM	69.2	DCPB	<i>Healy JE, Bateman JL, Gearhart CN, Ostrom CE, Florant GL; Colorado State University</i>	Peripheral ghrelin stimulates feeding and positive energy balance in a sciurid hibernator
1:40 PM	69.3	DCE	<i>Luloff TW, Hahn TP, MacDougall-Shackleton SA; University of Western Ontario, University of California, Davis</i>	Visual stimulation by blooming thistles accelerates changes in reproductive physiology in American goldfinches
2:00 PM	69.4	DCE	<i>McGuire NM, Kangas K, Koh A, Bentley GE; University of California, Berkeley</i>	Season-dependent modulation of testosterone and estradiol by gonadal neuropeptides

Thursday

**THURSDAY PROGRAM
AFTERNOON SESSIONS**

2:20 PM	69.5	DCE	<i>Stevenson TJ, Ball GF; Johns Hopkins University</i>	The neurogenetics of avian photoperiodism: a key role for gonadotropin releasing hormone 1 (GnRH1)
2:40 PM	69.6	DCE	<i>Perfito N, Zann RA, Hau M, Bentley GE; University of California, Berkeley, LaTrobe University, Australia, Max-Planck Institute for Ornithology, Radolfzell, Germany</i>	Seasonal-like variation in song system volume in wild zebra finches

1:00-3:00 PM

250 DE

Session 70: Ecomorphology of Locomotion II

Chair: Darrin Hulseley

1:00 PM	70.1	DVM	<i>Klaassen Van Oorschot B, Tobalske BW; University of Montana</i>	Aerodynamic effects of splayed primary feathers
1:20 PM	70.2	DCB	<i>Bowlin MS, Muijres FT, Johansson CL, Hedenstrom A; University of Michigan-Dearborn, Lund University</i>	The aerodynamic consequences of molt
1:40 PM	70.3	DVM	<i>Nichols RH, Fish FE, Boettger SA, Bart-smith H; West Chester University, Pennsylvania, University of Virginia, Charlottesville</i>	Comparative gross and sensory morphology of batoid tails
2:00 PM	70.4	DCB	<i>McElroy EJ; College of Charleston</i>	The effect of tail autotomy on locomotor performance in the long tailed grass lizard, <i>Takydromus sexlineatus</i>
2:20 PM	70.5	DCB	<i>Kane EA, Higham TE; Clemson University</i>	Multidimensional analysis of locomotion and feeding in cottids
2:40 PM	70.6	DVM	<i>Hulseley CD, Rupp MF, Hollingsworth Jr PR; University of Tennessee</i>	Can pectoral fin locomotion mediate trophic divergence in a sister species pair of malawi cichlids?

1:00-3:00 PM

251 AB

Session 71: Thermal Physiology

Chair: Nancy Berner

1:00 PM	71.1	DEE	<i>Kerfoot JR, Turingan RG; Union University, Florida Institute of Technology</i>	The influence of temperature on the physiology and feeding behavior of the invasive pike killifish, <i>Belonesox belizanus</i>
1:20 PM	71.2	DEE	<i>Clemmensen SF, Cervoni GE, Hahn DA; University of Tennessee, Knoxville, University of Florida</i>	Seasonal cues alter the temperature-size relationship in an ectotherm
1:40 PM	71.3	DVM	<i>Bagge LE, Koopman HN, Pokorny A, McLellan WA, Pabst DA; University of North Carolina Wilmington</i>	Depth-specific fatty acid composition and temperature dependent thermal properties of the blubber of short-finned pilot whales (<i>Globicephala macrorhynchus</i>)
2:00 PM	71.4	DCPB	<i>Berner NJ; Sewanee, The University of the South</i>	Effect of diet on membrane composition and CCO activity in the Eastern red spotted newt (<i>Notophthalmus viridescens viridescens</i>)
2:20 PM	71.5		<i>Mandin C, Vézina F; Université du Québec à Rimouski</i>	Daily and seasonal variation in markers of nutritional condition in black-capped chickadee: effect of short term climate fluctuations
2:40 PM	71.6	DCPB	<i>Kobey RL, Montooth KL; Indiana University</i>	The contribution of desiccation and starvation to cold mortality in <i>Drosophila melanogaster</i>

THURSDAY PROGRAM AFTERNOON SESSIONS

1:00-2:40 PM

251 F

Session 72: Neurobiological Control of Behavior

Chair: Jacqueline Webb

1:00 PM	72.1	DVM	<i>Webb JW, Alberg T; University of Rhode Island</i>	Convergent evolution of an adaptive phenotype in the mechnosensory lateral line system: it's not that simple
1:20 PM	72.2	DAB	<i>Bergstrom MA, Webb JF; University of Rhode Island</i>	Linking hydrodynamic stimuli and lateral line-mediated feeding behavior in a Lake Malawi cichlid
1:40 PM	72.3	DAB	<i>Gardiner JM, Atema J, Hueter RE, Motta PJ; University of South Florida, Boston University Marine Program, Mote Marine Laboratory</i>	Multisensory integration in shark feeding behavior
2:00 PM	72.4	DNB	<i>Fechko AS, Hinterwirth AJ, Daniel TL; University of Washington</i>	Gaining insight: visual feedback control in the hawkmoth <i>Manduca sexta</i>
2:20 PM	72.5		<i>Goller B, Altshuler DL; University of California, Riverside</i>	Visual stabilization during hummingbird flight

1:00-3:00 PM

250 F

Session 73: Education, Outreach and Policy

Chair: Jory Weintraub

1:00 PM	73.1		<i>Weintraub JP; National Evolutionary Synthesis Center (NESCent)</i>	Evolution education resources from the national evolutionary synthesis center
1:20 PM	73.2	DSEB	<i>Aronowsky A, Sanzenbacher B, Villanosa K, Thompson J, Angielczyk KD, Drew JA; The Field Museum</i>	21st century learning in biology: examples and lessons learned from five digital learning projects
1:40 PM	73.3	DCB	<i>Wheeler MD, Barbano DL, Nelson RL, Uyeno TA; Northern Arizona University</i>	Microtomy and histology in the high school biology classroom
2:00 PM	73.4	DCPB	<i>Furimsky M; Westminster College - Pennsylvania</i>	Taking learning to the extremes: the natural history of Chile as a biological case study
2:20 PM	73.5		<i>Moorhead L, Breuner C, Blank L; University of Montana</i>	Impacting science teacher candidate practices through authentic research experience
2:40 PM	73.6		<i>Rowe MP, Gillespie MB, Rose LA; Sam Houston State</i>	Rethinking college general education science courses

Thursday

THURSDAY POSTERS SESSION P3

Exhibit Hall A, 3:00-5:00 PM

Even # Posters - Authors present from 3:00 - 4:00 pm

Odd # Posters - Authors present from 4:00 - 5:00 pm

Behavioral Ecology: Trophic Interactions

- P3.1 *Alupay JS, Caldwell RL; University of California, Berkeley* Characterizing arm autotomy: an octopus mode of defense
- P3.2 DEE *Starkey D, Warne RW, Crespi EJ; Vassar College* Short- and long-term effects of predation threat on development, growth, and behavior in wood frogs
- P3.4 DAB *Pendergraft L, Bates-Albers L, Duell M, Zuniga E, Abramson CI, Cakmak I, Barthell JF, Hranitz JM, Wells H; Oklahoma State University, Stillwater, University of Central Oklahoma, Bloomsburg University, Humboldt State University, Uludag University, Bursa Turkey, Tulsa University* Feature positive and feature negative learning in honey bees

Chemical Ecology and Physiology

- P3.6 *Durben RM, Shuster SM, Whitham TG, Theimer T; Northern Arizona University* Mammalian herbivory changes chemistry and arthropod communities of *Populus* species
- P3.7 DEE *Wilson BA, Mendez MO; Texas A&M International University* Exposure of *Lycopersicon esculentum* (tomato) and the microbial community to Triclosan and Ciprofloxacin
- P3.8 DCPB *Perrault J, Miller DL, Wyneken J; Florida Atlantic University, Veterinary Diagnostic and Investigational Lab, University of Georgia-Tifton, Florida Atlantic University* Salps to sea turtles: Hg and Se in leatherback sea turtles (*Dermochelys coriacea*). Lessons learned from two populations
- P3.9 DCE *Weissenfluh SE, Reed WL, Clark ME; North Dakota State University* A seasonal profile of adult condition in a long distance migrant, Franklin's gull (*Leucophaeus pipixcan*)
- P3.10 DAB *Nemeth Z, Krause J, Campion A, Ramenofsky M; University of California, Davis* Subspecies comparisons of the physiological mechanisms regulating the traits of migratory and resident white-crowned sparrows, *Zonotrichia leucophrys*
- P3.11 *Hochberg A, Hochberg R; University of Massachusetts Lowell* New insights on morphology of feeding and the evolution of the sessile lifestyle: species of *Stephanoceros*
- P3.12 *Glenn DL, Pakes MJ, Caldwell RL; University of California, Berkeley* Autofluorescence of remipede, shrimp, pericard and ostracod crustaceans from anchialine cave systems: an innovative device for ecological study
- P3.13 *Williams LE; Virginia Commonwealth University* The growth and molting of blue crabs (*Callinectes sapidus*) from the tidal freshwater James River
- P3.13A DCPB *Bonge S, Jackson KW, Lutterschmidt WI; Sam Houston State University, University of Oklahoma Health Science Center* Comparative peptide profiles of sympatric anurans *Hyla versicolor* (Hylidae) and *Lithobates clamitans* (Ranidae): an anti-predator hypothesis

Complementary to Symposium: Biomechanics and Behavior of Gliding Flight

- P3.14 DCB *Ngo V, McHenry MJ; University of California, Irvine* Swimming hydrodynamics at intermediate Reynolds numbers in water boatmen
- P3.15 DCB *Tisbe AR, Guenther-Gleason E, Evangelista DJ, Koehl MAR; University of California, Berkeley* Effect of leg feathers on the gliding performance and aerodynamic stability of a small dinosaur

Complementary to Symposium: Environment, Energetics and Fitness

- P3.16 *Szafranska PA, Speakman JR ZK, Konarzewski M; Mammal Research Institute Polish Academy of Sciences, The University of Aberdeen* Association between high daily energy expenditures (DEE) and winter mortality in Root vole *Microtus oeconomus*

P3.17	DCPB	<i>Valencak TG, Ruf T; University of Veterinary Medicine Vienna</i>	Lactating hares in the cold: the role of heat dissipation
P3.18	DCPB	<i>Michaelson JB, Powers DR, Friesen CR, Mason RT; George Fox University, Oregon State University</i>	The role of innate metabolic capacity in the courtship behavior of male red-sided garter snakes (<i>Thamnophis sirtalis parietalis</i>)
P3.19		<i>Corder KR, Powers DR, Tobalske BW; George Fox University, University of Montana</i>	The energetic cost of stabilization in cross wind during hovering in hummingbirds
P3.20		<i>Bambardekar K, McHenry MJ, Bradley TJ; University of California, Irvine</i>	Kinematic examination of spiracular synchrony in the insect <i>gromphadorhina portentosa</i> (hissing cockroach). Kinematic examination of spiracular synchrony in the insect <i>gromphadorhina portentosa</i> (hissing cockroach)

Complementary to Symposium: Environmentally-Cued Hatching Across Taxa

P3.21	DIZ	<i>Armstrong AF, Allen JD; College of William and Mary</i>	Environmentally induced twinning in echinoderm embryos and its effects on larval development
P3.22		<i>Palmer MS, Willink B, Landberg T, Vonesh JR, Warkentin KM; Ohio Wesleyan University, Delaware, Universidad de Costa Rica, San José, Boston University, Virginia Commonwealth University</i>	Costs of hatching early: vulnerability and period of exposure to predators
P3.23	DEDB	<i>Cohen KL, Seid MA, Rouben CM, Warkentin KM; Boston University, Smithsonian Tropical Research Institute</i>	The mechanism of rapid, plastic hatching in red-eyed treefrogs, <i>Agalychnis callidryas</i>
P3.24	DEE	<i>Schleier Hernandez SL, Warkentin KM; University of Puerto Rico, Boston University</i>	Effects of hatching age and predator cues on the onset of feeding in red-eyed treefrogs
P3.25	DEE	<i>Willink B, Landberg T, Vonesh JR, Warkentin KM; Universidad de Costa Rica, San José, Boston University, Virginia Commonwealth University</i>	Effect of hatching early on vulnerability of red-eyed treefrog tadpoles varies among predators but not with presence of later hatched tadpoles

Complementary to Symposium: Population Dynamics of Crustaceans

P3.26	DAB	<i>Hudson DM, Sexton DJ, Wint D, Crivello JF; University of Connecticut, Georgia State University</i>	Invasive crab salinity preference: effects of acclimation and implications for estuarine distribution
P3.27		<i>Bradley C, Seitz R; VIMS, College of William and Mary</i>	Bottom-up control in the Patuxent River, Maryland: impacts of shoreline hardening on infaunal communities, crabs, and fish
P3.28	DDCB	<i>Das S, Najar FZ, Hopkins PM, Roe BA, Durica DS; University Oklahoma</i>	Transcriptome profiling of limb regeneration in the fiddler crab, <i>Uca pugnator</i>
P3.29		<i>Satterlee SA, Kuhle CW, Ramirez-Pinto F, Fernández S, Velázquez MC, Jackson L, Zuercher GL, Taylor MS; Southeast Missouri State University</i>	Rediscovering a lost crab genus: aegla within the interior Atlantic Forest of Canindeyú, Paraguay

Complementary to Symposium: Thermal Adaptation and Climate Change

P3.30	DEDB	<i>Rhen T, Schroeder A, Levin J, Fagerlie R, Legge H, Wessman L; University of North Dakota</i>	Temperature-dependent sex determination: merging classical genetics and next generation sequencing technologies to identify temperature sensitive genes
P3.31	DEE	<i>Gibbs AG, Rajpurohit S, Oliveira CC, Etges WJ; University of Nevada, Las Vegas, University of Arkansas</i>	Effects of temperature on gene expression in a desert <i>Drosophila</i>
P3.32	DCPB	<i>Devor DP, Grim JM, Crockett EL; Ohio University, Athens</i>	Elevated temperatures induce lipid peroxidation in cardiac muscle but not other tissues from Antarctic notothenioid fishes
P3.33		<i>Bellingheri K, Ruiz M, Martins EP; Alabama A&M University, Indiana University</i>	Dietary lipids increase behavioral stress and activity levels in zebrafish <i>Danio rerio</i> exposed to a social stimulus

Conservation Biology

P3.34		<i>Rollins KE, Meyerholz DK, Johnson GD, Capparella AP, Loew SS; Illinois State University, University of Iowa, Western EcoSystems Technology Inc.</i>	Cause of bat mortality at wind farms: barotrauma vs. collision
P3.35	DEE	<i>Hale AM, Karsten KB*; Texas Christian University</i>	What is the cost of going green?
P3.36	DEE	<i>Bauer CB, Lewis SM, Faust LF, Reed JM; Tufts University</i>	Modeling the effects of harvesting on firefly population viability
P3.37	DCE	<i>Rostal DC; Georgia Southern University</i>	Long-term field study on temperature dependent sex determination in the gopher tortoise in south-east Georgia (1997-2008)
P3.38	DEE	<i>Hazard LC, Kwasek KM*, Koelmel E, Gerges S; Montclair State University</i>	Interspecific variation in behavioral aversion of sympatric temperate zone amphibians to road deicers
P3.39	DEE	<i>Zillmann AM, Collins JP, Smith VH; Arizona State University, University of Kansas</i>	Does iron play a role in the dynamics of an emerging infectious disease?
P3.40	DEE	<i>Williams KL, Frick MG, LeBlanc AM, Drake KK, Tuttle J, Sparrow J, Rostal D; Caretta Research Project, Friends of the National Zoo, Georgia Southern University</i>	Long-term study of loggerhead sea turtle hatching sex ratios on two Georgia Barrier Islands (2000-2010)

Corticosteroids

P3.41	DCE	<i>Davis JE, Foltz SL, Wang G, Lei F, Meddle SL, Wingfield JC; Radford University, Virginia Tech, University of Kentucky, Chinese Academy of Sciences, University of Edinburgh, University of California, Davis</i>	Neuronal corticosteroid receptor distribution in invasive and native passerine species of the Tibetan plateau
P3.42	DCE	<i>Lattin CR, Waldron-Francis K, Richardson JW, Breuner CW, Romero LM; Tufts University, Northern Essex Community College, University of Montana</i>	Quantification of glucocorticoid and mineralocorticoid receptors in house sparrow brain and peripheral tissues
P3.43	DDCB	<i>Stewart AC, Prehoda-Weyers MM, Dearolf JL; Hendrix College</i>	Effect of glucocorticoids on glycogen storage in fetal <i>Cavia porcellus</i> breathing muscles
P3.44	DDCB	<i>Bissell JA, Prehoda-Wyers MM, Dearolf JL; Hendrix College</i>	The effect of glucocorticoids on the oxidative capacity of the fetal guinea pig rectus abdominus

Ecomorphology and Performance

P3.45	DCB	<i>Timm L, Marshall CD; Texas A&M University, Galveston and College Station</i>	Craniodental morphology and bite performance in otters (Lutrinae)
P3.46		<i>Collins C, Self J, Anderson R, McBrayer L; Georgia Southern University, Western Washington University</i>	The effect of substrate particle size on sprint performance in three species of desert lizards
P3.47		<i>Balaban JP, Bizzaro JJ, Summers AP; University of Rhode Island, University of Washington</i>	Burrowing preference and capability in the Pacific sand lance
P3.48		<i>Charbonnier JF, Langberg T; Virginia Commonwealth University, Boston University</i>	Tadpole density changes the relationship of red-eyed treefrog morphology and jumping performance
P3.49		<i>Stiller RB, McBrayer LD; Georgia Southern University</i>	Effect of ontogeny on escape response and locomotor performance in <i>Sceloporus woodi</i>
P3.50		<i>Ackerly KL, Ward AB; Adelphi University</i>	A warmer start: the correlation between vertebral development and C-start efficiency in <i>Danio rerio</i>
P3.51	DCB	<i>Stewart WJ, Cardenas GS, McHenry MJ; University of California, Irvine</i>	The kinematics of predator evasion by zebrafish larvae
P3.52		<i>Cardenas GS, Stewart WJ, McHenry MJ; University of California, Irvine</i>	Predator evasion in zebrafish is mediated by the lateral line system

P3.53	DVM	Bernal D, Aalbers S, Sepulveda C; University Massachusetts Dartmouth, Pflieger Institute of Environmental Research	Heat balance in free-swimming swordfish
P3.54	DVM	Gerry SP, Liao J, Ives C, Ellerby DJ; Wellesley College	Quantifying maneuverability in bluegill sunfish
P3.55	DVM	Jordan LK, Chiaradia AC, Simpson KNG, Ropert-Coudert Y; Florida Atlantic University, Phillip Island Nature Park, Victorian Ornithological Research Group, Institut Pluridisciplinaire Hubert Curien	Flipping through penguin flippers: an ecomorphological approach

Evo-devo: Sensory and Neural Development

P3.56	DEDB	Resh CA, Passamaneck Y, Martindale MQ, Santagata S; Long Island University, University of Hawaii	Isolation and characterization of the expression patterns of <i>FoxG</i> in the embryos and larvae of the articulate brachiopod, <i>Terebratalia transversa</i>
P3.58		Protas ME, Trontelj P, Patel NH; University of California Berkeley, University of Ljubljana	Eye and pigment loss in the isopod cave crustacean, <i>Asellus aquaticus</i>
P3.59		Marlow H, Martindale MQ, Arendt D; EMBL Heidelberg, University of Hawaii at Manoa	Patterning of the larval apical territory by a conserved cassette of transcription factors
P3.61		Lauri A, Tomer R, Arendt D; EMBL	Ancestral neurotrophins and the evolution of the "neurotrophic signaling" in Eumetazoa
P3.62	DDCB	Meyer NP, Seaver EC; University of Hawaii	Understanding central nervous system development in an annelid: mapping gene expression profiles during early brain formation in <i>Capitella teleta</i>
P3.63		Ding S, Sassoon D*, Rued A, Winters I, Hill A, Rivera A; University of Richmond, University of the Pacific	Origins of the Pax/Six Gene Regulatory Network

Feeding and Digestion

P3.64	DCPB	Bissell H; University of Wisconsin-Madison	Digestion of lichen by a specialist herbivore - the black-and-white snub-nosed monkey (<i>Rhinopithecus bieti</i>)
P3.65		Verworn NR, Greenlee KJ; North Dakota State University	Effects of high dietary lipid on larval growth and mortality rates of <i>Manduca sexta</i> , the tobacco hornworm
P3.66		Erickson MR, Maerz JC, Grosse AM; Georgia Southern University, University of Georgia, Savannah River Ecology Laboratory	Dietary analysis of the diamondback terrapin (<i>Malaclemys terrapin</i>) along the Georgia coast
P3.67	DVM	Lopresti EF, Gidmark NJ, Brainerd EL; Brown University	Morphological adaptations for high dexterity and extreme bite force in the pharyngeal jaw of black carp
P3.68	DVM	Tarrant JC, Gidmark NJ, Brainerd EL; Brown University	XROMM analysis of pharyngeal jaw function in grass carp, <i>Ctenopharyngodon idella</i>
P3.69	DVM	Maie T, Meister AB, Leonard GL, Schrank GD, Blob RW, Schoenfuss HL; Clemson University, St. Cloud State University	Jaw muscle fiber type distribution in Hawaiian gobioid stream fishes: histochemical correlations with feeding ecology and behavior
P3.70		Wainwright DK; Duke University	Functional morphology of northern clingfish feeding on limpets
P3.71	DEE	Copus JM, Gibb AC; Northern Arizona University	An ecomorphological approach to understanding feeding in butterflyfishes (<i>Chaetodontidae</i>)
P3.72		Carlson N, Alice G; Northern Arizona University	Does morphology contribute to dimorphic feeding behavior in <i>Betta splendens</i>
P3.73	DVM	Harper CJ, Brainerd EL, Swartz SM; Brown University	The morphology of the free portion of the tongue in a nectar-feeding bat, <i>Glossophaga soricina</i>

Metabolic Physiology

- P3.74 DCPB *Finkler MS; Indiana University, Kokomo* A sigh of relief: metabolic rates of hatchling snapping turtles (*Chelydra serpentina*) decrease upon entry into aquatic habitats
- P3.75 *Spencer MA, Lengyel MS, Knight F, Bagatto B; The University of Akron* Physiological variability in neonatal nine-banded armadillo clonal siblings: responses to simulated burrow conditions during development
- P3.77 *Lengyel MS, Spencer MA, Riggs G, Becket A, Moore FBG, Bagatto B; The University of Akron* Metabolic cost of pregnancy and lactation in the nine-banded armadillo
- P3.78 *Batavia M; University of California, Berkeley* New methods for imaging hibernation marks in the incremental dentin of rodent incisors
- P3.79 DEE *Skibielski AL, Hood WR; Auburn University* Temporal and inter-individual variation in milk composition in a free-ranging, hibernating rodent
- P3.80 DCPB *Scholnick DA, Dick KN, Gilpin NT; Pacific University* Thermoregulatory and cardiopulmonary disruptions due to malarial infection in the western fence lizard, *Sceloporus occidentalis*
- P3.81 DNB *Krajniak KG, Stassi KJ, Yoder TD; Southern Illinois University Edwardsville* The effects of GABA on the isolated crop-gizzard of the earthworm *Lumbricus terrestris*
- P3.82 DCPB *Priester C, Braude JP, Kinsey ST, Watanabe WO, Dillaman RM; University of North Carolina Wilmington* Change in orientation of the myofibrils and cytoskeleton in white muscle fibers of large black sea bass, *Centropristis striata*
- P3.83 *Alvine TD, Burggren WW; University of North Texas* Increased exposure to retinoic acid on kidney development and function in the developing chicken
- P3.84 *Bartlett JN, Loke KM, Young K, Lowe C, Rourke BC; CSU Long Beach* Changing sexes in a complex environment - shifts in skeletal myosin isoforms in coastal populations of California sheephead
- P3.85 DCPB *Schlater AE, Corley A, Demiranda MA, Kanatous SB; Colorado State University, Pomona College* Fat chance: the effect of lipid supplementation on adapting to hypoxia in C2C12 skeletal muscle cells
- P3.86 DCPB *De Miranda JR MA, Schlater AE, Green TL, Kanatous SB; Colorado State University* Want to be an elite diver? Get fat! The underlying secrets of myoglobin regulation in Weddell seal muscle cells
- P3.87 DCPB *Fernandez MJ, Suarez RK; University of North Carolina, Chapel Hill, University of California, Santa Barbara* Enzymatic flux capacities in hummingbird flight muscles: a "One Size Fits All" hypothesis

Molecular Evolution

- P3.88 *Gundling WE, Schulte JA; Clarkson University* Comparative analysis of reproductive tissue transcriptomes in North American garter snake, *Thamnophis sirtalis*
- P3.89 *Pairett AN, Serb JM; Iowa State University* Comparative transcriptomics: a study using the mirror eye of the scallop, *Argopecten irradians*
- P3.90 *Harrison JS; Georgia Southern University* Evolution of sex-biased genes in a marine copepod
- P3.91 *Ramirez D, Oakley T; University of California, Santa Barbara* Dermal expression of three phototransduction cascade genes in the cephalopod, *Octopus bimaculoides*
- P3.92 DEE *Chan LM, Yoder AD; Duke University* Remarkably large repertoires of V1R pheromone receptors in strepsirrhine primates
- P3.93 DEE *Churcher AM, Taylor JS; University of Victoria, Victoria BC* The discovery of orthologs of chordate odorant receptors in the cnidarian *Nematostella vectensis* reveals this lineage of genes has ancient roots

Neurobiology: Neurotransmitters and Pharmacology

P3.94	DNB	<i>Adams T, Beaubrun D, Nelson M, Carroll MA, Catapane EJ; Medgar Evers College, Kingsborough Community College</i>	Study of serotonin and dopamine post-synaptic receptor mechanisms in the bivalve mollusc <i>Crassostrea virginica</i>
P3.95	DNB	<i>Cha DJ, Murray JA*; University of Washington, Friday Harbor Labs, California State University East Bay</i>	The effects of cholinesterase toxins on buccal ganglia of <i>Tritonia diomedea</i>
P3.96	DNB	<i>Brown C, Adebessin D, Carroll MA, Catapane EJ; Medgar Evers College</i>	Pharmacological study of dopamine post-synaptic receptors of the lateral ciliated cells of the gill and visceral ganglia of <i>Crassostrea virginica</i>
P3.97	DNB	<i>Citarella MR, Kohn AB, Bobkova E, Yu F, Moroz LL; Whitney Lab for Marine Bioscience, ICBR, University of Florida</i>	Genome-wide characterization of signaling peptides across animal phyla and parallel evolution of neural systems
P3.98	DCB	<i>Mekdara NT, Choudhury S, Mekdara PJ, Godarzi A, Mazloomi F, Adam M, Berg O, Goto JJ, Muller UK*; CSU Fresno</i>	Exploring the effects of the glutamate agonist BMAA on central and peripheral motor control in <i>Drosophila melanogaster</i>
P3.99	DNB	<i>Saddler C, Duncanson I, Joseph J, Catapane EJ, Carroll MA; Medgar Evers, Kingsborough Community College</i>	The ability of PAS, acetylsalicylic acid and calcium EDTA to protect against the toxic effects of manganese on mitochondrial respiration and membrane potential in the gill of <i>Crassostrea virginica</i>
P3.100	DNB	<i>Neal MW, Krajniak KG; Southern Illinois University Edwardsville</i>	The effects of several putative neurotransmitters on the body wall of <i>Lumbricus terrestris</i>
P3.101	DNB	<i>Hernandez A, Bandaogo Z, Carroll MA, Catapane EJ; Medgar Evers College</i>	Pharmacological study of serotonin post-synaptic receptors of the lateral ciliated cells of the gill and visceral ganglia of <i>Crassostrea virginica</i>
P3.102	DNB	<i>Lehman HK; Hamilton College</i>	The cellular and molecular biology of octopaminergic neurons
P3.103	DNB	<i>Nelson M, Adams T, Beaubrun D, Carroll MA, Catapane EJ; Medgar Evers College, Kingsborough Community College</i>	Are the neurotoxic effects of manganese due to blockage of post synaptic dopamine receptors

Parental Behavior

P3.104	DAB	<i>Kelly NB, Alonzo SH; Yale University</i>	The evolution of male parental care in darters (Percidae: Etheostoma)
P3.105		<i>Pease S, Salinas-Melgoza A, Renton K, Wright T; New Mexico State University, Universidad Nacional Autonoma de Mexico</i>	Offspring Sex Ratios in Lilac-Crowned Parrots (<i>Amazona finschi</i>)
P3.106	DAB	<i>Brashears JA, Denardo DF; Arizona State University</i>	Touch or go: proximal cues for clutch brooding in Children's pythons (<i>Antaresia childreni</i>)
P3.107	DAB	<i>Cupp, Jr PV; Eastern Kentucky University</i>	Nest site defense by brooding female green salamanders, <i>Aneides aeneus</i>
P3.108		<i>Johnson EE, Crino OL*, Breuner CW; University of Montana, Missoula</i>	The effect of roads on avian communities: Indirect effects on nestlings through parental feeding rates.
P3.109	DAB	<i>Burtka JL, Grindstaff JL; Oklahoma State University</i>	Repeatable nest defense behavior in a wild passerine
P3.110	DAB	<i>Stahlschmidt ZR, Brashears J, Denardo DF; Arizona State University, Tempe</i>	Warm and humid: nest-site selection in an emerging parental care model
P3.111	DAB	<i>Anderson EM, Navara KJ; The University of Georgia</i>	Nest box orientation and surrounding vegetation height influence nest box preference in eastern bluebirds
P3.112	DAB	<i>Hanauer RE, Londono GA; Indiana University, University of Florida</i>	Incubation behavior of a tropical montane hummingbird, <i>Doryfera ludovicae</i>

Population Genetics

- P3.113 *Loria SF, Zigler KS, Lewis JJ; Sewanee: The University of the South, Lewis and Associates: Cave, Karst and Groundwater Biological Consulting LLC* Phylogeography of the cave-obligate millipede Genus *Tetracion*
- P3.114 DEE *Ricci PR, Hranitz JM, Barthell JF, Freeman B, Lui L, Stevison B, Giannoni M, Redd J, Presky M, Cakmak I, Petanidou T; Bloomsburg University, University of Central Oklahoma, University North Carolina, Chapel Hill, Oklahoma State University, University of Puerto Rico, SUNY College at Oneonta, Uludag University, Turkey, University of the Aegean, Greece* Existing microsatellite primers for *osmia rufa* amplify homologous microsatellite DNA in an invasive leafcutting bee
- P3.115 DEE *Lasala J, Harrison JS, Williams K, Frick M, Rostal DC; Georgia Southern University, Caretta Research Project* Multiple paternity within the northern subpopulation of loggerhead sea turtle (*Caretta caretta*)
- P3.116 DEE *Wakeling SW, Hagerty BE, Sandmeier F, Tracy CR; University of Nevada, Reno* Homing ability and navigation in chuckwallas
- P3.117 *Naccarato AM, Dejarnette JB, Allman P; Florida Gulf Coast University* An investigation of population genetic diversity in introduced *Ctenosaura similis* after extreme long-distance dispersal
- P3.118 DEE *Carruth WC, Harrison JS, Rostal DC; Georgia Southern University* Population genetics of the American alligator, *Alligator mississippiensis*
- P3.119 *Pan JW, Zigler KS; Sewanee: The University of the South* Distribution and structure of genetic variation in *Ilyanassa obsoleta* (Mollusca: Neogastropoda)
- P3.120 DEE *Heilman AM, Chan LM, Rakotomalala Z, Goodman SM, Yoder AD; Duke University, Vahatra, Field Museum* A multilocus phylogeographic study of a rodent (*Eliurus myoxinus*) distributed throughout western Madagascar

Stress: Environmental Variation

- P3.121 *Hanninen AF, Earley RL; The University of Alabama* Plasticity of the stress response in variable environments: a reaction norm approach in the mangrove rivulus (*Kryptolebias marmoratus*)
- P3.122 *Foltz SL, Davis JE, Greene VW, Vega RC, Moore IT; Virginia Tech, Radford University* Effects of urban habitat and human disturbance on stress hormones the song sparrow (*Melospiza melodia*)
- P3.124 DCE *Jayne MK, Cohen J, Guinan J, Davis JE; Radford University* Correlations between nest microbiology, nestling health and hormones in the Eastern bluebird (*Sialia sialis*)
- P3.125 DCE *Thompson JA, Franck L, Valverde RA; Southeastern Louisiana University* Effects of salinity on the endocrine stress response of *Trachemys scripta* in the Lake Pontchartrain Basin
- P3.126 DCPB *Ibrahim G, Kaehler A, Hranitz J, Surmacz C; Bloomsburg University* Effects of acclimation and aeration on stress responses in blackworms
- P3.127 DCPB *Duell M, Apted T, Hall N, Bates-Albers L, Pendergraft L, Zuniga E, Sorucu A, Abramson CI, Aydin L, Barthell JF, Cakmak I, Oruc HH, Wells H, Hranitz JM, Ikizoglu D, Selova S; Bloomsburg University PA, American Samoa Community College, Loyola-Marymount University, University of Central Oklahoma, Oklahoma State University, Humboldt State University, Uludag University, Bursa Turkey* Lethal and sublethal effects of flumethrin (VAROS-TOP®) on the Anatolian honey bee in the Republic of Turkey

Structure and Mechanical Design

P3.128	DCB	<i>Diaz C, Long JH, Porter ME; Vassar College</i>	The vertebral column of sharks: regional variation in dynamic mechanical properties and locomotor function
P3.129		<i>Fajardo RJ, Schmitz JE, Riplog-Peterson S, O'Connor PM; UTHSCSA, AZ Sonoran Desert Museum, Ohio University</i>	Preliminary study of anti-fatigue failure mechanisms in the trochilid skeleton
P3.130	DVM	<i>Kambic R, Roberts T, Gatesy S; Brown University</i>	Beyond hinges: 6 DOF joint kinematics in avian bipedalism
P3.131	DVM	<i>Carney RM; Brown University</i>	ArcOSAUR: ArcGIS operations for surface analysis using rasters
P3.132	DVM	<i>Goldbogen JA, Potvin J, Shadwick RE; University of California, San Diego, Saint Louis University, University of British Columbia</i>	Passive elasticity of ventral groove blubber does not limit engulfment volume in lunge-feeding whales
P3.133	DCB	<i>Matson AP, Konow P, Konow N, Roberts TJ; Brown University</i>	Variations in tendon material properties among muscles
P3.134		<i>Taylor KR, Thompson JT, Gentile C; Franklin and Marshall College</i>	Effects of relative body wall thickness on the magnitude of gradients of strain in the long-finned squid, <i>Doryteuthis pealeii</i>
P3.135	DVM	<i>Werth AJ; Hampden-Sydney College</i>	Flow-dependent porosity of baleen

Thermobiology

P3.136	DCPB	<i>Crespo JG, Goller F, Vickers NJ; University of Utah, Salt Lake City</i>	Olfactory modulation of pre-flight shivering behavior in male moths
P3.137	DEE	<i>Logan ML; Dartmouth College</i>	The thermal ecology of open-habitat and forest lizards and their potential response to climate change
P3.138	DCPB	<i>Gray EM, Bowen CM; The Colorado College</i>	Thermal and water balance physiology of attacking mountain pine beetles
P3.139	DCPB	<i>Ben-Hamo M, McCue MD, McWilliams SR, Pinshow B; Ben-Gurion University of the Negev, Israel, St. Mary's University, University of Rhode Island</i>	Dietary fatty acid composition influences tissue lipid profiles and regulation of body temperature, but not metabolic rates, of hypothermic Japanese quail
P3.140		<i>Kehrier CL, Dickson KA; California State University Fullerton</i>	Extra-ocular muscles as a possible source of heat for cranial endothermy in lamnid sharks
P3.141	DCPB	<i>Knapp JM, Medina A, Lutcavage M; University of New Hampshire, University of Cadiz, Spain, University of Massachusetts Amherst</i>	Comparative stereology of female Atlantic bluefin tuna, <i>Thunnus thynnus</i> , from the Mediterranean Sea and the Gulf of Mexico
P3.142		<i>Gonzalez-Gomez PL, Ricote-Martinez N, Razo-to-Barry P, Cotoras I, Bozinovic F; University of California, Davis, Instituto de Filosofia y Ciencias de la Complejidad, Chile, CASEB, Pontificia Universidad Catolica de Chile, IEB, Facultad de Ciencias, Universidad de Chile</i>	Thermoregulatory cost affects territorial behavior in hummingbirds: a model and its application
P3.143	DCPB	<i>Hougen HY, Hiebert SM*; Swarthmore College</i>	The effect of temperature on the sensitivity to and preference for an n-3 and an n-6 polyunsaturated fatty acid in mice
P3.144	DCPB	<i>Gearhart CG, Healy JE, Florant GL; Colorado State University</i>	Changes in expression and phosphorylation of AMPK and ACC in the hibernating Golden-mantled ground squirrel (<i>C. lateralis</i>)

Ventilation, Vocalization and Circulation

P3.145	DVM	<i>Porter WR, Witmer LM; Ohio University</i>	Vascular patterns in galliform birds: regions of thermal exchange
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P3.146		<i>Bourke JB, Witmer LM; Ohio University, Ohio University College of Osteopathic Medicine</i>	The nose knows: modeling airflow in alligators and dinosaurs
P3.147	DCPB	<i>Brings VE, Jorgensen DD*; Roanoke College</i>	Respiratory function response to acute bacterial exposure in the American lobster, <i>Homarus americanus</i>
P3.148	DVM	<i>Riede T, Ma ST, Suthers RA, Kane JR, Fox C, Ramig L, Schallert T; University of Utah, Salt Lake City, University of Michigan, Ann Arbor, Indiana University, Bloomington, University of Texas, Austin, University of Colorado, Boulder</i>	Vocal tract motor patterns in spontaneously vocalizing rats (<i>Rattus norvegicus</i>)
P3.149	DVM	<i>Allred LM, Christensen LA, Meyers RA, Goller F; Weber State University, Ogden, University of Utah, Salt Lake City</i>	Denervation and testosterone changes muscle fiber types in the zebra finch syrinx
P3.150	DVM	<i>Rose CS, James BD; James Madison University</i>	<i>Xenopus laevis</i> does not need to use lungs to breath

Friday Schedule of Events

All events take place in the Salt Palace Convention Center unless noted as (M) for Marriott Hotel

<u>EVENT</u>	<u>TIME</u>	<u>LOCATION</u>
Registration	7:30 AM-3:00 PM	North Foyer
<u>SYMPOSIA ORAL PRESENTATIONS</u>		
S9: A Synthetic Approach to Response of Organisms ...	8:00 AM-3:00 PM	150 ABC
S10: Environ, Energetics & Fitness: Symp Honoring D.W. Thomas	7:45 AM-3:00 PM	150 DEF
Symposium S11: The Biomechanics and Behavior of Gliding Flight	8:00 AM-3:00 PM	150 G
<u>CONTRIBUTED PAPER ORAL PRESENTATIONS</u>		
Session 74: Comp Session to Population Dynamics of Crustaceans	8:00-9:40 AM	151 ABC
Session 75: Comp Session to Environmentally-Cued Hatching ...	10:00 AM-Noon	151 ABC
Session 76: Hormonal Control of Osmoregulation	9:00-9:40 AM	151 DEF
Session 77: Digestive Physiology	10:00 AM-Noon	151 DEF
Session 78: Biogeography and Diversity	8:00-10:00 AM	151 G
Session 79: Biodiversity in the Oceans	10:20 - 11:20 AM	151 G
Session 80: Aquatic Feeding I	8:00-10:00 AM	250 AB
Session 81: Aquatic Feeding II	10:20 AM-Noon	250 AB
Session 82: Loads and Levers	8:00-9:40 AM	250 DE
Session 83: Limb Loading and Structural Design	10:00 AM-Noon	250 DE
Session 84: Parental Behavior	8:20-9:40 AM	251 AB
Session 85: Behavioral Ecology - Novel and Harsh Environments	10:00 AM-Noon	251 AB
Session 86: Evolutionary Physiology I: Mice and Metabolism	8:00-10:00 AM	251 DE
Session 87: Evolutionary Physiology II	10:20 - 11:40 AM	251 DE
Session 88: Reproductive Physiology	1:00-3:00 PM	151 ABC
Session 89: Marine Vision and Visibility	1:00-2:40 PM	151 DEF
Session 90: Stress Endocrinology - Responses to Chronic Stressors	1:00-2:40 PM	151 G
Session 91: Locomotion - Gait, Rattle and Roll	1:00-3:00 PM	250 AB
Session 92: Chemical Ecology	1:00-3:00 PM	250 DE
Session 93: Behavioral Ecology - Foraging	1:00-2:40PM	251 AB
Session 94: Molecular Evolution	1:00-3:00 PM	251 DE
<u>SPECIAL LECTURE</u>		
Moore Lecture	3:00-4:00 PM	Ballroom B
<u>COMMITTEE & BOARD MEETINGS</u>		
Executive Committee	7:00-9:00 AM	Deer Valley (M)
SPDAC Meeting	Noon-1:00 PM	Boardroom
<u>WORKSHOPS AND PROGRAMS</u>		
NSF Workshop "NSF Info Updates and Funding Opportunities"	Noon-1:00 PM	151 G
<u>SOCIAL EVENTS</u>		
Society-wide Social in Honor of Students and Post Docs	4:00-6:00 PM	Registration Foyer

FRIDAY PROGRAM SYMPOSIA

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

8:00 AM-3:00 PM
150 ABC

Symposium S9: A Synthetic Approach to the Response of Organisms to Climate Change: The Role of Thermal Adaptation

Supported by: DAB, DCPB, DEE

Organized by: Michael Sears, Michael Angilletta

8:00 AM	S9.1	DEE	<i>Sears MW, Angilletta MJ; Bryn Mawr College, Arizona State University</i>	The world is not flat: defining the thermal landscape...again
8:30 AM	S9.2	DEE	<i>Angilletta MJ, Sears MW; Arizona State University, Bryn Mawr College</i>	The role of evolutionary theory in predicting responses to environmental warming
9:00 AM	S9.3	DEE	<i>Boyles JG, Smit B, McKechnie AE; University of Pretoria</i>	Can generalized models of thermoregulation predict responses of endotherms to climate change?

9:30 AM BREAK

10:00 AM	S9.4		<i>Gomulkiewicz R; Washington State University</i>	Genetics and the potential for adaptation to climate change
10:30 AM	S9.5	DCPB	<i>Schulte PM, Dhillon RS, Healy TM; University of British Columbia</i>	Using intraspecific variation to assess the capacity for acclimation and adaptation of thermal tolerance in fish
11:00 AM	S9.6	DCPB	<i>Dahlhoff EP, Rank NE; Santa Clara University, Sonoma State University</i>	Physiological adaptation to climate change in a montane insect
11:30 AM	S9.7		<i>De Meester L, Stoks R, Van Doorslaer W, Geerts A, Orsini L; University of Leuven</i>	Thermal genetic adaptation in the water flea <i>Daphnia</i> and its impact - an experimental evolution approach

NOON LUNCH BREAK

1:00 PM	S9.8	DEE	<i>Kingsolver JG, Woods HA, Buckley LB, MacLean H, Higgins JK, Potter KA; University of North Carolina, Chapel Hill, University of Montana, Missoula</i>	Life cycle complexity and responses to climate change
1:30 PM	S9.9		<i>Angert AL, Sheth SN; Colorado State University</i>	Incorporating population variation in thermal niche properties into geographic range shift predictions
2:00 PM	S9.10		<i>Kozak KH; University of Minnesota</i>	Shrinking islands in the sky? Trait- and microclimate-based forecasts of the range dynamics of montane species under climate change
2:30 PM	S9.11			Panel Discussion

7:45 AM-3:00 PM
150 DEF

Symposium S10: Environment, Energetics and Fitness: A Symposium Honoring Donald W. Thomas

Supported by: DCPB, DEE, Sable Systems, Inc.

Organized by: Michal Wojciechowski, Murray Humphries, Berry Pinshow

7:45 AM	S10.1	DAB	<i>Careau V; Université de Sherbrooke</i>	Donald William Thomas (1953-2009): the free expression of thoughts and ideas
8:00 AM	S10.2		<i>Geiser F, Stawski C; University of New England, Australia</i>	Hibernation and torpor in tropical and subtropical bats
8:30 AM	S10.3	DCPB	<i>McKechnie AE, Mzilikazi N; University of Pretoria, Nelson Mandela Metropolitan University</i>	Heterothermy in Afrotropical mammals and birds: a review
9:00 AM	S10.4		<i>Willis CKR, Boyles JG; University of Winnipeg, University of Pretoria</i>	Hibernation energetics, evaporative water loss and conservation of bats

FRIDAY PROGRAM SYMPOSIA

9:30 AM	S10.5		<i>Gutowski JP, Dubicki A, Wojciechowski MS, Jefimow M; Nicolaus Copernicus University, Torun, Poland</i>	The effects of diet on thermoregulation and torpor in Siberian hamsters.
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10:00 AM BREAK

10:30 AM	S10.6	DCPB	<i>Pinshow B, Aamidor S, Mizrahy O, McWilliams SR, Bauchinger U; Ben-Gurion University of the Negev, University of Rhode Island</i>	The effects of dietary protein and water availability on mass gain in passerine birds refueling during migration
11:00 AM	S10.7	DCPB	<i>Vézina F; Université du Québec à Rimouski</i>	Cold acclimation, migration, and phenotypic compromises in a long distance migratory shorebird
11:30 AM	S10.8	DCPB	<i>Wojciechowski MS, Jefimow M, Pinshow B; Nicolaus Copernicus University, Poland, Jacob Blaustein Institutes for Desert Research, Ben-Gurion University, Israel</i>	Hypothermia in small migrating passerines. What can bats teach us about bird migration?

NOON LUNCH BREAK

1:00 PM	S10.9	DCPB	<i>Humphries M, Careau V; McGill University, Sherbrooke University</i>	Activity substitution for thermoregulation and the metabolic ecology of endotherms
1:30 PM	S10.10		<i>Korine C, Sánchez F, Pinshow B; Ben-Gurion University of the Negev, Universidad de Ciencias Aplicadas y Ambientales, UDCA</i>	Ethanol increase food consumption in summer but not in winter: effects of ethanol consumption on skin temperature of the Egyptian fruit bats
2:00 PM	S10.11		<i>Levy O, Dayan T, Kronfeld-Schor N*; Tel Aviv University</i>	Thermal ecology of a diurnal desert rodent
2:30 PM	S10.12	DCPB	<i>Speakman JR, Krol E; University of Aberdeen, UK</i>	Heat dissipation and hyperthermia risk as limiting factors in endotherm ecology

8:00 AM-3:00 PM 150 G

Symposium S11: The Biomechanics and Behavior of Gliding Flight

Supported by: DAB, DCB, DVM

Organized by: Robert Dudley

8:00 AM	S11.1	DCB	<i>Dudley R, Yanoviak SP; University of California, Berkeley, University of Arkansas, Little Rock</i>	Animal aloft: the origins of aerial behavior
8:30 AM	S11.2	DCB	<i>Munk Y, Yanoviak SP, Dudley R; University of California, Berkeley, University of Arkansas at Little Rock</i>	Directed aerial descent in canopy ants
9:00 AM	S11.3	DCB	<i>Jusufi A, Zeng Y, Full RJ, Dudley R; University of California, Berkeley</i>	Aerial righting responses: a comparative approach

9:30 AM BREAK

10:00 AM	S11.4	DVM	<i>Herrel A, Boistel R, Losos J, Vanhooydonck B; MNHN/CNRS, Université de Poitiers, Harvard University, University of Antwerp</i>	The evolution of the vestibular system and controlled aerial descent in non-specialized arboreal squamates
10:30 AM	S11.5	DCB	<i>Socha JJ, Jafari F, Vlachos PP; Virginia Tech</i>	Challenges of being a snake glider
11:00 AM	S11.6		<i>McGuire JA, Dudley R; University of California, Berkeley</i>	The evolution of gliding performance in flying lizards (<i>Draco</i>)
11:30 AM	S11.7	DCB	<i>Byrnes G, Spence AJ; University of Cincinnati, Royal Veterinary College</i>	Ecological and biomechanical insights into the origins of gliding in mammals

NOON LUNCH BREAK

**FRIDAY PROGRAM
SYMPOSIA**

1:00 PM	S11.8	DCB	<i>Bishop KL, Bahlman JW*</i> ; Florida International University, Brown University	Active control of aerodynamic forces during gliding in flying squirrels
1:30 PM	S11.9	DCB	<i>Koehl M, Evangelista D</i> ; University of California, Berkeley	Aerodynamic performance of feathered dinosaurs
2:00 PM	S11.10		<i>Peterson K, Birkmeyer P, Dudley R, Fearing RS</i> ; University of California, Berkeley	Wing Assisted Locomotion of a 25 g Running Robot
2:30 PM	S11.11	DVM	<i>Lentink D, De Kat R</i> ; Wageningen University, Delft University of Technology	Swifts have an edge on drag reduction

**FRIDAY PROGRAM
MORNING SESSIONS**

**8:00-9:40 AM
151 ABC**

Session 74: Complementary Session to Population Dynamics of Crustaceans

Chair: Sherry Tamone

8:00 AM	74.1	DEE	<i>Demiri B, Cristescu M, Crease T</i> ; University of Windsor, University of Guelph	Genetic and expression changes in lactate dehydrogenase as potential mechanisms for promoting local adaptation in the <i>Daphnia pulex</i> species complex (Cladocera, Anomopoda)
8:20 AM	74.2		<i>Xu S, Omilian AR, Cristescu M</i> ; University of Windsor, Canada, Indiana University	Crustaceans as ecological genomics models: high rate of deletions in asexual <i>Daphnia</i> and implications for the evolution of sex
8:40 AM	74.3	DSEB	<i>Constantin A, Crease TJ, Cristescu ME</i> ; University of Windsor, University of Guelph	Habitat transition and ecological speciation with gene flow in <i>Daphnia pulex</i> species complex
9:00 AM	74.4	DEE	<i>Altshuler I, Cristescu ME</i> ; University of Windsor	The effects of declining calcium levels on the gene expression patterns in crustaceans
9:20 AM	74.5		<i>Vaillant JJ, Cristescu ME, Haffner GD</i> ; University of Windsor	The calanoids of Sulawesi: exploring speciation patterns in ancient lakes

9:40 AM BREAK

**10:00 AM-Noon
151 ABC**

Session 75: Complementary Session to Environmentally-Cued Hatching Across Taxa

Chair: Ricky Spencer

10:00 AM	75.1		<i>Vonesh JR, McCoy MW, Hughey MC, Warkentin KM</i> ; Virginia Commonwealth University, Boston University	Sequential predator effects across life stages: Predicting phenotypic and density effects of egg predators on larval survival and growth
10:20 AM	75.2	DVM	<i>Landberg T, Cohen KL, Willink B, Warkentin KM</i> ; Boston University, Universidad de Costa Rica, San Jose	Effects of hatching age and predator cues on the development of escape swimming performance and survival with dragonfly predators in red-eyed treefrogs
10:40 AM	75.3		<i>Delia J</i> ; East Carolina University	The role of parental care in mediating a plastic life-history switch point: an example from a neotropical glassfrog
11:00 AM	75.4		<i>Carrillo A, Almasarweh FA, Dickson KA</i> ; California State University Fullerton	Does extended incubation affect morphology and feeding ability of larval California grunion, <i>Leuresthes tenuis</i> ?
11:20 AM	75.5	DVM	<i>Aryafar H, Dickson KA</i> ; California State University Fullerton	Does delayed hatching in the California grunion, <i>Leuresthes tenuis</i> , affect larval development, swimming activity and survival?

**FRIDAY PROGRAM
MORNING SESSIONS**

11:40 AM	75.6	DEE	<i>Spencer R-J, McGlashan J, Colbert P, Janzen F; University of Western Sydney, Australia, Iowa State University</i>	Synchronous hatching: mechanisms and evolution
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**9:00-9:40 AM
151 DEF**

Session 76: Hormonal Control of Osmoregulation

Chair: Christian Tipsmark

9:00 AM	76.1	DCE	<i>Tipsmark CK, Breves JP, Hirano T, Grau EG; University of Arkansas, Fayetteville, University of Hawaii, Manoa</i>	Salinity dependent gill Na,K-ATPase isoform shifts in a cichlid fish and prolactin dependence of the freshwater enzyme
9:20 AM	76.2	DCE	<i>McCormick SD, Regish AM, Chadwick JG, Christensen AK; USGS, Conte Anadromous Fish Research Center</i>	Hormonal control and developmental changes in the salinity-dependent isoforms of the branchial sodium pump of Atlantic salmon

9:40 AM BREAK

**10:00 AM-Noon
151 DEF**

Session 77: Digestive Physiology

Chair: Michele Skopec

10:00 AM	77.1		<i>Bouchard SS, Jenney CR, Charbonnier JF, Warkentin KM; Otterbein University, Virginia Commonwealth University, Boston University</i>	Density-dependent digestive plasticity in red-eyed treefrogs before and after metamorphosis
10:20 AM	77.2	DCPB	<i>Munoz-Garcia A, Aamidor S, McCue M, McWilliams S, Pinshow B; Ben Gurion University, St. Mary's University, University of Rhode Island</i>	Allocation of endogenous and dietary protein in the reconstitution of the gastrointestinal tract in migratory blackcaps, <i>Sylvia attricapilla</i> , at stop-over sites
10:40 AM	77.3	DCPB	<i>Skopec MM, Malenke JR, Halpert JR, Dearing MD; Weber State University, University of Utah, University of California, San Diego</i>	Role of cytochrome P450s in juniper versus creosote consumption in woodrats
11:00 AM	77.4	DCPB	<i>Kohl KD, Dearing MD; University of Utah</i>	Physiological and evolutionary responses of digestive enzymes to toxin-rich diets
11:20 AM	77.5	DCPB	<i>Day RD, Tibbetts IR; The University of Queensland</i>	Life without a stomach: trophic and physiological implications of stomach loss in teleost fishes
11:40 AM	77.6	DCPB	<i>Secor SM, Lignot J-H; University of Alabama, Université Montpellier</i>	Does form dictates function in the adaptive regulation of intestinal performance among snakes?

**8:00-10:00 AM
151 G**

Session 78: Biogeography and Diversity

Chair: John Pearse

8:00 AM	78.1	DIZ	<i>Goddard JHR, Gosliner TM, Pearse JS*; University of California, Santa Barbara, California Academy of Sciences, University of California, Santa Cruz</i>	Decline in nudibranch gastropods following a climate-related range shift of a large predatory aeolid in the northeast Pacific Ocean
8:20 AM	78.2	DSEB	<i>Lake DT, Lee KA, Ruiz GM, Cohen CS; San Francisco State University, University of California, Davis, Smithsonian Environmental Research Center</i>	Phylogenetic analysis of bicoastal parasite diversity in three brooding bivalves

FRIDAY PROGRAM
MORNING SESSIONS

8:40 AM	78.3	DEE	<i>Berke SK, Jablonski D, Krug AZ, Tomasovych A, Valentine JW; University of Chicago, University of California, Berkeley</i>	Renegade clams: marine bivalves follow neither Bergmann's Rule nor its converse
9:00 AM	78.4	DSEB	<i>Boyer SL, Howe AA, Juergens NW, Hove MC; MacAlester College, University of Minnesota</i>	CSI freshwater mussels: using DNA barcoding to identify microscopic animals
9:20 AM	78.5	DEE	<i>Tucker DB, Harrison JS, McBrayer LD; Georgia Southern University</i>	Genetic isolation of <i>Sceloporus woodi</i> due to mature forests and major roadways
9:40 AM	78.6	DIZ	<i>Timmings-Schiffman EB, Dorfmeier EM, Roberts SB; University of Washington</i>	The effects of climate change on physiology: pacific oyster (<i>Crassostrea gigas</i>) larval response to environmental change

10:00 AM BREAK

10:20 - 11:20 AM
151 G

Session 79: Biodiversity in the Oceans

Chair: Donald Munson

10:20 AM	79.1		<i>Munson DA; Washington College</i>	The distribution of <i>Acanthamoeba spp.</i> in marine and estuarine sediments from the coast of France
10:40 AM	79.3		<i>Tricas TC, Boyle KS; Hawaii Institute of Marine Biology, University Hawaii at Manoa, Honolulu</i>	Hawaiian reef fish cocktail parties: look who is talking!
11:00 AM	79.4	DIZ	<i>Lasker HR; University at Buffalo</i>	Reproductive strategy, larval behavior and recruitment among Caribbean octocorals

8:00-10:00 AM
250 AB

Session 80: Aquatic Feeding I

Chair: Cheryl Wilga

8:00 AM	80.1	DCB	<i>Van Wassenbergh S, Aerts P; University Antwerpen</i>	A computational modelling perspective on buccal expansion dynamics and water flow patterns in suction feeding fish
8:20 AM	80.2	DCB	<i>Goldbogen JA, Calambokidis J, McKenna M, Oleson E, Potvin J, Pyenson N, Schorr G, Shadwick R; University of California, San Diego, Cascadia Research Collective, NOAA, Saint Louis University, Smithsonian NMNH, University of British Columbia</i>	Mechanics, hydrodynamics and energetics of blue whale lunge feeding: predatory strategies and efficiency dependence on krill density
8:40 AM	80.3	DVM	<i>Mara KR, Motta PJ; University of South Florida</i>	Functional morphology of the feeding apparatus in hammerhead sharks (<i>Sphyrnidae</i>): a phylogenetic perspective
9:00 AM	80.4	DCB	<i>Wilga CD, Stoehr AA, Duquette DC, Allen RM; University of Rhode Island, University of Massachusetts Dartmouth, University of New Hampshire, Ross University</i>	Biomechanics of prey capture in elasmobranchs
9:20 AM	80.5	DAB	<i>Mulvany SM, Motta PJ; University of S Florida</i>	Feeding kinematics in batoids: comparing species with and without cephalic lobes
9:40 AM	80.6	DCB	<i>Stoehr AA, Wilga CD, Allen RM; University of Massachusetts, Dartmouth, University of Rhode Island, Ross University</i>	Prey processing in elasmobranchs

FRIDAY PROGRAM MORNING SESSIONS

10:00 AM BREAK

10:20 AM-Noon
250 AB

Session 81: Aquatic Feeding II

Chair: Lara Ferry

10:20 AM	81.1	DVM	<i>Reece JS, Mehta RS, Alfaro M; University of California, Santa Cruz, University of California, Los Angeles</i>	Functional and morphological convergence in durophagous moray eels
10:40 AM	81.2	DCB	<i>Moran CJ, Ferry LA; Moss Landing Marine Labs</i>	Bite force production in Kyphosidae
11:00 AM	81.3	DCB	<i>Crofts SB, Summers AP; University of Washington, Friday Harbor Labs</i>	Finite element analysis of crushing teeth
11:20 AM	81.4	DVM	<i>Ferry LA, Gibb AC, Konow N; Arizona State University, Northern Arizona University, Brown University</i>	Kissing and scraping: the intramandibular joint in <i>Helostoma temmincki</i>
11:40 AM	81.5	DAB	<i>Pfeiffenberger JA, Motta PJ; University of South Florida</i>	The effects of intraspecific competition on the prey-capture kinematics and behavior of bluegill sunfish, <i>Lepomis macrochirus</i>

8:00-9:40 AM
250 DE

Session 82: Loads and Levers

Chair: Callum Ross

8:00 AM	82.1	DVM	<i>Dumont ER, Samavedam KC, Grosse IR; University of Massachusetts at Amherst</i>	Mechanical optimization and skull form in New World leaf-nosed bats
8:20 AM	82.2	DCB	<i>Ross CF, Porro LB, Holliday CM, Anapol F, Oliveros LC, Oliveros LT; University of Chicago, University of Missouri School of Medicine, Columbia, University of Wisconsin, Milwaukee</i>	Free body analysis, beam mechanics, and finite element modeling of the mandible of <i>Alligator mississippiensis</i>
8:40 AM	82.3	DCB	<i>Rosario MV, Patek SN, Dumont ER; University of Massachusetts, Amherst</i>	Comparing elastic energy structures in mantis shrimp using finite element analysis
9:00 AM	82.4	DCB	<i>Hubel TY, Usherwood J; Royal Veterinary College, UK</i>	Limitations for walking speeds - how accurate are predictions based on a reductionist inverted pendulum model
9:20 AM	82.5	DCB	<i>McHenry MJ, Strother JA; University of California Irvine</i>	Do skeletal levers have a trade-off between speed and force?

9:40 AM BREAK

10:00 AM-Noon
250 DE

Session 83: Limb Loading and Structural Design

Chair: John Bertram

10:00 AM	83.1	DCB	<i>Clemente CJ, Withers PC, Thompson G, Lloyd D; Harvard University, University of Western Australia, Edith Cowan University</i>	Evolution of body posture with body size within Varanid lizards (Squamata: Varanidae: <i>Varanus</i>)
10:20 AM	83.2	DVM	<i>Blob RW, Butcher MT, Gosnell WC, Maie T, Parrish JHA; Clemson University, Youngstown State University</i>	Locomotor loading of the femur in opossums: safety factors, loading regimes, and an explanation for mediolateral bending

**FRIDAY PROGRAM
MORNING SESSIONS**

10:40 AM	83.3		<i>Byron CD, Ouy L, Adeniyi AR, Vanvalkenburgh D; Mercer University</i>	Mouse phalangeal morphology and implications for agility within the fine-branch niche
11:00 AM	83.4	DVM	<i>Osborn ML, Homberger DG; Louisiana State University, Baton Rouge</i>	The human head-neck-shoulder complex: a configuration to free the hands
11:20 AM	83.5		<i>Provini P, Abourachid A; Muséum National d'Histoire Naturelle, France</i>	Leg thrust forces in zebra finches during take-off and landing on non-level perches
11:40 AM	83.6	DCB	<i>Bertram JEA, Gutmann A, Germscheid N, Matyas J; University of Calgary, Canada</i>	How a quadruped limps: long-term quantification of support redistribution following injury in the dog

8:20-9:40 AM

251 AB

Session 84: Parental Behavior

Chair: Mark Hauber

8:20 AM	84.1		<i>Hauber ME; Hunter College of the City University of New York</i>	Avian family dynamics and the evolution of virulence in parasitized nests
8:40 AM	84.2	DAB	<i>Knutie SA, Koop JAH, French SS, Clayton DH; University of Utah, Salt Lake City, Utah State University, Logan</i>	The woes of parenthood: the stress of an introduced nest parasite on Darwin's finches
9:00 AM	84.3	DAB	<i>Warner DA, Mitchell TS, Janzen FJ; Iowa State University</i>	Decoupling intrinsic and behavioral maternal effects on phenotypic variation in hatchling turtles: insights from a cross-fostering experiment in the field
9:20 AM	84.4		<i>Small TW, Bridge E, Schoech SJ; University of Memphis, University of Oklahoma</i>	Targeted dietary supplementation in free-living Florida scrub-jays (<i>Aphelocoma coerulescens</i>): use of a novel "SmartFeeder" design

9:40 AM BREAK

10:00 AM-Noon

251 AB

Session 85: Behavioral Ecology - Novel and Harsh Environments

Chair: Tracy Langkilde

10:00 AM	85.1		<i>Langkilde T, Trompeter WP; Penn State University</i>	Invader danger: lizards faced with novel predators exhibit altered behavioral stress responses
10:20 AM	85.2	DAB	<i>Sewall KB, Nowicki S; Duke University</i>	The relationship between behavioral syndromes and behavioral plasticity in male song sparrows
10:40 AM	85.3	DCE	<i>Atwell JW, Cardoso GC, Whittaker DJ, Ketterson ED; Indiana University, Centro de Investigação em Biodiversidade e Recursos Genéticos, Portugal</i>	Persistent population differences in boldness behavior and stress physiology suggest rapid evolution following colonization of a novel environment
11:00 AM	85.4		<i>Robbins TR, Langkilde T; The Pennsylvania State University</i>	Stress and invasion: factors influencing the escape behavior of native fence lizards in response to introduced fire ants
11:20 AM	85.5		<i>Roth TC, Ladage LD, Pravosudov VV; University of Nevada, Reno</i>	Learning capabilities enhanced in harsh environments
11:40 AM	85.6	DAB	<i>Flynn LM, Zani PA*; Whitman College</i>	Anti-predator behavior of side-blotched lizards in response to a novel predator

FRIDAY PROGRAM MORNING SESSIONS

8:00-10:00 AM

251 DE

Session 86: Evolutionary Physiology I: Mice and Metabolism

Co-Chairs: Pavel Brzek, Kristi Montooth

8:00 AM	86.1	DCPB	<i>Dlugosz EM, Schutz H, Meek TH, Acosta W, Downs CJ, Platzer EG, Chappell MA, Garland Jr T; University of California, Riverside, University of Nevada, Reno</i>	Immune response to a <i>Trichinella spiralis</i> infection in high-runner mice
8:20 AM	86.2	DEE	<i>Downs CJ, Schutz H, Meek TH, Dlugosz EM, Acosta W, Garland TJR; University of Nevada, Reno, University of California, Riverside</i>	Innate immune function in mice selectively bred for high voluntary wheel-running behavior
8:40 AM	86.3	DEE	<i>Brzek P, Ksiazek A, Gebczynski A, Franczuk J, Konarzewski M; University of Bialystok, Poland</i>	Does high level of Basal Metabolic Rate increase susceptibility to food shortage?
9:00 AM	86.4	DEE	<i>Montooth K, Hoekstra L, Rice J; Indiana University, Bloomington</i>	Impacts of the mitochondrial-nuclear interaction on metabolic fitness
9:20 AM	86.5	DEE	<i>Gebczynski AK, Konarzewski M; University of Bialystok, Poland</i>	Effects of oxygen availability on maximum aerobic performance in mice selected for divergent BMR or high aerobic capacity
9:40 AM	86.6	DEE	<i>Sadowska J, Gebczynski AK, Konarzewski M; University of Bialystok</i>	Milk composition of mice divergently selected for Basal Metabolic Rate (BMR)

10:00 AM BREAK

10:20 - 11:40 AM

251 DE

Session 87: Evolutionary Physiology II

Chair: William Dowd

10:20 AM	87.1	DNB	<i>Moore AF, Menaker M; University of Virginia, Charlottesville</i>	Photosensitivity of the circadian clock is correlated with photic niche in <i>Anolis</i> lizards
10:40 AM	87.2	DEE	<i>Fronstin RB, Doucet SM, Williams TD; Simon Fraser University, University of Windsor</i>	Egg colour in European starlings: relationship with female quality, male parental effort and haematology
11:00 AM	87.3	DCPB	<i>Dowd WW, Somero GN; Hopkins Marine Station of Stanford University</i>	Patterns of oxidative protein damage and gaping behavior following repeated heat stress in <i>Mytilus</i> mussels
11:20 AM	87.4		<i>Waite JL, Henry AR, Clayton DH; University of Utah</i>	Do flies suffer fitness consequences from vectoring blood parasites: experiments with <i>Pseudolynchia canariensis</i> and <i>Haemoproteus columbae</i>

FRIDAY PROGRAM AFTERNOON SESSIONS

1:00-3:00 PM

151 ABC

Session 88: Reproductive Physiology

Chair: Stephen Secor

1:00 PM	88.1	DIZ	<i>Wells SL, McConaughy JR, Horth LA; Old Dominion University</i>	Multiple mating and sperm allocation in an exploited decapod crustacean
1:20 PM	88.2	DCE	<i>Zaleski MAF, Tamone SL; University of Alaska Fairbanks, University of Alaska Southeast</i>	Reproductive indices of male snow crab <i>Chionoecetes opilio</i> from the eastern Bering Sea

Friday

FRIDAY PROGRAM
AFTERNOON SESSIONS

1:40 PM	88.3	DIZ	<i>Conner SL, Bauer RT; University of Louisiana, Lafayette</i>	First test of the protandric hypothesis in the bo- pyrid isopod hyperparasite <i>Cabirops</i> sp.
2:00 PM	88.4	DVM	<i>Stewart JR, Ecay TW, Thompson MB; East Tennessee State University, Johnson City, University Sydney</i>	Calcium placentotrophy in a lizard with prolonged uterine egg retention
2:20 PM	88.5	DCPB	<i>Heiss RS, Schoech SJ; University of Memphis</i>	Oxidative damage reduces reproductive output in the cooperatively breeding Florida scrub-jay
2:40 PM	88.6	DAB	<i>Watts HE, Simenhoff CL, Hahn TP; Loyola Marymount University, University of California, Davis</i>	Sex differences in the effect of environmental cues on reproductive development in pine siskins

1:00-2:40 PM
151 DEF

Session 89: Marine Vision and Visibility

Chair: Daniel Speiser

1:00 PM	89.1		<i>Zylinski S; Duke University</i>	Camouflage and chromatophores in the open ocean: transparency and body patterning in the mesopelagic octopus <i>Japetella</i>
1:20 PM	89.2	DIZ	<i>Speiser DI, Johnsen S; Duke University</i>	Seeing through rocks: chitons use calcium car- bonate lenses to form images
1:40 PM	89.3		<i>Holt AL, Sweeney AM, Morse DE; Uni- versity of California, Santa Barbara</i>	Optical probing and modeling of structural reflec- tions from proteinaceous shapes in squid
2:00 PM	89.4	DCPB	<i>Sweeney AM, Holt AL, Howell A, Shaner NC, Morse DE; University of California, Santa Barbara, Monterey Bay Aquarium Research Institute</i>	Squid reflectins and photonic self-assembly: a transcriptomic approach
2:20 PM	89.5	DIZ	<i>Baldwin Fergus JL, Johnsen S; Duke University</i>	When love is blind: vision constrained by molting during mating in the female blue crab

1:00-2:40 PM
151 G

Session 90: Stress Endocrinology - Responses to Chronic Stressors

Chair: Robin Warne

1:00 PM	90.1	DCE	<i>Harris BN, Saltzman W, De Jong TR, Perea-Rodriguez JP, Chauke M, Milnes MR; University of California, Riverside, Institute for Conservation Research</i>	How to tell when your fecal assay is crap: consid- erations for development and validation of fecal steroid assays
1:20 PM	90.2	DCPB	<i>Warne RW, Crespi EJ; Vassar College Biology</i>	The long-term developmental and physiological effects of larval environmental stressors are con- dition-dependent in wood frogs
1:40 PM	90.3	DCE	<i>Bauer CB, Glassman LG, Romero LM; Tufts University</i>	Unpredictable food availability as an ethologically relevant chronic stressor in European starlings (<i>Sturnus vulgaris</i>)
2:00 PM	90.4	DCE	<i>Lynn SE, Phillips MM, Prince LE, Kern MD; College of Wooster, University Cali- fornia, Davis</i>	Lasting impacts of handling on adrenocortical responsiveness of free-living adult and nestling eastern bluebirds
2:20 PM	90.5	DCPB	<i>Hausmann MF, Bowden RM; Bucknell University, Illinois State University</i>	Stress begets stress: elevated yolk corticosterone impacts oxidative stress in chicks

FRIDAY PROGRAM AFTERNOON SESSIONS

1:00-3:00 PM

250 AB

Session 91: Locomotion - Gait, Rattle and Roll

Chair: Henry Astley

1:00 PM	91.1	DCB	<i>McBride JA, Chadwell BA, Ashley-Ross MA*; Wake Forest University</i>	Roll with it: how tarantulas turn over
1:20 PM	91.2	DCB	<i>Astley HC; Brown University</i>	Getting around when you're round: quantitative analysis of the locomotion of the thick-spined brittlestar (<i>Ophiocoma echinata</i>)
1:40 PM	91.3	DCB	<i>Revzen S, Guckenheimer JM, Full RJ; University of Pennsylvania, Cornell University, University of California at Berkeley</i>	Subtle differences in gaits: the perspective of data driven Floquet analysis
2:00 PM	91.4	DCB	<i>Nauwelaerts S, Aerts P, Clayton HM; University of Antwerp, Michigan State University</i>	Energetic cost of transitioning between trot and gallop and back in horses
2:20 PM	91.5	DVM	<i>Deban SM, Schilling N, Carrier DR; University of South Florida, Tampa, Friedrich-Schiller University, Jena, Germany, University of Utah, Salt Lake City</i>	Activity of extrinsic forelimb and hindlimb muscles in dogs while walking, trotting and galloping
2:40 PM	91.6	DCB	<i>Hudson PE, Corr SA, Wilson AM; Royal Veterinary College, London, University of Nottingham</i>	Galloping cheetahs: the challenges of high speed locomotion

1:00-3:00 PM

250 DE

Session 92: Chemical Ecology

Chair: Stefanie Boettger

1:00 PM	92.1	DIZ	<i>Boettger SA, Taraska NG, Joseph J, Walker CW; West Chester University of Pennsylvania, University of New Hampshire</i>	Contaminants and cancer: heavy metal pollution induces development of hemic neoplasia in <i>Mya arenaria</i>
1:20 PM	92.2	DCPB	<i>Samuni M, Izhaki I, Dearing DM, Arad Z; Technion, Israel, University of Haifa, Israel, University of Utah</i>	Differential responses of two species of spiny mouse to glucosinolates in sweet mignonette fruits
1:40 PM	92.3	DEE	<i>Bautista JA, Wilson BA; Texas A&M International, Laredo</i>	Bioassay to determine toxic effects of imazapyr on <i>Daphnia</i>
2:00 PM	92.4	DEE	<i>Williams BL, Hanifin CT, Brodie, Jr ED, Caldwell RL; New Mexico State University, Hopkins Marine Station, Stanford University, Utah State University, University of California, Berkeley</i>	Ontogeny of tetrodotoxin levels in blue-ringed octopuses: maternal investment as well as independent production in offspring of <i>Hapalochlaena lunulata</i>
2:20 PM	92.5		<i>Clotfelter ED*, Brown AC, Montgomery TM, Stevenson LM, Gendelman HK, Ota M; Amherst College, University of Massachusetts</i>	Reproductive consequences of exposure to waterborne phytoestrogens and ethinyl estradiol in male fighting fish <i>Betta splendens</i>
2:40 PM	92.6	DAB	<i>Sprayberry JDH, Ritter K; Muhlenberg College</i>	Effects of non-insecticidal agricultural chemicals on bumblebee foraging behavior

**FRIDAY PROGRAM
AFTERNOON SESSIONS**

1:00-2:40PM

251 AB

Session 93: Behavioral Ecology - Foraging

Chair: Peter Zani

1:00 PM	93.1	DAB	<i>Mayack CL, Naug D; Colorado State University</i>	Desperate times call for desperate measures: energetic stress from infection causes risk-prone foraging behavior in honeybees
1:20 PM	93.2		<i>Sparks MN, Lewis CM, Johnson MA; Trinity University</i>	Ectoparasite load and territorial behavior in green anole lizards (<i>Anolis carolinensis</i>)
1:40 PM	93.3	DAB	<i>Pakes MJ, Lindberg DR, Caldwell RL; University of California, Berkeley</i>	Behavior of remipede crustaceans: in caves, <i>in situ</i> , and in fluorescence
2:00 PM	93.4		<i>Ulappa AC, Shipley LA, Rachlow JL, Forbey JS; Boise State University, Washington State University, University of Idaho</i>	Nutritional and chemical factors shaping the "foodscape" of a dietary specialist herbivore, the pygmy rabbit
2:20 PM	93.5	DAB	<i>Karsten KB, Ferguson GW, Chen TC, Holick MF; Texas Christian University, Boston University Medical Center</i>	Panther chameleons behaviorally regulate optimal UV exposure depending on dietary vitamin D

1:00-3:00 PM

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Session 94: Molecular Evolution

Chair: Francesco Santini

1:00 PM	94.1	DSEB	<i>Santini F; University of California, Los Angeles</i>	Timetree of vertebrate visual opsin genes suggests long cryptic history of metazoans
1:20 PM	94.2		<i>Krause AJ, Pairett AN, Serb JM*; Iowa State University</i>	The role of gene duplication and convergence in the molecular evolution of scallop opsins
1:40 PM	94.3	DSEB	<i>Janosik AM, Halanych KM; Auburn University</i>	Seeing stars: a molecular and morphological investigation of the evolutionary history of the Odonotasteridae (Asterozoa: Echinodermata)
2:00 PM	94.4		<i>Stringham SA, Aldenhoven JT, Tampio AJ, Miller AL, Lunsford AR, Shapiro MD; University of Utah</i>	Diverse genetic mechanisms underlie pelvic reduction in ninespine sticklebacks (<i>Pungitius pungitius</i>)
2:20 PM	94.5		<i>Emera D, Casola C, Lynch VJ, Wildman D, Agnew D, Wagner GP; Yale University, Indiana University, Wayne State University, Michigan State University, East Lansing</i>	Convergent evolution of endometrial prolactin expression in the human and elephant lineage through the independent recruitment of transposable elements
2:40 PM	94.6		<i>Malenke JR, Magnanou E, Dearing MD; University of Utah</i>	Cytochrome P450 2B diversity in a wild rodent herbivore, the desert woodrat (<i>Neotoma lepida</i>)

3:00-4:00 PM

Room: Ballroom B

Moore Lecture

<i>Freeman S; University of Washington</i>	Evidence-based teaching in introductory biology
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