Society for Integrative and Comparative Biology

with the

American Microscopical Society

Animal Behavior Society

The Crustacean Society

2012 SICB Annual Meeting & Exhibition

January 3-7

Charleston, South Carolina

Embassy Suites North Charleston

and

North Charleston

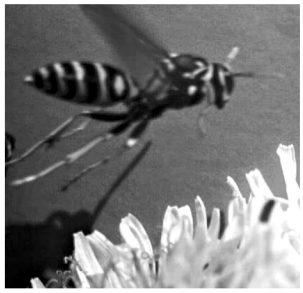
Convention Center

Final Program

Mega Speed HHC "X" Series

Full Featured Portable High Speed Cameras

600 fps @ 1280 x 1020 & 11 sec. rt.
2500 fps @ 320 x 240 & 44 sec rt.



5000 fps @ 512 x 512 & 6.5 sec. rt.
10000 fps @ 256 x 256 & 13 sec. rt.

600 fps @ 1920 x 1080
850 fps @ 1280 x 720

High Definition 1080P 600 fps
High Speed Camera

Please visit us on line or contact our sales office for additional product information.

Mega Speed
High Speed Camera

www.megaspeedUSA.com email: sales@megaspeedUSA.com Phone: 1-800-565-2772 Fax: 1-204-867-3933

Table of Contents

Future Meeting Dates

San Francisco, California, January 3-7, 2013

Austin, Texas, January 2-6, 2014

The Society for Integrative & Comparative Biology
1313 Dolley Madison Blvd.
Suite 402
McLean, VA 22101
Phone: 703-790-1745 - 800-955-1236
FAX: 703-790-2672
Email: SICB@BurkInc.com
Web: www.SICB.org

Welcome to Charleston – Message from the Program Officer

You will be a part of the largest SICB meeting on record! Welcome to the first-timers, and 'Welcome Back' to our returning members! With more than 1420 presentations over four full days, you are sure to find more fascinating research than you will have time to see. These presentations are organized into 10 symposia with their complementary poster and oral sessions, plus 120 contributed oral sessions and 3 days of poster (615) presentations.

We will start the SICB Conference with the **Plenary Lecture** on the ***Grand Challenges in Organismal Biology*** entitled "Animals in a bacterial world: a new imperative for the life sciences" presented by **Margaret McFall-Gnai**. Successive evenings will hold the **Bartholomew Lecture** (Wednesday, Jan 4), by Emanuel Azizi; the **Bern Lecture** (Thursday, Jan 5) by Lynn Riddiford; **AMS Lecture** (Thursday, Jan 5) by Kevin Eckelbarger; and we will conclude the meeting with the **Moore Lecture** (Saturday, Jan 7 @ 3 PM) by Brian Alters. Our Society-wide Social in Honor of Students and Post-Docs will immediately follow the Moore Lecture Saturday afternoon @ 4 PM.

STUDENTS and Post-Docs will have access to a variety of specialized workshops, including the Student/Post-Doctoral Affairs Committee Workshop ***"Maximizing Your Potential through Job Applications and Interviews"*** on Friday, Jan 6; the Broadening Participation Workshops (a) ***"Science is a Two-way street: Mentorship and the Mentee"*** Jan 4 @ noon; and (b) ***"NSF: Demystifying the Grant Application Process"*** 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), 2012 Symposium Organizers, the SICB Officers, Sue Burk and the Burk & Associates team for putting this fantastic meeting together. Please be sure to provide feedback to any of us concerning the meeting program.

Brian Tsukimura
SICB Program Officer

There will be a
Cash & Carry Lunch
available in the
Exhibit Hall

Wednesday through Friday
11:30 am-2:00 pm

Society for Integrative and Comparative Biology

2012 Officers

Kenneth P. Sebens, President
Billie Swalla, President-Elect
Richard A. Satterlie, Past President
Louis E. Burnett, Secretary
Robert D. Roer, Treasurer
Brian Tsukimura, Program Officer
Jon Harrison, Program Officer-Elect
Harold F. Heatwole, Editor-in-Chief, *Integrative and Comparative Biology*
Brett J. Burk, Executive Director

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.

Embassy Suites North Charleston - Airport/Hotel & Convention

5055 International Boulevard
North Charleston, South Carolina 29418
843-747-1882; FAX: 843-747-1895

SICB Business Office

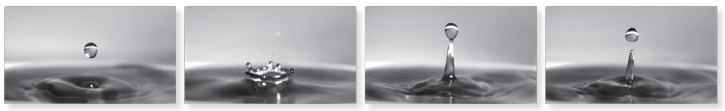
1313 Dolley Madison Blvd
Suite 402
McLean, Virginia 22101
Phone: 800-955-1236/703-790-1745
Fax: 703-790-2672
sicb@BurkInc.com; www.sicb.org

FASTEC IMAGING™

HIGH SPEED IMAGING IN THE PALM OF YOUR HAND

TS3

Model 100-X



TS3 At A Glance

- **Handheld, Battery Powered, Built-in LCD**
- **1280 x 1024 at 500 fps CMOS Sensor**
- **Up to 256GB of onboard image storage**
- **Multiple removable storage options**
- **Web Camera Control via Browser**

Key Features

- **Portability** – With its small form factor, battery operation, large built in LCD screen and intuitive on-screen menu system, the TS3 puts the power of a traditional high speed camera in the palm of your hands. TS3 is truly a point-and-shoot, high speed camera.

- **High Resolution High-Speed Images** – The Fastec TS3 100-X records 1280 x1024 megapixel resolution at over 500 frames per second, providing ultra-sharp images. With recording rates over 20,000 frames per second at reduced resolutions, almost no event is too fast for the TS3.

- **Flexible Control** - The TS3 can be operated as a self-contained, handheld camera, over Gigabit Ethernet via a PC or MAC, or even over the internet using a standard web browser for long distance control.

- **Multiple Storage Options** – The TS3 features both USB ports and SD ports to allow users to easily download images to thumb drives, SD cards, or portable hard drives. Additionally, an optional built-in SSD (solid state drive) provides for up to 256GB of non-volatile internal storage. Shoot all day long without having to download to a computer.

MEETING HIGHLIGHTS/SOCIAL EVENTS

Tuesday, January 3

Plenary Session - *Ballroom AB, 7:30-8:30 pm*
The Plenary Address will be given by Margaret McFall-Ngai, from the University of Wisconsin. Her talk is "Animals in a bacterial world: a new imperative for the life sciences."

Welcome to Charleston Reception - *Ballroom Foyer, 8:30-10:00 pm*
The Society for Integrative and Comparative Biology welcomes you to Charleston with a reception on Tuesday, January 3. The Welcome Reception will follow the Plenary lecture. Light snacks will be provided.

Wednesday, January 4

Poster Session 1 - *Exhibit Hall AB, 3:00-5:00 pm*
Even # poster authors present from 3:00-4:00 pm, Odd # poster authors present from 4:00-5:00 pm.

DAB/DNB Social - *Room 5, 6:00-7:30 pm*

An Evening Social, hosted by Xcitex - *High Cotton Bar, 7:00-10:00 pm*
Meet us in the HIGH COTTON Bar, 199 East Bay Street, a short walk from the shuttle stop, for Complimentary Drinks and Hors D'Oeuvres. All Conference Attendees & Guests Welcome. Stop by our booth #204 to pick up your complimentary ticket on Wednesday!

DCPB Social - *Ballroom Foyer, 7:30-8:30 pm*

Thursday, January 5

SRC Breakfast - *Embassy Suites Restaurant, 6:30-8:30 am (ticketed event for those not staying at Embassy Suites)*

Poster Session 2 - *Exhibit Hall AB, 3:00-5:00 pm*
Even # poster authors present from 3:00-4:00 pm, Odd # poster authors present from 4:00-5:00 pm.

DCE Social - *Room 4 and Foyer, 7:30-10:00 pm*

DCB/DVM/DEDB Social - *Ballroom Foyer, 8:00-10:00 pm*

Friday, January 6

AMS Luncheon - *Room 5 and Foyer, Noon-1:00 pm*
Tickets required, please see SICB Registration Desk for details.

Poster Session 3 - *Exhibit Hall AB, 3:00-5:00 pm*
Even # poster authors present from 3:00-4:00 pm, Odd # poster authors present from 4:00-5:00 pm.

DIZ/DEE/DPCB/AMS/TCS Social - *Rooms 4-5 and Foyer, 6:30-8:30 pm*

Broadening Participation Social - *Room 3, 8:00-10:00 pm*

Saturday, January 7

Society-Wide Social in Honor of Students and Postdocs - *Ballroom Foyer, 4:00-6:00pm*
Join your fellow SICB members for a Society-Wide Social. Wine, cheese and fruit will be served.

There will be a Cash & Carry Lunch available in the Exhibit Hall Wednesday - Friday, 11:30 am-2:00 pm

SICB AND DIVISIONAL BUSINESS MEETINGS

Wednesday, January 4

DAB Meeting - *Room 12, 5:15-6:00pm*
DCPB Meeting - *Room 13, 5:15-6:15pm*
DCB Meeting - *Room 6/7, 5:15-6:15 pm*
DEDB Meeting - *Room 8/9, 5:15-6:15pm*
DEE Meeting - *Room 10/11, 5:15-6:15pm*

Thursday, January 5

DCE Meeting - *Room1, 5:15-6:15pm,*
DVM Meeting - *Room 6/7*, *5:15-6:15pm,*
DIZ Meeting - *Room 8/9, 5:15-6:15pm,*
DNB Meeting - *Room 3, 5:15-6:15pm,*
DPCB Meeting - *Room 10/11, 5:15-6:15pm,*

Friday, January 6

AMS Business Meeting - *Room 5, 1:30–3:00pm,*
TCS Business Meeting - *Room 1, 6:30-7:30pm*

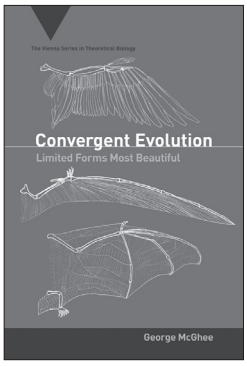
SICB Society Business Meeting & Awards Presentation
Friday, January 6
5:15-6:15pm, Ballroom C1

Shuttle Schedule, Wednesday - Friday evenings

Coach # 1
6:30 PM Depart the Convention Center for Concord St. Coach Drop
6:50 PM Drop group at Concord St. Coach Drop
6:55 PM Depart Concord St. Coach Drop for the Convention Center
7:15 PM Depart the Convention Center for Concord St. Coach Drop
7:35 PM Drop group at Concord St. Coach Drop
7:40 PM Depart Concord St. Coach drop for the Convention Center
8:00 PM Depart the Convention Center for Concord St. Coach Drop
8:20 PM Drop group at Concord St. Coach drop and remain in Coach Parking
8:25 PM Depart Concord St. Coach drop for the Convention Center
8:45 PM Drop group at Hilton Garden , Convention Center & Hyatt Place - Return to Concord St .
9:10 PM Depart Concord St. Coach drop for the Convention Center
9:30 PM Drop group at Hilton Garden , Convention Center & Hyatt Place - Return to Concord St .
9:55 PM Depart Concord St. Coach drop for the Convention Center
10:15 PM Drop group at Hilton Garden , Convention Center & Hyatt Place – Return to Concord St .
10:40 PM Depart Concord St. Coach drop for the Convention Center
11:00 PM Drop group at Hilton Garden , Convention Center & Hyatt Place

Coach # 2
6:45 PM Depart the Convention Center for Concord St. Coach Drop
7:05 PM Drop group at Concord St. Coach Drop
7:10 PM Depart Concord St. Coach Drop for the Convention Center
7:30 PM Depart the Convention Center for Concord St. Coach Drop
7:50 PM Drop group at Concord St. Coach Drop
7:55 PM Depart Concord St. Coach Drop for the Convention Center
8:15 PM Depart the Convention Center for Concord St. Coach Drop
8:35 PM Drop group at Concord St. Coach Drop & remain in Coach Parking
8:40 PM Depart Concord St. Coach drop for the Convention Center
9:00 PM Drop group at Hilton Garden , Convention Center & Hyatt Place – Return to Concord St .
9:30 PM Depart Concord St. Coach drop for the Convention Center
9:50 PM Drop group at Hilton Garden , Convention Center & Hyatt Place – Return to Concord St .
10:20 PM Depart Concord St. Coach drop for the Convention Center
10:40 PM Drop group at Hilton Garden , Convention Center & Hyatt Place – Return to Concord St .
11:15 PM Depart Concord St. Coach drop for the Convention Center
11:35 PM Drop group at Hilton Garden , Convention Center & Hyatt Place
11:45 PM End of service

The MIT Press



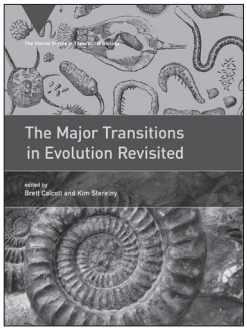
Convergent Evolution

Limited Forms Most Beautiful

George McGhee

An analysis of convergent evolution from molecules to ecosystems, demonstrating the limited number of evolutionary pathways available to life.

Vienna Series in Theoretical Biology • 312 pp., 8 illus., $35 cloth



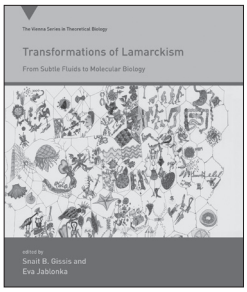
The Major Transitions in Evolution Revisited

edited by Brett Calcott and Kim Sterelny

"This book presents new and sophisticated ways of carving the history of life at its evolving joints. The clarity of the writing and the succinct introductions by the editors make the illuminating conceptual distinctions and imaginative expansions of major transitions' range and loci, accessible and enjoyable by all theoretically-minded biologists and biologically-minded philosophers."

— Eva Jablonka, Tel Aviv University

Vienna Series in Theoretical Biology • 352 pp., 36 illus., $50 cloth



Transformations of Lamarckism

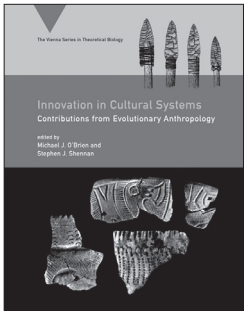
From Subtle Fluids to Molecular Biology

edited by Snait Gissis and Eva Jablonka

"An international panel of contributors illuminates the rich history and philosophy of what the editors call Lamarckian problematics, and shows how a developmental perspective informs much of today's cutting-edge research."

— Susan Oyama, John Jay College and City University of New York

Vienna Series in Theoretical Biology • 448 pp., 23 illus., $50 cloth



Innovation in Cultural Systems

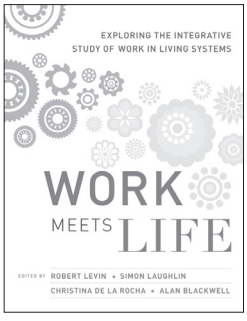
Contributions from Evolutionary Anthropology

edited by Michael J. O'Brien and Stephen J. Shennan

"Archaeologists have recently emerged as some of the most sophisticated evolutionists in the human sciences. O'Brien and Shennan's book on innovation is an important contribution to a central but difficult topic."

— Peter J. Richerson, University of California, Davis

Vienna Series in Theoretical Biology • 288 pp., 45 illus., $40 cloth



Work Meets Life

Exploring the Integrative Study of Work in Living Systems

edited by Robert Levin, Simon Laughlin, Christina De La Rocha, and Alan Blackwell

Work as fundamental to life, explored at different levels of organization from the perspectives of a variety of biological and nonbiological disciplines.

272 pp., 37 illus., $30 cloth

Evolution: The Modern Synthesis

The Definitive Edition

Julian S. Huxley

with a new foreword by Massimo Pigliucci and Gerd B. Müller

"Julian Huxley's *Evolution: The Modern Synthesis* excited me when I first read it as a teenager and continues to excite me still. Popular yet scholarly, it synthesizes Darwinism, Mendelism, and population genetics to give a powerful account of the mechanism of evolution. Moreover, it illuminates difficult concepts such as natural selection, speciation, and evolutionary progress to provide a comprehensive enlightening view of evolution. Read it because of the insight it gives into biology of the 1940s, read it because it continues to be relevant today."

— Sir Paul Nurse, Nobel Laureate in Physiology or Medicine, 2001

784 pp., 2 illus., $35 paper

Evolution – the Extended Synthesis

edited by Massimo Pigliucci and Gerd B. Müller

"The essays in this volume provide ample food for thought, and from all the major food groups! The Modern Synthesis in evolutionary theory, and what lies beyond, are assessed here from multiple angles. This book will greatly interest evolutionary biologists and philosophers of evolutionary biology alike."

— Elliot Sober, University of Wisconsin-Madison

504 pp., 52 illus., $37 paper

The Metamorphosis of Plants

Johann Wolfgang von Goethe

Introduction and Photographs by Gordon L. Miller

"Goethe would be delighted with this edition of *The Metamorphosis of Plants*. It does what he hoped would eventually become possible and provides pictures situated in the text of all the plants to which he refers, so that we can see for ourselves the specific points to which he is drawing our attention."

— Henri Bortoft, author of *The Wholeness of Nature* and *Goethe's Scientific Consciousness*

136 pp., 60 color photographs, 3 color illus., 21 b&w illus., $21.95 cloth

Visit our BOOTH for a 30% DISCOUNT

To order call 800-405-1619 • **http://mitpress.mit.edu** • Visit our e-books store: **http://mitpress-ebooks.mit.edu**

SPECIAL LECTURES

George A. Bartholomew Award/Lecture - Wednesday, January 4, *Ballroom A - 6:30-7:30 pm*
The George A. Bartholomew Award lecture, "From sarcomeres to organisms: the role of muscle-tendon architecture in determining locomotor performance" will be given by Emanuel Azizi, from the University of California, Irvine.

Howard Bern Lecture - Thursday, January 5, *Ballroom A - 6:30-7:30 pm*
The Bern Lecturer is Lynn Riddiford from Janelia Farm Research Campus. The title of her presentation is, "How does juvenile hormone regulate insect metamorphosis and reproduction?"

AMS Keynote Lecture - Thursday, January 5, *Ballroom C2 - 7:30-8:30 pm*
The Keynote Lecturer is Kevin Eckelbarger from the University of Maine. His talk is titled, "A tribute to Dr. Mary E. Rice: from neanderthals to Naples - a brief history of marine biology from antiquity to 1900."

John A. Moore Lecture - Saturday, January 7, *Ballroom A - 3:00-4:00 pm*
The John Moore Lecture this year "Evolution education and creationism through the decades" will be given by Brian Alters from Chapman University.

SYMPOSIA

- S1: Novel Methods for the Analysis of Animal Movement: Spatial and Temporal Structure Across Scale (Wednesday 1/4)
- S2: Mangrove Killifish: An Exemplar of Integrative Biology (Wednesday 1/4)
- S3: Poecilogony as a Window on Larval Evolution: Polymorphism of Developmental Mode within Marine Invertebrate Species (Wednesday 1/4)
- S4: Dispersal of Marine Organisms (Thursday 1/5)
- S5: New Frontiers from Marine Snakes to Marine Ecosystems (Thursday 1/5)
- S6: Comparative Proteomics of Environmental and Pollution Stress (Thursday 1/5)
- S7: Combining Experiments with Modeling and Computational Methods to Study Animal Locomotion (Friday 1/6)
- S8: The Impacts of Developmental Plasticity on Evolutionary Innovation and Diversification (Friday 1/6)
- S9: Evo-Devo Rides the Genomics Express (Saturday 1/7)
- S10: Barnacle Biology: Essential Aspects and Contemporary Approaches (Saturday 1/7)

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

WORKSHOPS AND PROGRAMS

Tuesday, January 3

Grad Student/Post Docs Welcome and Meeting Orientation, "How to get the most out of your SICB meeting." *Ballroom C - 5:30-6:30 pm*

The Student/Postdoctoral Affairs Committee will be hosting the student orientation meeting where we will have 'tips' sheets available for all students! These 'tips' sheets are for students attending their first meeting (or any student for that matter) and will contain information about how to get the best out of the meeting. We will be calling this sheet the Notes from the Above Ground to correspond with the Notes from the Underground (tips about local flare).

Wednesday, January 4

Broadening Participation Workshop, "Science is a Two-way Street: Mentorship and the Mentee." *Ballroom C3 - Noon-1:00 pm*

This workshop is organized by Michele Nishiguchi. The mentor and mentee are professional partners. As in all successful partnerships, both parties must want the relationship to work and be willing to commit time and energy to the process. Successful mentoring relationships are built on mutual respect and appreciation. A single mentor is unlikely to meet all the mentee's needs. This workshop will help identify challenges such as time and energy, selecting goals and objectives, keeping momentum going, and giving effective feedback for both prospective mentors and mentees.

NSF Workshop: "The New NSF-IOS Program Solicitation and Review Process" *Ballroom B, Noon-1:00 pm*

The Divisions of Environmental Biology and Integrative Organismal Systems at the National Science Foundation recently announced significant changes to the proposal review process. NSF Program Directors will host this workshop during which the SICB membership will have a chance to ask questions about these changes.

"Survival Analysis: Not Just for Survival Anymore." *Ballroom C2 - 7:30-9:30 pm*

While many researchers are trained with a firm foundation in general linear models, biostatistical methods are more diverse and are constantly changing. The days of the ANOVA and assumptions of linearity are gone! For instance, we commonly end up with data describing the time to some event (e.g., time to death, metamorphosis, response to some cue), but classical statistics make poor use of these data. Jesse Brunner of Washington State University will lead a workshop reviewing the use and application of survival analysis, as well as discussing experimental designs amenable to these analyses. While the focus will be on understanding the assumptions and logic of survival analyses, participants will receive instruction on how to run them using the [R] statistics package. Note that there will not be time to learn how to use [R], but even novices to [R] will learn about survival analyses. Participants will have the opportunity to bring their own data to work with, or work from practice datasets that will be provided.

Thursday, January 5

Public Affairs Committee Workshop: "Distilling Your Message - Communicating Science" *Room 14, Noon-1:30 pm*

This 90-minute workshop will be run by Stony Brook University's Center for Communicating Science, whose main mission is helping scientists to communicate more effectively. The workshop will focus on general principles of communicating with the public, in particular how to craft short, clear, conversational statements, intelligible to non-scientists, about what you do and why it matters.

Thursday, January 5 (Continued)

Building Conceptual Bridges between Marine Snake Research and Challenging Frontiers in Biology, *Organized by Harvey B. Lillywhite, University of Florida, and François Brischoux, CEBC-CNRS, France*

Experimental Studies of Osmoregulation in Marine/Estuarine Snakes - Why is There so Much Diversity in Regulatory Mechanisms? *Room 12, 8:00-10:00 pm*

Speaker and Discussion Moderator: William A. Dunson

This workshop brings together world experts who currently investigate the biology of marine snakes and their interactions with marine ecosystems in which they live, in addition to others who share similar conceptual interests, but might work in different systems or with different taxa. The fundamental purpose is to promote interactions and exchange of ideas as an extension of the symposium on "New frontiers from marine snakes to marine ecosystems" (Symposium S5, Thursday).

Friday, January 6

Broadening Participation Workshop, "NSF: Demystifying the Grant Application Process." *Ballroom B - Noon-1:00 pm*

This workshop is hosted by Cheryl Wilga and the National Science Foundation. Program directors will speak about grant writing and the review process at the NSF. Programs that target SICB members are emphaisized.

ProAnalyst Users Group Meeting - *Room 14, Noon-1:00 pm*

The ProAnalyst Users Group meeting is an interactive forum for current users of ProAnalyst software to learn new features and program efficiencies firsthand from ProAnalyst developers. Users will also learn from their peers about actual implementations in both lab and field. Xcitex engineers will be on-hand to individually discuss applications, and selected invited speakers will share their experiences.

"Research and Training at the Interface of Theory and Experiment" (complementary to S7: Combining Experiments with Modeling and Computational Methods to Study Animal Locomotion)*, Room 6/7, 6:30-9:30 pm*

This workshop involves research and training at the interface of theory and experiment. The workshop will begin with introductions by each of the panelists followed by a question and answer session. The workshop will then break up into subgroups to discuss each of the following topics: Running an experimental lab in a math or theoretical department; Working as a theorist in a experimentally dominated department; Being a successful interdisciplinary researcher in terms of where to publish, seek grants, navigate evaluations for tenure and promotion; Training students and postdocs in interdisciplinary work; Helping interdisciplinary students and postdocs launch their careers

Building Conceptual Bridges between Marine Snake Research and Challenging Frontiers in Biology, *Organized by Harvey B. Lillywhite, University of Florida, and François Brischoux, CEBC-CNRS, France*

Using Stable Isotope Techniques to Investigate the Ecology and Physiology of Marine Vertebrates, *Room 12, 8:00-10:00 pm*

Speaker and Discussion Moderator: Melissa Pilgrim

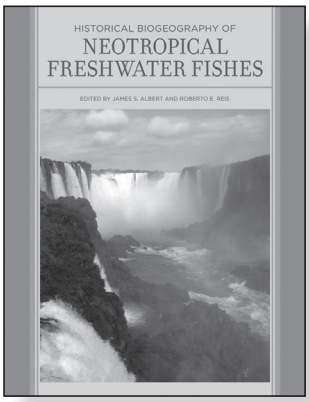
See description at top of page.

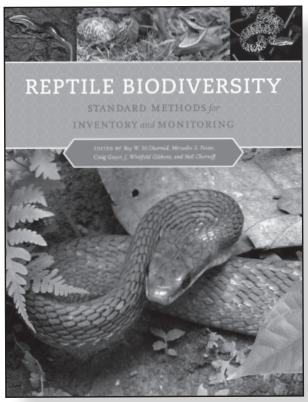
Student/Postdoc Workshop, "Maximizing your Potential through Job Applications and Interviews," *Ballroom A, 6:30-8:00 pm*

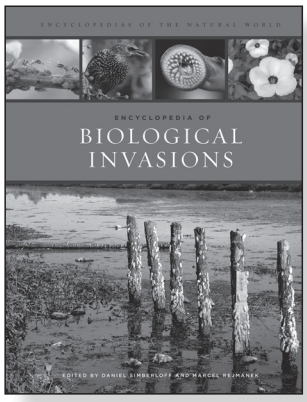
The Student/Postdoctoral Affairs Committee is hosting this workshop on applying and interviewing for jobs. We have rounded up several scientists from all levels of careers to offer their best advise and we will be hosting mock interviews during the workshop.

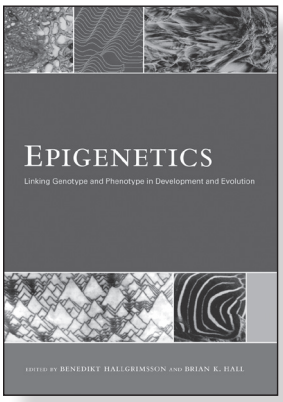
Saturday, January 7

Grand Challenges Update, *Ballroom B, Noon-1:00 pm*









Edited by James S. Albert and Roberto E. Reis

Historical Biogeography of Neotropical Freshwater Fishes

$85.00 cloth

Edited by Kathleen S. Cole

Reproduction and Sexuality in Marine Fishes

Patterns and Processes

$59.95 cloth

Mark A. Colwell

Shorebird Ecology, Conservation, and Management

A Stephen Bechtel Fund Book in Ecology and the Environment

$60.00 cloth

Edited by Benedikt Hallgrímsson and Brian K. Hall

Epigenetics

Linking Genotype and Phenotype in Development and Evolution

$85.00 cloth

Edited by Alan Hastings and Louis Gross

Encyclopedia of Theoretical Ecology

A Stephen Bechtel Fund Book in Ecology and the Environment

$150.00 cloth

Michel Laurin

How Vertebrates Left the Water

$34.95 cloth

Jonathan B. Losos

Lizards in an Evolutionary Tree

Ecology and Adaptive Radiation of Anoles

Organisms and Environments, 10

$95.00 cloth, $49.95 paper

Michael P. Marchetti and Peter B. Moyle

Protecting Life on Earth

An Introduction to the Science of Conservation

A Stephen Bechtel Fund Book in Ecology and the Environment

$49.95 paper

Edited by Roy W. McDiarmid, Mercedes S. Foster, Craig Guyer, J. Whitfield Gibbons, and Neil Chernoff

Reptile Biodiversity

Standard Methods for Inventory and Monitoring

$95.00 cloth

Marcelo Sánchez

Embryos in Deep Time

The Rock Record of Biological Development

$39.95 cloth

Edited by J. G. M. Thewissen and Sirpa Nummela

Sensory Evolution on the Threshold

Adaptations in Secondarily Aquatic Vertebrates

$75.00 cloth

Edited by Lars Werdelin and William Joseph Sanders

Cenozoic Mammals of Africa

$95.00 cloth

ENCYCLOPEDIAS OF THE NATURAL WORLD

Edited by Mark W. Denny and Steven D. Gaines

Encyclopedia of Tidepools and Rocky Shores

$95.00 cloth

Edited by Rosemary G. Gillespie and David A. Clague

Encyclopedia of Islands

$95.00 cloth

Edited by Daniel Simberloff and Marcel Rejmánek

Encyclopedia of Biological Invasions

$95.00 cloth

SPECIES AND SYSTEMATICS

Michael Heads

Molecular Panbiogeography of the Tropics

$75.00 cloth

Lynne R. Parenti and Malte C. Ebach

Comparative Biogeography

Discovering and Classifying Biogeographical Patterns of a Dynamic Earth

$50.00 cloth

John S. Wilkins

Species

A History of the Idea

$49.95 cloth, $29.95 paper

JOURNALS

American Biology Teacher

Auk

Condor

BioScience®

www.ucpressjournals.com

Visit us in booth #300 for the special meeting discount.

Many of these titles are available as ebooks. Go to **www.ucpress.edu** for more information.

FOR MORE NATURAL SCIENCE TITLES: **www.ucpress.edu/go/natsci**

JOIN OUR ENEWS LIST: **www.ucpress.edu/go/subscribe** • TO DONATE: **www.ucpress.edu/go/membership**

UNIVERSITY OF CALIFORNIA PRESS

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, Meeting Room 2, in the 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:

Day	Date	Time
Tuesday	1/3	Noon-7 pm
Wednesday-Friday	1/4-1/6	7 am-5 pm
Saturday	1/7	7-10 am

Business Centers

If you need to use a fax, use a computer, make basic photocopies, there is a small Business Center located in the Embassy Suites on the lobby level. The use of the business center is at your own expense. For more involved projects, there is a FedEx Office Print and Ship Center nearby.

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. The coffee breaks will be located in Exhibit Hall AB, Wednesday-Friday.

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

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 Exhibit Hall A Lobby. The Registration Desk will be open during the following hours:

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

Cash & Carry Lunch

There will be a Cash & Carry Lunch available in the Exhibit Hall Wednesday-Friday, 11:30 am-2:00 pm.

2012 EXHIBITORS

Academia Book Exhibits **Booth: 211**
3512 Willow Green Court
Oakton, VA 22124
703-716-5537; FAX: 703-620-3676

Professional books and journals in a multi-publisher display

ADInstruments **Booth: 407**
2205 Executive Circle
Colorado Springs, CO 80906
719-576-3978; FAX: 719-576-3971
www.adinstruments.com

PowerLab data acquisition and analysis.

American Microscopical Society **Booth: 311**
c/o John Zardus, The Citadel
Dept of Biology, 171 Moultrie St.
Charleston, SC 29409
843-953-7511; FAX: 843-953-7264
www.amicros.org

Featuring the AMS Buchsbaum Photomicrography contest and Society publications and fellowships.

American Physiological Society **Booth: 310**
9650 Rockville Pike
Bethesda, MD 20814
301-634-7246; FAX: 301-634-7241
www.the-aps.org

APS supports the scientific community through state-of-the-art publications, meetings, and education programs. APS education resources will be available. Complimentary copies of *Advances in Physiology Education* and AJP-*Regulatory Integrative and Comparative Physiology* as well as other Society information will also be available.

The Biological Bulletin, **Booth: 304**
Marine Biological Laboratory
7 MBL Street
Woods Hole, MA 02543
508-289-7149; FAX: 508-289-7922
www.biolbull.org

The Biological Bulletin publishes outstanding experimental research in broadly related fields of biology, including Neurobiology and Behavior, Physiology and Biomechanics, Ecology and Evolution, Development and Reproduction, Cell Biology, Symbiosis and Systematics.

The Company of Biologists **Booth: 302**
Bidder Building, 140 Cowley Road
Cambridge UK CB4 ODL
011-44-1223 426164; FAX: 011-44-1223-423353
www.biologists.com

The Journal of Experimental Biology is the leading journal in comparative animal physiology and is published by The Company of Biologists, a not-for-profit publisher. The Company aims to support innovation in all Aspects of biological research, also providing grants and sponsorship in the areas in which it publishes.

The Crustacean Society **Booth: 308**
7180 S. Foster Road
San Antonio, TX 78222
210-648-1214
www.thecrustaceansociety.org

The Crustacean Society will be available in the booth area to discuss membership, journal submissions and coming meetings. Please visit our websites at http://www.thecrustaceansociety.org for society news, online membership information and applications.

Darling Marine Center, University of Maine **Booth: 306**
193 Clarks Cove Road
Walpole, ME 04573
207-563-3146; FAX: 207-563-3119
www.dmc.maine.edu

The DMC is a year round field station for marine research and education. We invite visiting investigators and students to use our flowing seawater laboratories, scuba facilities, and research vessels throughout the year. Our conference center is available for scientific meetings and workshops. Graduate degrees are offered through the University of Maine's School of Marine Science.

Defend Science **Booth: 410**
2124 Kittridge Street, #182
Berkeley, CA 94704
808-271-7688
www.defendscience.org

Information on the importance of solid science in local and national decision making in government, schools and society.

ecoRidge **Booth 409**
695 Keen Park Road
Frostproof, FL 33843
843-605-3336
www.pbase.com\ecoRidge

Endangered species mandalas. My art is made from photographs of endangered species and printed on aluminum for a unique and beautiful display.

Fastec Imaging Corp. **Booth: 200**
17150 Via Del Campo #301
San Diego, CA 92127
858-592-2342; FAX: 858-592-2615
www.fastecimaging.com

Fastec provides high-speed digital cameras that are both portable and affordable. Available in battery powered, hand-held models, PC tethered models and long record based systems, Fastec cameras are ideal for research labs and field work.

H. Stevan Logsdon/Wildlife Artist **Booth: 210**
PO. Box 4070
Silver City, NM 88062
575-388-8101

Quality wildlife jewelry and T-shirts, with scientific emphasis.

IOP Publishing **Booth: 403**
150 S Independence Mall W, Suite 929
Philadelphia, PA 19106
215-627-0880; FAX: 215-627-0879
www.ioppublishing.org

IOP Publishing is an international, not-for-profit, learned society publisher. Stop by our booth for a sample copy of our journal, *Bioinspiration & Biomimetics*. BB publishes research where biology inspires new technological solutions, which can in turn provide insight into biological systems. Visit us online at bb.iop.org.

iWorx Systems Inc. **Booth: 205**
62 Littleworth Road
Dover, NH 03820
603-343-8480; FAX: 603-742-2455
www.iworx.com

iWorx provides a full range of advanced hardware and software tools for physiology and metabolic teaching and research.

Loligo Systems APS **Booth: 405**
Niels Pedersens Alle 2
Tjele, Denmark DK-8830
011-45-8999-2545; FAX: 011-45-8999-2599
www.loligosystems.com

Aquatic respirometry, fiber optic sensors, animal chambers, swim tunnels, water quality controllers, and video analysis software.

Mega Speed **Booth: 207**
PO BOX 1710, 45 Main Street South Unit B
Minnedosa, Manitoba R0J1E0 CANADA
204-867-3767; FAX: 204-867-3933
www.megaspeed.ca

High Speed Cameras

MIT Press **Booth: 209**
55 Hayward Street
Cambridge, MA 02142
617-258-5764; FAX: 617-253-1709
http://mitpress.mit.edu

The MIT Press publishes extensively in theoretical and philosophical biology. Please come by our booth to browse and purchase our newest and classical titles.

National Evolutionary Synthesis Center (NESCent) **Booth: 411**
2024 West Main Street, Suite A200
Durham, NC 27705
919-668-4582; FAX: 919-668-9198
www.nescent.org

NESCent staff will be at our booth to discuss ways in which we support synthetic research in evolutionary science, evolutionary informatics and evolution in education (including sabbaticals, postdocs, graduate fellowships and working groups).

National Science Foundation **Booth: 400**
4201 Wilson Blvd.
Arlington, VA 22230
703-292-8420; FAX: 703-292-9153
www.nsf.gov

The National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense…" With an annual budget of about $6.9 billion (FY 2010), we are the funding source for approximately 20 percent of all federally supported basic research conducted by America's colleges and universities.

Oxford University Press **Booths: 206, 208**
198 Madison Ave
New York, NY 10016
800-451-7556; FAX: 919-677-1303
www.oup.com/us

Oxford University Press is one of the world's leading publishers of books, journals, and online resources in the field of biology. Visit our booth to browse new and classic titles and to pick up a free sample copy of *Integrative & Comparative Biology*!

Photron Inc. **Booth: 203**
9520 Padgett Street, suite 110
San Diego, CA 92126
858-684-3555; FAX: 858-684-3558
www.photron.com

Photron offers a wide range of high speed camera video systems for slow motion analysis of animal locomotion and behavioral studies. From miniature camera heads ideal for concealed placement or microscopy and intensified systems bioflorescence to the world's fastest mega pixel video.

Princeton University Press **Booth: 307**
41 William St.
Princeton, NJ 08540
609-258-4900; FAX: 609-258-4915
www.press.princeton.edu

Princeton University Press publishes distinguished titles in the biological sciences. New titles include *Honeybee Democracy* by Thomas Seeley, *Beyond the Brain: How Body and Environment Shape Animal and Human Minds* by Louise Barrett, *The Optics of Life: A Biologist's Guide to Light in Nature by* Sönke Johnsen, *Solid Biomechanics* by Roland Ennos, and *Structural Biomaterials, Third Edition*, by Julian Vincent. To order: http://press.princeton.edu; 1-800-777-4726, or email orders@cpfsinc.com.

Qubit Systems Inc. **Booth: 301**
700 Gardiners Road, Suite 105
Kingston, ON K7M 3X9 CANADA
613-384-1977; FAX: 613-384-9118
www.qubitsystems.com

Systems for measuring metabolic rate in insects, amphibians, fish, mammals and humans. Single channel and multichannel capabilities. CO2 and O2 analyzers with gas mixing and gas control apparatus. Research and teaching appllications. See our new QBOX packages for excellent equipment at attractive prices.

Royal Society Publishing **Booth: 408**
6-9 Carlton House Terrace
London, UK SW1Y 5AG
44-(0)20-7451-2500; FAX: 44-207-9761837
www.royalsocietypublishing.org

The Royal Society publishes six journals of interest to the SICB community - our three biology journals, *Proceedings B, Biology Letters* and *Philosophical Transactions B*; our two cross-disciplinary journals, *Interface* and *Interface Focus*; and the newest addition to our portfolio, *Open Biology*, a fast, open access journal covering biology at the molecular and cellular level. Find out more at http://royalsocietypublishing.org/journals.

Sable Systems International Inc. **Booth: 201**
6000 S. Eastern Avenue, Building 1
Las Vegas, NV 89119
702-269-4445; FAX: 702-269-4446
www.sablesystems.com

Sable Systems International contributes to the research community with superior instrumentation and software for innovation and discovery.

We are scientists too, and know that you need data you can trust. Our instruments and systems meet this need, and are cited in top research journals world-wide. Free, lifetime technical support from experts – by scientists, for scientists – adds extra value.

Smithsonian Tropical Research Institute (STRI) **Booth: 309**
Smithsonian Marine Science Network, Unit 0948
APO, AA 34002 -0948
703-487-3770
www.stri.org

STRI's mission is to increase understanding of past, present and future of tropical biodiversity and its relevance to human welfare. Educational materials and fellowship information will be offered

University of California Press **Booth: 300**
2120 Berkeley Way
Berkeley, CA 94704
510-642-2035; FAX: 510-643-7127
www.ucpress.edu

University of California Press is a leading publisher of academic and general interest natural science titles.

Xcitex Corp **Booth: 204**
25 1st Street, Suite 105
Cambridge, MA 02141
617-225-0080; FAX: 617-225-2529
www.xcitex.com

Xcitex is an innovator in the industries of motion analysis and video-based motion capture. ProAnalyst® is the world's leading software for extracting (tracking), analyzing, and presenting motion from pre-recorded video. MiDAS DA software combines and synchronizes data from a variety of sensors with your high-speed video.

Vision Research **Booth: 401**
1002 SE Monterey Commons, Suite 200
Stuart, FL 34996
772-286-7000; FAX: 772-286-6206
www.visionresearch.com

Phantom Digital High-Speed Cameras

Wiley Blackwell **Booths: 404, 406**
350 Main Street
Malden, MA 02148
772-286-7000; FAX: 772-286-6206
www.wlley.com

Publications

Tuesday Schedule of Events

All events take place in the North Charleston Convention Center unless noted as (ES) for Embassy Suites Hotel

EVENT	TIME	LOCATION
Registration	3:00-8:30 PM	Exhibit Hall A Foyer
Exhibitor Setup	Noon-8:00 PM	Exhibit Hall AB
SPECIAL LECTURE		
SICB Opening Plenary Session	7:30-8:30 PM	Ballroom AB
COMMITTEE & BOARD MEETINGS		
SICB Executive Committee	2:30-5:30 PM	Room 10/11
Broadening Participation: Mentor/Mentee Meeting	6:30-7:30 PM	Wando (ES)
WORKSHOPS AND PROGRAMS		
Student First Timer/Worker Orientation	5:30-6:30 PM	Ballroom C
SOCIAL EVENTS		
SICB Welcome Reception	8:30-10:00 PM	Ballroom C/Foyer

Undergraduate Poster Display

The SICB Educational Council will once again 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 Ballroom Foyer area near the plenary session on the day of arrival, Tuesday, January 3rd. Please stop by for a “preview” of the posters that these students will later present in their scheduled poster sessions.

Wednesday Schedule of Events

All events take place in the North Charleston Convention Center unless noted as (ES) for Embassy Suites Hotel

EVENT	TIME	LOCATION
Poster Session 1 Set Up	7:00-8:00 AM	Exhibit Hall AB
Registration	7:00 AM-5 PM	Exhibit Hall A Foyer
Exhibit Hall	9:30 AM-5:00 PM	Exhibit Hall AB
Poster Session 1 Even Numbers Viewing	3:00-4:00 PM	Exhibit Hall AB
Poster Session 1 Odd Numbers Viewing	4:00-5:00 PM	Exhibit Hall AB
Poster Session 1 Teardown	5:00-5:30 PM	Exhibit Hall AB
Coffee Break/PM Poster Session Cash Bar	9:30-10:30 AM/3-5 PM	Exhibit Hall AB
SPECIAL LECTURE		
George A. Bartholomew Award Lecture	6:30-7:30 PM	Ballroom A
SYMPOSIA ORAL PRESENTATIONS		
S1: Novel Methods for the Analysis of Animal Movement...	8:00 AM-3:00 PM	Ballroom A
S2: Mangrove Killifish: An Exemplar of Integrative Biology ...	7:45 AM-3:00 PM	Rooms 6/7
S3: Poecilogony as a Window on Larval Evolution: Polymorphism ...	8:00 AM-3:00 PM	Rooms 8/9
CONTRIBUTED PAPER ORAL PRESENTATIONS		
Session 1: Evolutionary Morphology - Fish Feeding	8:00-9:40 AM	Ballroom B
Session 2: Ecomorphology: Lizards and Locomotion	10:00 AM-Noon	Ballroom B
Session 3: Thermobiology I: Thermal Limits and Stress	8:00 AM-Noon	Ballroom C1
Session 4: Larvel Ecology I	8:00-9:40 AM	Ballroom C2
Session 5: Larval Ecology II	10:00 AM-Noon	Ballroom C2
Session 6: Muscle Physiology and Biochemistry	8:00 AM-Noon	Ballroom C3
Session 7: Sexual Signaling	8:20-10:00 AM	Club South
Session 8: Dominance & Aggression	10:20 AM-Noon	Club South
Session 9: Immunology: Evolution and the Environment	8:00-10:00 AM	Club North
Session 10: Immunology: Fungal Infections	10:20 AM-Noon	Club North
Session 11: Structure: Legs and Armor	8:00-9:40 AM	Room 1
Session 12: Adaptation	10:00-11:40 AM	Room 1
Session 13: Evo-devo: Vertebrate Morphogenesis I	8:00-10:00 AM	Room 3
Session 14: Evo-devo: Vertebrate Morphogenesis II	10:20 AM-Noon	Room 3
Session 15: Tribute to Steve Morris & David Towle	8:00-11:40 AM	Rooms 10/11
Session 16: Population Genetics and Biogeography	8:20-11:40 AM	Room 12
Session 17: Flows & Pumps	8:00-10:00 AM	Room 13
Session 18: Small Suction and Pumps	10:20-11:40 AM	Room 13
Session 19: Locomotion: Substrates	1:00-3:00 PM	Ballroom B
Session 20: Thermobiology II: Metabolism	1:00-2:40 PM	Ballroom C1
Session 21: Biophysical Ecology	1:00-3:00 PM	Ballroom C2
Session 22: Sticky and Fast	1:00-3:00 PM	Ballroom C3
Session 23: Social Behavior	1:00-3:00 PM	Club South
Session 24: Structure & Mechanical Design: Locomotion	1:00-3:00 PM	Club North
Session 25: Small Scale Flows and Function	1:00-2:40 PM	Room 1
Session 26: Development: Evolutionary Developmental Biology	1:00-3:00 PM	Room 3
Session 27: Tribute to Steve Morris & David Towle	1:00-3:00 PM	Rooms 10/11
Session 28: Comparative Genomics	1:20-3:00 PM	Room 12
Session 29: Evo-devo: Cell Differentiation	1:00-3:00 PM	Room 13
COMMITTEE & BOARD MEETINGS		
Broadening Participation Committee Meeting	7:00-8:00 AM	Exec Boardrm (ES)
DPOs & Symposium Organizers for San Francisco	Noon-1:00 PM	Room 5
Division Chairs President/President-Elect	Noon-1:00 PM	Room 4
TCS Board Meeting	5:15-10:00 PM	Edisto Room (ES)
SICB Nominating Committee	8:00-9:00 PM	Wando (ES)
AMS Executive Committee	8:00-11:00 PM	Exec Boardrm (ES)
BUSINESS MEETINGS		
DAB Meeting	5:15-6:00 PM	Room 12
DCPB Meeting	5:15-6:15 PM	Room 13
DCB Meeting	5:15-6:15 PM	Room 6/7
DEDB Meeting	5:15-6:15 PM	Room 8/9
DEE Meeting	5:15-6:15 PM	Room 10/11
WORKSHOPS AND PROGRAMS		
NSF Workshop " The new NSF/IOS program solicitation & review process"	Noon-1:00 PM	Ballroom B
Broadening Participation Workshop: "Science is a Two-way Street:…"	Noon-1:00 PM	Ballroom C3
Survival Analysis for Integrative Biologists	7:30-9:30 PM	Ballroom C2
SOCIAL EVENTS		
Companion Orientation Program	9:00-10:00 AM	Wando (ES)
DAB/DNB Social	6:00-7:30 PM	Room 5
DCPB Social	7:30-8:30 PM	Ballroom Foyer

WEDNESDAY PROGRAM
SYMPOSIA

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

8:00 AM-3:00 PM
Ballroom A

Symposium S1: Novel Methods for the Analysis of Animal Movement: Spatial and Temporal Structure Across Scale

Supported by: DAB, DCB, DCPB, DEE, DIZ, DNB, & DVM

Organized by: Douglas Altshuler, Michael Dickinson

8:00 AM	S1-1.1		*Peyriéras N; Institut de Neurobiologie Alfred Fessard, CNRS*	A comparative analysis of gastrulation in deuterostomians using digital embryos
8:30 AM	S1-1.2		*Samuel A, Gershow M, Kane E, Klein M, Luo L, Afonso B, Vonner A; Harvard University*	How drosophila larvae navigate
9:00 AM	S1-1.3		*Robie AA, Kabra M, Branson S, Hirokawa J, Korff WL, Branson K*; HHMI Janelia Farm*	Making automated tracking and behavior analysis high throughput in practice
9:30 AM BREAK IN EXHIBIT HALL				
10:00 AM	S1-1.4		*Berman GJ, Bialek W, Shaevitz JW; Princeton University*	A data-driven methodology for analyzing the behavior of terrestrial fruit flies
10:30 AM	S1-1.5		*Mendes CS, Bartos I, Akay T, Marka S, Mann RS*; Columbia University*	Using frustrated total internal reflection to analyze insect walking
11:00 AM	S1-1.6	DAB	*Censi A, Straw AD, Sayaman R, Murray RM, Dickinson MH; California Institute of Technology, Research Institute of Molecular Pathology (IMP), Austria, University of Washington*	Dimensionality reduction to understand sensory influences on turning in large scale behavior in Drosophila
11:30 AM	S1-1.7	DCPB	*Dickinson M, Zabala F, Polidora P, Robie A, Branson K, Perona P; University of Washingon, IORodeo, Janelia Farm, HHMI, Caltech*	Detecting motion while moving: a simple visual reflex revealed by animal-robot interactions
NOON LUNCH BREAK				
1:00 PM	S1-2.1	DAB	*Greenwood AK, Wark AR, Peichel CL; Fred Hutchinson Cancer Research Center*	Mechanisms underlying the evolution of schooling behavior in sticklebacks
1:30 PM	S1-2.2	DCB	*Altshuler DL, Segre PS, Straw AD; University of British Columbia, Institute for Molecular Pathology*	Computational analysis of hummingbird flight
2:00 PM	S1-2.3		*Chapman JW; Rothamsted Research, UK*	Recent insights from entomological radar studies of high-altitude insect migration
2:30 PM	S1-2.4	DCB	*Goldbogen J; Cascadia Research Collective*	Using high-resolution acoustic tags to determine the kinematics and maneuverability of the world's largest whales

7:45 AM-3:00 PM
Rooms 6/7

Symposium S2: Mangrove Killifish: An Exemplar of Integrative Biology

Supported by: DAB, DCE, & DCPB

Organized by: Edward Orlando, Ryan Earley, Brian Ring, David Bechler

7:45 AM			*Orlando E; University of Maryland*	Opening Remarks
8:00 AM	S2-1.1		*Taylor DS; Brevard County Environmentally Endangered Lands Program*	Twenty-four years in the mud: what have we learned about the natural history and ecology of *Kryptolebias marmoratus*?

8:30 AM	S2-1.2		*Kelley JL, Yee MC, Lee C, Levandowsky E, Shah M, Harkins T, Earley RL, Bustamante CD; Stanford University, University of Chicago, Life Technologies, University of Alabama*	Bringing genomics to non-model organisms: the promise of de novo genome assembly and population genetics of the fish *Kryptolebias marmoratus*
9:00 AM	S2-1.3		*Tatarenkov A; University of California, Irvine*	Population genetics and phylogeography of a selfing killifish, *Kryptolebias marmoratus*
9:30 AM	S2-1.4		*Bielmyer GK, DeCarlo C, Morris C, Carrigan T, Bullington JB; Valdosta State University*	The influence of salinity on zinc and nickel toxicity to two euryhaline fish species
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:30 AM	S2-1.5		*Kudoh T; University of Exeter, Exeter, UK*	The hermaphroditic mangrove killifish as a model for embryological studies
11:00 AM	S2-1.6	DCE	*Farmer JL, Orlando EF*; University of Maryland, College Park*	Effects of developmental exposure to ethinylestradiol on gene expression and fitness of the adult rivulus, *Kryptolebias marmoratus*
11:30 AM	S2-1.7	DDCB	*Sucar S, Newsome JM, Moore GL, Ring BC*; Valdosta State University*	Establishing developmental genetics in the mangrove killifish (*Kryptolebias marmoratus*)
NOON	**LUNCH BREAK**			
1:00 PM	S2-2.1	DCPB	*Wright PA; University of Guelph, Canada*	Environmental physiology
1:30 PM	S2-2.2		*Hsu Y, Chang C; National Taiwan Normal University, Taiwan*	The relationship between aggressiveness and boldness, tendency to explore and learning performance in *Kryptolebias marmoratus*: the influence of recent contest experiences and the roles of hormones
2:00 PM	S2-2.3	DCE	*Earley RL, Hanninen AF, Fuller A, Garcia MJ, Stanley S, Lee EA, Taylor DS; University of Alabama, Brevard County Environmentally Endangered Lands Program*	Plasticity, integration, and selection: prospects for exploring the evolution of complex phenotypes in a powerful fish model
2:30 PM	S2-2.4	DAB	*Bechler DL; Valdosta State University*	*Kryptolebias marmoratus*, the mangrove rivulus, as a model organism for comparative research

8:00 AM-3:00 PM
Rooms 8/9

Symposium S3: Poecilogony as a Window on Larval Evolution: Polymorphism of Developmental Mode within Marine Invertebrate Species

Supported by: DEDB, DEE, DIZ & AMS

Organized by: Emily Knott, Damhnait McHugh

8:00 AM	S3-1.1	DEE	*Knott KE, McHugh D; University of Jyväskylä, Finland, Colgate University, USA*	Poecilogony, polymorphism or polyphenism: a window on larval evolutionary transitions in marine invertebrates
8:30 AM	S3-1.2	DIZ	*Collin R; Smithsonian Tropical Research Institute*	What can “intermediates” tell us about evolutionary transitions between modes of invertebrate development?
9:00 AM	S3-1.3	DIZ	*Vendetti JE, Krug PJ; California State University, Los Angeles*	Origins of poecilogony and shifts in larval type in photosynthetic sea slugs: a phylogenetic perspective
9:30 AM	S3-1.4	DEE	*Krug PJ, Gordon D; California State University, Los Angeles*	Ecological triggers and evolutionary consequences of alternative larval types in sea slugs
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:30 AM	S3-1.5	DIZ	*Schult N, McHugh D; Colgate University*	*Streblospio benedicti* (Spionidae, Annelida) as a model organism for the study of larval evolutionary transitions

11:00 AM	S3-1.6	DEDB	*Rockman M; New York University*	Looking for poecilogony in the *Streblospio benedicti* genome
11:30 AM	S3-1.7		*Gibson GD; Acadia University*	Poecilogony in the polychaete *Polydora cornuta*: A potential polyphenism that requires decisions, decisions, decisions
NOON LUNCH BREAK				
1:00 PM	S3-2.1	DIZ	*Oyarzun FX, Grünbaum D; University of Washington, Seattle*	Two reproductive strategies and their implications for population dynamics: an individual-based model of the poecilogonous spionid *Boccardia proboscidea*
1:30 PM	S3-2.2	DEE	*Zakas C, Wares JP; University of Georgia*	The consequences of a poecilogonous life history for dispersal ability, genetic structure and gene flow in coastal populations of the polychaete *Streblospio benedicti*
2:00 PM	S3-2.3		*Kesäniemi JE, Knott KE; University of Jyväskylä, Finland*	Developmental mode polymorphism and population connectivity in the polychaete *Pygospio elegans*
2:30 PM				Discussion

WEDNESDAY PROGRAM
MORNING SESSIONS

8:00-9:40 AM
Ballroom B

Session 1: Evolutionary Morphology - Fish Feeding

Chair: Andrew Clark

8:00 AM	1.1	DVM	*Clark AJ, Summers AP; College of Charleston, Friday Harbor Laboratories, University of Washington*	Ontogenetic scaling of the morphology and biomechanics of the feeding apparatus in the Pacific hagfish *Eptatretus stoutii*
8:20 AM	1.2	DCB	*Fuller PO, Takada T, Oufiero CE, Wainwright PC; University of California, Davis*	The kinematic basis for the evolution of zooplankton feeding in haemulid fishes
8:40 AM	1.3	DVM	*Sharick JT, Mehta RS, Lappin AK; University of California, Santa Cruz, California State Polytechnic University, Pomona*	Biomechanical modeling and *In Vivo* bite force in the zebra moray eel, *Gymnomuraena zebra* (Muraenidae)
9:00 AM	1.4	DCB	*Tkint T, De Meyer J, Helsen P, Van Hoorebeke L, Verheyen E, Adriaens D; Ghent University, Belgium, Antwerp University, Belgium, RBINS, Brussels, Belgium*	Phenotypic plasticity of feeding performance as a response to diet in cichlids: suction versus biting
9:20 AM	1.5	DEE	*Higgins BA, Horn MH; California State University, Fullerton*	Suction among pickers: jaw mechanics and dietary breadth in the beach-spawning grunion sisters (*Leuresthes*) compared to their relatives (Teleostei: Atherinopsidae)
9:40 AM BREAK IN EXHIBIT HALL				

10:00 AM-Noon
Ballroom B

Session 2: Ecomorphology: Lizards and Locomotion

Chair: Eric McElroy

10:00 AM	2.1	DAB	*Kuo CY, Gillis GB, Irschick DJ; University of Massachusetts Amherst, Mt. Holyoke College*	The role of practice (or lack thereof) on the recovery of jump performance in tailless green anole lizards *Anolis carolinensis*
10:20 AM	2.2	DVM	*Collins CE, Anderson RA, McBrayer LD; Georgia Southern University*	Sprint sensitivity to substrate and ecomorphological correlates in six terrestrial lizard species
10:40 AM	2.3	DCB	*McElroy EJ, Archambeau KL, McBrayer LD; College of Charleston, Georgia Southern University*	The correlation between locomotor performance and hindlimb kinematics during burst locomotion in the Florida scrub lizard, *Sceloporus woodi*

11:00 AM	2.4	DCB	*Foster KL, Higham TE; University of California, Riverside*	How fore- and hindlimb function changes with incline and perch diameter in *Anolis carolinensis*
11:20 AM	2.5	DCB	*Byrnes G, Jayne BC; University of Cincinnati*	The gripping forces and behavior of climbing snakes
11:40 AM	2.6	DCB	*Higham TE, Russell AP; University of California, Riverside, University of Calgary*	Dancing with the tails: comparative dynamics of caudal autotomy in geckos

8:00 AM-Noon
Ballroom C1

Session 3: Thermobiology I: Thermal Limits and Stress

Co-Chairs: Michael Darnell, Dawn Vaughn

8:00 AM	3.1	DCPB	*Fly EK, Hilbish TJ; University of South Carolina*	Comparative physiological energetics of the blue mussel species in response to increased temperatures
8:20 AM	3.2		*Fields LG, Devries AL; University of Illinois at Urbana-Champaign*	Ecological physiology of the Antarctic *Trematomus* fishes: effect of temperature and ice on freeze avoidance
8:40 AM	3.3		*Stimola M, Muñoz MM, Landestoy MA, Conover A, Rodriguez AJ, Losos JB; Columbia University, Harvard University, University of California, Davis*	A comparison of heat and cold tolerance among closely related anoles from different thermal environments
9:00 AM	3.4	DCPB	*Vorhees A, Gray E, Bradley T; University of California, Irvine*	Comparison of upper thermal limits among geographically-distributed populations of the mosquito, *Culex tarsali*s
9:20 AM	3.5	DCPB	*Wolf BO, McKechnie AE; University of New Mexico, University of Pretoria, SA*	Heat waves - challenges for desert bird communities
9:40 AM BREAK IN EXHIBIT HALL				
10:00 AM	3.6	DCPB	*Darnell MZ, Fowler K, Munguia P; University of Texas at Austin*	Carapace coloration affects body temperature and limits activity in the fiddler crab *Uca panacea*
10:20 AM	3.7	DEE	*Vaughn D, Turnross O, Carrington E; University of Washington, Friday Harbor Laboratories, University of California, Santa Barbara*	Effect of increased aerial temperature on sex-specific foraging and growth in rocky intertidal snails
10:40 AM	3.8	DCPB	*Williams CM, Chick WD, Sinclair BJ; University of Western Ontario*	Multiple trade-offs among life-history and metabolic traits mitigate the impacts of overwintering microclimate on the fitness of fall webworm across its native range
11:00 AM	3.9	DCPB	*Marshall KE, Sinclair BJ; University of Western Ontario*	Ecologically-relevant stresses hurt differently: the response of *Eurosta solidaginis* to repeated freeze-thaw cycles
11:20 AM	3.10	DCPB	*Lewis JM, Klein G, Walsh PJ, Currie S; Georgia Southern University, Mount Allison University, University of Ottawa, Canada*	Thermal stress induces a change in age class composition but not cell death in the circulating red blood cells of rainbow trout (*Oncorhynchus mykiss*)
11:40 AM	3.11		*Plant KP, Powell MS, Rodnick KJ*, Hardy RW; University of Idaho, Hagerman, Idaho State University, Pocatello*	Rainbow trout *Oncorhynchus mykiss* erythrocytes respond to thermal stress *in vitro*

8:00-9:40 AM
Ballroom C2

Session 4: Larvel Ecology I

Chair: Amy Moran

8:00 AM	4.1	DIZ	*Pechenik JA, Jarrett J, Arellano S, Diederich C; Tufts University, Central Connecticut State University, New Britain, Woods Hole Oceanographic Institution*	Exposing larvae to reduced salinity does not impact post-metamorphic growth for the marine gastropod *Crepidula onyx*

8:20 AM	4.2	DIZ	*Moran AL, Phillips NE; Clemson University, Victoria University of Wellingon, NZ*	Gases for the masses: ecological interactions promote rapid embryonic development of a marine gastropod
8:40 AM	4.3		*Charbonnier JF, Vonesh JR; Virginia Commonwealth University*	How froglets pay the price: carry-over effects on morphology and performance in response to pond drying
9:00 AM	4.4	DEE	*McDonald KA; Smithsonian Tropical Research Institute*	Ontogenetic evidence and performance consequences of re-acquisition of planktotrophy in the gastropod family Calyptraeidae
9:20 AM	4.5	DIZ	*McAlister JS, Moran AL; Clemson University*	Maternal provisioning in echinoids: the role of egg constituents during pre-feeding larval development

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon
Ballroom C2

Session 5: Larval Ecology II

Chair: Justin McAlister

10:00 AM	5.1		*Von Dassow YJ; Duke University*	Benthic baby snatchers: predation on marine invertebrate embryos inside gelatinous egg masses
10:20 AM	5.2	DEE	*Loh T-L, Pawlik JR; University of North Carolina Wilmington*	When settlement doesn't settle it: the pitfalls of still-water larval assays
10:40 AM	5.3	DIZ	*Tran C, Hadfield MG; University of Hawaii at Manoa*	Sensory mechanisms utilized by coral planulae to detect settlement cues
11:00 AM	5.4	DEE	*Cahill AE; Stony Brook University*	Response of *Crepidula* larvae to temperature as a function of geography and developmental mode: existence of local adaptation
11:20 AM	5.5	DIZ	*Whitehill EAG, Moran AL; Clemson University*	The effects of temperature on the developmental energetics of a sea urchin with indirect larval development
11:40 AM	5.6	DEE	*Woods HA; University of Montana*	A caterpillar grows up: thermal consequences of growing larger on a leaf

8:00 AM-Noon
Ballroom C3

Session 6: Muscle Physiology and Biochemistry

Co-Chairs: Maria de Boef, Sabrina Lee

8:00 AM	6.1	DCB	*De Boef MM, Biewener AA; Concord Field Station, Harvard University*	Measuring muscle pennation in vivo using sonomicrometry and 3-D X-ray cinematography methods
8:20 AM	6.2	DCPB	*Gilmore LA, Nishikawa KC; Northern Arizona University*	Length, force and changes in the elastic behavior of active muscle
8:40 AM	6.3	DVM	*Eng CM, Lieberman DE, Biewener AA; Harvard University*	In vivo strain patterns indicate different functions in the proximal and distal fascia lata of the goat
9:00 AM	6.4	DCPB	*Williams CD, Salcedo MK, Regnier M, Irving TC, Daniel TL; University of Washington, Seattle, Illinois Institute of Technology, Chicago*	Pulling apart lattice spacing: interfilament distance regulates force
9:20 AM	6.5		*Lee SSM, Biewener AA, De Boef MM, Arnold AS, Wakeling JM; Simon Fraser University, Harvard University*	Effect of motor unit recruitment on *in vivo muscle function*

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM	6.6	DCPB	*Crespo JG, Vickers NJ, Goller F; University of Utah*	Female pheromones modulate muscle activation patterns for pre-flight warm-up in male moths

10:20 AM	6.7	DCB	*Von Busse JRS, Swartz SM, Breuer KS, Hedenström A, Winter Y, Voigt CC; Brown University, Lund University, Sweden, Humoldt University, Germany, Leibnitz Institute, Germany*	Energetics of bat flight
10:40 AM	6.8	DCPB	*Woods WA, Schuler FR, Yee AL, Trimmer BA; Tufts University*	Optimizing work and power production of a *Manduca sexta* larval locomotory muscle
11:00 AM	6.9	DCB	*Richards CT, Sawicki G; Harvard University, North Carolina State University*	Power amplification in water: modeling muscle-tendon dynamics during swimming
11:20 AM	6.10	DCPB	*Coughlin DJ, Mistry H, Campion LA, Choi S; Widener University*	Contractile properties and myosin expression in swimming and feeding muscles of centrarchid fishes
11:40 AM	6.11		*Kmack DA, Yeo SH, Pai DK, Uyeno TA, Wilkinson KC, Tester JT, Nishikawa KC; Northern Arizona University, University of British Columbia, Valdosta State University*	Linear actuator design based on a new hypothesis of muscle contraction

8:20-10:00 AM
Club South

Session 7: Sexual Signaling

Chair: Diana Hews

8:20 AM	7.1	DAB	*Hews DK, Ossip-Klein A, Oyola-Morales J, Cain P, Martins EP; Indiana State University, Terre Haute, Indiana University, Bloomington, Cornell University*	Multiple color traits: can they signal body condition or size in male Sceloporus lizards
8:40 AM	7.2		*Crothers LR, Gering EJ, Cummings ME; University of Texas at Austin*	Is brighter better? Aposematic signal variation predicts male-male interactions in a polymorphic poison dart frog
9:00 AM	7.3	DEE	*Bywater CL, White C, Wilson RS; The University of Queensland*	It's costly to be honest: the metabolic expense of maintaining a reliable signal of strength for crustaceans
9:20 AM	7.4		*Alward BA, Rouse ML, Stevenson TJ, Ball GF; The Johns Hopkins Univerisity*	Photoperiodic and social regulation of song rate and structure in male border canaries (*Serinus canaria*)
9:40 AM	7.5	DAB	*Hobbs NJ, Ferkin MH; University of Memphis*	Reproductive state of female voles affects males' responses to same- and mixed-sex over-marks

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Club South

Session 8: Dominance & Aggression

Chair: Melissa Hughes

10:20 AM	8.1		*Hughes M, Williamson T, Hollowell K, Vickery RE; College of Charleston*	Oh snap! Sex, weaponry and aggression in snapping shrimp
10:40 AM	8.2	DAB	*Henningsen JP, Lance SL, Irschick DJ; University of Massachusetts Amherst, Savannah River Ecology Lab, University of Georgia*	How do signal size and performance capacity affect reproductive success in male green anole lizards (*Anolis carolinensis*)?
11:00 AM	8.3	DAB	*Edwards JE, Lailvaux SP; University of New Orleans, Louisiana*	Staged dominance interactions between *Anolis carolinensis* and *Anolis sagrei* Lizards
11:20 AM	8.4	DAB	*Cotrone MC, Earley RL, Draud M; University of Alabama, Tuscaloosa, Long Island University - C.W. Post*	Contest behavior is mediated by resource payoff value in female convict cichlids (*Amatitlania nigrofasciata*)

11:40 AM	8.5	DAB	*Cunningham CB, Chase K, Ruff JS, Edmunds TN, Potts WK, Carrier DR; University of Utah*	Heritability, size, and aggression interact to influence social dominance ability in male house mice

8:00-10:00 AM
Club North

Session 9: Immunology: Evolution and the Environment

Co-Chairs: James Adelman, Louise Rollins

8:00 AM	9.1	DCPB	*Adelman JS, Hawley DM; Virginia Tech*	Variation in immune responsiveness and tolerance of *Mycoplasma* infection between house finch populations
8:20 AM	9.2	DCE	*Graham S, Freidenfelds N, McCormick G, Langkilde T; The Pennsylvania State University*	The impacts of invaders: basal and acute stress glucocorticoid profiles and immune function in native lizards threatened by invasive ants
8:40 AM	9.3	DAB	*Lopes PC, Adelman JS, Chan H, Demathieu SL, Bentley GE; University of California, Berkeley, GABBA, University of Porto, Virgina Tech*	Potential trade-off between recovery from infection and current reproductive opportunity: social effects on sickness behavior
9:00 AM	9.4	DCPB	*Flies AS, Mansfield LS, Tsao JI, Holekamp KE; Michigan State University*	Rank-related variation in immune function in a gregarious carnivore
9:20 AM	9.5	DCE	*Kohno S, Stern WH, Lowers RH, Guillette LJ; University Florida, University South Carolina, Kennedy Space Center, Innovative Health Applications*	Can environmental contaminants alter sex hormone signaling of splenic function in the American alligator?
9:40 AM	9.6	DEE	*Cary TL, Karasov WH; University of Wisconsin, Madison*	Immunotoxicity may be a more sensitive endpoint for sublethal polychlorinated biphenyl exposure in the northern leopard frog

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Club North

Session 10: Immunology: Fungal Infections

Co-Chairs: James Adelman, Louise Rollins

10:20 AM	10.1	DCPB	*Fites JS, Ramsey JP, Rollins-Smith LA*; Vanderbilt University, James Madison University, Vanderbilt University Medical Center*	Paralysis of amphibian lymphocyte functions by products of the chytrid fungus, *Batrachocytrium dendrobatidis*
10:40 AM	10.2	DCE	*Peterson JD, Steffen J, Pohlman W, McDonald M, Appel A, Cobine P, Rollins-Smith L, Mendonca MT; Auburn University, Troy University, Penn State, Vanderbilt University*	Is chytridiomycosis a stress induced syndrome?
11:00 AM	10.3	DEE	*Boyles JG, Verant ML, Waldrep, Jr. W, Wibbelt G, Blehert DS; University of Tennessee, University of Wisconsin, Madison, University of Chicago, Leibniz Institute for Zoo and Wildlife Research, Germany, USGS National WIldlife Health Center, Madison*	Temperature-dependent growth performance of *Geomyces destructans*, the fungus associated with white-nose syndrome in bats
11:20 AM	10.4	DEE	*Gervasi SS, Gondhalekar C, Blaustein AR; Oregon State University, Corvallis*	Physiological responses of amphibians after exposure to the fungal pathogen, *Batrachochytrium dendrobatidis*
11:40 AM	10.5		*Srygley RB, Jaronski ST; USDA-Agricultural Research Service*	Adaptive melanism and immunity to fungal infection in the migratory grasshopper

8:00-9:40 AM
Room 1

Session 11: Structure: Legs and Armor

Chair: Tomasz Owerkowicz

8:00 AM	11.1	DVM	*Owerkowicz T, Yang J*, Blank JM, Eme J, Hicks JW; California State University, San Bernardino, California Polytechnic State University, San Luis Obispo, University North Texas, University California, Irvine*	Alligator growth plate thickness as indicator of longitudinal growth rate and circulatory pattern
8:20 AM	11.2	DVM	*Tsai HP, Ward CV, Holliday CM; University of Missouri*	Pelvic anatomy of alligator mississippiensis and its significance for interpreting limb function in fossil archosaurs
8:40 AM	11.3		*Li L, Ortiz C; Massachusetts Institute of Technology, Cambridge*	A multiscale structural design of a natural transparent armor: *Placuna placenta*
9:00 AM	11.4	DIZ	*Menzel LP, Stein B, Bigger CH; Florida International University, Indiana University*	Morphology and histology of the gorgonian coral Swiftia exserta
9:20 AM	11.5		*Chen T, Boyce M, Ortiz C; Massachusetts Institute of Technology*	Microstructure and mechanics of the tiled and actuating exoskeleton of the helmet urchin, *Podophora atrata*

9:40 AM BREAK IN EXHIBIT HALL

10:00-11:40 AM
Room 1

Session 12: Adaptation

Chair: Graham Slater

10:00 AM	12.1	DCPB	*Poteat MD, Buchwalter DB; North Carolina State University, Raleigh*	Divalent metal trafficking in aquatic insects: a comparative approach
10:20 AM	12.2		*Oliphant A, Thatje S, Brown A, Morini M, Ravaux J, Shillito B, Smith F, Reed A; University of Southampton, Université Pierre et Marie Curie*	Insights into the physiological adaptations of caridean shrimp to hydrothermal vent living: implications for colonization
10:40 AM	12.3		*Gagnon Y, Speiser D, Sweeney A; Duke University, University of California, Santa Barbara*	The visual function of the fluorescent lenses of greeneye fish
11:00 AM	12.4	DEE	*Cooper BS, Hammad LA, Fisher NP, Karty JA, Montooth KL; Indiana University, Bloomington*	Selection favors increased cellular plasticity in a variable environment
11:20 AM	12.5	DEE	*Kikuchi DW, Pfennig DW; University of North Carolina, Chapel Hill*	Mimicry and the proximate basis of adaptation

8:00-10:00 AM
Room 3

Session 13: Evo-devo: Vertebrate Morphogenesis I

Chair: Marcus Davis

8:00 AM	13.1	DEDB	*Davis MC; Kennesaw State University*	A comparative assessment of musculoskeletal development in basal actinopterygians
8:20 AM	13.2	DEDB	*Winslow BB, Leary B, Kavanagh K; University of Massachusetts Dartmouth*	Developmental evidence that the metatarsals and phalanges are distinct modules
8:40 AM	13.3		*Redmond SB, Botts EA, Hill KL, Evans PK, Vaglia JL; DePauw University*	*Hoxa13* gene expression is associated with tail growth across embryonic, larval, and adult development in the non-model salamander *Eurycea cirrigera*

9:00 AM	13.4	DVM	*Dickson JM, Udvadia AJ, Janssen J; University of Rhode Island, Univsersity of Wisconsin, Milwaukee*	Reduced lateral line canal development in the round goby, *Neogobius melanostomus*
9:20 AM	13.5	DEDB	*Von Dassow M, Davidson LA; University of Pittsburgh*	Does temperature dependence of morphogenesis require fine control of tissue mechanics?
9:40 AM	13.6	DEDB	*Cohen KL, Seid MA, Warkentin KM; Boston University, University of Scranton*	The mechanism of rapid, plastic hatching in red-eyed treefrogs

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Room 3

Session 14: Evo-devo: Vertebrate Morphogenesis II

Co-Chairs: Arkhat Abzhanov, Jacqueline Moustakas

10:20 AM	14.1	DEDB	*Abzhanov A; Harvard University, Cambridge*	Pecking at the origin of morphological diversity: insights from Darwin's finches and other birds
10:40 AM	14.2	DEDB	*Cooper LN, Jast J, Behringer RR, Cretekos C, Rasweiler IV JJ, Sears KE; University of Illinois, University of Texas, University of Idaho, SUNY Downstate Medical Center*	Cellular patterns and biomechanical consequences of bat wing development
11:00 AM	14.3	DEDB	*Sanger TJ, Seav SM, Losos JB, Abzhanov A; Harvard University*	Evolution and development of sexual skull dimorphism among *Anolis* lizards
11:20 AM	14.4	DEDB	*Lewis Z, Kerney R, Dorantes J, Hanken J; Museum of Comparative Zoology, Harvard University, Dalhousie University, Canada*	Pulmonary surfactant proteins are expressed in lungless salamanders
11:40 AM	14.5	DVM	*Moustakas JE, Kallonen A, Ahtianen L, Häkkinen T, Harjunmaa E, Salazar-Ciudad I, Hämäläinen K, Jernvall J; University of Helsinki, Finland,*	Changing tissue properties and cell behavior during tooth organogenesis

8:00 - 11:40 AM
Rooms 10/11

Session 15: Tribute to Steve Morris & David Towle

Co-Chairs: Nora Terwilliger, Lou Burnett

8:00 AM	15.1	DCPB	*Terwilliger NB; University of Oregon*	Crustacean ion and oxygen tranporters: research by David Towle and Steve Morris, and new findings on hemocyanin
8:20 AM	15.2	DCPB	*Stillman JH; San Francisco State University*	Transcriptomic profiles of thermal acclimation in cardiac tissues of the porcelain crab, *Petrolisthes cinctipes*
8:40 AM	15.3	DCPB	*Jayasundara N, Gardner LD, Towle DT, Block BA; Stanford University, Mount Desert Island Biological Laboratory*	Warm fish with cold hearts: cardiac thermal plasticity of Pacific bluefin tuna *Thunnus orientalis*
9:00 AM	15.4	DCPB	*Weihrauch D, Fehsenfeld S, Marini A-M, Ziegler A, Edwards S, Meyer H, Siebers D, Towle DW; University of Manitoba, Universite Libre de Bruxelles, University of Ulm, Appalachian State University, University of Osnabrück, Alfred-Wegener-Institut f. Polar und Meersforschung, Mount Desert Island Biological Laboratory*	Ammonia excretion in the green shore crab *Carcinus maenas*
9:20 AM	15.5	DCPB	*Mykles DL; Colorado State University, Fort Collins*	Signaling pathways controlling the crustacean molting gland

9:40 AM BREAK IN EXHIBIT HALL				
10:00 AM	15.6	DCPB	*Burnett L, Danielson M, McElroy E, Stover K, Burnett K; College of Charleston*	Performance in the Atlantic blue crab: effects of anemia and hypoxia
10:20 AM	15.7		*Glazer L, Weil S, Mittelman B, Roth Z, Khalaila I, Tom M, Sagi A; Ben-Gurion University, Israel Oceanographic and Limnological Research, Haifa*	Novel molt-related hemocyanin family proteins from extracellular matrix of crustacean gastroliths
10:40 AM	15.8	DCPB	*Burnett K, Wise R, Petty A, Fire S, Haynes B, Wang Z, Hardy K, Burnett L; College of Charleston, Biotoxins Program, NOAA/NOS, Medical University of South Carolina*	Impacts of hypoxia and domoic acid on large muscle activity in the shrimp *Litopenaeus vannamei*
11:00 AM	15.9	DCPB	*Defur PL; Virginia Commonwealth University*	Physiological responses of blue crabs, Callinectes sapidus, swimming upriver into freshwater
11:20 AM	15.10	DCPB	*Henry RP, Serrano L; Auburn University*	Molecular basis of low salinity limits in euryhaline decapod crustaceans

8:20 -11:40 AM
Room 12

Session 16: Population Genetics and Biogeography

Co-Chairs: Jake Lasala (8:20-10 am), Raoul Van Damme (8.20-10 am), Caldwell Hahn 10:20-11:40 am)

8:20 AM	16.1	DEE	*Lasala JA, Williams K, Harrison JS, Frick M, Rostal DC; Georgia Southern University, Caretta Research Project, Georgia Southern University*	Multiple paternity of loggerhead sea turtle (*Caretta caretta*) within the Northern Management Unit
8:40 AM	16.2	DEE	*Moody KN, Kawano SM, Maie T, Blob RW, Schoenfuss HL, Blum MJ, Ptacek MB; Clemson, St. Cloud State, Tulane*	Morphological divergence despite gene flow in a Hawaiian waterfall-climbing goby
9:00 AM	16.3		*Vervust B, Huyghe K, Vanhooydonck B, Herrel A, Backeljau T, Van Damme R*; University of Antwerp, Belgium, Muséum National d'Histoire Naturelle, Paris, Royal Belgian Institute of Natural Sciences, Brussel*	Rapid divergence in morphology, physiology and behaviour among island populations of lizards
9:20 AM	16.4	DEE	*Fox AM, Schrey AW, McCoy ED, Mushinsky HR; University of South Florida*	Comparison of genetic structure of the Florida sand skink, *Plestiodon reynoldsi*, in homogeneous and heterogeneous habitat on Lake Wales Ridge in Central Florida
9:40 AM	16.5	DEE	*Schrey AW, Liebl AL, Richards CL, Martin LB; University of South Florida, Tampa*	The relative significance of genetic and epigenetic diversity for house sparrow colonization of Kenya
10:00 AM BREAK IN EXHIBIT HALL				
10:20 AM	16.6		*Sharma PP, Giribet G; Harvard University*	Upstream colonization of Australasia by Neotropical Opiliones (Arachnida)
10:40 AM	16.7	DEE	*Stegner MA, Ferrer EA*; University of California, Berkeley*	Holocene biogeography of *Neotoma*: mandibular geometric morphometrics and implications for climate change

11:00 AM	16.8		*Feis ME, Thieltges DW, Olsen JL, De Montaudouin X, Jensen KT, Bazaïri H, Culloty SC, Luttikhuizen PC; University of Groningen, The Netherlands, Royal Netherlands Institute for Sea Research NIOZ, The Netherlands, University Bordeaux 1, France, University of Aarhus, Denmark, University Mohammed V Agdal, Morocco, University College Cork, Ireland*	Parasite population genetic structure in relation to definitive host type
11:20 AM	16.9	DEE	*Falk B, Perkins S; American Museum of Natural History*	Comparative phylogeography of parasites in *Anolis* lizards on the Puerto Rican Bank

8:00-10:00 AM
Room 13

Session 17: Flows & Pumps

Co-Chairs: Janice Voltzow, Sally Leys

8:00 AM	17.1	DCB	*Hamlet CL, Miller LA; North Carolina State University, University of North Carolina at Chapel Hill*	Numerical simulations and laboratory experiments of the upside-down jellyfish with background flow
8:20 AM	17.2	DCB	*Leys SP, Yahel G, Reidenbach M, Tunnicliffe V, Shavit U, Reiswig HM; University of Alberta, Ruppin Academic Centre, University of Virginia, University of Victoria, Israel Institute of Technology*	The sponge pump: the role of current induced flow in the design of the sponge body plan
8:40 AM	17.3	DCB	*Cushman KC, Merz RA; Swarthmore College*	Maximizing feeding in minimal flow: behavioral and morphological plasticity of *Balanus glandula*
9:00 AM	17.4	DIZ	*Voltzow J; University of Scranton*	Peeping through the keyhole: endoscopy of a gastropod mantle cavity
9:20 AM	17.5		*Webster DR, Delavan SK; Georgia Institute of Technology, University of Canterbury*	Unsteadiness of bivalve clam jet flow according to environmental conditions and predator presence
9:40 AM	17.6	DVM	*Farina SC; Cornell University*	Cryptic and rapid gill ventilation behaviors of the goosefish, *Lophius americanus*

10:00 AM BREAK IN EXHIBIT HALL

10:20-11:40 AM
Room 13

Session 18: Small Suction and Pumps

Chair: Jake Socha

10:20 AM	18.1	DCB	*Brown MD, Holzman R, Berg O, Muller UK; California State University, Fresno, Tel Aviv University*	Sub-millisecond flow fields induced by bladderwort, the fastest known suction feeder
10:40 AM	18.2	DCB	*Roberts C, Socha JJ; Virginia Tech*	Dynamics of the sucking pump in fluid feeding butterflies
11:00 AM	18.3	DCB	*Kikuchi K, Chatterjee S, Lee W-K, Stremler MA, Mochizuki O, Socha JJ*; Toyo University, Virginia Tech, Argonne National Laboratory*	Multi-modal pumping in drinking mosquitoes
11:20 AM	18.4	DCB	*Dalton E, Socha JJ; Virginia Tech*	The role of the abdominal pump in rhythmic tracheal compression in the ground beetle, *Pterostichus tristis*

1:00-3:00 PM
Ballroom B

Session 19: Locomotion: Substrates

Chair: Andrew Spence

1:00 PM	19.1	DCB	*Wilshin S, Haynes GC, Reeve M, Revzen S, Spence AJ*; Royal Veterinary College, University of Pennsylvania*	How is dog gait affected by natural rough terrain?
1:20 PM	19.2	DCB	*Burnell AL, Young BA; University of Massachusetts, Lowell*	Tracking reptilian footprints
1:40 PM	19.3	DCB	*Birn-Jeffery AV, Daley MA; Royal Veterinary College, UK*	The effects of posture and body mass on uneven terrain locomotion in *Galliformes* and *Struthio camelus*
2:00 PM	19.4	DCB	*Schmidt A; Ohio University Heritage College of Osteopathic Medicine*	Individual locomotor strategies in degus (*Octodon degu*) - implication for biomechanical constraints on terrestrial substrates varying in orientation
2:20 PM	19.5		*Parikh SC, Mara KR, Hsieh ST; Temple University*	Does the SLIP model apply during inverted running in cockroaches?
2:40 PM	19.6	DCB	*Mongeau J-M, McRae B, Jusufi A, Birkmeyer P, Hoover AM, Fearing R, Full RJ; University of California, Berkeley, Olin College*	Rapid inversion: running cockroaches, geckos, and robots swing like a pendulum under ledges

1:00-2:40 PM
Ballroom C1

Session 20: Thermobiology II: Metabolism

Co-Chairs: John Whiteman, Brent Sinclair

1:00 PM	20.1	DEE	*Whiteman JP, Harlow HJ, Ben-David M, Durner GM; University of Wyoming, US Geological Survey*	Polar bears may depress body temperature and metabolic rate during summer
1:20 PM	20.2	DCPB	*Liu J, Karasov WH; University of Wisconsin-Madison, Taiwan Endemic Species Research Institute*	Energetics and use of torpor during summer in a subtropical bat, the Formosan leaf-nosed bat *Hipposideros terasensis*
1:40 PM	20.3	DCPB	*McGuire LP, Jonasson KA, Guglielmo CG; University Western Ontario, London*	Torpor-assisted migration in bats
2:00 PM	20.4	DCPB	*Sanders T, Kazmaier R, Ligon D*; Missouri State University, West Texas A&M University*	Thermal ecology of yellow mud turtles (*Kinosternon flavescens*) during hibernation
2:20 PM	20.5	DCPB	*Sinclair BJ, Stinziano JR, Williams CM, Marshall KE, MacMillan HA, Storey KB; University of Western Ontario, Carleton University*	Real-time measurements of metabolism during freezing and thawing in wood frogs, *Rana sylvatica*

1:00-3:00 PM
Ballroom C2

Session 21: Biophysical Ecology

Chair: Ofir Levy

1:00 PM	21.1		*Brickner-Braun I, Pinshow B; Ben-Gurion University of the Negev, Jacob Blaustein Institutes for Desert Research*	Burrowing rodents are not necessarily tolerant of hypercapnia
1:20 PM	21.2		*Levy O, Dayan T, Porter WP, Kronfeldschor N; Tel Aviv University, University of Wisconsin, Madison*	Biophysical modeling of foraging behavior: climate change may limit foraging

1:40 PM	21.3	DEE	*Johnsen S, Marshall NJ; Duke University, University of Queensland*	Through the looking glass: are silvery fish safe from viewers with polarization vision?
2:00 PM	21.4	DEE	*Woodin SA, Hewitt JE, Pilditch CA, Polerecky L, Thrush SF, Volkenborn N, Wethey DS; University South Carolina, Columbia, NIWA, NZ, University Waikato, NZ, Max Planck Inst Marine Micro*	Bivalves as infaunal hydraulic ecosystem engineers vs wimps of the class
2:20 PM	21.5	DCPB	*Dunkin RC, Tinker MT, Williams TM; University of California Santa Cruz, USGS-Western Ecological Research Center*	From tissues to landscapes: using physiology to answer landscape level questions in large mammals
2:40 PM	21.6	DCPB	*Potter KA, Woods HA; University of Montana, Missoula*	How do insect eggs avoid sunburns?

1:00-3:00 PM
Ballroom C3

Session 22: Sticky and Fast

Chair: Adam Summers

1:00 PM	22.1	DCB	*Hagey T; University of Idaho*	Variation in stickiness: using the weibull distribution to quantify adhesion across geckos
1:20 PM	22.2	DCB	*Wainwright DK, Kleinteich T, Gorb SN, Kleinteich A, Summers AP; Duke University, University of Washington, Friday Harbor Marine Lab, University of Kiel, Germany*	These dead fish really suck: adhesion performance of the northern clingfish
1:40 PM	22.3	DVM	*Maie T, Schoenfuss HH, Blob RW; Clemson University, St. Cloud State University*	Comparative functional capacity of adhesion and climbing among sicydiine gobiid fishes and related species
2:00 PM	22.4	DCB	*Summers AP; Friday Harbor Labs, UW*	Burrowing in sand - can surface reduce friction?
2:05 PM	22.5	DCB	*Strother JA, Ngo V, McHenry MJ; University of California, Irvine*	The role of viscoelasticity in flow sensing
2:10 PM	22.6		*Chiu C, Swartz SM, Breuer KS; Brown University*	The interactive flight of bats
2:20 PM	22.7	DVM	*Ka'apu-Lyons C, Gibb AC*; Northern Arizona University*	Critical periods during teleost development: a case study of two cypriniform fishes
2:25 PM	22.8	DVM	*Hulsey CD; University of Tennessee*	Rates of trophic evolution in Lake Malawi cichlid fishes
2:30 PM	22.9	DVM	*Westneat MW; Field Museum of Natural History*	New computational approaches to biomechanical modeling
2:40 PM	22.10	DVM	*Ferry LA, Gibb AC; Arizona State University, Northern Arizona University*	Jaw elongation and piscivory in fishes
2:45 PM	22.11	DVM	*Dumont ER, Davalos LM, Goldberg A, Santana SE, Rex K, Voigt CC; University of Massachusetts, Amherst, Stony Brook University, University of California, Los Angeles, Leibniz Institute for Zoo and Wildlife Research*	Cranial morphology, feeding performance and diversification in new world leaf-nosed bats
2:50 PM	22.12	DVM	*Hicks R, Macesic LJ, Gillis GB*; Mount Holyoke College*	Horizontal and vertical landing in the Cuban tree frog, *Osteopilus septentrionalis*

1:00-3:00 PM
Club South

Session 23: Social Behavior

Chair: Michele Nishiguchi

1:00 PM	23.1	DEE	*Castle W, Nishiguchi MK*; New Mexico State University*	Language barriers among bacteria: cooperation and cheating in a squid-*Vibrio* symbiosis

1:20 PM	23.2	DAB	*Wehrle BA, Espinoza RE; CSU Northridge*	Why do lizards lounge? The role of social aggregations in exchanging microbial communities among hatchling green iguanas
1:40 PM	23.3	DAB	*Burnette MF, Ashley-Ross MA; Wake Forest University*	Group shooting behavior in archerfishes
2:00 PM	23.4	DAB	*Chadwell BA, Hristov NI, Allen LC; Guilford College, Greensboro, Center for Design Innovation/Winston-Salem State University, Salem College*	Methods for describing and analyzing group behavior in bats: a case study in the Brazilian free-tailed bat
2:20 PM	23.5	DAB	*Chicoli A, Lun Y, Butail S, Coombs S, Paley D; University of Maryland, College Park, Bowling Green State University*	Making waves: quantitative analysis of information transmission in schooling fish
2:40 PM	23.6	DAB	*Pruitt JN, Oufiero CE, Aviles L, Riechert SE; University of Pittsburgh, University of California, Davis, University of British Columbia, University of Tennessee*	It takes all kinds: iterative evolution of increased trait variance proves advantageous for spider societies

1:00-3:00 PM
Club North

Session 24: Structure & Mechanical Design: Locomotion

Chair: Marianne Porter

1:00 PM	24.1	DCB	*Choudhury U, Dudek DM; Virginia Tech*	Dynamic mechanical properties of cockroach resilin
1:20 PM	24.2	DCB	*Porter ME, Diaz C, Long JH, Jr; Vassar College*	Regional variation in the dynamic mechanical properties of shark vertebral columns
1:40 PM	24.3	DCB	*Nowroozi BN, Brainerd EL; Brown University*	Mechanics and kinematics of the vertebral column in striped bass, *Morone saxatilis*
2:00 PM	24.4	DVM	*Nicodemo P, Jayne BC; University of Cincinnati*	Longitudinal variation in the axial muscles of snakes
2:20 PM	24.5		*Marvi H, Cook JP, Hu DL; Georgia Institute of Technology*	Rectilinear locomotion of snakes and the design of Scalybot 2
2:40 PM	24.6		*Salzman RE, Schwartz JM, Ahn AN; Claremont McKenna College, Harvey Mudd College*	The effect of passive joint elements on the movement output of the frog ankle

1:00-2:40 PM
Room 1

Session 25: Small Scale Flows and Function

Chair: Matthew Reidenbach

1:00 PM	25.1		*Volkenborn N, Chennu A, Matsui GYM, Polerecky L, Wethey DS, Woodin SA; University of South Carolina, Columbia, Max Planck for Marine Microbiology, Germany*	Bioirrigation revisited: infaunal hydraulic activities and porewater advection in marine sediments
1:20 PM	25.2	DCB	*Reidenbach MA, Whitman ER; University of Virginia*	Benthic flow environments impacting larval recruitment on *Crassostrea virginica* oyster reefs
1:40 PM	25.3	DCB	*Pepper RE, Roper M, Ryu S, Matsudaira P, Matsumoto N, Nagai M, Stone HA; University of California, Berkeley*	Microscopic filter feeders near boundaries: feeding restrictions and strategies due to eddies
2:00 PM	25.4	DIZ	*Padilla DK, Shumway SE, McCann MJ, Heupel E, Holohan B, Ward JE; Stony Brook University, University of Connecticut*	How do little suspension feeders make it: larval diet and post metamorphic survivorship, growth and feeding in *Crepidula fornicata*
2:20 PM	25.5		*Roper ML, Simonin A, Leeder A, Glass NL; University of California, Los Angeles, Berkeley*	Genomic dynamics in a growing filamentous fungus

1:00-3:00 PM
Room 3

Session 26: Development: Evolutionary Developmental Biology

Chair: Ariel Chipman

1:00 PM	26.1	DEDB	*Weisbrod A, Chipman A*; The Hebrew University of Jerusalem*	The origin of insect A/P axis determination pathways - insights from the holometabolous milkweed bug, *Oncopeltus fasciatus*
1:20 PM	26.2	DIZ	*Santagata S; Long Island University*	Revaluating spiral-like cell cleavage patterns during the embryonic development of phoronids and brachiopods.
1:40 PM	26.3		*Smith KE, Thatje S; University of Southampton*	Darwin in a nutshell - the subtle intracapsular survival of the fittest in the common whelk *Buccinum undatum*
2:00 PM	26.4	DCPB	*Peyer SM, McFall-Ngai MJ; University of Wisconsin, Madison*	Eye-associated genes in the eye and light organ of the squid *Euprymna scolopes*
2:20 PM	26.5	DEDB	*Boyle MJ, Rice ME; Smithsonian Marine Station at Fort Pierce, Florida*	Life history evolution: insights from comparative development and gene expression in sipuncula
2:40 PM	26.6	DEE	*Kingsolver JG, Diamond SE, Seiter S, Higgins JK; University of North Carolina, Chapel Hill*	Direct and indirect selection on size and development in *Manduca sexta*

1:00-3:00 PM
Rooms 10/11

Session 27: Tribute to Steve Morris & David Towle

Chair: Bob Roer

1:00 PM	27.1	DCPB	*Williams TM, Wolfe LL, Davis TR, Kendall T, Richter B, Elkaim G, Wilmers C; University of California, Santa Cruz, Colorado Parks and Wildlife, Fort Collins*	Energetics and mechanics of mountain lions: a step by step analysis for carnivore conservation
1:20 PM	27.2	DCPB	*Frederich M, Toombs C, Pennoyer K; University of New England, Biddeford*	Color-polymorphism in the green crab, *Carcinus maenas*: are green morphs really more stress tolerant than red morphs?
1:40 PM	27.3	DCPB	*Pathi B, Kinsey ST*, Howdeshell ME, Priester C, McNeill RS, Locke BR; Florida State University, University of North Carolina, Wilmington*	Can spatial variation in mitochondrial degradation predict mitochondrial distribution in skeletal muscle?
2:00 PM	27.4	DCPB	*Lee CE, Kiergaard M, Charmantier G, Posavi M; University of Wisconsin, Madison, Université Montpellier, France*	Evolution of ionic regulation following invasions into freshwater habitats
2:20 PM	27.5	DCPB	*Lenz PH, Unal E, Hassett RP, Smith CM, Batta Lona P, Bucklin A, Christie AE, Towle DW; University of Hawaii at Manoa, University of Connecticut, Ohio University, Mount Desert Island Biological Laboratory*	Physiological ecology of zooplankton: differential expression in *Calanus finmarchicus*
2:40 PM	27.6	DCPB	*Lovett DL, Bradley LM, Chan BC, Nayak S, Osborn JM; College of New Jersey, Ewing*	A four-pronged approach to supporting at-risk students: successes and re-evaluations of the PERSIST Scholars Program

1:20-3:00 PM
Room 12

Session 28: Comparative Genomics

Co-Chairs: Greg Ragland, Courtney Babbitt

1:20 PM	28.1	DEE	*Ragland GJ, Hahn DA; University of Notre Dame, University of Florida*	Comparative functional genomics of diapause: common physiological pathways and their connections with stress responses

1:40 PM	28.2		*Greenwold MJ, Sawyer RH; University of South Carolina, Columbia*	Characterization and expression profiles of beta (β)-keratins in the American alligator (*Alligator mississippiensis*) and their molecular evolution in archosaurians
2:00 PM	28.3		*Babbitt CC, Pfefferle LW, Fedrigo O, Wray GA; Duke University*	Conservation and function of noncoding RNAs in primate evolution
2:20 PM	28.4	DPCB	*Hutchins ED, Stapley J, Eckalbar WL, Kulathinal RJ, Hsieh ST, Denardo DF, Fisher RE, Wilson-Rawls J, Rawls A, Huentelman MJ, Bermingham E, Kusumi K; Arizona State University, Smithsonian Tropical Research Institute, Temple University, University Arizona College of Med-Phoenix, Translational Genomics Research Inst*	Comparative analysis of genomic sequence and myogenic pathways regulating muscle mass in the green anole, *Anolis carolinensis*, and the Panamanian slender anole, *A. apletophallus*
2:40 PM	28.5	DPCB	*Cox CL, Davis Rabosky AR, Chippindale PT; The University of Texas, Arlington, The University of California, Berkeley*	The evolution of *Mc1R* in the snake genus *Sonora*

1:00-3:00 PM
Room 13

Session 29: Evo-devo: Cell Differentiation

Chair: Yale Passamaneck

1:00 PM	29.1	DEDB	*Passamaneck YJ, Schiemann S, Martindale MQ, Hejnol A; Kewalo Marine Laboratory, University of Hawaii, Sars International Centre for Marine Molecular Biology, Norway*	Regulation of larval chaetogenesis in the brachiopod *Terebratalia tranversa* by Notch/Delta signaling
1:20 PM	29.2	DEDB	*Matus DQ, Yang M, Chang E, Sherwood DR; Duke University*	Anchor cell invasion across the Nematoda: a highly conserved cell biological process required for establishing the uterine-vulval connection
1:40 PM	29.3	DEDB	*Lee EM-J, Nguyen K, Mederios D, McCauley D; University of Oklahoma, Norman, University of Colorado, Boulder*	Expression of amphioxus and lamprey SoxE genes in zebrafish reveals ancient neural crest-specific roles in vertebrate evolution
2:00 PM	29.4	DIZ	*Chong T, Newmark PA; University of Illinois, Urbana-Champaign*	Role for a DM domain gene in male-specific reproductive development in the simultaneous hermaphrodite *Schmidtea mediterranea*
2:20 PM	29.5	DEDB	*Yamaguchi E, Seaver EC; University of Hawaii at Manoa, Kewalo Marine Lab*	Developmental potential of embryonic cells to generate larval and juvenile eyes in the polychaete *Capitella teleta*
2:40 PM	29.6	DEDB	*Swearingen RL, Vaglia JL; DePauw University*	Persistence of embryonic axial patterning markers in adult *Eurycea cirrigera* tails

6:30-7:30 PM
Room: Ballroom A

Bartholomew Award

			Azizi E; University of California, Irvine	From sarcomeres to organisms: the role of muscle-tendon architecture in determining locomotor performance

WEDNESDAY POSTER SESSION P1

Exhibit Hall, 3:00-5:00 PM

Poster Set Up: 7:00-8:00 am; Poster Teardown: 5:00-5:30 pm

Even # - Authors present from 3:00 - 4:00 pm; Odd # - Authors present from 4:00 - 5:00 pm

Behavioral Ecology: Predation & Defenses

P1.1	DAB	*Perreault TR, Rivers TJ*; Bowdoin College*	Predator-prey interactions between decapod crustaceans and polynoid polychaetes
P1.2		*Jimenez RR, Abinette SH*, Touchon JC, Vonesh JR, Warkentin KM; University Nac. de Costa Rica, Virginia Commonwealth University, Boston University*	Ontogeny of risk across the aquatic-terrestrial interface: how changing behavior and morphology affect predation through anuran metamorphosis
P1.3	DAB	*Taylor ZJ, Milliken GW; College of Charleston*	Comparison of startle response in two ambystomid species
P1.4	DAB	*Seymoure B, Toomey M, Clark D; Arizona State University, Alma College*	Reflectance of snakes of Beaver Island: a descriptive and visual approach
P1.5	DAB	*Birk MA, Ulmer KM, Chiao C-C, Chubb C, Siemann L, Hanlon RT; University of North Carolina Wilmington, Marine Biological Laboratory, National Tsing Hua University, Taiwan, University of California, Irvine*	Cuttlefish camouflage: using visual psychophysics approach with grayscale disk patterns to examine disruptive body patterning
P1.6		*Bianchi KM, Jacobs MW, Atema J, Bayer S; Falmouth Academy, McDaniel College, Boston University, Darling Marine Laboratories*	The effect of experience on shelter-seeking behavior of early juvenile *Homarus americanus*
P1.7		*Wheat SK, Cayron E, Vonesh JR, Warkentin KM; Whitman College, Arizona State University, Virginia Commonwealth University, Boston University*	How do tadpoles use chemical cues to assess risk? Cue concentration versus pulse frequency
P1.8	DAB	*Belton SM, Charles C, Sanford JL, Shields VDC; Baltimore City Community College, Towson University*	Can gypsy moth larvae (*Lymantria dispar*) adapt its aversive behavioral response to alkaloids?
P1.9	DAB	*Hicke JW, Bowden RM; Illinois State University*	Antipredator behavior of red-eared slider hatchlings in response to visual and chemical predator cues

Bioindicators and Pollution

P1.10	DEE	*Hanselmann R, Jolles AE; Oregon State University*	How intensive forest management affects disease in wildlife: patterns of Sin Nombre virus infection and gastrointestinal parasitism in wild deer mice (*Peromyscus maniculatus*)
P1.11		*Zanotto FP, Ortega P, Castro JM, Sa MG; Universidade Presbiteriana Mackenzie, Sao Paulo, University of Sao Paulo*	Cadmium and calcium transport in gill cells of *Ucides cordatus* a mangrove crab
P1.12	DIZ	*Taraska NG, Boettger SA; West Chester University of Pennsylvania*	Initiation of hemic neoplasia in the soft-shell clam *Mya arenaria* - evidence of viral disease etiology?
P1.13	DIZ	*Fontanella EL, Abgrall MJ, Taraska NG, Leblanc L, Tremblay E, Boettger SA; West Chester University of Pennsylvania, University of New Brunswick, Kouchibouguac National Parkia*	Disseminated neoplasia and clam populations in a Canadian National Park - Kouchibouguac National Park
P1.14		*Mourabit S, Kudoh T; University of Exeter, UK*	The mangrove killifish as a model for environmental embryology
P1.15	DEE	*Pinkerton M, Tapley J, Cunningham C, Jenny MJ; University of Alabama, University of New Mexico*	Identification of several glutathione s-transferase and multixenobiotic resistance transporter genes from the American oyster, *Crassostrea virginica*

P1.16	DCPB	*McClary, Jr. M, Hassan N, Morrison K, Martinez E, Emo S, Salem H, Shah A, Garah S, Garah M; Fairleigh Dickinson University, Union Hill High School, North Bergen High School, County Prep High School, Lodi High School, Paramus High School*	Shell characteristics of barnacles from two New Jersey water bodies
P1.17	DEE	*Perkins SL, Jenny MJ; University of Alabama*	Comparative transcriptomics of two freshwater mussels, *Villosa nebulosa* and *Villosa lienosa*, in response to heat shock
P1.18	DEE	*Ansorge K, Crane D, Cunningham C, Jenny MJ; University of Alabama, University of New Mexico*	Identification of key members of the Aryl Hydrocarbon Receptor (AHR) pathway and related oxidative stress genes from the American oyster, *Crassostrea virginica*
P1.19	DEE	*Porter D, Perkins S, Pritchett J, Tarrant AM, Jenny MJ; University of Alabama, Woods Hole Oceanographic Institution*	Induction of cell death in *Nematostella vectensis* by environmentally relevant concentrations of Macondo crude oil from the Deepwater Horizon Oil Spill
P1.20	DCPB	*Harper BT, Jarvis TA, Butler B, Rice L, Ryan S, Bielmyer GK; Valdosta State University, Waterford Institute of Technology*	Metal accumulation from dietary exposure in the sea urchin, strongylocentrotus droebachiensis
P1.21		*Oster JM, Welch AM; College of Charleston, SC*	Combined effects of social stress and an agricultural pesticide on tadpole growth and development
P1.22		*Wood BE, Welch AM; College of Charleston, SC*	Tadpole responses to combined environmental stressors - pesticides and salinity
P1.23	DIZ	*Williams LE, Defur PL; Virginia Commonwealth University*	The effects of river sediment contaminants and moderate hypoxia on the blue crab (callinectes sapidus)
P1.24	DEE	*Komoroske LM, Bowen L, Miles AK; University of California, Davis, United States Geological Survey, Western Ecological Research Center*	Biomarker development to examine sublethal impacts of pollutants in marine turtles
P1.25	DCPB	*Wojdylo JE, Rice CD*; Clemson University, Clemson SC*	AHR-1, AHR-2, and Cyp1a expression in tissues of creosote-adapted Atlantic killifish (fundulus heteroclitus) from the Elizabeth River, VA, USA
P1.26	DCE	*Matter JM, Wagner D, Pierce S; Juniata College*	Effects of agro-chemicals on testicular recrudesence in *Sceloporus undulatus*
P1.27	DCPB	*Hutchison ER, Gunderson MD, Milanowski AC, Covi JA; UWSP*	Effect of lipophilic compounds on the early development of microcrustaceans
Chemical Ecology			
P1.28	DNB	*Shapiro NS, Choate BA, Huynh MH, Murray JA*; California State University East Bay*	The characterization of antifeedant/defensive properties of a Pacific coast opisthobranch *Tritonia tetraquetra* (Bergh) and its octocoral prey *Ptilosarcus gurneyi* (Gray)
P1.29	DCPB	*Edwards TM, Morgan HE; Louisiana Tech University*	Effects of acid rain on parsley phytoestrogen content and development
P1.30	DEE	*Craft JD, Ritson-Williams R, Langdon C, Paul V; Smithsonian Marine Station, Fort Pierce*	Impacts of ocean acidification on growth, calcification, and terpene concentrations in the green alga *Halimeda opuntia*
Comparative Endocrinology & Regulation of Behavior			
P1.31	DCE	*Creighton AE, Sinkiewicz DM, Wilczynski W; Georgia State University*	Steroid correlations in plasma, tissue and water samples
P1.32	DCE	*Pradhan DS, Solomon-Lane TK, Willis MC, Naude PW, Grober MS; Georgia State University, Atlanta, University of Georgia, Athens*	Brain injection of an androgen synthesis inhibitor rapidly affects recovery from anesthesia and androgen levels in males
P1.33	DCE	*Ellens ER, Kittilson JD, Sower SA, Sheridan MA; North Dakota State University, Fargo*	Evolutionary origin and divergence of the growth hormone/prolactin/somtolactin receptor family: insights from studies in sea lamprey

P1.34	DVM	*Ebersbacher HE, Furimsky M; Westminster College - PA*	The effects of deer antler velvet on caudal fin regeneration in zebrafish
P1.35	DNB	*Fernandez WL, Elmuti LF, Konkle ME, Nathan BP, Menze MA; Eastern Illinois University*	Effects of estrogen on mitochondrial function in ApoE-deficient mice
P1.36	DCE	*Bergan HE, Sheridan MA*; North Dakota State University, Fargo*	Mechanisms that underlie fasting-associated growth cessation and lipid catabolism in rainbow trout (*Oncorhynchus mykiss*)
P1.39	DCE	*Edmonds KE; Indiana University Southeast*	Hormonal and metabolic regulation of compensatory testicular hypertrophy in the marsh rice rat (*Oryzomys palustris*)
P1.40	DCE	*Lema SC, Salvesen KE, Slane MA, Godwin J; California Polytechnic State University, Pennsylvania State University, North Carolina State University*	Isolation and expression patterns of two V1a-type arginine vasotocin receptor mRNAs in the protogynous bluehead wrasse
P1.41	DCE	*Miranda RA, Propper CR; Northern Arizona University*	Sexually dimorphic mRNA levels of genes involved in arginine vasotocin and sex steroid signaling in the brain of *Xenopus tropicalis*
P1.42	DCE	*Dunham LA, Wilczynski W; Georgia State University, Atlanta*	Influence of AVT on corticosterone and aggression in lizards
P1.43	DCE	*Movius MA, Aubin-Horth N, Renn SCP; Reed College, Laval University*	Decreased aggression without loss of territory following cortisol injection in male cichlids
P1.44	DCE	*Hanauer R, Ketterson E; Indiana University*	Corticosterone, immune function, and behavior in free-living dark-eyed juncos
P1.45		*Baldo S, Guindre-Parker S*, Gilchrist HG, Doucet SM, Mennill DJ, Love OL; Department of Biological Sciences, University of Windsor, National Wildlife Research Centre, Environment Canada*	Does physiology mediate the link between acoustic and visual signals and reproductive success in an Arctic passerine?
P1.46	DCE	*Ferguson SF, Reichard DG, Rosvall KA, Whittaker DJ, Ketterson ED; College of Wooster, Ohio, Indiana University, Bloomington, Michigan State University, East Lansing*	Behavioral and physiological responses to simulated territorial intrusions of short- and long- range song in male dark-eyed juncos (*Junco hyemalis*)
P1.47	DAB	*Sewall KB, Nowicki S; Duke University*	The relationship between testosterone and aggressive phenotype in male song sparrows (*Melospiza melodia*)

Complementary to: Steve Morris and David Towle Special Session

P1.48	DAB	*Kim D, Yu S-E; Yonsei University, Seoul*	Visual cues for burrow surveillance in fiddler crabs
P1.49	DVM	*Leary BP, Kavanagh K; University of Massachusetts Dartmouth*	The range of variation in pedal phalangeal proportions increases over the evolution of the avian lineage
P1.50	DCPB	*Cruz MJ, Sourial MM, Weihrauch D*; University of Manitoba*	Long term exposure to high environmental ammonia (HEA) impairs net ammonia secretion over the skin of the African clawed frog, *Xenopus laevis*
P1.51	DCPB	*Booth CE, Henry RP; Eastern Connecticut State University, Auburn University*	Mechanisms of H+ and ammonia excretion in exercising blue crabs, *Callinectes sapidus*
P1.52	DCPB	*Obi I, Sterling KM, Simmons T, Ahearn GA; University of North Florida, Jacksonville*	K-dependent 3H-D-glucose transport by hepatopancreatic BBMV of the marine shrimp, *Litopenaeus setiferus*
P1.53		*Duka A, Ahearn GA; University of North Florida, Jacksonville*	Comparative sugar transport by crustacean hepatopancreas and intestine
P1.54	DCPB	*Kapper MA; Central Connecticut State University, New Britain*	Is the subcellular location of aquaporin-2 regulated by reversible phosphorylation during salinity adaptation in *G. Demissa* gill?

P1.55	DCPB	*Pitts NL, Hoke KL, Mykles DL, Ghalambhor CK; Colorado State University*	Differences in the expression of muscle related genes in response to predation cues in the Trinidad guppy; *Poecilia reticulata*
P1.56	DCPB	*Robinson AM, MacLea KS, Chang ES, Mykles DL; Colorado State University, University of California, Davis Bodega Marine Lab*	Effects of molting on expression of FKBP12, an inhibitor of mTOR-regulated protein synthesis, in crustacean skeletal muscle
P1.57		*Cortes PA, Franco LM, Chappell MA, Nespolo RF; Universidad Austral de Chile, University of California, Riverside*	Thermorregulatory capacities and energy-saving strategies in the South American marsupial, *Dromiciops gliroides*
P1.58	DCPB	*Hardy KM, Burnett KG, Burnett LE; Cal Poly State University - San Luis Obispo, Medical University of South Carolina, College of Charleston*	The effect of hypercapnic hypoxia and bacterial infection on protein synthesis rates in the Pacific whiteleg shrimp, *Litopenaeus vannamei*
P1.59	DCPB	*Cosenza KS, Sorach K, Chang ES, Mykles DL; Colorado State University, University California Davis Bodega Marine Lab*	Effects of molting on myostatin expression in crustacean skeletal muscle
P1.60		*Pham D, Charmantier G, Boulo V, Grousset E, Wabete N, Charmantier-Daures M*; Ifremer New Caledonia, University Montpellier 2, France*	Osmoregulation in the peneid shrimp *Litopenaeus stylirostris*: ontogeny and localization of transporters
P1.61	DCPB	*Mitchell RT, Pinho BSH, Henry RP; Auburn University*	Carbonic anhydrase induction in the euryhaline blue crab, *Callnectes sapidus*, during low salinity acclimation is rate-limited by protein synthesis
P1.62	DCPB	*Abuhagr AM, Chang ES, Mykles DL; Colorado State University, University of California Davis Bodega Marine Lab*	Role of mTOR and TGFβ in Y-organ activation during the crustacean molting cycle
P1.63	DCPB	*Echlin ML, MacLea KS, Mykles DL; Colorado State University*	Cloning and characterization of a novel transforming growth factor-β in crustaceans
P1.64	DCPB	*Marshall KL, Chang ES, Mykles DL; Colorado State University, University of California Davis Bodega Marine Lab*	Myostatin and limb regenerate growth in the blackback land crab, *Gecarcinus lateralis*
P1.65	DCPB	*Pennoyer K, Frederich M; University of New England*	Differential whole animal and cellular level response to salinity stress in two color morphs of *Carcinus maenas*

Conservation Biology

P1.66	DEE	*Burke RL, Dolcemascolo P*, Kanonik A; Hofstra University, Montclair State University, Town of Hempstead Department of Conservation and Waterways*	Investigating changes in diamondback terrapin nesting behavior in Jamaica Bay, New York
P1.67		*Maginn KE, Klaus JM, Welch AM; College of Charleston, SC, University of Central Florida*	Environmental factors influencing the selection of breeding habitat by the Carolina gopher frog, *Lithobates capito*
P1.68		*Goote PC, Bergman DA; Grand Valley State University*	Using crayfish to control zebra mussel populations
P1.70	DEE	*Fox AM, Schrey AW, McCoy ED, Mushinsky HW; University of South Florida*	Parentage analysis of the Florida sand skink, *Plestiodon reynoldsi*, following relocation on the Lake Wales Ridge in Central Florida

Ecomorphology

P1.71	DEE	*Rader JA, Newsome SD, Martinez Del Rio C; University of Wyoming, Laramie*	Of isotopes and ovenbirds: seeking phenotype-environment correlations in South American *Cinclodes* ovenbirds
P1.72	DCB	*Crall JD, Combes SA; Harvard University*	Flying high: body size, flight performance, and vertical stratification of orchid bee communities in tropical rainforests

P1.73		*MacLean HJ, Higgins JK, Kingsolver JG, Buckley LB; University of North Carolina, Chapel Hill*	Local adaptation and responses to climate change in *Colias* butterflies
P1.74	DIZ	*Duong N, Davidowitz G; University of Arizona*	The effects of food availability on the workforce of a social insect: response of worker production in bumble bee (*Bombus impatiens*) colonies when food availability is manipulated

Education

P1.75	DPCB	*Kulathinal RJ, Liang Y, Hsieh ST; Temple University*	*Lizardbase*: an integrative scientific database and educational resource for discovery and learning
P1.76		*Tessmer D, Taylor KR, Nishikawa KC; Coconino Institute of Technology, Northern Arizona University*	The experience of research from a high school teacher's perspective
P1.77	DCB	*Sarfati AL, Shaffer JF, Kier WM, Coble JS; University of North Carolina at Chapel Hill*	Using research focused learning modules for outreach to high school science classrooms
P1.78	DCPB	*Carroll MA, Skeete D, Catapane EJ; Medgar Evers College, Brooklyn, NY*	STEP into science at Medgar Evers College, a successful strategic plan
P1.79	DIZ	*Chan KYK; University of Washington, Seattle*	Scientific process in practice, an activity based seminar for beginning science majors
P1.80		*Murdock C*, Debro L; Jacksonville State University*	Mycobacteriophage isolation and characterization as a model to promote undergraduate research in the freshman curriculum
P1.81	DCE	*Addis EA, Boury NM, Powell-Coffman JA; Iowa State University*	Scientific reasoning skills in introductory biology
P1.82		*Hawkins MB, Ferzli M, Overman E, Shea D; North Carolina State University*	A studio lab for the undergraduate biology curriculum: using a comparative endocrinology model to recruit future scientists

Endocrine Disruption & Sexual Differentiation

P1.83	DCE	*Priyamvada L, Garcia J*, Heckman K, Schreiber AM; St. Lawrence University*	The estrogen-disrupting compounds bisphenol-A (BPA) and atrazine inhibit thymus gland growth in amphibian (*Xenopus laevis*) tadpoles
P1.83A		*Garrehy CA, Benowitz-Fredericks ZM, Sweeney K; Bucknell University*	Interactions between yolk testosterone levels and post-hatch food availability in male chickens: early indicators of sexual maturation
P1.84	DCPB	*Morgan HE, Edwards TM; Louisiana Tech University*	Phytoestrogen variation among organs of soybeans
P1.85	DCE	*Wolff SE, Coston JM, Veldhoen N, Helbing CC, Propper CR; Northern Arizona University, University of Victoria*	Effects of exposure to 4-tert-octylphenol on sexual differentiation and gene expression in African clawed frogs
P1.86	DCE	*Smelker KS, Valverde RA; Southeastern Louisiana University*	Vitellogenin induction by PCBs in the turtle *Trachemys scripta*
P1.87		*Sweeney KM, Garrehy CA, Fisher KA, Benowitz-Fredericks ZM; Bucknell University*	Effects of yolk testosterone levels and post-hatch food availability on wound healing in male domestic chickens (Gallus gallus)
P1.88	DCE	*Paitz RT, Bowden RM; Illinois State University*	A mechanistic understanding of yolk steroid effects
P1.89		*Connor KR, Pradhan DS, Solomon-Lane TK, Willis MC, Naude PW, Grober MS; Georgia State University, Atlanta, University of Georgia, Athens*	Endocrine correlates of initial sexual differentiation in the bluebanded goby
P1.90		*Coz JH, Doheny BM, McCoy JA, Rainwater TR, Boggs ASP, Guillette LJ; College of Charleston, Medical University of SC/Hollings Marine Laboratory*	Exploring genomic tools to sex non-sex chromosomal animal, American alligator (*Alligator mississippiensis*)

P1.91		*Underwood EB, Kohno S, Rainwater TR, Boggs ASP, Doheny B, McCoy J, Guillette LJ; College of Charleston, Hollings Marine Laboratory, MUSC, Charleston*	Using sexually dimorphic gene expression in scutes as a marker of sex in the American alligator
P1.92		*Doheny BM, Kohno S, McCoy JA, Guillette Jr LJ; Medical University of South Carolina, OB-GYN/Hollings Marine Laboratory*	Signaling and timing of Müllerian duct differentiation in the American alligator

Evolution of Form and Function

P1.93	DVM	*Green P, Pang B, Van Valkenburgh B; University of California, Los Angeles; University of Massachusetts, Amherst*	Respiratory and olfactory turbinate size in canid and arctoid carnivorans
P1.94	DVM	*Curtis AA, Lai G, Van Valkenburgh B; University of California, Los Angeles*	Frontal sinus morphology in arctoid carnivorans
P1.95	DVM	*Kaatz IM, Stewart DJ; SUNY-ESF Syracuse NY*	Morphological correlates of vocal traits in a clade of neotropical catfishes (Siluriformes: Doradidae and Auchenipteridae): an adaptive radiation driven by vocal traits?
P1.96	DCB	*Clark CJ, Prum RO; Yale University Peabody Museum*	Aeroelastic flutter and flight sounds across birds
P1.97	DVM	*King HM, Hale ME; University of Chicago*	Pelvic limb morphology in the lungfish *Protopterus annectens*
P1.98	DVM	*Taft N, Lemberg J, Daeschler E, Shubin N; University of Chicago, Academy of Natural Sciences*	Comparative analysis of the functional relationship between the endochondral and dermal elements of the pectoral fin among fossil and living sarcopterygian fishes
P1.99	DVM	*Gutzwiller SG, O'Connor PM, Su A; The Ohio State University, Ohio University, Cleveland State University*	Postcranial pneumaticity and bone structure in two clades of neognath birds
P1.100		*Brandt E, Morris JS*, Carrier DR; University of Utah*	Skeletal sexual dimorphism in gray wolves indicates functional trade-offs in specialization for competition versus locomotor economy
P1.101	DEE	*Jorgensen ME; Ohio University*	Examining the relationship between locomotor mode and rate of morphological evolution in frogs
P1.102	DVM	*Nygaard KR, Hund AK, Rand MS; Carleton College*	Genetics and color development in a rare melanized and pterin-less morph of a North American lizard (*Sceloporus*)
P1.103	DVM	*Feo TJ, Prum RO; Yale University*	A revised model of feather shape development
P1.104	DVM	*Hieronymus TL, Simons ELR; Northeast Ohio Medical University, Midwestern University*	Morphology and histology of avian quill knobs: The fine structure of remigial feather attachments
P1.105	DVM	*Morhardt A, Ridgely R, Witmer L; Ohio University*	Gross Anatomical Brain Region Approximation (GABRA): a new technique for assessing brain size and structure in extinct archosaurs
P1.106	DCB	*Westneat MW, McCord CM; Field Museum of Natural History, University of Chicago*	Phylogenetics, morphometrics and biomechanics of reef fishes
P1.107	DEE	*Hollingsworth Jr. PR, Hulsey CD; University of Tennessee*	Evolution of the adductor mandibulae and premaxillary protrusion angle across eastern North American minnows (Cyprinidae)
P1.108	DVM	*Staab KL, Betancur-R R, Hernandez LP; George Washington University*	Evolutionary origin and diversification of adductor mandibula structure in cypriniform fishes
P1.109	DVM	*Muller LJ, Staab KL, Hernandez LP; George Washington University*	Comparative adductor mandibula architecture and muscle fiber type composition within Cyprinidae
P1.110	DVM	*Costantini KE, Hernandez LP; George Washington University*	Morphological variation in the palatal organ of Cypriniformes

P1.111	DVM	*Rade CM, Hernandez LP; George Washington University*	Morphological variation in the pharyngeal jaw apparatus of Cypriniformes
P1.112	DVM	*Clemmensen SF, Hulsey CD; University of Tennessee, Knoxville*	Convergence in pharyngeal jaw morphology in Heroine cichlids
P1.113	DVM	*Rupp MF, Hulsey CD; University of Tennessee, Knoxville*	Evolution of pectoral fins in malawi cichlids
P1.114		*Gussekloo SWS, Grosse IR, Berthaume M, Dumont ER; Wageningen University, University of Massachusetts, Amherst*	Finite element modeling suggests functional divergence in the skulls of palaeognathous and neognathous birds
P1.115	DVM	*Stewart TA, Hale ME; University of Chicago*	Adipose fin function in *Horabagrus brachysoma*: first identification of a muscular control mechanism for the adipose fin
P1.116	DVM	*Aluck RJ, Ward AB; Adelphi University*	Fish out of water: evaluating the use of substrate during terrestrial excursions
P1.117	DVM	*Rivera G, Hansel MM, Adams DC; Iowa State University, Ames*	Evolutionary rates and patterns of sexual shape dimorphism in the shells of emydid turtles
P1.119	DVM	*O'Brien HD; Ohio University, Athens*	Ontogeny and phylogeny of cranial vascular patterns in the tragulidae (Artiodactyla: Ruminantia)
P1.120	DVM	*McCartney JA; Stony Brook University*	Vertebral number is correlated with ecology in snakes (Squamata: Serpentes)
P1.121	DVM	*Claeson KM; Ohio University Heritage College of Osteopathic Medicine*	Connective tissues of the craniovertebral joint in rajidae
P1.122	DEE	*Finkler MS; Indiana University Kokomo*	Dimorphism on the inside: differences in visceral organ mass between male and female spring peepers (*Pseudacris crucifer*)

Evolutionary Morphology: Color & Photoreception

P1.123	DEE	*Dial TO, Santana SE, Eiting TP, Alfaro ME; University of California Los Angeles*	How the bat got its stripes: roosting ecology and the evolution of pelage markings in bats
P1.124	DVM	*Bonin JA, Homberger DG; Louisiana State University, Baton Rouge*	Optical properties of yellow psittacofulvin colors in the tail feathers of cockatoos (Cacatuidae) and parrots (Psittacidae)
P1.125	DPCB	*Ramirez MD, Oakley TH; University of California, Santa Barbara*	Uncovering the molecular basis of dispersed photoreception in the cephalopod, *Octopus bimaculoides*
P1.126	DVM	*Hancock JA, Biknevicius AR; Marietta College, Ohio University Heritage College of Osteopathic Medicine, Athens*	The evolution of retinal morphology in birds

Evolutionary Morphology: Paleobiology

P1.127	DPCB	*Mooi R, Burns C; California Academy of Sciences, San Francisco*	Tic tacs from the Eocene of the Pacific Northwest: significant clypeasteroids from unexpected places
P1.128	DPCB	*Burch SH, Smith ND, Nesbitt SJ, Irmis RB, Turner AH; Stony Brook University, Field Museum, The University of Washington, Utah Museum of Natural History*	Reconstructing the antebrachial and manual musculature in the basal theropod dinosaur *Tawa hallae*
P1.129	DEE	*Pirtle EI, Tracy CR; University of Nevada Reno*	Why dinosaurs went extinct: a species-centered analysis

Genetics and Evolution of Behavior

P1.130	DAB	*Moreno P, Aracena J; Southwestern Oklahoma State University*	Differential starvation survival of field collected and laboratory wild type fruit flies (*Drosophila melanogaster*)
P1.132	DNB	*Soares D; University of Maryland College Park*	Jumping in the Trinidadian guppy
P1.132A	DAB	*Renn SCP, Carleton J, Crotteau E; Reed College*	Molecular modules of maternal aggression in the African cichlid Astatotilapia burtoni

P1.133		*Peterson MP, Atwell JW, Mila B, Abolins-Abols M*, Ketterson ED; Indiana University, Bloomington, Museo Nacional de Ciencias Naturales, Madrid*	Candidate genes and rapidly evolving migratory behavior in the genus *Junco*
P1.134	DCPB	*Shorter KR, Crossland J, Webb D, Talley L, Szalai G, Felder MR, Vrana PB; University of South Carolina, Columbia*	Epigenetic effects of diet on a natural mammalian variant

Genomics and Proteomics

P1.135	DPCB	*Citarella MR, Girardo DO, Kohn AB, Moroz LL; Whitney Lab for Marine Bioscience, University of Florida, St Augustine, University of Florida, Gainesville*	Global discovery and validation of signaling molecules in the ctenophore, *Pleurobrachia bachei*
P1.136	DEDB	*Girardo DO, Citarella MR, Kohn AB, Moroz LL; Whitney Lab for Marine Bioscience, University of Florida, St Augustine*	Automatic transcriptome analysis and quest for signaling molecules in basal metazoans
P1.137		*Vaughn R, Garnhart N, Thomas WK, Garey JR, Livingston BT; University of South Florida, University of New Hampshire, California State University, Long Beach*	Sequencing and analysis of the gastrula transcriptome of the brittle star *Ophiocoma wendtii*
P1.138	DEE	*Panhuis TM, Broitman-Maduro G, Uhrig J, Maduro M, Reznick DN; Ohio Wesleyan Univeristy, University of California, Riverside*	Expressed sequence tag analysis of the *Poeciliopsis* placenta
P1.139		*Bricker EA, Greenwold MJ, Sawyer RH; University of South Carolina, Columbia*	The molecular evolution of alpha keratins in reptiles and birds
P1.141	DEDB	*Smith JP, Rutter MT, Bridges MC, Easterling MR, Jackson LA, Byrum CA*; College of Charleston*	A genome-wide survey of evolutionarily conserved nuclear transport genes in the sea urchin
P1.142	DEE	*Medlin AM, Cole AM, Shedlock AM; College of Charleston*	Global annotation and molecular evolutionary analysis of genomic repeats in the painted turtle, *Chrysemys picta*
P1.143	DEE	*Bezault E, MacHado H, Hunter J, Joyce D, Lunt D, Renn SCP; Reed College, Stanford, University of Hull*	Genomics of adaptive radiation: gene duplication in African cichlid lineages
P1.144	DEE	*Biardi J; Fairfield University*	Comparative proteomic analysis of blood sera of venom-resistant and non-resistant ground squirrels under rattlesnake predation
P1.145	DPCB	*Porter ML, Haynes B, Crandall KA, Oakley TH, Cronin TW; University of Maryland Baltimore County, Brigham Young University, University of California, Santa Barbara*	Evolutionary genomics of visual system complexity: expressed opsin diversity in stomatopod crustaceans

Immunology

P1.146	DCPB	*Rice CD; Clemson University*	The Gulf killifish, fundulus grandis, as a key model for determing the effects of environmental stressors on immune function in Gulf of Mexico estuarine fish
P1.147	DCPB	*Martin LB, Ardia DR, Hawley DM; University of South Florida, Franklin and Marshall College, Virginia Polytechnic Institute and State University*	A Research Coordination Network in Ecological immunology (RCNE)
P1.148	DCPB	*Klingensmith KC, Jorgensen DD; Roanoke College*	Immune response to acute bacterial exposure in the American lobster
P1.149	DCPB	*Killpack TL, Oguchi Y, Karasov WH; University of Wisconsin-Madison*	Ontogeny of constitutive innate immune function in free-living altricial house sparrow nestlings

P1.150	DCPB	*Eisner Pryor LJ, Casto JM; Illinois State University*	Chronic mite infestation and its effects on nest success, immunity and development in European starling nestlings
P1.151	DCE	*Carlton ED, Demas GE; Indiana University, Bloomington*	Leptin and seasonal variation in sickness responses in Siberian hamsters (*Phodopus sungorus*)
P1.152		*Forsman AM, Paitz RT; Cornell University, Illinois State University*	Geographic variation in maternal effects across the breeding range of the tree swallow (*Tachycineta bicolor*)

Muscle Physiology and Biochemistry

P1.153	DCB	*Adkins ZE, De Buron I, Roumillat WA, McElroy EJ; College of Charleston, South Carolina Department of Natural Resources*	The effect of a myxosporean parasite, *Kudoa inornata* on the flesh quality of spotted seatrout, *Cynoscion nebulosus*
P1.154		*George NT, Salcedo MK*, Williams CD, Irving TC, Daniel TL; University of Washington, Seattle, Illinois Institute of Technology, Chicago*	Myofilament lattice spacing increases as muscles shorten
P1.155	DCPB	*Fuqua RD, Monroy JA, Nishikawa KC; Northern Arizona University*	Force enhancement of soleus muscles from *mdm* mice
P1.156	DEE	*Charbonnier JF, Gerald G, Purrenhage J, Schaeffer P; Virginia Commonwealth University, Nebraska Wesleyan University, University of New Hampshire, Durham, Miami University of Ohio, Oxford*	Carry-over effects of pond canopy cover on locomotor performance of the American toad (*Anaxyrus americanus*)
P1.157		*Holsinger RC, Potenza JB, Mercier AJ, Cooper RL; University of Kentucky, Transylvania University, Brock University, Canada*	Modulation and calcium sensitivity in rate and force of contraction of the crayfish gut
P1.158		*Khozein RT, Castro DJ, McCarther NM, Wade J, Johnson MA; Trinity University, Michigan State University*	Evolution of muscle physiology and reproductive behavior in *Anolis* lizards
P1.159	DVM	*Velten BP, McLellan WA, Pabst DA; University of North Carolina, Wilmington*	A comparative study of the locomotor muscle of extreme deep-diving cetaceans
P1.160	DCPB	*King MO, Zhang Y, Tordsen T, Swanson DL; University of South Dakota*	Seasonal phenotypic flexibility of muscle aerobic enzyme activities in small birds
P1.161	DCPB	*Ross TT, Kinsey ST; University of North Carolina Wilmington*	β-GPA treatment leads to elevated basal metabolic rate and enhanced exercise tolerance in mice
P1.162	DCPB	*Grove TJ, Fort TJ; Valdosta State University*	Functional characterization of calsequestrin from the eurythermal killifish, *Fundulus similis*
P1.163	DVM	*Prince SC, Walker RA, Dearolf JL; Hendrix College*	Effects of betamethasone on myosin light chain expression of fetal *Cavia porcellus* intercostals
P1.164	DVM	*Lee RJ, Walker RA, Dearolf JL; Hendrix College*	Betamethasone treatment of the diaphragm of fetal *Cavia porcellus*: a look at glycogen storage
P1.165	DVM	*Walker RA, Dornhoffer TM, Dearolf JL; Hendrix College*	Do multiple doses of betamethasone increase the oxidative capacity of the fetal guinea pig scalenus muscle?
P1.166	DNB	*Krajniak K, Neal M; Southen Illinois University Edwardsville*	Further investigation of the effects of putative neurotransmitters on the body wall of *Lumbricus terrestris*
P1.167	DVM	*Moore SJ, Walker RA, Dearolf JL; Hendrix College*	Do prenatal steroids affect the oxidative capacity of the guinea pigs rectus thoracis muscle?
P1.168	DVM	*Redo AR, Walker RA, Dearolf JL; Hendrix College*	Determining the effect of prenatal steroids on the rectus abdominis of *Cavia porcellus*
P1.169	DVM	*Riley LA, Sciortino A, Walker RA, Dearolf JL; Hendrix College*	The effect of prenatal steroids on the fatigue resistance of the fetal guinea pig diaphragm

P1.170	DVM	*Butler MR, Chughtai A, Walker RA, Dearolf JL; Hendrix College*	The effect of prenatal steroids on the fast-twitch fibers of the fetal guinea pig scalenus

Neurobiology: Development, Plasticity and Behavior

P1.171	DNB	*Prokop JA, Monzon RI, Krohmer RW; St. Xavier University, Chicago*	Using the spinophilin protein as a method of assessing regional neuronal plasticity in the brain of the male red-sided garter snake
P1.172		*Maine AR, Powers SD, Lutterschmidt DI; Portland State University, Oregon*	Fall migration is associated with changes in neurogenesis in red-sided garter snakes (*Thamnophis sirtalis*)
P1.173	DNB	*Hadjisolomou SP, Grasso FW; The Graduate Center of the City University of New York*	Chromatophore control mechanisms underlying crypsis in the European cuttlefish, *Sepia officinalis*
P1.174	DNB	*Powers SD, Maine AR, Lutterschmidt DI; Portland State University, Oregon*	Seasonal variation in neurogenesis in red-sided garter snakes (*Thamnophis sirtalis*)
P1.175		*Yan Q, Dallman JE; University of Miami*	Mapping developmentally dynamic synaptic inputs on motor neurons in zebrafish
P1.176		*Smeets J, Krohmer RW; Saint Xavier University, Chicago*	Neurogenesis in the injured red-sided garter snake brain
P1.177	DAB	*Lopez IL, Aracena J; Southwestern Oklahoma State University*	Decision-making in feeding and mating behaviors of field collected fruit flies (*Drosophila melanogaster*)
P1.178		*Ellerby DJ, Hitchcock AC*; Wellesley College*	Use of preferred escape trajectories in bluegill sunfish (Lepomis macrochirus)
P1.179	DAB	*Liu Y, Day LB, Summers K, Burmeister SS; University of North Carolina, Chapel Hill, University of Mississippi, East Carolina University*	Spatial navigation strategies of green poison dart frogs in a morris water maze task
P1.180		*Provine SR, O'Malley H, Krochmal AR, Roth TC; Kenyon College, Washington College*	Memory use as a possible mechanism for over-land movements in eastern painted turtles (Chrysemys picta picta): behavioral and neurological evidence
P1.181		*Ernst DA, Lohmann KJ; University of North Carolina at Chapel Hill*	Undersea orientation mechanisms of horseshoe crabs
P1.182	DIZ	*Lessios N, Rutowski R; Arizona State University*	Orientation behavior and possible visual statocyst in a crustacean found in the Sonoran Desert: *Triops* (Branchiopoda: Notostraca)
P1.183	DNB	*Cooper RM, Schapker Finucane H, Adami M, Cooper RL; University of Kentucky*	Heart and ventilatory measures in crayfish during copulation

Population Ecology

P1.184	DCE	*Williams TD, Evans Ogden LJ, Martin K; Simon Fraser University, Canada, University of British Columbia, Canada*	Altitudinal differences in songbird fattening rates during fall migration
P1.185	DEE	*Diederich CM, Pechenik JA; Tufts University*	Intertidal and subtidal *Crepidula fornicata* experiencing drastically different thermal conditions have similar physiological tolerances
P1.186	DIZ	*Gilchrist SL; New College of Florida, Sarasota*	A seven year study of shell use by *Coenobita clypeatus* on Cayos Cochinos Mejor, Bay Islands, Honduras
P1.187	DEE	*Knight MS, Francis, Jr. AW; Armstrong Atlantic State University*	Catch and compare: ichthoplankton sampling methods in a Georgia estuary
P1.188	DEE	*Wells SL, McConaugha JR; Old Dominion University, OEAS*	The effects of changing abundance on reproduction in an exploited decapod crustacean
P1.189	DEE	*Howell AL, Francis, Jr. AW; Armstrong Atlantic State University*	Abundance and variation of invertebrate zooplankton in a Georgia estuary
P1.190	DEE	*Tracy CT, Todd J*, Wakeling S, Pirtle E, Tracy CR; University of Melbourne, University of Nevada Reno*	Predicting extinction due to global climate change

Reproductive & Parental Behaviors

P1.191		*Lothery CJ, Thompson CF, Sakaluk SK; Illinois State University*	Self-maintenance versus reproduction: effect of experimentally increased food availability on female incubation behavior, chronic stress levels, and offspring condition in house wrens
P1.192	DAB	*Stahlschmidt ZR, Shine R, Denardo DF; Arizona State University, Tempe, University of Sydney*	The benefits and costs of parental care in free-ranging pythons (*Liasis fuscus*) in tropical Australia
P1.193	DAB	*Cupp, Jr. PV; Eastern Kentucky University*	Male green salamanders, *Aneides aeneus*, may help defend some nest sites
P1.195		*Radzio TA, Tucker C, Strickland JT, Ligon DB, Delaney DK; Drexel University, Missouri State University, US Fish and Wildlife Service, US Army Corps of Engineers*	Can automated radio telemetry quantify ornate box turtle activity and nesting patterns?
P1.196	DAB	*Willis MC, Pradhan DS, Naude PW, Solomonlane TK, Grober MS; Georgia State University, Atlanta, University of Georgia, Athens*	Egg laying and development in bluebanded gobies
P1.197		*Sorenson GH, Huntington CE, Mauck RA; Kenyon College, Bowdoin College*	Which way to turn? Within-colony movement patterns in a long-lived seabird

Thermobiology

P1.198	DCPB	*Williams JB, Lee RE; Southern Illinois University, Miami University*	Effect of dehydration and freezing on cryoprotectant and ion distribution and hemolymph volume in the goldenrod gall fly, *Eurosta solidaginis*
P1.199		*Doelling AR, Williams JB; Southern Illinois University Edwardsville*	Multiple freeze cycles induce oxidative stress and reduce survival in the freeze-tolerant goldenrod gall fly, *Eurosta solidaginis*
P1.200	DCPB	*Church A, Legters C, Papa J, Tymochko L, Elnitsky MA*; Mercyhurst College*	Antioxidant capacity and oxidative stress in the freeze-tolerant woolly bear caterpillar, *Pyrrharctia isabella*
P1.201		*Rosendale AJ, Costanzo JP, Lee RE; Miami University, Oxford OH*	Importance of a putative glucose transporter during physiological stress in the wood frog, *Rana sylvatica*
P1.202		*Do Amaral MC, Costanzo JP, Lee RE; Miami University*	Seasonal variation in liver glycogen phosphorylase and cAMP-dependent protein kinase levels in *Rana sylvatica*
P1.203	DCPB	*Taylor G, Wilson A, Haukenes A; University of Arkansas at Pine Bluff*	Evaluation of thermally induced cross-protection in channel catfish
P1.204	DCPB	*Wise KL, Gray EM; Colorado College*	Thermal acclimation affects the aerobic scope of hissing cockroaches
P1.205	DCPB	*McCue MD; St. Mary's University*	Atmospheric oxygen availability limits thermotolerance at upper lethal temperatures: an examination of environmental oxygen limitation in insects
P1.206	DEE	*Chick LD, Fowler DA, Sanders NJ; University of Tennessee, Knoxville*	Variation in critical thermal limits of ant species along an elevational gradient
P1.207	DEE	*Raffel TR, Herbig E*, Kobasa C, Venesky M, McMahon TA, Rohr JR; Dickinson College, University of South Florida*	Climate variability reduces frog resistance to parasitic infection
P1.208	DCPB	*Lewden A, Petit M, Vezina F*; Université du Québec à Rimouski, Canada*	Low ambient temperatures may reduce cold endurance in wintering black-capped chickadees
P1.209	DCPB	*Enzor LA, Place SP; University of South Carolina*	High latitude oceans in a high CO2 world: comparative analysis of the metabolic response of Antarctic notothenioids to a multi-stressor scenario
P1.210	DCPB	*Kawarasaki Y, Teets NM, Kobelkova A, Denlinger DL, Lee RE; Miami University, Oxford, Ohio State University*	Rapid cold-hardening in the frozen state increases cold tolerance in the Antarctic midge, *Belgica antarctica*

P1.212	DCPB	*Jayasundara N, Somero GN; Stanford University*	Cardiac thermal plasticity in the longjaw mudsucker *Gillichthys mirabilis*
P1.213	DCPB	*Marquand TH, Berner NJ; Sewanee: The University of the South*	Seasonal expression of cytochrome c oxidase and citrate synthase genes in the Eastern red spotted newt (*Notophthalmus viridescens viridescens*)
P1.214	DVM	*Vargas F, Carrillo A, Hulse K, Hockersmith B, Dickson K*; California State University, Fullerton*	Effects of variable environmental temperatures on hatching success and larval length and yolk area in the California grunion, *Leuresthes tenuis*
P1.215	DCPB	*Jefimow M, Gutowski JP, Wojciechowski MS; Nicolaus Copernicus University, Poland*	Different diet does not affect thermal preferences and daily energy expenditure of golden and Siberian hamsters
P1.216	DVM	*Porter WR, Witmer LM; Ohio University*	Vascular patterns in iguanas: blood vessels and cephalic sites of thermal exchange
P1.217		*Maki KG, Powers DR, Tobalske BW; George Fox University, University of Montana*	Heat dissipation during flight in calliope hummingbirds (*Stellula calliope*)
P1.218		*Copenhaver PE, Powers DR; George Fox University*	Thermal preference and habitat choice in the rough-skinned newt (*Taricha granulosa*)
P1.219	DCPB	*Costanzo JP, Do Amaral MC, Rosendale AR, Lee RE; Miami University, Oxford*	Seasonal dynamics and influence of hibernaculum temperature on energy reserves in the wood frog, *Rana sylvatica*
P1.220	DCPB	*Muir TJ, Dishong BD, Costanzo JP, Lee RE; Augustana College, Miami University*	Energy use in terrestrially hibernating hatchling turtles (Chrysemys picta) is extremely sensitive to overwintering temperature
P1.221		*Quinlan BA, Stevenson TJ, Buck CL, Duddleston KN; University of Alaska Anchorage*	Post-weaning dynamics of the fecal microbial communities of arctic ground squirrels
P1.222		*Stevenson TJ, Buck CL, Quinlan BA, Duddleston KN; University of Alaska Anchorage*	Post-weaning dynamics of the cecal microbial communities of arctic ground squirrels
P1.223	DCPB	*Faherty SL, Yoder AD; Duke University*	Assessing gene expression profiles during seasonal thermoregulation in a hibernating primate, *Cheirogaleus medius*

Ventilation and Circulation

P1.224	DCB	*Miller L, Waters JS, Harrison JF, Vandenbrooks JM, Yager DD, Xiao X, De Carlo F, Socha JJ; Virginia Tech, Arizona State University, University Maryland, Argonne National Lab.*	The use of SR-μCT for 3D visualization of insect tracheal systems
P1.225		*Giarra MN, Vlachos PP, Socha JJ; Virginia Polytechnic Institute and State University*	Visualization of hemolymph flow in the heart of a cockroach
P1.226	DCB	*Pendar H, Beringer D, Socha JJ; Virginia Tech*	Collapse patterns of insect tracheal tubes under pressure
P1.227	DCB	*Hochgraf JS, Socha JJ; Virginia Tech*	Does tracheal compression in carabid beetles function as a unidirectional pump?
P1.228	DCB	*Bourke J, Witmer L; Ohio University, Athens*	Baffling bird noses: modeling the effects of turbinate structure on airflow dynamics in ostriches and turkeys

Thursday Schedule of Events

All events take place in the North Charleston Convention Center unless noted as (ES) for Embassy Suites Hotel

EVENT	TIME	LOCATION
Poster Session 2 Set Up	7:00-8:00 AM	Exhibit Hall AB
Registration	7:30 AM-5 PM	Exhibit Hall A Foyer
Exhibit Hall	9:30 AM-5:00 PM	Exhibit Hall AB
Poster Session 2 Even Numbers Viewing	3:00-4:00 PM	Exhibit Hall AB
Poster Session 2 Odd Numbers Viewing	4:00-5:00 PM	Exhibit Hall AB
Poster Session 2 Teardown	5:00-5:30 PM	Exhibit Hall AB
Coffee Break/PM Poster Session Cash Bar	9:30-10:30 AM/3-5 PM	Exhibit Hall AB
SPECIAL LECTURE		
Howard Bern Lecture	6:30-7:30 PM	Ballroom A
AMS Lecture	7:30-8:30 PM	Ballroom C2
SYMPOSIA ORAL PRESENTATIONS		
S4: Dispersal of Marine Organisms	8:00 AM-3:00 PM	Ballroom A
S5: New Frontiers from Marine Snakes to Marine Ecosystems	8:00 AM-3:00 PM	Rooms 8/9
S6: Comparative Proteomics of Environmental and Pollution Stress	7:50 AM-3:00 PM	Rooms 10/11
CONTRIBUTED PAPER ORAL PRESENTATIONS		
Session 30: Energetics	8:00-10:00 AM	Ballroom B
Session 31: Digestion	10:20 -11:40 AM	Ballroom B
Session 32: Form and Function: Feeding	8:00-10:00 AM	Ballroom C1
Session 33: Ecomorphology: Aquatic Locomotion and Body Shape	10:20 AM-Noon	Ballroom C1
Session 34: Biodiversity and Biogeography I	8:00-9:40 AM	Ballroom C2
Session 35: Biodiversity and Biogeography II: Symbiosis	10:00 AM-Noon	Ballroom C2
Session 36: Complementary to Symposium: Developmental Plasticity ...	8:00 AM - NOON	Ballroom C3
Session 37: Sexual Selection in Herps	8:00-10:00 AM	Club South
Session 38: Sexual Selection-General	10:20 AM-Noon	Club South
Session 39: Behavioral Ecology: Orientation	8:00-10:00 AM	Club North
Session 40: Behavioral Ecology: Predation	10:20 AM-Noon	Club North
Session 41: Complementary to Symposium: Mangrove Killifish ...	8:20-11:40 AM	Room 1
Session 42: Neurobiology: Motor Systems and Sensory-Motor Control	8:20 AM-Noon	Room 3
Session 43: Comp to Symp: Novel Methods to Analyze Animal Movement	8:00 AM-Noon	Rooms 6/7
Session 44: Evolutionary Morphology: Macroevo, Biomech, Ecomorphology	8:00-9:40 AM	Room 12
Session 45: Regulation of Reproduction	10:00 AM-Noon	Room 12
Session 46: Education	8:00-10:00 AM	Room 13
Session 47: Behavioral Ecology: Climate & Temperature	10:20 - 11:40 AM	Room 13
Session 48: Metabolism	1:00-3:00 PM	Ballroom B
Session 49: Locomotion: Terrestrial Mechanics and Gaits	1:00-3:00 PM	Ballroom C1
Session 50: Population Ecology	1:00-3:00 PM	Ballroom C2
Session 51: Evo-devo: Invertebrate Morphogenesis	1:00-3:00 PM	Ballroom C3
Session 52: Flight: Insect Control and Sensoriomotor Systems	1:00-2:40 PM	Club South
Session 53: Mating Behavior	1:00-2:40 PM	Club North
Session 54: Evolutionary Morphology: Evolutionary Paleobiology	1:00-2:20 PM	Room 1
Session 55: Neurobiology - Molecular Mechanisms	1:00-2:40 PM	Room 3
Session 56: Aquatic Locomotion: Flapping, Fins, and Flexibility	1:00-2:40 PM	Rooms 6/7
Session 57: Life History Evolution and Hormones	1:20-3:00 PM	Room 12
Session 58: Complementary to Symposium: Modeling Animal Locomotion I	1:00-3:00 PM	Room 13
COMMITTEE & BOARD MEETINGS		
Invert Bio Editors	7:00 AM-8:00 AM	Edisto (ES)
SICB Division Secretaries	Noon-1:00 PM	Room 4
Educational Council	Noon-1:00 PM	Wando (ES)
Student Support Committee	8:00-10:00 PM	Exec Boardrm (ES)
Advisory Committee	8:00 PM	Sebens Suite
BUSINESS MEETINGS		
DCE Meeting	5:15-6:15 PM	Room 1
DVM Meeting	5:15-6:15 PM	Room 6/7
DIZ Meeting	5:15-6:15 PM	Room 8/9
DNB Meeting	5:15-6:15 PM	Room 3
DPCB Meeting	5:15-6:15 PM	Room 10/11
WORKSHOPS AND PROGRAMS		
Public Affairs Workshop	Noon-1:00 PM	Room 14
Experimental Studies of Osmoregulation in Marine/Estuarine Snakes…	8:00 -10:00 PM	Room 12
SOCIAL EVENTS		
SRC Breakfast	6:30-8:00 AM	ES Restaurant
DCE Social	7:30-10:00 PM	Room 4 & Foyer
DCB/DVM/DEDB Social	8:00-10:00 PM	Ballroom Foyer

THURSDAY PROGRAM
SYMPOSIA

7:50 AM-3:00 PM
Ballroom A

Symposium S4: Dispersal of Marine Organisms

Supported by: DEDB, DEE, DIZ, & AMS

Organized by: Vicki Martin, Sara Lindsay

7:50 AM			*Lindsay S; University of Maine*	Introduction to the Symposium
8:00 AM	S4-1.1	DIZ	*Winston JE; Virginia Museum of Natural History*	Dispersal in marine organisms without a pelagic phase
8:30 AM	S4-1.2	DIZ	*Chan KYK, Clay TW, Grünbaum D; University of Washington, Seattle*	Physical constraints on larval swimming and their implications for dispersal
9:00 AM	S4-1.3	DEE	*Thatje S; University of Southampton, Southampton*	Dispersal capabilities, barophysiology and the evolution of Antarctic community structure
9:30 AM BREAK IN EXHIBIT HALL				
10:00 AM	S4-1.4		*Young CM, He R, Emlet RB, Li Y, Qian H, Arellano SM, Van Gaest AL, Bennett K, Smart TI, Wolf M, Rice ME; University of Oregon, North Carolina State University, Smithsonian Marine Station, Ft. Pierce*	Larval life and dispersal potential of deep-sea animals from the Intra-American Seas
10:30 AM	S4-1.5	DIZ	*Schulze A, Maiorova A, Timm LE, Rice ME; Texas A&M University, Galveston, Institute of Marine Biology, Smithsonian Marine Station at Fort Pierce*	Sipunculan larvae and “cosmopolitan” species
11:00 AM	S4-1.6	DPCB	*Bird CE, Timmers MA, Smouse PE, Toonen RJ; University of Hawaii at Manoa, NOAA Honolulu, Rutgers, The State University of New Jersey*	Haplotypes, genetic distance and the inference of dispersal patterns using analysis of molecular variance
NOON LUNCH BREAK				
1:00 PM	S4-2.1		*Levin LA, Becker BJ, Carson HS, Cook GS, Dibacco C, Fodrie FJ, Lope-Duarte PC; Scripps Institution of Oceanography, University of Washington, Tacoma, University of Hawaii, Hilo, McGill University, Bedford Institute of Oceanography, University of North Carolina, Chapel Hill, Rutgers University*	What controls connectivity? A place-based, multi-species approach
1:30 PM	S4-2.2		*Treml EA; University of Queensland, Qld, Australia*	Bridging ecological and evolutionary timescales with spatially-explicit network analysis of marine population connectivity
2:00 PM	S4-2.3		*Sotka EE; College of Charleston*	Selection, dispersal and the geography of phenotype in the sea
2:30 PM				Discussion

8:00 AM-3:00 PM
Rooms 8/9

Symposium S5: New Frontiers from Marine Snakes to Marine Ecosystems

Supported by: DAB, DCPB, DNB, DESB, & DVM

Organized by: Harvey Lillywhite, Francois Brischoux

8:00 AM			*Lillywhite HB; University of Florida, Gainesville*	Introduction to the Symposium
8:05 AM	S5-1.1		*Murphy J; Field Museum of Natural History*	Marine invasions by non-sea snakes, with thoughts on terrestrial-aquatic-marine transitions

8:30 AM	S5-1.2		*Voris HK; Field Museum of Natural History, Chicago*	How a dynamic climate and landscape in Southeast Asia during the neogene directed the evolution and diversification of marine snakes
9:00 AM	S5-1.3	DCPB	*Lillywhite HB, Brischoux F, Sheehy III CM, Pfaller JB; University of Florida, Gainesville, University of Texas at Arlington*	Dehydration and freshwater drinking requirements of marine snakes
9:30 AM	S5-1.4		*Brischoux F, Tingley R, Shine R, Lillywhite HB; CEBC-CNRS, France, University of Sydney, Australia, University of Florida*	Distributional data helps to identify evolutionary challenges: oceanic salinity as a major constraint during the transition to marine life in snakes
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:30 AM	S5-1.5	DEE	*Babonis LS, Brischoux F; University of Hawaii/Kewalo Marine Laboratory, CEBC-CNRS, France*	Perspectives on salt gland evolution in marine snakes
11:00 AM	S5-1.6	DEE	*Heatwole H, Grech A, Monahan J, King S, Marsh H; North Carolina State University, Raleigh, James Cook University, Townsville, Eastern Kentucky University, Richmond*	Ectothermy in the marine environment: new perspectives from the ecology and geography of sea snakes
11:30 AM	S5-1.7		*Tu M-C, Liu Y-L; National Taiwan Normal University*	New perspectives on the extent of terrestriality in three species of sea kraits and their habitat selection
NOON	**LUNCH BREAK**			
1:00 PM	S5-2.1		*Bonnet X; CNRS CEBC France*	Long term field study of sea kraits in New Caledonia: fundamental and conservation issues
1:30 PM	S5-2.2		*Pfaller JB, Frick MG, Brischoux FEO, Sheehy III CM, Lillywhite HB; University of Florida, Gainesville, University of Texas at Arlington*	Ecology of epibiosis: what can we learn from marine reptiles
2:00 PM	S5-2.3		*Sanders KL, Rasmussen AR, De Silva A, Mumpuni NA, Ukuwela DB; University of Adelaide, Australia, Royal Danish Academy of Fine Arts, Denmark, Amphibia and Reptile Research Organisation of Sri Lanka, Museum of Zoology, Bogor*	Ecological innovation and speciation in viviparous sea snakes (Hydrophiinae)
2:30 PM	S5-2.4	DEE	*Sheehy III CM, Lillywhite HB, Pfaller JB; University of Texas at Arlington, University of Florida*	Low genetic diversity across the Pacific Ocean in the pelagic sea snake, *Pelamis platurus*

7:50 AM-3:00 PM
Rooms 10/11

Symposium S6: Comparative Proteomics of Environmental and Pollution Stress

Supported by: DCE, DCPB, & DNB

Organized by: Lars Tomanek

7:50 AM	S6-1.0		*Tomanek L;*	Introduction
8:00 AM	S6-1.1	DCPB	*Dowd WW; Loyola Marymount University*	Experimental contexts and statistical choices: challenges for interpreting the proteomics of environmental stress
8:30 AM	S6-1.2	DCPB	*Rees BB; University New Orleans*	The potential of piscine proteomics: examples from studies with *Fundulus*

9:00 AM	S6-1.3	DCPB	*Adams NL, Campanale JP, Foltz KR; California Polytechnic State University, Scripps Institution of Oceanography, University of California, San Diego, and Santa Barbara*	Damage or defenses: an examination of how the sea urchin proteome changes in response to ultraviolet radiation
9:30 AM	S6-1.4	DCPB	*Cristobal S, Amelina H, Apraiz I*, Bayat N, Danielsson G; Linköping University, Sweden, Stockholm University, Sweden*	Environmental proteomics in pollution assessment
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:30 AM	S6-1.5	DCPB	*Fields PA, Cox K, Karch KR; Franklin & Marshall College*	Latitudinal variation in protein expression in the salt marsh mussel *Geukensia demissa*
11:00 AM	S6-1.6	DCPB	*Tomanek L; California State University, San Luis Obispo*	Environmental stress proteomics of the mussel *Mytilus*
11:30 AM	S6-1.7	DCPB	*Dilly GF, Young CR, Lane WS, Pangalinan J, Girguis PR; Harvard University, Massachusetts Institute of Technology, DOE Joint Genome Institute*	Exploring the limit of metazoan thermal tolerance via comparative proteomics: thermally induced expression shifts in hydrothermal vent polychaetes *P. sulfincola* and *P. palmiformis*
NOON LUNCH BREAK				
1:30 PM	S6-2.1		*Martyniuk CJ, Chown B, Doperalski NJ, Feswick A, Kroll KJ, Spade DS, Barber DS, Denslow ND; University of New Brunswick, University of Florida*	Proteomics as a tool to study neurotoxicity in fish
2:00 PM	S6-2.2		*Silvestre F; University of Namur*	Mechanisms of acclimation to pollutants and elevated temperature in aquatic organisms. Changes of the cellular phenotype revealed by proteomics
2:30 PM	S6-2.3		*Denslow ND, Martyniuk C, Alvarez S, Villeneuve DL, Ankley GT; University of Florida, University of New Bruswick, Donald Danforth Plant Science Center, US EPA, Duluth*	Proteomic expression patterns in fathead minnows exposed to trenbolone and flutamide

THURSDAY PROGRAM
MORNING SESSIONS

8:00-10:00 AM
Ballroom B

Session 30: Energetics

Co-Chairs: Christopher Guglielmo, Victoria Gibbs

8:00 AM	30.1	DCPB	*Guglielmo CG, Gerson AR; University of Western Ontario*	The effects of high carbohydrate versus high protein diet on body composition, endurance flight capacity and fuel mixture in a migratory songbird
8:20 AM	30.2	DCPB	*Contreras HL, Davidowitz G; University of Arizona*	The effect of nectar sugar concentration on the specific dynamic action of the hawkmoth *Manduca sexta*
8:40 AM	30.3	DCPB	*Anderson RA, Karasov WH, Nagy KA; Western Washington University, University Wisconsin, Madison, University California, Los Angeles*	Ecological cost of growth in a free-ranging lizard
9:00 AM	30.4	DCPB	*Jackson AGS, Hicks JW; University of California, Irvine*	Energetics of reproduction in the oviparous squamate, *Lamprophis fuliginosus*
9:20 AM	30.5	DCPB	*Powers DR, Friesen CR, Mason RT, Michaelson JB; George Fox University, Oregon State University*	The energetic cost of courtship in male vs. female red-sided garter snakes (*Thamnophis sirtalis parietalis*)

9:40 AM	30.6		*Tavoni S, Champagne C, Houser D, Crocker D; Sonoma State University, University of California, Santa Cruz, National Marine Mammal Foundation*	Lactate turnover and glucose production in free-ranging northern elephant seal pups *Mirounga angustirostris*

10:00 AM BREAK IN EXHIBIT HALL

10:20 -11:40 AM
Ballroom B

Session 31: Digestion

Co-Chairs: Christopher Guglielmo, Victoria Gibbs

10:20 AM	31.1	DCPB	*Gibbs VK, Cunningham AC, Watts SA; University of Alabama at Birmingham*	Enigma of the sea urchin gut: abiotic and biotic conditions influence form and function
10:40 AM	31.2	DCPB	*Price ER, Ruff L, Guerra A, Karasov WH; University of Wisconsin - Madison*	Mice increase reliance on paracellular intestinal absorption in response to increased energy demand
11:00 AM	31.3	DEE	*Borchert JD, Rusch T, Angilletta M; Arizona State University*	Variation in assimilation rate among populations of *Sceloporus* lizards at constant and fluctuating temperatures
11:20 AM	31.4	DCPB	*Kline LW, Karpinski E; University of Alberta, Edmonton*	The flavone, chrysin, relaxes cholecystokini or KCl-induced tension in male guinea pig gallbladder strips through multiple signaling pathways

8:00-10:00 AM
Ballroom C1

Session 32: Form and Function: Feeding

Chair: David Collar

8:00 AM	32.1	DVM	*Mehta RS, Pollard RE; University of California, Santa Cruz, and Davis*	Morays de-couple feeding and respiration via a parabranchial pouch
8:20 AM	32.2	DVM	*Dean M, Huber D, Goo B, Danos N, Shimada K, Summers A; MPI, UT, UCI, DePaul, FHL/UW*	On the jaws of lamniform sharks
8:40 AM	32.3	DCB	*Gidmark NJ, Tarrant JC, Brainerd EL; Brown University*	Pharyngeal jaw function in three cyprinid fishes
9:00 AM	32.4	DVM	*Geerinckx T, Huysseune A, Boone M, Claeys M, Couvreur M, De Kegel B, Mast P, Van Hoorebeke L, Verbeken K, Adriaens D; Ghent University*	Soft dentin results in unique, naturally bendable teeth in scraping catfish
9:20 AM	32.5	DVM	*Collar D, Mehta R, Revell L, Alfaro M, Wainwright P; University California, Santa Cruz, University Massachusetts, Boston, University California, Los Angeles, University California, Davis*	Does feeding mode constrain diversification of the skull in elopomorph fishes?
9:40 AM	32.6	DVM	*McGee MD, Wainwright PC; University of California, Davis*	Divergence in the functional morphology and feeding kinematics of threespine stickleback

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Ballroom C1

Session 33: Ecomorphology: Aquatic Locomotion and Body Shape

Chair: Christofer Clemente

10:20 AM	33.1	DCB	*Clemente CJ, Richards CT; Harvard University*	Limitations to swimming speed in drag based aquatic systems
10:40 AM	33.2	DVM	*Kane EA, Higham TE; University of California, Riverside*	How sculpin pectoral fin morphology changes with demand across habitat transitions

11:00 AM	33.3	DVM	*Blob RW, Kawano SM, Moody KN, Burchfield HJ, Maie T, Ptacek MP, Schoenfuss HL; Clemson University, St. Cloud State University*	Environmentally correlated divergence in morphology and climbing performance in waterfall-climbing fish from Hawai'i and Kaua'
11:20 AM	33.4	DVM	*Rivera G, Davis JN, Godwin JC, Adams DC; Iowa State University, Tuskegee University, Alabama Natural Heritage Program*	Parallel evolution of shape divergence in the shells of freshwater turtles inhabiting different flow regimes
11:40 AM	33.5	DVM	*Reynaga CM, Collar DC, Ward AB, Mehta RS; University of California, Santa Cruz, Adelphi University*	A revised metric to quantify body shape diversity in vertebrates

8:00-9:40 AM
Ballroom C2

Session 34: Biodiversity and Biogeography I

Chair: Don Munson

8:00 AM	34.1		*Munson DA; Washington College, Chestertown, MD*	The distribution of *Acanthamoeba spp.* in marine sediments from Great Sound, Bermuda
8:20 AM	34.2	DIZ	*Garey JR, Wu T, Ayres E, Bardgett RD, Wall DH; University of South Florida, Colorado State University, Lancaster University, Colorado State University*	The global distribution and diversity of soil invertebrates
8:40 AM	34.3	DEE	*Berke SK, Jablonski D, Krug AZ; University of Chicago*	Do clams of a feather arise together? Evolutionary dynamics, latitudinal gradients, and the global deployment of bivalve life habits
9:00 AM	34.4		*Gong SY, Tsukimura B; California State University Fresno*	Environmental effects on native and non-native copepod populations in San Francisco Bay
9:20 AM	34.5	DEE	*Diamond SE, Sorger DM, Hulcr J, Pelini SL, Sanders NJ, Ellison AM, Gotelli NJ, Dunn RR; North Carolina State University, Harvard Forest, University of Tennessee, University of Vermont*	Predicting regional and global responses of ants to climate change

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon
Ballroom C2

Session 35: Biodiversity and Biogeography II: Symbiosis

Chair: Michael Sears

10:00 AM	35.1	DEE	*Helmuth B, Kearney MR, Matzelle A; University of South Carolina, Columbia, University of Melbourne, Victoria*	Forecasting the sublethal impacts of climate change: no more lizard lovin' and mussel beaches?
10:20 AM	35.2	DIZ	*Meyer EL, Matzke NJ, Williams S; University of California, Berkeley*	Novel remote sensing technique assesses intertidal habitat and reveals population expansion of West Indian topshell
10:40 AM	35.3		*Brown A, Thatje S; University of Southampton*	Respiratory response of the deep-sea amphipod *Stephonyx biscayensis* indicates bathymetric range limitation by temperature and hydrostatic pressure
11:00 AM	35.4	DEE	*Wethey DS, Woodin SA, Hilbish TJ, Lima FP, Jones SJ; University South Carolina, Columbia, CIBIO, University Porto, Portugal, NOAA, Washington DC*	Extreme events and biogeography of range boundaries in the European intertidal
11:20 AM	35.5	DEE	*Dillon ME, Frazier MR; University of Wyoming, Laramie, US EPA, Western Ecology Division*	Development time, seasonality, and body size clines in insects: a general explanation?

11:40 AM	35.6	DEE	*Sears MW, Angilletta MJ, Buckley LB; Bryn Mawr College, Arizona State University, University of North Carolina-Chapel Hill*	Responses of species to climate change: the role of thermal adaptation of thermal reaction norms

8:00-11:40 AM
Ballroom C3

Session 36: Complementary to Symposium: Developmental Plasticity & Evolutionary Innovation

Co-Chairs: Richard Palmer, Diane Adams

8:00 AM	36.1	DEDB	*Pires Da Silva A; University of Texas at Arlington*	Sex determination in a nematode that produces males, females and hermaphrodites
8:20 AM	36.2	DEDB	*Adams DK, Sewell MA, Nowakowski NM, Angerer LM; National Institutes of Health, University of Auckland, New Zealand, American University, Washington, DC*	Mechanism underlying developmental plasticity in echinoid larval form
8:40 AM	36.3	DEE	*Hahn DA, Clemmensen SF; University of Florida, University of Tennessee*	Indian summer: photoperiod alters thermally induced plasticity in life history and morphological traits
9:00 AM	36.4	DIZ	*Schwab DB, Allen JD; College of William and Mary*	Maternal size effects on reproduction and development in the mud snail, *Ilyanassa obsoleta*
9:20 AM	36.5		*Vrana PB; University of South Carolina*	Disruption of developmental & epigenetic programs in peromyscus hybrids
9:40 AM	**BREAK IN EXHIBIT HALL**			
10:20 AM	36.6		*Prakash M; Stanford University*	Hydraulic stress induced bubble nucleation and growth during pupal metamorphosis
10:40 AM	36.7	DVM	*Rose CS, James B; James Madison University*	Plasticity of lung development in frogs
11:00 AM	36.8	DEDB	*Palmer AR; University of Alberta*	Developmental plasticity and the origin of novel forms: unveiling of cryptic genetic variation via 'use and disuse'
11:20 AM	36.9	DCPB	*McLeod L, Cacciatore C, Lupica N, Lutton BV*; Endicott College*	Novel insights into stem cell activity and angiogenesis from an elasmobranch, *Leucoraja erinacea*

8:00-10:00 AM
Club South

Session 37: Sexual Selection in Herps

Co-Chairs: Michele Johnson, Bieke Vanhooydonck

8:00 AM	37.1		*Duryea MC, Kern AD, Cox RM, Calsbeek RG; Dartmouth College, Rutgers University, University of Virginia*	Approximate Bayesian analysis of sire precedence reveals first-male advantage in the brown anole lizard (Anolis sagrei)
8:20 AM	37.2	DEE	*Huyghe K, San-Jose LM, Peñalver AM, Fitze PS; University of Antwerp, Belgium, CSIC-MNCN, Spain, UNIL, Switzerland*	The lizard's tail: size matters! Determinants of mating success in the common lizard
8:40 AM	37.3		*Friesen CR, Estes S, Mason RT; Oregon State University, Portland State University*	Snake sex in the city or the country? Different mating aggregation densities generate asymmetry in postcopulatory sexual selection in two populations of red-sided garter snakes
9:00 AM	37.4	DEE	*Vanhooydonck B, Herrel A; University of Antwerp, Belgium, National Museum of Natural History, France*	The growing dewlap - comparing growth trajectories in sexually and naturally selected traits in male and female *Anolis baracoae*
9:20 AM	37.5	DEE	*Johnson MA, Sanger TJ, Sparks MN, Losos JB; Trinity University, Harvard University*	Sexual dimorphisms in *Anolis* lizard behavior and morphology: the result of niche partitioning or sexual selection?

9:40 AM	37.6	DEE	*Twomey E, Summers K; East Carolina University*	Sexual selection in the mimic poison frog *Ranitomeya imitator*

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Club South

Session 38: Sexual Selection-General

Co-Chairs: Mary Hart, Maren Vitousek

10:20 AM	38.1	DAB	*McCullough E, Weingarden P, Emlen D, Tobalske B; University of Montana*	Elaborate weapons: the costs of producing and carrying horns in a giant rhinoceros beetle
10:40 AM	38.2	DEE	*Wilson RS; The University of Queensland*	Bigger is better in all environments: temperature-induced variation in phallus size is a reliable indicator of male physical performance and gamete quality
11:00 AM	38.3		*Hill GE; Auburn University*	Condition-dependent display traits as signals of the functionality of vital cellular processes
11:20 AM	38.4	DEE	*Vitousek MN, Stewart RA, Safran RJ; University of Colorado, Boulder, Indiana University*	Signal color drives seasonal oxidative stress and testosterone profiles in a songbird.
11:40 AM	38.5		*Hart MK; University of Kentucky, Lexington*	Flexible sex allocation in a group-living simultaneous hermaphrodite

8:00-10:00 AM
Club North

Session 39: Behavioral Ecology: Orientation

Chair: Alan Harvey

8:00 AM	39.1	DAB	*Lohmann KJ, Putman NF, Lohmann CMF; University of North Carolina at Chapel Hill*	Navigating the Atlantic Ocean with geomagnetic markers: an inherited magnetic map in hatchling loggerhead sea turtles
8:20 AM	39.2	DIZ	*Huang H-D, Wu C-H, Liu HC; National Museum of Natural Science, Taiwan, National Chung-Hsing University, Taiwan, Providence University, Taiwan*	Magnetic orientation for larval release migration by the land crab *Metasesarma aubryi* in Kenting National Park, southern Taiwan
8:40 AM	39.3	DAB	*Painter MS, Dommer DH, Gnirke M, Tran D, Moore B, Phillips JB; Virginia Tech*	Characterizing the light-dependent magnetic compass of *Drosophila melanogaster*
9:00 AM	39.4		*Harvey A, Whitford G, Delorenzo S; Georgia Southern University, Statesboro*	Hunger-mediated phototaxis in adult brine shrimp
9:20 AM	39.5	DAB	*Shields VDC, Sanford JL, Otalora-Luna F, Dickens JC; Towson University, Instituto Venezolano de Investigaciones Cientificas, USDA, Beltsville Agricultural Research Center*	Do you see what i see?: visual orientation behavior of Colorado potato beetle larvae to emissive colors
9:40 AM	39.6	DAB	*Sprayberry JDH, Riffell JA; Muhlenberg College, University Washington*	Impacts of non-insecticidal agricultural chemicals on olfactory behaviors in bumblebees

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Club North

Session 40: Behavioral Ecology: Predation

Chair: Tracy Langkilde

10:20 AM	40.1		*Jooste E, Swanepoel LH, Pitman RT, Van Hoven W; University of Pretoria, South Africa, University of Plymouth, UK*	Unusually high predation on Chacma baboons (*Papio ursinus*) by female leopards (*Panthera pardus*) in the Waterberg Mountains, South Africa

10:40 AM	40.2		*Steffenson MM, Formanowicz DR; University of Texas at Arlington*	Predation ability in the wolf spider *Hogna helluo*
11:00 AM	40.3	DAB	*Larabee FJ, Suarez AV; University of Illinois, Urbana-Champaign*	Evolutionary co-option of trap-jaw ant mandible strikes: defensive interactions with antlions
11:20 AM	40.4	DEE	*Langkilde T, Freidenfelds NA, Robbins TR; Penn State University*	Evading invaders: adaptive significance of a behavioral response
11:40 AM	40.5		*Samuni-Blank M, Izhaki I, Dearing MD, Arad Z; Technion, Israel, University of Haifa, Israel, University of Utah, Salt Lake City*	From a seed predator to a high-quality seed disperser: the tale of *Acomys cahirinus* and *Ochradenus baccatus*

8:20-11:40 AM
Room 1

Session 41: Complementary to Symposium: Mangrove Killifish & Integrative Biology

Co-Chairs: David Bechler, Miriam Ashley-Ross

8:20 AM	41.1		*Currie S, Fuller A, Earley RL, Cooper C, Reagan K, Taylor DS, Wright PA; Mount Allison University, University of Alabama, Tuscaloosa, University of Guelph, Canada, Brevard County Environmentally Endangered Lands Program*	Wild but not angry - mangrove rivulus *Kryptolebias marmoratus* captured from crab burrows in the field show little sign of aggression
8:40 AM	41.2	DAB	*Perlman BM, Ashley-Ross MA, Gibb AC, Earley RL; Wake Forest University, Northern Arizona University, University of Alabama*	Flipping out: jumping performance of mangrove rivulus (*Kryptolebias marmoratus*) from different geographic locations
9:00 AM	41.3	DCE	*Hanninen AF, Davis AG, Lee EA, Wong SC, Earley RL; University of Alabama*	Endocrine and life history plasticity in an amphibious fish
9:20 AM	41.4		*Turko A, Cooper C, Wright P; University of Guelph*	Terrestrially induced gill remodelling reduces the aquatic respiratory function of *Kryptolebias marmoratus*
9:40 AM	**BREAK IN EXHIBIT HALL**			
10:20 AM	41.6		*Bernhardt L, Bechler DL, Ring BC, Elder JF; Valdosta State University*	The impact of color on egg laying rates and outcrossing of *Kryptolebias marmoratus*
10:40 AM	41.7	DAB	*Garcia MJ, Stanley S, Vaughn S, Earley RL, Taylor DS; University of Alabama, Brevard County Environmentally Endangered Lands Program*	Evidence for local adaptation of life history traits in the mangrove rivulus (*Kryptolebias marmoratus*)
11:00 AM	41.8		*Stanley SG, Garcia MJ, Vaughn S, Taylor DS, Earley RL; University of Alabama, Tuscaloosa, Brevard County Environmentally Endangered Lands Program, Melbourne, Florida*	Going to great lengths: population and genotypic effects on growth and development in the mangrove rivulus
11:20 AM	41.9		*Fuller AB, Hanninen AF, Robinson S, Lenox A, Earley RL; University of Alabama, Tuscaloosa*	Social context and behavioral plasticity in the mangrove rivulus (*Kryptolebias marmoratus*)

8:20-11:40 AM
Room 3

Session 42: Neurobiology: Motor Systems and Sensory-Motor Control

Chair: Duane McPherson

8:20 AM	42.1	DCB	*Lin H, Ros IG, Biewener AA; Harvard University*	A bird's eye view of path planning: is there a simple rule for flying in a cluttered environment?

8:40 AM	42.2	DCB	*Fechko AS, Hinterwirth AJ, Daniel TL; University of Washington*	Gaining insight: visual feedback control in the hawkmoth *Manduca sexta*
9:00 AM	42.3	DAB	*Van Breugel F, Dickinson M; California Institute of Technology, University of Washington*	Flight decisions: target orientation, landing, and obstacle avoidance in fruit flies
9:20 AM	42.4	DNB	*Chung BP, Linan-Velez G, Cattaert D, Edwards DH; Georgia State University, University of Bordeaux 1*	A hybrid neuromechanical system for studying reflex reversal in crayfish
9:40 AM	42.5	DCB	*Gutmann AK; University of Moscow, ID*	A mechanical basis for bilateral deficit and facilitation
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:20 AM	42.6	DNB	*Tahir U, Edwards DH; Georgia State University*	Suppression of inappropriate reflexes during centrally commanded movements
10:40 AM	42.7		*Bielecki J, Garm A; University of Copenhagen*	Swim pacemaker response to bath applied neurotransmitters in the box jellyfish *Tripedalia cystophora* rhopalium
11:00 AM	42.8	DNB	*Eichinger JM, Satterlie RA; University of North Carolina Wilmington*	Turning mechanisms in cubomedusae
11:20 AM	42.9	DVM	*Liu Y-C, Hale ME; University Chicago*	Activity of Mauthner cells and their serial homologues during alternative startles in larval zebrafish

8:00-11:40 AM
Rooms 6/7

Session 43: Complementary to Symposium: Novel Methods to Analyze Animal Movement

Co-Chairs: Nicolai Konow, Gordon Berman

8:00 AM	43.1	DCB	*Konow N, Roberts TJ; Brown University*	Does extended training alter the operating length of leg extensor muscles?
8:20 AM	43.2	DCB	*Bergou AJ, Franck J, Reimnitz L, Riskin D, Taubin G, Swartz S, Breuer K; Brown University*	Inertial and fluid forces during bat flight maneuvers
8:40 AM	43.3		*Prakash M, Donald K; Stanford University*	Flying in two dimensions
9:00 AM	43.4	DAB	*Zabala FA, Dickinson MH; University of Washington*	Vision-based altitude control in freely flying Drosophila
9:20 AM	43.5	DAB	*Bowlin MS, Enstrom DA, Cochran WW, Cochran J; University of Michgan-Dearborn, Illinois Natural History Survey, JDJC Corporation*	Migration in three dimensions: flight altitudes of small migratory birds
9:40 AM	43.6	DNB	*Rastogi A, Rani S, Kumar V*; University of Lucknow, University of Delhi*	Phase inversion in neural activity of the sensory systems but not the putative biological clock parallels behavioral shift during migration in a night-migratory songbird
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:20 AM	43.7	DCB	*Beatus T, Ristroph LG, Morozova S, Iams SM, Wang ZJ, Guckenheimer JM, Cohen I; Cornell University*	Rock and roll - how do flies recover from aerial stumbles?
10:40 AM	43.8	DCB	*Gravish N, Saldana L, Jankovsky N, Goodisman MAD, Goldman DI; Georgia Tech*	Climbing and falling in confined environments
11:00 AM	43.9	DIZ	*Dorgan KM, Rouse G; Scripps Institution of Oceanography*	Peristaltic burrowing in beach sands by the polychaete *Thoracophelia mucronata*

11:20 AM	43.10		*Landler L, Von Oheimb PV; Virginia Tech, Natural History Museum of Vienna, Austria, Department of Animal Ecology and Systematics, Germany*	Y-axis orientation in South American freshwater snails (*Chilina* spp.)

8:00-9:40 AM
Room 12

Session 44: Evolutionary Morphology: Macroevolution, Biomechanics, Ecomorphology

Chair: Herrel Whitcombe

8:00 AM	44.1		*Whitcome KK, O'Connor JP, Lopez J, Miller EE, Burns JL; University of Cincinnati, Harvard University*	Effect of pelvic rotation on stride length: redefining the human obstetrical dilemma
8:20 AM	44.2		*Sherratt E, Wilkinson M, Gower DJ, Klingenberg CP; Harvard University, The Natural History Museum, UK, The University of Manchester, UK*	Evolution of cranial modularity in caecilians
8:40 AM	44.3	DVM	*Olsen AM, Westneat MW; University of Chicago, Field Museum of Natural History*	Beyond the beak: modeling avian cranial kinesis and the evolution of bird skull shapes
9:00 AM	44.4	DVM	*Herrel A, Cornette R; Département d'Ecologie et de Gestion de la Biodiversité, France, Origine, Structure et Evolution de la Biodiversité (OSEB), France*	The evolution of form and function in the greater white-toothed shrew
9:20 AM	44.5	DVM	*Dial TR, Heers AM, Tobalske BW; Brown University, University of Montana*	Ontogeny of aerodynamics in Mallard ducks: comparative performance and developmental implications

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon
Room 12

Session 45: Regulation of Reproduction

Co-Chairs: Kristin Navara, Stacia Sower

10:00 AM	45.1		*Albergotti LC, Hamlin HJ, McCoy MW, Kohno S, Guillette, Jr. LJ; University of Florida, Gainesville, University of Maine, Orono, Medical University of South Carolina*	Steroidogenesis and steroid hormone signaling in the chorioallantoic membrane of the domestic chicken (*Gallus gallus*), the American alligator (*Alligator mississippiensis*), and the Florida red-belly slider turtle (*Pseudemys nelsoni*)
10:20 AM	45.2	DCE	*Rosen O, Manor R, Weil S, Aflalo ED, Abdu U, Sagi A; Ben Gurion University of the Negev*	The identification of *Cq-MAG*, a novel androgenic gland-specific gene encoding a putative crustacean membrane-anchored protein
10:40 AM	45.3	DCE	*Kumar S, Ganji PCN, Song H, Von Kalm L, Borst DW; University of Central Florida*	siRNA-mediated down-regulation of hexamerins suppresses reproduction and feeding in the lubber grasshopper *Romalea microptera*
11:00 AM	45.4	DCE	*Sower S, Osugi T, Daukss D, Gazda K, Ubuka T, Kosugi T, Tsutsui K; University New Hampshire, Waseda University, Japan*	Evolutionary origin of Gonadotropin-Inhibitory Hormone (GnIH): isolation, localization and biological activity of lamprey GnIH ortholog
11:20 AM	45.5	DCE	*Connolly MH, Dutkosky RM, Heah TP, Sayler GS, Henry TB; University of Tennessee, Knoxville*	Vitellogenin gene expression is correlated with stage 2 oogenesis in zebrafish (*Danio rerio*)
11:40 AM	45.6	DCE	*Anderson EM, Navara KJ; University of Georgia, Athens*	Hormone content of rooster seminal plasma and effects on sperm quality and fertility

8:00-10:00 AM
Room 13

Session 46: Education

Chair: Sean Walker

8:00 AM	46.1	DEE	*Walker SE, Moon HS, Hoese WJ, Bonsangue MV, Zacherl DC, Burnaford JL, Read E, Filowitz M; California State University, Fullerton*	Supplemental instruction and student success in an introductory biology course
8:20 AM	46.2	DAB	*Vieyra ML, Gilmore JA; University of South Carolina Aiken, University of Texas Austin*	Involving underrepresented groups in undergraduate research: a case for required participation
8:40 AM	46.3		*Wilkinson KC, Uyeno TA, Nelson R; Northern Arizona University*	An economical and open-source particle image velocimetry instrument for use in a secondary and higher education setting
9:00 AM	46.4	DCPB	*Kerkhoff AJ, Gillen CM, Hartlaub BA, Holdener JA, Itagaki H; Kenyon College*	The mathematical biology of metabolic scaling: using a model insect as the basis for interdisciplinary undergraduate science training and research
9:20 AM	46.5	DEE	*Gadani AP, Alfaro M; University of California, Los Angeles*	All I ever learned about macroevolution I learned in fifth grade
9:40 AM	46.6	DIZ	*Iyengar EV; Muhlenberg College*	Writing across the curriculum: explorations in nature and first year seminars

10:20 - 11:40 AM
Room 13

Session 47: Behavioral Ecology: Climate & Temperature

Chair: Robert Mauck

10:20 AM	47.1	DEE	*Mauck RA, Huntington CE, Doherty, Jr. PF; Kenyon College, Bowdoin College, Colorado State University*	Climate, weather, and a long-lived seabird: what can fifty years of data tell us?
10:40 AM	47.2	DAB	*Muñoz MM, Stimola M, Landestoy MA, Conover A, Rodriguez AJ, Losos JB; Harvard University, Columbia University, University of California, Davis*	Behavioral and physiological mechanisms of thermal adaptation in a diverse clade of *Anolis* lizards
11:00 AM	47.3	DAB	*Kaiser SA, Webster MS, Sillett TS; Cornell University, Ithaca, Smithsonian Migratory Bird Center, Washington, DC*	Population-level variation in endogenous testosterone, mating and paternal effort across an elevation gradient
11:20 AM	47.4	DEE	*Aldredge RA, Sockman KW; University of North Carolina at Chapel Hill*	Egg pigmentation varies with laying order and differs in populations at different latitudes

THURSDAY PROGRAM
AFTERNOON SESSIONS

1:00-3:00 PM
Ballroom B

Session 48: Metabolism

Co-Chairs: David Swanson, Mark Meade

1:00 PM	48.1	DCPB	*Swanson DL, Thomas NE; University of South Dakota, Vermillion, Shippensburg University*	Are intraspecific correlations between minimum and maximum metabolic output in birds consistent with the aerobic capacity model for the evolution of endothermy?
1:20 PM	48.2	DCPB	*Callier V; Arizona State University*	A mechanism for metabolic scaling in insects
1:40 PM	48.3	DCPB	*Goessling JM, Lutterschmidt WI, Reinert HK, Odum RA; Sam Houston State University, Texas Research Institute for Environmental Studies, The College of New Jersey, Toledo Zoological Society*	Comparative metabolic rate and assimilation between an endemic rattlesnake and an invasive boa: implications for invasive species success

2:00 PM	48.4	DCPB	*Petit M, Vezina F; Université du Québec à Rimouski, Canada*	Do body composition drives winter variations of metabolic performance in black-capped chickadees (*Poecile atricapillus*)?
2:20 PM	48.5		*Meade ME, Romano F, Sewell S; Jacksonville State University*	Metabolic rates of an aquatic tardigrade, *Dactylobiotus nuovo* species
2:40 PM	48.6	DCPB	*Cordle ME, Meade ME, Nichols A; Jacksonville State University*	Metabolic physiology of the stream minnow, *Campostoma oligolepis*, inhabiting a polluted stream

1:00-3:00 PM
Ballroom C1

Session 49: Locomotion: Terrestrial Mechanics and Gaits

Chair: John Bertram

1:00 PM	49.1	DCB	*Bertram JEA, Hasaneini SJ; University of Calgary*	What are walking and running, and why? Modeling optimization tested against gravity manipulation
1:20 PM	49.2	DCB	*Hubel TY, Usherwood J; Royal Veterinary College, UK*	Walking in children - the story of an additional gait
2:00 PM	49.4	DCB	*Miller CE, Granatosky MC, O'Neill MC, Bishop KL, Schmitt D; Duke, Stony Brook University, Florida International University*	Center of mass mechanics in the squirrel monkey *Saimiri sciureus*
2:20 PM	49.5	DCB	*Wilshin SD, Haynes GC, Porteous J, Spence AJ; Royal Veterinary College, University of Pennsylvannia*	Describing gait transitions and the role of symmetry in control
2:40 PM	49.6	DCB	*Moore TY, Cooper KL, Biewener AA; Harvard Concord Field Station, Harvard Medical School*	Gait transitions independent of speed in Lesser Egyptian jerboa

1:00-3:00 PM
Ballroom C2

Session 50: Population Ecology

Chair: Sandra Gilchrist

1:00 PM	50.1		*Metts BS, Buhlmann KA, Scott DE, Tuberville TD, Hopkins WA; Savannah River Ecology Lab, Virginia Tech*	Maternal transfer of contaminants and its effect on reproduction and embryonic development in southern toads (*Bufo terrestris*)
1:20 PM	50.2		*Walling KM, Carrera JV, Cody JC, Tan LT, Connelly SJ*; Rochester Institute of Technology*	The photoprotective properties of vitamin D in *Daphnia* spp.
1:40 PM	50.3	DEE	*Zohdy S, Kemp AD, Durden LA, Wright PC, Jernvall J; University of Helsinki, University of Texas, Austin, Georgia Southern University, Statesboro, Stony Brook University, Long Island*	Mapping the social network: tracking lice in a wild primate population (*Microcebus rufus*) to infer social contacts and vector potential
2:00 PM	50.4		*Scott DE, Metts BS; UGA/SREL, Aiken, SC*	Shifts in an isolated wetland salamander community over 30 yrs: has climate change altered wetland hydrology?
2:20 PM	50.5	DEE	*Nunziata SO, Lance SL, Scott DE; University of Georgia, Savannah River Ecology Lab*	Genetic and demographic patterns of populations of *Ambystoma opacum*
2:40 PM	50.6	DEE	*Wakeling SR, Santana FE, Clark RW; University of Nevada, Reno , San Diego State University*	Tadpole photo mark-recapture in critically endangered *Rana Muscosa*

1:00-3:00 PM
Ballroom C3

Session 51: Evo-devo: Invertebrate Morphogenesis

Chair: Leslie Babonis

1:00 PM	51.1	DEDB	*Babonis LS, Martindale MQ; University of Hawaii/Kewalo Marine Laboratory*	Cnidocyte development in *Nematostella vectensis*: a model for terminal cell differentiation
1:20 PM	51.2	DEDB	*Farrar N, Ludeman D, Leys S; University of Alberta*	Evidence for a functional sensory system in sponges
1:40 PM	51.3	DEDB	*Smith FW, Tenlen JR, Goldstein B, Jockusch EL; University of Connecticut, University of North Carolina*	Development of *Hypsibius dujardini* (Tardigrada) lobopodal appendages and the origin of the arthropod appendage
2:00 PM	51.4	DEDB	*Amiel A, Henry JQ, Seaver EC*; University of Hawaii, University of Illinios*	Blastomere deletions reveal organizing activity in the polychaete annelid *Capitella teleta*
2:20 PM	51.5	DEDB	*Zattara EE, Bely AE; University of Maryland, College Park*	A modern view of annelid “neoblasts” live 4D imaging reveals widespread cell migration during annelid regeneration
2:40 PM	51.6	DEDB	*Ozpolat BD, Zattara EE, Bely AE; University of Maryland, College Park*	*piwi* expression during regeneration in the annelid *Pristina leidyi*

1:00-2:40 PM
Club South

Session 52: Flight: Insect Control and Sensoriomotor Systems

Chair: Simon Sponberg

1:00 PM	52.1	DCB	*Dickerson BH, Daniel TL, Riffell JA; University of Washington*	Shaken, not static: multimodal processing in the antenna of the hawkmoth *Manduca sexta*
1:20 PM	52.2	DCB	*Sponberg S, Fairhall AL, Daniel TL; University of Washington*	Extracting within-stroke features of torque reveals how power muscles combine to act as a motor control channel
1:40 PM	52.3	DCB	*Windsor SP, Bomphrey RJ, Taylor GK; University of Oxford*	Flight control sensorimotor response in the hawk moth *Hyles lineata*
2:00 PM	52.4		*Walker SM, Taylor GK; University of Oxford, UK*	The control of saccades in hoverflies
2:20 PM	52.5	DCB	*Fernandez MJ, Guo M, Hedrick TL; University of North Carolina at Chapel Hill*	Load lifting with asymmetric wings in the hawkmoth (*Manduca sexta*)

1:00-2:40 PM
Club North

Session 53: Mating Behavior

Chair: Simon Lailvaux

1:00 PM	53.1	DEE	*Shenoy K, Toyoda JH; University of Kentucky*	Latent effects of embryonic exposure to atrazine on mating behaviors in guppies
1:20 PM	53.2	DAB	*Moseley DL; University of Massachusetts Amherst*	Female preferences are influenced by early experience and male vocal performance
1:40 PM	53.3	DAB	*Tudor MS, Morris MR; University of Florida, Ohio University*	Frequencies of alternative mating strategies influence female mate preference in the swordtail Xiphophorus multilineatus
2:00 PM	53.4	DCE	*Dickens MJ, Cornil CA, Balthazart J; University of Liege*	Female perception of male mate as a stressor may depend on sexual experience
2:20 PM	53.5	DEE	*Lailvaux SP, Bariya P; University of New Orleans*	Performance, female choice and sexual conflict in crickets
2:40 PM	53.6	DEE	*Fedorka K, Radhakrishnan P; University of Central Florida*	Immune activation influences sperm viability and female sperm storage in Drosophila melanogaster

1:00-2:20 PM
Room 1

Session 54: Evolutionary Morphology: Evolutionary Paleobiology

Chair: John Vandenbrooks

1:00 PM	54.1	DPCB	*Vandenbrooks JM, Munoz EE, Weed MD, Harrison JF; Arizona State University, Penn State University*	Developmental and fossil evidence that changes in atmospheric oxygen drove historical patterns in insect body size
1:20 PM	54.2	DVM	*Carney RM, Vinther J, Shawkey MD, D'Alba L, Ackermann J; Brown University, University of Texas, Austin, University of Akron, Carl Zeiss NTS GmbH*	Back in black: new evidence on the color, ultrastructure, and nature of the isolated *Archaeopteryx* fossil feather
1:40 PM	54.3		*Geist NR, Hillenius WJ*, Frey E, Jones TD, Elgin RA; Sonoma State University, College of Charleston, Staatl. Mus. Naturkunde Karlsruhe, Cal. State University Stanislaus*	Breathing in a box: constraints on lung ventilation in giant pterosaurs
2:00 PM	54.4	DVM	*Smith A, Corfe I, Jernvall J, Hakkinen T, Gill P; University of Massachusetts, Amherst, University of Helsinki, Finland, University of Bristol, UK*	The developmental basis of 200 million year old mammal teeth

1:00-2:40 PM
Room 3

Session 55: Neurobiology - Molecular Mechanisms

Chair: Thomas Heinbockel

1:00 PM	55.1	DVM	*Satterlie R; University of North Carolina Wilmington*	FMRFamide immunoreactivity and the diffuse nerve net of scyphozoan and cubozoan jellyfish
1:20 PM	55.2	DCB	*Mekdara NT, Choudhury S, Mekdara PJ, Berg O, Goto JJ, Muller UK; California State University of Fresno*	The role of glutamate in insect locomotion: a glutamate agonist causes hyperactivity and loss of climbing ability in adult fruit flies
1:40 PM	55.4		*Garrett SC, Rosenthal JJC; University of Puerto Rico, Institute of Neurobiology*	RNA editing underlies temperature adaptation in K
2:00 PM	55.5	DNB	*Heinbockel T, Wang Z-J, Sun L; Howard University College of Medicine, Washington, DC*	Cannabinoid receptor-mediated regulation of neuronal activity and signaling in glomeruli of the main olfactory bulb
2:20 PM	55.6	DNB	*Rosenthal JJC, Correa RA, Palavicini JP; Institute of Neurobiology, University of Puerto Rico/RCM*	The squid nervous system expresses novel RNA editing enzymes

1:00-2:40 PM
Rooms 6/7

Session 56: Aquatic Locomotion: Flapping, Fins, and Flexibility

Chair: Brett Szymik

1:00 PM	56.1	DCB	*Blevins EL, Macesic LM, Mulvaney D; Harvard University, Mount Holyoke College, Florida Atlantic University*	Synchronized swimming: coordination of pelvic and pectoral fins during augmented punting in stingrays
1:20 PM	56.2	DCB	*Szymik BG, Satterlie RA; Longwood University, University of North Carolina at Wilmington*	Gait selection in a pteropod mollusk? Examining the kinematics of *Clione limacina*'s swimming for evidence of a gait change
1:40 PM	56.3	DCB	*Wigton RA, Krueger PS, Bartol IK; Old Dominion University, Southern Methodist University*	Maneuverability and agility in cuttlefish *Sepia pharaonis* and *Sepia bandensis*
2:00 PM	56.4		*Jagnandan K, Sanford CP; Hofstra University*	Ribbon fin kinematics in the bowfin, *Amia calva*
2:20 PM	56.5	DCB	*Shelton RM, Lauder GV; University of North Carolina, Chapel Hill*	Undulatory locomotion by flexible foils as a model of understanding fish propulsion

1:20-3:00 PM
Room 12

Session 57: Life History Evolution and Hormones

Co-Chairs: Elizabeth Addis, Holly Hennin

1:20 PM	57.1	DCE	*Ryan CP, Dawson A, Sharp PJ, Williams TD; Simon Fraser University, Canada, Centre for Ecology and Hydrology, UK, The Roslin Institute, University of Edinburgh, UK*	Experimental evidence for a role of prolactin in modulating avian clutch-size
1:40 PM	57.3	DCE	*Addis EA, Schwartz TS, Reding DM, Palacios MG, Bronikowski AM; Iowa State University*	The insulin-like growth factor axis as a mediator of life history trade-offs
2:00 PM	57.4	DPCB	*Swanson EM, Dantzer B; Michigan State University*	The relationship between insulin-like growth factor-1 and life history across Mammalia
2:20 PM	57.5	DCE	*Hennin HL, Bêty J, Gilchrist HG, Love OP; University of Windsor, Canada, Université du Québec à Rimouski, Canada, National Wildlife Research Centre, Environment Canada*	Do state-mediated hormones predict reproductive decisions in Arctic-nesting common eiders?
2:40 PM	57.6	DEE	*Smith HA, Snell TW; Georgia Institute of Technology*	Rapid evolution of sex frequency selected by requirement for dormancy and hydroperiod adaptation

1:00-3:00 PM
Room 13

Session 58: Complementary to Symposium: Modeling Animal Locomotion I

Co-Chairs: George Lauder, James Liao

1:00 PM	58.1	DCB	*Lauder GV, Oeffner J; Harvard University*	Hydrodynamic function of shark skin and two biomimetic models
1:20 PM	58.2	DCB	*Wen Li, Lauder G; Harvard University*	Understanding undulatory locomotion in fishes using an inertia-compensated flapping foil robotic device
1:40 PM	58.3	DCB	*Qian F, Zhang T, Li C, Shen J, Hoover AM, Birkmeyer P, Pullin A, Fearing RS, Goldman DI, Masarati P; Georgia Institute of Technology, F.W. Olin College of Engineering, University of California, Berkeley, Politecnico di Milano*	Legged locomotion of a bio-inspired lightweight robot on granular media
2:00 PM	58.4	DCB	*Mazouchova N, Goldman D; Georgia Institute of Technology*	Disturbed ground leads to failure in a sea turtle inspired robot
2:20 PM	58.5	DCB	*Liao JC, Taguchi M; Whitney Lab, University of Florida, Gainesville*	Exploring the parameter space for Kármán gaiting: kinematics across speed and size
2:40 PM	58.6	DCB	*Li C, Goldman D; Georgia Tech*	Towards a terramechanics for legged locomotion on granular media

6:30-7:30 PM
Room: Ballroom A
Howard Bern Lecture

DCE	*Riddiford LM; Janelia Farm Research Campus, HHMI*	How does juvenile hormone regulate insect metamorphosis and reproduction?

7:30-8:30 PM
Room: Ballroom C2
AMS Lecture

DIZ	*Eckelbarger KJ; University of Maine*	A tribute to Dr. Mary E. Rice: from neanderthals to Naples - a brief history of marine biology from antiquity to 1900

THURSDAY POSTER SESSION P2

Exhibit Hall, 3:00-5:00 PM

Poster Set Up: 7:00-8:00 am; Poster Teardown: 5:00-5:30 pm

Even # - Authors present from 3:00 - 4:00 pm; Odd # - Authors present from 4:00 - 5:00 pm

Animal Communication

P2.1		*West J, Murphy TG; Trinity University*	Do *Betta splendens* females eavesdrop on female-female aggressive interactions?
P2.2	DEE	*Bywater CL, James C, McElroy E; The University of Queensland, The College of Charleston*	Morphological determinants of aggression and fighting success in two species of *Callinetes*
P2.3	DIZ	*Vickery RE, Hollowell K, Hughes M*; College of Charleston, SC*	Why have long antennae? Exploring the function of antennal contact in snapping shrimp
P2.4		*Reichard DG, Hahn TP, Ketterson ED; Indiana University, Bloomington, University of California, Davis*	Female release of luteinizing hormone (LH) in response to short- and long-range song in a songbird, the dark-eyed junco (*Junco hyemalis*)
P2.5		*Petzold JM, Smith GT; Indiana University, Bloomington*	Chirp parameters signal sex but not male quality in the weakly electric fish *Parapteronotus hasemani*
P2.6	DAB	*Fernandez D, Smith GT*; Georgia State University, Indiana University*	Blocking gonadal steroid receptors affects sexually dimorphic communication signals in a weakly electric fish
P2.7	DAB	*Mangiamele LA, Bevier CR, Carol HA, King KR; Bowdoin College, Colby College*	Stress response correlates with reduced calling capacity in spring peepers (*Pseudacris crucifer*)
P2.8	DAB	*Haiman ANK, Gendi KM, Hahn TP; University of California, Davis*	Variation in flight calls and responsiveness among individuals and types in the evening grosbeak (*Coccothraustes vespertinus*)
P2.9	DAB	*De Jesus CE, Hoese W; California State University Fullerton*	Effects of anthropogenic noise on song sparrow song
P2.10		*Black CE, Giraudeau M, McGraw KJ, Nolan PM; The College of Charleston, Arizona State University, The Citadel*	Bird song behavior along an urban-to-rural gradient

Biogeography

P2.11	DIZ	*Hochberg R, Atherton S, Kieneke A, Rothe B, Thacker C, Gouge D; University Massachusetts Lowell, Senckenberg Forschunginstitut und Naturmuseum, Universitat Hamburg, University of Florida*	Marine meiofauna of Little Cayman Island with a focus on Gastrotricha
P2.12	DIZ	*Wallace RL, Schroeder T, Rios Arana JV, Walsh EJ; Ripon College, University of Texas at El Paso, Universidad Autonoma de Ciudad Juarez*	Determinants of rotifer species diversity in aridland aquatic habitats
P2.13	DIZ	*Vendetti JE; California State University, Los Angeles*	A perspective on natural history collections after the Tōhoku earthquake and tsunami: buccinid gastropods and the EOL
P2.14		*Keddell RW, Drakes D, Shifflett B, Scholl N, Mortenson C; Johns Hopkins University*	STRI researchers in k-12 scientific literacy programming
P2.15	DPCB	*Siler CD, Brown RM; University of Kansas*	Philippine Biodiversity Research and Education Outreach (PhilBREO)
P2.16		*Matzelle AJ, Helmuth BS, Lakshmi V; University of South Carolina, Columbia*	Nearshore satellite data as relative indicators of intertidal organism physiological stress
P2.17		*Crickenberger S; Clemson University, Clemson, SC*	Testing the predictive ability of niche-based models using a natural range retraction
P2.18	DEE	*Suss JS, Honarvar S, Spotila JR, O'Connor MP; Drexel University*	Beach characteristics affect the gas exchange environment for sea turtle nests

Biophysical Ecology

P2.19	DIZ	*Kilgour MJ, Shirley TC; Texas A&M University-Corpus Christi*	A zoogeographic analysis of galatheoid and chirostyloid crabs in the Gulf of Mexico
P2.20	DEE	*Holm ER, Gowing S, Sanchez De Lozada MF; Naval Surface Warfare Center, Carderock Division*	Flow-generated forces on hull fouling organisms and relationship to hydrodynamic self-cleaning of fouling-release coatings
P2.21	DEE	*Bakken GS; Indiana State University*	Stress, strain, thermal environment, and thermoregulation
P2.22	DEE	*Fockler SL, Helmuth B; University of South Carolina, Columbia*	Modelling in the waves: significance of wave splash to the survival of intertidal organisms
P2.23	DEE	*Huang S-P, Porter WP, Chiou C-R, Lin T-E, Lin C-C, Tu M-C; University of Wisconsin, Madison, National Taiwan University, Taiwan*	Mechanistic predictions of climate warming effects on energetics, activity and distribution of a high-altitude pit viper, *Trimeresurus gracilis*, in Taiwan
P2.24	DEE	*Suss JS, Patel S, Neeman N, Panagopoulou A, Riggall T, Margaritoulis D, O'Connor MP*, Spotila JR; Drexel University, ARCHELON*	Gas exchange and hatching success in loggerhead turtle nests in Greece
P2.25	DEE	*Wang C, Sears MW*; Bryn Mawr College*	Challenges of modeling the environments of animals: features of geospatial datasets bias predictions of thermal heterogeneity
P2.26		*Kish N, Helmuth B, Denny MW; University of South Carolina, Columbia, Stanford University*	Predicting patterns of thermal stress in *Mytilus californianus*
P2.28	DEE	*Askins M, Lonati G*, Guttenplan K, Fahey A, Johnson A, Ellers O; Bowdoin College, Maine*	Externally visible polyfluorochrome marking of urchins: growth comparisons between lab-reared and tidepool urchins

Complementary to Symposium: Developmental Plasticity & Evolutionary Innovation

P2.29	DEDB	*Adams DK, Nowakowski NM, Angerer LA; National Institutes of Health, American University*	Evolution of food-induced developmental plasticity in echinoids
P2.30	DEDB	*Barnett AA, Thomas RH; Southern Illinois University, Carbondale*	Exploring the loss of the hox gene *abdominal-A* in the mite archegozetes longisetosus
P2.31	DEDB	*Corder KM, Ayme-Southgate AJ; College of Charleston, Charleston*	Variation in projectin isoforms and flight performance in *Drosophila melanogaster*
P2.32	DVM	*Ackerly KL, Ward AB; Adelphi University*	More of a good thing: the positive relationship between vertebral number and performance

Complementary to Symposium: Mangrove Killifish & Integrative Biology

P2.33		*Luke KN, Bechler DL; South Georgia College, Douglas, Valdosta State University*	Dyadic interactions in the mixed-mating strategies of the mangrove rivulus, *Kryptolebias marmoratus.* I. The role of hermaphrodite-male and hermaphrodite-hermaphrodite dyads
P2.33A	DCPB	*Albritton-Ford AC, Harper BT; Valdosta State University*	The influence of salinity on acute toxicity to the euryhaline fish, *Kryptolebias marmoratus*
P2.34		*Luke KN, Bechler DL; South Georgia College, Valdosta State University*	Dyadic interactions in the mixed-mating strategies of the mangrove rivulus, *Kryptolebias marmoratus*. II. The role of male-male parings
P2.35		*Kuo J, Hsu Y; National Taiwan Normal University*	What types of contest interaction modify a contestant's behavior in a subsequent fight?
P2.36		*Huang Y, Hsu Y; National Taiwan Normal University*	How does a new contest experience interact with an old one to influence subsequent contest behavior?
P2.37	DAB	*Bechler DL, Elder JF; Valdosta State Univereisty*	Inter-strain differences in personality and learning in the self-fertilizing mangrove killifish, *Kryptolebias marmoratus* Poey 1880
P2.38	DAB	*Bechler DL, Luke K, Flaherty F; Valdosta State University, South Georgia College*	Activity patterns of the mangrove killifish, *Kryptolebias marmoratus* in an artificial crab burrow
P2.39		*Gopinath A, Elder JF, Ring BC, Bechler DL; Valdosta State University*	Relationship between cnr1 gene variation and behavioral differences among *Kryptolebias marmoratus* laboratory isogenic lines

P2.40		*McIvor CC; US Geological Survey*	Community ecology of mangrove rivulus at two west Florida locations
P2.41	DCPB	*Shiver NB, Grove TJ; Valdosta State University*	Quantification of the oxygen binding proteins myoglobin and hemoglobin in the mangrove killifish, *Kryptolebias marmoratus*, during emersion
P2.42		*Lee EA, Earley RL, Hanninen AF; The University of Alabama*	The hormonal response to fasting in an amphibious fish
P2.44	DCPB	*Perry JL, Ring BC; Valdosta State University*	Cloning and characterization of the vasa gene in the mangrove killifish, *Kryptolebias marmoratus*
P2.45	DEDB	*Wells MW, Turko AJ, Wright PA; University of Guelph, Canada*	Terrestrial development in embryonic mangrove rivulus (*Kryptolebias marmoratus*)
P2.46	DCB	*Ashley-Ross MA, Perlman BM, Carpenter-Carter S, Gibb AC, Earley RL; Wake Forest University, Northern Arizona University, University of Alabama*	Heads or tails? Two different ways for fish to jump
P2.47	DCE	*Strykowski JL, Orlando EF*; University of Maryland*	Effects of temperature on gene expression and sex determination during embryogenesis in the mangrove rivulus, *Kryptolebias mamoratus*

Complementary to Symposium: Novel Methods to Analyze Animal Movement

P2.48	DIZ	*Law CJ, Dorgan KM, Rouse G; Scripps Institution of Oceanography*	The kinematics and anatomical features of undulatory burrowing in *Armandia brevis*
P2.49		*Crane E, Childers D, Rothman E, Gerstner GE*; University of Michigan*	Functional data analysis of mammalian masticatory jaw movements
P2.50	DCB	*Moore AL, Barnes CJ, Lee DV; University of Nevada, Las Vegas*	A new 3D system for measuring burrowing biomechanics
P2.51	DCB	*Guo M, Hedrick TL; University of North Carolina at Chapel Hill*	3D image correlation based reconstruction of fluid locomotor surfaces
P2.52	DCB	*Springthorpe D, Hedrick TL; University of California, Berkeley, University of North Carolina, Chapel Hill*	A miniaturized animal-computer interface for use with untethered subjects
P2.53	DCB	*Bergou AJ, Swartz S, Breuer K, Taubin G; Brown University*	3D reconstruction and analysis of bat flight maneuvers from sparse multiple view video
P2.54	DCB	*Goodarzi A, Mekdara P, Soltani A, Berg O, Goto JJ, Muller UK; California State University Fresno*	Quantifying the locomotory capabilities of drosophila through a novel lenticular arena
P2.55	DEE	*Peters JP, Wolf N, Stricker CA, Collier TR, Martinez Del Rio C; University of Wyoming, US Geological Survey, Fort Collins Science Center, Denver Federal Center*	Trophic and metamorphic discrimination of hydrogen isotopes in cabbages (Brassica oleracea) and cabbage loopers (Trichoplusia ni): implications for stable isotope ecology
P2.56		*Holmes KD, Thickman JD, Miller CW; University of Florida*	The influence of vegetation structure and social group composition in the habitat use of a cactus bug

Development: Cell Differentiation & Morphogenesis

P2.57	DEDB	*Valley JR, Martin VJ*; Appalachian State University*	Eye development in box jellyfish
P2.58	DEDB	*Lyons DC, McClay DR; Duke University*	Programmed cell fusion of PMCs during skeletal development in the sea urchin *Lytechinus variegatus*
P2.59	DEDB	*George R, Hutchins E, Eckalbar WL, Kusumi K, Rawls JA, Wilson-Rawls J*; Arizona State University*	Isolation of *Anolis carolinensis* satellite cells and examination of their differentiation potential

P2.60	DIZ	*Sikes JM, Dillon RL, Newmark PA; University of Illinois, Champaign-Urbana, Howard Hughes Medical Institute*	Germline development in the basal bilaterian *Convolutriloba macropyga*
P2.61	DEDB	*Flores EB, Byrum CA; University of Miami, College of Charleston*	Expression of myoregulatory factors in the sea urchin *Lytechinus variegatus*
P2.62		*Parrott BB, Hudson A, Brady R, Schulz C; Medical University of South Carolina, University of Georgia*	Environmental and genetic control of stem cell divisions in the drosophila testis
P2.64		*Allard CA, Grim JG, Hu M, Parker SK, Postlethwait JH, Detrich III HW; Northeastern University, University of Oregon*	Exploring the role of *hemgn* in blood and bone formation using the zebrafish and Antarctic fish models.
P2.65		*Jemmett J, Starobinskya E, Woznica A, Davidson B; University of Arizona, Tucson*	FGF/Ets target genes in *Ciona intestinalis* heart cell specification
P2.66		*Perry KL, Ramirez A, Browne WE; University of Miami, Coral Gables*	Investigation of the *cis*-regulation of the *FoxB* Gene in *Nematostella vectensis*
P2.67		*Bowie EJ, Smith JPS; Winthrop University*	Diurnal synchronization of the cell cycle in *Aeolosoma* (Annelida)

Development: Fertilization, Metamorphosis, and Regeneration

P2.68	DIZ	*Castro DA, Podolsky RD; College of Charleston*	Effects of elevated oceanic CO
P2.69		*Sucar S, Moore G, Ard M, Newsome JM, Bernhardt L, Ring BC; Valdosta State University*	A forward genetic screen for zygotic and sterile mutants in the mangrove killifish (*Kryptolebias marmoratus*)
P2.70		*Watson BL, Podolsky RD; College of Charleston*	How will ocean acidification affect reproduction? a study of sperm respiration in the purple sea urchin, *Arbacia Punctulata*
P2.71	DCE	*Horn R, Kitts J, Miller B, Schreiber AM; St. Lawrence University*	Pharmacological suppression of matrixmetalloprotease (MMP) activity inhibits intestinal remodeling during *Xenopus laevis* metamorphosis
P2.72	DCE	*Rock K, Greer E, Mayer M, Schreiber AM; St. Lawrence University*	Methylmercury uptake and tissue distribution in metamorphosing *Xenopus laevis* tadpoles fed a swordfish diet
P2.73		*Wygoda J, Wray G, McClay D; Duke University*	Rudiment formation in the sea urchin *Lytechinus variegatus*
P2.74	DIZ	*Arellano SM, Zhang Y, Wang H, Chen Z-F, Qian P-Y; Woods Hole Oceanographic Institution, Hong Kong University of Science and Technology*	Proteome and transcriptome changes associated with competency and metamorphosis in the marine gastropod *Crepidula onyx*
P2.75	DVM	*Robertson JC; Westminster College*	Structure and growth of the paddlefish rostrum: investigating vertebrate postembryonic morphogenesis
P2.76	DVM	*Gruchalla KL, Rhen TE; University of North Dakota*	Development of the hypothalamus and pituitary gland in the snapping turtle, *Chelydra serpentina*
P2.77	DVM	*Duchman BJ, Wiens DJ*; University of Northern Iowa*	Effects of hypergravity on xenopus embryo growth and cardiac hypertrophy
P2.78	DEDB	*Zalisko EJ, Erton TS, Forbes ST, Fearn RL; Blackburn College*	Respiratory rates of BC-floater axolotls in normoxic and hypoxic conditions
P2.79	DCPB	*Tweeten KA, Abitz A; St. Catherine University*	Patterns of cleavage and gastrulation in embryos of freshwater oligochaetes from the *Lumbriculus* complex
P2.80	DNB	*Kemer KM, Furimsky MM; Westminster College, PA*	The development of the visual system in the *Polyodon spathula*

P2.82	DEDB	*Ooka S, Wang L, Wikramanayake A; University of Miami, FL*	Expression pattern of flamingo during sea urchin early development
P2.83	DVM	*Dagley B, Maglia A, Shearman R; Framingham State University, National Science Foundation*	Skeletal development of *Hyla chrysoscelis* and the skeletal evolution of NA hylids
P2.84		*Chow B, Wray M, Villines B, Pinnick G, Sheets E, Spaulding J, Cohen CS; RTC, San Francisco State University, CSU, SLO*	Experimental whole body regeneration among botryllid ascidian species in San Francisco Bay
Digestion			
P2.85	DNB	*Bone NB, Krajniak KG; Southen Illinois University Edwardsville*	The response of the earthworm crop/gizzard to members of the oxytocin/vasopressin family of peptides
P2.85A	DCPB	*Napier KR, McWhorter TJ, Martinez Del Rio C, Fleming PA; Murdoch University, Western Australia, University of Wyoming, Laramie, University of Adelaide, South Australia*	A comparison of pharmacokinetic methods for *in vivo* studies of non-mediated glucose absorption
P2.86	DCPB	*Ramirez M, Skibiel A, Hood W; Auburn University*	Lactating Columbian ground squirrels increase nutrient absorption without altering digesta retention
P2.87	DCPB	*Belanich JR, Shillington C, Secor SM; University of Alabama, Eastern Michigan University*	Determinants of the postprandial metabolic response and specific dynamic action of the tarantula *Grammostola rosea*
P2.88	DCPB	*Smith ME, Secor SM; University of Alabama*	Gastrointestinal responses to aestivation for the aquatic salamander *Amphiuma tridactylum*
P2.89	DCPB	*Manrique A, Secor S*, Denardo DF; Arizona State University, University of Alabama*	Water balance and the use of a unique internal water reservoir in viper boas (*Candoia aspera*)
P2.90	DCPB	*Derrickson EM, Cook M; Loyola University Maryland*	Compensatory changes in assimilation capability in response to low protein diets in mice (*Mus musculus*)
Evolutionary Physiology			
P2.91		*Mineo PM, Schaeffer PJ; Miami University*	Thermal acclimation of locomotor performance in the Eastern newt (Notophthalmus viridescens)
P2.92		*Smith KE, Thatje S; University of Southampton*	Combined effects of temperature and hydrostatic pressure on the early ontogeny of the common whelk *Buccinum undatum* (Linnaeus, 1758)
P2.93	DCPB	*Menzel EJ, Nicholas B, Denardo DF, Secor SM; University of Alabama, Arizona State University*	Adaptive regulation of gastrointestinal form and function for the diamondback rattlesnake
P2.94	DEE	*Downs CJ, Wone B, Donovan ER, Hayes JP; University of Nevada, Reno; Ben-Gurion University of the Negev, Israel*	Selection on maximal metabolic rate in mice alters body mass but not body composition
P2.95		*Howard JR, Buckio BR, Dillon ME; University of Wyoming, Laramie*	Within-nest allometry of the bumblebee tracheal system
P2.96	DCPB	*Wojciechowski MS, Stawski C, Jefimow M, Koteja P; Nicolaus Copernicus University, Poland, Jagiellonian University, Poland*	The capacity of non-shivering thermogenesis in bank voles from lines selected for high aerobic metabolism
P2.97	DEE	*Brace AJ, Liebl AL, Boruta M, Martin LB; University of South Florida*	The effects of captivity on immune function and physical performance in house sparrows
P2.98		*Clavijo-Baquet S, Cumplido N, Bozinovic F; Pontificia Universidad Católica de Chile*	Relationship between parental care and resting metabolic rate in *Phodopus campbelli*: testing parental care models for the origin of endothermy
P2.101		*Carlson BM, Gross JB; University of Cincinnati*	Sundials in the void: assessing circadian rhythms in a cave adapted species
P2.102	DEE	*Milenkaya O, Walters JR; Virginia Tech*	Survival of finches is predicted by oxygen carrying capacity, but not by immunological, stress, or condition parameters

Growth and Scaling

P2.103	DCPB	*Hood WR; Auburn University*	Growing up in the dark isn't so bad: development of cavity nesting bluebirds birds is not limited by vitamin D
P2.104	DVM	*Fellmann CD, Young JW; Ashland University, Northeastern Ohio Medical University*	Limb growth, locomotor development, and life history in lagomorphs
P2.105	DCE	*Kemirembe K, Liebmann KL, Smith WA, Suzuki Y; Wellesley College, Northeastern University*	The effects of diet on the timing of larval molts in the tobacco hornworm, *Manduca sexta*
P2.107	DVM	*Essner, Jr. RL, Patel R, Reilly SM; Southern Illinois University Edwardsville, Ohio University*	Ontogeny of body shape and diet in freshwater drum (*Aplodinotus grunniens*)
P2.108	DVM	*Roark AM, Bast RL, Sánchez J, Bolten AB, Bjorndal KA; Hood College, University of Florida, Gainesville*	Intake and growth rates modulate bone structure in juvenile green turtles (*Chelonia mydas*)
P2.109	DVM	*Mortimer SA, Pace CM, Nishikawa KC; Northern Arizona University*	Implications of hind limb scaling across mouse *mdm* genotypes

Metabolism and Energetics

P2.110	DCPB	*Bennett MM, Petersen K, Yocum G, Rinehart J, Greenlee K; North Dakota State University, Concordia College, US Department of Agriculture*	The effects of extended diapause duration on the metabolic rate and critical PO
P2.110A	DPCB	*Thapa G, Verworn N, Greenlee K; North Dakota State University*	Developmental attenuation of high-fat diet-induced mortality in the tobacco hornworm caterpillar, Manduca sexta
P2.111	DCPB	*Patil YN, Boswell L, Marden B, Hand SC; Louisiana State University, Great Salt Lake Artemia LLC*	Metabolic downregulation in embryos of *Artemia franciscana* during diapause
P2.112	DCPB	*Zhang Y, Swanson DL; University of South Dakota*	Does the energetically expensive lifestyle of swallows affect thermogenic capacity?
P2.113		*Khalilieh AI, McCue MD, Pinshow B; Jacob Blaustein Institute Desert Research, Ben-Gurion University of the Negev, St. Mary's University*	House sparrows oxidize endogenous fuels differently from fasting-adapted species
P2.114		*Word KR, Wingfield JC; University of California, Davis*	Measuring allostatic load in wintering gambel's white-crowned sparrows, *Zonotrichia leucophrys gambelii*
P2.115	DCPB	*Santin AE, Powell MS, Hardy RW, Rodnick KJ; Idaho State University, Pocatello, University of Idaho, Hagerman*	Dietary carbohydrate and biomarkers of sustained glycemia in rainbow trout
P2.116		*Monaco CJ; University of South Carolina*	Parameterizing a dynamic energy budget model for the keystone predator *Pisaster ochraceus*
P2.117	DCPB	*Gerson AR, Guglielmo CG; Advanced Facility for Avian Research, University of Western Ontario*	Changes in body composition and the metabolic response to high and low evaporative water loss during short duration flights in the American robin (Turdus migratorius)
P2.118		*Boles SE, Hettinger A, Gaylord B, Sanford E, Todgham AE; San Francisco State University, Bodega Marine Laboratory and University of California, Davis*	Metabolic costs of ocean acidification on growth and development of the native Olympia oyster, *Ostrea lurida*
P2.119	DCE	*Tamone SL, Keller E, Linderoth T; University of Alaska Southeast*	The effect of eyestalk neurohormones on circulating glucose and trehalose in two species of oregonid crabs

P2.120	DCPB	*Gerringer ME, Friedman J, Drazen JC, Yancey PH; Whitman College, Walla Walla, University of Hawai'i, Honolulu*	Proximate chemistry of buoyant gel tissues in benthopelagic and benthic deep-sea fishes

Neurobiology: Neurotransmitters, Neuroanatomy, and Neuroethology

P2.121		*Akande P, Bandaogo Z, Carroll MA, Catapane EJ; Medgar Evers College*	Sensory motor integration of gill lateral cilia in the bivalve mollusc, *Crassostrea virginica*
P2.121A		*Lutterschmidt DI, Maine AR, Wilczynski W; Portland State University, Oregon, Georgia State University, Atlanta*	Melatonin and seasonal variation in GnRH: lessons for interpreting changes in immunoreactive cell number
P2.122		*Mora-Kepfer F, Siassipour AH, Stump J, Browne WE; University of Miami, Coral Gables*	Anatomy of the brain in the crustacean model system, *Parhyale hawaiensis*: sexual dimorphism and an examination of the amphipod hemi-ellipsoid body
P2.123	DNB	*Bouchard JB, Mitchell R, Campbell A, Kirouac LE, Lachance S, Naimie AA, Watson, III WH, Newcomb JM*; New England College, University of New Hampshire*	In search of biological clock neurons in the central nervous system of the nudibranch *Melibe leonina*
P2.124	DCPB	*Brown C, Sadchla M, Matthew K, Cochran T, Carroll MA, Catapane EJ; Medgar Evers College*	A study of GABA in bivalve molluscs
P2.125	DNB	*Bubak AN, Swallow JG, Renner KJ; University of South Dakota*	Whole brain monoamine detection in a stalk-eyed fly
P2.126		*Peres R, Marques AC, Cipolla-Neto J; University of São Paulo, Brazil*	Melatonin in cnidarians
P2.127		*Cavanaugh MR, Giacomini J, McPherson DR, Lovett JA; SUNY at Geneseo*	Mapping expression of a novel 5-HT7 receptor in *Aplysia californica*
P2.128	DNB	*McCommas SA, Bauer CL, Kerstein KW, McCullough KA, Krajniak KG; Southern Illinois University Edwardsville*	The identification of a FMRFamide - related peptide in the earthworm, *Lumbricus rubellus*
P2.129	DNB	*McPherson DR; SUNY at Geneseo*	Pharmacology of the serotonin-mediated increase of cAMP in *Aplysia* foot muscle
P2.130	DCPB	*Nelson M, Adams T, Ojo CO, Carroll MA, Catapane EJ; Medgar Evers College, Kingsborough Community College*	Adenylyl cyclase inhibitors reverse the neurotoxic effects of manganese on post-synaptic dopamine D2 receptors
P2.131		*Plyler J, Satterlie R; University of North Carolina Wilmington*	Organization of the pedal serotonergic cluster neurons in the pteropod mollusc clione
P2.132	DNB	*Swore JJ, Kohn AB, Citarella MR, Bobkova YV, Moroz LL; Whitney Lab for Marine Bioscience, University of Florida*	Molecular mapping of ctenophore neurons and glutamate signaling
P2.133	DNB	*Triblehorn JD, Paolini ML, Yager DD, Frederick-Hudson KH; College of Charleston, University of Maryland, College Park, University of Missouri, Columbia*	Comparative study of large axons in the abdominal connectives of mantids (Mantodea) and cockroaches (Blattodea)
P2.134	DNB	*Verdecia M, Brehm P, Mandel G, Looger L, Lavis L; HHMI Janelia Farm Research Campus, Vollum Institute, OHSU*	A genetically encoded fluorescent protein in echinoderms marks the history of neuronal activity
P2.135	DNB	*Nathaniel T, Huber R, Panksepp J; University of South Carolina School of Medicine-Greenville, Bowling Green State University, Washington State University, Pullman*	Specific locomotion behavioral patterns associated with drug; cocaine alters active multifarious behavior in crayfish
P2.136		*Kozol RA, Dallman JE, Pericak-Vance MA; University of Miami*	Knockdown of putative autism genes, SYNGAP and SHANK3, in zebrafish disrupts rhythmic motor behaviors.

P2.137	DNB	*Prezioso K, Furimsky M; Westminster College*	Behavioral effects of the Parkinsonism inducing neurotoxin, 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine on zebrafish larvae
P2.138	DNB	*Wang Z-J, Sun L, Peng W, Ma S, Zhu C, Fu F, Heinbockel T*; Howard University College of Medicine, Luye Pharma Group Ltd., China, Yantai University, Pharmacy, China*	Ginseng derivative ocotillol enhances neuronal activity through increased glutamate release: a possible mechanism underlying increased spontaneous locomotor activity of mice
P2.139	DNB	*Zungul-Hasty LS, Cain SD; Eastern Oregon University*	Localization of NOS in the ciliated foot epithelium of the pond snail *Lymnaea stagnalis*
P2.140		*Borsuk P, Krohmer RW; Saint Xavier University, Chicago*	Colocalization of aromatase and nitric oxide immunoreactive neurons in the forebrain of the male red-sided garter snake

Reproductive Physiology

P2.141	DEE	*Clarke DN, Zani PA*; Whitman College, Pomona College*	Effects of nighttime warming on reproduction in side-blotched lizards (*Uta stansburiana*)
P2.142		*Botteri NL, Moore BC, Albergotti LC, Hamlin HJ, Lawler AN, Mathavan K, Guillette Jr. LJ; University of Florida, Louisiana Tech University, University of Maine, University of Miami, University of Massachusetts Amherst, Medical University of South Carolina*	The medullary rest: a naturally occurring intersex region of American alligator ovary
P2.143	DCPB	*Tokar DR, Veleta K, Canzano J, Hahn DA, Hatle JD; University of North Florida, University of Florida*	Physiological effects of RNAi for vitellogenin on somatic storage and reproduction in grasshoppers
P2.144	DCPB	*Puengyam P, Utarabhand P, Tsukimura B; Prince of Songkla University, Thailand, California State University, Fresno*	Histological structure and mRNA in situ hybridization in the ovary of the banana shrimp (*Fenneropenaeus merguiensis* de Man)
P2.145	DCPB	*Schultz EM, Koch RE, Hahn TP; University of California, Davis*	Assessing life history tradeoffs in an opportunistically breeding songbird
P2.146	DCE	*Pinson SE, Navara KJ; University of Georgia*	Sequence position, but not age, significantly influences sex ratios in the domestic chicken
P2.147	DCPB	*Perrault JR, Miller DL, Wyneken J; Florida Atlantic University, Boca Raton, Center for Wildlife Health, Wildlife and Fisheries, University of Tennessee, Knoxville*	Physiological measures of health and reproductive success in leatherback sea turtles (*Dermochelys coriacea*)
P2.148		*Copenhaver PE, Powers DR, Friesen CR, Mason RT; George Fox University, Oregon State University*	Energy investment in copulatory plug production by large vs. small male red-sided garter snakes (*Thamnophis sirtalis parietalis*)
P2.149	DCE	*Calisi RM, Knudsen D, Krause J, Wingfield JC, Gentner TQ; University of California, Davis, University of California, San Diego*	Estradiol and reproductive state affect song pattern recognition and performance in a songbird

Sensorimotor Structure and Function

P2.150	DVM	*Georgi JA; Arizona College of Osteopathic Medicine, Midwestern University*	Natural orientation of the lateral semicircular canal in *Alligator mississippiensis*
P2.151	DVM	*Krueger JA, Robertson JC; Westminster College, PA*	Characterization of the rostrum lateral line of juvenile paddlefish (*Polyodon spathula*)
P2.152	DNB	*Bierman HS, Young BA, Thorton JL, Jones HG, Koka K, Carr CE, Tollin DJ; University of Maryland, College Park, University of Massachusetts, Lowell, University of Colorado Medical School, Aurora*	Evidence for a pressure difference receiver system in alligator sound localization
P2.153		*McCormick LR, Cohen JH; Eckerd College, St. Petersburg, University of Delaware, Lewes*	Pupillary light reflex in the Atlantic brief squid, *Lolliguncula brevis*

P2.154		*Kidera N, Mori A, Tu MC; National Taiwan Normal University, Kyoto University*	Can sea kraits detect freshwater resource?

Social Behavior

P2.155		*Savage EH, Allen LC, Chadwell BA, Hristov NI; Winston-Salem State University, Guilford College, Center for Design Innovation*	No energetic benefit to group flight in the free-tailed bat *Tadarida brasiliensis*
P2.156	DAB	*Solomon-Lane TK, Pradhan DS, Willis MC, Grober MS; Georgia State University, Atlanta*	The relative contributions of allometry, individual behavior, and group dynamics to reproductive success in the bluebanded goby (*Lythrypnus dalli*)
P2.157		*Kanagawa M, Murphy DW, Webster DR, Kawaguchi S, King R, Yen J; Georgia Institute of Technology, Australian Antarctic Division*	Swarming to schooling transitions in Antarctic krill aggregations
P2.158	DAB	*Siciliano AM, Bedore CN, Long JH, Porter ME; Vassar College, Florida Atlantic University*	Does school size matter? Swimming kinematics of cownose rays (*Rhinoptera bonasus*)
P2.159		*Bourcier T, Sola Gracia E, Martin III AL; Saginaw Valley State University, University of Rochester*	The effects of flow on social dynamics of the crayfish, *Orconectes propinquus*
P2.160	DAB	*Nair DT, Miller BM, Zigler AM, Farrell WJ*; Franklin and Marshall College*	Behavioral profile and predictors of social status for male green anole lizards (*Anolis carolinensis*) during two weeks of cohabitation
P2.161	DAB	*Cook EG, Murphy TG, Johnson MA; Trinity University, San Antonio*	Highly-parasitized Caribbean lizards (*Anolis brevirostris*) exhibit less colorful, less frequent social displays

Stress: Behavior & Environment

P2.162		*Lexa CM, Davis JE; Radford University*	The effects of juvenile hormone modulation on development and stress-related behavior in Madagascar hissing cockroaches (*Gromphadorhina portentosa*)
P2.163	DCE	*Wack CL, Ratay MK, Woodley SK; Chowan University, Duquesne University*	Stress-induced behavioral changes are not mediated by corticosterone in red-legged salamanders
P2.164		*Driscoll SC, Crino OL, Breuner CW; University of Montana*	The forgetful finch: does developmental stress affect cognitive ability in zebra finches?
P2.165	DCE	*Shahbazi M, Jimenez P, Carruth LL; Georgia State University, Autonomous University of Tlaxcala, Mexico*	The effects of corticosterone treatment on song complexity and HVC size in the male zebra finch
P2.166	DCE	*Warne R, Reeves B, Crespi E, Brunner J; Southern Illinois University, State University of New York, Washington State University*	Integrating physiological and behavioral responses to stressors into an epidemiological framework
P2.167	DEE	*Boruta M, Brace AJ, Liebl AL, Martin LB; University of South Florida, Tampa*	Does variation in host physiology occur among urban-rural habitats in disease prevalence?
P2.168	DAB	*Foltz SL, Davis JE, Greene VW, Laing BT, Tallant JA, Moore IT; Virginia Tech, Radford University*	Aggression, neophobia and corticosterone in relation to urbanization in song sparrows (*Melospiza melodia*)
P2.169	DCE	*Jayne MK, Dudley E, Greene V, Moore IT, Davis JE; Radford University, Virginia Tech*	Effects of short term stress on plasma corticosterone and testosterone levels in captive and wild house sparrows (*Passer domesticus*)
P2.170	DCE	*Klukowski M; Middle Tennessee State University*	Influence of reproductive state on plasma corticosterone levels in free-living female fence lizards (*Sceloporus undulatus*)
P2.171	DCE	*Peterson JD, Riley KL, Appel A, Mendonca MT; Auburn University; Troy University, Montgomery, Auburn University*	Exogenous corticosterone elevates metabolic rate in an amphibian
P2.172	DCE	*Lattin CR, Bauer CM, De Bruijn R, Romero LM; Tufts University*	Seasonal differences in the functioning of the hypothalamus-pituitary-adrenal axis and initial transference to captivity in wild house sparrows

P2.173	DCE	*De Bruijn R, Merullo D*, Wang L, Cash J, Romero LM; Tufts University*	Three weeks of daily, randomized exposure to rain, cold and food restriction do not elicit symptoms of chronic stress in molting European starlings
P2.174	DCE	*Liebl AL, Martin LB; University of South Florida*	Seasonal variation of glucocorticoid regulation in house sparrows (*Passer domesticu*)

Stress: Physiology & Endocrinology

P2.175	DCE	*Bauer CM, Koplik L, Romero LM; Tufts University, Universidad de Puerto Rico*	Effects of chronic stress on ketone and uric acid levels in juvenile *Passer domesticus*
P2.176		*McCoy JA, Kohno S, Doheny BD, Guillette, Jr. LG; Medical University of South Carolina, OB-GYN, Hollings Marine Lab*	The potential role of glucocorticoid signaling during sex determination in the American alligator (*Alligator mississipiensis*)
P2.177	DCE	*Ross AM, Thompson JA, Valverde RA; Southeastern Louisiana University*	Cloning and tissue-specific expression of CRH and its binding protein from the hypothalamus of the red-eared slider turtle, *Trachemys scripta elegans*
P2.178	DCE	*Whitley BN, Treidel LA, Bowden RM, Haussmann MF; Bucknell University, Ilinois State University*	Chronic stress alters stress-induced oxidative damage in domestic chickens (*Gallus gallus*)
P2.179	DCE	*Waldron-Francis K, Lattin CR, Breuner CW, Romero LM; Tufts University, University of Montana-Missoula*	Characterization of intracellular glucocorticoid and mineralocorticoid receptors in skin of house sparrows
P2.180	DCE	*Treidel LA, Whitley BN, Benowitz-Fredericks ZM, Haussmann MF; Bucknell University, Lewisburg*	Prenatal exposure to testosterone mitigates the stress-induced rise in oxidative stress in domestic chickens (*Gallus gallus*)
P2.181		*Krause JS, Dorsa D, Wingfield JC; University of California, Davis*	A new view of the stress response in free-living birds: 3-way adrenal steroid response
P2.182	DCE	*Daniel N, Cunningham G*; St. John Fisher College*	Stress hormone in white-throated sparrows (*Zonotrichia albicollis*) is not influenced by the cleanliness of a cotton bag
P2.183	DCE	*Madliger CL, Love OP; University of Windsor, Ontario*	Repeatability and plasticity of baseline corticosterone

Terrestrial Locomotion and Adhesion

P2.184	DVM	*Whitenack LB, Hessel AL, Ryerson W; Allegheny College, University of Connecticut*	Jumping kinematics in the Plethodontidae I: performance, morphology, and scaling
P2.185	DVM	*Hessel AL, Ryerson W, Whitenack LB; Allegheny College, University of Connecticut*	Jumping kinematics in the Plethodontidae II: the effects of tail loss
P2.186	DVM	*Hicks R, Katz H, Macesic LJ, Gillis GB; Mount Holyoke College*	Do bullfrogs tune forelimb muscle activity in anticipation of landing?
P2.187	DCB	*Aguilar J, Lesov A, Wiesenfeld K, Goldman DI; Georgia Tech*	Lift-off in a hopping robot
P2.188		*Booster N, Su FY*, Adolph SC, Ahn AN; Pitzer College, Harvey Mudd College*	The effect of temperature on running in the tarantula, *Aphonopelma hentzi*
P2.189	DCB	*Nappier AL, McBrayer LM, McElroy EJ; College of Charleston, Georgia Southern University*	Computational morphological model and biomechanical analysis of acceleration in the Florida scrub lizard, *Sceloporus woodi*
P2.190	DCB	*Hudson PE, Corr SA, Wilson AM; Royal Veterinary College, London*	Gearing of galloping in the cheetah and racing greyhound
P2.192	DCB	*Helmsmüller D, Wefstaedt P, Nolte I, Schilling N*; Small Animal Clinic, University of Veterinary Medicine Hannover, Institute of Systematic Zoology and Evolutionary Biology, Friedrich-Schiller-University*	Kinematic, kinetic and electromyographic analysis of the locomotor ontogeny of the beagle

P2.193		*Schilling N, Carrier DR, Anders C; Small Animal Clinic, University of Veterinary Medicine Hannover, University of Utah, Clinic for Trauma, Hand and Reconstructive Surgery, University Hospital Jena*	Epaxial muscle function in walking and running humans
P2.194		*Stevens CS, Jerry C, Martin P, Cinco T, Ahn AN; Harvey Mudd College*	Effect of variable neural recruitment on biomechanics of walking
P2.195	DCB	*Clifton GT, Hong C, Geyer H, Biewener AA; Harvard , Carnegie-Mellon*	Limb swing dynamics of wild turkeys during normal and perturbed swings
P2.196	DVM	*Self JS, McBrayer LD; Georgia Southern University*	Sprint performance and running behavior of obstacle crossing in the lizards Crotaphytus bicinctores, Gambelia wislizenii, Aspidoscelis tigris and Sceloperous occidentalis
P2.197		*Chang-Siu EH, Libby T, Full RJ, Tomizuka M; University of California, Berkeley*	Tailbot - robot with inertial assisted control by an active tail inspired by lizards
P2.198	DCB	*Mongeau J-M, Alexander T*, Full RJ; University of California, Berkeley, Morgan State University*	Neuromechanical feedback during dynamic recovery after a lateral perturbation in rapid running cockroaches
P2.199	DCB	*Husain DI, Gonzalez G, Maxkwee K, Berg O, Goto JJ, Muller UK; California State University, Fresno, Fresno City College*	How flies stumble: the effects of a glutamate agonist on climbing ability in adult fruit flies
P2.200		*Stark AY, Sullivan TW, Niewiarowski PH; The University of Akron, Integrated Bioscience*	The effect of surface water and wetting on gecko adhesion
P2.201	DVM	*Boumis RJ, Gibb AC*; Northern Arizona University*	Orientation and movement strategies determine the success of down-slope movement in stranded *Gambusia affinis*
P2.202	DCB	*Byrnes G, Jayne BC; University of Cincinnati*	The effects of branch structure on the locomotion of a specialized arboreal snake (*Boiga irregularis*)
P2.203		*Baum JT, Jayne BC; University of Cincinnati, Cincinnati*	Kinematics and performance of arboreal limbless locomotion in *Boiga irregularis*
P2.204	DCB	*Young JW; Northeast Ohio Medical University (NEOMED)*	The ontogeny of quadrupedal walking in squirrel monkeys (*Saimiri boliviensis*)

Friday Schedule of Events

All events take place in the North Charleston Convention Center unless noted as (ES) for Embassy Suites Hotel

EVENT	TIME	LOCATION
Poster Session 3 Set Up	7:00-8:00 AM	Exhibit Hall AB
Registration	7:30 AM-5 PM	Exhibit Hall A Foyer
Exhibit Hall	9:30 AM-5:00 PM	Exhibit Hall AB
Poster Session 3 Even Numbers Viewing	3:00-4:00 PM	Exhibit Hall AB
Poster Session 3 Odd Numbers Viewing	4:00-5:00 PM	Exhibit Hall AB
Poster Session 3 Teardown	5:00-5:30 PM	Exhibit Hall AB
Coffee Break/PM Poster Session Cash Bar	9:30-10:30 AM/3-5 PM	Exhibit Hall AB
SYMPOSIA ORAL PRESENTATIONS		
S7: Combining Experiments with Modeling and Computational Methods...	8:00 AM-3:00 PM	Ballroom A
S8: The Impacts of Developmental Plasticity on Evolutionary Innovation...	8:00 AM-3:00 PM	Ballroom B
CONTRIBUTED PAPER ORAL PRESENTATIONS		
Session 59: Locomotion: Jumping	8:00-10:00 AM	Ballroom C1
Session 60: Locomotion: Above and Underground	10:20 AM-Noon	Ballroom C1
Session 61: Cardiovascular and Respiration Physiology	8:00-11:40 AM	Ballroom C2
Session 62: Growth and Energetics	8:20-10:00 AM	Ballroom C3
Session 63: Regulation of Behavior	10:20 AM-Noon	Ballroom C3
Session 64: Phylogenetics - Invertebrates	8:00-10:00 AM	Club South
Session 65: Phylogenetics - Vertebrates	10:20 AM-Noon	Club South
Session 66: Complementary to Symposium: Evo Devo & Genomics	8:20 AM-Noon	Club North
Session 67: Evolutionary Morphology: Form & Function I	8:00-9:40 AM	Room 1
Session 68: Evolutionary Morphology: Form & Function II	10:00-11:40 AM	Room 1
Session 69: Symbiosis I	8:00-10:00 AM	Room 3
Session 70: Symbiosis II	10:20 AM-Noon	Room 3
Session 71: Complementary to Symposium: Dispersal of Marine Organisms	8:00-11:40 AM	Rooms 6/7
Session 72: Parental Care & Parental Investment	8:00-10:00 AM	Rooms 8/9
Session 73: Sensory Ecology	10:20-11:40 AM	Rooms 8/9
Session 74: Osmotic and Ionic Regulation	8:00-10:00 AM	Rooms 10/11
Session 75: Feeding and Digestion: Jaws, Teeth and Tongues	10:20 AM-Noon	Rooms 10/11
Session 76: Form and Function: Underwater Light and Eyes	8:00-9:40 AM	Room 12
Session 77: Community Ecology	10:00 AM-Noon	Room 12
Session 78: Evolutionary Ecology	8:20-11:40 AM	Room 13
Session 79: Locomotion: Stability	1:00-3:00 PM	Ballroom C1
Session 80: Hypoxia	1:00-2:20 PM	Ballroom C2
Session 81: Ecomorphology: Feeding and Fighting	1:00-3:00 PM	Ballroom C3
Session 82: Conservation Biology	1:00-2:40 PM	Club South
Session 83: Structure & Mechanical Design: Shape, Sound and Sex	1:00-3:00 PM	Club North
Session 84: Neurobiology - Sensory Systems	1:00-3:00 PM	Room 1
Session 85: Coral Reef Ecology	1:00-2:40 PM	Room 3
Session 86: Comp to Symp: Comparative Proteomics of Env & Pollution Stress	1:20-2:00 PM	Rooms 6/7
Session 87: Complementary to Symposium: Barnacle Biology	2:00-2:40 PM	Rooms 6/7
Session 88: Behavioral Syndromes	1:00-2:40 PM	Rooms 8/9
Session 89: Cranial Structure, Function and Evolution	1:00-3:00 PM	Rooms 10/11
Session 90: Life History Evolution - Maternal Investment	1:00-3:00 PM	Room 13
COMMITTEE & BOARD MEETINGS		
Public Affairs Committee	Noon-1:00 PM	Wando (ES)
SICB Editorial Board	Noon-1:00 PM	Room 4
Development Committee	Noon-1:00 PM	Exec Boardrm (ES)
BUSINESS MEETINGS		
AMS Business Meeting	1:30-3:00 PM	Room 5
SICB Society Business Meeting & Awards Presentation	5:15-6:15 PM	Ballroom C1
TCS Business Meeting	6:30-7:30 PM	Room 1
WORKSHOPS AND PROGRAMS		
Broadening Participation Workshop “NSF Demystifying the Grant…”	Noon-1:00 PM	Ballroom B
Student/Post Doc “Maximizing your potential through Job…”	6:30-8:00 PM	Ballroom A
Interface of Math & Biology	6:30-9:30 PM	Room 6/7
Using Stable Isotope Techniques to Investigate the Ecology…	8:00-10:00 PM	Room 12
SOCIAL EVENTS		
AMS Luncheon	Noon-1:00 PM	Room 5 & Foyer
Xcitex User’s Group Meeting	Noon-1:00 PM	Room 14
DIZ/DEE/DPCB/AMS/TCS Social	6:30-8:30 PM	Room 4/5 & Foyer
Broadening Participation Social	8:00-10:00 PM	Room 3

FRIDAY PROGRAM
SYMPOSIA

8:00 AM-3:00 PM
Ballroom A

Symposium S7: Combining Experiments with Modeling and Computational Methods to Study Animal Locomotion

Supported by: DCB, DEE, DIZ, DNB, & DVM
Organized by: Laura Miller, Silas Alben

8:00 AM	S7-1.1	DCB	*Lauder GV, Flammang B, Alben S; Harvard University, Georgia Institute of Technology*	Robotic models of fish body and caudal fin propulsion
8:30 AM	S7-1.2		*Alben S, Witt C, Baker TV, Anderson E, Lauder GV; Georgia Tech, Grove City College, Harvard University*	Resonances in fish fin models
9:00 AM	S7-1.3	DCB	*Tytell ED, Hsu C-Y, Cohen AH, Williams TL, Fauci LJ; Johns Hopkins University, Feng Chia University, University of Maryland, College Park, Princeton University, Tulane University*	Neuromechanical phase lags in swimming lampreys
9:30 AM	S7-1.4	DCB	*Yen J, Webster D, Murphy D, Catton K, Mittal R, Zheng L; Georgia Tech, Colorado State University, Johns Hopkins University*	Wake signatures formed at intermediate Re regimes: signals of prey, predators, mates or schoolmates
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:30 AM	S7-1.5	DCB	*Miller LA; University of North Carolina at Chapel Hill*	Uncovering the aerodynamics of the smallest insects using numerical and physical models
11:00 AM	S7-1.6	DCB	*Dudek D; Virginia Tech*	Simple models for terrestrial locomotion and the materials that power it
11:30 AM	S7-1.7	DCB	*McHenry MJ; University of California, Irvine*	On the speed of lever systems
NOON	**LUNCH BREAK**			
1:00 PM	S7-2.1	DCB	*Wang J; Cornell University*	Stability and control of flapping flight
1:30 PM	S7-2.2	DCB	*Hedrick TL; University of North Carolina at Chapel Hill*	Separating behavioral and passive dynamics in the pitch maneuvers of hawkmoths
2:00 PM	S7-2.3	DCB	*Daniel TL, Williams CD; University Washington*	Modeling many molecular motors mostly motivated by moth movement
2:30 PM	S7-2.4	DCB	*Goldman D; Georgia Institute of Technology*	The secrets of swimming in sand

8:00 AM-3:00 PM
Ballroom B

Symposium S8: The Impacts of Developmental Plasticity on Evolutionary Innovation and Diversification

Supported by: DAB, DCE, DEDB, DEE, DIZ, DESB, & DVM
Organized by: Matthew Wund, Armin Moczek, Ian Dworkin, Fred Nijhout

8:00 AM	S8-1.1	DEDB	*Wund MA; The College of New Jersey*	Introduction to the symposium: assessing the role of developmental plasticity in evolutionary innovation and diversification
8:30 AM	S8-1.2		*Leichty AR, Pfennig DW*, Jones CR, Pfennig KS; University of Pennsylvania, University of North Carolina, Chapel Hill*	Relaxed selection on rates of molecular evolution: consequence or cause of phenotypic plasticity?
9:00 AM	S8-1.3	DEE	*Snell-Rood E; University of Minnesota*	Exploration in development: implications for the costs, consequences and evolution of phenotypic plasticity

9:30 AM BREAK IN EXHIBIT HALL				
10:00 AM	S8-1.4	DEDB	*Nijhout HF; Duke University*	Phenotypic plasticity and allometry: new models and evolutionary implications
10:30	S8-1.5	DEE	*Ledon-Rettig CC, Pfennig DW, Crespi EJ; University of South Florida, Tampa, University of North Carolina, Chapel Hill, Washington State University*	Phenotypic plasticity's role in the origins of novel feeding strategies
11:00 AM	S8-1.6		*Murren CJ, Messervy J, Strand AE, Rutter MT; College of Charleston*	Plasticity and the integrated phenotype: examination of integration through development and across environments through classic and genomic approaches
11:30 AM	S8-1.7		*Sultan SE; Wesleyan University*	Inherited adaptation via transgenerational plasticity: a case study in annual plants
NOON LUNCH BREAK				
1:00 PM	S8-2.1	DEE	*Dworkin I; Michigan State University*	Genetic contingency: intergrating genetic background and environment into the study of mutational effects
1:30 PM	S8-2.2		*Amdam GV; Arizona State University*	The making of a social insect - genetics of social design
2:00 PM	S8-2.3		*Cruickshank T; National Evolutionary Synthesis Center*	Evolutionary consequences of context-dependent maternal effects
2:30 PM	S8-2.4		*Moczek A; Indiana University Bloomington*	The nature of nurture and the causes of traits: toward a comprehensive theory of developmental evolution

FRIDAY PROGRAM
MORNING SESSIONS

8:00-10:00 AM
Ballroom C1

Session 59: Locomotion: Jumping

Chair: Henry Astley

8:00 AM	59.1	DVM	*Azizi E; University of California, Irvine*	Muscle properties are tuned to mechanical function: lessons from hopping toads
8:20 AM	59.2	DVM	*Macesic LJ, Gillis GB; Mount Holyoke College*	Pre-landing muscle tuning in the forearm and shoulder of *Bufo marinus*
8:40 AM	59.3	DCB	*Astley HC, Haruta A, Roberts TJ; Brown University*	The effects of substrate compliance on jump performance in the Cuban tree frog (*Osteopilus septentrionalis*)
9:00 AM	59.4	DVM	*Abbott EM, Azizi M, Roberts TJ; University of California, Irvine, Brown University*	Extrinsic loading in Cuban tree frog jumping
9:20 AM	59.5		*Self ZT, Spence AJ, Wilson AM; The Royal Veterinary College*	Jump racing: do horses slow down due to a force limit?
9:40 AM	59.6	DCB	*Taylor KR, Pace CM, Mortimer SA, Nishikawa KC; Northern Arizona University*	Vertical jumping among *mdm* mouse genotypes
10:00 AM BREAK IN EXHIBIT HALL				

10:20 AM-Noon
Ballroom C1

Session 60: Locomotion: Above and Underground

Chair: David Carrier

10:20 AM	60.1	DAB	*Gilman CA, Irschick DJ; University of Massachusetts Amherst*	Foils of flexion: the effects of perch compliance on lizard locomotion and perch choice in the wild

10:40 AM	60.2	DCB	*Sharpe SS, Judy KN, Daffon K, Goldman DI; Georgia Tech*	Burrowing of the ocellated skink (*Chalcides ocellatus*) in wet and dry granular media
11:00 AM	60.3		*Warner SE, Pickering P, Panagiotopoulou O, Pfau T, Ren L, Hutchinson JR; Royal Veterinary College, University of Manchester*	Size-related biomechanical constraints on foot impacts in ungulate mammals
11:20 AM	60.4		*Blum Y, Birn-Jeffery A, Daley MA; Royal Veterinary College*	Perturbed bipedal running: how do touch down conditions affect stance dynamics?
11:40 AM	60.5	DVM	*Carrier DR, Anders C, Schilling N; University of Utah, Salt Lake City, University Hospital Jena, University of Veterinary Medicine Hannover*	The musculoskeletal system of humans is not tuned to maximize the economy of locomotion

8:00-11:40 AM
Ballroom C2

Session 61: Cardiovascular and Respiration Physiology

Co-Chairs: Scott Kirkton, John Eme

8:00 AM	61.1	DCPB	*Kirkton SD, Hennessey LE, Duffy B, Bennett MM, Lee W-K, Greenlee KJ; Union College, North Dakota State University, Argonne National Laboratories*	Intermolt development reduces oxygen delivery capacity and jumping performance in the American locust (*Schistocerca americana*)
8:20 AM	61.2	DCPB	*Van Sant MJ, Hammond KA; University of California, Riverside*	Limits of the blood oxygen carrying capacity in the deer mouse, *Peromyscus maniculatus*
8:40 AM	61.3	DCPB	*Harrison JF, Waters JS, Heinrich SM, Socha JJ; Arizona State University, Virginia Polytechnical Institute*	Effects of rearing oxygen level on the anatomy of the adult tracheal system in *Drosophila*
9:00 AM	61.4	DCPB	*Tate KB, Slay CE, Hicks JW, Crossley II DA; University North Texas, University of California, Irvine*	Chronic hypoxic incubation stress and the plasticity of humoral regulation of cardiovascular function in the American alligator (*Alligator mississippiensis*)
9:20 AM	61.5	DCPB	*Eme J, Tate KB, Kohl ZF, Slay CE, Hicks JW, Crossley II, DA; University North Texas, University of California, Irvine*	Cardiovascular plasticity during hypoxic development in reptile embryos
9:40 AM	**BREAK IN EXHIBIT HALL**			
10:00 AM	61.6	DCPB	*Owerkowicz T, Campbell C, Eme J, Blank JM, Hicks JW; California State University, San Bernardino, University California, Irvine, University North Texas, Denton, California Polytechnic State Uni, San Luis Obispo*	Cardiac hypertrophy in response to pressure overload and exercise training in the American alligator
10:20 AM	61.7	DCPB	*Ros IG, Biewener AA; Harvard University*	Heart rate is not modulated with flight speed in cockatiels
10:40 AM	61.8	DCPB	*Noren SR, Williams TM; UC Santa Cruz*	Ontogeny influences the capacity for bradycardia in dolphins
11:00 AM	61.10	DVM	*Hykin SM; University of California, Berkeley*	Cardiac morphology of *Dermophis mexicanus* through ontogeny
11:20 AM	61.11	DIZ	*Barbano DL, Nishikawa KC, Uyeno TA; Northern Arizona University, Valdosta State University*	Ultrastructure and function in accessory heart of squid

8:20-10:00 AM
Ballroom C3

Session 62: Growth and Energetics

Co-Chairs: Michael Romero, Stephen Schoech

8:20 AM	62.1	DCE	*Cornelius JM, Hahn TP, Chapple TK, Wilkelski M; Max Planck Institute of Ornithology, University of California, Davis*	Seasonal changes in energy expenditure, corticosterone and behavior in free-living red crossbills, *Loxia curvirostra*
8:40 AM	62.2	DCE	*Kelly JE, Blair BG, Meade ME, Murdock CA; Jacksonville State University, Alabama*	Elevated growth rate and hepatic IGF-1 expression in *Oreochromis niloticus* (Nile Tilapia), the case for *Eubacterium cellulosolvens* 5494 as a possible aquaculture probiont
9:00 AM	62.3		*Levin E, Yom-Tov Y, Hefetz A, Kronfeld-Schor N; Tel-Aviv University, Department of Zoology*	Pre-hibernation saturated fat rich diet in the subtropical mouse-tailed bat (Rhinopoma microphyllum) with relation to hypothalamic NPY and AgRP expression
9:20 AM	62.4	DCE	*De Bruijn R, Merullo D, Romero LM; Tufts University*	Heart rate response of molting and non-molting European starlings to artificial rain and cooling
9:40 AM	62.5	DCE	*Elderbrock EK, Small TW, Schoech SJ; University of Memphis*	Plasma corticosterone and feather quality in the threatened Florida scrub-jay

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Ballroom C3

Session 63: Regulation of Behavior

Co-Chairs: Michelle Rensel, Sunny Scobell

10:20 AM	63.1	DCE	*Scobell SK, MacKenzie DS, Jaques JT, Jones AG; Texas A&M University, College Station, Texas Veterinary Medical Diagnostic Laboratory*	Androgens and female intrasexual aggression in the sex-role reversed Gulf pipefish
10:40 AM	63.2	DCE	*Ernst DFK, Bentley GE; University of California, Berkeley*	Social isolation, reproductive physiology and behavior in male zebra finches
11:00 AM	63.3	DCE	*Rensel MA, Salwiczek L, Hsiao CF, Xia S, Remage-Healey L, Schlinger B; University of California, Los Angeles*	In vivo microdialysis reveals dynamics of estradiol production in the avian hippocampus
11:20 AM	63.4	DCE	*Dlugosz EM, Harris BN, Saltzman W, Chappell MA; University of California, Riverside*	Aerobic physiology, locomotor behavior, and glucocorticoids in California mice
11:40 AM	63.5	DCPB	*Acosta W, Meek TH, Schutz H, Dlugosz EM, Vu KT, Garland T Jr; University of California, Riverside*	Effects of early-onset voluntary exercise on adult physical activity in mice selectively bred for high voluntary wheel running

8:00-10:00 AM
Club South

Session 64: Phylogenetics - Invertebrates

Co-Chairs: Ellen Strong, Isabella Kappner

8:00 AM	64.1		*Strong EE; Smithsonian Institution, Washington DC*	Large, common and variable: re-assessing the monophyly and diversity of Cerithiidae (Cerithioidea, Caenogastropoda)
8:20 AM	64.2		*Kawauchi GY, Sharma PP, Giribet G; Harvard University*	A new Sipuncula classification: reassessing and dating the sipunculan phylogeny using a six-gene dataset and fossil taxa
8:40 AM	64.3	DPCB	*Spagna JC, Larabee FJ, Suarez AV; William Paterson University, University of Illinois, Urbana-Champaign*	Evolution of jaw-morphology and kinematics in ponerine trap-jaw ants

9:00 AM	64.4	DIZ	*Crowley LM; American Museum of Natural History, New York*	Systematics and phylogenetics of the arks (arcoida: bivalvia): a combined analysis of morphology and molecular data
9:20 AM	64.5	DPCB	*Laumer CE, Giribet G; Harvard Museum of Comparative Zoology*	A single, stepwise origin of ectolecithality in Platyhelminthes?
9:40 AM	64.6	DPCB	*Kappner I; American Museum of Natural History, New York*	Paternal mitochondrial inheritance is widespread in dioecious bivalves and may have multiple origins

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Club South

Session 65: Phylogenetics - Vertebrates

Co-Chairs: Mike Alfaro, Princess Gilbert

10:20 AM	65.1	DPCB	*Miller EC, Drewes RC; University of California, San Diego, California Academy of Sciences*	A new species of *Hemidactylus* gecko endemic to the Gulf of Guinea: a story of transoceanic colonization events
10:40 AM	65.2	DPCB	*Alfaro ME, Faircloth B, Sorenson L, Chang J, Santini F; University of California, Los Angeles*	A 500-locus phylogenomic study of ray-finned fishes
11:00 AM	65.3	DEE	*Gilbert PS, Chang J, Faircloth B, Alfaro ME; University of California, Los Angeles*	Genome-wide ultraconserved elements exhibit higher phylogenetic informativeness than traditional fish markers
11:20 AM	65.4		*Keck BP; University of Tennessee*	Rates of hybridization, introgression, and formation of chimaeric lineages in Darters
11:40 AM	65.5	DPCB	*Siler CD; University of Kansas*	Comparative species delimitation and patterns of cryptic diversity in an island radiation of fossorial lizards

8:20 AM-Noon
Club North

Session 66: Complementary to Symposium: Evo Devo & Genomics

Co-Chairs: Leonid Moroz, Brad Davidson

8:20 AM	66.2	DEDB	*Srivastava M, Reddien PW; Whitehead Institute, Massachusetts Institute of Technology, HHMI*	A comparative approach to animal regeneration
8:40 AM	66.3	DEDB	*Sikes JM, Newmark PA; University of Illinois, Champaign-Urbana, Howard Hughes Medical Institute*	Exploring the evolutionary loss of regeneration: a comparative genomics study in planarians
9:00 AM	66.4	DEDB	*Infante CR, Losos JB, Menke DM; University of Georgia, Harvard University*	The developmental basis of an adaptive radiation: the evolution of limb diversity in *Anolis* lizards
9:20 AM	66.5	DEDB	*Serb JM, Zhang X, West Greenlee MH; Iowa State University*	Applying seed networks to genomic data in an evodevo context: a new analysis tool

9:40 AM BREAK IN EXHIBIT HALL

10:20 AM	66.6		*Browne WE, Schnitzler CE, Gildea D, Nguyen A-D, Maxwell E, Ryan JF, Baxevanis AD; University of Miami, NHGRI/NIH*	The early embryo: genomic analysis of gene expression in an early diverging lineage of metazoans, the Ctenophora
10:40 AM	66.7	DEDB	*Moroz LL, Kohn A, Citarella M, Grigorenko A, Kocot K, Halanych K, Rogaev E; University of Florida, University of Massachusetts Medial School, University of Alabama*	The genome of the ctenophore pleurobrachia bachei: molecular insights into independent origins of nervous systems

11:00 AM	66.8	DNB	*Kohn AB, Citarella MR, Gillette R, Sweedler JV, Moroz LL; Whitney Lab for Marine Bioscience University of Florida, University of Illinois at Urbana-Champaign*	Genome-wide characterization of signaling peptides in molluscs: insights into neuronal evolution
11:20 AM	66.9	DEDB	*Maliska ME, Pierce T, Hausch P, Brown CT, Swalla BJ; University of Washington, Ripon College, Michigan State University*	Molgulid ascidians show an early heterochronic shift in the expression of genes critical for metamorphosis in other ascidians
11:40 AM	66.10	DEDB	*Woznica A, Hausler M, Jemmet J, Starobinska E, Li Y, Davidson B*; University of California, Berkeley, University of California, Santa Cruz, University of Arizona*	Resetting the clock: temporal dynamics in gene network evolution

8:00-9:40 AM
Room 1

Session 67: Evolutionary Morphology: Form & Function I

Chair: Sharlene Santana

8:00 AM	67.1	DEE	*Santana SE, Lynch Alfaro J, Alfaro ME; University of California Los Angeles*	Adaptive evolution of facial color patterns in Neotropical primates
8:20 AM	67.2	DVM	*Homberger DG, Dubansky BH; Louisiana State University, Baton Rouge*	Functional morphology of the crocodilian and avian integument: implications for the evolutionary origin of feathers in dinosaurs
8:40 AM	67.3	DIZ	*Okamura B, Humphries S, Gruhl A; Natural History Museum, London, University of Hull, UK*	Buddenbrockia plumatellae: a novel solution to being a worm
9:00 AM	67.4	DEE	*Figueroa A, Lailvaux S; University of New Orleans*	Ecomorphology and convergence in arboreal snakes
9:20 AM	67.5	DVM	*Smith SM, Angielczyk KD, Schmitz L, Wang SC; Johns Hopkins University, Field Museum of Natural History, University of California, Davis, Swarthmore College*	How well do orbit dimensions predict diel activity in sciurid rodents?

9:40 AM BREAK IN EXHIBIT HALL

10:00-11:40 AM
Room 1

Session 68: Evolutionary Morphology: Form & Function II

Chair: Dominique Adriaens

10:00 AM	68.1	DVM	*Adriaens D, Neutens C, Christiaens J, Van Loo D, De Kegel B, Boistel R, Van Hoorebeke L; Ghent University, Belgium, Université de Poitiers, France*	Evolutionary morphology of the caudal musculoskeletal system in syngnathid fish: from swimming to prehension ... in different ways
10:20	68.3		*Marcroft TA, Van Wassenbergh S, Dornburg A, Santini F, Slater GJ, Modlin J, Nguyen MTT, Alfaro ME; University of California, Los Angeles, University of Antwerp, Belgium, Yale University, California State University, Channel Islands*	Trade-offs and evolution of the boxfish carapace
10:40 AM	68.4	DVM	*Tsai HP, Holliday CM*; University of Missouri*	Ontogeny of the alligator cartilago transiliens and its significance for sauropsid jaw muscle evolution
11:00 AM	68.5		*Jaszlics A, Pardo JD; University of Texas at Arlington*	Ontogeny and modularity in the crocodilian skull
11:20 AM	68.6	DVM	*Swartz B; University of California, Berkeley*	The origin and early evolution of terrestrial locomotion

8:00-10:00 AM
Room 3

Session 69: Symbiosis I

Chair: Malcolm Hill

8:00 AM	69.1	DIZ	*Middlebrooks ML, Pierce SK, Bell SS; University of South Florida*	Chlorophyll synthesis in the photosynthetic sea slug *Elysia clarki*
8:20 AM	69.2	DIZ	*Fernandes DAO, Podolosky RD; College of Charleston*	Developmental consequences of association with a photosynthetic substrate for encapsulated embryos of an intertidal gastropod
8:40 AM	69.3		*Curtis NE, Fang X, Jiang X, Schwartz JA, Pierce SK; University of South Florida, Tampa, Beijing Genomics Institute-Shenzhen, China*	Algal, nuclear-encoded gene sequences are present in the transcriptome of the kleptoplastic sea slug, *Elysia chlorotica* - further evidence for horizontal gene transfer
9:00 AM	69.4	DIZ	*Mazzillo Mays M, Kempf SC; Auburn University*	Mucilage variation and ultrastructure among *Symbiodinium* strains
9:20 AM	69.5		*Matterson KO, Gleason DF; University of Alabama at Birmingham, Georgia Southern University*	Microscale variation in light intensity and its effects on the growth of juveniles of the temperate coral, *Oculina arbuscula*
9:40 AM	69.6	DIZ	*Schwartz JA, Curtis NE, Pierce SK; University of South Florida, Tampa*	Using fluorescent *in situ* hybridization (FISH) to localize transferred algal genes in the cells of the sacoglossan sea slug, *Elysia chlorotica*

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Room 3

Session 70: Symbiosis II

Chair: Lori Tolley-Jordan

10:20 AM	70.1		*Freeman CJ, Thacker RW, Baker DM, Fogel M; University of Alabama, Birmingham, Carnegie Institution of Washington*	Determining the benefits of symbiosis: tracing the products of symbiont nitrogen and carbon metabolism to host sponges using incubations with enriched stable isotopes
10:40 AM	70.2	DEE	*Allison AL, Fitzpatrick BM; University of Tennessee, Knoxville*	Distinctiveness and diversity of bacteria associated with salamander skin
11:00 AM	70.3	DEE	*Nourabadi N, Nishiguchi MK; New Mexico State University*	The role of sensor regulator loci that mediate anaerobic respiration in host symbiotic competence of the *Euprymna-Vibrio mutualism*
11:20 AM	70.4	DEE	*Punke EB, Nishiguchi MK; New Mexico State University*	Spatial and temporal patterns among symbiotic Vibrio fischeri: environment matters!
11:40 AM	70.5		*Tolley-Jordan LR, Chadwick MA; Jacksonville State University, Kings College London*	Significance of snails as habitat patches for their concomitant parasites in novel environments

8:20-11:40 AM
Rooms 6/7

Session 71: Complementary to Symposium: Dispersal of Marine Organisms

Co-Chairs: Renae Brodie, Shawn Arellano

8:20 AM	71.1	DAB	*Putman NF, Verley P, Shay TJ, Lohmann KJ; North Carolina State University, IRD, France, University of North Carolina, Chapel Hill*	Transoceanic migratory dispersal in young sea turtles: the role of currents and geomagnetic navigation
8:40 AM	71.2	DIZ	*Arellano SM, Mullineaux L, Anderson EJ, Helfrich K, McGann BJ, Wheeler JD; Woods Hole Oceanographic Institution, Grove City College*	Can waterborne settlement cues trigger the larval transition from the plankton to the seafloor?

9:00 AM	71.3		*Miller RG, Burrows MT, Fox CJ, Inall ME; Scottish Association for Marine Science*	Offshore renewable energy structures as stepping stones for biogeographic change: does larval vertical positioning hold the key?
9:20 AM	71.4		*Eernisse DJ, Kvist S, Barrio A, Siddall ME; California State University Fullerton, American Museum of Natural History, New York*	Cryptic species diversity in the marine pulmonate limpet subgenus *Siphonaria* (*Heterosiphonaria*) in the vicinity of the Gulf of California
9:40 AM	71.5	DIZ	*Borda E, Kudenov JD, Blake JA, Alvarado JR, Chevaldonné P, Desbruyères D, Fabri M-C, Hourdez S, Pleijel F, Schulze A, Shank TM, Rouse GW; Texas A&M University at Galveston, University of Alaska Anchorage, AECOM, Centre de Brest de l IFREMER, Centre d'Océanologie de Marseille, Ifremer Méditerranée, Station Biologique de Roscoff, Tjärnö Marine Biological Laboratory, Woods Hole Oceanographic Institution, Scripps Institution of Oceanography*	Cryptic species of *Archinome* (Annelida: Amphinomida) from hydrothermal vents and cold seeps
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:20 AM	71.6	DEE	*Rognstad RL, Wethey DS, Hilbish TJ; University of South Carolina, Columbia*	Intertidal population connectivity: limitations of climate and larval supply
10:40 AM	71.7		*Yund PO, Tilburg CE, McCartney MA; University of New England, University of North Carolina - Wilmington*	Is the southern range boundary of the northern blue mussel, *Mytilus trossulus*, determined by constraints on larval dispersal?
11:00 AM	71.8	DEE	*McCartney MA, Yund PO; University of North Carolina, Wilmington, University of New England*	Transplants of juvenile mussels show that thermal tolerance, alone, is unlikely to set the Atlantic southern range boundary of the northern blue mussel, *Mytilus trossulus*
11:20 AM	71.9	DIZ	*Hickman CS; University of California, Berkeley*	Why marine mollusks don't require larvae for dispersal

8:00-10:00 AM
Rooms 8/9

Session 72: Parental Care & Parental Investment

Chair: Alice Boyle

8:00 AM	72.1	DEE	*Delia JRJ, Warkentin KM; Boston University, Boston*	Hatching plasticity and the function of parental care in two glassfrogs (Anura: Centrolenidae)
8:20 AM	72.2	DAB	*Tumulty JP, Summers K; East Carolina University*	Male Removal Experiments Support the Biparental Care Hypothesis for the Evolution of Monogamy in *Ranitomeya imitator*
8:40 AM	72.3	DCE	*Pradhan DS, Solomon-Lane TK, Willis MC, Grober MS; Georgia State University*	Neural androgens regulate paternal care in a polygamous sex changing fish
9:00 AM	72.4	DCE	*Harris BN, Perea-Rodriguez JP, Saltzman W; University of California, Riverside*	Acute effects of corticosterone injection on paternal behavior in California mouse (*Peromyscus californicus*) fathers
9:20 AM	72.5	DAB	*Dantzer B, Boonstra R, Boutin S, Humphries MM, Palme R, McAdam AG; Michigan State University, University of Toronto at Scarborough, University of Alberta, McGill University, University of Veterinary Medicine, University of Guelph*	Adaptive hormone-mediated maternal effects in red squirrels

9:40 AM	72.6	DAB	*Sockman KW; University of North Carolina, Chapel Hill*	Real-time modulation of egg size in an altricial bird

10:00 AM BREAK IN EXHIBIT HALL

10:20-11:40 AM
Rooms 8/9

Session 73: Sensory Ecology

Chair: Sönke Johnsen

10:20 AM	73.1	DAB	*Seymoure B, McMillan WO, McGraw K, Rutowski R; Arizona State University, Smithsonian Tropical Research Institute*	*Heliconius* mimicry rings in a new light
10:40 AM	73.2	DIZ	*Baldwin JL, Johnson S; Duke University*	The use of chromatic and achromatic cues during mate choice in the male blue crab, *Callinectes sapidus*
11:00 AM	73.3		*Wang DL, Papaj DR; University of Arizona*	Color as a visual cue in the pipevine swallowtail, *Battus philenor*: is hue or brightness more important?
11:20 AM	73.4	DEE	*Uhrig EJ, Lemaster MP, Mason RT; Oregon State University, Corvallis, Western Oregon University, Monmouth*	Chemical ecology of the red-spotted garter snake, *Thamnophis sirtalis concinnus*

8:00-10:00 AM
Rooms 10/11

Session 74: Osmotic and Ionic Regulation

Co-Chairs: Michael Menze, Charlotte Bodinier

8:00 AM	74.1	DCPB	*MacMiillan HA, Williams CM, Staples JF, Sinclair BJ; University of Western Ontario*	After the cold: the reestablishment of osmotic balance and neuromuscular function during chill-coma recovery in a cricket (*Gryllus pennsylvanicus*)
8:20 AM	74.2	DCPB	*Anderson JM, Harder AM, Hand SC, Toner M, Chakraborty N, Menze MA; Eastern Illinois University, Louisiana State University, Medicine Harvard Medical School*	Protective mechanisms against water stress evaluated in insect cells
8:40 AM	74.3	DCPB	*Marunde MR, Li S, Hand SC, Menze MA; Eastern Illinois University, Charleston, Louisiana State University*	Late embryogenesis abundant protein ameliorates inhibition of mitochondrial respiration
9:00 AM	74.4	DCPB	*Champagne AM, Allen HC, Williams JB; The Ohio State University*	Effects of lipid-lipid and lipid-water interactions on cutaneous water loss in the house sparrow (*Passer domesticus*) across temperature and humidity regimes
9:20 AM	74.5	DCPB	*Gefen E, Kalra B; University of Haifa-Oranim, Israel*	Desiccation stress triggers a switch to exclusive carbohydrate catabolism in scorpions
9:40 AM	74.6	DCPB	*Bodinier C, Meng Y, Galvez F; Louisiana State University, Baton Rouge*	Localization and expression of Na^+/K^+-ATPase, $Na^+/K^+/2CL$ cotransporter, and CFTR during osmotic challenges to *Fundulus grandis*

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Rooms 10/11

Session 75: Feeding and Digestion: Jaws, Teeth and Tongues

Chair: Paul Gignac

10:20 AM	75.1		*Erickson GM, Hamilton M, Bourne GR, Norell MA, Sawyer WG; Florida State University, Tallahassee, University of Florida, Gainesville, Colorado School of Mines, Golden, American Museum of Natural History, New York*	Histology and wear biomechanics of hadrosaurid dinosaur teeth-reptiles that exceeded mammals in dental complexity
10:40 AM	75.2	DCB	*Gignac PM, Erickson GM; Stony Brook University, Florida State University*	Assessing biomechanical performance in extinct crocodylians: a neontological model of bite-force generation and tooth pressures in fossil forms
11:00 AM	75.3	DCB	*Iriarte-Diaz J, Terhune CE, Ross CF; University of Chicago, Duke University*	Mandibular helical axis during feeding in non-human primates
11:20 AM	75.4	DCB	*Anderson CV, Larghi NP, Creemers S, Deban SM; University of South Florida, Tampa*	Thermal effects on the performance, motor control, and muscle dynamics of tongue projection in a plethodontid salamander
11:40 AM	75.5	DCB	*Deban S, Anderson C, Larghi N, Sandusky P; University South Florida, Tampa*	Evolution of elastic mechanisms in salamander tongues

8:00-9:40 AM
Room 12

Session 76: Form and Function: Underwater Light and Eyes

Chair: Lars Schmitz

8:00 AM	76.1	DIZ	*Sweeney AM, Holt AL, Gagnon Y, Morse DE; University of California, Santa Barbara, Duke University*	Giant clam iridocytes optimize photosynthetic symbiosis
8:20 AM	76.2		*Holt AL, Gagnon Y, Sweeney AM, Morse DE; University California, Santa Barbara, Duke University*	A monte-carlo model of photon transport in symbiotic giant clams
8:40 AM	76.3	DIZ	*Speiser DI, Gagnon YL, Chhetri RK, Oldenburg AL, Johnsen S; University of California, Santa Barbara, Duke University, University of North Carolina, Chapel Hill*	Optical coherence tomography (OCT) reveals that scallop eyes may have bifocal optics
9:00 AM	76.4	DVM	*Schmitz L, Wainwright PC; University of California, Davis*	Nocturnality limits morphological and functional diversity in the eyes of reef fishes
9:20 AM	76.5		*Sandkam BA, Watson CT, Joy JB, Breden F; Simon Fraser University*	Genomic and lighting environments influence color vision in guppies

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon
Room 12

Session 77: Community Ecology

Chair: Sandra Connelly

10:00 AM	77.1	DEE	*Trowbridge CD, Little C, Pilling GM, Stirling P, Miles A; University of Oregon, University of Bristol, Secretariat of the Pacific Community*	Decadal-scale changes of shallow subtidal benthos in an Irish marine reserve
10:20 AM	77.2	DEE	*Gosnell JS, Diprima JB, Gaines SD; University of California, Santa Barbara*	Variation in habitat structure impacts responses to biotic and abiotic factors in an intertidal snail
10:40 AM	77.3	DEE	*Gillespie JL, Franklin RB; Virginia Commonwealth University*	A comparison of microbial community structure and function in tidal freshwater wetlands of the Chesapeake Bay watershed in Virginia

11:00 AM	77.4	DEE	*Elahi R, Sebens KP; Friday Harbor Labs, University of Washington*	A consumer one-two punch: facilitation and functional diversity prevent reversals in community state
11:20 AM	77.5		*Turner KR, Sebens KP; University of Washington*	Lingcod and rockfish impacts on benthic community structure
11:40 AM	77.6	DCPB	*Pilgrim MA, Farrell TM; University of South Carolina Upstate, Stetson University*	Use of stable isotope approaches to study spatial variation in diet: rattlesnakes as a case study.

8:20-11:40 AM
Room 13

Session 78: Evolutionary Ecology

Co-Chairs: Ryan Martin (8:20-10 am), Laura Wegener (8:20-10 am), Kevin Matson (10:20-11:40 am)

8:20 AM	78.1	DEE	*Heiniger J, Van Uitregt V, Wilson RS; University of Queensland*	Fine tuning anti-predator responses: are the costs of inducible predator defences proportional to the magnitude of the responses?
8:40 AM	78.2		*Thawley CJ, Robbins TR, Langkilde T; Pennsylvania State University*	Survival under pressure: lethal and sublethal effects of an invasive predator, the red imported fire ant, on a spiny lizard
9:00 AM	78.3	DEE	*Martin RA, Pfennig DW; University of North Carolina, Chapel Hill*	Ecological opportunity and competition predict widespread disruptive selection in the wild
9:20 AM	78.4		*Riesch R, Martin RA, Langerhans RB; North Carolina State University, Raleigh*	Ecological causes of the joint evolution of life history and morphology during a post-Pleistocene radiation of Bahamas mosquitofish (*Gambusia hubbsi*)
9:40 AM	78.5	DEE	*Wegener Parfrey L, Knight R; University of Colorado, Howard Hughes Medical Institute*	Broad patterns in the diversity of eukaryotic microbes
10:00 AM	**BREAK IN EXHIBIT HALL**			
10:20 AM	78.6		*Matson KD, Mauck RA, Lynn SE, Tieleman BI; University of Groningen, Kenyon College, The College of Wooster*	Island life and innate immunity: combining comparative and experimental approaches to better understand avian immune system evolution
10:40 AM	78.7	DEE	*Hahn DC, Igl L, Burnett J, Erf G; US Geological Survey, University of Arkansas*	Evidence of parasite-mediated selection favoring evolution of more effective immune defenses: more immune constituents in eggs of avian brood parasites
11:00 AM	78.8	DEE	*Coon CAC, Martin LB; University of South Florida*	Do changes in parasite prevalence facilitate range expansion of Kenyan house sparrows (*Passer domesticus*)?
11:20 AM	78.9	DEE	*Li J; University of Michigan, Ann Arbor*	Sponsorship required for permanent residency in sediment

FRIDAY PROGRAM
AFTERNOON SESSIONS

1:00-3:00 PM
Ballroom C1

Session 79: Locomotion: Stability

Chair: Tonia Hsieh

1:00 PM	79.1	DCB	*Mara KR, Hsieh ST; Temple University*	Slip perturbation recovery in the frilled dragon, a dynamically stable bipedal runner
1:20 PM	79.2		*Liedtke AM, Moore S, Witte T, Spence AJ; The Royal Veterinary College, UoL*	How do animals with limited distal limb musculature use sensory feedback during locomotion?
1:40 PM	79.3	DCB	*Lammers AR, Zurcher U; Cleveland State University*	Dynamic stability during quadrupedal arboreal locomotion: body segment contributions to angular momentum

2:00 PM	79.4	DCB	*Jayaram K, Merritt C, Full RJ; University of California, Berkeley*	Robust climbing in cockroaches results from fault tolerant design using leg spines
2:20 PM	79.5		*Jusufi A, Libby T, Full RJ; University of California, Berkeley*	Scales assist scaling in lizards: keeled, subcaudal scale arrays engage substrate during rapid vertical climbing
2:40 PM	79.6	DCB	*Hsieh ST, Fisher RE, Kusumi K; Temple University, University of Arizona College of Medicine, Phoenix, Arizona State University*	The effect of tail autotomy on locomotor stability in the green anole lizard

1:00-2:20 PM
Ballroom C2

Session 80: Hypoxia

Co-Chairs: David Buchwalter, Johanne Lewis

1:00 PM	80.1	DCPB	*Kim KS, Funk DH, Buchwalter DB*; North Carolina State University, Stroud Water Research Center*	Thermal and hypoxic gene expression in the mayfly (*Centroptilum triangulifer*)
1:20 PM	80.2	DCPB	*Darling CL, Burnett LE, Burnett KG; College of Charleston*	Recovery from hypoxia and hypercapnic hypoxia: impacts on the transcription of key antioxidant genes in the shrimp *Litopenaeus vannamei*
1:40 PM	80.3	DCPB	*Diaz S, Thaler CD, Shirkey NJ, Brown T, Cardullo RA, Hammond KA; University of California, Riverside*	Changes in pulmonary surfactant in deer mice (*Peromyscus maniculatus*) at high altitude
2:00 PM	80.4		*Campbell JC, Cobb VA; Middle Tennessee State University*	Are all snakes made equal: handling hypoxic conditions.

1:00-3:00 PM
Ballroom C3

Session 81: Ecomorphology: Feeding and Fighting

Co-Chairs: Christopher Kenaley, Ralph Turingan

1:00 PM	81.1	DVM	*Turingan RG, Wittenrich ML, Beck JB, Samarco TJ; Florida Institute of Technology, University of Florida, NOAA, St. Petersburg, Florida*	Determinants of feeding performance in marine-fish larvae
1:20 PM	81.2	DCB	*Kenaley CP; Harvard University*	A device for dampening drag: a novel hypothesis for the function of enormous fangs in deep-sea fishes
1:40 PM	81.3	DCB	*Oufiero CE, Holzman R, Wainwright PC; University of California, Davis*	The diversity of strike kinematics in serranid fishes: support for the ram-suction continuum
2:00 PM	81.4	DCB	*Sustaita D, Rubega M; University of Connecticut*	Anatomy of a shrike bite: force, speed, and pressure in relation to bill shape in loggerhead shrikes (Passeriformes: Laniidae: Lanius ludovicianus)
2:20 PM	81.5	DEE	*Cameron SF, Wynn ML, Wilson RS; University of Queensland, Australia*	Trade-offs and compensatory traits: bite force and sprint speed pose conflicting demands on the design of male geckos (Hemidactylus frenatus)
2:40 PM	81.6	DAB	*Devries MS, Christy JH; University of California, Berkeley, Smithsonian Tropical Research Institute*	Why stomatopods are striking

1:00-2:40 PM
Club South

Session 82: Conservation Biology

Chair: James Garey

1:00 PM	82.1	DAB	*Noren DP, Hauser DDW; NOAA Fisheries*	Using behavioral data to identify potential marine protected areas for the endangered southern resident killer whale
1:20 PM	82.2	DEE	*Zylberberg M, Lee KA, Klasing KC, Hahn TP, Wikelski M; University of California, Davis, Max Planck Institute for Ornithology*	Change in avian pox prevalence varies by species and land use type in Galápagos finches
1:40 PM	82.4		*Lavender AL, Bartol SM, Bartol IK; Old Dominion University, Virginia Wesleyan College*	A two-method approach for investigating the underwater hearing capabilities of loggerhead sea turtles (*Caretta caretta*)
2:00 PM	82.5	DEE	*Harden LA, Williard AS; University of North Carolina, Wilmington*	Using a spatially-explicit predator-prey model to investigate bycatch risk of terrapins in crab pots
2:20 PM	82.6	DEE	*Karsten KB, Hale AM; California Lutheran University, Texas Christian University*	Using meteorological data to predict bat mortality at a wind facility in Texas

1:00-3:00 PM
Club North

Session 83: Structure & Mechanical Design: Shape, Sound and Sex

Chair: Diane Kelly

1:00 PM	83.1	DVM	*Clardy T; Virginia Institute of Marine Science*	Using fractals to describe morphology and ontogeny of lateral line canals of *Xiphister* (Cottiformes: Stichaeidae), with comparisons to other stichaeids
1:20 PM	83.2	DCB	*Connors MJ, Kallai I, Gazit D, Ortiz C; Massachusetts Institute of Technology, Hebrew University*	Three-dimensional structure of the shell plate assembly of the chiton Tonicella marmorea and its biomechanical consequences
1:40 PM	83.3		*Mohajer YJ, Fine ML, Ghahramani ZN; Virginia Commonwealth University*	High speed examination of pectoral stridulation sound generation in blue catfish, *Ictalurus furcatus*
2:00 PM	83.4	DVM	*Friscia AR, Schlinger BA; University of California, Los Angeles*	Unique wing morphology in wingsnapping *Manacus* Manakins
2:20 PM	83.5		*Moore BC, Mathavan K, Guillette LJ; Louisiana Tech University, University of Massachusetts, Medical University of South Carolina*	The functional complexity of the male American alligator phallus
2:40 PM	83.6	DVM	*Kelly DA; University of Massachusetts, Amherst*	Functional morphology of penile erection in the American alligator (*Alligator mississippiensis*): indirect eversion and elastic retraction

1:00-3:00 PM
Room 1

Session 84: Neurobiology - Sensory Systems

Chair: Duane McPherson

1:00 PM	84.1		*Therrien S, Carr C, Wells-Berlin A; University of Maryland, College Park, US Geological Survey, Patuxent Wildlife Research Center*	Auditory brainstem response in sea ducks and diving ducks
1:20 PM	84.2		*Bok MJ, Porter ML, Cronin TW; University of Maryland, Baltimore County*	Ultraviolet vision in mantis shrimp
1:40 PM	84.3		*Cohen JH; University of Delaware*	Visual ecology of bi-lobed eyes in an Antarctic euphausiid

2:00 PM	84.4		*McCullagh G, Bishop C, Wyeth R; St. Francis Xavier University*	Odor-gated rheotaxis and sensory integration by the rhinophores during navigation in the nudibranch, *Tritonia diomedea*
2:20 PM	84.5	DPCB	*Eiting T, Smith T, Forger N, Dumont E; UMass Amherst, Slippery Rock Univ*	Comparing sensory abilities: olfactory bulb size and olfactory sensitivity in phyllostomid bats
2:40 PM	84.6	DAB	*Elzinga MJ, Dickson WB, Dickinson MH; Caltech, IO Rodeo, University of Washington*	The influence of sensory feedback delays on the yaw dynamics of insect flight

1:00-2:40 PM
Room 3

Session 85: Coral Reef Ecology

Chair: Sophie George

1:00 PM	85.1	DIZ	*Hanes SD, Kempf SC; Auburn University*	Autophagic degradation and bleaching in the symbiotic anemone, *Aiptasia pallida*
1:20 PM	85.2	DEE	*Meyer E, Davies S, Matz MV; University of Texas, Austin*	Gene expression predicts genetically-determined thermal tolerance in corals
1:40 PM	85.3	DEE	*Matz MV; University of Texas at Austin*	Coral bleaching as an adaptive mechanism facilitating transmission of algal symbionts to the next generation of coral host
2:00 PM	85.4		*Dustan P, Doherty O, Pardede ST, Vance J, Cowan NJ; College of Charleston, Biosphere Foundation, WIldlife Conservation Society, Indonesia, Johns Hopkins University*	Digital reef rugosity
2:20 PM	85.5	DEE	*Davies SW, Meyer E, Matz M; University of Texas at Austin*	Lack of Caribbean coral recruitment: a mismatch between larvae and settlement cues?

1:20-2:00 PM
Rooms 6/7

Session 86: Complementary to Symposium: Comparative Proteomics of Environmental & Pollution Stress

Chair: Lars Tomanek

1:20 PM	86.1		*Baumgarner BL, Inerowicz D, Brown PB; University of North Carolina, Wilmington*	Comparative proteomic analysis of intestinal and pyloric ceca mucosa from fed vs. starved of rainbow trout (Oncorhynchus mykiss)
1:40 PM	86.2	DCPB	*Koman JS, Tomanek L; Cal Poly San Luis Obispo*	Proteomic analysis of hyposalinity stress in the ascidian species *Ciona savignyi* and *C. intestinalis*

2:00-2:40 PM
Rooms 6/7

Session 87: Complementary to Symposium: Barnacle Biology

Chair: Sherry Tamone

2:00 PM	87.1	DEDB	*Barazandeh M, Davis CS, Neufeld CJ, Palmer RA; University of Alberta, Canada, Bamfield Marine Sciences Centre Canada*	A third way: spermcapture mating in barnacles
2:20 PM	87.2		*Chen Z-F, Matsumura K, Wang H, Arellano SM, Yan X, Alam I, Archer JAC, Bajic VB, Qian P-Y; The Hong Kong University of Science and Technology (HKUST), Woods Hole Oceanographic Institution, King Abdullah University of Science and Technology (KAUST)*	Toward an understanding of the molecular mechanisms of barnacle larval settlement: a comparative transcriptomic approach

1:00-2:40 PM
Rooms 8/9

Session 88: Behavioral Syndromes

Chair: Michael Childress

1:00 PM	88.1		*Childress MJ, Heldt KA, McClellan KL; Clemson University*	Opposites attract: lobsters prefer to share dens with opposite behavioral phenotypes
1:20 PM	88.2	DAB	*Liebl AL, Garringer AR, Wiley DD, Sierra AS, Martin LB; University of S. Florida*	Variation in the glucocorticoid stress response and behavior along a gradient of invasive house sparrows (*Passer domesticus*)
1:40 PM	88.3	DAB	*Fox RA, Williams RN; Transylvania University*	Badges of personality? Neophobia, corticosterone, and bib size in house sparrows *Passer domesticus*
2:00 PM	88.4		*Carlson BE, Langkilde T; Penn State University*	Personality across ontogeny in an amphibian
2:20 PM	88.5		*Singer ML, Oswald ME, Wiedeback BD, Robison BD; University of Idaho, University of Notre Dame*	The genetic architecture of the bold-shy continuum in zebrafish, *Danio rerio*

1:00-3:00 PM
Rooms 10/11

Session 89: Cranial Structure, Function and Evolution

Co-Chairs: Phil Anderson, Matthew Close

1:00 PM	89.1	DVM	*Close MT, Cundall DL; Lehigh University*	Extensible tissues and their contribution to macrostomy in snakes
1:20 PM	89.2	DVM	*Dubansky BH, Homberger DG; Louisiana State University, Baton Rouge*	Biomechanical properties of the intermandibulocervical integument of alligators: Implications for a more accurate understanding of the alligator feeding mechanism
1:40 PM	89.3		*Pyenson ND, Goldbogen JA, Vogl AW, Szathmary G, Drake R, Shadwick RE; Smithsonian Institution, Cascadia Research Collective, University of British Columbia, FPinnovations, Cleveland Clinic*	A putative sensory organ in the mandibular symphysis of rorqual whales (Balaenopteridae)
2:00 PM	89.4	DVM	*Anderson P, Rayfield EJ, Renaud S; University Bristol, UK, University Lyon, France*	Diet-based biomechanical plasticity in mouse mandibles
2:20 PM	89.5	DVM	*McCord CL; University of Chicago*	Diversity of cranial morphology and jaw biomechanics in tetraodontiform fishes
2:40 PM	89.6	DVM	*Curtis AA, Farke AA; University of California, Los Angeles, Raymond M. Alf Museum of Paleontology*	Strut your stuff: frontal sinus complexity in bovidae and carnivora

1:00-3:00 PM
Room 13

Session 90: Life History Evolution - Maternal Investment

Co-Chairs: Jesse Patterson, Robert Cox

1:00 PM	90.1	DEE	*Patel K, Williams K, Frick M, Rostal D; GSU, Caretta Project*	Variation in egg components: a study of maternal investment and resource partitioning in the nesting loggerhead sea turtle
1:20 PM	90.2		*Skibiel AL, Hood WR; Auburn University*	Building better babies: impact of individual variation in milk composition on differential reproductive performance of Columbian ground squirrels
1:40 PM	90.3	DEE	*Cox RM, Calsbeek R; University of Virginia, Dartmouth College*	Experimentally decoupling reproductive investment and energy storage to investigate the functional basis of life-history trade-offs

2:00 PM	90.4		*Caplins SA, Turbeville JM; Virginia Commonwealth University*	Reproduction and fecundity in the nemertean worm *Prosorhochmus americanus* (Nemertea, Hoplonemertea)
2:20 PM	90.5	DEE	*Appleby LR; University of Houston*	Resource availability and colony founding in harvester ants
2:40 PM	90.6	DAB	*Patterson J; University of Calgary*	Ectoparasites as a determinant of host litter size

FRIDAY POSTER SESSION P3

Exhibit Hall, 3:00-5:00 PM

Poster Set Up: 7:00-8:00 am; Poster Teardown: 5:00-5:30 pm

Even # - Authors present from 3:00 - 4:00 pm; Odd # - Authors present from 4:00 - 5:00 pm

Behavioral Ecology: Interacting with the Environment

P3.1	DEE	*Hodge A-MC; University of North Carolina, Wilmington*	Margay (*Leopardus wiedii*) habitat preference based on vegetation structure in the eastern Andean foothills of Ecuador
P3.2		*Sanders D, Mabry K; New Mexico State University*	Habitat preferences of *Peromyscus boylii*
P3.3		*Cooper LN, Hall FM, Davis JE; Radford University, Virginia Tech*	Color oriented neophobia and sex differences in the house sparrow (*Passer domesticus*)
P3.4	DAB	*Pierce CT, Contreras HL, Davidowitz G; University of Arizona*	Environmental humidity effects on m. sexta foraging behavior
P3.5		*Salica MJ, Vonesh JR, Warkentin KM; Universidad Nacional de Tucumán, Argentina, Virginia Commonwealth University, Boston University*	Egg clutch dehydration induces early hatching in red-eyed treefrogs
P3.6	DEE	*Fisher L, Owens D, Godfrey M; College of Charleston, North Carolina Division of Environment and Natural Resources*	Predicting impacts of global climate change on the Northwest Atlantic loggerhead sea turtle (*Caretta caretta*) population: locomotor responses of hatchlings to differing incubation temperatures
P3.7		*Gantz JD, Sheafor BA; Miami University, University of Mount Union*	Behavioral thermoregulation and its role in decreasing morbidity and mortality associated with chytridiomycosis
P3.8		*Nielsen ME, Papaj DR; University of Arizona*	Change in thermal refuge seeking behavior during development of *Battus philenor* larvae
P3.9	DIZ	*Huang H-D, Liu HC; National Museum of Natural Science, Taiwan, Providence University, Taiwan*	Comparison of visual orientation between two land crabs *Sesarmops intermedium* and *Scandarma lintou* in Kenting National Park, southern Taiwan
P3.10	DAB	*Fudickar AM, Partecke J; Max Planck Institute for Ornithology*	Pre migratory activity in free living migratory and sedentary European blackbirds *Turdus merula*
P3.11	DCE	*Hahn TP, Haiman AN, Brazeal KR, De Castro DM, Gendi KM, Bomze LM, Watts HE; University of California, Davis, California State University East Bay, Loyola Marymount University*	Evolution of photorefractoriness in the Cardueline finches
P3.12		*De Castro DM, Zylberberg M, Brazeal KR, Hahn TP; University of California Davis*	Effects of various photoperiod treatments on the molt schedule of house finches

Cardiovascular & Respiratory Physiology

P3.13	DCPB	*Kohl ZF, Hedrick MS, Crossley DA; University of North Texas*	Ontogeny of viscosity in the chick embryo, *Gallus gallus*: cheating the hematocrit dependence of blood viscosity
P3.14	DCPB	*Bjelde BE, Todgham AE; San Francisco State University*	Cardiac performance and metabolism of an intertidal limpet under conditions of emersion and immersion
P3.15	DVM	*Robertson JJ, Dearolf JL; Hendrix College*	The role of the diaphragm and scalenus in the ventilation of striped and spotted dolphins (*Stenella* spp.)
P3.16	DCPB	*Welsh C, Hoque R, Ikotun I, Jean Louis A, Catapane EJ, Carroll MA; Medgar Evers College*	Study of octopamine in bivalves
P3.17	DCPB	*Slay CE, Enok S, Wang T, Hicks JW; University of California, Irvine, Aarhus University*	Experimental reduction of arterial oxygen content increases magnitude of postprandial cardiac hypertrophy in Burmese pythons (*Python molurus*)
P3.18	DCPB	*Mika TL, Reiber CL; University of Nevada, Las Vegas*	Cardiac performance across temperature extremes in the grass shrimp, *Palaemonetes pugio*

P3.19	DVM	*Henry AF, Dearolf JL; Hendrix College*	Determining the existence of a sphincter in the caval region of *Stenella* spp.
P3.20	DCPB	*Heinrich EC, McHenry MJ, Bradley TJ; University of California, Irvine*	Spiracular activity and respiratory airflow in the Madagascar hissing cockroach (*Gromphadorhina portentosa*)
P3.21	DCPB	*Robbins KA, Shero MR, Stevenson T, Duddleston K, Buck CL, Burns JM; University of North Carolina, Wilmington, University of Alaska, Anchorage*	Hematological development in young Arctic ground squirrels: a model for natural resistance to iron deficiency?
Cell and Molecular Physiology			
P3.22		*Reynolds AM, Gatlin JC; Miami University, University of Wyoming*	Determining the effects of chromatin-derived signals on dynein motor function during mitosis
P3.23		*Boswell LC, Moore DS, Hand SC; Louisiana State University*	Identification of splice variants and protein expression levels for two late embryogenesis abundant proteins in embryos of *Artemia franciscana*
P3.24	DCPB	*Powers ML, Haddock SHD; University of California, Santa Cruz, Monterey Bay Aquarium Research Institute*	Cloning, expression, and characterization of a photoprotein from the luminescent ctenophore *Bathocyroe fosteri*
P3.25		*Matsumoto T, Ishibashi Y; Kinki University, Nara, Japan*	Cloning of the opsin gene in longtooth grouper (*Epinephelus bruneus*)
Community Ecology			
P3.26A		*Carrera JV, Catlin D, Walling KM, Monaghan C, Bowles S, Schmitthenner H, Cody JC, Tan LT, Connelly SJ; Rochester Institute of Technology*	High Performance Liquid Chromatography (HPLC) analysis of vitamin D
P3.26	DEE	*Connelly SJ, Tan LT, Cody JC; Rochester Institute of Technology*	Establishing the role of vitamin D
P3.27		*Walsh EJ, Woods MA, Schroeder T; University of Texas, El Paso*	Microcosm tests of interspecific competitive abilities and habitat monopolization
P3.28	DEE	*Whippo R, Lowe AT, Britton-Simmons KH; University of British Columbia, Friday Harbor Laboratories*	Benthic community structure mediated by the red sea urchin *Strongylocentrotus franciscanus* in the San Juan Archipelago
P3.29		*Tobias MS, Connelly SJ; Rochester Institute of Technology*	Interaction of nutrition and UV radiation on *Daphnia*
P3.30	DEE	*Landau MP, Curtis MD, Reiley SJ; Richard Stockton College*	Distribution of three sponges in a Florida seagrass bed
P3.31	DIZ	*McClintock JB, Amsler MO, Angus RA, Challener RC, Schram JB, Amsler CD, Mah CL, Cuce J, Baker BJ; University of Alabama at Birmingham, Museum of Natural History, Smithsonian Institute, University of South Florida*	The Mg-Calcite levels of Antarctic echinoderms: implications for ocean acidification and further support for a latitudinal gradient in levels of Mg-Calcite
P3.32	DEE	*Kao ST, Hadfield MG; University of Hawaii, Manoa*	The effects of ocean acidification on biofilm bacterial populations
P3.33		*Nater OHA, Bruno JR, Dillon ME; University of Wyoming, Laramie*	Effects of climate on seasonal abundance of native bees and flowers - implications for plant-pollinator communities in the face of climate change
P3.34		*Hanson KM, McElroy EJ; College of Charleston*	Anthropogenic impacts on herpetofaunal diversity and community structure on a developed Barrier Island in South Carolina
P3.35		*Bell CB, Dillon ME; University of Wyoming, Laramie*	Seasonal variation in body size of native bees: thermal constraint or resource limitation?
P3.36	DIZ	*Salyers JM, Allen JD; College of William and Mary*	Adventures in juvenile sea urchin ecology

P3.37	DEE	*Corwin P, Nolan PM; The Citadel*	Avian community response to seasonal and successional changes
P3.38	DEE	*Lindsay SM; University of Maine*	Is all injury equal? Measuring the effect of repeated injury on sediment disturbance by the polychaete *Abarenicola pacifica*
P3.39	DEE	*Barthell JF, Hranitz JM, Albritton-Ford AC, Barnett A, Butler ME, Cowo CL, Kurtz RM, Sanchez ML, Warren JJ, Petanidou T, Wells H; University of Central Oklahoma, Bloomsburg University of Pennsylvania, Valdosta State University, State University of New York, Siena Heights University, Commack High School, University of North Texas, Oklahoma State University, University of the Aegean, University of Tulsa*	Competition between two Eurasian plant species for pollinators: a perturbation experiment
P3.40	DEE	*Anderson RA, McBrayer LD, Fabry CJ, Dugger PJ; Western Washington University, Georgia Southern University*	Production in a desert lizard as a consequence of prey availability and annual variation in climate
P3.41		*Raymond WW, Duggins DO, Dethier MN; Oregon State University, Friday Harbor Laboratories, University of Washington*	Fresh vs. aged kelp: feeding preferences of red urchins

Complementary to Symposium: Comparative Proteomics of Environmental & Pollution Stress

P3.42	DCPB	*Parrilla L, Owerkowicz T, Steele E, Mori M, Lee A, Hicks J, Rourke B; California State University, Long Beach, University of California, Irvine*	Effects of hypoxia and hyperoxia in *Alligator mississippiensis*
P3.43	DIZ	*Neth L; University of Hawaii*	Oxidative stress in two coral species, Porites lobata and Pocillopora damicornis, from Enipein, Micronesia
P3.44	DCPB	*Chilton H, Mier J, Zuzow M, Tomanek L*; California Polytechnic State University, San Luis Obispo*	The proteomic response of *Mytilus californianus* to acute oxidative stress in the presence of a sirtuin inhibitor
P3.45	DCPB	*Zuzow MZ, Serafini L, Hitt L, Valenzuela J, Tomanek L; California Polytechnic State University, San Luis Obispo*	Proteomic responses of *Mytilus* congeners to hyposaline stress
P3.46		*Cockett PM, Nedved BT, Hadfield MG; University of Hawaii, Manoa*	Hawaiian littoral gastropods' heated existence
P3.47	DCPB	*Karch KR, Fields PA; Franklin and Marshall College*	Effects of chronic heat exposure on protein expression in the mussel *Geukensia demissa*
P3.48	DCPB	*Cox KM, Fields PA; Franklin and Marshall College*	Time course of protein expression changes in response to acute heat stress in the mussel *Geukensia demissa*
P3.49	DCPB	*Beam M, Zuzow M, Tomanek L; California Polytechnic State University, San Luis Obispo*	Sirtuin-induced protein deacetylation affects the heat shock response in blue mussel congeners (*Mytilus*)
P3.50		*Hernandez D, Schuman M, Tomanek L; California Polytechnic State University*	Proteomic response of tidal-rhythm entrained *Mytilus californianus* to acute aerial heat stress
P3.51	DCPB	*Garland MA, Elder H, Hurt DA, Stillman JH, Tomanek L; California Polytechnic State University, San Luis Obispo, Romberg Tiburon Center, SFSU*	The proteomic response to acute heat stress after acclimation to fluctuating temperatures in the eurythermal porcelain crab, *Petrolisthes cinctipes*

Complementary to Symposium: Dispersal of Marine Organisms

P3.52		*Ahrens JB, Borda E, Campbell AM, Schulze A; Texas A&M University at Galveston*	High degree of connectivity among amphi-Atlantic populations of *Hermodice carunculata* (Amphinomidae, Annelida)

P3.53	DEE	*Holm ER, Anil AC, Hadfield MG; Naval Surface Warfare Center, Carderock Division, National Institute of Oceanography, INDIA, Kewalo Marine Laboratory, University of Hawaii*	Quantitative genetic analysis of acquisition of metamorphic competence in *Hydroides elegans*, and consequences for larval dispersal
P3.54	DIZ	*Maliska ME, Swalla BJ; Department of Biology, University of Washington*	Geographic range size and diversification in tailed and tailless molgulid ascidians
P3.55	DIZ	*Kaini P, Shrestha S, Roberts B, Zhu N, Brodie R; Mount Holyoke College*	Response to adult conspecific odor is modulated by salinity in metamorphosing megalopae of the fiddler crab *Uca minax*
P3.56	DIZ	*Walters L, Turner T, Paul V, Kuffner I; University of Central Florida, University of the Virgin Islands, Smithsonian, Ft. Pierce, USGS*	Sea urchin foraging: impacts in coral recruits
Complementary to Symposium: Evo Devo & Genomics			
P3.57	DEDB	*Andrykovich KR, Lowe E, Swalla BJ, Brown CT; Carleton College, Michigan State University, University of Washington*	Investigating the molecular basis of notochord loss in *Molgula occulta* via transcriptome sequencing
P3.58		*Fischer AHL, Tulin S, Smith J; MBL, Woods Hole*	Gene regulatory networks in *Nematostella*: old questions - new approaches
P3.59		*Felder MR, Vrana PB, Szalai G, Shorter K, Lewandowski A; University of South Carolina*	Development of resources for peromyscus laboratory research
Complementary to Symposium: Modeling Animal Locomotion			
P3.60	DCB	*Byron M, Variano E; University of California, Berkeley*	Measuring angular velocity of models in turbulence using Refractive-Index-Matched PIV
P3.61	DCB	*Uyeno TA, Gilles B, Lee DV, Barbano DL, Wilkinson KC, Pai DK, Giszter SF, Nishikawa KC; Valdosta State University, INRIA, Montpellier, University of Nevada, Las Vegas, North Arizona University, University of British Columbia, Drexel University*	Towards the automatic animation of a virtual 3D Bullfrog skeleton
P3.62	DCB	*Flammang BE, Alben S, Lauder GV; Harvard University, Georgia Institute of Technology*	Vortex perturbation of fish hovering
Coral Reef Biology			
P3.63	DEE	*Fiore CL, Labrie M, Lesser MP; University of New Hampshire*	Pumping activity and nitrogen cycling in the giant barrel sponge, Xestospongia muta
P3.64		*Fuess LE, Shedlock AM, Wham FC, Dustan P; College of Charleston, Pennsylvania State University*	A molecular assay for the cause of bleaching in the temperate Atlantic coral species *Occulina arbuscula*
P3.66	DIZ	*Krzykwa JC; New College of Florida*	A survey of distribution and movement of *Cyphoma gibbosum* in relation to the fungal pathogen *Aspergillus sydowii*
P3.67	DEE	*Easson CG, Thacker RW, Olson JB, Slattery M, Willett KW, Gochfeld DJ; University of Mississippi, University of Alabama at Birmingham, University of Alabama*	Effects of nutrient enrichment on competition between the algae *Microdictyon marinum* and the sponge *Aplysina cauliformis*
P3.68		*Guinea ML; Charles Darwin University*	Dwindling sea snakes at Ashmore Reef: searching for the “Elephant in the Room”
Development: Evolutionary Developmental Biology			
P3.69	DEDB	*Tenlen JR, Goldstein B; University of North Carolina, Chapel Hill*	Disrupting gene function in tardigrades by RNA interference
P3.70	DEDB	*Wu HR, Zhang QJ, Chen YT, Yu JK*; ICOB, Academia Sinica, Fujian Normal University*	Expression patterns of germline specific markers indicate a preformation mechanism of germ cell development in cephalochordates

P3.71	DEDB	*Aspiras AC, Angelini DR; American University*	Sex-specific gene interactions in the patterning of insect genitalia
P3.72	DIZ	*Aspiras AC, Prasad R, Fong DW, Carlini DB, Anglini DR; American University*	Evolution in the dark: exploring the genetic basis of cave adaptation in amphipod populations
P3.73	DEDB	*Hiebert LS, Maslakova S; University of Oregon*	Comparing axial patterning in nemertean larvae - insights into the evolution of a novel larval body plan
P3.74	DEDB	*Moustakas JE, Cebra-Thomas J, Häkkinen T, Jernvall J, Gilbert SF; Institute of Biotechnology, University of Helsinki, Finland, Millersville University, Swarthmore College*	The dynamic network of scute formation
P3.75	DEDB	*Lesoway MP, Collin R, Abouheif E, Henry JJ; McGill University, Montreal, Smithsonian Tropical Research Institute (STRI), Panama, University of Illinois, Urbana*	MAPK activation and early development in the calyptraeid gastropods
P3.76	DEDB	*Trevino M, Stefanik D, Harmon S, Burton P*; Wabash College, Boston University*	Wnt signaling promotes oral fates during regeneration and embryogenesis in the cnidarian *Nematostella vectensis*
P3.77	DEDB	*Winters I, Rued A, Siyu D, Posfai D, Gentile L, Rivera A, Hill A; University of Richmond, University of the Pacific*	Knockdown of *PaxB* and *Six1/2* by RNAi leads to developmental defects of the aquiferous system in the freshwater sponge *Ephydatia muelleri*
P3.78	DEDB	*Lee AK, Sze CC, Suzuki Y; Wellesley College*	Identification of developmental genes involved in larval leg regeneration in the flour beetle, *Tribolium castaneum*
P3.79		*Stopper GF, Grzyb A, Perlee B, Swift S, Engel A, Hartman B; Sacred Heart University*	Sonic hedgehog's negative autoregulatory properties in salamander limb development
P3.80	DEDB	*Tulin S, Smith J; Marine Biological Laboratory*	Transcriptome analysis of embryogenesis in *Nematostella vectensis*
P3.81		*Li Y, Woznica A, Starobinska E, Jemmett J, Davidson B; University of Arizona*	Analysis of enhancers of Ets1/2 target genes in the basal chordate ciona intestinalis
P3.82	DIZ	*Spindle ST, Turbeville JM; Virginia Commonwealth University*	Confocal microscopy study of embryonic development in the viviparous hoplonemertean *Prosorhochmus americanus*
P3.83	DEDB	*Wang L, Ooka S, Poustka A, Wikramanayake A; University of Miami, Max-Planck Institut für Molekulare Genetik, Germany*	Investigating the molecular determinants for polarity in the sea urchin egg
P3.84		*Sharma PP, Schwager EE, Extavour CG, Giribet G; Harvard University*	*Phalangium opilio* (Opiliones, Eupnoi): a new model for study of arachnid development?
P3.85	DEDB	*Musser JM, Wagner GP, Prum RO; Yale University*	The role of beta-catenin in the early development of archosaur skin appendages
P3.86	DEDB	*Helm RR, Dunn CW; Brown University*	A phylogenetic synthesis of medusa development
P3.87	DEDB	*Carter AL, Martin KL; Charleston Southern University, Pepperdine University*	Maternal investment in a short-lived, iteroparous marine fish
P3.88	DIZ	*Hofstee JC, Collin R; Smithsonian Tropical Research Institute*	Modification of velar lobe morphology across different developmental modes in Calpytraeid gastropods
P3.89		*Lu Y, Pick L; University of Maryland*	Evolution and function of *ftz* and *ftz-f1* in hemipteroid assemblage insects
P3.90		*Abdelhady A, Cortes R*, Musumeci S, Srinivasan D, Shigenobu S, Stern D, Kobayashi S; Rowan University, NJ, NIBB, Japan, Howard Hughes Medical Institute,MD*	Investigation of the role of Aubergine RNA-binding proteins in the reproductive plasticity of the pea aphid, *Acyrthosiphon pisum*

Feeding

P3.91	DCPB	*Connell KP, Raithel SJ, Kerkoff AJ, Itagaki H; Kenyon College*	Characterization of midgut morphology in *Manduca sexta* and the development of a model of digestion

P3.92	DCPB	*Yeoh AJ, Vela-Mendoza AV, Gillen CM*; Kenyon College*	Scaling of *Manduca sexta* midgut tissue and amino acid transporter expression
P3.93	DCPB	*Newel MS, Bourne GB; University of Calgary, Alberta, Bamfield Marine Sciences Centre, British Columbia*	Factors affecting the drilling and feeding behavior of Lewis' moon snail, *Euspira lewisii* (Gastropoda: Naticidae)
P3.94	DIZ	*Jaeckle WB, Strathmann RR; Illinois Wesleyan University, Friday Harbor Labs, University Washington, Seattle*	The anus as a second mouth: anal suspension-feeding by an oral deposit-feeding sea cucumber
P3.95	DVM	*Paig-Tran EWM, Kleinteich T, Summers AP; University of Washington*	Exploring the filter morphology and filtration mechanics in Mobulidae
P3.96	DCB	*Zeng Y; University of California, Berkeley*	Feeding at the air-water Interface: biomechanics and functional morphology of feeding in funnel-mouthed tadpoles (Megophryidae: *Megophrys*)
P3.97	DVM	*Kolmann MA, Huber DR, Dean M, Erickson GM, Grubbs RD; Florida State University, University of Tampa, Max Planck Institute*	Muscle, shell, and tooth: a comprehensive investigation of durophagy in the cownose ray
P3.98	DCB	*Crofts SB; University of Washington*	Effects of morphology on the function of crushing teeth
P3.99	DVM	*Rodriguez D, Francis, Jr. AW*; Armstrong Atlantic State University*	Asymmetrical dentition observed in the flounder *Paralicthys albigutta*
P3.100	DCB	*Henson CB, Francis, Jr. AW; Armstrong Atlantic State University*	Modeling feeding biomechanics of the asymmetrical flatfish *Paralichthys lethostigma*
P3.101	DVM	*Grabenstein CJ, Hulsey CD; University of Tennessee, Knoxville*	Many-to-one mapping in catastomid fish jaws: multiple ways to be a sucker!
P3.102	DCB	*Gidmark NJ, Tarrant JC, Konow N, Brainerd EL; Brown University*	Bite force limitation by the length-tension relationship of skeletal muscle in three cyprinid fish species
P3.103	DVM	*Montuelle SJ, Williams SH; Ohio University Heritage College of Osteopathic Medicine*	Mobility of the mandibular symphysis during feeding in lizards

Larval Ecology

P3.104	DIZ	*Smoot SC, Plante CJ, Podolsky RD; College of Charleston, Charleston*	Plasticity of anti-microbial activity in egg masses of *Melanochlamys diomedea* in response to habitat variation in sediment size and microbial load
P3.105		*Feller KD, Cronin TW; UMBC*	The spectral sensitivity of stomatopod larvae
P3.106		*Shishido CM, Collin R, Lesoway MP; Smithsonian Tropical Research Institute, McGill University*	The development of particle capture and ingestion abilities in calyptraeid gastropods with different modes of development
P3.107	DIZ	*Lee D, George SB*; Georgia Southern University*	Vertical distribution of *Pisaster ochraceus* larvae in haloclines after prior exposure to low salinity
P3.108	DCPB	*Ceballos L, Carter HA, Miller N, Stillman JH; San Francisco State University*	Developmental effects of ocean acidification on porcelain crabs
P3.109	DCPB	*Carter HA, Ceballos L, Miller N, Stillman JH; San Francisco State University*	Impact of ocean acidification on development and energetics of porcelain crab early life history stages
P3.110	DIZ	*Fritz RM, George SB*; Georgia Southern University*	Low salinity decreases juvenile production in the sea urchin *Lytechinus variegatus* (Echinodermata:echinoidea)
P3.111		*Timm L, Grunbaum D; Texas A&M University, Galveston, University of Washington, Seattle*	Effects of blastocoel geometry and density on swimming ability in early-stage larvae
P3.112	DIZ	*Meyers ML, Jacobs MW, Gallager SM, Christmas AF; McDaniel College, Woods Hole Oceanographic Institution, Western Washington University*	Living it up before going down- vertical positioning behaviors of *Homarus americanus* larvae in response to a thermocline

P3.113	DEE	*Jenney CR, Bouchard SS, Warkentin KM; Otterbein University, Boston University*	Carryover effects of larval digestive plasticity in postmetamorphic red-eyed treefrogs, *Agalychnis callidryas*
P3.114	DEE	*Genovese CB, Moran AL; Clemson University*	Magnitude of specific dynamic action response in larvae of the sea urchin *Lytechinus variegatus*
P3.115		*Wargelin LW, Bouchard SS, Warkentin KM; Otterbein University, Boston University*	Metabolic carryover effects in postmetamorphic red-eyed treefrogs
P3.116		*McDonald AJ, Jaeckle WB; Illinois Wesleyan University, Bloomington*	Uptake of dissolved high molecular weight molecules by larvae of *Lytechinus variegatus*
P3.117	DIZ	*Fernandes DAO, Podolsky RD*; College of Charleston*	Effects of ocean acidification on growth, development, and calcification of gastropod embryos: does encapsulation matter?

Life History and Sexual Selection

P3.118	DCPB	*Frazier MR, Dillon ME*; US EPA, Western Ecology Division, University of Wyoming, Laramie*	Allometric scaling of development time in insects
P3.119	DEE	*Hart MW, Popovic I, Emlet RB; Simon Fraser University, University of Oregon*	Population genetics of *Heliocidaris* sea urchins with benthic fertilization and brooded development
P3.120		*Tuberville TD; University of Georgia's Savannah River Ecology Lab*	Maternal and paternal contributions to growth in hatchling turtles
P3.121	DVM	*Douglas MJ, Hulsey CD, Keck BP, Rakes PL, Shute JR, Petty MA, Ruble CL; University of Tennessee, Knoxville, Conservation Fisheries, Inc.*	The evolutionary correlation of gene flow and pelagic larval duration in darters (Percidae: Etheostomatinae)
P3.122		*Diaz L, Lopez-Martinez G, Hahn DA; University of Florida*	Do antioxidants mediate sexual selection after an extreme oxidative stressor in *Drosophila melanogaster*
P3.123		*Tun KM, Peiris FC, Carlton ED, Matson KD, Mauck RA; Kenyon College, Indiana University, Bloomington, University of Groningen, The Netherlands*	Finding the blue in bluebirds: what does full-spectrum data tell you about individual quality that a camera cannot?
P3.124	DEE	*Worthington AM, Berns CM, Swallow JG*; Iowa State University, Ames, University of South Dakota, Vermillion*	Size matters, but so does shape: quantifying complex shape changes in a sexually selected trait in stalk-eyed flies
P3.125		*Hart MK; University of Kentucky*	Allometry of sex allocation for a simultaneous hermaphrodite: a contrast of patterns at high and low densities
P3.126	DEE	*Schmidt EM, Pfennig KS; University of North Carolina, Chapel Hill*	Context-dependent mate choice in female spadefoot toad hybrids
P3.127	DIZ	*Murray KB, Demko AM, Ward BK, Delillo CA, Balazadeh K, Bourque BD, Rhyne AL; Roger Williams University, New England Aquarium*	The absence of male features and functionality in the monotypic shrimp genus *Lysmatella*, a simultaneous hermaphrodite
P3.128	DEE	*Heiniger J, Van Uitregt V, Wilson R; The University of Queensland*	Death after sex in the Australian bush: determinants of survival and reproduction in males of the world's largest semelparous mammal
P3.129	DEE	*Tsunekage T, Ricklefs RE; University of Missouri, St. Louis*	A comparative study of oxidative damage in avian embryos
P3.130	DEE	*Young RC, Kitaysky AS; University of Alaska Fairbanks*	Life history traits and senescence in six auk species

Movement Through and of Fluids

P3.131	DCB	*Potvin J, Goldbogen JA, Shadwick RE; Saint Louis University, Cascadia Research Collective, University of British Columbia*	The very high metabolic costs of engulfment by lunge-feeding rorquals, as revealed by computer simulations

P3.133	DCB	*Badger MA, Jones MA; University of California, Berkeley, Florida State University, Tallahassee*	Falling faster: size and folding behavior decrease descent time in a brittle star (*Ophiocoma aethiops*)
P3.134	DCB	*Green MH, Curet OM, Patankar NA, Hale ME; University Chicago, Northwestern University*	Kinematics and fluid dynamics of pectoral fin movement in larval zebrafish
P3.135	DCB	*Ryan DS, Berg O, Feitl KE, McHenry MJ, Muller UK; Wageningen University, California State University Fresno, University of California Irvine*	Three-dimensional escape trajectories in larval fish
P3.136	DCB	*Gerry SP, Robbins A, Ellerby DJ; Fairfield University, Wellesley College*	Variation in fast start performance of bluegill ecomorphs
P3.137	DCB	*Fontanella JE, Fish FE, Barchi EI, Campbell-Malone R, Nichols RH, Beneski JT; West Chester University, Johns Hopkins University, University of Rhode Island*	Batoid out of hell: hydrodynamic geometry of rays related to swimming mode
P3.138		*Young BA, Dumais J, McMahon K, Burnell AL*; University of Massachusetts, Lowell*	A tale of two tails: swimming mechanics in *Varanus salvator*
P3.139	DAB	*Carpenter-Carter S, Perlman BM, Ashley-Ross MA; Wake Forest University*	Jumping performance of largemouth bass (*Micropterus salmoides*) across a size gradient
P3.140	DCB	*Rivera ARV, Rivera G, Blob RW, Wyneken J; Florida Atlantic University, Boca Raton, Iowa State University, Ames, Clemson University*	Whole-body acceleration and inertial effects of flippers during swimming in the green sea turtle (*Chelonia mydas*)
P3.141	DCB	*Bahlman JW, Swartz SM, Breuer KS; Brown University*	Measuring cost of flight associated with varying kinematics in a robotic bat wing
P3.142	DCB	*Greeter JSM, Hedrick TL; University of North Carolina at Chapel Hill*	Sideslipping maneuvers in free-flying hawkmoths
P3.143	DCB	*Lam K, Zeng Y, Dudley R; University of California, Berkeley*	The effect of asymmetric morphology in the aerial righting of a larval stick insect
P3.144		*Jones SK, Miller LA, Hedrick TL; University of North Carolina, Chapel Hill*	Dynamic drag of broad leaves and physical models in strong wind

Neurobiology: Sensory Systems

P3.145	DIZ	*Charles C, Belton S, Shields V; Towson University, Baltimore City Community College*	Inventory and distribution of sensory organs on the antennae of the house cricket, *Acheta domesticus* (L.)
P3.146	DNB	*Duque JF, Freudenberger K, Yager DD*; University Maryland, College Park*	Multimodal integration in praying mantis audition: visual information modulates the descending ultrasound-evoked CNS responses of *Parasphendale agrionina*
P3.147	DNB	*Gans E, Willis KL, Bierman H, Carr C; University of Maryland, College Park*	The interaural canal of the barn owl, *Tyto alba*
P3.148	DVM	*Willis KL, Carr CE; University of Maryland*	Middle ear cavity morphology across testudines
P3.149	DNB	*Haspel G, Schwartz A, Soares D; NINDS, University of Maryland College Park*	Unique mechanosensory adaptation to extreme environments in cavefish
P3.150	DNB	*Love-Chezem T, Aggio J, Derby C; Georgia State University*	Chemical defense through sensory disruption in spiny lobster-sea hare interactions
P3.151	DNB	*Harrison A, Kempler KE, Dugger, Jr. D, Battelle B-A; Whitney Laboratory, University of Florida, St. Augustine and Spelman College, University of Florida, Gainesville*	UV opsin is expressed in *Limulus* lateral, median and ventral eyes and is coexpressed with a visible light sensitive opsin
P3.152		*Nahm AC, Bell G, Kuzirian AM, Hanlon RT, Cronin TW; University of Maryland, Baltimore County, Marine Biological Laboratory*	Dermal opsins of the summer flounder, *Paralichthys dentatus*

P3.153	DNB	*Rice JL, Cain SD; Eastern Oregon University*	A comparison of the brain and rhinophores of *Tritonia diomedea* and *Armina californica*
P3.154	DNB	*Soares D, Streets A; University of Maryland College Park*	Structure of the dome pressure receptors in the skin of the alligator
P3.155	DNB	*Walters IJ, Cain SD; Eastern Oregon University*	Comparative anatomy of ciliated tissues in *Armina californica*
P3.156	DCPB	*Kim D, Sim S; Yonsei University, Seoul*	Electrolocation measure in weakly electric fish

Osmoregulation

P3.157	DCPB	*Sucré E, Vidussi F, Mostajir B, Charmantier G*, Grousset E, Gros R, Lorin-Nebel C; University Montpellier 2, France*	Impact of UV-B radiation on the osmoregulatory function of ichthyoplankton larvae of the sea bass *Dicentrarchus labrax*
P3.158	DCE	*McCormick SD, Regish AM, Christensen AK, Bjornsson BT; USGS, Conte Anadromous Fish Research Center, USGS, University of Goteborg, Sweden*	Na,K-ATPase isoform switching is critical for the development of salinity tolerance in juvenile Atlantic salmon
P3.159	DCPB	*Secor SM, Castoe TA, Pollock DD; University of Alabama, University of Colorado School of Medicine*	Transcriptome analysis of the regulatory mechanisms of intestinal response for the Burmese python
P3.160	DCPB	*Hazard LC, Sierra J, Terodemos H, Caro L; Montclair State University*	Limited sensitivity to aldosterone in salt glands of two lizard species with minimal variation in cation secretion

Sexual Selection & Mating Systems

P3.161		*Navara KJ, Anderson EM, Edwards ML*; University of Georgia*	Comb size and color are honest indicators of sperm quality in male broiler breeder chickens
P3.162	DAB	*Palmer MS, Hankison SJ*; Ohio Wesleyan University*	UV and mate choice in the sailfin molly, *Poecilia latipinna*
P3.163	DAB	*Lange EC, Seda JB, Ptacek MB; Clemson University*	The influence of male size and social context on activity, boldness, sociability and mating behaviors in the sailfin molly (*Poecilia latipinna*)
P3.164	DAB	*Schroer ML, Peters M, Healy FL, Petersen JN, Propper CR; Northern Arizona University*	The effects of shifting population dynamics on behavior and the expression of secondary sex characteristics in *Pimephales promelas*
P3.165	DAB	*Helmey-Hartman WL, Miller CW; University of Florida, Gainesville*	Effects of environmental variation on courtship in the harlequin bug, *Murgantia histrionica*
P3.166	DCE	*Prior NH, Heimovics SA, Soma KK; University British Columbia*	Effects of water restriction on zebra finch reproductive physiology and pair-maintenance behavior
P3.167	DPCB	*Wright ML, Steves I, Caldwell RL; University of California, Berkeley*	Did social monogamy evolve as part of a sedentary lifestyle in Lysiosquilloid mantis shrimps?

Stress and Aging

P3.168	DCPB	*Lane SJ, Mancinelli GE, Martinez EE, Sandoe LH, Kopke DL, Elekonich MM, Roberts SP*; Central Michigan University, University of Nevada, Las Vegas*	The aging and senescence of *Drosophila* from different behavioral regimes
P3.169	DCPB	*Calhoon EA, Harper JM, Jimenez AG, Miller RA, Jurkowitz MS, Williams JB; Ohio State University, Michigan State University*	Lipids of mitochondria in fibroblasts and their nexus to life history in temperate and tropical birds
P3.170	DCPB	*Kellenberger JW, Viray EN, Smith AL, Hahn DA, Hatle JD; University of North Florida, University of Florida*	Life-extending ovariectomization or dietary restriction each show a lack of cellular responses, despite large differences in storage levels, in grasshoppers
P3.171	DCPB	*Boisette B, Dialey F, Dorce K, Catapane EJ, Carroll MA; Medgar Evers College, Kingsborough Community College*	The effects of manganese and copper on mitochondrial membrane potential in the gill of *Crassostrea virginica*

P3.172		*Jalli IS, Nijhout HF; Duke University*	Physiological response to homocysteine stress in *Escherichia coli*
P3.173	DCPB	*Steele H, Harner A, Black P, Adair B, Koether M, Reese S; Kennesaw State University*	Ontogeny of bone buffers in two species of anoxia-intolerant turtles
Structure and Mechanical Design			
P3.174	DVM	*Dunbar MA, Davenport IR; Xavier University of Louisiana, New Orleans*	Follicle cell processes in the squaliformes, dogfish sharks
P3.175A	DIZ	*Laumer CE, Smith, III JPS, Giribet G; Harvard Museum of Comparative Zoology, Winthrop University*	New and useful knowledge on the genus *Gnosonesima* (Platyhelminthes: Neoophora)
P3.175	DCB	*Suss AB, Porter ME, Boxberger J, Koob TJ, Long JH*; Vassar College, Doctors Research Group, Inc., MiMedx Group, Inc.*	Building biomimetic collagen fibers: viscoelastic properties under physiological hydration, temperature, and loading
P3.176	DCB	*Cheney JA, Bearnot A, Breuer KS, Swartz SM; Brown University*	Pre-stressed compliant fibers within the wing membrane of *Glossophaga soricina*, Pallas' long tongued bat
P3.177		*Demas AD, Clark AJ; College of Charleston*	Mechanical properties of the skin of the Pacific hagfish, *Epatretus stoutii*
P3.178	DVM	*Porter ME, Grotmol S, Kryvi H, Totland GK, Long JH*; Vassar College, University of Bergen*	The vertebral column of sharks: functional morphology of the intervertebral joint
P3.179	DCB	*Habegger ML, Motta PJ, Mullins G, Stokes MJ, Winters D; University of South Florida*	Feeding biomechanics in billfish: inferring the role of the rostrum from a mechanical standpoint
P3.180	DVM	*Wood BM, Andermann RJ, Homberger DG; Louisiana State University, Baton Rouge*	The morphology of the myomere-myoseptal intersections in a lamprey (*Petromyzon marinus*) and a shark (*Squalus acanthias*)
P3.181		*Gross V, Hochberg R, Atherton S; University of Massachusetts, Lowell*	A comparison of tardigrade muscular organization between species with different body form and habitat
P3.182	DIZ	*Hochberg A, Hochberg R; University of Massachusetts, Lowell*	Comparative morphology of the musculature in larviparous rotifers: gradual versus drastic metamorphosis
P3.183	DVM	*Olszewski JM, Harper CJ, Brainerd EL; Brown University*	High-throughput method for measuring muscle ultrastructure
P3.184	DCB	*Feilich KL, Gerry SP, Ellerby DJ; Wellesley College*	Modulation of leech muscle performance by serotonin
Symbiosis			
P3.185		*Williams J, David A; Hofstra University*	Morphology, ecology, and reproduction of the cryptogenic sponge associate *Polydora colonia* (Polychaeta: Spionidae)
P3.186	DIZ	*Kingsley RJ, Armistead BE, Hooper CW, Oszustowicz AL, Palmer AD; University of Richmond*	Bacterial endosymbionts in the gorgonian *Leptogorgia virgulata* and their potential role in spicule formation
P3.187	DEE	*Blair PB, Freeman CJ, Thacker RW; University of Alabama at Birmingham*	Genotyping symbionts through high-resolution melting analysis: distinguishing clades of the sponge-specific cyanobacterial symbiont *Synechococcus spongiarum*
P3.188	DPCB	*Lechliter SM, Cevasco MH; Coastal Carolina University*	Kleptoplasty in the foraminifera of coastal South Carolina
P3.189	DEE	*Strehlow B, McCauley M, Richardson C, Peterson K, Cotman C, Hill A, Hill M; University Richmond, University Mississippi, University Viriginia*	Examination of genetic regulation of *Symbiodinium* uptake and the morphological development of the zooxanthella-dense pinadocerm in the sponge *Cliona varians*

Systematics and Population Genetics

P3.190	DIZ	*Nguyenba A, Borda E, Alvarado JR, Schulze A; Texas A&M University at Galveston*	Delineating cryptic species and populations of the cosmopolitan fireworm genus *Eurythoe* (Annelida: Amphinomidae) using High-Resolution Melting Analysis (HRMA)
P3.191		*Boyko CB, Moscato DJ; Dowling College*	Sexual dimorphism and species distinctions in the genus *Edotia* (Crustacea: Isopoda)
P3.192		*Markello K, Mooi R; San Francisco State University, California Academy of Sciences, San Francisco*	Small wonders: the phylogenetics of highly modified micro-echinoids in the genus *Echinocyamus*
P3.193	DPCB	*Bursey JB, Graham L, Smith III JS, Litvaitis MK; Winthrop University, University of New Hampshire*	*Parotoplana hannahfloydae* (Proseriata: Otoplanidae) from the coast of North Carolina, USA
P3.194	DPCB	*Simison BW, Arbisser IM*; California Academy of Sciences*	Evolutionary history of the seagrass limpets *Lottia depicta* and Lottia paleacea
P3.195	DPCB	*Salazar J, Carmack CA, Thacker RW; Ohio State University, University of Alabama at Birmingham*	Evaluating the phylogenetic utility of *alg11* a potential marker for sponge systematics
P3.196	DPCB	*Carmack CA, Redmond N, Thacker RW, Colin L, Colin P, Hill M, Hill A, Lopez J, Diaz MC, Pomponi S, Bangalore P; University of Alabama at Birmingham, Smithsonian Institution, Coral Reef Research Foundation, University of Richmond, Nova Southeastern University, Museo Margarita, Harbor Branch Oceanographic Institute*	Nuclear 28S ribosomal subunit gene sequences support new relationships among families and orders of Porifera
P3.197		*Shi JJ, Chan LM, Rakotomalala Z, Goodman SM, Yoder AD; Duke University, Université d'Antananarivo, Field Museum of Natural History*	Emerging patterns of microendemism in the rodent *Eliurus myoxinus* within Madagascar's western forests
P3.198	DEE	*Hranitz JM, Barthell JF, Sullivan N, Ricci PR; Bloomsburg University of Pennsylvania, University of Central Oklahoma*	Microsatellite variation in invasive and native populations of the *Centaurea* leafcutting bee
P3.199	DEE	*Martin RA, Riesch R, Langerhans RB; North Carolina State University*	Evolution of male coloration during a post-Pleistocene radiation of Bahamas mosquitofish (*Gambusia hubbsi*)
P3.200	DEE	*Barrile GM, Bower CD, Downs LK*, Evancho BJ, Gerard NR, Klinger TS, Hranitz JM; Bloomsburg University of Pennsylvania*	Comparative studies of island dwarfism in Fowler's toads on several Atlantic Coast Barrier Islands
P3.201		*Bertin A, Sampertegui S, Ruiz V, Figueroa R, Gouin N; Universidad de La Serena, Chile, Universidad de Concepción, Chile, Centro EULA, Chile, CEAZA, Chile*	Between-population variation in fluctuating asymmetry: testing the relative importance of spatial processes and ecological traits in the water-strider *Aquarius chilensis*
P3.202		*Gouin N, Bertin A, Borquez J, Sampertegui S, Ruiz V, Figueroa R; CEAZA, Chile, Universidad de La Serena, Chile, Universidad de Concepción, Chile, Centro EULA, Chile*	Contrasting influence of spatial and ecological factors on genetic diversity and morphological differentiation of two freshwater invertebrate species

Saturday Schedule of Events

All events take place in the North Charleston Convention Center unless noted as (ES) for Embassy Suites Hotel

EVENT	TIME	LOCATION
Registration	7:30 AM-3:00 PM	Exhibit Hall A Foyer
SYMPOSIA ORAL PRESENTATIONS		
S9: Evo-Devo Rides the Genomics Express	8:30 AM-3:00 PM	Rooms 6/7
S10: Barnacle Biology: Essential Aspects and Contemporary Approaches	8:00 AM-3:00 PM	Rooms 8/9
CONTRIBUTED PAPER ORAL PRESENTATIONS		
Session 91: Locomotion: Aquatic to Terrestrial	8:00-10:00 AM	Ballroom A
Session 92: Locomotor Evolution and Ontogeny	10:20 AM-Noon	Ballroom A
Session 93: Cell and Molecular Physiology	8:00-9:40 AM	Ballroom B
Session 94: Fish Feeding: Scaling and Suction	10:00 AM-Noon	Ballroom B
Session 95: Endocrine Disruptors	8:20-10:00 AM	Ballroom C1
Session 96: Stress: Reproduction	10:20 AM-Noon	Ballroom C1
Session 97: Flight I: Gliding and Flying	8:00-9:40 AM	Ballroom C2
Session 98: Flight II: Birds and Insects	10:00 AM-Noon	Ballroom C2
Session 99: Behavioral Ecology: Predator/Prey Cues	8:20-10:00 AM	Ballroom C3
Session 100: Behavioral Ecology: Foraging & Diet	10:20 AM-Noon	Ballroom C3
Session 101: Macroevolution and Systematics	8:00-9:40 AM	Club South
Session 102: Morphological Evolution	10:00 AM-Noon	Club South
Session 103: Sensorimotor Systems: From Fins to Feeding	8:00-10:00 AM	Club North
Session 104: Chemical Ecology I	8:00-10:00 AM	Room 1
Session 105: Chemical Ecology II	10:20-11:40 AM	Room 1
Session 106: Flicking and Feeding: (Mostly) Tongues and Pumps	8:00-9:40 AM	Rooms 10/11
Session 107: Complementary to Symposium: Modeling Animal Locomotion II	10:00 AM-Noon	Rooms 10/11
Session 108: Immune: Cellular	8:00-10:00 AM	Room 12
Session 109: Immune: Energetics	10:20 AM-Noon	Room 12
Session 110: Neurobiology: Learning, Memory, Cognition and Development...	8:20-10:00 AM	Room 13
Session 111: Neurobiology: Learning, Memory, Cognition and Development...	10:20 AM-Noon	Room 13
Session 112: Locomotion: Muscle and Bone Mechanics	1:00-3:00 PM	Ballroom A
Session 113: Aquatic Locomotion: Flow, Foils and Fins	1:00-3:00 PM	Ballroom B
Session 114: Stress: Developmental & Chronic	1:00-3:00 PM	Ballroom C1
Session 115: Mating Systems	1:20-3:00 PM	Ballroom C3
Session 116: Thermal Physiology	1:00-3:00 PM	Club South
Session 117: Reproductive Physiology	1:20-3:00 PM	Club North
Session 118: Bioindicators & Pollution	1:00-3:00 PM	Room 1
Session 119: Complementary to Symposium: Modeling Animal Locomotion III	1:00-3:00 PM	Rooms 10/11
Session 120: Evo-devo: Metamorphosis	1:20-3:00 PM	Room 12
SPECIAL LECTURE		
Moore Lecture	3:00-4:00 PM	Ballroom A
COMMITTEE & BOARD MEETINGS		
Executive Committee	7:00-9:00 AM	Room 3
SPDAC Meeting	Noon-1:00 PM	Exec Boardrm (ES)
WORKSHOPS AND PROGRAMS		
Grand Challenges Update	Noon-1:00 PM	Ballroom B
SOCIAL EVENTS		
Society-wide Social in Honor of Students and Post Docs	4:00-6:00 PM	Ballroom BC Foyer

SATURDAY PROGRAM
SYMPOSIA

8:30 AM-3:00 PM
Rooms 6/7

Symposium S9: Evo-Devo Rides the Genomics Express
Supported by: DCE, DEE, DIZ, DNB, DESB, & DVM
Organized by: Billie Swalla

8:30 AM	S9-1.1	DEDB	*Sperling E, Erwin D, Laflamme M, Tweedt S, Pisani D, Peterson K; Harvard University, Smithsonian National Museum of Natural History, National University of Ireland, Maynooth, Dartmouth College*	The Cambrian conundrum: early divergence and later ecological success in the early history of animals
9:00 AM	S9-1.2	DEDB	*Diggle PK; University of Colorado, Harvard University*	Phenotypic plasticity and the evolutionary diversification of plant sexual systems
9:30 AM	S9-1.3	DEDB	*Swalla BJ; University of Washington*	Origin, evolution & development of the chordates: notochord gain or retention?
10:00 AM BREAK IN EXHIBIT HALL				
10:30 AM	S9-1.4	DEDB	*Martindale MQ, Dubuc T, Simmons DK; University Hawaii*	The evolution of a Hox code: evidence from a basal metazoan
11:00 AM	S9-1.5		*Sinha NR; University of California, Davis*	Evolutionary inferences from transcriptional analysis of wild and domesticated tomato
11:30 AM	S9-1.6		*Brown CT, Lowe E, Pavangadkar K, Maliska ME, Swalla BJ; Michigan State University, University of Washington, Seattle*	Tail loss: investigating the Molgula
NOON LUNCH BREAK				
1:30 PM	S9-2.1		*Barker MS, Rundell RJ*; University of Arizona*	Polyploidy in plants and animals
2:00 PM	S9-2.2	DEDB	*Ryan JF, Pang K, Schnitzler CE, Nguyen A-D, Moreland RT, Havlak P, Putnam NH, Nisc, Wolfsberg TG, Mullikin JC, Martindale MQ, Baxevanis AD*; NHGRI/NIH, University of Hawaii, Rice University*	The genome of the ctenophore, *Mnemiopsis leidyi*: insights into the origins of morphological complexity
2:30 PM	S9-2.3		*Smith J; Marine Biological Laboratory, Woods Hole*	Evolution of developmental gene regulatory networks

8:00 AM-3:00 PM
Rooms 8/9

Symposium S10: Barnacle Biology: Essential Aspects and Contemporary Approaches
Supported by: DEE, DIZ, AMS & TCS
Organized by: John Zardus

8:00 AM	S10-1.1	DEE	*Jarrett JN; Central Connecticut State University*	Costs and benefits of alternative defensive morphologies and population variation in phenotypic plasticity of the barnacle *Chthamalus fissus*
8:30 AM	S10-1.2		*Rand DM, Flight PA*; Brown University*	Population genomics of the acorn barnacle: tests of balancing selection at Mpi and diversifying selection across the genome
9:00 AM	S10-1.3		*Wares JP, Ewers C; University of Georgia*	Genetic variation: are barnacles so strange?
9:30 AM BREAK IN EXHIBIT HALL				

10:00 AM	S10-1.4		*Hoeg JT, Chan BKK, Glenner H, Maruzzo D, Okano K; University of Copenhagen, Academia Sinica, Bergen University, University of Padova, Akita Prefectural University*	Metamorphosis in balanomorphan, pedunculated and parasitic barnacles: a video based analysis
10:30 AM	S10-1.5	DEE	*Holm ER; Naval Surface Warfare Center, Carderock Division*	Barnacles and biofouling - a brief history and summary of current research approaches and results
11:00 AM	S10-1.6	DIZ	*Rittschof D, Dickinson GH, Wahl KJ, Barlow D, Orihuela B, Vega IE, Everett R; Duke University, University of Pittsburgh, Naval Research Laboratory, Duke University Marine Laboratory, University of Puerto Rico*	Barnacle glue, is curing like blood clotting?
NOON LUNCH BREAK				
1:00 PM	S10-2.1		*Perez-Losada M, Hoeg JT, Achituv Y, Crandall KA; CIBIO, University of Porto, Portugal, University of Copenhagen, Denmark, Bar Ilan University, Israel, Brigham Young University*	Deep phylogeny and character evolution in the Thecostraca barnacles
1:30 PM	S10-2.2		*Jones DS; Western Australian Museum*	The biogeography of Australian barnacles
2:00 PM	S10-2.3		*Chan BKK, Tsang LM, Ng WC, Williams GA, Chu KH; Academia Sinica, Taiwan, The Chinese University of Hong Kong*	Biogeography of the widespread intertidal barnacle *Chthamalus malayensis* in Indo-Pacific waters: the interplay of geological history, contemporary ocean circulation patterns and habitat specificity
2:30 PM	S10-2.4		*Yamaguchi S, Sawada K, Yusa Y; Kyushu University, Fukuoka, Japan, JSPS, Grad. University Adv. Stud. (SOKENDAI), Japan, Nara Women's University, Japan*	Life history and sexuality patterns in barnacles: a theoretical perspective

SATURDAY PROGRAM
MORNING SESSIONS

8:00-10:00 AM
Ballroom A

Session 91: Locomotion: Aquatic to Terrestrial

Chair: Craig McGowan

8:00 AM	91.1	DCB	*Stover KK, Burnett LE, McElroy EJ, Burnett KG; College of Charleston*	Exposure to hypoxia impacts hexapedal locomotion in the blue crab, *Callinectes sapidus* Rathbun
8:20 AM	91.2	DCB	*Wilkinson KC, Nishikawa KC, Uyeno TA, Lee D; Northern Arizona University, Valdosta State University, University of Nevada Las Vegas*	Propulsive force calculations of a frog jumping from the water's surface
8:40 AM	91.3	DCB	*Kawano SM, Blob RW; Clemson University*	Force production by the forelimbs of salamanders and pectoral fins of mudskippers during terrestrial locomotion
9:00 AM	91.4	DCB	*Garrett JN, Fish FE; West Chester University, Pennsylvania*	Kinematics of terrestrial locomotion in phocid seals: importance of spinal flexion by an amphibious mammal
9:20 AM	91.5	DCB	*Wilson AM, Lowe J, Hudson PE, Roskilly K, McNutt JW; The Royal Veterinary College, Botswana Predator Conservation Trust*	Dynamics of hunting in free ranging cheetah

9:40 AM	91.6	DCB	*McGowan C; University of Idaho*	Acceleration mechanics in desert kangaroo rats (*Dipodomys desertii*)

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Ballroom A

Session 92: Locomotor Evolution and Ontogeny

Chair: Callum Ross

10:20 AM	92.1	DCB	*Ross CF, Blob R, Carrier DR, Daley MA, Deban SM, Demes B, Gripper JL, Kilbourne B, Landberg T, Polk J, Schilling N, Vanhooydonck B; University of Chicago, Clemson University, University of Utah, Royal Veterinary College, University of South Florida Tampa, Stony Brook University, Boston University, University of Illinois Urbana-Champagne, Friedrich-Schiller-Universität, University of Antwerp*	Evolution of tetrapod rhythmicity
10:40 AM	92.2	DCB	*Libby T, Moore TY, Chang-Siu E, Li D, Jusufi J, Cohen D, Full RJ; University of California, Berkeley*	Tail assisted pitch control in a lizard, robot, and dinosaur
11:00 AM	92.3	DVM	*Rivera ARV; Florida Atlantic University, Boca Raton*	A comparative examination of forelimb kinematics and muscle function during rowing and flapping-style swimming in four species of turtle
11:20 AM	92.4	DCB	*Jackson BE, Tobalske BW, Dial KP; Field Research Station at Fort Missoula, The University of Montana*	Ontogeny of contractile behavior in the flight muscles of birds
11:40 AM	92.5	DVM	*Heers AM, Dial KP; University of Montana*	Locomotor ontogeny and the evolution of avian flight

8:00-9:40 AM
Ballroom B

Session 93: Cell and Molecular Physiology

Co-Chairs: Justin Shaffer, Ana Jimenez

8:00 AM	93.1	DCB	*Shaffer JF, Kier WM; University of North Carolina, Chapel Hill*	Muscular tissues of the squid *Doryteuthis pealei* express identical myosin heavy chain isoforms
8:20 AM	93.2	DCPB	*Jimenez AG, Kinsey ST; University of North Carolina at Wilmington*	Nuclear DNA content variation associated with muscle fiber hypertrophic growth in fishes
8:40 AM	93.3	DCPB	*Priester C, Cornelissen A, Kinsey S, Dillaman R; University of North Carolina Wilmington*	Nuclear distribution in skeletal muscle of selected members of Chondrichthyes
9:00 AM	93.4		*Blier PU, Pichaud N, Ballard JWO, Tanguay RM; Université du Québec, University of New South Wales, Australia, Université Laval, Québec*	Divergent mitochondrial haplotypes convey clear adjustments in metabolic phenotypes
9:20 AM	93.5	DCPB	*Sackey-Mensah C, Rueppell O; University of North Carolina, Greensboro*	Investigating intestinal stem cell proliferation rate as an indicator of honey bee (*Apis mellifera*) health

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon
Ballroom B

Session 94: Fish Feeding: Scaling and Suction

Chair: Roi Holzman

10:00 AM	94.1	DVM	*Deary AL, Hilton EJ; College of William and Mary, Virginia Institute of Marine Science*	Comparison of lower jaw levers in the oral jaws of early life history stage drums (Family Sciaenidae) of the Chesapeake Bay
10:20 AM	94.2	DAB	*Pfeiffenberger JA, Turingan RG; Florida Institute of Technology*	The effects of prey type on the scaling of prey capture kinematics in invasive lionfish, *Pterois* spp.
10:40 AM	94.3	DCB	*Michel KB, Van Wassenbergh S, Aerts P; University of Antwerp, Belgium*	Comparison of Atlantic mudskippers (*Periophthalmus barbarus*) feeding in an aquatic and terrestrial environment: a detailed morphological and kinematical study
11:00 AM	94.4	DVM	*Camp AL, Brainerd EL; Brown University, Providence, RI*	Pectoral girdle motion and hypaxial muscle strain during suction feeding in largemouth bass, *Micropterus salmoides*
11:20 AM	94.5	DCB	*Van Wassenbergh S; University Antwerpen*	Three-dimensional model of force transmission in the suction feeding system of seahorses
11:40 AM	94.6	DVM	*Holzman R, Collar DC, Mehta RS, Wainwright PC; Tel Aviv University, University of California, Santa Cruz, University of California Davis*	Suction induced force field: an integrative model of aquatic feeding performance

8:20-10:00 AM
Ballroom C1

Session 95: Endocrine Disruptors

Co-Chairs: Ryan Paitz, Mark Sheridan

8:20 AM	95.1	DCE	*Hanson AM, Sheridan MA; North Dakota State University*	Environmental estrogens inhibit the expression of insulin-like growth factors 1 and 2 in the liver and gill of rainbow trout *in vitro*
8:40 AM	95.2	DCE	*Norris DO, Vajda AM, Barber LB, Schoenfuss HL; University of Colorado, Boulder, University of Colorado, Denver, United States Geological Survey, Boulder CO, St. Cloud University*	Impacts of neuroactive and estrogenic chemicals in wastewater effluents on behavior and reproduction in freshwater fishes
9:00 AM	95.3	DCE	*Clairardin SG, Paitz RT, Bowden RM; Il. St. University*	Endocrine disrupting compound metabolism and the effects of bisphenol-a during development in the red-eared slider turtle (*Trachemys scripta*)
9:20 AM	95.4	DCE	*Thompson JT, Valverde RA; Southeastern Louisiana University*	Influence of Polychlorinated biphenyls on gene expression and corticosteroid secretion within the neuroendocrine stress system of the red-eared slider turtle, *Trachemys scripta elegans*
9:40 AM	95.5		*Boggs ASP, Lowers RH, Hamlin HJ, Mccoy JA, Guillette LJ; Medical University of South Carolina, University of Florida, Innovative Health Applications, Kennedy Space Center, NASA, University of Maine, Medical University of South Carolina*	The role of plasma iodide and endocrine disrupting chemicals in predictive adaptive responses of *Alligator mississippiensis*

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Ballroom C1

Session 96: Stress: Reproduction

Co-Chairs: Jason Davis, Oliver Love

10:20 AM	96.1	DCE	*Davis JE, Guinan JA; Radford University*	Parental behavior and corticosterone during the breeding season in eastern bluebirds (*Sialia sialis*)
10:40 AM	96.2		*Angelier F, Chastel O; CEBC, CNRS, France*	Prolactin as a mediator of the stress response in parent birds: an underappreciated mechanism
11:00 AM	96.3	DCE	*Small TW, Bridge E, Schoech S; University of Memphis, University of Oklahoma*	Physiological stress responsiveness is transferable from parent to offspring in free-living Florida scrub-jays
11:20 AM	96.4	DCE	*Love OP, Bourgeon S, Madliger C, Semeniuk CAD, Williams TD; University of Windsor, Norwegian Institute for Nature Research , University of Calgary, Simon Fraser University*	Glucocorticoids, workload and fitness: the role of environmental context, plasticity and repeatability
11:40 AM	96.5	DCE	*Madliger CL, Love OP; University of Windsor, Ontario*	An investigation of the CORT-fitness hypothesis: the importance of age and environmental quality

8:00-9:40 AM
Ballroom C2

Session 97: Flight I: Gliding and Flying

Chair: Marta Wolf

8:00 AM	97.1	DCB	*Jafari F, Socha JJ; Virginia Tech*	A theoretical investigation of static stability in gliding snakes
8:20 AM	97.2	DVM	*Bachmann T; Technische Universität Darmstadt, Germany*	The silent flight of owls
8:40 AM	97.3	DCB	*Wolf M, Ortega-Jimenez VM, Kim E, Dudley R; University of California, Berkeley*	Flow visualization, kinematics, and metabolic rates of Anna's hummingbird hovering in ground effect
9:00 AM	97.4	DCB	*Crandell KE, Tobalske BW; University of Montana, Missoula*	A novel unsteady aerodynamic mechanism in avian flight
9:20 AM	97.5	DCB	*Evangelista D, Cardona G, Ray N, Tse K, Wong D; University of California, Berkeley*	Measurement of the aerodynamic stability and control effectiveness of human skydivers during free fall and directed aerial descent

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon
Ballroom C2

Session 98: Flight II: Birds and Insects

Chair: Stacey Combes

10:00 AM	98.1	DCB	*Provini P, Abourachid A; Muséum National d'Histoire Naturelle, Paris*	Relative role of hindlimbs and forelimbs during take-off and landing in different species of birds
10:20 AM	98.2	DVM	*Baier DB, Gatesy SM, Dial KP, Jenkins FA Jr; Providence College, Brown University, University of Montana, Harvard University*	A new look at the avian wishbone
10:40 AM	98.3		*Usherwood JR; The Royal Veterinary College*	Free-flight dynamics of peregrine and pigeon - predator and prey
11:00 AM	98.4	DCB	*Combes SA, Rundle DE, Iwasaki JM; Harvard University*	Dragonfly *versus* fruit fly: biomechanics, behavior and strategy during aerial predator-prey encounters
11:20 AM	98.5	DCB	*Mountcastle AM, Combes SA; Harvard University*	Resilin and the morphological basis of flexible wing dynamics in flying insects

11:40 AM	98.6	DCB	*Zeng Y, Dudley R; University of California, Berkeley*	Wing reduction and flight biomechanic in stick insects (Insecta: Phasmatodea)

8:20-10:00 AM
Ballroom C3

Session 99: Behavioral Ecology: Predator/Prey Cues

Chair: Trevor Rivers

8:20 AM	99.1	DAB	*Rivers TJ, Perreault TR; Bowdoin College*	Luminescent responses to predation in the scale worm *Harmothoe imbricata*
8:40 AM	99.2	DAB	*Brandley NC, Johnsen S; Duke University*	The black widow's hourglass: a covert aposematic signal?
9:00 AM	99.3	DAB	*Murray EM, Saporito RA; Missouri State University, John Carroll University*	Predation in the strawberry poison frog *Oophaga pumilio*: are adults and juveniles equally protected from ctenid spiders?
9:20 AM	99.4	DAB	*Wethington AR; Chowan University*	Does predation by leeches inferred from chemical cues impose any appreciable costs on their snail prey?
9:40 AM	99.5	DAB	*Bedore CN, Harris LL, Kajiura SM; Florida Atlantic University*	Behavioral sensitivity of batoid elasmobranchs to prey-simulating electric fields

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Ballroom C3

Session 100: Behavioral Ecology: Foraging & Diet

Chair: Vonnie Shields

10:20 AM	100.1		*Boyle WA, Winkler DW, Guglielmo CG; University Western Ontario*	Female tree swallows modulate fat and lean mass in anticipation of increased foraging costs of chick rearing
10:40 AM	100.2	DEE	*Orr TJ, Hammond KA, Ortega J; University of California, Riverside, Politécnico Nacional, Mexico*	The effects of reproductive state on dietary shifts in Jamaican fruit bats *Artibeus jamaicensis*
11:00 AM	100.3		*Hansen BK, Krist AC, Martinez Del Rio C; University of Wyoming*	How do invasive species maintain dominance in nutrient limited environments? A comparison of behavioral and physiological mechanisms between an invasive and a native snail
11:20 AM	100.4		*Wright CW, Moeller KM, Denardo DF; Arizona State University, Tempe*	Do low energy systems practice state-dependent foraging strategies?
11:40 AM	100.5	DAB	*Napier KR, Xie S, McWhorter TJ, Nicolson SW, Martinez Del Rio C, Fleming PA; Murdoch University, Western Australia and University of Wyoming, Laramie, University of Adelaide, South Australia, University of Pretoria, South Africa*	Can sugar preferences in Australian birds be explained by behaviour or physiology?

8:00-9:40 AM
Club South

Session 101: Macroevolution and Systematics

Co-Chairs: Graham Slater, Liam Revell

8:00 AM	101.1	DEE	*Chang J, Roy K, Eastman JM, Smith SA, Santini F, Baum JK, Hastings PA, Sidlauskas BL, Alfaro ME; University of California, Los Angeles, University of California, San Diego, University of Idaho, Moscow, Brown University, Oregon State University, Corvallis*	Phylogenetic clustering of commercially exploited fish species

8:20 AM	101.2	DPCB	*Slater GJ, Harmon LJ, Alfaro ME; University of California, Los Angeles, University Idaho*	Fossils, molecular phylogenies, and models of trait evolution
8:40 AM	101.3	DVM	*Werning S, Irmis RB, Nesbitt SJ, Smith ND, Turner AH, Padian K; University of California, Berkeley, University of Utah, University of Washington, The Field Museum, Stony Brook University*	Early evolution of elevated growth and metabolic rates in archosaurs
9:00 AM	101.4	DPCB	*Revell LJ; University of Massachusetts Boston*	Analyzing continuous character evolution on a phylogeny
9:20 AM	101.5		*McClain CR; National Evolutionary Synthesis Center*	Increased energy promotes size-based niche availability in marine mollusks

9:40 AM BREAK IN EXHIBIT HALL

10:00-11:40 AM
Club South

Session 102: Morphological Evolution

Co-Chairs: Joshua Gross, Kenneth Angielczyk

10:00 AM	102.1		*Caplins SA, Norenburg JL, Turbeville JM*; Virginia Commonwealth University, National Museum of Natural History, Washington, DC*	Molecular and morphological variation in the barnacle predator *Nemertopsis bivitatta* (Nemertea, Hoplonemertea)
10:20 AM	102.2	DEDB	*Gross JB, Wilkens H; University of Cincinnati, Zoological Institute and Zoological Museum, University of Hamburg, Germany*	Evolution of albinism in a captive population of cavefish
10:40 AM	102.3	DVM	*Maddin HC, Russell AP, Anderson JS; University of Calgary*	Phylogenetic implications of the morphology of the braincase of caecilian amphibians (Gymnophiona)
11:00 AM	102.4	DVM	*Bergmann PJ, Berk CP; Clark University, University of Arizona*	Evolution and integration of weapons in horned lizards (*Phrynosoma*)
11:20 AM	102.6	DVM	*Angielczyk KD, Melstrom KM; Field Museum of Natural History, University of Michigan*	Are the plastral scutes and plastral lobes of turtle shells modules? A geometric morphometric perspective

8:00-10:00 AM
Club North

Session 103: Sensorimotor Systems: From Fins to Feeding

Chair: Brooke Flammang

8:00 AM	103.1	DVM	*Hale ME, Williams IV R; University of Chicago*	Pectoral fins as sensors: spatial distribution of sensory input to the pectoral fins of the bluegill sunfish
8:20 AM	103.2		*Williams IV R, Neubarth NL, Hale ME; University of Chicago*	Characterizing sensory nerve fiber responses to pectoral fin ray bending
8:40 AM	103.3	DCB	*Flammang BE, Lauder GV; Harvard University*	Navigation through obstacles by bluegill sunfish under different sensory conditions
9:00 AM	103.4	DCB	*Stewart WJ, Cardenas GS, McHenry MJ; University of California, Irvine*	Zebrafish larvae evade predators by sensing water flow
9:20 AM	103.5	DVM	*Mandecki JL, Westneat MW; University of Chicago, Field Museum of Natural History*	Coordination of oculomotor and locomotor systems in fishes
9:40 AM	103.6	DNB	*Brown KA, Iriarte-Diaz J, Takahashi K, Hatsopoulos NG, Ross CF; University of Chicago*	Kinematic and state representations by neuron population activity in MI orofacial cortex

10:00 AM BREAK IN EXHIBIT HALL

8:00-10:00 AM
Room 1

Session 104: Chemical Ecology I

Chair: Vonnie Shields

8:00 AM	104.1	DEE	*Byers KJRP, Bradshaw HD, Riffell JA; University of Washington*	Specific floral odorants contribute to differential pollinator attraction in monkeyflowers (*Mimulus*)
8:20 AM	104.2	DEE	*Clifford MR, Riffell JA; University of Washington*	The role of pollinator olfactory processing in biasing floral scent evolution
8:40 AM	104.3	DAB	*Weissburg MJ; Georgia Tech*	Turbulent mixing diminishes discrimination of food and predator risk odor sources by altering small scale structure of signals impinging on blue crab antennules
9:00 AM	104.4	DNB	*Martin TL, Shields VDC; Towson University*	The responses of taste receptor cells of gypsy moth larvae to various phytochemicals
9:20 AM	104.5		*Hutchinson DA, Mori A, Savitzky AH, Burghardt GM, Nguyen C, Meinwald J, Schroeder FC; Coastal Carolina University, Kyoto University, Japan, Utah State University, University of Tennessee, Cornell University*	Sequestration of defensive toxins by the Asian snake *Rhabdophis tigrinus*: effects of local prey availability and maternal diet
9:40 AM	104.6	DEE	*Bergman DA, Page K, Gauthier S; Grand Valley State University*	Alkyphenol effect on development, growth, reproductive behavior, and survival of crayfish

10:00 AM BREAK IN EXHIBIT HALL

10:20-11:40 AM
Room 1

Session 105: Chemical Ecology II

Chair: Thea Edwards

10:20 AM	105.1	DEE	*Craft JD, Delorenzo ME, Sotka EE; College of Charleston*	Cold-exposure compromises feeding resistance toward seaweed secondary metabolites in the sea urchin *Arbacia punctulata*
10:40 AM	105.2	DEE	*Schram JB, McClintock JB, Amsler CD, Baker BJ; University of Alabama at Birmingham, University of South Florida*	Impacts of elevated seawater temperature on Antarctic amphipod feeding choices for chemically-deterrent macroalgae
11:00 AM	105.3	DEE	*Marion ZH, Hay ME; University of Tennessee, Knoxville, Georgia Institute of Technology*	Chemical defense of the eastern newt (*Notophthalmus viridescens*): variation in efficiency against different consumers and in different habitats
11:20 AM	105.4	DEE	*Fordyce JA, Nice CC, Dimarco RD; University of Tennessee, Texas State University*	Ontogenetic and sex specific variation in chemical sequestration by a toxic herbivore

8:00-9:40 AM
Rooms 10/11

Session 106: Flicking and Feeding: (Mostly) Tongues and Pumps

Chair: Caroline Harper

8:00 AM	106.1		*Schuech R, Stacey M, Koehl M; University of California, Berkeley*	Numerical simulations of odorant detection by crustacean olfactory hair arrays
8:20 AM	106.2	DCB	*Waldrop LD; University of California, Berkeley*	Fluid dynamics of antennule flicking of the terrestrial hermit crab, *Coenobita rugosus* (Decapoda: Anomura)
8:40 AM	106.3	DCB	*Ryerson WG, Schwenk K; University of Connecticut*	Why snakes flick their tongues: a fluid dynamics approach
9:00 AM	106.4	DVM	*Harper CJ, Swartz SM, Brainerd EL; Brown University, Providence*	How nectar-feeding bats lap: nectar uptake and ingestion in *Glossophaga soricina*

9:20 AM	106.5		*Kim W, Gilet T*, Bush JWM; Massachusetts Institute of Technology, Cambridge, University of Liege, Belgium*	Nectar drinking

9:40 AM BREAK IN EXHIBIT HALL

10:00 AM-Noon
Rooms 10/11

Session 107: Complementary to Symposium: Modeling Animal Locomotion II

Co-Chairs: Lydia Bourouiba , Richard Bomphrey

10:00 AM	107.1		*Bourouiba L; Massachusetts Institute of Technology*	Disease transmission: insights from fluid dynamics
10:20 AM	107.2	DCB	*Bomphrey RJ, Henningsson P, Michaelis D, Horstmann T, Hollis D; University of Oxford*	Desert locust aerodynamics: instantaneous wake volumes using tomographic particle image velocimetry (tomo-PIV)
10:40 AM	107.3	DCB	*Hatton RL, Ding Y, Masse A, Maladen RD, Goldman DI, Choset H; Carnegie Mellon University, Georgia Institute of Technology*	Principles of sand-swimming revealed by geometric mechanics
11:00 AM	107.4	DCB	*Ding Y, Sharpe SS, Maladen RD, Goldman DI; Georgia Institute of Technology*	Using a sandfish simulation to compare undulatory swimming in sand and in fluids
11:20 AM	107.5	DAB	*Murphy DW, Webster DR, Yen J; Georgia Institute of Technology*	Copepod escape jumps: tomo-PIV measurements of the eliciting hydromechanical signal and subsequent flow disturbance
11:40 AM	107.6	DCB	*Cox SM, Modarres-Sadeghi Y, Patek S; University of Massachussettes, Amherst*	physical model of the feeding strike of the mantis shrimp

8:00-10:00 AM
Room 12

Session 108: Immune: Cellular

Co-Chairs: Rachel Bowden, Russell Easy

8:00 AM	108.1	DCPB	*Easy R, Adamo S; Dalhousie University*	Pitting the stress response against the immune response: changes in gene expression in the Texas field cricket (Gryllus texensis)
8:20 AM	108.2	DIZ	*Nalini Padmanabhan M; Karpagam University, India*	*In vitro* cell-cell co-operation during cellular immune functions in the edible marine crab *Scylla serrata*
8:40 AM	108.3	DCPB	*Lindner KK, Haring JS, Rubalcava J, Nguyen T, Greenlee KJ; North Dakota State University, Northern Arizona University, University of Maryland*	The role of matrix metalloproteinases in immunity in the caterpillar, *Manduca sexta*
9:00 AM	108.4	DCPB	*Zimmerman LM, Clairardin SG, Paitz RT, Hicke JW, Vogel LA, Bowden RM; Illinois State University*	Humoral immunity to lipopolysaccharide in a long-lived ectotherm
9:20 AM	108.5	DCPB	*Killpack TL, Karasov WH; University of Wisconsin, Madison*	Post-hatching ontogeny of adaptive antibody response to two distinct antigens in captive zebra finches
9:40 AM	108.6		*Fassbinder-Orth C, Barak V, Brown C; Creighton University, University of Tulsa*	Avian immune responses to alphavirus infections

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Room 12

Session 109: Immune: Energetics

Co-Chairs: Erica Crespi, Travis Wilcoxen

10:20 AM	109.1	DCPB	*Wilcoxen TE, Horn DJ, Cerny J, Hogan B, Hubble C, Huber S, Knott M, Robertson A, Salik F; Millikin University*	The buzz about food: songbird physiology in response to increased availability of a natural food source

10:40 AM	109.2	DCPB	*Durant SE, Hawley DM, Adelman JS, Wilson AF, Hopkins WA; Virginia Tech, Princeton University*	Infection and cold stress result in additive energetic costs and altered host immunity in a naturally occurring host-pathogen system
11:00 AM	109.3		*Nan Tie DE, Killpack TL, Karasov WH; University Wisconsin, Madison*	Effect of food restriction and realimentation on growth, immune response, and body composition in Zebra finches
11:20 AM	109.4	DCE	*Crespi EJ, Fites JS, Rollins-Smith LA; Washington State University, Vanderbilt University Medical Center*	Leptin enhances proliferation of amphibian lymphocytes
11:40 AM	109.5	DCPB	*Richardson CS, Curley B, Davis F; Northeastern University*	The effect of circadian disruption on metabolic rate and immune function in vasoactive intestinal protein (VIP) deficient mice

8:20-10:00 AM
Room 13

Session 110: Neurobiology: Learning, Memory, Cognition and Development: Learning and Cognition

Chair: Emilie Snell-Rood

8:20 AM	110.1	DAB	*Jaumann S, Naug D*; Colorado State University*	Learning kills
8:40 AM	110.2	DEE	*Snell-Rood EC, White WA, Espeset A, Kenzie SA; University of Minnesota*	Nutritional constraints in the evolution of cognition: effects of host shifts on neural investment in butterflies
9:00 AM	110.3	DAB	*Ladage LD, Roth TC, Cerjanic AM, Sinervo B, Pravosudov VV; University of Nevada, Reno, Kenyon College, University of California, Santa Cruz*	Spatial memory in the side-blotched lizard, *Uta stansburiana*
9:20 AM	110.4		*Roth TC, Ladage LD, Freas CA, Pravosudov VV; Kenyon College, University of Nevada, Reno*	Variation in memory and the hippocampus across populations from different climates: a common garden approach
9:40 AM	110.5	DAB	*Krochmal AR, Laduc TJ, Place AJ; Washington College, The University of Texas at Austin, Northwestern Oklahoma State University*	Proximate and ultimate perspectives on one-trial learning in rattlesnakes

10:00 AM BREAK IN EXHIBIT HALL

10:20 AM-Noon
Room 13

Session 111: Neurobiology: Learning, Memory, Cognition and Development: Plasticity and Development

Chair: Zoltan Nemeth

10:20 AM	111.1	DAB	*Lynch KS, Ramsey ME, Cummings ME; University of Texas at Austin*	Understanding the mate choice brain in two related poecillid fish with divergent mating systems
10:40 AM	111.2	DCPB	*Claghorn GC, Meek TH, Perea-Rodriguez JP, Garland Jr T; University of California, Riverside*	Neurobiological correlates of voluntary exercise: effects of selective breeding and a high-fat diet
11:00 AM	111.3	DAB	*Brazeal KR, Hahn TP; University of California, Davis*	Carryover or compensation? The effect of delayed plumage molt in house finches (*Carpodacus mexicanus*)
11:20 AM	111.4	DAB	*Wada H, Newman AEM, Hall Z, Soma KK, MacDougall-Shackleton SA*; University Western Ontario, University Guelph, University British Columbia*	Effects of corticosterone and dehydroepiandrosterone on adult neuroplasticity in songbirds
11:40 AM	111.5	DAB	*Nemeth Z, Ramenofsky M; University of California, Davis*	Gonadal androgen and development of vernal migratory condition in Gambel's white-crowned sparrow

1:00-3:00 PM
Ballroom A

Session 112: Locomotion: Muscle and Bone Mechanics

Chair: Robert Kambic

1:00 PM	112.1	DCB	*Kurth JA, Thompson JT, Kier WM; University of North Carolina, Chapel Hill, Franklin and Marshall College*	Tuning of mantle connective tissue to non-uniform strain in the squid *Doryteuthis pealeii*
1:20 PM	112.2	DCB	*Thompson JT, Shelton RM, Kier WM; Franklin and Marshall College, University of North Carolina*	Non-uniform strain in squid mantle muscle: relating the length-tension curve to *in vivo* muscle performance
1:40 PM	112.3	DCB	*Horner AM, Astley HC, Roberts TJ; Brown University*	Analysis of rat hindlimb muscle and tendon mechanics using x-ray videoradiography
2:00 PM	112.4	DCB	*Aiello BR, Blob RW, Butcher MT; Youngstown State University, Clemson University*	Correlation of bone loading and muscle function in the hindlimb of the river cooter turtle (pseudemys concinna)
2:20 PM	112.5		*Lamas LP, Main RP, Shefelbine S, Hutchinson JR; The Royal Veterinary College, UK, Purdue University, Imperial College London, UK*	In vivo locomotor mechanics of the tarsometatarsus bone in juvenile emus
2:40 PM	112.6	DVM	*Kambic RE, Gatesy SM, Roberts TR; Brown University*	Walking with a twist

1:00-3:00 PM
Ballroom B

Session 113: Aquatic Locomotion: Flow, Foils and Fins

Chair: Frank Fish

1:00 PM	113.1	DCB	*Katija K, Jiang H, Colin SP, Costello JH; Woods Hole Oceanographic Institution, Roger Williams University, Providence College*	Ontogenetic propulsive transitions from viscous to inertial flow regimes
1:20 PM	113.2	DCB	*Ngo V, McHenry MJ; University of California, Irvine*	Swimming at intermediate Reynolds numbers in water boatmen
1:40 PM	113.3	DCB	*Hardy AR, Merz RA; Swarthmore College, PA*	Flippin' out: inverted sand dollars actively orient themselves in flow to maximize lift for righting
2:00 PM	113.4	DVM	*Maia A, Lauder GV, Wilga CD; University of Rhode Island, Harvard University*	Hydrodynamic function of dorsal fins in sharks
2:20 PM	113.5	DCB	*Fish FE, Gabler MK, Beneski JT, Mulvany S, Moored KW; West Chester University, University of South Florida, Princeton University*	Hydrodynamic function of the cephalic lobes of the cownose ray for bottom swimming stabilization
2:40 PM	113.6	DCB	*Koehl M, Stocker R, Nicolau D, King N; University of California, Berkeley, MIT*	Swimming and feeding by unicellular vs. colonial choanoflagellates

1:00-3:00 PM
Ballroom C1

Session 114: Stress: Developmental & Chronic

Chair: Sarah Woodley

1:00 PM	114.1	DCE	*Woodley SK, Ricciardella LF; Duquesne University*	Is plasma corticosterone a useful biomarker of environmental degradation?
1:20 PM	114.2	DCPB	*Crino OL, Klaassen Van Oorschot B, Tobalske BW, Breuner CW; University of Montana*	Developmental stress: morphological, physiological, and behavioral consequences in the zebra finch

1:40 PM	114.3	DCE	*Wada H, Allen NR, Kriengwatana B, Schmidt KL, Soma KK, MacDougall-Shackleton SA; University Western Ontario, University British Columbia*	Long-term consequences of incubation temperature on offspring physiology and survival in zebra finches
2:00 PM	114.4	DCE	*Bebus SE, Small TW, Elderbrock EK, Heiss RS, Schoech SJ; University of Memphis*	Corticosterone responsiveness at nutritional independence predicts behavior nine months later in the Florida scrub-jay (*Aphelocoma coerulescens*)
2:20 PM	114.5		*Wiedeback BD, Oswald ME, Robison BD; University of Idaho, University of Notre Dame*	The link between stress and behavior in zebrafish: is embryonic perturbation a factor?
2:40 PM	114.6	DCE	*Lattin CR, Medina C, Romero LM; Tufts University*	Effects of chronic stress on brain and peripheral intracellular glucocorticoid receptors in wild house sparrows

1:20-3:00 PM
Ballroom C3

Session 115: Mating Systems

Chair: Anne Danielson-Francois

1:20 PM	115.1		*Danielson-Francois A, Drobot Y; University of Michigan, Dearborn*	Nuptial thief: male spiders steal food from mating partners
1:40 PM	115.2	DAB	*Westerman EL, Monteiro A; Yale University*	Mating status drives male-female interactions in a polygynandrous butterfly
2:00 PM	115.3	DEE	*Somjee U, Ablard K, Crespi B, Schaefer PW, Gries G; Simon Fraser University, Canada, US Department of Agriculture, Newark, DE*	Sex ratio adjustment in a solitary parasitoid wasp
2:20 PM	115.4		*Mabry K, Blumstein D, Van Vuren D, Shelley E; New Mexico State University, University of California, Los Angeles, University of California, Davis*	The evolutionary relationship between social mating system and sex-biased dispersal in mammals
2:40 PM	115.5	DAB	*Husak JF, Lovern MB; University of St. Thomas, Oklahoma State University*	Variation in circulating steroid hormones among Caribbean *Anolis* ecomorphs

1:00-3:00 PM
Club South

Session 116: Thermal Physiology

Co-Chairs: Zachary Stahlschmidt, Michael Rowe

1:00 PM	116.1	DEE	*Kenkel CD, Goodbody-Gringley G, Bartels E, Davies SW, Percy AL, Matz MV; The University of Texas at Austin, Bermuda Institute of Ocean Sciences, Mote Tropical Research Laboratory*	Evidence of local thermal adaptation in a Caribbean coral
1:20 PM	116.2	DEE	*Condon CH, Cooper BS, Yeaman S, Angilletta MJ; Arizona State University, Indiana University, Bloomington, University of British Columbia*	Evolution of thermal acclimation in constant and heterogeneous environments
1:40 PM	116.3	DCPB	*Luken AN, Espinoza RE; California State University, Northridge*	Temperature-dependent sprint performance of nocturnal and diurnal geckos: does Dollo's law apply to physiological traits?
2:00 PM	116.4	DCPB	*Gunderson AR; Duke University*	The evolution of thermal physiology in the lizard genus *Anolis*

2:20 PM	116.5	DCPB	*Stahlschmidt ZR, Butler MW, Ardia DR, Davies S, Davis JR, Guillette LJ, Johnson N, McCormick SD, McGraw KJ, Denardo DF; Arizona State University, Franklin and Marshall College, Rhodes College, Medical University of South Carolina, US Geological Survey, University of Massachusetts*	Thermal performance of innate immunity in vertebrates
2:40 PM	116.6	DCPB	*Rowe MF, Bakken GS, Ratliff J, Hagan D, Theison W; Indiana State University, Audubon Nature Institute, Indianapolis Zoo, Pittsburgh Zoo*	Radiant heat loss in the pinnae of exercising elephants: pinna recruitment or regional non-pachyderm?

1:00-3:00 PM
Club North

Session 117: Reproductive Physiology

Co-Chairs: Nicole Perfito, Giancarlo Lopez-Martinez

1:00 PM	117.1	DCPB	*Heiss RS, Schoech SJ; University of Memphis*	Experimental supplementation with antioxidants reduces reproduction-associated oxidative damage in breeding male Florida scrub-jays
1:20 PM	117.2	DCPB	*Lopez-Martinez G, Hahn DA; University of Florida*	Anoxia boosts post-irradiation longevity and mating success in a lekking fly
1:40 PM	117.3		*Guindre-Parker S, Gilchrist HG, Doucet SM, Love OL; Biological Sciences, University of Windsor, National Wildlife Research Centre, Environment Canada*	Male quality in an Arctic passerine: what are the links between plumage and reproduction
2:00 PM	117.4	DCE	*Perfito N, Hornick K, Nguyen S, Darling H, Bentley G; University of California, Berkeley*	Gene expression underlying the 'decision' to initiate egg-laying: social effects on vitellogenesis
2:20 PM	117.5	DCE	*Pinson SE, Gam AE, Navara KJ; University of Georgia, Athens*	Effects of acute, physiological elevations of corticosterone on offspring sex ratios in two avian species
2:40 PM	117.6	DCE	*Zysling DA, Park S-U, McMillan EL, Place NJ; Cornell University*	Gonadotropin suppression alone does not induce the short-day ovarian phenotype in Siberian hamsters

1:00-3:00 PM
Room 1

Session 118: Bioindicators & Pollution

Chair: Ann Tarrant

1:00 PM	118.1	DIZ	*Boettger SA, Taraska NG; West Chester University of Pennsylvania*	Development of hemic neoplasia in *Mya arenaria* along the Atlantic coast of the United States
1:20 PM	118.2	DCPB	*Brock JR, Bielmyer GK; Valdosta State University*	Metal accumulation and sublethal effects in the sea anemone, *Aiptasia pallida*, after waterborne exposure to metal mixtures
1:40 PM	118.3	DEE	*Lance SL, Jones KL, Flynn RW, Erickson MR, Tuberville TD, Scott DE; Savannah River Ecology Laboratory, University of Georgia, University of Colorado School of Medicine*	Chronic copper exposure in southern toads, *Anaxyrus terrestris*: lethal, sublethal, and gene expression effects
2:00 PM	118.4	DEE	*Flynn RW, Kuhne WW, Scott DE, Erickson MR, Mills GL, Tuberville TD, Lance SL; University of Georgia, Savannah River Ecology Laboratory, Savannah River National Laboratory, UGA-SREL*	The lethal and sublethal consequences of copper exposure for *Lithobates sphenocephalus* and *Gastrophryne carolinensis*

2:20 PM	118.5	DEE	*Dubansky B, Bodinier C, Rice CD, Whitehead A, Galvez F; Louisiana State University, Clemson University*	Effects of exposure to crude oil from the Deepwater Horizon oil spill on populations of gulf killifish (*Fundulus grandis*) in Barataria Bay, Louisiana
2:40 PM	118.6	DCPB	*Tarrant AM, Reitzel AM, Kwock CK, Goldstone JV, Jenny MJ; WHOI, Chinese University of Hong Kong, University of Alabama*	Activation of cellular defenses in the sea anemone *Nematostella vectensis* by PAHs and crude oil

1:00-3:00 PM
Rooms 10/11

Session 119: Complementary to Symposium: Modeling Animal Locomotion III

Co-Chairs: David Hu, Jonathan Dyhr

1:00 PM	119.1		*Dickerson AK, Shankles P, Madhavan N, Hu DL; Georgia Institute of Technology*	Insects flying in the rain
1:20 PM	119.2	DCB	*Hu D, Dickerson A, Mills Z; Georgia Institute of Technology*	Wet mammals shake at tuned frequencies to dry
1:40 PM	119.3		*Kovac M, Vogt D, Ithier D, Smith MJ, Wood RJ; Harvard University, Microrobotics Laboratory*	Experimental flight performance evaluation of forewing orientation in butterflies
2:00 PM	119.4	DCB	*Henningsson P, Bomphrey RJ; University of Oxford*	How aerodynamic induced power scales with body mass and wing span in British dragonflies and damselflies
2:20 PM	119.5	DCB	*Dyhr JP, Cowan NJ, Hinterwirth AJ, Morgansen KA, Daniel TL; University Washington, Johns Hopkins University*	Flexible frames for flight
2:40 PM	119.6		*Jing F, Kanso E; Georgia Tech, University of Southern California*	Effects of body elasticity on stability of underwater locomotion

1:00-3:00 PM
Room 12

Session 120: Evo-devo: Metamorphosis

Chair: Tobias Landberg

1:00 PM	120.1	DVM	*Landberg T, Willink B, Noss CF, Greene RS, Vonesh JR, Warkentin KM; Murray State University, University of Costa Rica, University of Florida, University of Victoria, Virginia Commonwealth University, Boston University*	Development of climbing performance and behavior during red-eyed treefrog metamorphosis' the effects of larval competition
1:20 PM	120.2		*Plough LV, Hedgecock D; University of Southern California*	High genotype-dependent mortality at metamorphosis in the Pacific oyster
1:40 PM	120.3	DEE	*Helm BR, Davidowitz G; University of Arizona*	Do resource thresholds play a role in the onset of maturation—a key life history transition?
2:00 PM	120.4	DIZ	*Nedved BT, Asahina AY, Hafield MG; University Hawaii*	The apical sensory organ is not required for the initiation of metamorphosis in larvae of hydroides elegans
2:20 PM	120.5	DNB	*Biscocho D, Leise EM; University of North Carolina Greensboro*	Is GABA an inhibitory neurotransmitter in the neural circuit regulating metamorphosis in *Ilyanassa obsoleta*
2:40 PM	120.6		*Ueda N, Degnan SM; The University of Queensland*	Nitric oxide as a regulator of marine invertebrate metamorphosis: behavioural and molecular insights

3:00-4:00 PM ***Room: Ballroom A*** **John A. Moore Lecture**		
	Alters B; Chapman University	Evolution education and creationism through the decades

KEYWORD INDEX

AUTHOR INDEX

C

D

E

F

G

H

I

J

K

L

M

N

S

T

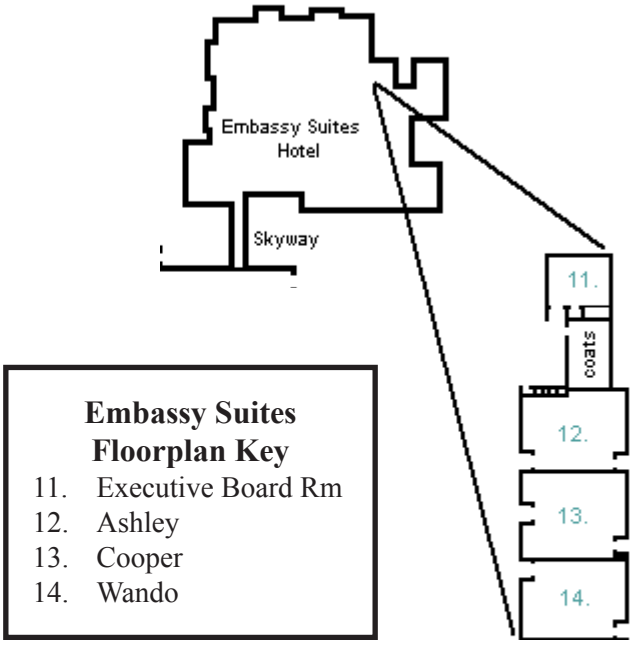
U

X

Y

Z

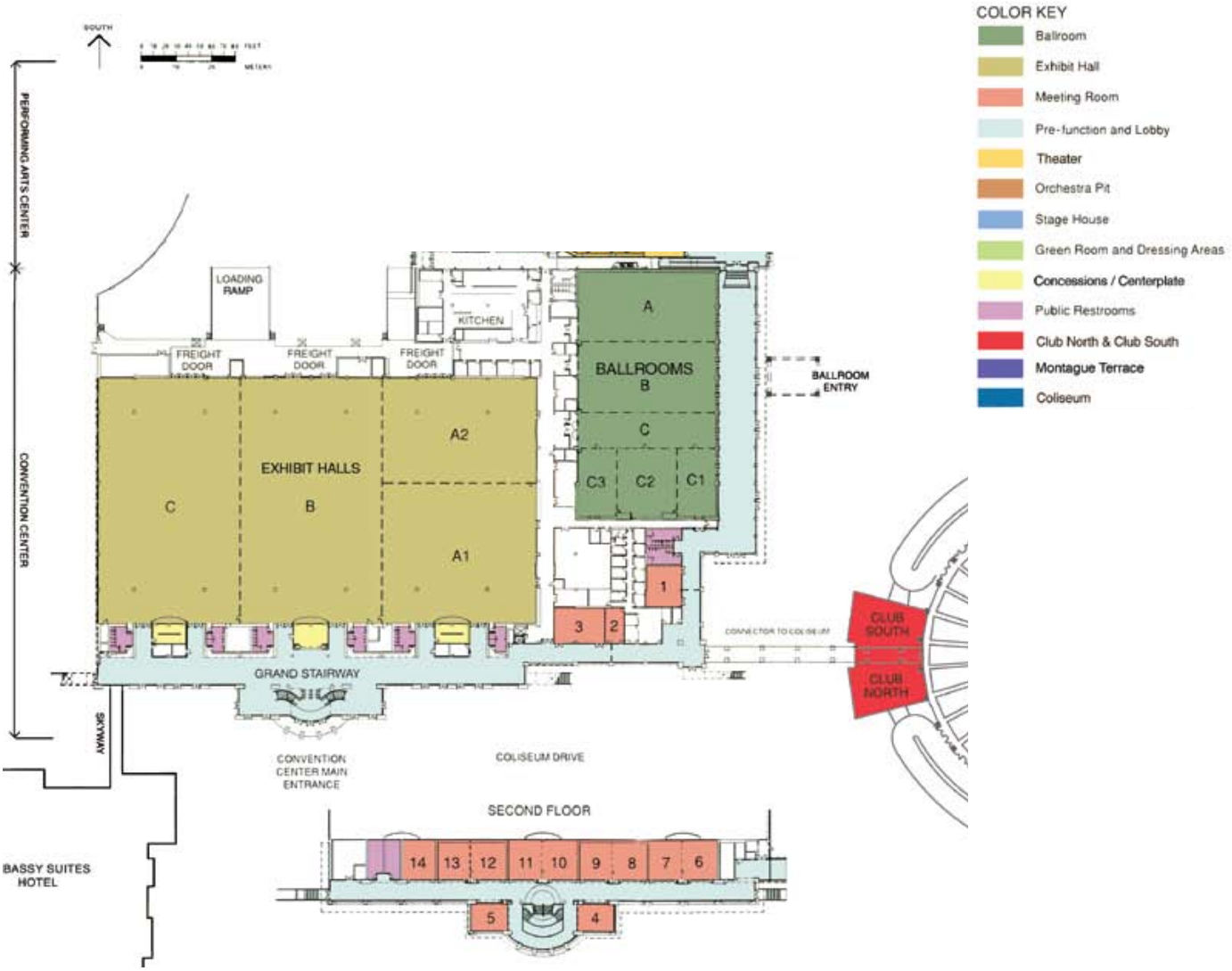
NOTES



Embassy Suites
Floorplan Key

11. Executive Board Rm
12. Ashley
13. Cooper
14. Wando

Embassy Suites Floorplan



Charleston Convention Center
Floorplan

The Society for Integrative & Comparative Biology
1313 Dolley Madison Blvd.
Suite 402
McLean, VA 22101
Phone: 703-790-1745 - 800-955-1236
FAX: 703-790-2672
Email: SICB@BurkInc.com
Web: www.SICB.org