Adaptation I

📅 Tue, June 21
🕒 10:00 AM - 11:30 AM
📍 Virtual

Adaptation, Birds, Drosophila, Evolutionary ecology, Fishes, Mammals, Plants

Presentations

10:00 AM
**Evolution of gene networks underlying adaptation to drought tolerance in the wild tomato Solanum chilense**

-Gustavo A Silva Arias¹, Kai Wei², Saida Sharifova³, Aurelien Tellier⁴

¹Technical University of Munich, Freising, Germany, ²Technical University of Munich, Germany, ³Khazar University, ⁴Technical University Munich

-Adaptation, Plants

10:15 AM
**Genetic signals of local adaptation in a desert rodent that occupies diverse climates and habitats**

-Keaka Farleigh¹, Tereza Jezkova¹

¹Miami University

-Adaptation, Mammals

10:30 AM
**Some traits of covariation between sternum and pelvis shapes in aquatic birds**

-Oksana Shatkovska¹, Maria Ghazali²

¹Schmalhausen Institute of Zoology of NAS of Ukraine, Kyiv
Evolutionary ecology I

Tue, June 21
10:00 AM - 11:30 AM
Virtual

Presentations

10:00 AM
Exploring range expansion in ferns: Evidence for spore trade-offs, and for dispersal driven by trade winds in the widespread Cheilanthes distans (Pteridaceae)
Karla Sosa, Duke University, Durham, NC

10:15 AM
Estimating the capacity of Chamaecrista fasciculata to adapt to novel environments
Anna Peschel¹, Ruth G. Shaw²
¹University of Minnesota, Twin Cities, Minneapolis, ²University of Minnesota, St. Paul, MN

11:00 AM
Contrast the geographical distribution and body size of two sibling flower-breeding Drosophila species
Shu-Dan Yeh, National Central University, Taoyuan City, Taiwan

11:15 AM
Phenotypic Correlates of Pelvic Spine Coloration in the Threespine Stickleback (Gasterosteus aculeatus): Implications for Function and Evolution
Christopher M. Anderson¹, Jeffrey McKinnon¹
¹East Carolina University, Greenville, NC

11:30 AM
Exploring range expansion in ferns: Evidence for spore trade-offs, and for dispersal driven by trade winds in the widespread Cheilanthes distans (Pteridaceae)
Karla Sosa, Duke University, Durham, NC
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Author(s)</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:15 AM</td>
<td>Increasing body sizes in Anomala expansa expansa (Coleoptera: Scarabaeidae) populations in response to rising temperatures over time</td>
<td>Ian Maher¹, Matan Shelomi¹</td>
<td>National Taiwan University, Taipei, Taiwan</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Adaptations to agricultural practices: how do trichomes contribute to herbicide resistance?</td>
<td>Nia M. Johnson, Univeristy of Michigan, Ann Arbor, MI</td>
<td>Evolutionary ecology, Plants</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Modelling adaptation in two genetically-correlated traits under antagonistic selection</td>
<td>Meaghan Theodore, University of Guelph, Innisfil</td>
<td>Adaptation, Invertebrates</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Hole-y tendons! Anatomy &amp; novel tendon morphology of the California sea lion hindflipper</td>
<td>Ariel Leahy¹, Aditya Kulkarni², Sarah Kerr³, Katherine Riordan³, Frank Fish⁴, Megan Leftwich²</td>
<td>Baylor University, Hewitt, George Washington University, West Chester University, West Chester, PA</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Genomic evidence that a sexually selected trait captures genome-wide variation and facilitates the purging of genetic load</td>
<td>Jonathan Parrett, Adam Mickiewicz University, Poznan, Poland</td>
<td>Arthropods, Evolutionary ecology</td>
</tr>
</tbody>
</table>

**Hybridization / Invasion**

📅 Tue, June 21  
⏰ 10:00 AM - 11:30 AM  
📍 Virtual
Presentations

10:00 AM

**Ecology of hybrid zones in Impatiens**

*Sneha Joshi*, Indian Institute of Science Education and Research, India

- Ecology
- Plants

10:15 AM

**Floral scent divergence across an elevational hybrid zone with varying pollinators**

*Yedra García¹, Kate Ostevik², Joseph J. Anderson³, Mark D. Rausher⁴, Amy L. Parachnowitsch⁵*

¹University of New Brunswick, Fredericton, New Brunswick, ²UC Riverside, Riverside, ³Uppsala University, Uppsala, Uppland, Sweden, ⁴Duke University, Durham, NC, ⁵University of New Brunswick, Fredericton, NB

- Plants
- Pollination

10:30 AM

**Genome structure drives the landscape of introgression from selfing into outcrossing Capsella**

*Tyler Kent¹, Yaniv Brandvain², Stephen I. Wright³*

¹University of Toronto EEB, Vancouver, British Columbia, ²University of Minnesota, ³Department of EEB, U. Toronto, Toronto, Ontario

- Gene flow
- Plants

10:45 AM

**Tracing the invasion history of Lantana camara in India using genomics**

*PRAVEEN P*, National Center for Biological Sciences, BENGALURU, Karnataka, India

- Invasive/invasion
- Plants

11:00 AM

**Patterns of diversification in a widespread invasive species (Sorghum halepense)**

*Michael McKain¹, Nate Hofford², M'Kayla Motley², Bryan MacNeill², Andrew Busby², Caitlin McCann², Fae Oldham², Allison Hayes², Susie McLaughlin², Alaina Dawkins³*

¹The University of Alabama, Tuscaloosa, ²The University of Alabama, ³Mississippi University for Women

- Invasive/invasion
- Plants

11:15 AM
Genetically Differentiated Populations of Invasive Tawny Crazy Ant Detected Across Their Geographic Distribution in the US

Jocelyn Holt¹, James Montoya Lerma², Louis Calcaterra³, Tyler Raszick⁴, Raul Medina⁴

¹Texas A&M University / Rice University, ²Department of Biology, Universidad del Valle, Campus de Meléndez, Colombia, ³Fundación para el Estudio de Especies Invasivas, Hurlingham, Buenos Aires, Argentina, ⁴Department of Entomology, Texas A&M University, College Station, Texas

Invasive/invasion  Invertebrates

Phylogenetics / Methods

📅 Tue, June 21
⏰ 10:00 AM - 11:30 AM
📍 Virtual

Bioinformatics  Fishes  No specific taxon  Phylogenetic comparative methods
Phylogenetic methods development  Plants

Presentations

10:00 AM  Building large phylogenetic trees by combining phylogenomics and DNA barcoding: Methods and biological insights.

M. A. Thanuja M. Fernando, University of Guelph, Guelph, ON

Bioinformatics  Fishes

10:15 AM  TensorPhylo: a high-performance likelihood library for a general class of state-dependent birth-death models

Michael R. May¹, Xavier Meyer¹

¹UC Berkeley, Berkeley, CA

No specific taxon  Phylogenetic comparative methods

10:30 AM  Accounting for intraspecific variation in continuous trait evolution on a reticulate phylogeny

Benjamin Teo¹, Jeffrey Rose¹, Paul Bastide², Cecile Ane³

¹University of Wisconsin-Madison, ²Université de Montpellier,
On the inference of complex phylogenetic networks with SnappNet
Charles-Elie Rabier¹, Vincent Berry², Fabio Pardi³, Jean-Christophe Glaszmann⁴, Celine Scornavacca³
¹Université de Montpellier, Montpellier, France, ²Université de Montpellier, ³CNRS, ⁴CIRAD
Phylogenetic methods development, Plants

Build a better bootstrap and the RAWR shall beat a random path to your door: phylogenetic support estimation revisited
Kevin J. Liu¹, Wei Wang², Ahmad Hejasebazzi³, Julia Zheng²
¹Michigan State University, East Lansing, MI, ²Michigan State University, East Lansing, Michigan, ³Michigan State University
No specific taxon, Phylogenetic methods development

Modeling Process Variation Among Morphological Characters: Inferring Morphological Phylogenies Under a Dirichlet Process Prior Model
Lan Wei¹, Carl Rothfels², Michael R. May³
¹University of California, Berkeley, Berkeley, CA, ²UC Berkeley, Richmond, CA, ³UC Berkeley, Berkeley, CA
No specific taxon, Phylogenetic methods development

Evolutionary ecology II
📅 Tue, June 21
⏰ 12:00 PM - 1:30 PM
📍 Virtual

Amphibians, Birds, Contemporary evolution, Ecology, Evolutionary ecology, Evolutionary theory, Fishes, Invertebrates, Macroevolution, Mammals, Phenotypic plasticity/GxE, Reptiles

Presentations
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
<th>Keywords</th>
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</thead>
<tbody>
<tr>
<td>12:00 PM</td>
<td><strong>The role of near-infrared reflectance in poison frog thermoregulation</strong></td>
<td>Analisa Shields-Estrada(^1), David Cannatella(^2)</td>
<td>(^1)The University of Texas at Austin, Austin, (^2)University of Texas, Austin, TX</td>
<td>Amphibians, Evolutionary ecology</td>
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<td>12:15 PM</td>
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<td>12:15 PM</td>
<td><strong>Food variation determines effects of harvest on trait distributions of harvested fish populations</strong></td>
<td>Matthew Schumm, Florida State University, Tallahassee</td>
<td></td>
<td>Contemporary evolution, Fishes</td>
</tr>
<tr>
<td>12:30 PM</td>
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<tr>
<td>12:30 PM</td>
<td><strong>Dietary partitioning of the critically endangered Yellow-breasted bunting and other sympatric buntings</strong></td>
<td>Lai Ying Chan(^1), Emily Shui Kei Poon(^1), Pei-Yu Huang(^1), Yat-Tung Yu(^2), Simon Sin(^3)</td>
<td>(^1)The University of Hong Kong, Hong Kong, (^2)Hong Kong Bird Watching Society, (^3)The University of Hong Kong, Hong Kong</td>
<td>Birds, Ecology</td>
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<td>12:45 PM</td>
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<tr>
<td>12:45 PM</td>
<td><strong>Pupal colour plasticity: What factors affect pupal colour and why?</strong></td>
<td>Tarunkishwor Yumnam(^1), Birupaksha Banerjee(^2), Hazekaiah Laloo(^3), Thales Freitas(^4)</td>
<td>(^1)Indian Institute of Science Education and Research, (^2)Researcher, (^3)Thiruvananthapuram, (^4)Indian Institute of Science Education and Research, Thiruvananthapuram</td>
<td>Invertebrates, Phenotypic plasticity/GxE</td>
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<td>1:00 PM</td>
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<tr>
<td>1:00 PM</td>
<td><strong>Evolution of scapula and pelvis of hystricomorph rodents</strong></td>
<td>Luiza F. Gasparetto(^1), Bruno Simionovschi(^2), Renan Maesti(^3), Bruce Patterson(^4), Thales Freitas(^2)</td>
<td>(^1)Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil, (^2)Universidade Federal do Rio Grande do Sul, Brazil, (^3)Universidade Federal do Rio Grande do Sul, Brazil, (^4)Field Museum of Natural History</td>
<td>Macroevolution, Mammals</td>
</tr>
</tbody>
</table>
Experimental evolution

Tuesday, June 21
12:00 PM - 1:30 PM
Virtual

Artificial selection  Drosophila  Experimental evolution  Microbes  Mitochondrial  Mutation  Nematodes  No specific taxon

Presentations

12:00 PM
A role for microbes in the experimental evolution of life histories and aging in Caenorhabditis elegans

Ivo M. Chelo\textsuperscript{1}, Josiane Santos\textsuperscript{2}, David Pires\textsuperscript{3}
\textsuperscript{1}Center for Ecology, Evolution and Environmental Changes, Faculdade de Ciências, Universidade de Lisboa, Portugal., Lisbon, NA, Portugal, \textsuperscript{2}Center for Ecology, Evolution and Environmental Changes, Faculdade de Ciências, Universidade de Lisboa, Portugal., \textsuperscript{3}INIAV - National Institute for Agrarian and Veterinary Research, Portugal, Portugal

Experimental evolution  Nematodes

12:15 PM
Evolvability of sporulation and germination behavior in Bacillus subtilis batch culture

Katie Sagarin\textsuperscript{1}, Elizabeth Ouanemlay\textsuperscript{2}, Hilda Asante-Nyame\textsuperscript{2}, Vera Hong\textsuperscript{2}, Frederick Cohan\textsuperscript{2}
\textsuperscript{1}Wesleyan University, Middletown, CT, \textsuperscript{2}Wesleyan University

Experimental evolution  Microbes

12:30 PM
Mutation rate does not fully explain the rate of mutator invasion into wild-type populations

Mrudula Sane\textsuperscript{1}, Deepa Agashe\textsuperscript{2}
\textsuperscript{1}National Centre for Biological Sciences, Bengaluru, India, \textsuperscript{2}National Centre for Biological Sciences, Bangalore, Karnataka,
Mixed session I

**Presentations**

12:00 PM

**DNA sequencing of historical museum specimens of ladybird beetles (Coleoptera, Coccinellidae) to resolve their phylogenetic relationships**

Karen Salazar\(^1\), Romain NATTIER\(^2\), Guillaume ACHAZ\(^3\)

\(^1\)Institut Systématique Evolution Biodiversité (ISYEB - UMR 7205), Muséum national d'Histoire naturelle, Sorbonne Université, CNRS, EPHE, Paris, Ile de France, France, \(^2\)ISYEB (UMR 7205), Muséum national d'Histoire naturelle, CNRS, Sorbonne Université, EPHE, \(^3\)UMR 7206, Musée de l'Homme, Muséum national d'Histoire naturelle & UMR 7241 CIRB, Collège de France

Adaptation  Arthropods  Birds  Fishes  Phylogeography  Systematics

12:15 PM

**Sex and mitonuclear adaptation in experimentally evolved C. elegans**

Zachary Dietz\(^1\), Suzanne Estes\(^2\)

\(^1\)Portland State University, Portland, Oregon, \(^2\)Portland State University

Mitochondrial  Nematodes

12:30 PM

**Habitat novelty shapes history's influence on trade-offs and trade-ups in digital organisms**

Jason Bundy\(^1\), Richard Lenski\(^2\), Charles Ofria\(^3\)

\(^1\)University of Minnesota, LANSING, \(^2\)Michigan State University, East Lansing, MI, \(^3\)Michigan State University

Experimental evolution  No specific taxon

1:00 PM

**DNA sequencing of historical museum specimens of ladybird beetles (Coleoptera, Coccinellidae) to resolve their phylogenetic relationships**

Karen Salazar\(^1\), Romain NATTIER\(^2\), Guillaume ACHAZ\(^3\)

\(^1\)Institut Systématique Evolution Biodiversité (ISYEB - UMR 7205), Muséum national d'Histoire naturelle, Sorbonne Université, CNRS, EPHE, Paris, Ile de France, France, \(^2\)ISYEB (UMR 7205), Muséum national d'Histoire naturelle, CNRS, Sorbonne Université, EPHE, \(^3\)UMR 7206, Musée de l'Homme, Muséum national d'Histoire naturelle & UMR 7241 CIRB, Collège de France

Arthropods  Systematics
Millennium Institute Biodiversity of Antarctic and Subantarctic Ecosystems (BASE): phylogeographical patterns obtained from genomic data in different taxonomic groups
Juliana A. VIANNA1, Karin Gerard2, Angie Diaz3, Claudio González-Wevar4, Nicolás Segovia5, Guillaume Schwob6, Léa Cabrol6, Julieta Orlando7, Elie Poulin5
1Pontificia Universidad Católica de Chile, SANTIAGO, RM, Chile, 2Universidad de Magallanes, 3Universidad de Concepcion, Concepcion, Concepcion, Chile, 4Universidad Austral de Chile, 5Universidad de Chile, 6Millennium Institute Biodiversity of Antarctic and Subantarctic Ecosystems (BASE), 7Universidad de Chile, Santiago, Chile

Exploring gut microbiota diversity associated with divergence in trophic ecology in threespine stickleback
Emma Kurstjens, UCSD, San Diego

Paleobiology / Phylogenetics
📅 Tue, June 21
⏰ 12:00 PM - 1:30 PM
📍 Virtual

Presentations

Understanding the relative contribution of phylogeny and ecomorphology to 2D skull shape in the Mesozoic radiation of fossil archosaurs
Roland Sookias1, Nicole Grunstra2, Anne Le Maître3, Eduardo Ascarrunz4, Christian Foth5
1Université de Liège, Liège, Belgium, 2University of Vienna/Natural History Museum Vienna, 3University of Vienna/Université de Poitiers, 4Université de Fribourg, 5Université de Fribourg
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>12:15 PM</td>
<td>Trait-based paleontological niche prediction demonstrates deep time parallel ecological occupation in specialized ant predators</td>
<td>Christine Sosiak(^1), Phillip Barden(^2)</td>
<td>(^1)New Jersey Institute of Technology, (^2)New Jersey Institute of Technology, Newark</td>
<td>Arthropods, Paleobiology</td>
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<tr>
<td>12:30 PM</td>
<td>Specialized predation drives aberrant morphological integration and diversity in the earliest ants</td>
<td>Phillip Barden(^1), Vincent Perrichot(^2), Bo Wang(^3)</td>
<td>(^1)New Jersey Institute of Technology, Newark, (^2)Université de Rennes, (^3)Nanjing Institute of Geology and Palaeontology</td>
<td>Arthropods, Paleontology</td>
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<tr>
<td>12:45 PM</td>
<td>Testing for phylogenetic signal in shell shape for the Lucinidae (Bivalvia, Mollusca)</td>
<td>Brooke Long-Fox(^1), Laurie Anderson(^2), Broc Kokesh(^3), Audrey Paterson(^4), Shen Jean Lim(^5), Barbara Campbell(^6), Annette Engel(^4)</td>
<td>(^1)South Dakota School of Mines and Technology, Rapid City, (^2)South Dakota School of Mines and Technology, (^3)University of Chicago, (^4)University of Tennessee, (^5)University of Miami, (^6)Clemson University</td>
<td>Mollusks, Systematics</td>
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<td>1:00 PM</td>
<td>Deep time extinction of largest insular ant predators and the first fossil Neoponera (Formicidae: Ponerinae) from Miocene age Dominican amber</td>
<td>Gianpiero Fiorentino(^1), Phillip Barden(^1), Christine Sosiak(^2)</td>
<td>(^1)New Jersey Institute of Technology, Newark, (^2)New Jersey Institute of Technology</td>
<td>Arthropods, Evolutionary ecology</td>
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<td>1:15 PM</td>
<td>Phylogenetic Branch Regression (PhyBR): A fast, flexible, and integrative method for modelling traits on phylogenies and conducting comparative analyses.</td>
<td>Russell Dinnage, Florida International University</td>
<td>No specific taxon</td>
<td>Phylogenetic comparative methods</td>
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Presentations

2:30 PM

Is salinity-induced cell death in D. salina adaptive in a fluctuating environment?

Nathalie Zeballos¹, Daphné Grulois², Stanislas Fereol³, Christelle Leung⁴, Luis-Miguel Chevin³

¹University of Montpellier, CNRS-CEFE, Montpellier, France, ²CNRS, ³CNRS CEFE Montpellier France, ⁴CNRS CEFE, France

2:45 PM

Colonization of opposite ends of an extreme altitudinal gradient

Adrián Villastrigo¹, William F. Humphreys², Steven Cooper³, Michael Balke⁴

¹Zoologische Staatssammlung München, Munich, Germany, ²School of Biological Sciences, University of Western Australia, Australia, ³South Australian Museum / The University of Adelaide, ⁴Zoologische Staatssammlung München

3:00 PM

Adaptation to the Urban Heat Island in Weedy Plant Species Across US Cities

WITHDRAWN

Eric Yee, Johns Hopkins University, Baltimore, MD

3:15 PM

Evolution in the time of drought: Natural selection on floral traits in water deficit

Kaushalya K. Rathnayake¹, Amy L. Parachnowitsch²

¹University of New Brunswick, Department of Biology, Fredericton, NB, ²University of New Brunswick, Fredericton, NB

3:30 PM
## Mixed session II

**Tuesday, June 21**

**2:30 PM - 4:00 PM**

**Virtual**

- Arthropods
- Bioinformatics
- Coevolution
- Genomics
- Mammals
- No specific taxon
- Phylogenomics

### Presentations

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<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker/Institution</th>
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<tbody>
<tr>
<td>2:30 PM</td>
<td><strong>Shiny phyloregion: An interactive tool to explore and analyze macroecological and biogeographical data</strong></td>
<td>Gabriel Nakamura, Texas A&amp;M University, Corpus Christi</td>
</tr>
</tbody>
</table>
| 2:45 PM| **Diaspidiotus ancyclus: An extremely polyphagous insect or a clade of diverse specialists? or both?** | Mayrolin Garcia\(^1\), Ben Normark\(^2\)  
\(^1\)UMass Amherst, Amherst, MA, \(^2\)University of Massachusetts Amherst, AMHERST, MA |
| 3:00 PM| **Mitonuclear Coevolution via Nuclear Compensation: Plausible yet a Paucity of Evidence** |                                                                                     |
Ryan Weaver¹, Samantha Rabinowitz², Kiley Theuson², Justin C. Havird³
¹Iowa State University, Ames, IA, ²University of Texas at Austin, ³University of Texas at Austin, Austin, TX

Population genetics

Tue, June 21
2:30 PM - 4:00 PM
Virtual

Birds  Ecological genetics  Fishes  Genomics  Mammals  Marine animals  No specific taxon  Population genetics: molecular ecology

Presentations

2:30 PM
Genetic variation and natural selection across non-MHC immune loci of tiger Panthera tigris
B.V. Aditi Prasad¹, Uma Ramakrishnan²
¹National Center for Biological Sciences-TIFR, Bengaluru, Karnataka, India, ²NCBS, India

Mammals  Population genetics: molecular ecology

2:45 PM
Genetic approaches reveal a healthy population and unexpected origin for Foskett Spring Speckled Dace
Brian Sidlauskas¹, Hakan Aydoğan², Samarth Mathur³, Andrew Black²
¹Oregon State University, Corvallis, OR, ²Oregon State University, ³Ohio State University, Dublin, OH

Fishes  Population genetics: molecular ecology

3:00 PM
Evaluating the sensitivity of landscape genomic analyses
Comparative population genomics reveals drivers of population size fluctuations and genetic basis of adaptation in albatrosses
Simon Sin, Stella Huynh, Alison Cloutier, David Tsz Chung Chan, Derek Kong Lam, Scott V. Edwards
The University of Hong Kong, Hong Kong, Hong Kong, Hong Kong, Harvard University, Cambridge, MA, The University of Hong Kong, Hong Kong, The University of Hong Kong
Birds, Genomics

Population genetics of a Fundulus spp. hybrid zone in northeastern Florida
Andrew Hardy, University of North Florida, Jacksonville
Ecological genetics, Fishes

Reproductive biology
Tue, June 21
2:30 PM - 4:00 PM
Virtual

Presentations
2:30 PM
Single-cell gene expression of lepidopteran sperm morphs across developmental stages
Melissa Plakke, Governors State University
Arthropods, Reproductive biology

2:45 PM
Morphometry And Gametogenesis In The All-Female Chrosomus Eos X Neogaeus: The Role Of Maternal Effects
<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Subject Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 PM</td>
<td>Flower Size and Division of Labor in Buzz-Pollinated Flowers</td>
<td>Peter Quakenbush, Western Michigan University, Kalamazoo</td>
<td>Comparative biology, Plants</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>How orchids bloom? A molecular perspective of reproductive transition in tropical species</td>
<td>Yesenia Madrigal(^1), Michael Scanlon(^2), Juan F. Alzate(^3), Natalia Pabon-Mora(^4)</td>
<td>Development, Plants</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Reproductive success of carpenter ant queens: Effects of colony structure, heterozygosity, and nest environment</td>
<td>Miguel Pereira-Romeiro(^1), Marianne Azevedo-Silva(^2), Henrique Florindo(^3), Paulo Oliveira(^2), Gustavo Mori(^4)</td>
<td>Arthropods, Mating systems (e.g. monogamy, polygamy, etc.)</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>Somatic And Genital Traits Show Reproductive Character Displacement In Two Sympatric Scorpion Species</td>
<td>Mariela A. Oviedo-Diego(^1), Eduardo M. Soto(^2), Camilo Mattoni(^3), Alfredo Peretti(^4)</td>
<td>Invertebrates, Species interactions</td>
</tr>
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## Behavior

**Presentation Schedule**

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>4:30 PM</td>
<td>Using simulation models to examine the preferred ambush locations for sit-and-wait predators</td>
<td>Inon Scharf, Tel Aviv University, Tel Aviv, Israel</td>
</tr>
</tbody>
</table>
| 4:45 PM | Variation in non-songbird vocalizations                              | Prabhjeet Singh[^1], Vinodkumar Saranathan[^2]  
1[^1]SIAS, Krea University, India,  
2[^2]Krea University, Sricity, India | |
| 5:00 PM | Scent feathers: a shared derived trait in the Genus Aethia?         | Hector Douglas, Grambling State University, Ruston                          |
| 5:15 PM | Manipulating Indirect Genetic Effects to reveal their influence on evolutionary rates in D. melanogaster | Julia Saltz[^1], Anna Girardeau[^1]  
[^1]Rice University | |
| 5:30 PM | Somebody’s Watching Me: Exploring the Effects of Social Information Use and Production | Marina Hutchins[^1], Julia Saltz[^2]  
[^1]Rice University, Houston,  
[^2]Rice University | |

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**Phylogenetics / Biogeography**
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<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:45 PM</td>
<td><strong>Phylogeography of the cosmopolitan ribbon worm Lineus sanguineus</strong> (Rathke 1799) (Heteronemertea: Nemertea) on the Brazilian coast</td>
<td>Dione Jordan¹, Sónia C. Andrade², Cecili Mendes³ ¹USP, Sao Paulo, Brazil, ²Institute of Bioscienses, University of São Paulo, ³University of São Paulo, Brazil</td>
</tr>
<tr>
<td>5:00 PM</td>
<td><strong>Geography vs. past climate: the drivers of population genetic structure of the Himalayan langur</strong></td>
<td>Kunal Arekar¹, Neha Tiwari², Sathyakumar S³, Mehreen Khaleel⁴, Praveen Karanth⁵ ¹Indian Institute of Science, Bangalore, Karnataka, India, ²Louisiana State University, Baton Rouge, ³Wildlife Institute of India, ⁴Wildlife Research and Conservation Foundation, Jammu and Kashmir, India, ⁵Indian Institute of Science</td>
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<tr>
<td>5:15 PM</td>
<td><strong>Phylogeographic signatures of lineage fusion closely resemble those of population size reduction</strong></td>
<td>Ryan Garrick, U. Mississippi, University, MS</td>
</tr>
<tr>
<td>5:30 PM</td>
<td><strong>Chronoecogeography and Bergmann’s Rule: Integrating geographical and temporal scale patterns</strong></td>
<td>Matan Shelomi, National Taiwan University, Taipei, Taiwan</td>
</tr>
<tr>
<td>5:45 PM</td>
<td><strong>Evolution of the coloration of glass frogs</strong> (Anura: Centrolenidae) and its relationship with altitudinal gradients in the Neotropics</td>
<td></td>
</tr>
</tbody>
</table>
Maria Sánchez-Carvajal¹, Mauricio Ortega², Diego F. Cisneros-Heredia³
¹Universidad Regional Amazonica Ikiam, Tena, Napo, Ecuador, ²Universidad Regional Amazonica Ikiam, Ecuador, ³Universidad San Francisco de Quito

Population genetics / Evolutionary theory

📅 Tue, June 21
⏰ 4:30 PM - 6:00 PM
📍 Virtual

Presentations

<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Taxons</th>
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<tr>
<td>4:30 PM</td>
<td>Information in simulated alignments is limited for recombination rate estimation</td>
<td>Mackenzie Johnson¹, Claus Wilke¹</td>
<td>No specific taxon</td>
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<tr>
<td>4:45 PM</td>
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<td></td>
<td>Population genetics: theory and methods</td>
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<tr>
<td>4:45 PM</td>
<td></td>
<td>Peter Nabutany¹, Meike Wittmann²</td>
<td>No specific taxon</td>
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<tr>
<td>5:00 PM</td>
<td>Modeling minimum viable population size with multiple genetic problems of small populations</td>
<td></td>
<td>Population genetics: theory and methods</td>
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<tr>
<td>5:00 PM</td>
<td>An NK model of adaptation in changing environments</td>
<td>Sonia Singhal¹, Emily Dolson²</td>
<td>No specific taxon</td>
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<tr>
<td>5:15 PM</td>
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</table>

*Presentations are subject to change.*
5:30 PM

**Analytic and numerical evaluation of average evolvability measures for comparison of G matrices**

**Junya Watanabe**, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

- No specific taxon
- Quantitative genetics

---

5:30 PM

**Indirect reciprocity in multiple social contexts**

**Taylor A. Kessinger**¹, Corina Tarnita², Joshua Plotkin³

¹University of Pennsylvania, Philadelphia, PA, ²Princeton University, ³University of Pennsylvania

- Mythical creatures
- Social systems

---

**Adaptation II**

📅 Tue, June 21

🕒 7:00 PM - 8:15 PM

📍 Virtual

- Adaptation
- Arthropods
- Drosophila
- Fishes
- Marine animals
- Plants
- Quantitative genetics

---

**Presentations**

7:00 PM

**The genomic basis of spawning and migratory behaviour in a polymorphic salmonid**

**Anna Tigano**¹, Michael Russello²

¹University of British Columbia - Okanagan, Kelowna, NH, ²University of British Columbia Okanagan

- Adaptation
- Fishes

---

7:15 PM

**Microgeographic differentiation and adaptation to depth within meadows of the seagrass Zostera marina**

**Cynthia Hays**¹, Torrance C. Hanley², A. Randall Hughes², Erik Sotka³

¹Keene State College, Keene, NH, ²Northeastern University, Nahant, MA, ³College of Charleston

- Adaptation
- Plants

---

7:30 PM
How do sizes of host-use gene families differ between specialist and generalist bark beetles?

**Jared Bernard**, University of Hawaii–Manoa

- Adaptation
- Arthropods

---

Rapid reduction of Paraoxonase expression followed by inactivation across semi-aquatic mammals suggests adaptive benefit of gene loss

**Allie M. Graham**, Nathan Clark, Wynn K. Meyer, Clement Furlong, Jerrica Jamison, Rebecca Richter, Ari Fustukjian


- Adaptation
- Marine animals

---

Genetic architecture of the thermal tolerance landscape of Drosophila melanogaster

**Juan A. Soto**, Luis E. Castañeda, Patricio E. Olguín

1. Universidad de Chile, Quillota, Valparaíso, Chile, 2. Universidad de Chile, Santiago, Santiago Metropolitan, Chile, 3. Universidad de Chile

- Drosophila
- Quantitative genetics

---

**Evolutionary loss of complexity in animal communication: cause and consequence**

**Terry J. Ord**, UNSW Sydney, Sydney, NSW, Australia

- Behavior
- Reptiles
7:15 PM  Competition effects on phenotypic and biogeographic evolution in a continental radiation
Octavio Jimenez-Robles¹, Renee Catullo², Paul Doughty³, Craig Moritz⁴
¹École Normale Supérieure (Paris, FR) / Australian National University (Canberra, AU), Australia, ²University of Western Australia, ³Western Australian Museum, ⁴Australian National University (ANU)

7:30 PM  Does good food make male mice sexy?
Neelam Jitendra Porwal¹, S. Gangothri², Himrekha Agarwal³, Anja Guenther⁴
¹Adam Mickiewicz University, Poland, ²Indian Institute of Science Education and Research, Bhopal, India, ³Ramnarain Ruia Autonomous College, ⁴Max Planck Institute for Evolutionary biology

7:45 PM  Evolution of stage-specific habitat selection under intraguild predation
Joshua Goldberg¹, Richard Evans¹, David N. Reznick²
¹Bhutan Ecological Society, Bhutan, ²University of California, Riverside, California

8:00 PM  Studying reversions from multicellularity to unicellularity using experimental evolution
Harley Yopp¹, Saranya Gourisetti², Peter Conlin³, William C. Ratcliff⁴
¹Georgia Institute of Technology, ²Georgia Institute of Technology, Cumming, ³Georgia Institute of Technology, Atlanta

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Genomics / Hybridization

📅 Tue, June 21
⏰ 7:00 PM - 8:15 PM
📍 Virtual

➡️ Birds ➡️ Coevolution ➡️ Fishes ➡️ Genomics ➡️ Hybridization ➡️ No specific taxon ➡️ Phylogenetic methods development ➡️ Plants
Presentations

7:00 PM  Scans for selective sweeps reveal signatures of local and global adaptation in the California Valley Oak (Quercus lobata)
Jesse A. Garcia¹, Kirk Lohmueller², Victoria Sork³
¹UCLA, Los Angeles, CA, ²UCLA, ³Department of Ecology & Evolutionary Biology, University of California, Los Angeles

7:15 PM  R3F: An R package for evolutionary dates, rates, and priors using relative rate framework
WITHDRAWN
Qiqing Tao¹, Koichiro Tamura², Sudip Sharma³, Sudhir Kumar⁴
¹Institute for Genomics and Evolutionary Medicine, Philadelphia, PA, ²Tokyo Metropolitan University, ³Temple University, Philadelphia, Pennsylvania, ⁴iGEM @ Temple, Philadelphia, PA

7:30 PM  Early diversifications of angiosperms and their insect pollinators: were they unlinked?
Yasmin Asar¹, Simon Y. Ho², Hervé Sauquet³
¹The University of Sydney, Sydney, NSW, Australia, ²University of Sydney, ³Royal Botanic Gardens and Domain Trust, Sydney, NSW, Australia

8:00 PM  A novel three-way hybridization event between deeply diverged Xiphophorous species.
Shreya M. Banerjee¹, Daniel Powell², Benjamin M. Moran¹, Wilson F. Ramírez-Duarte³, Quinn Langdon¹, Molly Schumer¹
¹Stanford University, Stanford, CA, ²Stanford University, Belmont, CA, ³University of Toronto, St. George, Toronto, Ontario

8:15 PM  Experimental evidence that mito-nuclear interactions impact mitochondrial function in long-tailed finch hybrids
Callum McDiarmid¹, Daniel Hooper², Antoine Stier³, Simon Griffith⁴
¹Macquarie University, Marsfield, New South Wales, Australia, ²American Museum of Natural History, Brooklyn, ³Department of
Coevolution / Mutualism

Wed, June 22
10:00 AM - 11:30 AM
Virtual

Presentations

10:00 AM
Transcriptomic analysis of cooperative behavior in a mutualistic ant-plant interaction
MARIA C. TOCORA1, Christopher Reid2, Haoran Xue, Megan E. Frederickson3
1University of Toronto, Toronto, Ontario, 2University of Toronto, 3University of Toronto, Toronto, Ontario

10:15 AM
Small guts, big potentials: Symbiont digestive abilities in a clade of herbivorous ants
Ben Bechade1, Yi Hu2, Christian Cabuslay3, Dharman Anandarajan4, Valerie Fiers5, Richard Lu4, Benjamin Rubin6, Corrie S. Moreau7, John Wertz8, Jacob Russell
1Drexel University, Philadelphia, Pennsylvania, 2Beijing Normal University, 3Drexel University, Philadelphia, PA, 4Russell Lab, Drexel University, 5Drexel University, 6Princeton University, Princeton, NJ, 7Cornell University, Ithaca, New York, 8Calvin College

10:30 AM
Mutualistic interactions alter rates of molecular evolution in rhizobia
Tia L. Harrison1, John R. Stinchcombe1, Megan E. Frederickson2
1University of Toronto, Toronto, ON, 2University of Toronto,
Mitochondrial-nuclear interactions with the environment affect phenotype expression in a slime mould

WITHDRAWN

Venkatesh Nagarajan Radha¹, Madeleine Beekman²
¹St. John’s College, Palayamkottai, NSW, India, ²University of Sydney

Studying Symbiosis with Digital Evolution

Anya E. Vostinar¹, Katherine Skocelas², Alexander M. Lalejini³, Luis Zaman⁴
¹Carleton College, Northfield, MN, ²Michigan State University, East Lansing, MI, ³Michigan State University, Owosso, MI, ⁴University of Michigan, Ann Arbor, Michigan

Symbiont genome decay associated with free-living environment alters host specificity in a legume-rhizobia mutualism

Anna Simonsen¹, Samuel Andrew², Justin Borevitz³
¹Florida International University, Miami, ²Commonwealth Scientific and Industrial Research Organisation, Australia, ³Australian National University

Ecological genetics

Wed, June 22
10:00 AM - 11:30 AM
Virtual
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
<th>Institution(s)</th>
<th>Keywords</th>
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<tbody>
<tr>
<td>10:00 AM</td>
<td>The population genetics of species range loss in the Anthropocene</td>
<td>Moi Exposito-Alonso</td>
<td>Carnegie Institution for Science &amp; Stanford University, Stanford, CA</td>
<td>Ecological genetics, No specific taxon</td>
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<tr>
<td>10:15 AM</td>
<td>Contrasting Population-Specific Genome-Wide Epigenetic Profiles Across Latitude-Altitude Range Extremes in the Bumble Bee B. vosnesenskii</td>
<td>Sarthok Rasique Rahman¹, Jeffrey D. Lozier²</td>
<td>The University of Alabama, Tuscaloosa, Alabama, University of Alabama</td>
<td>Arthropods, Ecological genetics</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Genomic architecture informs the evolutionary history of the Atlantic silversides (Menidia menidia) WITHDRAWN</td>
<td>Áki Jarl Láruson¹, Maria Akopyan², Nina O. Therkildsen³</td>
<td>University of Iceland, Reykjavik, Iceland, Cornell University, Ithaca, NY, Cornell University</td>
<td>Evolutionary ecology, Fishes</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Functional genomics of abiotic environmental adaptation in lacertid lizards and other vertebrates</td>
<td>Katharina Wollenberg Valero</td>
<td>University of Hull, Kingston-upon-Hull, Humberside, United Kingdom</td>
<td>Parallel/convergent evolution, Reptiles</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>HEMOGLOBIN GENES: EVOLUTION ACROSS REPTILES FOLLOWS ENVIRONMENTAL VARIATION TIED TO OXYGEN AVAILABILITY</td>
<td>Juan David Carvajal Castro¹, Randy Ortiz², Genrietta Yagudayeva³, Carolina Benitez⁴, Juan C. Santos⁵</td>
<td>St. John's University, New York City, St. John's University, JAMAICA, NY, St. John's University, Brooklyn, St. John's University, Queens-Jamaica, New York</td>
<td>Evolutionary ecology, Reptiles</td>
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<tr>
<td>11:15 AM</td>
<td>Restricted gene flow in the euralyne native crab</td>
<td></td>
<td>Cyrtograpsus angulatus along its latitudinal gradient on the Southwestern Atlantic coast</td>
<td></td>
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</tbody>
</table>
**Phylogenetics I**

**Presentations**

**10:00 AM**
**Annotating Genomes to Improve Phylogenetic Inference for Distributed in Silico Populations**
Matthew A. Moreno¹, Emily Dolson¹, Charles Ofria²
¹Michigan State University, East Lansing, MI, ²Michigan State University

**10:15 AM**
**What can we tell about a reticulate phylogenetic network using genetic distances?**
Jingcheng Xu¹, Cecile Ane²
¹University of Wisconsin - Madison, ²University of Wisconsin - Madison, Madison, WI

**10:30 AM**
**Species-level timeline of mammal evolution integrating phylogenomic data**
Sandra Alvarez-Carretero¹, Asif Tamuri², Matteo Battini³, Fabricia Nascimento⁴, Emily Carlisle³, Robert Asher⁵, Ziheng Yang⁶, Phil Donoghue³, Mario dos Reis⁷
¹University College London, London, London, United Kingdom, ²University College London, ³University of Bristol, ⁴Imperial College

---

**Berenice Trovant¹, Florencia Alvarez Gallego², Ivanna H. Tomasco³, Daniel Ruzzante⁴, Néstor G. Basso⁵**
¹IDEAUS - CONICET, Puerto Madryn, Chubut, Argentina, ²UNPSJB, Argentina, ³Facultad de Cienias, Universidad de la República, Montevideo, Montevideo, Uruguay, ⁴Dalhousie University, ⁵IDEAUS-CONICET

- Fishes
- Macroevolution
- Mammals
- No specific taxon
- Phylogenetic comparative methods
- Phylogenetic methods development
- Phylogenetic theory
- Phylogenomics

**Phylogenetics I**

**Wed, June 22**
**10:00 AM - 11:30 AM**
**Virtual**
Phylogenomic discordance and the evolutionary history of the Neotropical cat genus Leopardus

Jonas Lescroart1, Paola Pulido-Santacruz2, Constanza Napolitano3, William Murphy3, Hannes Svardal4, Eduardo Eizirik4
1University of Antwerp, Wilrijk, Oost-Vlaanderen, Belgium,
2Alexander von Humboldt Biological Resources Research Institute, Bogota, Colombia, 3University of Los Lagos, 4University of Antwerp

Considering decoupled phenotypic diversification between ontogenetic phases in macroevolution: An example using Triggerfishes (Balistidae)

Katerina Zapfe1, Alex Dornburg2, Michael E. Alfaro3, Thomas Near4, Bruno Frédérich5, Haruka Adachi5, Francesco Santini5, Richard Morris5, Joseph Flores5, Rachel Williams5
1University of North Carolina at Charlotte, Charlotte, 2University of North Carolina Charlotte, Charlotte, 3UCLA, Santa Barbara, CA, 4Yale University, New Haven, CT, 5Laboratory of Functional and Evolutionary Morphology, FOCUS, University of Liège

Reinterpreting the molecular evolution of the ray-finned fish innate immune system

Rittika Mallik1, Kara Carlson2, Jeffrey Yoder2, Alex Dornburg3
1UNC Charlotte, Charlotte, North Carolina, 2NC State University, 3University of North Carolina Charlotte, Charlotte
Presentations

12:00 PM

Hidden structural diversity within a Wolbachia strain infecting cherry-infesting Rhagoletis (Diptera: Tephritidae) flies across North America
Daniel Bruzzese\(^1\), Thomas Wolfe\(^2\), Hannes Schuler\(^3\), Wee L. Yee\(^4\), Juan Rull\(^4\), Martin Aluja\(^5\), Robert Goughnour\(^6\), Glen R. Hood\(^7\), Christian Stauffer\(^8\), Jeffrey R. Feder\(^9\)

\(^1\)University of Notre Dame, Notre Dame, IN, \(^2\)University of Vienna, \(^3\)Free University of Bozen-Bolzano, Bozen, Bolzano, Italy, \(^4\)USDA, \(^5\)Insituto de Ecología A. C., Xalapa, Mexico, \(^6\)Washington State University Extension, \(^7\)Wayne State University, Detroit, MI, \(^8\)University of Natural Resources and Life Sciences, Vienna, \(^9\)University of Notre Dame

12:15 PM

Purifying selection and adaptive evolution spanning the zoonosis of SARS-CoV-1 and SARS-CoV-2
Alex Dornburg\(^1\), Stephen J. Gaughran\(^2\), Hayley Hassler\(^3\), J. Nick Fisk\(^3\), Jeffrey P. Townsend\(^2\), Alison Galvani\(^3\)

\(^1\)University of North Carolina Charlotte, Charlotte, \(^2\)Yale University, New Haven, CT, \(^3\)Yale University, New Haven

12:30 PM

The durability of SARS-CoV-2 vaccine-mediated immunity and the optimal timing of booster vaccination
Hayley Hassler\(^1\), Alex Dornburg\(^2\), Jeffrey P. Townsend\(^3\)

\(^1\)Yale University, New Haven, \(^2\)University of North Carolina Charlotte, Charlotte, \(^3\)Yale University, New Haven, CT

12:45 PM

The speed of antigenic escape in the presence of immunocompromised host
Ryuichi Kumata\(^1\), Akira Sasaki\(^2\)

\(^1\)Department of Evolutionary Studies of Biosystems, School of Advanced Sciences, SOKENDAI, Japan, \(^2\)Department of Evolutionary Studies of Biosystems, School of Advanced Sciences,
**Virulence evolution of an amphibian emerging infectious pathogen**

Minjie Fu\(^1\), Bruce Waldman\(^2\)

\(^1\)Seoul National University, Seoul, Seoul, South Korea, \(^2\)Oklahoma State University

- Amphibians
- Coevolution

---

**Coevolution with freshwater fishes drives the radiation of a group of parasitic bivalves**

Chase H. Smith\(^1\), Wendell Haag\(^2\), John M. Pfeiffer\(^2\), Nathan Johnson\(^3\), James Williams\(^4\), Manuel Lopes-Lima\(^5\), Andre Gomes-dos-Santos\(^5\), Elsa Froufe\(^5\), David Hillis\(^6\)

\(^1\)University of Texas at Austin, Austin, TX, \(^2\)US Forest Service, Frankfort, KY, \(^3\)U.S. Geological Survey, Wetland and Aquatic Research Center, Gainesville, FL, USA, \(^4\)Florida Museum of Natural History, University of Florida, Gainesville, FL, USA, \(^5\)CIIMAR/CIMAR - Interdisciplinary Centre of Marine and Environmental Research, University of Porto, Matosinhos, Portugal, \(^6\)University of Texas at Austin

- Coevolution
- Mollusks

---

**Macroevolution / Adaptation**

📅 Wed, June 22


⏰ 12:00 PM - 1:30 PM

📍 Virtual

- Adaptation
- Allometry
- Arthropods
- Fishes
- Macroevolution
- Mollusks
- Plants
- Reptiles
- Sensory systems
- Species delimitation

---

**Presentations**

12:00 PM  
Ray of light: vegetation cover is the main driver of color brightness evolution in squamates  
Jonathan Goldenberg, Ghent University, Belgium

- Macroevolution
- Reptiles
Evidence of depth partitioning in Provanna (Gastropoda: Provannidae) from the Costa Rica Margin
Melissa Betters, Temple University, Philadelphia

The influence of habitat on the pattern of sexual signals in a freshwater fish radiation (Etheostoma spp.)
Iain R. R. Moodie¹, Tamra C. Mendelson², Julien P. Renoult³
¹CNRS Centre d'Ecologie Fonctionnelle et Evolutive, France,
²University of Maryland, ³CNRS Centre d'Ecologie Fonctionnelle et Evolutive

Sexual dimorphism in bite performance, and the evolution of Rensch's rule in Anolis lizards
Ken Toyama¹, Anthony Herrel², Luke Mahler³
¹University of Toronto, Toronto, ON, ²Muséum national d'Histoire naturelle, ³University of Toronto

Resurrection genomics and evolutionary inference in Daphnia
Matthew J. Wersebe¹, Lawrence J. Weider²
¹University of Oklahoma, Norman, Ok, ²University of Oklahoma

Convergence without divergence in North American red-flowering Silene
Andrea E. Berardi¹, Ana Betancourt Morejon², Robin Hopkins³
¹Harvard University, Cambridge, MA, ²University of Puerto Rico - Rio Piedra, ³Harvard University, Boston, MA

Sex / Recombination
Wed, June 22
12:00 PM - 1:30 PM
### Presentations

<table>
<thead>
<tr>
<th>Time</th>
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<th>Authors</th>
<th>Institutions</th>
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<tbody>
<tr>
<td>12:00 PM</td>
<td>Dioecy and chromosomal sex determination are maintained through allopolyploid speciation in the plant genus Mercurialis</td>
<td>Melissa Toups&lt;sup&gt;1&lt;/sup&gt;, Beatriz Vicoso&lt;sup&gt;2&lt;/sup&gt;, John R. Pannell&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Bournemouth University, Poole, Niederösterreich, United Kingdom,</td>
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<td>Institute of Science and Technology Austria, University of Lausanne</td>
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<td>12:15 PM</td>
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<tr>
<td>12:15 PM</td>
<td>Allele specific expression of Rumex hastatulus sex chromosomes</td>
<td>Bianca M. Sacchi&lt;sup&gt;1&lt;/sup&gt;, Stephen I. Wright&lt;sup&gt;2&lt;/sup&gt;</td>
<td>University of Toronto, Toronto, ON</td>
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<td>Department of EEB, U. Toronto, Ontario</td>
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<td>12:30 PM</td>
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<tr>
<td>12:30 PM</td>
<td>Repeated translocation of a supergene underlying rapid sex chromosome turnover in Takifugu fish</td>
<td>Ahammad Kabir&lt;sup&gt;1&lt;/sup&gt;, Risa Ieda&lt;sup&gt;2&lt;/sup&gt;, Sho Hosoya&lt;sup&gt;2&lt;/sup&gt;, Daigaku Fujikawa&lt;sup&gt;2&lt;/sup&gt;, Shotaro Hirase&lt;sup&gt;3&lt;/sup&gt;, Kiyoshi Kikuchi&lt;sup&gt;4&lt;/sup&gt;</td>
<td>University of Tokyo, Hamamatsu, Shizuoka, Japan, University of Tokyo, The University of Tokyo</td>
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<td>12:45 PM</td>
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<tr>
<td>12:45 PM</td>
<td>Were eukaryotes made by sex?</td>
<td>Michael Brandeis, The Hebrew University of Jerusalem, Jerusalem, Israel</td>
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<td>1:00 PM</td>
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<td>1:00 PM</td>
<td>Sex and the City - How social environment influences sex change in a sequential hermaphrodite</td>
<td>WITHDRAWN</td>
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SSE/ASN Public policy panel discussion

Wed, June 22
1:30 PM - 3:00 PM
Virtual

Description

Please join us for a VIRTUAL 2022 Evolution Policy Panel, featuring panelists from academia, NGOs and industry who will share their expertise on how to effectively translate science into policy, and will discuss practical tips for scientists interested in getting more involved in policy.

Open to all Evolution meeting registrants. Discussion will be in a Zoom webinar outside the platform.

Join here: https://us06web.zoom.us/webinar/register/WN_z1q9OiZ5RMWVLbVW-B1o6w

To download the program

Hybridization

Wed, June 22
2:30 PM - 4:00 PM
Virtual

Birds  Fishes  Genomics  Human  Hybridization  Plants

Presentations

2:30 PM
Selection against hybrid benthic and limnetic threespine stickleback
Diana J. Rennison¹, Gregory Owens², Ken A. Thompson³, Thor Veen⁴, Dolph Schluter⁵
Genome resequencing reveals hybrid zone dynamics of secondary contact in darters (Teleostei:Percidae)
Pia Franziska Schwarz¹, Dan MacGuigan², Trevor Krabbenhoft
¹University at Buffalo, State University of New York, ²University at Buffalo, BUFFALO, NY

Comparing genomic landscapes of introgression across the great ape phylogeny
Michael G. Tassia¹, James B. Pease², Rajiv McCoy³
¹Johns Hopkins University, Baltimore, Alabama, ²Wake Forest University, ³Department of Biology, Johns Hopkins University

Re-evaluating homoploid reticulate evolution in the annual sunflowers.
Gregory Owens¹, Loren Rieseberg², Marco Todesco³, Kaichi Huang²
¹University of Victoria, Victoria, ²University of British Columbia, Vancouver, BC, ³University of British Columbia
<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
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<tbody>
<tr>
<td>2:30 PM</td>
<td>A phylogenetic analysis of headhunting practices and political complexity in Austronesian societies</td>
<td>Kiran Basava, University of Oxford, Oxford, Oxfordshire, United Kingdom</td>
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<tr>
<td>2:45 PM</td>
<td>Can learning facilitate speciation? The interactions between geographic range overlap, learned song, and speciation in songbirds</td>
<td>Nicole Creanza¹, Emily Hudson¹, Megan Mitchell¹ *¹Vanderbilt University</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>New candidate species for northern Andes a criptic species of Anolis tolimensis (Squamata: Dactyloidae), from Colombia</td>
<td>Maria Carolina Acevedo Muñoz³¹, Nelsy R. Pinto-Sánchez² *¹Universidad Militar Nueva Granada, Chía, Colombia, ²Programa de Biología Aplicada, Universidad Militar Nueva Granada, Cajicá, Cundinamarca, Colombia</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>Periodic environmental disturbance drives repeated ecomorphological diversification in an adaptive radiation of Antarctic fishes</td>
<td>Elyse Parker¹, Katerina Zapfe², Jagriti Yadav³, Bruno Frédérich⁴, Christopher D. Jones⁵, Evan P. Economo⁶, Sarah Federman⁷, Thomas Near¹, Alex Dornburg⁸ *¹Yale University, New Haven, CT, ²University of North Carolina at Charlotte, Charlotte, South Carolina, ³University of North Carolina, Charlotte, ⁴Laboratory of Functional and Evolutionary Morphology, FOCUS, University of Liège, ⁵NOAA Southwest Fisheries Science Center, ⁶Biodiversity and Biocomplexity Unit, Okinawa Institute of Science and Technology Graduate University, ⁷Plenty Unlimited Inc., ⁸University of North Carolina Charlotte, Charlotte</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>The evolution of the anuran phalanx: rates, phylogenetic signal, and modularity</td>
<td>André Confetti¹, Tiana Kohlsdorf², Marcio R. Pie³ *¹Università Federal do Paraná, Curitiba, PR, Brazil, ²University of São Paulo, Ribeirão Preto, SP, Brazil, ³Edge Hill University,</td>
</tr>
</tbody>
</table>
Sexual selection

Wed, June 22
2:30 PM - 4:00 PM

Virtual

Presentations

2:30 PM
The genetics of female resistance to male harm in Drosophila melanogaster
Sarah M. Kettelkamp¹, Kimberly A. Hughes², Joseph Travis¹
¹Florida State University, Tallahassee, FL, ²Florida State University

2:45 PM
Evolution of order from disorder in plumage structural color-producing photonic nanostructures through mate choice
Vinodkumar Saranathan, Krea University, Sricity, India

3:00 PM
Sexual Selection in Plants: History and Bias
Jared Griffin¹, Megan Van Etten²
¹Penn State University, Throop, ²Pennsylvania State University,
Mating success and genetic parentage increase with body size in male brown anole lizards, Anolis sagrei

Rachana S. Bhave¹, Aaron M. Reedy², Heidi Seears³, Tyler Wittman⁴, Chris Robinson⁵, Daniel Warner⁶, Robert Cox⁷
¹University of Virginia, Charlottesville, VA, ²Auburn University, Charlottesville, Virginia, ³University of Virginia, ⁴University of Virginia, Charlottesville, Virginia, ⁵University of Virginia, Charlottesville, ⁶Auburn University

Black and orange coloration predict success during male-male competition the guppy

Alexa Guerrera¹, Kimberly A. Hughes², Mitchel J. Daniel³
¹Florida State University, Tallahassee, ²Florida State University, ³Florida State University, Tallahassee, FL

Low mutation load in a supergene underpinning alternative male mating strategies in ruff

Erik Enbody¹, Jason Hill², Huijuan Bi², Sangeet Lamichhaney³, Doreen Schwochow², Shady Younis², Fredrik Widemo⁴, Leif Andersson⁵
¹University of California Santa Cruz, Santa Cruz, California, ²Uppsala University, ³Kent State University, Kent, OH, ⁴SLU, ⁵Uppsala University, Sweden

Genomics

Wed, June 22
4:30 PM - 6:00 PM
Virtual
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
<th>Keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:30 PM</td>
<td>Analysis of the <em>Oldenlandia corymbosa</em> genome</td>
<td>Irene Julca Chávez(^1), Daniela Mutwil-Anderwald(^2), Marek Mutwil(^2)</td>
<td>(^1)Nanyang Technological University, Singapore, (^2)Nanyang Technological University</td>
<td>Genomics, Plants</td>
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<td>4:45 PM</td>
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<tr>
<td>4:45 PM</td>
<td>Closely related ginger species remain distinct despite recent and ancient gene flow</td>
<td>Julia Harencar(^1), Kathleen M. Kay(^2)</td>
<td>(^1)University of California, Santa Cruz, Santa Cruz, (^2)University of California Santa Cruz, Santa Cruz, CA</td>
<td>Hybridization, Plants</td>
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<tr>
<td>5:00 PM</td>
<td>Conserved non-coding elements evolve repeatedly around homeobox genes in cnidarians, molluscs, arthropods and vertebrates.</td>
<td>Paul Gonzalez(^1), Andy Baxevanis(^2)</td>
<td>(^1)National Institutes of Health, Bethesda, MD, (^2)National Human Genome Research Institute, NIH, Bethesda, MD</td>
<td>Genomics, No specific taxon</td>
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<tr>
<td>5:15 PM</td>
<td>Developmental changes of opsin gene expression in ray-finned fishes (Actinopterygii)</td>
<td>Nik Lupše(^1), Monika Klodawska(^2), Veronika Truhlářová(^2), Prokop Košátko(^2), Vojtěch Kašpar(^3), Arnold Roger Bitja Nyom(^4), Zuzana Musilova(^1)</td>
<td>(^1)Department of Zoology, Faculty of Science, Charles University, Vinicna 7, 12844 Prague, Czech Republic, (^2)Charles University, (^3)University of South Bohemia in České Budějovice, (^4)University of Douala, Cameroon</td>
<td>Fishes, Sensory systems</td>
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<tr>
<td>5:30 PM</td>
<td>Diversification of vertebrate toll-like receptors illuminate the evolutionary history of gene family expansion and retraction</td>
<td>Kara Carlson(^1), Alex Dornburg(^2), Jeffrey Yoder(^1)</td>
<td>(^1)NC State University, (^2)University of North Carolina Charlotte, Charlotte</td>
<td>Molecular evolution, No specific taxon</td>
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</table>

**SSB Ernst Mayr symposium**
Presentations

4:30 PM - 6:00 PM

4:30 PM

**Is host switching mediated by the phylogenetic distance of host species a predictor for parasitic associations?**

Elvira D'Bastiani¹, Debora Princepe², Flavia MD Marquitti³, Walter A Boeger⁴, Karla M Campião⁴, Sabrina LB Araujo⁴  
¹Universidade Federal do Paraná, Curitiba, Brazil, ²Universidade Estadual de Campinas, Campinas, SP, Brazil, ³Instituto de Física "Gleb Wataghin", Universidade Estadual de Campinas, UNICAMP;  
Insituto de Biologia, Universidade Estadual de Campinas, UNICAMP, ⁴Universidade Federal do Paraná

4:45 PM

**A phylogenomic approach to understanding adaptation to subterranean habitats in beetles**

Pau Balart-Garcia¹, Slavko Polak², Perry Grace Beasley-Hall³, Tessa M. Bradford⁴, Ignacio Ribera⁵, Steven Cooper³, Rosa Fernández⁵  
¹Institute of Evolutionary Biology (CSIC-Universitat Pompeu Fabra), Barcelona, Spain, ²Notranjski muzej Postojna, ³South Australian Museum / The University of Adelaide, ⁴South Australian Museum, ⁵Institute of Evolutionary Biology (CSIC - Universitat Pompeu Fabra)

5:00 PM

**Rapid diversification of vascular architecture underlies the Carboniferous fern radiation**

Jacob Suissa¹, William Friedman²  
¹Harvard University, Roslindale, ²Harvard University

5:15 PM

**New Phylogenetic Models Incorporating Interval-Specific Dispersal Dynamics Improve Inference of**

5:30 PM
### Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:30 PM</td>
<td>Caloric restriction extends lifespan in an aquatic plant</td>
<td>Suzanne L. Chmilar¹, Robert A. Laird¹, Priyanka Dutt</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>Effect of mode of larval development on the intertidal recruitment of four Northeastern Pacific</td>
<td></td>
</tr>
</tbody>
</table>

1 *University of Lethbridge, Lethbridge, Alberta*
gastropods during extreme El Niño events: Evaluation of four hypotheses
Elizabeth G. Boulding, University of Guelph, Guelph, Ontario

5:00 PM
5:15 PM
Vegan or not: diet influences latitudinal gradients in life-history traits, but not reproductive output, in lizards
Udita Bansal¹, Maria Thaker²
¹Washington University in St. Louis, ²Indian Institute of Science

5:15 PM
5:30 PM
Life History of Reptiles in Hemoglobin-Oxygen Affinity
Genrietta Yagudayeva¹, Juan C. Santos², Juan David Carvajal Castro³, Randy Ortiz⁴, Carolina Benitez⁵
¹St. John's University, Brooklyn, ²St. John's University, Queens-Jamaica, New York, ³St. John's University, New York City, ⁴St. John's University, JAMAICA, NY, ⁵St. John's University

5:30 PM
5:45 PM
Translating time across the lifespan of primates shows old age as a distinctively human trait
Christine Charvet¹, Carmen Falcone², Kwadwo Ofori³, Brier Rigby Dames⁴
¹Auburn University, ²College of Veterinary Medicine, Auburn University, ³Delaware State University, ⁴Department of Computer Science, University of Bath

5:45 PM
6:00 PM
The impact of parental senescence on offspring population growth in Lemna minor
Vicky Thwaites¹, Robert A. Laird², Suzanne L. Chmilar²
¹University of Lethbridge, Lethbridge, ²University of Lethbridge, Lethbridge, Alberta

6:00 PM
6:15 PM
The role of traits in biogeographic long-distance dispersal
Sarah-Sophie Weil¹, Laure Gallien², Sébastien Lavergne², Luca Borger³, Michaël Nicolai⁴, Gabe Hassler⁵, Will Allen⁶
¹Swansea University & Université Grenoble Alpes, ²Université
Improving workplace climate: empowering individuals to become active bystanders

Fri, June 24  
8:30 AM - 12:00 PM  
Room 13  
Workshop / Information session

Description

Previous registration required.

This interactive session describes academic practices and institutional structures that allow for sexual harassment, bullying, and other hostile behaviors to persist and provides training in bystander intervention strategies to protect and support targets of harassment. As a result of this session, participants will be empowered to: (1) identify different ways in which sexual and other types of harassment, bullying and microaggressions can manifest in research environments; (2) intervene safely as bystanders, and (3) utilize resources for cultural change in academic institutions and professional societies.

Facilitators: Amanda Shaffer, Diversity Officer, College of Agriculture & Natural Resources, University of Maryland & Jennifer Schuttlefield Christus, Associate Professor of Chemistry and the Director of the University of Wisconsin System Alliance for Inclusion, Diversity, Equity, and Advancement in STEM.

Shaffer has 20+ years of experience designing gender equity and diversity related initiatives for academic institutions across the United States. She has been involved with groundbreaking NSF ADVANCE projects like ADVANCE GEO since 2004. Dr. Christus has a background in atmospheric and environmental chemistry, surface science, and chemical education. In 2020, she participated in an ADVANCEGeo Train-the-trainers workshop and has been helping facilitate workshops with the team over the last two years.

Joint council entrance meeting

Fri, June 24  
8:30 AM - 12:00 PM  
Room 14
Open to ASN/SSB/SSE Joint council members only.

**Undergraduate diversity at Evolution (UDE) Career Development workshop**

- **Meeting**
  - Fri, June 24
  - 8:30 AM - 12:30 PM
  - Room 21
  - Workshop / Information session

**Description**

Pre-registration required.

This workshop is part of the Undergraduate Diversity at Evolution program which provides funds for travel, lodging, and meeting registration for undergraduate students in an effort to increase diversity. The workshop is open to all undergraduates who wish to participate. Topics to be covered include navigating and networking at the conference and applying to graduate school. We will also be taking a field trip in the afternoon to the Cleveland Natural History Museum https://www.cmnh.org/.

**PhylogatR: phylogeographic data aggregation and repurposing**

- **Meeting**
  - Fri, June 24
  - 9:00 AM - 12:00 PM
  - Room 19
  - Workshop / Information session

**Description**

Previous registration required.

This SSB-sponsored workshop will introduce users to the phylogatR database. phylogatR brings
together genetic data with georeferenced specimen records resulting in downloads that include DNA sequence alignments with associated GPS coordinates that are analysis ready. The goals of the PhylogatR project are to empower students to actively learn about genetics, computer code, and biodiversity by repurposing genetic and climatic data that cost millions of dollars and decades of hard work by thousands of scientists to acquire. During the workshop we will conduct several walkthroughs of R scripts or Shiny R apps using these data. Shiny R apps make it easy for individuals and instructors to implement R code in an interactive way without any coding experience. This approach makes using real data in the classroom accessible to instructors who do not have experience coding. The workflow will start with data collection and curation, then move on to small level data analysis. We will discuss the use of the database for both research and teaching, but will focus on demonstrating use in the classroom. https://phylogatr.org/

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**iEvoBio**

📅 Fri, June 24  
⏰ 9:00 AM - 5:00 PM  
📍 Room 16  
倓 Workshop / Information session

**Description**

Pre-registration required.

iEvoBio is an event for exploring careers and education in computational evolutionary biology. This year's theme will be "Building it right from the start." The morning session will address issues in developing software and starting a lab in computational evolutionary biology, and will feature speakers from an array of lab settings. The afternoon will focus on educational activities geared towards early involvement of undergraduates in computational and quantitative research. More information can be found on our website (http://www.ievobio.org).

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**Paleobotany and divergence time estimates using RevBayes**

📅 Fri, June 24  
⏰ 9:00 AM - 5:00 PM  
📍 Room 20  
倓 Workshop / Information session
Description

Pre-registration required.

Divergence time estimation in plant clades requires expertise in paleobotany, systematics, phylogenetics and statistics. Our workshop aims to provide a space for phylogeneticists interested in paleobotany and Bayesian total-evidence dating to: 1) discuss challenges and learn tools to extract character information from plant fossils; 2) explore statistical methods to cluster fossils and extant taxa; and 3) gain a theoretical and practical background in total-evidence dating using the software RevBayes. Although the case study will focus on plant fossils, the clustering methods and divergence time estimation approaches are widely applicable across taxa.

ASN workshop - Science Communication 101

📅 Fri, June 24
⏲️ 1:00 PM - 4:00 PM
📍 Room 21
ชั Workshop / Information session

Description

Pre-registration required.

Facilitator: Dr. Jory Weintraub (Science Communication Director, Duke Initiative for Science & Society, Duke University). Jory teaches undergraduate and graduate science communication courses at Duke University and runs science communication workshops for students, postdocs, and faculty at institutions around the country. Previously he spent over 10 years leading the public outreach and education efforts at NESCent (the National Evolutionary Synthesis Center).

Description: Sure, your research is the most exciting and important science out there! But to have an impact, it must be communicated in ways that enable people to understand and compel them to care. This workshop will combine empirical evidence gained from science communication research with fun, engaging activities to provide you with strategies and approaches to help you communicate your work effectively to diverse audiences. It will also explore specific strategies for communicating “controversial” science in non-controversial, non-confrontational ways.

NSF Proposal Writing Workshop

📅 Fri, June 24
⏲️ 1:00 PM - 4:30 PM
📍 Room 15
Description

Pre-registration required. Restricted to postdoctoral fellows.

What makes a good, potentially-fundable grant proposal? In the first part of this workshop, NSF program officers will provide advice and answer questions about what to do, what to avoid, and comment on problems with grant proposals. The second part will be a mock review panel in small groups. This is a hands-on workshop, where you will learn how proposals are evaluated and what makes successful ones successful. Participants will be provided with two proposals to review, along with instructions, ahead of the workshop.

ASN council entrance meeting

📅 Fri, June 24
⏰ 1:00 PM - 5:00 PM
📍 Room 22
Meeting

Description

Open to ASN council members only.

SSB council entrance meeting

📅 Fri, June 24
⏰ 1:00 PM - 5:00 PM
📍 Room 13
Meeting

Description

Open to SSB council members only.
SSE council entrance meeting

Fri, June 24  
1:00 PM - 5:00 PM  
Room 14  
Meeting

Description

Open to SSE council members only.

SSE Diverse Careers Workshop - Leveraging your PhD: Careers in and out of Academia

Fri, June 24  
1:00 PM - 5:00 PM  
Room 19  
Workshop / Information session

Description

Pre-registration required.

Wondering what's outside the tenure track? Have the last few years made you wonder how to best use your PhD to make a difference? This active and participatory workshop will guide graduate students and postdocs in planning their careers after graduate school or postdoctoral training. Through presentations and small group activities, you will learn about the many potential avenues open to PhDs in evolutionary biology and ecology. You'll meet professionals working in government, corporations, community colleges, non-profits, and yes, even academia. You'll also learn the basics of building a professional network and how to identify the transferable skills you developed during your training. Based on past workshops, we expect that workshop attendees will experience greater confidence regarding career options and leave with actionable strategies for non-academic job searches.

Gould Prize Lecture - Dr. Lisa White

Fri, June 24  
7:00 PM - 8:00 PM  
Grand Ballroom A  
Plenary
The **Stephen Jay Gould Prize** is awarded annually by the Society for the Study of Evolution to recognize individuals whose sustained and exemplary efforts have advanced public understanding of evolutionary science and its importance in biology, education, and everyday life in the spirit of Stephen Jay Gould.

The SSE Gould Prize Committee is pleased to announce **Dr. Lisa White** as the 2022 recipient of the Stephen Jay Gould Prize. Dr. White was selected for her work promoting the broader impacts of paleontology, evolution, and the nature and process of science, and for her role as a national leading voice in diversity, equity and inclusion efforts in the biological and geological sciences.

Dr. White is the Director of Education and Outreach for the University of California Museum of Paleontology at the University of California Berkeley and an adjunct professor in the Department of Earth and Climate Studies at San Francisco State University. Dr. White is also a member of the UC Berkeley Coalition for Education and Outreach Steering Committee, the Berkeley Natural History Museum Outreach Committee, and the UC Berkeley Science@Cal program Advisory Board. She chairs the Diversity and Inclusion Advisory Committee of the American Geophysical Union (AGU), chairs the International Ocean Discovery Program (IODP) Broader Impacts and Outreach working group, and been a panelist at the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) National Diversity in STEM Conference. A micropaleontologist by training, Dr. White is a Fellow and Trustee of the California Academy of Sciences and in multiple invited keynote addresses, she has highlighted strategies for creating a culture that embraces diversity and inclusion in the advancement of the Earth and life sciences.

**Info**

**Talk type:**
Plenary/Award

**Title:**
Facilitating Connections in Evolutionary Science Concepts for Broad and Diverse Audiences through a Website, a Science Journey, and a STEM Escape Room

**Abstract:**
The University of California Museum of Paleontology (UCMP) has been a leader in evolution education exemplified by the award winning web-based resource, *Understanding Evolution*. A comprehensive and accurate source for well-researched information on evolutionary concepts, the website is highly valued by K-16 educators and provides in-depth content on the history, evidence, and misconceptions pertaining to evolution.
My work in evolution education reflects my own journey as a geoscience professor, science educator, and museum director dedicated to helping users understand new concepts and acquire strategies for and confidence in teaching evolution, particularly to individuals and groups who are otherwise reluctant to learn about evolution. Presenting information in a manner and tone that is appealing to broad and diverse audiences with user-friendly, understandable, and current examples on the mechanisms of evolution, adaptation, the significance of fossils, and the nature of science. The newest UCMP evolution education project takes engagement a step further and applies an escape room game approach, inviting players use their critical-thinking and collaboration skills to solve puzzles on basic evolutionary relationships and concepts in a timed series of exercises.

Author

Lisa White
University of CA Museum of Paleontology

Opening reception

📅 Fri, June 24
🕒 8:00 PM - 10:30 PM
📍 Ballroom prefunction space
썸 Social event

Description

Cash bar, light snacks.

SSE Presidential Address - Dr. Laura Galloway

📅 Sat, June 25
🕒 8:15 AM - 9:20 AM
📍 Grand Ballroom A
썸 Plenary

Presentations
Adaptation I

Sat, June 25
9:30 AM - 10:45 AM
Room 15
Regular

Presentations

9:30 AM
The gene's-eye view of evolution
J. Arvid Ågren, Uppsala University, Sweden

9:44 AM
Molecular mechanisms underlying desiccation resistance in a desert Drosophila species
Zinan Wang\textsuperscript{1}, Jian Pu\textsuperscript{2}, Haosu Cong\textsuperscript{2}, Henry Chung\textsuperscript{2}
\textsuperscript{1}Michigan State University, East Lansing, MI, \textsuperscript{2}Michigan State University, East Lansing, Michigan

10:00 AM
When the tap runs dry: The physiological effects of acute experimental dehydration in Peromyscus eremicus
Dani Blumstein\textsuperscript{1}, Matthew D. MacManes\textsuperscript{2}
\textsuperscript{1}University of New Hampshire, Kittery, New Hampshire, \textsuperscript{2}Department of Molecular, Cellular and Biomedical Sciences and Center for Evolutionary Genomics, Durham, NH

10:15 AM
Shrinking Shrew Brains: evolution of a unique wintering adaptation
William Thomas\textsuperscript{1}, Liliana M. Davalos\textsuperscript{2}, Dina Dechmann\textsuperscript{2}, John Nieland\textsuperscript{2}, Cecilia Baldoni\textsuperscript{2}, Marion Muturi\textsuperscript{2}, Angelique Corthals\textsuperscript{3}, Domink Elverfeldt\textsuperscript{3}, Julie Holm-Jacobsen\textsuperscript{3}
Reproductive adaptations that protect fetal growth at altitude are linked to remodeling of placental structure and function

Kate Wilsterman¹, Emily C. Moore², Rena M. Schweizer², Jeff M. Good³, Zachary Cheviron²
¹Colorado State University - Fort Collins, Fort Collins, ²University of Montana, Missoula, MT, ³Division of Biological Sciences, University of Montana, Missoula

Behavior

Sat, June 25
9:30 AM - 10:45 AM
Room 16
Regular

Presentations

9:30 AM
Mushroom body evolution in insects and crustaceans: conserved traits and evolved loss
Gabriella Wolff, Case Western Reserve University, Cleveland

9:45 AM
Multiple climatic factors affect the expression of reproductive traits in wolf spiders
Jake Woods¹, Noah T. Leith², Kasey Fowler-Finn³
¹Saint Louis University, Granite City, ²Saint Louis University, St. Louis, MO, ³Saint Louis University, Saint Louis, MO

10:00 AM
A tale of two crickets: glyphosate has different effects on native and introduced crickets
Susan Gershman¹, Lydia Mullins²
¹The Ohio State University at Marion, Marion, OH, ²The Ohio State University

10:15 AM
Selection for female dispersal caused correlated selection in male dispersal syndromes
Contemporary Evolution

Sat, June 25
9:30 AM - 10:45 AM
Room 20
Regular

Presentations

9:30 AM
Urbanization promotes genetic divergence of functional traits in Asclepias syriaca (common milkweed)
Sophie Breitbart¹, Anurag Agrawal², Marc Johnson³, Helene Wagner³
¹University of Toronto, Toronto, ON, ²Cornell University, ³University of Toronto Mississauga

9:45 AM
City limits: winter physiology across the urbanization gradient in the acorn ant, temnothorax curvispinosus
Eric Prileson¹, Ryan Martin²
¹Case Western Reserve University, Cleveland, ²Case Western Reserve University, Cleveland, Ohio

10:00 AM
Local adaptation between white clover and rhizobia in the urban mosaic
David Murray-Stoker¹, Marc Johnson²
¹University of Toronto, Toronto, Ontario, ²University of Toronto Mississauga

How does paternal experience influence male behavior, neurophysiology, and gene expression in a biparental mammal?
Maria Colt¹, Amber Valentino², Erica Glasper², Heidi Fisher³
¹University of Maryland, College Park, College Park, ²The Ohio State University, ³University of Maryland
10:15 AM | **Evolution in urban-adjacent marine ecosystems: current knowledge and future directions**
Liz Alter, California State University Monterey Bay, Seaside, California

10:30 AM | **Experimental evidence for local adaptation and altered ecological effects in urban environments**
Aaron Yilmaz¹, Gracie Bellino², Ryan Martin³
¹Case Western Reserve University, ²Case Western Reserve University, Essex Jct, ³Case Western Reserve University, Cleveland, Ohio

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**Genomics I**

📅 Sat, June 25
⏰ 9:30 AM - 10:45 AM
📍 Room 21
☐ Regular

**Presentations**

9:30 AM | **Multiple long-read de novo assemblies of House Finches enable pangenome analysis of structural variants**
Bohao Fang¹, Scott V. Edwards²
¹Harvard University, Cambridge, ²Harvard University, Cambridge, MA

9:45 AM | **Evolution and genetics of the strawberry poison frog color polymorphism in Bocas del Toro**
Diana Aguilar Gómez¹, Layla Freeborn², Yusan Yang³, Corinne Richards-Zawacki⁴, Rasmus Nielsen⁵
¹University of California, Berkeley, Berkeley, CA, ²University of Pittsburgh, Department of Biological Sciences, Pittsburgh, PA, ³Living Earth Collaborative, Washington University in St. Louis, St. Louis, ⁴University of Pittsburgh, Pittsburgh, PA, ⁵University of California Berkeley & Natural History Museum of Denmark

10:00 AM | **Genetic and peripheral visual system changes underlie evolving butterfly mate preference**
 Phylogenetics I

Sat, June 25

9:30 AM - 10:45 AM
Room 19
Regular

Presentations

Evolution of Puya (Bromeliaceae), the Queens of the Andes

Julian Aguirre-Santoro¹, Alejandro Zuluaga Trochez², Julio Betancur³, Rachel Jabaily⁴
¹Universidad Nacional de Colombia, Bogota, Colombia,
²Universidad del Valle, ³Universidad Nacional de Colombia,
⁴Colorado College

Putative drought-adapted SNPs increase in frequency during severe drought

Daniel Anstett¹, Julia Anstett², Dylan Moxley², Mojtaba Jahani², Kaichi Huang³, Marco Todesco², Rebecca Jordan⁴, Loren Rieseberg³, Amy Angert³
¹Michigan State University, East Lansing, British Columbia,
²University of British Columbia, ³University of British Columbia, Vancouver, BC, ⁴CSIRO

Identifying Fractionation Events Across the Tripsacinae Subtribe

Samantha Snodgrass¹, Margaret Woodhouse², Matthew Hufford³
¹Iowa State University, Ames, IA, ²USDA-ARS Corn Insects and Crop Genetics Research Unit, ³Iowa State
The effect of developmental pleiotropy on the evolution of immune genes in Drosophila

Alissa Williams¹, Thi Ngo¹, Ann Tate²

¹Vanderbilt University, ²Vanderbilt University, Nashville, TN

Long-distance dispersal by doves generated ecological opportunities for adaptive radiation by their parasites

Bret Boyd¹, Nam-Phuong Nguyen¹, Julie M. Allen², Robert Waterhouse², Kyle Vo², Andrew Sweet², Dale Clayton³, Sarah Bush⁴, Michael Shapiro⁵, Kevin P. Johnson⁶

¹Virginia Commonwealth University, Richmond, USA, ²University of Nevada, Reno, ³School of Biological Sciences, University of Utah, Salt Lake City, Utah, ⁴School of Biological Sciences, University of Utah, Salt Lake City, UT, ⁵School of Biological Sciences, University of Utah, ⁶Illinois Natural History Survey, Champaign, IL

Effects of using diverse different phylogenetic datasets on diversification rate estimations

Eren Ada¹, Rachel S. Schwartz²

¹University of Rhode Island, Kingston, Rhode Island, ²University of Rhode Island, Kingston, RI

Continuing to elucidate the Echiniscidae phylogeny with new sequencing data

Adam Trautwig¹, jason pienaar¹

¹Florida International University, Miami

Speciation I

Sat, June 25
9:30 AM - 10:45 AM
Room 22
Regular

Presentations

9:30 AM
Drought response, hybridization, and ecological isolation in sympatric Mimulus species

9:44 AM
**SSB Ernst Mayr Award Symposium I**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Author(s) and Affiliation</th>
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<tbody>
<tr>
<td>9:45 AM</td>
<td>Macroevolutionary Patterns of Bird Migration Revealed by Intraspecific Variation</td>
<td>Valentina Gomez-Bahamon, Pennsylvania State University, Ann Arbor</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Finding the Source of Divergent Selection on Joshua Trees with Genome-Wide Data and Linkage Mapping</td>
<td>Mikhail Plaza, Northwestern University and Chicago Botanic Garden, Skokie</td>
</tr>
</tbody>
</table>
| 10:15 AM   | Testing for a role of postzygotic incompatibilities in rapidly speciated Lake Victoria cichlids | Anna Feller¹, Catherine Peichel², Ole Seehausen³ 
�Harvard University, Boston, ²University of Bern, Bern, Bern, Switzerland, ³The Swiss Federal Institute of Aquatic Science and Technology (EAWAG) |
| 10:30 AM   | Incipient speciation in a fossil lineage of the threespine stickleback, Gasterosteus doryssus | Yoel Stuart¹, Raheyma Siddiqui², Allison Ozark², Michael Bell³ 
�Loyola University Chicago, Chicago, ²Loyola University Chicago, ³University of California Museum of Paleontology |

**Description**

The Ernst Mayr Award is given to the presenter of the outstanding student talk in the field of systematics at the annual meetings. This is SSB's premier award, and is judged by the quality and creativity of the research completed over the course of the student's Ph.D. program. The award consists of $1000, a
certificate of distinction, and a two-year subscription to the journal *Systematic Biology*. Learn more about the award here.

**Presentations**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>9:44 AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:45 AM</td>
<td>Exploring Species Boundaries: A Story About Hybridization</td>
<td>Carla Bautista¹, Isabelle Gagnon-Arsenault², Anna Fijarczyk², Devin P. Bendixsen³, Rike Stelkens⁴, Christian Landry²</td>
</tr>
<tr>
<td>9:59 AM</td>
<td></td>
<td>¹Université Laval, Québec, ²Université Laval, ³Stockholm University, ⁴Stockholm University</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Widespread Reticulate Evolution in an Adaptive Radiation</td>
<td>Dylan DeBaun¹, Christopher Raxworthy¹, Frank Burbrink²</td>
</tr>
<tr>
<td>10:14 AM</td>
<td></td>
<td>¹American Museum of Natural History, ²American Museum of Natural History, New York, NY</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>Phylogenomic comparative methods: accurate evolutionary inferences in</td>
<td>Mark Hibbins¹, Lara Breithaupt², Matthew Hahn²</td>
</tr>
<tr>
<td>10:29 AM</td>
<td>the presence of gene tree discordance</td>
<td>¹University of Toronto, IN, ²Indiana University</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Inference of phylogenetic networks from sequence data using</td>
<td>Sungsik Kong¹, David Swofford², Laura Kubatko³</td>
</tr>
<tr>
<td>10:44 AM</td>
<td>composite likelihood</td>
<td>¹The Ohio State University, Columbus, OH, ²University of Florida, Durham, NC, ³The Ohio State University, Columbus, Ohio</td>
</tr>
</tbody>
</table>

**SSE W.D. Hamilton Award Symposium I**

📅 Sat, June 25
⏰ 9:30 AM - 10:45 AM
📍 Grand Ballroom A
The W. D. Hamilton Award for Outstanding Graduate Student Presentation will be given to a current or very recent graduate student who presents an outstanding talk based on their graduate work. Learn more about this award here.

**Presentations**

9:30 AM  
**Fight not flight: parasites drive bacterial evolution of resistance, not migration**  
*Mike Blazanin*, *Jeremy Moore*, *Michael Travisano*  
*Yale University, New Haven, CT, Yale University, University of Minnesota, St. Paul*

9:45 AM  
**Global Gradients in the Distribution of Animal Polyploids**  
*Kyle T. David*, Auburn University, Auburn, Alabama

10:00 AM  
**Multicellularity as a Darwinian material: the biophysical basis of de novo multicellular adaptation during long-term experimental evolution**  
*Thomas Day*, *William C. Ratcliff*, *G. Ozan Bozdag*, *Peter Yunker*, *Kai Tong*, *Peter Conlin*  
*Georgia Institute of Technology, Atlanta, Georgia Institute of Technology, Georgia Institute of Technology, Atlanta, GA*

10:15 AM  
**Body size as a magic trait in plant-feeding insects**  
*Ashleigh Glover*, *Catherine R. Linnen*  
*University of Kentucky, Lexington, University of Kentucky, Lexington, KY*

10:30 AM  
**Massive inversion polymorphisms shape the genomic landscape of deer mice**  
*Olivia S. Harringmeyer*, *Hopi Hoekstra*  
*Harvard University, Cambridge, Harvard University*
**Coffee break**

📅 Sat, June 25  
⏰ 10:45 AM - 11:15 AM  
📍 Grand Ballroom BC  
🔍 Social event

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**John Edmonstone Coffee Social for BIPOC Scientists**

📅 Sat, June 25  
⏰ 10:45 AM - 11:15 AM  
📍 Room 25ABC  
🔍 Social event

---

**Description**

This event is named after John Edmonstone, who was born into slavery in British Guiana and eventually taught and influenced a young Charles Darwin. Edmonstone’s life highlights that people of color have been present—if invisible—in the development of evolutionary biology from the beginning. This mixer is an opportunity to interact with evolutionary biologists at all stages of their career and training who identify as people of color and their allies. Attendees will have the opportunity to meet, discuss their work, share experiences, establish mentor-mentee connections, and build on constructive ways to make evolutionary biology a more inclusive community.

Includes coffee break service. Sign-up was during meeting registration but all welcome.

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**Adaptation II**

📅 Sat, June 25  
⏰ 11:15 AM - 12:30 PM  
📍 Room 15  
🔍 Regular

---

**Presentations**

11:15 AM  
**Variation in seasonal timing traits and life history along a latitudinal transect in Mimulus ringens**  
**James M Sobel**, Binghamton University, Binghamton
Genomics II

Sat, June 25

11:15 AM - 12:30 PM

Room 21

Regular

Presentations

11:15 AM
Analysis of tandem repeats across the tree of life
Shu-Ting Cho¹, Erik S. Wright²
¹University of Pittsburgh, Pittsburgh, ²University of Pittsburgh, Pittsburgh, PENNSYLVANIA

11:30 AM
The role of DNA methylation in shaping genome evolution following whole genome duplication: insight from Chinese Sucker (Myxocyprinus asiaticus)
Hannah Waterman¹, Trevor Krabbenhoft
¹University at Buffalo, BUFFALO, NY

11:45 AM
A chromosome-level genome assembly and annotation of the desert horned lizard, Phrynosoma
platyrhinos, provides insight into chromosomal rearrangements among reptiles

Nazila Koochekian¹, Alfredo Ascanio², Keaka Farleigh², Daren Card³, Drew R. Schield⁴, Todd Castoe⁵, Tereza Jezkova²

¹Miami University, Cincinnati, OH, ²Miami University, ³Harvard University, Cambridge, MA, ⁴University of Colorado, ⁵University of Texas, Arlington

12:00 PM
12:14 PM

Shared and Unique Features of Structural Genomic Variants in Fish Evolutionary Divergence

Trevor Krabbenhoft¹, Dan MacGuigan, Nate Backenstose², Christopher A. Osborne³

¹University at Buffalo, Buffalo, NY, ²University at Buffalo, Buffalo, New York, ³University at Buffalo, Lockport, New York

12:15 PM
12:29 PM

Mining Museums for Historic DNA

Alexander Salis¹, Brian T. Smith², Christopher Raxworthy²

¹American Museum of Natural History, New York, ²American Museum of Natural History

Host-Parasite

Sat, June 25
11:15 AM - 12:30 PM
Room 20
Regular

Presentations

11:15 AM
Defense at what cost: quantifying the energetic cost of inflammation
Trey Sasser¹, Jesse Weber²
¹University of Wisconsin, Madison, ²University of Wisconsin-Madison, Madison, AK

11:30 AM
Birds as islands: Using an avian contact zone to investigate their parasite population structure
Emily Ostrow¹, Lucas H. DeCicco², Monica Carlson³, Robert Moyle²
11:45 AM

Evolutionary gain and loss of a pathological immune response to parasitism

Jesse Weber¹, Natalie Steiner², Foen Peng³, Kum Chuan Shim⁴, Brian Lohman⁵, Lauren E. Fuess⁶, Swapna K. Subramanian⁷, Stephen De Lisle⁸, Daniel Bolnick⁹

¹University of Wisconsin-Madison, Madison, AK, ²University of Massachusetts Lowell, ³University of Connecticut, storrts, CONNECTICUT, ⁴University of Texas at Austin, ⁵Huntsman Cancer Institute, University of Utah, ⁶Texas State University, San Marcos, Texas, ⁷University of Connecticut, Mansfield Center, CT, ⁸Lund University, Lund, Skåne, Sweden, ⁹University of Connecticut, Storrs, CT

12:00 PM

Bugs vs. ‘Bugs’: Potential for coevolution between a maternally inherited symbiont, its phage, and a parasitoid wasp

Melissa Carpenter¹, Stephanie Weldon², Andrew Smith³, Linyao Peng¹, Jonah Joffe³, Nicole Lynn-Bell⁴, Kerry Oliver⁵, Jacob Russell⁶

¹Drexel University, Philadelphia, PA, ²University of Montana, ³Drexel University, ⁴University of Georgia, ⁵Dept. of Entomology, University of Georgia, Athens, Georgia, ⁶Drexel University, PHILADELPHIA, Pennsylvania

Phylogenetics II

Sat, June 25
11:15 AM - 12:30 PM
Room 19
Regular

Presentations

11:15 AM

A phylogenomic perspective reveals sex-specific migration in an African Reed Frog

Lucinda Lawson⁴, Gabriela Bittencourt-Silva², Simon Loader², Michelle Thompson³, Werner Conradie⁴, Breda Zimkus⁵, Daniel M. Portik⁶
Using the abba baba test to characterize genome-wide patterns of homoeologous exchange in the allotetraploid Coffea arabica

WITHDRAWN

Andre Ortiz¹, Joel Sharbrough²
¹New Mexico Institute of Mining and Technology, Socorro, ²New Mexico Institute of Mining and Technology, Socorro, NM

Genomic differentiation between subspecies of red-tailed chipmunk (Tamias ruficaudus) across old and young hybrid zones

David Sneddon¹, Jack Sullivan²
¹University of Idaho, MOSCOW, ID, ²University of Idaho

Conflict analysis using entire gene families reveals the importance of phylogenomics in inferring trait evolution: a case study in the carnivorous Caryophyllales

Holly Robertson¹, Edwige Moyroud¹, Joseph F. Walker¹
¹University of Illinois Chicago, Chicago, MI

Rock on! Inferring the evolution of a novel trait in deep-sea sea pens (Cnidaria:Anthozoa:Octocorallia:Pennatulacea)

Upasana Ganguly¹, Scott France²
¹University of Louisiana at Lafayette, Lafayette, ²University of Louisiana at Lafayette

Sensory systems

Sat, June 25
11:15 AM - 12:30 PM
Room 16
Regular

Presentations
The influence of ecology on the evolution of visual systems in frogs
Jeffrey W. Streicher, Natural History Museum, London, United Kingdom

Evaluating the role of mechanosensation in host adaptation and reproductive success
Ryan Ridenbaugh, Will Holland, Vasav Rachan, Wynne Radcliffe, Catherine R. Linnen
1University of Kentucky, Lexington, KY, 2University of Kentucky

Rapid shifts in visible Carolina grasshopper (Dissosteira carolina) coloration during flights
Nicholas Brandley, Ezekiel Martin
1College of Wooster, Wooster, 2College of Wooster

Visual Environment and the Evolution of Ornaments in Habronattus Jumping Spiders
David J. Morris, Helean Shelton, Nathan I. Morehouse
1University of Cincinnati, CINCINNATI, OH, 2University of Cincinnati, Cincinnati, 3University of Cincinnati

Dynamic evolution of olfactory receptor repertoires across avian ecology and phylogeny
Robert Driver, Christopher Balakrishnan
1East Carolina University, Greenville, NC, 2East Carolina University, Greenville, North Carolina

Speciation II
Sat, June 25
11:15 AM - 12:30 PM
Room 22
Regular

Presentations
Reproductive barriers and genomic hotspots of adaptation during allopatric species divergence
**SSB Ernst Mayr Award Symposium II**

📅 Sat, June 25  
🕒 11:15 AM - 12:30 PM  
📍 Room 26BC  
📝 Symposium

**Description**

The Ernst Mayr Award is given to the presenter of the outstanding student talk in the field of systematics at the annual meetings. This is SSB's premier award, and is judged by the quality and creativity of the
research completed over the course of the student's Ph.D. program. The award consists of $1000, a certificate of distinction, and a two-year subscription to the journal *Systematic Biology*. Learn more about the award here.

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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15 AM</td>
<td>On the origin of the bird’s nest fungi: Phylogenomic analyses of fungi in the Nidulariaceae (Agaricales, Basidiomycota)</td>
<td>Nattapol Kraisitudomsook(^1), Matthew E. Smith(^2) (1)University of Florida, Florida, (2)University of Florida</td>
</tr>
<tr>
<td>11:29 AM</td>
<td>WITHDRAWN</td>
<td></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>You Glow Some, You Lose Some: Horizontal Transfer, Duplication, And Loss Of Genes In The Evolution Of Bioluminescence In Toadfishes</td>
<td>Emily S. Lau(^1), Todd H. Oakley(^2) (1)University of California, Santa Barbara, Santa Barbara, California, (2)University of California, Santa Barbara</td>
</tr>
<tr>
<td>11:44 AM</td>
<td></td>
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</tr>
<tr>
<td>11:45 AM</td>
<td>Geography and ecology structure lineage diversity in the endemic Hawaiian fern <em>Polypodium pellucidum</em></td>
<td>Jonas I. Mendez-Reneau(^1), Nicholas J. Kooyers(^1), Erin M. Sigel(^2) (1)University of Louisiana, Lafayette, Lafayette, LA, (2)University of New Hampshire</td>
</tr>
<tr>
<td>11:59 AM</td>
<td></td>
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<tr>
<td>12:00 PM</td>
<td>Whole-genome phylogeography of a classic leapfrog pattern: origin and color variation of an Andean tanager, the Superciliaried <em>Hemispingus</em></td>
<td>Jonathan Schmitt(^1), Scott V. Edwards(^2) (1)Harvard University, Cambridge, Massachusetts, (2)Harvard University, Cambridge, MA</td>
</tr>
<tr>
<td>12:14 PM</td>
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</tr>
</tbody>
</table>

**SSE W.D. Hamilton Award Symposium II**

📅 Sat, June 25  
⏰ 11:15 AM - 12:30 PM  
📍 Grand Ballroom A  
🗂 Symposium
The W. D. Hamilton Award for Outstanding Graduate Student Presentation will be given to a current or very recent graduate student who presents an outstanding talk based on their graduate work. Learn more about this award here.

## Presentations

11:15 AM  | Rapid polygenic evolution of Brassica rapa (field mustard) under experimental drought
Stephen Johnson¹, Silas Tittes², Steve J. Franks³
¹University of Michigan, NY, ²University of California, Davis, Davis, CA, ³Fordham University, Bronx, NY

11:30 AM  | Evolution of improved stress tolerance and post-copulatory reproductive traits in populations of Drosophila melanogaster experimentally evolved for adaptation to a crowded larval environment
Rohit Kapila¹, Nagraj G. Prasad²
¹Florida International university, Miami, India, ²IISER Mohali

11:45 AM  | Divorce and attachment: Distinct behaviors with a shared goal
Brian Lerch¹, Trevor Price², Maria Servedio³
¹University of North Carolina at Chapel Hill, ²University of Chicago, ³University of North Carolina, Chapel Hill, NC

12:00 PM  | Morphometric analysis of locomotory ecology in the fossil bird Ichthyornis (Avialae: Ornithurae)
Talia Lowi-Merr¹, Oliver Demuth², Daniel J. Field², Roger Benson³, Santiago Claramunt⁴, David Evans⁵
¹University of Toronto, Royal Ontario Museum, Toronto, Ontario, ²University of Cambridge, ³University of Oxford, ⁴Royal Ontario Museum, Toronto, ON, ⁵University of Toronto, Royal Ontario Museum

12:15 PM  | Evolution of cooperation in the chemostat
Bryan K. Lynn, Oregon State University, Corvallis, OR
**SSE/ASN Public policy panel discussion**

📅 Sat, June 25  
⏰ 12:30 PM - 2:15 PM  
📍 Room 24  
🗂 Workshop / Information session

**Description**

Pre-registration required.

Are you interested in promoting scientific research to the public and legislators, but are not sure how to get started? This event, which will feature a panel of experts in science policy, will equip you with the tools you need to begin engaging with key decision makers in your community.

**Evolution editorial board meeting**

📅 Sat, June 25  
⏰ 12:30 PM - 2:30 PM  
📍 Room 13  
🗂 Meeting

**Description**

For journal editors/associate editors only.

**LGBTQ+ networking lunch**

📅 Sat, June 25  
⏰ 12:30 PM - 2:30 PM  
📍 Offsite  
🗂 Social event

**Description**

Join your LGBTQ+ colleagues for a small group networking lunch event! This event aims to facilitate interactions between LGBTQ+ identified scientists at all career stages, help folks to network, glean
career and professional advice, and create community for LGBTQ+ identified individuals.

Sign-up was required during meeting registration and groups were pre-arranged. Each group is responsible for finding their own lunch venue.

### Lunch

📅 Sat, June 25  
⏰ 12:30 PM - 2:30 PM  
📍 Offsite  
🗂 Social event

**Description**

Attendees are on their own; lunch is not provided.

### Systematic Biology editorial board meeting

📅 Sat, June 25  
⏰ 12:30 PM - 2:30 PM  
📍 Room 14  
🗂 Meeting

**Description**

For journal editors/associate editors only.

### SSE members open forum

📅 Sat, June 25  
⏰ 1:15 PM - 2:15 PM  
📍 Room 22  
🗂 Meeting

**Description**
Open to all members of the SSE; registration not required. Lunch is not provided

Development

📅 Sat, June 25
🕒 2:30 PM - 3:45 PM
📍 Room 19
🔍 Regular

Presentations

2:30 PM
Using leaf morphology modeling in herbaria specimens of three Capsella species to predict changes in leaf shape in response to climate change.
Asia T. Hightower¹, Emily Josephs²
¹Michigan State University, East Lansing, Michigan, ²Michigan State University, East Lansing, MI

2:45 PM
Probing for a developmental mechanism underlying the re-evolution of lost mandibular teeth in frogs
Daniel J. Paluh, University of Florida, Gainesville, FL

3:00 PM
The origin of color in butterflies
Robert Reed, Cornell University, Ithaca, New York

3:15 PM
Genetic variation in vegetative phase change alters response to abiotic stress
Erica Lawrence¹, Jesse Lasky¹
¹Pennsylvania State University, University Park, PA

3:30 PM
Development and evolution of the avian voice box
Evan Kingsley, Harvard Medical School, Boston

Evolution in the tropics: 70 years since Dobzhansky
Description

Organizers: Dr. Kathleen Kay and Dr. Oscar Vargas
Tropical diversity has long fascinated biologists, but most research to-date has addressed the ecological mechanisms maintaining diversity rather than evolutionary mechanisms generating diversity. This symposium seeks to synthesize macro- and micro-evolutionary work on patterns and mechanisms of diversification in the tropics, and specifically addresses Janzen and Dobzhansky’s classic hypotheses about physiological tolerances and biotic interactions. With a recent resurgence of studies into tropical evolution, the time is right to assess the current state of knowledge and identify productive avenues for future research.

Presentations

<table>
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<tr>
<th>Time</th>
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<th>Speakers</th>
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</thead>
<tbody>
<tr>
<td>2:30 PM</td>
<td>Dobzhansky, Janzen, and speciation research in the tropics</td>
<td>Kathleen M. Kay, University of California Santa Cruz, Santa Cruz, CA</td>
</tr>
<tr>
<td>2:44 PM</td>
<td>MACROEVOLUTIONARY APPROACHES AND THE CONSTRUCTION OF THE LATITUDINAL DIVERSITY GRADIENT</td>
<td>Jonathan Rolland, CNRS - University of Toulouse III, Toulouse, France</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>Testing hypotheses about Neotropical plant diversifications using comparative methods</td>
<td>Oscar Vargas¹, Kathleen M. Kay², Christopher Dick³, Beryl Simpson⁴</td>
</tr>
<tr>
<td></td>
<td></td>
<td>¹Cal Poly Humboldt, Arcata, ²University of California Santa Cruz, Santa Cruz, CA, ³University of Michigan, ⁴The University of Texas at Austin</td>
</tr>
</tbody>
</table>
## Presentations

### 2:30 PM

**Food supplementation and lifetime reproductive success in a wild population of squirrels**

Faye Romero\(^1\), Stan Boutin\(^2\), David Coltman\(^2\), Ben Dantzer\(^3\), Jeffrey Lane\(^4\), Andrew McAdam\(^5\), Nancy Chen\(^6\)

\(^1\)University of Rochester, Rochester, \(^2\)University of Alberta, \(^3\)University of Michigan, \(^4\)University of Saskatchewan, \(^5\)University of Colorado, Boulder, Ontario, \(^6\)University of Rochester, Rochester, NY

### 2:45 PM

**The genomic consequences of novel age-at-maturity phenotypes in pink salmon (Oncorhynchus gorbuscha) introduced to the Great Lakes**

Morgan Sparks\(^1\), Lisa Seeb\(^2\), James Seeb\(^2\), Mark Christie\(^3\)

\(^1\)Biological Sciences, Purdue University, West Lafayette, \(^2\)School of Aquatic and Fishery Sciences, University of Washington, \(^3\)Purdue University

### 3:00 PM

**A population dynamics tipping point for aging as a cause of adult death**

Andrea Scharf, St. Louis, St. Louis

### 3:15 PM

**Maternal and paternal age effects on male antler flies: a field experiment**

Chris Angell\(^1\), Rebecca Janacek\(^2\), Howard D. Rundle\(^3\)

\(^1\)Earham College, Richmond, IN, \(^2\)University of Ottawa, \(^3\)University of Ottawa, Ottawa, ON

### 3:30 PM

**Multilevel selection on offspring size and the maintenance of variation**

WITHDRAWN

Hayley Cameron\(^1\), Darren Johnson\(^2\), Keyne Monro\(^3\), Dustin Marshall\(^4\)

\(^1\)Monash University, Eltham, Australia, \(^2\)California State University, Long Beach, \(^3\)Monash University, Melbourne, Victoria, Australia, \(^4\)Monash University, Monash University, Australia
Phylogenetic Methods I

Sat, June 25
2:30 PM - 3:45 PM
Room 16
Regular

Presentations

2:30 PM  Protein Functional Inference using Co-evolutionary Signal
Aidan Lakshman¹, Erik S. Wright²
¹University of Pittsburgh, PITTSBURGH, ²University of Pittsburgh, Pittsburgh, PENNSYLVANIA

2:45 PM  Phylogenetic niche modeling
Sean W. McHugh¹, Anahi Espindola², Emma White³, Josef C. Uyeda⁴
¹Washington University in St. Louis, St Louis, VA, ²University of Maryland, College Park, College Park, MD, ³George Mason University, ⁴Virginia Tech, Blacksburg, VA

3:00 PM  Comparison of genome-scale hybridization detection methods
Marianne Bjorner¹, Claudia Solis-Lemus²
¹University of Wisconsin, Madison, ²University of Wisconsin-Madison, Madison, WI

3:15 PM  Macroevolutionary modeling of life history evolution in vertebrates
Josef C. Uyeda¹, George Brooks², Holly Kindsvater², Nic Bone¹, Chris Mull³, Hailey Conrad²
¹Virginia Tech, Blacksburg, VA, ²Virginia Tech, ³Dalhousie University

3:30 PM  Why reconstruct when you can simulate? Exploring stochastic character mapping of continuous traits
Bruce S. Martin¹, Marjorie Weber²
¹Michigan State University, Lansing, MI, ²Michigan State University, East Lansing, Michigan
Presentations

2:30 PM
The population genomics of invasion in a cosmopolitan weed
Jonas I. Mendez-Reneau¹, James S. Santangelo², Lucas J. Albano³, Courtney Patterson⁴, Kathryn Hodgins⁵, Marc Johnson⁶, Nicholas J. Kooyers¹
¹University of Louisiana, Lafayette, Lafayette, LA, ²University of Toronto, Mississauga, Ontario, ³University of Toronto - Mississauga, Mississauga, ON, ⁴University of Louisiana, Lafayette, ⁵Monash University, ⁶University of Toronto Mississauga

2:45 PM
Population genomics of Xenopus laevis in South Africa
Tharindu Premachandra¹, Ben Evans², Caroline M. Cauret³, John Measey⁴
¹McMaster University, Hamilton, ²McMaster University, Hamilton, ON, ³McMaster University, Hamilton, Ontario, ⁴Stellenbosch university

3:00 PM
Study of the incidence of homologous recombination in function of the population dynamics of Ensifer meliloti
Mario Ceron Romero¹, Katy D. Heath², Tandy Warnow³
¹University of Illinois at Urbana-Champaign, Cali, Colombia, ²University of Illinois at Urbana-Champaign, Urbana, IL, ³University of Illinois at Urbana-Champaign

3:15 PM
Gene flow and population connectivity in Hawaiian cave-adapted planthoppers
Jordan M. Gossett¹, Becky Chong²
¹University of Hawaii Manoa, Honolulu, HI, ²University of Hawaii, Honolulu, Hawaii
<table>
<thead>
<tr>
<th>Time</th>
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<th>Authors</th>
<th>Institution</th>
</tr>
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<tbody>
<tr>
<td>3:30 PM</td>
<td>A weird way that gene drive causes balancing selection in partial selfers</td>
<td>Matthew Rockman</td>
<td>NYU Biology, New York, NY</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>Investigating the relationship between burying beetles (Nicrophorus sp.) and associated microbial symbionts</td>
<td>Kathryn Herr¹, Tory Hendry²</td>
<td>Cornell University, ITHACA</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>Herbivore resistance and mechanisms of local adaptation in Mimulus guttatus WITHDRAWN</td>
<td>Megan Blanchard</td>
<td>Northern Arizona University, Flagstaff</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Glow away: Impacts of bacterial fluorescence diversity on aphid behavior.</td>
<td>Tory Hendry¹, Kathryn Herr²</td>
<td>Cornell University, ITHACA</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>Context-dependent effects in the Dictyostelium discoideum-Paraburkholderia symbiosis</td>
<td>Trey Scott¹, David Queller², Joan Strassmann²</td>
<td>Washington University in St. Louis, Missouri, Saint Louis, Missouri, Washington University in St. Louis</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>The contribution of costs, benefits, and resource use efficiency to variation in outcomes in the legume-rhizobia mutualism.</td>
<td></td>
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</table>
SSE W.D. Hamilton Award Symposium III

Sat, June 25
2:30 PM - 3:45 PM
Grand Ballroom A
Symposium

Description

The W. D. Hamilton Award for Outstanding Graduate Student Presentation will be given to a current or very recent graduate student who presents an outstanding talk based on their graduate work. Learn more about this award here.

Presentations

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<tr>
<td>2:30 PM</td>
<td>Substitution load imposes a mild constraint on adaptation, with a high proportion of deaths in A. thaliana being selective</td>
<td>Joseph Matheson(^1), Moises Exposito-Alonso(^2), Joanna Masei(^3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(^1)University of Arizona, Tucson, (^2)Department of Plant Biology, Carnegie Institution for Science, (^3)University of Arizona</td>
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<tr>
<td>2:45 PM</td>
<td>Adaptation during range expansion: a phylogenetic, population genetic, and physiological perspective</td>
<td>Cinnamon Mittan, Michigan State University, Hickory Corners</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Global urban environmental change drives adaptation in white clover</td>
<td>James S. Santangelo, University of Toronto, Mississauga, Ontario</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>Group augmentation underlies the evolution of complex sociality in the face of environmental instability</td>
<td>Shailee Shah(^1), Dustin Rubenstein(^2)</td>
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<td>(^1)University of Rochester, (^2)Columbia University</td>
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</table>
Coffee break

Sat, June 25
3:45 PM - 4:15 PM
Grand Ballroom BC
Social event

Flying solo coffee social

Sat, June 25
3:45 PM - 4:15 PM
Room 25ABC
Social event

Description

Registration not required.

The SSE Graduate Student Advisory Council is organizing a coffee break for people who attend the meeting without their lab group or advisor. The event is intended to provide networking for people who are "flying solo" at Evolution 2022.

Disease

Sat, June 25
4:15 PM - 5:30 PM
Room 22
Regular

Presentations

Cultural evolution after environmental stress: a case study of songbird populations affected by the 2016 New York drought

Kate Snyder¹, Nicole Creanza²
¹Vanderbilt University, Nashville, ²Vanderbilt University
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
</table>
| 4:15 PM | Fitness consequences of depression vary across generations: evidence from a large cohort study of women across the 20th Century | Christopher I. Gurguis¹, Renee A. Duckworth², Nicole Bucaro³, Consuelo Walss-Bass³  
  ¹McGovern Medical School at UTHealth, HOUSTON, TX,  
  ²University of Arizona, ³McGovern Medical School at UTHealth |
| 4:30 PM | Traits, phylogeny and host cell receptors predict Ebolavirus host status among African mammals | Mekala Sundaram¹, Barbara Han², John Paul Schmidt³, John M. Drake³, Patrick Stephens⁴  
  ¹Oklahoma State University, Stillwater, ²Cary Institute of Ecosystem Studies, ³University of Georgia, ⁴Oklahoma State University |
| 4:45 PM | A probabilistic model predicting host specificity in mites parasitic on mammals | Pavel Klimov¹, Qixin He²  
  ¹Purdue University, West Lafayette, ²Purdue University, West Lafayette, Indiana |
| 5:00 PM | Strain diversity explains different biogeographic patterns of relationships between transmission intensity and the spread of drug resistance | Qixin He¹, Jack Chaillet²  
  ¹Purdue University, West Lafayette, Indiana, ²Purdue University |
| 5:15 PM | Do differences in pathogen exposure and migratory movements influence immune gene diversity? | Susanna Campbell¹, Ben M. Winger², Liliana Cortés-Ortiz³  
  ¹University of Michigan, Ypsilanti, MI, ²University of Michigan Museum of Zoology, ³University of Michigan, Ann Arbor, MI |

**Evolution in the tropics: 70 years since Dobzhansky II**

📅 Sat, June 25  
⏰ 4:15 PM - 5:30 PM  
📍 Room 26BC  
🗂 Symposium
Description

Organizers: Dr. Kathleen Kay and Dr. Oscar Vargas
Tropical diversity has long fascinated biologists, but most research to-date has addressed the ecological mechanisms maintaining diversity rather than evolutionary mechanisms generating diversity. This symposium seeks to synthesize macro- and micro-evolutionary work on patterns and mechanisms of diversification in the tropics, and specifically addresses Janzen and Dobzhansky’s classic hypotheses about physiological tolerances and biotic interactions. With a recent resurgence of studies into tropical evolution, the time is right to assess the current state of knowledge and identify productive avenues for future research.

Presentations

4:15 PM | Janzen's mountain passes and diversification in the tropics
Kimberly Sheldon, University of Tennessee, Knoxville

4:45 PM | Diversity and divergence: Evolution of defense chemistry in the tropical tree genus Inga
Dale Forrister¹, María-José Endara², Abrianna J. Soule³, Gordon C. Younkin⁴, Phyllis D. Coley³
¹University of Utah, Salt Lake City, ²Centro de Investigación de la Biodiversidad y Cambio Climático (BioCamb) e Ingeniería en Biodiversidad y Recursos Genéticos, Facultad de Ciencias de Medio Ambiente, Universidad Tecnológica Indoamérica, Quito, Ecuador, ³School of Biological Sciences, University of Utah, Aline W. Skaggs Biology Building, 257 S 1400 E, Salt Lake City, UT 84112-0840, USA, ⁴Boyce Thompson Institute, Ithaca, New York 14853, USA

5:00 PM | Standing species richness shapes the tempo and mode of avian speciation across the Neotropics
Michael Harvey, The University of Texas at El Paso, EL PASO

Experimental Evolution I

📅 Sat, June 25
⏰ 4:15 PM - 5:30 PM
📍 Room 19
🔒 Regular
Presentations

4:15 PM  |  **Strength of selection potentiates distinct adaptive responses in an evolution experiment with outcrossing yeast**  
**Mark A. Phillips**¹, Molly K. Burke²  
¹Oregon State University, Corvallis, Oregon, ²Oregon State University, Corvallis, OR

4:30 PM  |  **The effect of Horizontal Gene Transfer on genome modularity and evolvability**  
**Mike J. Wiser**¹, Rosangela Canino-Koning², Charles Ofria³  
¹Michigan State University, East Lansing, MI, ²Independent Scientist, ³Michigan State University

4:45 PM  |  **EvolvingSTEM: a high school research curriculum to enhance student inclusion and agency and advance scientific discovery**  
**Abigail M. Matela**¹, Vaughn S. Cooper²  
¹University of Pittsburgh, Pittsburgh, PA, ²University of Pittsburgh

5:00 PM  |  **On the (ir)reversibility of the evolution of multicellularity: epistasis and entrenchment during long-term experimental evolution**  
**WITHDRAWN**  
**Peter Conlin**¹, Penelope Kahn², G. Ozan Bozdag¹, William C. Ratcliff³  
¹Georgia Institute of Technology, Atlanta, ²University of British Columbia, ³Georgia Institute of Technology

5:15 PM  |  **The Holy Grail: Predicting the evolution of antibiotic resistance**  
**Nishant Panicker**¹, Erik S. Wright  
¹University of Pittsburgh, Pittsburgh, Pennsylvania

Gene Expression I

📅 Sat, June 25  
⏰ 4:15 PM - 5:30 PM
### Presentations

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<tr>
<th>Time</th>
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<th>Authors</th>
<th>Affiliations</th>
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<tbody>
<tr>
<td>4:15 PM</td>
<td>Sexually dimorphic coloration evolves through alterations to hormonally mediated gene expression in Sceloporus lizards</td>
<td>Chris Robinson¹, Matthew Hale², Tyler Wittman³, Christian Cox⁴, Henry John-Alder⁵, Robert Cox³</td>
<td>¹University of Virginia, Charlottesville, ²University of Virginia, ³University of Virginia, Charlottesville, Virginia, ⁴Florida International University, ⁵Rutgers University</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Insectahemoglobins: transcriptomes reveal expression of hemoglobins throughout insecta</td>
<td>Hollister Herhold¹, Steven Davis², David Grimaldi²</td>
<td>¹American Museum of Natural History, New York, NY, ²American Museum of Natural History</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>Chance promoter activities illuminate the origins of eukaryotic intergenic transcriptions</td>
<td>Haiqing Xu¹, Jianzhi Zhang²</td>
<td>¹University of Michigan, ANN ARBOR, ²University of Michigan</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>How does mutation create gene expression variation in Chlamydomonas reinhardtii?</td>
<td>Eniolaye Balogun¹, Rob W. Ness²</td>
<td>¹University of Toronto Mississauga, Mississauga, ²University of Toronto</td>
</tr>
<tr>
<td>5:15 PM</td>
<td>Role of Plasticity in Evolutionary Adaptation to Salt Stress</td>
<td>Yeshoda Harry-Paul¹, Rob W. Ness²</td>
<td>¹University of Toronto, Mississauga, ²University of Toronto</td>
</tr>
</tbody>
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**Life History II**

📅 Sat, June 25
⏰ 4:15 PM - 5:30 PM
Presentations

4:15 PM | Experimental warming reduces body mass but not reproductive investment
Alycia Lackey, University of Louisville, Louisville, KY

4:30 PM | The physiological and developmental basis of life history transitions in grasses
David Des Marais¹, Marjorie Lundgren², Caio Guilherme Pereira³
¹Massachusetts Institute of Technology, Cambridge, ²Lancaster University, ³Massachusetts Institute of Technology, Cambridge, MA

4:45 PM | Metamorphosis adaptively decouples juvenile and adult evolution for some traits more than others in dragonflies
Michael Moore, Living Earth Collaborative, St. Louis

5:00 PM | Macroevolutionary patterns in metabolism and development
George Jarvis¹, Craig White², Dustin Marshall³
¹Monash University, Melbourne, Australia, ²Monash University, ³Monash University, Monash University, Australia

5:15 PM | Size-number tradeoffs and the ancillary costs of producing larger offspring: egg size variation a marine fish
Darren Johnson, California State University, Long Beach

Phylogenetic Methods II

📅 Sat, June 25
⏰ 4:15 PM - 5:30 PM
📍 Room 16
📝 Regular
<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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</table>
| 4:15 PM | Evolutionary rate covariation across the plasmodium phylogeny reveals new candidate proteins involved in red blood cell invasion | Helena Hopson\(^1\), Ellen Leffler\(^1\)  
\(^1\)University of Utah |
| 4:30 PM | Cophylogenetic event reconciliation are affected by species tree quality | Julia Zheng, Michigan State University, East Lansing, Michigan |
| 4:45 PM | Beyond the Mk Model for Studying Discrete Character Evolution on Trees | Liam J. Revell, University of Massachusetts Boston, Boston, MA |
| 5:00 PM | Direct and indirect defensive trait evolution across scales in Vitis   | Carolyn Graham\(^1\), Marjorie Weber\(^2\)  
\(^1\)Michigan State University, East Lansing, \(^2\)Michigan State University, East Lansing, Michigan |
| 5:15 PM | Evolution of Biological Networks: Factors affecting Network Rewiring Rates. | Alejandro G. Gil-Gomez\(^1\), Joshua S. Rest\(^1\)  
\(^1\)Stony Brook University, Stony Brook, NY |

**Population Genetics II**

📅 Sat, June 25  
⏰ 4:15 PM - 5:30 PM  
📍 Room 21  
🗂️ Regular

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<th>Time</th>
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<th>Authors</th>
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<tr>
<td>4:15 PM</td>
<td>Estimation of selection components in a pedigreed population of Florida Scrub-Jays</td>
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</table>
Drivers of within- and between-population genetic diversity in a widespread plant spanning an elevation gradient

Anita Cisternas Fuentes¹, Matthew Koski²
¹Clemson University, Clemson, ²Clemson University

Spread of segregation distorter in self-pollinated plants

Hongru Wang¹, Rasmus Nielsen², Léo Planche²
¹UC Berkeley, Hayward, CALIFORNIA, ²University of California Berkeley & Natural History Museum of Denmark

Genetic architecture and evolutionary history of the brown coat color variant in American black bears

Emily Puckett¹, Michael Marks², Gregory Barsh³
¹University of Memphis, Memphis, TN, ²Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, ³HudsonAlpha, Huntsville, AL

The origin and persistence of mixed-ploidy in Andropogon gerardi

Alyssa Phillips¹, Taylor AuBuchon-Elder², Brenda Cameron¹, Patrick Minx², Elizabeth Kellogg³, Jeffrey Ross-Ibarra¹
¹UC Davis, ²Donald Danforth Plant Science Center, ³Donald Danforth Plant Science Center, St. Louis, MO

SSE Dobzhansky Award Symposium

Sat, June 25
4:15 PM - 5:30 PM
Grand Ballroom A
Symposium
The Theodosius Dobzhansky Prize is awarded annually by the Society for the Study of Evolution to recognize the accomplishments and future promise of an outstanding young evolutionary biologist. The prize was established in memory of Professor Dobzhansky by his friends and colleagues, and reflects his lifelong commitment to fostering the research careers of young scientists.

**Presentations**

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<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter</th>
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<tr>
<td>4:15 PM</td>
<td>Introduction</td>
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<td>4:29 PM</td>
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<tr>
<td>4:30 PM</td>
<td>Behavioral evolution in a complex world: environmental impacts on mating decisions across species</td>
<td>Philipp Brand, The Rockefeller University, New York, NY</td>
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<tr>
<td>4:59 PM</td>
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<tr>
<td>5:00 PM</td>
<td>The dual role of parental conflict in speciation: Lessons from Mimulus</td>
<td>Jenn M. Coughlan, University of North Carolina, Chapel Hill, Chapel Hill, NC</td>
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<td>5:29 PM</td>
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**Saturday poster session**

📅 Sat, June 25
⏰ 5:30 PM - 8:00 PM
📍 Grand Ballroom BC
📂 Poster

**Presentations**

**Using Barcoding loci to evaluate species relationships in two populations of Eisenia arborea (Poster board 13)**

Katherine Haines¹, Naomi Phillips²

¹Arcadia University, Glenside, ²Biology Arcadia University, Glenside

**Linking root phenotypes to environmental associations in Zea mays landraces (Poster board 14)**

Chloee McLaughlin, Penn State University, State College
Evolution of a femme fatale firefly: Comparative transcriptomics reveals gene families associated with predatory behavior (Poster board 15)
Cheyenne McKinley¹, Sarah Lower²
¹University of California, Santa Barbara, Santa Barbara, ²Bucknell University

Species delimitation in the North American deer mouse using museum specimens (Poster board 16)
Natalie Hamilton¹, Sharon A. Jansa², Jessica E. Light¹
¹Texas A&M University, College Station, Texas, ²University of Minnesota

Isolation of Microorganisms from Ten-Year-Old Southern Pine Beetle Galleries. (Poster board 17)
Shang Xu¹, Lily Khadempour²
¹Rutgers University, Newark, ²Rutgers University-Newark, Newark, NJ

Transcriptomic response of juvenile American alligators to salt stress (Poster board 18)
John Konvalina¹, Eric Hoffman²
¹University of Central Florida, Orlando, ²University of Central Florida

Comparative genomics: chromosomal inversions in eudicots without adaptive selection (Poster board 19)
Kaede Hirabayashi¹, Gregory Owens²
¹University of Victoria, Victoria, BC, ²University of Victoria, Victoria

Comparing divergent plastid genomes in Campanula americana at a structural level using Minion long read sequencing (Poster board 20)
Tyler Gandee, James Madison University, Harrisonburg, VA

Sexual Conflict and Hybridization: A Phylogenomic Test of Macroevolutionary Predictions (Poster board 21)
Emma Lehmberg¹, Igor Cavalcanti de Araújo Souto Santos², Paulo A. Buckup³, David N. Reznick⁴, Gil Rosenthal⁵
¹Texas A&M University, College Station, ²Museu Nacional, Universidade Federal do Rio de Janeiro, ³Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil, ⁴University of California, Riverside, California, ⁵University of Padova

Strategies for predation in a social amoeba, Dictyostelium discoideum (Poster board 22)
Examining nuclear transfer between homokaryotic and dikaryotic strains of *Rhizosphagus irregularis* (Poster board 23)

**Bianca Turcu**, University of Ottawa

The genomic landscape of hybridization with increased genomic instability (Poster board 24)

**Carla Bautista**\(^1\), Isabelle Gagnon-Arsenault\(^2\), Anna Fijarczyk\(^2\), Devin P. Bendixsen\(^3\), Rike Stelkens\(^4\), Christian Landry\(^2\)

\(^1\)Université Laval, Québec, \(^2\)Université Laval, \(^3\)Stockholm University, Stockholm, US and Canada only, \(^4\)Stockholm University

Investigating sources of conflict in a phylogenomic analysis of placental mammals (Poster board 25)

**Leann Biancani**\(^1\), Alexander Knyshov\(^2\), Rachel S. Schwartz\(^3\)

\(^1\)University of Rhode Island, \(^2\)University of Rhode Island, Kingston, Rhode Island, \(^3\)University of Rhode Island, Kingston, RI

Reducing the biases in false correlations between discrete characters (Poster board 26)

**James Boyko**\(^1\), Jeremy Beaulieu\(^1\)

\(^1\)University of Arkansas, Fayetteville, AR

Exploring the most recent range expansion of threespine stickleback with population genetics (Poster board 27)

**Max Reynolds**\(^1\), Jesse Weber\(^2\)

\(^1\)University of Wisconsin-Madison, Madison, \(^2\)University of Wisconsin-Madison, Madison, AK

Mycorrhizal response of homokaryotic versus dikaryotic arbuscular mycorrhizal fungi. (Poster board 28)

**Victoria Terry**, University of Ottawa, Ottawa

Increased variability in adenine methylation in the absence of methyl-directed mismatch repair in *Escherichia coli* (Poster board 29)

**Carl J. Stone**\(^1\), Megan G. Behringer\(^1\)

\(^1\)Vanderbilt University, Nashville, TN
Population genomics of Myzomela honeyeaters in the Solomon Islands (Poster board 30)
Emily Ostrow¹, Devon DeRaad², Stephen Baca², Elsie H. Shogren³, Jason M. Sardell⁴, J. Albert C. Uy⁵, Robert Moyle⁶
¹University of Kansas, Lawrence, ²University of Kansas, Lawrence, KS, ³University of Rochester, Rochester, New York, ⁴University of Texas, Austin, TX, ⁵Biology, University of Rochester, Rochester, NY, ⁶University of Kansas

Newly evolved rattling crickets use novel morphology to attract mates while evading eavesdroppers (Poster board 31)
Jay H. Gallagher¹, David M. Zonana², Dale Broder³, Robin Tinghitella¹
¹University of Denver, Denver, CO, ²University of Denver, Denver, Colorado, ³St Ambrose University

Drosophila mettleri: A Study in the Loss of Adaptability (Poster board 32)
Lidane Noronha, Cornell University, Ithaca

TREE-QMC: Scalable and accurate species tree estimation from gene tree embedded quartets via graph cuts (Poster board 33)
Yunheng Han¹, Erin Molloy²
¹UMCP, ²University of Maryland, College Park

Multi-locus species tree estimation with TREE-TMC (Poster board 34)
Tobias Rubel¹, Yunheng Han², Erin Molloy³
¹University of Maryland, College Park, College Park, ²UMCP, ³University of Maryland, College Park

Investigating the evolution and maintenance of variable species boundaries and repeatability of evolution using a classic hybrid zone model (Poster board 35)
Thomas (TJ) Firneno¹, Erica Larson², Robin Tinghitella², Luana S. Maroja³
¹University of Denver, Denver, ²University of Denver, Denver, CO, ³Williams College, Williamstown, Massachusetts

Population genomics can delineate conservation units: the case of the White Sands pupfish (Cyprinodon tularosa) (Poster board 36)
Erangi Heenkenda¹, Andrew Black², Brian L. Pierce³, Sarah Turner³, David Rizzuto³, J. Andrew A. DeWoody⁴
¹Purdue university, West Lafayette, ²Purdue University, ³Texas A&M University, College Station, ⁴Purdue University, West Lafayette, IN
**Do plants increase microbial activity? Using BONCAT-FACS to measure microbial activity across the root-soil resource gradient (Poster board 37)**

Jennifer Harris¹, Liana T. Burghardt², Regina Bledsoe³, Estelle Couradeau³, Sharifa Crandall³, Haneen Omari³

¹The Pennsylvania State University, University Park, PA, ²The Pennsylvania State University, State College, MINNESOTA, ³The Pennsylvania State University

**Tracing the Origins of Repletism and Identifying the Honeypot Ant Gut Microbiota (Poster board 38)**

Indira Sawh¹, Phillip Barden², Lily Khadempour³

¹Rutgers University, East Orange, New Jersey, ²New Jersey Institute of Technology, Newark, ³Rutgers University-Newark, Newark, NJ

**Susceptibility of common bottlenose dolphins to three variants of SARS-CoV-2 (Poster board 39)**

Helen Stone¹, Paul E. Turner²

¹Yale University, New Haven, ²Yale University, New Haven, CT

**Chromosome-level genome assembly of the Western black widow spider (Latrodectus hesperus) provides insight into arachnid sex chromosome evolution (Poster board 40)**

Hannah Waterman¹, Lindsay Miles², Robert Haney³, Jessica Garb³, Nadia Ayoub⁴, Trevor Krabbenhoft, Brian C. Verrelli⁵

¹University at Buffalo, BUFFALO, NY, ²University of Toronto Mississauga, Mississauga, ON, ³University of Massachusetts Lowell, Lowell, MA, ⁴Department of Biology, Washington and Lee University, Lexington, VA, ⁵Virginia Commonwealth University, Richmond, VA

**Co-evolutionary genetics and functional validation of partner quality genes in Ensifer meliloti (Poster board 41)**

Ivan Sosa-Marquez, UIUC, Urbana

**Early Detection of an Invasive New Zealand Freshwater Snail Using Environmental DNA (Poster board 42)**

Mae-Ling Kao¹, Anna Hunt², Joel Sharbrough³

¹New Mexico Institute of Mining and Technology, Socorro, ²New Mexico Institute of Mining and Technology, ³New Mexico Institute of Mining and Technology, Socorro, NM

**Transcription error rates in unicellular eukaryotes (Poster board 43)**

Lada Isakova¹, Stephan Baehr², Jean-Francois Gout³, Michael Lynch⁴

¹Arizona State University; ENS PSL, Tempe, ²Arizona State University, Tempe, ³Mississippi State University, ⁴Arizona State University
Adaptation of Lobelia spicata to soil microbial communities across the North American tallgrass prairie (Poster board 44)
Sydney K. Metternich, Illinois State University, Normal, IL

Fitness seascapes facilitate models of therapy resistance under time-varying selection (Poster board 45)
Eshan King¹, Julia Pelesko², Jeff Maltas³, Steph Owen⁴, Emily Dolson⁵, Jacob Scott³
¹Case Western Reserve University School of Medicine, Cleveland, ²Cleveland Clinic Lerner Research Institute, ³Cleveland Clinic, ⁴Cleveland Clinic Lerner Institute, Cleveland, ⁵Michigan State University, East Lansing, MI

Paramutations to the rescue? (Poster board 46)
WITHDRAWN
Puneeth Deraje¹, Matthew Osmond²
¹University of Toronto, Toronto, ²University of Toronto

The Macroevolution of a Smoke-induced Seed Germination Trait (Poster board 47)
Yanni Chen¹, Maribeth Latvis², Lora Perkins², A. Joshua Leffler², Matthew G. Johnson³
¹Texas Tech University, Lubbock, TX, ²South Dakota State University, ³Texas Tech University

Untangling the radiation of lizards (Pleurodonta) and the role of viviparity in driving species diversification (Poster board 48)
Laura R. Alencar¹, Saúl F Domínguez-Guerrero², Meaghan Gade³, Elizabeth Daniel⁴, Brooke L. Bodensteiner³, Josef C. Uyeda⁵, Martha Muñoz¹
¹Yale University, New Haven, CT, ²Yale University, New Haven, ³Yale University, ⁴Virginia Polytechnic Institute and State University, Blacksburg, ⁵Virginia Tech, Blacksburg, VA

Variation in selective signals within the American pika (Ochotona princeps) (Poster board 49)
Zach Farrand¹, Kurt Galbreath¹, Kate Teeter¹
¹Northern Michigan University

The Fitness Effects of Mutations Given a History of Adaptation (Poster board 50)
Kevin Bao, UW Madison - Genetics Department

The influence of demographic history and genetic architecture on complex phenotypes via runs of homozygosity (Poster board 51)
**Evolution of Type IIA Topoisomerases in Extremophilic Bacteria (Poster board 52)**

Alexa G. Gonzalez¹, Jeremy M. Brown², Allyn Schoeffler³

¹Louisiana State University, Metairie, LA, ²Louisiana State University, Baton Rouge, LA, ³Loyola University New Orleans

**Gene annotation of the insulin signaling pathway in model organisms (Poster board 53)**

Isabella Armstrong¹, Tara A. Pelletier²

¹Radford University, Falls Church, ²Radford University, Radford, VA

**Comparative functional analysis of KLK3/PSA in primates to reveal its natural and sexual selective pressures (Poster board 54)**

Emine F. F. Kahveci¹, Michael Jensen-Seaman²

¹Duquesne University, Pittsburgh, Pennsylvania, ²Duquesne University, Pittsburgh, PA

**Strong evidence for positive and negative correlational selection revealed by recreating ancestral variation (Poster board 55)**

Robin Waterman¹, Heather Sahli², Vanessa Koelling³, Keith Karoly⁴, Jeff Conner⁵

¹Michigan State University, Hickory Corners, ²Shippensburg University, ³Auburn University at Montgomery, Montgomery, ⁴Reed College, ⁵Kellogg Biological Station, Hickory Corners, MI

**Genomic Patterns of Homozygosity and Deleterious Alleles in Wild Rhesus Macaques (Poster board 56)**

Camille Steux¹, Zachary Szpiech¹

¹Penn State University

**Runs of homozygosity reveal extensive inbreeding among K’gari dingoes (Poster board 57)**

Ana Victoria Leon Apodaca¹, Manoharan Kumar², Gabriel Conroy², Steven Ogbourne², Kylie M. Cairns³, Sankar Subramanian⁴, Zachary Szpiech⁵

¹Pennsylvania State University, University Park, ²Geneology Research Centre, University of the Sunshine Coast, QLD, Australia, ³Evolution and Ecology Research Centre, School of BEES, University of New South Wales, NSW, Australia, ⁴University of the Sunshine Coast, Sippy Downs, QLD, Australia, ⁵Penn State University

**LoRaD: marginal likelihood from a single posterior sample (Poster board 58)**
Spatio-temporal dynamics of disease pressure driven by abiotic stressors and implications for space-for-time substitution modeling (Poster board 59)

Madeline Eppley¹, Kathleen E. Lotterhos²
¹Northeastern University, Boston, ²Northeastern University Marine Science Center, Nahant, MA

Local Adaptation of Male Reproductive Success in Drosophila melanogaster (Poster board 60)

Cameron Kendrick¹, Aneil Agrawal², Howard D. Rundle³
¹University of Ottawa, Ottawa, ²U of Toronto, Toronto, ON, ³University of Ottawa, Ottawa, ON

Characterizing environmental scaling of indirect genetic effects in Drosophila (Poster board 61)

Tristan L. Ducharme¹, Howard D. Rundle²
¹University of Ottawa, Etobicoke, ON, ²University of Ottawa, Ottawa, ON

Convergence and selection throughout the evolutionary history of visual opsins proteins in geckos (Poster board 62)

Natalie Allen¹, Tony Gamble²
¹Marquette University, Gainesville, ²Marquette University

Motherhood and field science: challenges, strategies, and supports for success (Poster board 63)

Tara A. Pelletier¹, Anja Whittington¹
¹Radford University, Radford, VA

The effects of assortative mating and environmental stress on the strength and magnitude of inbreeding and outbreeding depression in Lythrum salicaria populations across Easter North America. (Poster board 64)

Maria Jose Gomez Quijano¹, Robert I. Colautti²
¹Queen's University, Kingston, ²Queen's University, Kingston, Kingston, ON

Testing the association of ROH with non-disease phenotypes in dogs (Poster board 65)
The causes and consequences of transitions in life history strategy in a broadly distributed plant (Poster board 66)

Simon Innes¹, Nic Kooyers²
¹University of Louisiana, Lafayette, Lafayette, LA, ²University of Louisiana, Lafayette

Chemical attacks and the evolution of resistance in plants (Poster board 67)

Megan Brown¹, Andrea Case²
¹Kent State University, Kent, OH, ²Kent State University, Kent, Ohio

Anatomy of hybrid gars bridging a 105-million-year divergence and the limits of evolvability (Poster board 68)

WITHDRAWN

Chase D. Brownstein¹, Thomas Near²
¹Yale University, Stamford, Connecticut, ²Yale University, New Haven, CT

Investigating heritability of resistance gene copy number variation in glyphosate-resistant Amaranthus palmeri (Poster board 69)

Lisa Han¹, Kathryn F. Dungey², Sarah Yakimowski³
¹Queen's University, Kingston, ON, ²Queen's University, Kingston, ON, ³Queen's University (Kingston, ON, Canada), Kingston, Ontario

A new framework for efficiently sampling ancestral recombination graph (Poster board 70)

Yun Deng, UC Berkeley, Berkeley

Distribution and genetic diversity of Notropis volucellus and Notropis wickliffi (Leuciscidae: Pogonichthyinae) in the Mississippi River (Poster board 71)

Roberto V. Cucalón¹, Mark Davis², Joel Corush³, Robert Hrabik⁴, Konrad Schmidt⁵, John Lyons⁶, Milton Tan⁷
Genetic Variation Related to Thiamine Metabolism Among Great Lakes and Finger Lakes Lake Trout (Poster board 72)

Christopher A. Osborne¹, Dimitry Gorsky², Jacques Rinchard³, Brian Lantry⁴, Trevor Krabbenhoft⁵
¹University at Buffalo, Lockport, New York, ²U.S. Fish and Wildlife Service, ³SUNY Brockport, ⁴USGS Lake Ontario Biological Station, ⁵University at Buffalo, Buffalo, NY

Genome evolution of the crested gecko sex chromosomes (Poster board 73)

Shannon E. Keating¹, Brendan J. Pinto¹, Tony Gamble²
¹Marquette University, Milwaukee, WI, ²Marquette University

Mallard introductions to New Zealand result in extensive hybridization with endemic grey ducks (Poster board 74)

Joshua Brown¹, Jennifer Sheppard², Jonathon Mohi³, Philip Lavretsky¹
¹University of Texas at El Paso, ²Simax Ecology, Tauranga, Bay of Plenty, NZ, New Zealand, ³University of Texas El Paso

Microgeographic adaptation of yeast communities in apple orchards (Poster board 75)

Swapna K. Subramanian, University of Connecticut, Mansfield Center, CT

Does phenotypic plasticity facilitate population persistence? Evaluating the buying time hypothesis (Poster board 76)

Emily Harmon¹, David Pfennig²
¹UNC Chapel Hill, Burlington, NC, ²University of North Carolina, Chapel Hill, NC

A Y-linked duplication of anti-Mullerian hormone is necessary for testis development in threespine stickleback (Gasterosteus aculeatus) (Poster board 77)

Matthew J. Treaster¹, Michael A. White¹
¹University of Georgia, Athens, GA

Evolutionary capacitance driven by HSP90 during the de novo evolution of multicellularity (Poster board 78)

Dung Lac¹, Vivian Cheng², Kai Tong³, Kristopher Montrose⁴, Anthony Burnetti², G. Ozan Bozdag¹, Juha Saarikangas⁴, William C. Ratcliff²
¹Georgia Institute of Technology, Atlanta, ²Georgia Institute of Technology, ³Georgia Institute of Technology, Atlanta, GA, ⁴University of Helsinki
Effects of mitochondrial replacement in Tigriopus californicus (Poster board 79)
Jacob Denova¹, Ben A. Flanagan², Murad Jah³, Suzanne Edmands
¹University of Southern California, Los Angeles, ²University of Southern California, LOS ANGELES, CA, ³University of Southern California, Los Angeles

A comparative analysis of the chloroplast genomes of two southeastern azaleas, Rhododendron cumberlandense and R. prunifolium (Ericaceae). (Poster board 80)
Vanessa Koelling¹, Michael McKain²
¹Auburn University at Montgomery, Montgomery, ²The University of Alabama, Tuscaloosa

Using UCE-based landmarking to explore patterns of genomic disparity in tetrapods (Poster board 81)
Jeffrey W. Streicher¹, Anjali Goswami², Ashwini V. Mohan³
¹Natural History Museum, London, United Kingdom, ²Department of Life Sciences, The Natural History Museum, London SW7 5DB, UK, ³TU Braunschweig, Braunschweig, Lower Saxony, Germany

The role of carnivory in shaping carnivoran genome evolution (Poster board 82)
Matthew Pollard¹, Emily Puckett¹
¹University of Memphis, Memphis, TN

Imprints of the past: relating demographic histories to variation in deleterious load and runs of homozygosity within three species of bears (Poster board 83)
Heather Clendenin¹, Emily Puckett¹
¹University of Memphis, Memphis, TN

The Influence of Reproductive Mode on Genome Evolution in Oscheius Nematodes (Poster board 84)
Tori Eggers, Florida International University, Tuscaloosa

Mutation accumulation maintains outcrossing in the face of selfing invasion (Poster board 85)
Michelle McCauley¹, Levi Morran²
¹Emory University, Atlanta, GA, ²Emory University, Atlanta
PhyloHerb: A high-throughput phylogenomic pipeline for processing genome-skimming data (Poster board 86)
Liming Cai¹, Hongrui Zhang², Charles C. Davis³
¹UT Austin, Austin, MA, ²Texas A&M, ³Harvard University

Exploring the Effects of Urban Pollution on an Intertidal Marine Invertebrate (Poster board 87)
WITHDRAWN
Maddie L. Armstrong¹, Rachael Bay²
¹University of California Davis, Department of Evolution and Ecology, Davis, CA, ²University of California, Davis

Sex Chromosomes in the Tribe Cyprichromini (Teleostei: Cichlidae) of Lake Tanganyika (Poster board 88)
Kristen Behrens¹, Stephan Koblmüller², Thomas Kocher¹
¹University of Maryland, ²University of Graz

The complete genotype-phenotype map of an ancestral regulatory module (Poster board 89)
Santiago Herrera-Alvarez¹, Jaeda Patton², Joseph Thornton²
¹University of Chicago, Chicago, ²University of Chicago

Is deliberate mistranslation of in Streptomyces adaptive or not? (Poster board 90)
Yuxuan Chen, University of Michigan, Ann Arbor

Batch effects in population genomic studies with low-coverage whole genome sequencing data: Causes, detection, and mitigation (Poster board 91)
R. Nicolas Lou¹, Nina O. Therkildsen²
¹Cornell University, Ithaca, NY, ²Cornell University

Facilitation & Phylogenetic Structure of Montane Plant Communities (Poster board 92)
Leah Veldhuisen¹, Brian Enquist², Katrina M. Dlugosh³
¹University of Arizona, Tucson, Colorado, ²University of Arizona, ³University of Arizona, Tucson, AZ
Prezygotic isolation and speciation in a Neotropical lizard through a sensory drive lens (Poster board 93)
Janelle Talavera¹, Thomas H. Powell², Lindsey Swierk³
¹Binghamton University - SUNY, Binghamton, ²Binghamton University (SUNY), Binghamton, NY, ³Binghamton University

Does sex determination architecture differ between a turtle with sex chromosomes and a turtle without them? A network modeling approach. (Poster board 94)
Thea Gessler¹, Nicole Valenzuela¹
¹Iowa State University, AMES, IA

Differentially expressed genes and genetic adaptation to high altitudes in the Tibetan Partridge (Poster board 95)
Catalina C. Palacios¹, Pengcheng Wang², Nan Wang³, Megan Brown¹, Sangeet Lamichhaney¹
¹Kent State University, Kent, OH, ²Chinese Academy of Sciences, ³Beijing Forestry University

A proposal to contrast the landscape genetics of brown and American black bears across Southeast Alaska (Poster board 96)
Phil Douchinsky¹, Emily Puckett², Anthony Crupi³
¹University of Memphis, Memphis, ²University of Memphis, Memphis, TN, ³Alaska Department of Fish and Game, Juneau, Alaska

Changes in genetic parallelism between independently evolving populations (Poster board 97)
Caroline Turner¹, Eric Libby², Vaughn S. Cooper³
¹Loyola University Chicago, Chicago, IL, ²Umeå University, ³University of Pittsburgh

Exploring the effects of climate change on an important speciation complex (Poster board 98)
WITHDRAWN
Jordyn Condrate¹, Thomas H. Powell¹
¹Binghamton University (SUNY), Binghamton, NY

Environment exposure, but not maternal lineage, shapes the gut microbiome in two lineages of lizards (Poster board 99)
Braulio Assis¹, Terrence S. Bell², Heather Engler¹, William King¹
¹Penn State, ²The Pennsylvania State University, University Park, PA
Mutualism Among Unequal Partners (Poster board 100)
Peter Bednekoff, Eastern Michigan University, Ypsilanti

A sex chromosome transition in banded geckos (Coleonyx, Eublepharidae, Gekkota) (Poster board 101)
tony gamble¹, Shannon E. Keating², Eli Greenbaum³
¹marquette university, milwaukee, ²Marquette University, Milwaukee, WI, ³University of Texas at El Paso, El Paso, Texas

Biogeography and systematics in the leaf-toed geckos (Phyllodactylus) (Poster board 102)
Kathryn Sullivan¹, Tony Gamble²
¹Marquette University, Milwaukee

A model for the evolution of gene regulatory networks governing social traits (Poster board 103)
Elliott Greene¹, Jeremy Van Cleve²
¹University of Kentucky, Lexington, ²University of Kentucky, Lexington, KY

Mitochondrial function under heat stress in diploid vs. polyploid wheat (Poster board 104)
Sinai Grijalva¹, Joel Sharbrough², Anna Hunt³
¹New Mexico Institute of Mining and Technology, Socorro, ²New Mexico Institute of Mining and Technology, Socorro, NM, ³New Mexico Institute of Mining and Technology

Molecular and physiological consequences of warming and habitat loss in a coral reef fish (Poster board 105)
Ally Swank¹, Moises A. Bernal²
¹Auburn University, Auburn, ²Auburn University, Auburn, AL

Genotype-by-environment interaction (GxE) in gene regulatory networks in Brachypodium distachyon under soil water deficit (Poster board 106)
Jie Yun¹, David Des Marais²
¹MIT, Cambridge, MA, ²Massachusetts Institute of Technology, Cambridge

Selection favors greater predator-induced behavioral plasticity in prey activity (Poster board 107)
Wade Boys, University of Arkansas, Department of Biological Sciences, Fayetteville
Designing Custom Genetic Loci to Improve the Phylogeny of Dampiera (Goodeniaceae) (Poster board 108)

Pike Li¹, Nola Fanestil², Jacob Lynn-Palevsky², Rachel Jabaily², Kelly Shepherd³
¹Colorado College, Colorado Springs, Colorado, ²Colorado College, ³Western Australian Herbarium,

Cophylogenetic event reconciliation are affected by species tree quality (Poster board 109)

Julia Zheng, Michigan State University, East Lansing, Michigan

Pink Genome, Blue Genome: Do traits have different genetic architectures in males and females? (Poster board 110)

Mia Miyagi¹, Sarah Richardson²
¹Harvard University, Cambridge, MA, ²Harvard University

Saturday poster session (Undergraduate diversity at Evolution posters)

📅 Sat, June 25
⏰ 5:30 PM - 8:00 PM
📍 Grand Ballroom BC
📂 Poster

Presentations

The effects of spontaneous mutations on sexual performance in budding yeast. (Poster board 1)

Tara Disanayaka¹, Nathaniel Sharp²
¹Sharp Lab, University of Wisconsin-Madison, Madison, ²University of Wisconsin-Madison, Madison, WI

Cuticular hydrocarbons, male-like females and fertility in two hybridizing field crickets (Poster board 2)

Eddy Lee¹, Jaeun Lee², Nevyn Neal³, Luana S. Maroja⁴, Nathan Cook³
¹Williams College, Williamstown, ²Williams College, 01267, ³Williams College, ⁴Williams College, Williamstown, Massachusetts

Investigating fitness consequences due to insect herbivory in native and non-native hostplants (Poster board 3)
Tyler Pereira¹, Anna Parker¹, Joel G. Kingsolver²
¹University of North Carolina - Chapel Hill, ²University of North Carolina, Chapel Hill, NC

The effects of nicotine and hostplant on growth, consumption, and frass production in the tobacco hornworm (Poster board 4)
Madison Milotte¹, Anna Parker¹, Joel G. Kingsolver²
¹University of North Carolina - Chapel Hill, ²University of North Carolina, Chapel Hill, NC

Investigating the Transcriptomic Responses to Heat Stress and Starvation in the Economically Important Red Abalone Haliotis rufescens (Poster board 5)
Hanna Franklin, Sacramento State, Citrus Heights

Automatically extracted vocalization data by machine learning model corroborate evidence that two subspecies of the White-crowned Sparrow have divergent songs (Poster board 6)
Jiaying Yang¹, Kaiya Provost², Bryan C. Carstens³
¹The Ohio State University, Columbus, Ohio, ²The Ohio State University, Columbus, OH, ³The Ohio State University, Columbus, Ohio

Do female field crickets with a male-like cuticular hydrocarbon composition mate with more males in the wild? (Poster board 7)
Jaeun Lee¹, Eddy Lee², Luana S. Maroja³, Jo Kim⁴
¹Williams College, ⁰1267, ²Williams College, Williamstown, ³Williams College, Williamstown, Massachusetts, ⁴Williams College

How Diet, Exercise and Sex Influence Methylation Patterns in the Companion Dog. (Poster board 8)
Jazmine Harvey¹, Brianah M. McCoy², Layla Brassington², Noah Synder-Mackler², Kelly Jin³
¹CSUS/ASU, ²Arizona State University, ³Allen Institute

Fitness of XXY Drosophila melanogaster (Poster board 9)
Elizabeth Makovec¹, Kayla Janke¹, Caitlin Kestell², Nathaniel Sharp³
¹University of Wisconsin-Madison, Madison, ²UW-Madison Alum, ³University of Wisconsin-Madison, Madison, WI

The Demographic, Environmental, and Genetic Forces that Drive Microfilariae Infections in the Florida Scrub-Jay (Poster board 10)
Kristin Hardy, University of Rochester, Rochester, NY
To Smell or Not to Smell: Measuring Evolutionary Pressures in Chemosensory Genes and Morphology of Snakes with Divergent Ecologies (Poster board 11)

Mason Petty¹, Matteo Fabbri², Bhart-Anjan Bhullar³, Laurel Yohe⁴

¹University of North Carolina Charlotte, Charlotte, ²Field Museum of Natural History, ³Yale University, ⁴UNC Charlotte, Charlotte, CT

Experimental evidence suggests that tadpole transport on the dorsum affects warning signal effectiveness in poison frogs (Poster board 12)

Maria Paula Toro, Universidad del Quindio, Armenia, Colombia

ASN Grad social

📅 Sat, June 25
⏰ 7:30 PM - 9:00 PM
📍 Room 25ABC
👥 Social event

Description

The ASN Graduate Council is hosting a student-faculty mixer for members of the American Society of Naturalists. The goal of this mixer is to create a venue for academic discussion, particularly between graduate students, postdocs, and senior researchers. One free drink ticket will be provided to each ASN member as part of their registration package; refreshments will be served (cash bar).

UDE social event

📅 Sat, June 25
⏰ 7:30 PM - 9:00 PM
📍 Room 25ABC
👥 Social event

Description

All undergraduates are invited to join the Undergraduate Diversity at Evolution organizers for an undergraduate student social. The event will include food and beverages and give you an opportunity to talk with one another and previous UDE participants. All undergraduates are welcome and you do not need to register.
ASN Presidential Address - Dr. Judith Bronstein

Sun, June 26
8:00 AM - 9:20 AM
Grand Ballroom A
Plenary

Info

Talk type:
Plenary/Award

Title:
Dissolving Boundaries: Towards Unification in the Study of Species Interactions

Author

Judie Bronstein
University of Arizona

Adaptation III

Sun, June 26
9:30 AM - 10:45 AM
Room 16
Regular

Presentations

9:30 AM
Genetic adaptation in high gene flow systems: coupling RNA-Seq and common gardens to understand marine range expansions

Andy Lee¹, Benjamin Daniel², Jean Davidson³, Rob Toonen⁴, Crow White², Mark Christie⁵

¹Purdue University, West Lafayette, ²California Polytechnic State
Targeted capture sequencing reveals shared patterns of variation in hydrogen sulfide detoxification genes in extremophile fish P. mexicana

Kara Ryan¹, Ryan Greenway¹, Jake Landers¹, Lenin Arias-Rodriguez², Michael Tobler³, Joanna Kelley¹

¹Washington State University, ²Universidad Juárez Autónoma de Tabasco, Villahermosa, Tabasco, México, ³Kansas State University

Historical demography and population genomics of adaptive radiations in Great Lakes salmonids

Nate Backenstose¹, Dan MacGuigan², Moises A. Bernal³, Wendylee Stott⁴, Daniel L. Yule⁵, Christopher A. Osborne⁶, Trevor Krabbenhoft

¹University at Buffalo, Buffalo, New York, ²University at Buffalo, BUFFALO, NY, ³Auburn University, Auburn, AL, ⁴Ministry of Northern Development, Mines, Natural Resources and Forestry, ⁵USGS Great Lakes Science Center, ⁶University at Buffalo, Lockport, New York

Detection of structural variants among inland annual and coastal perennial ecotypes of the yellow monkey flower, Mimulus guttatus

Leslie Kollar¹, David B. Lowry², Chad Niederhuth³, Sunil Kenchanmane Raju³

¹Michigan State University, East Lansing, ²Michigan State University, East Lansing, MI, ³Michigan State University

The genetic, developmental, and physiological mechanisms of local adaption to oceanic salt spray in Mimulus guttatus

David B. Lowry, Michigan State University, East Lansing, MI
Genetic variation is central to evolutionary change, and has always featured prominently in attempts to understand biological diversity. Our understanding of its provenance, maintenance and impact have advanced substantially in the past few decades, and this symposium aims to integrate these advances. Focusing on the importance of new mutations and standing genetic variation during adaptation, we will aim to bridge across molecular and ecological perspectives on how mutational input shapes evolution in natural populations. We will address questions such as: what is the relative role of new mutations, standing genetic variation, and selection, during adaptation? What is the impact of mutation rate and bias? What can we say about these effects in natural populations and their ability to survive the coming decades?

**Presentations**

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<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>9:30 AM</td>
<td>Re-reviewing adaptive genetic variation</td>
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<td>9:59 AM</td>
<td>Deepa Agashe, National Centre for Biological Sciences, Bangalore, Karnataka,</td>
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<td>India</td>
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<td>10:00 AM</td>
<td>Introduction biases: theory, evidence, and broader implications</td>
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<td>10:29 AM</td>
<td>Bryan L. Gitschlag¹, Alejandro V. Cano², Joshua L. Payne², David M. McCandlish³, Arlin Stoltzfus⁴</td>
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<td>¹Simons Center for Quantitative Biology, Cold Spring Harbor Laboratory, Cold</td>
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<td>Spring Harbor, NY, USA, ²Swiss Institute of Bioinformatics, Lausanne, Switzerland, ³</td>
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<td>Cold Spring Harbor Laboratory, ⁴Office of Data and Informatics, NIST, Gaithersburg</td>
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<td>10:30 AM</td>
<td>Salt stress alters the spectrum of de novo mutation available to selection</td>
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<td>10:44 AM</td>
<td>during experimental adaptation of Chlamydomonas reinhardtii</td>
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<td>Ahmed R. Hasan¹, Josianne Lachapelle¹, Roman Potjewyd², Scott Ford², Sara</td>
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<td>El-Shawa², Rob W. Ness²</td>
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<td>¹University of Toronto, Toronto, ON, ²University of Toronto</td>
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Experimental Evolution II
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<th>Time</th>
<th>Presentation</th>
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<tr>
<td>9:30 AM</td>
<td><strong>Experimental evolution of macroscopic multicellularity</strong></td>
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<td><strong>G. Ozan Bozdag</strong>&lt;sup&gt;1&lt;/sup&gt;, William C. Ratcliff&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;*Georgia Institute of Technology, Atlanta,  &lt;sup&gt;2&lt;/sup&gt;*Georgia Institute of Technology</td>
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<td>9:45 AM</td>
<td><strong>Evolution of novel cellular differentiation in a multicellular long term evolution experiment (MuLTEE)</strong></td>
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<td><strong>Kai Tong</strong>&lt;sup&gt;1&lt;/sup&gt;, Juha Saarikangas&lt;sup&gt;2&lt;/sup&gt;, William C. Ratcliff&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;*Georgia Institute of Technology, Atlanta,  &lt;sup&gt;2&lt;/sup&gt;*University of Helsinki,  &lt;sup&gt;3&lt;/sup&gt;*Georgia Institute of Technology</td>
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<td>10:00 AM</td>
<td><strong>Adaptation of Escherichia coli hypermutators to a novel environment</strong></td>
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<td><strong>Wei-Chin Ho</strong>&lt;sup&gt;1&lt;/sup&gt;, Megan G. Behringer&lt;sup&gt;2&lt;/sup&gt;, Samuel F. Miller&lt;sup&gt;3&lt;/sup&gt;, Lily King&lt;sup&gt;3&lt;/sup&gt;, Jadon Gonzales&lt;sup&gt;3&lt;/sup&gt;, Amber Nguyen&lt;sup&gt;3&lt;/sup&gt;, Meriem Allahwerdy&lt;sup&gt;3&lt;/sup&gt;, Gwyneth F. Boyer&lt;sup&gt;3&lt;/sup&gt;, Michael Lynch&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;*Arizona State University, Tempe, AZ,  &lt;sup&gt;2&lt;/sup&gt;*Vanderbilt University, Nashville, TN,  &lt;sup&gt;3&lt;/sup&gt;*Arizona State University</td>
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<td>10:15 AM</td>
<td><strong>Mutation-transcription tango: are mutations more common in regions of high or low expression?</strong></td>
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<td><strong>Sarah Schaack</strong>, Reed College, Portland, OR</td>
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<td>10:30 AM</td>
<td><strong>Complex Ecotype Dynamics Evolve in Response to Fluctuating Resources</strong></td>
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<td><strong>Megan G. Behringer</strong>&lt;sup&gt;1&lt;/sup&gt;, Wei-Chin Ho&lt;sup&gt;2&lt;/sup&gt;, Carl J. Stone&lt;sup&gt;1&lt;/sup&gt;, Michael Lynch&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;*Vanderbilt University, Nashville, TN,  &lt;sup&gt;2&lt;/sup&gt;*Arizona State University, Tempe, AZ,  &lt;sup&gt;3&lt;/sup&gt;*Arizona State University</td>
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**Description**

**Organizers:** Susana Wadgymar, Rich Kliman, and Cathy Rushworth

Field work is a critical part of many biologists’ lives. It serves an entry point to a career in science, and it provides vital data for dissertations and funded projects. However, field work also presents physical, psychological, and emotional safety hazards for many, especially scientists from historically excluded groups. In the first ever tri-society Diversity Symposium, we discuss experiences in the field, colonialism and field work, and tools for creating safer, more inclusive, and positive field experiences for all.

**Presentations**

9:30 AM

9:44 AM

The fieldwork that we envision: A future of equitable field biology and reciprocity with the local communities

Valeria Ramirez Castañeda¹, Erin P. Westeen², Jeffrey Frederick³, Sina Amini⁴, Daniel Wait⁵, Anang Achmadi⁶, Moises A. Bernal⁷, Rafe Brown⁸, ROSA A. JIMENEZ⁹, Roberto Márquez¹⁰, Juan L. Parra¹¹, Santiago R. Ron¹², Noviar Andayani¹³, Evy Arida¹⁴, Umilaela Arifin¹⁵, Elisa Bonaccurso¹⁶, Marites Bonachita Sanguilai¹⁷, Jing Che¹⁸, Frank Peter Condori¹⁹, Diny Hartiningtias²⁰, Anne E Hiller²¹, Djoko Iskandar²², Khelifa²³, José G Martínez-Fonseca²⁴, Joshua Peñalba²⁵, Lina Pinto-García²⁶, Onja Razafindratsima⁴, Sara Souza⁴, Jatna Supriatna²⁷, Jimmy A. McGuire², Rauri C. Bowie²⁸, Carla Cicero⁴, Rebecca D. Tarvin⁴

¹University of California Berkeley, Berkeley, ²University of California, Berkeley, ³University of California, Berkeley, ⁴University of California Berkeley, ⁵University de California Berkeley, ⁶Museum Zoologicum Bogoriense, Research Center for Biology, ⁷Auburn University, Auburn, AL, ⁸Biodiversity Institute and Department of Ecology and Evolutionary Biology, University of Kansas, ⁹University of California, Berkeley - Universidad de San Carlos de Guatemala, El Sobrante, CA, ¹⁰University of Michigan, ANN ARBOR, ¹¹Pontificia Universidad Católica del Ecuador, Quito, Pichincha, Ecuador, ¹²Universitas Indonesia, ¹³Museum Zoologicum Bogorense, ¹⁴University of
The colonial legacy of herbarium collections
Daniel Park, Purdue University, West Lafayette

Safely navigating field work as Black Biologist
Alex Troutman, Georgia Southern University, Austell

Disabled in the field: navigating fieldwork as a disabled scientist
Kelsey J. Byers, John Innes Centre, Norwich, Norfolk, United Kingdom

Intersectionality and Safety in International Conservation Fieldwork
Gabriela Fleury, University of Wisconsin-Madison, Madison

Gene Expression II
Sun, June 26
9:30 AM - 10:45 AM
Room 19
Regular

Presentations

Marine heatwaves lead to increases in aerobic demand and changes to gene expression in the pinfish (Lagodon rhomboides)
Katie M. Eaton, Adam Hallaj, Jim Stoeckel, Moises A. Bernal
Department of Biological Sciences, Auburn University, Auburn, AL.
 Mate choice in the brain: Species differ in how male traits turn on gene expression in female brains

Janette W. Boughman\textsuperscript{1}, Jason Keagy\textsuperscript{2}, Hans Hofmann\textsuperscript{3}
\textsuperscript{1}Michigan State University, East Lansing, MI, \textsuperscript{2}Penn State University, \textsuperscript{3}University of Texas, Austin

Genotype-by-environment interaction (GxE) in gene regulatory networks in Brachypodium distachyon under soil water deficit

Jie Yun\textsuperscript{1}, David Des Marais\textsuperscript{2}
\textsuperscript{1}MIT, Cambridge, MA, \textsuperscript{2}Massachusetts Institute of Technology, Cambridge

Insight into the evolutionary origins of snake venom gene regulatory architecture

Blair Perry\textsuperscript{1}, Siddharth Gopalan\textsuperscript{2}, Giulia Pasquesi\textsuperscript{3}, Drew R. Schield\textsuperscript{4}, Aundrea Westfall\textsuperscript{5}, Cara Smith\textsuperscript{6}, Ivan Koludarov\textsuperscript{7}, Paul Chippindale\textsuperscript{5}, Mark Pellegrino\textsuperscript{5}, Edward Chuong\textsuperscript{3}, Stephen Mackessy\textsuperscript{6}, Todd Castoe\textsuperscript{5}
\textsuperscript{1}Washington State University, Pullman, WA, \textsuperscript{2}University of Texas, Arlington, Arlington, TX, \textsuperscript{3}University of Colorado Boulder, \textsuperscript{4}University of Colorado, \textsuperscript{5}University of Texas, Arlington, \textsuperscript{6}University of Northern Colorado, \textsuperscript{7}Justus Leibig University

Gene duplication and the evolution of aphid wing dimorphisms

Omid Saleh Ziabari\textsuperscript{1}, Jenn Brisson\textsuperscript{1}
\textsuperscript{1}University of Rochester, Rochester, NY

Hybridization I
### Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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| 9:30 AM    | The genomics and metabolomics of hybridization in the common and showy milkweeds (Asclepias) | Carrie Olson-Manning¹, Sydney Kreutzmann², Steven Matzner²  
¹Augustana University, SD, Sioux Falls, ²Augustana University |
| 9:45 AM    | Genomic patterns of post-glacial secondary contact and mosaic hybridization in the Johnny Darter (Etheostoma nigrum) species complex | Dan MacGuigan¹, Pia Franziska Schwarz², Oliver Orr³, Thomas Near⁴, Trevor Krabbenhoft  
¹University at Buffalo, BUFFALO, NY, ²University at Buffalo, State University of New York, ³Yale University, ⁴Yale University, New Haven, CT |
| 10:15 AM   | Baseline expectations for the high variability of outcomes in replicate hybrid zones | Eryn McFarlane¹, Josh Jahner², Alex Buerkle¹, Elizabeth Mandeville³  
¹University of Wyoming, ²University of Wyoming, NV, ³University of Guelph, Guelph, Ontario |
| 10:30 AM   | Hybridization as a diversification mechanism in Penstemon            | Benjamin W. Stone¹, Carrie Wessinger²  
¹University of South Carolina, ²University of South Carolina, Columbia, SC |

### Phenotypic Plasticity I

- **Sun, June 26**
- **9:30 AM - 10:45 AM**
- **Room 15**
- **Regular**

### Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>“Physiological response to temperature stress in Drosophila melanogaster and D. pseudoobscura”</td>
</tr>
</tbody>
</table>
Range expansion impacts the evolvability of plastic generalism in coarse-grained landscapes

Caitlin M. Miller¹, Jeremy Draghi²
¹Virginia Tech, Blacksburg, VA, ²Virginia Tech, Blacksburg, VIRGINIA

Three phenotypes, one genotype: How variable gene expression leads to predator-induced phenotypic plasticity in a Neotropical tadpole

Justin Touchon¹, Jared Freedman², Megan Saari², Victoria Armitage², Sedona Ryan²
¹Vassar College, Poughkeepsie, ²Vassar College

Evolution of phenotypic plasticity in wild populations of the butterfly Junonia coenia

Noah Brady¹, Robert Reed², Karin R. van der Burg³
¹Cornell University, Ithaca, ²Cornell University, Ithaca, New York, ³Cornell University, Ithaca, NY

Some don’t like it hot: meiotic failure at high temperatures reduces intraspecific mating

Caiti Smukowski Heil¹, Lauren M. Bailey², Mili Jimenez³
¹North Carolina State University, Raleigh, NC, ²NC State University, Clayton, NC, ³NC State University
9:44 AM  Investigating the Impact of Sequence Evolution Model Complexity on Gene Tree Discordance  
Benjamin S. Toups¹, Jeremy M. Brown¹  
¹Louisiana State University, Baton Rouge, LA

9:45 AM  Evolution of mycorrhizal symbiosis in Inocybaceae lineage of fungi  
Faheema K. Khan, Uppsala University, Uppsala, Upplands, Sweden

9:59 AM  Posterior predictive tests have surprising behavior, but reveal important idiosyncratic patterns of molecular evolution  
Jeremy M. Brown¹, Luiza Guimarães Fabreti², Kylie Domangue³, Lyndon Coghill⁴, Robert Thomson⁵, Sebastian Höhna⁶  
¹Louisiana State University, Baton Rouge, LA, ²LMU - Munich, ³Louisiana State University, ⁴University of Missouri, ⁵University of Hawaii, Honolulu, Hawaii, ⁶LMU Munich

10:00 AM  A new framework for efficiently sampling ancestral recombination graph  
Yun Deng, UC Berkeley, Berkeley

10:00 AM  Exploring the Drivers of Phylogenomic Uncertainty in the Hyper-diverse Neotropical Snake Family Dipsadidae  
Juan Ramirez Ramirez¹, Tod W. Reeder²  
¹San Diego State University/University of California, Riverside, San Diego, California, ²San Diego State University, San Diego, CA

Coffee break
📅 Sun, June 26  
⏰ 10:45 AM - 11:15 AM  
📍 Grand Ballroom BC  
気軽に参加を！

Adaptation IV
📅 Sun, June 26
## Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15 AM</td>
<td><strong>Insect biological control agent adapts timing of winter dormancy to latitude during range expansion</strong></td>
<td>Eliza Clark¹, Ellyn Bitume², Amanda R. Stahlke³, Dan Bean⁴, Paul A. Hohenlohe⁵, Ruth A. Hufbauer⁶</td>
</tr>
<tr>
<td>11:30 AM</td>
<td><strong>240 million years of adaptive evolution in squamate voltage-gated sodium channels</strong></td>
<td>Kerry L. Gendreau¹, Angela Hornsby¹, Josef C. Uyeda², Joel McGlothlin²</td>
</tr>
<tr>
<td>11:45 AM</td>
<td><strong>Temporal variation in the form and magnitude of natural selection on an extended phenotype: contributions of parasitism and predation to gall size</strong></td>
<td>Glen R. Hood¹, Sarah Black², Mike Sergeant², Scott P. Egan³, Mattheau S. Comerford³</td>
</tr>
<tr>
<td>12:00 PM</td>
<td><strong>Spatially and temporally varying selection in two sympatric Mimulus species</strong></td>
<td>Diana Tataru¹, Kathleen Ferris²</td>
</tr>
<tr>
<td>12:15 PM</td>
<td><strong>Tri-trophic effects on ecological speciation in the goldenrod gall fly system</strong></td>
<td>Pheobe M. Deneen¹, Thomas H. Powell²</td>
</tr>
</tbody>
</table>

¹Colorado State University, Fort Collins, CO, ²USDA Forest Service, ³University of Idaho, ⁴Colorado Dept. of Agriculture Insectary, ⁵University of Idaho, Moscow, ID, ⁶Colorado State University
 ASN Vice-Presidential Symposium: Re-viewing adaptive genetic variation II

Sun, June 26
11:15 AM - 12:30 PM
Grand Ballroom A
Symposium

Description

Organizer: Dr. Deepa Agashe
Genetic variation is central to evolutionary change, and has always featured prominently in attempts to understand biological diversity. Our understanding of its provenance, maintenance and impact have advanced substantially in the past few decades, and this symposium aims to integrate these advances. Focusing on the importance of new mutations and standing genetic variation during adaptation, we will aim to bridge across molecular and ecological perspectives on how mutational input shapes evolution in natural populations. We will address questions such as: what is the relative role of new mutations, standing genetic variation, and selection, during adaptation? What is the impact of mutation rate and bias? What can we say about these effects in natural populations and their ability to survive the coming decades?

Presentations

11:15 AM
Evolving the mutation spectrum
Lindi M. Wahl, Western University, London

11:44 AM
How does mutation contribute to phenotypic variation and how may this affect population adaptation?
Katrina McGuigan, The University of Queensland, Brisbane, Australia

12:15 PM
Evolution as a smart system: The human malaria resistant hemoglobin S mutation originates de novo more frequently where it is of adaptive significance
Adi Livnat1, Daniel Melamed2, Evgeni Bolotin2, Yuval Nov2, Assaf Malik2, Michael B. Yakass3, Revital Shemer4, Edem K. Hiadzi3, Karl Skorecki5
1University of Haifa, Haifa, Israel, 2University of Haifa Israel, 3Lister
# Experimental Evolution III

**Location:** Hospital & Fertility Centre, Accra, Ghana, Technion - Israel Institute of Technology, Haifa, Israel, Bar-Ilan University, Safed, Israel

**Date:** Sun, June 26

**Time:** 11:15 AM - 12:30 PM

## Presentations

<table>
<thead>
<tr>
<th>Time</th>
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<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15 AM</td>
<td>The experimental evolution of pesticide resistance trades off with insect immune responses</td>
<td>Ann Tate(^1), Stephanie Birnbaum(^2), Nora Schulz(^3)^&lt;sup&gt;\footnote{Vanderbilt University, Nashville, TN, Vanderbilt University, Nashville, Tennessee}^&lt;sup&gt;5\footnote{Vanderbilt University, Nashville, Tennessee}&lt;sup&gt;</td>
</tr>
<tr>
<td>11:29 AM</td>
<td></td>
<td>(^1)Vanderbilt University, Nashville, TN, (^2)Vanderbilt University, Nashville, Tennessee&lt;sup&gt;5\footnote{Vanderbilt University, Nashville, Tennessee}&lt;sup&gt;</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>The genomic implications of sexual size dimorphism reversal in a long-term artificial selection experiment on Drosophila melanogaster</td>
<td>Tyler Audet, McMaster University, Hamilton^&lt;sup&gt;1\footnote{Ecology Evolution &amp; Behavior, University of Minnesota, Minneapolis, MN, University of Minnesota, St. Paul}&lt;sup&gt;</td>
</tr>
<tr>
<td>11:44 AM</td>
<td>Looking for leviathans: free riding on a multicellular yeast</td>
<td>Rodrigo Zorrilla Gonzalez(^1), Michael Travisano(^2)^&lt;sup&gt;1\footnote{Ecology Evolution &amp; Behavior, University of Minnesota, Minneapolis, MN, University of Minnesota, St. Paul}&lt;sup&gt;</td>
</tr>
<tr>
<td>11:45 AM</td>
<td></td>
<td>(^1)Ecology Evolution &amp; Behavior, University of Minnesota, Minneapolis, MN, (^2)University of Minnesota, St. Paul&lt;sup&gt;</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Loss-of-heterozygosity facilitates the evolution of simple multicellularity</td>
<td>Beatriz Baselga Cervera(^1), Michael Travisano(^2)^&lt;sup&gt;1\footnote{University of Minnesota, Saint Paul, Minnesota, University of Minnesota, St. Paul}&lt;sup&gt;</td>
</tr>
<tr>
<td>12:14 PM</td>
<td></td>
<td>(^1)University of Minnesota, Saint Paul, Minnesota, (^2)University of Minnesota, St. Paul&lt;sup&gt;</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Pleiotropic effects of adaptation to metals in yeast</td>
<td>Anna Bazzicalupo(^1), Penelope Kahn(^1), Eully Ao(^1), Sarah (Sally) Otto(^2)^&lt;sup&gt;1\footnote{University of British Columbia, UBC, Vancouver, BC}&lt;sup&gt;</td>
</tr>
<tr>
<td>12:29 PM</td>
<td></td>
<td>(^1)University of British Columbia, (^2)UBC, Vancouver, BC&lt;sup&gt;</td>
</tr>
</tbody>
</table>

\(\footnote{1}\)
Field Safety and Ethics in Evolution and Ecology: Experiences and Tools for Inclusive Practices II

Sun, June 26
11:15 AM - 12:30 PM
Room 26BC
Symposium

Description

Organizers: Susana Wadgymar, Rich Kliman, and Cathy Rushworth

Field work is a critical part of many biologists' lives. It serves as an entry point to a career in science, and it provides vital data for dissertations and funded projects. However, field work also presents physical, psychological, and emotional safety hazards for many, especially scientists from historically excluded groups. In the first ever tri-society Diversity Symposium, we discuss experiences in the field, colonialism and field work, and tools for creating safer, more inclusive, and positive field experiences for all.

Presentations

11:15 AM
Building collaborations, and promoting research within indigenous communities
Justin Yeager1, Carlos Robinson Quiro Chiripua2
1Universidad de las Americas, Quito, Ecuador, 2Resguardo Indígena Calle Santa Rosa, Timbiquí, Colombia

11:30 AM
Building a Better Fieldwork Future: Benefits of interactive training for sexual harassment and assault prevention in scientific fieldwork
Allison Payne, UCSC, Santa Cruz

11:45 AM
Fieldwork Inspiring Expanded Leadership and Diversity (FIELD)
Lisa White, University of CA Museum of Paleontology, Berkeley

12:00 PM
Best practices for preventing and responding to harassment in field settings
Anne Kelly1, Stephanie Murphy2, Terry McGlynn3, Kristen Yarincik4
1The Nature Conservancy, 2Duke University, 3CSU Desert Studies, Zzyzx, 4Consortium for Ocean Leadership
**Presentations**

11:15 AM  
**Incomplete lineage sorting despite hybridization in Holacanthus Angelfishes in the Tropical Eastern Pacific**  
*Remy Gatins¹, Carlos A. Sánchez-Órtiz², Giacomo Bernardi³*  
¹Northeastern University, Nahant, CA, ²Universidad de Baja California Sur, ³University of California Santa Cruz

11:30 AM  
**Patterns of genomic variation support a single evolutionary origin of the recent allotetraploid Mimulus sookensis**  
*Makenzie R. Whitener¹, Andrea Sweigart¹*  
¹University of Georgia, Athens, GA

11:45 AM  
**The regulatory basis of hybrid male sterility in dwarf hamsters**  
*Kelsie E. Hunnicutt¹, Jeff M. Good², Erica Larson¹*  
¹University of Denver, Denver, CO, ²Division of Biological Sciences, University of Montana, Missoula

12:00 PM  
**Systematics and hybridization in the genus “Poecile” with insights from immune genes**  
*Angela Theodosopoulos¹, Tyler Chafin², Kathryn Grabenstei³n⁴, Amber M. Rice⁵, Jason Weir⁶, Vladimir Pravosudov⁷*  
¹University of Colorado at Boulder, Broomfield, ²University of Colorado, Nederland, CO, ³The University of Colorado, Boulder, Boulder, Colorado, ⁴Lehigh University, Bethlehem, PA, ⁵University
The hills are alive with the scent of hybrids: how floral traits mix and match in Alpine orchids

Kelsey J. Byers¹, Mikhaela Neequaye¹, Roman Kellenberger², Becca Collier³, Katie Wenzell⁴, Philipp Schlueter⁵
¹John Innes Centre, Norwich, Norfolk, United Kingdom, ²University of Cambridge, ³John Innes Centre, ⁴Northwestern University, Chicago, Illinois, ⁵University of Hohenheim

Phenotypic Plasticity II

Sun, June 26
11:15 AM - 12:30 PM
Room 15
Regular

Presentations

11:15 AM
Plasticity to ocean warming in tropical damselfishes: molecular and aerobic perspectives
Moises A. Bernal¹, Jennifer Donelson², Timothy Ravasi³, Philip L. Munday⁴
¹Auburn University, Auburn, Alabama, ²ARC Centre of Excellence for Coral Reef Studies, ³Okinawa Institute of Science and Technology Graduate University, ⁴James Cook University, Australia

11:30 AM
Effect of Mitochondrial-Nuclear Genomes and Thermal Stress on Metabolism of Invasive Snails
Omera Matoo¹, Maurine Neiman², Kristi L. Montooth³
¹University of Nebraska-Lincoln, Lincoln, Nebraska, ²University of Iowa, Iowa City, Iowa, ³University of Nebraska-Lincoln, Lincoln, NE

11:45 AM
Genotype by environment interactions for lifetime total fitness in the field: effects of single and double knockouts of duplicated genes in Arabidopsis thaliana planted in spring and fall
Jeff Conner¹, Melissa Lehti-Shiu², Siobhan Cusack², Ava J. Garrison³, Patrick Krysan⁴, Shin-Han Shiu²
12:00 PM  
**Altered foraging behaviors of predators encountering prey with induced defenses.**
Travis Klee¹, Carl Keiser², Colette St Mary³  
¹University of Florida, Gainesville, ²University of Florida, ³National Science Foundation, Alexandria, VA

12:15 PM  
**Many Factors Influence Female Guppy Foraging**
Shayna Rosenbloom¹, Swanne Gordon², Yusan Yang³, Lauren Johnson²  
¹University of Louisville, Louisville, ²Washington University in St. Louis, ³Living Earth Collaborative, Washington University in St. Louis, St. Louis

---

## Phylogenetics IV

📅 Sun, June 26  
⏰ 11:15 AM - 12:30 PM  
📍 Room 22  
📂 Regular

### Presentations

11:15 AM  
**Unraveling the patchy distribution of photosynthesis in Erythrobacteraceae**
Alexandra G. Walling¹, Robert DeSalle², Susan L. Perkins³  
¹American Museum of Natural History, New York, New York, ²American Museum of Natural History, ³American Museum of Natural History, New York, NY

11:30 AM  
**Phylogenomics of mito-nuclear discordance: an example from New Zealand cicadas**
Mark Stukel¹, Alexandra E. Porczak², Eric R. Gordon¹, Jason Vaillonis¹, Chris Simon¹  
¹University of Connecticut, Storrs, CT, ²University of Connecticut Ecology and Evolutionary Biology Simon Lab, Middletown, CT
Chevrons and Thorns: First Molecular Phylogeny Addressing the Evolution of the Acanthogorgiidae, a Speciose and Cosmopolitan Octocoral Family (Cnidaria: Anthozoa)
Jaymes Awbrey¹, Scott France²
¹University of Louisiana at Lafayette, LAFAYETTE, ²University of Louisiana at Lafayette

Using 3RAD and environmental niche modeling to test the validity of a narrow-range endemic snail
Nathan Whelan¹, Ellen E. Strong², Nicholas Gladstone², Jason Mays³
¹United States Fish and Wildlife Service & Auburn University, Auburn, AL, ²National Museum of Natural History, Smithsonian Institution, ³United States Fish and Wildlife Service

Widespread introgression across a phylogeny of 155 Drosophila genomes
Anton Suvorov¹, Bernard Kim², Jeremy Wang³, Ellie Armstrong³, David Peede⁴, Emmanuel R. D'Agostino⁵, Donald K. Price⁶, Peter Waddell⁶, Michael Lang⁶, Virginie Courtier-Orgogozo⁶, Jean David⁶, Dmitri Petrov², Daniel R. Matute⁷, Daniel R. Schrider⁸, Aaron Comeault⁸
¹UNC Chapel Hill, Chapel Hill, NC, ²Stanford University, ³UNC Chapel Hill, ⁴Brown University, Providence, RI, ⁵University of North Carolina at Chapel Hill, Carrboro, NC, ⁶University of Nevada - Las Vegas, Las Vegas, Nevada, ⁷University of North Carolina, Chapel Hill, Chapel Hill, NC, ⁸University of North Carolina, Chapel Hill, NC

Sexual Selection I
Sun, June 26
11:15 AM - 12:30 PM
Room 19
Regular

Presentations
11:15 AM
Sexual conflict and seminal fluid protein Acp29AB in Drosophila melanogaster
11:30 AM
Varied female and male courtship behavior facilitated the evolution of a novel sexual signal

Sophia Anner¹, Robin Tinghitella², Sophia Fitzgerald³
¹University of Louisville, Louisville, ²University of Denver, Denver, CO, ³University of Montana

11:45 AM
Temperature and water availability shape the dynamics of multimodal courtship, intersexual aggression, and mating success in wolf spiders.

Noah T. Leith¹, Jake Woods², Eshu Senthilkumaran³, Kasey Fowler-Finn⁴
¹Saint Louis University, St. Louis, MO, ²Saint Louis University, Granite City, ³Saint Louis University, ⁴Saint Louis University, Saint Louis, MO

12:00 PM
Trans regulatory control of an odorant binding protein coding gene constrains the evolution male mating performance in flies

Rich Meisel, University of Houston, Houston, Texas

12:15 PM
Hipster moms and sexy sons: female preference for rare males maintained via breeding success of sons

Tomas Potter¹, Jeff Arendt², David N. Reznick³, Joseph Travis⁴
¹Florida State University / The Guppy Project, United Kingdom, ²University of California at Riverside, Riverside, CA, ³University of California, Riverside, California, ⁴Florida State University, Tallahassee, FL

SSE Education & Outreach committee

Sun, June 26
12:30 PM - 1:30 PM
Room 13
Meeting
**Description**

Open to SSE Education & Outreach committee members. Lunch is provided.

**Lunch**

📅 Sun, June 26  
⏰ 12:30 PM - 2:30 PM  
📍 Offsite  
🏷 Social event

**Description**

Attendees are on their own; lunch is not provided.

**NSF/BIO/DEB Workshop**

📅 Sun, June 26  
⏰ 1:00 PM - 2:15 PM  
📍 Room 15  
🏷 Workshop / Information session

**Description**

Open to all attendees; registration not required. Lunch is not provided.

The National Science Foundation funds basic research in evolutionary biology and systematics, training of the next generation of evolutionary biologists, and broader impacts extending the reach of evolutionary research to benefit society. However, newer (and even experienced) scientists can find NSF’s numerous programs, detailed guidance, and merit review process to be a difficult landscape to navigate. In this informational session NSF program officers will discuss new and ongoing programs and the merit review process (including Intellectual Merit and Broader Impacts), followed by an open-ended question and answer session. Participants who wish to meet briefly individually with an NSF Program Officer may be able to do so following the discussion. Program Officers participating: Matthew Herron, Maureen Kearney, Diana Pilson, and Sam Scheiner.
Primer on Peer Review & Meet the Editors

Sun, June 26  
1:00 PM - 2:15 PM  
Room 26BC  
Workshop / Information session

Description

Open to all attendees; registration is not required. Lunch is not provided.

Come learn about the ins and outs of the scientific publishing process from the Editors of Evolution, Evolution Letters, American Naturalist, and Systematic Biology. The event will be begin with a walk-through of the peer review process from the perspectives of each of the editors, and then will open to a more general question and answer session guided by audience interest - anything from writing a great cover letter to the mysterious "impact factor" to the role of pre-print servers like bioRxiv.

SSB members business meeting

Sun, June 26  
1:00 PM - 2:15 PM  
Room 21  
Meeting

Description

Open to all SSB members; registration is not required. Lunch is not provided

Evolutionary Biologists with Disabilities Mixer

Sun, June 26  
1:00 PM - 2:30 PM  
Room 25ABC  
Social event

Description
Interested in meeting fellow evolutionary biologists with disabilities/chronic illnesses/Deaf folks and interested allies? Want to discuss increasing the inclusion and representation of disabled/chronically ill/Deaf students and staff in our diverse field? This is an informal chance to meet others interested in these topics, share experiences of disability in evolutionary biology, and hopefully increase our inclusion around issues of disability as a community. Anyone at any career stage and level of ability (including allies) is welcome to come join us. Note that although this event is scheduled during the lunch break, lunch is NOT provided; attendees are encouraged to grab some take-out and head back to the Convention Center for the mixer.

**ASN members business meeting**

📅 Sun, June 26  
🕒 1:30 PM - 2:15 PM  
📍 Room 22  
💬 Meeting

**Description**

Open to all ASN members; registration is not required. Lunch is not provided

**ASN Vice-Presidential Symposium: Re-viewing adaptive genetic variation III**

📅 Sun, June 26  
🕒 2:30 PM - 3:45 PM  
📍 Grand Ballroom A  
💬 Symposium

**Description**

**Organizer:** Dr. Deepa Agashe  
Genetic variation is central to evolutionary change, and has always featured prominently in attempts to understand biological diversity. Our understanding of its provenance, maintenance and impact have advanced substantially in the past few decades, and this symposium aims to integrate these advances. Focusing on the importance of new mutations and standing genetic variation during adaptation, we will aim to bridge across molecular and ecological perspectives on how mutational input shapes evolution in natural populations. We will address questions such as: what is the relative role of new mutations,
standing genetic variation, and selection, during adaptation? What is the impact of mutation rate and bias? What can we say about these effects in natural populations and their ability to survive the coming decades?

Presentations

2:30 PM  Whole-genome sequencing shows the role of gene regulation in local adaptation to environmental variability in a heterogeneous seascape
Csenge Petak\textsuperscript{1}, Lapo Frati\textsuperscript{2}, Reid Brennan\textsuperscript{3}, Melissa Pespeni\textsuperscript{2}
\textsuperscript{1}University of Vermont, Burlington, Vermont, \textsuperscript{2}University of Vermont, \textsuperscript{3}University of Vermont, Burlington, VT

3:00 PM  The past contribution and future fate of genetic variants under climate change
Cheng-Ruei Lee\textsuperscript{1}, Ya-Ping Lin\textsuperscript{2}, Cheng-Yueh Lu\textsuperscript{3}
\textsuperscript{1}National Taiwan University, Taipei, Taiwan, \textsuperscript{2}World Vegetable Center, Taiwan, Taiwan, \textsuperscript{3}National Taiwan University

3:30 PM  Genomics of the Hawaiian Metrosideros adaptive radiation: Understanding the mechanism behind the speciation paradox
Jae Young Choi\textsuperscript{1}, Michael Purugganan\textsuperscript{2}, Elizabeth A. Stacy\textsuperscript{3}
\textsuperscript{1}New York University, New York, NY, \textsuperscript{2}Center for Genomics and Systems Biology, Department of Biology, 12 Waverly Place, New York University, New York, NY USA, \textsuperscript{3}University of Nevada Las Vegas, Las Vegas, NV

Ecological Genetics I

📅 Sun, June 26
⏰ 2:30 PM - 3:45 PM
📍 Room 15
⏰ Regular

Presentations

2:30 PM  Re-evaluating the paradigm of genotype-environment associations: The paradox of adaptive
phenotypic clines without clines in causal allele frequencies
Kathleen E. Lotterhos, Northeastern University Marine Science Center, Nahant, MA

2:45 PM
2:59 PM
Fine-scale local adaptation in snowshoe hare populations across seasonal environments
Cynthia K. Ulbing, University of Montana, Missoula, MT

3:00 PM
3:14 PM
Evolution of thermal physiology alters projected distributions of threespine stickleback under climate change
Sara J. Smith Wuitchik¹, Stephanie Mogensen², Tegan Barry³, Antoine Paccard⁴, Heather Jamniczky², Rowan Barrett⁴, Sean M. Rogers²
¹University of Victoria & Simon Fraser University, Victoria, MA, ²University of Calgary, ³University of Lethbridge, ⁴McGill University

3:15 PM
3:29 PM
Seasonally varying thermal selection drives supergene-based adaptation in Drosophila
Alan Bergland¹, Joaquin Nunez², Alyssa Bangerter³, Benedict Lenhart³, Yang Yu³, Connor Murray³, Taylor Nystrom³, Priscilla Erickson⁴
¹University of Virginia, Charlottesville, VA, ²University of Virginia, Charlottesville, ³University of Virginia, ⁴University of Richmond

3:30 PM
3:44 PM
The not-so-secret life of flies: seasonal cycles of boom-and-bust demography drive evolution in Drosophila
Joaquin Nunez¹, Alyssa Bangerter², Connor Murray², Alan Bergland³
¹University of Virginia, Charlottesville, ²University of Virginia, ³University of Virginia, Charlottesville, VA

Field Safety and Ethics in Evolution and Ecology: Experiences and Tools for Inclusive Practices III
📅 Sun, June 26
⏰ 2:30 PM - 3:45 PM
📍 Room 26BC
話し合い / 事前説明会
Description

This workshop session of the Field Safety & Ethics symposium is open to pre-registered faculty members only.

Organizers: Susana Wadgymar, Rich Kliman, and Cathy Rushworth

Field work is a critical part of many biologists’ lives. It serves an entry point to a career in science, and it provides vital data for dissertations and funded projects. However, field work also presents physical, psychological, and emotional safety hazards for many, especially scientists from historically excluded groups. In the first ever tri-society Diversity Symposium, we discuss experiences in the field, colonialism and field work, and tools for creating safer, more inclusive, and positive field experiences for all.

Info

Talk type: Symposium

Title: Building a Better Fieldwork Future workshop for Faculty

Abstract:
Fieldwork is an important and often necessary component of many scientific disciplines, yet research suggests that it presents a high-risk setting for incidents of sexual/gender-based harassment and assault. The Building a Better Fieldwork Future (BBFF) Program involves a 90-minute workshop developed by a team of field researchers at UC Santa Cruz. It identifies the unique risks posed by fieldwork and offers a suite of evidence-based tools for field researchers, instructors, and students to prevent, intervene in, and respond to sexual harassment and assault. Through a series of practical intervention scenarios, this workshop guides participants on how to be an active and engaged bystander, how to report incidents, and how to plan field settings to minimize risk. Armed with these tools, participants can play a role in ensuring that field settings are safer, more equitable, and more welcoming for the next generation of field scientists.

Author

Allison Payne
UCSC
Presentations

2:30 PM

Allometry of sexual size dimorphism in geckos
Elizabeth Glynne¹, Dean Adams²
¹EEOB at Iowa State University, Ames, Iowa, ²Iowa State University, Ames, IA

2:45 PM

The evolution of sexual dimorphism and dichromatism in anole dewlap ornaments
Michael Yuan¹, Erin P. Westeen², Guin Wogan³, Ian Wang²
¹University of California, Davis, Davis, ²University of California, Berkeley, Berkeley, CA, ³Oklahoma State University, gwogan@berkeley.edu

3:00 PM

Inferring the evolutionary history of the Sino-Himalayan biodiversity hotspot using Bayesian phyldynamics
Bethany Allen¹, Timothy Vaughan², Louis du Plessis², Tanja Stadler³
¹ETH Zürich, Switzerland, ²ETH Zürich, ³ETH Zürich, Zürich, Switzerland

3:15 PM

Beyond proxy variables: sexual selection and speciation rate in vertebrates
Matheus Januario¹, Renato Macedo-Rego², Daniel L. Rabosky³
¹University of Michigan, ANN ARBOR, Sao Paulo, ²University of Sao Paulo, ³University of Michigan, Museum of Zoology and Department of Ecology & Evolutionary Biology

3:30 PM

Body size shows a flat adaptive landscape in fossil and living cetaceans
Gustavo Burin¹, Travis Park², Tamora James³, Graham J. Slater⁴, Natalie Cooper⁵
## Molecular Evolution I

Sun, June 26  
2:30 PM - 3:45 PM  
Room 20  
Regular

### Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30 PM</td>
<td>Inside giant genomes: determinants of genetic diversity in Neotropical salamanders (Plethodontidae: Bolitoglossini)</td>
<td>María Segovia Ramírez¹, Paul P. Decena², Hairo Rios³, Sean M. Rovito⁴</td>
</tr>
<tr>
<td></td>
<td></td>
<td>¹Unidad de Genómica Avanzada, Cinvestav-IPN, Irapuato, Mexico, ²Cinvestav, Irapuato, Guanajuato, Mexico, ³LANGEBIO, Irapuato, Mexico, ⁴Langebio-Cinvestav, Irapuato, Guanajuato, Mexico</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>Dissecting mechanisms of sex determination in African Clawed Frogs (Xenopus laevis) using gene editing</td>
<td>Lindsey Kukoly¹, Caroline M. Cauret², Ben Evans³, Marko Horb³, Sarah Burton³, Danielle Jordan³</td>
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<td></td>
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<td>¹McMaster University, Hamilton, ²McMaster University, Hamilton, Ontario, ³McMaster University, Hamilton, ON</td>
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<tr>
<td>3:00 PM</td>
<td>Comparative functional analysis of KLK3/PSA in primates to reveal its natural and sexual selective pressures</td>
<td>Emine F. F. Kahveci¹, Michael Jensen-Seaman²</td>
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<td></td>
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<td>¹Duquesne University, Pittsburgh, Pennsylvania, ²Duquesne University, Pittsburgh, PA</td>
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<tr>
<td>3:15 PM</td>
<td>Genome size and selection efficiency in tropical salamanders</td>
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<td>3:14 PM</td>
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<td>3:29 PM</td>
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</tbody>
</table>
3:30 PM  The intriguing evolution of the MutS mismatch repair gene family in animals
Dennis Lavrov¹, Viraj Muthye², Cameron Mackereth³, James Stewart⁴
¹Iowa State University, Ames, ²Iowa State University, ³Univ. Bordeaux, Institut Européen de Chimie et Biologie, ⁴Wellcome Centre for Mitochondrial Research, Newcastle Upon Tyne, United Kingdom

Quantitative Genetics

Presentations

2:30 PM  Flowering time adaptation in Yellowstone monkeyflowers
WITHDRAWN
Colette Berg¹, Lila Fishman¹
¹University of Montana, Missoula, MT

2:45 PM  What is causing selection on floral traits in the wild? A meta-analysis
Chris Caruso¹, Katherine Eisen², Ryan Martin³, Nina Sletvold⁴
¹Department of Integrative Biology, University of Guelph, Guelph, Ontario, ²Department of Ecology and Evolutionary Biology, Cornell University, Ithaca, NY, ³Case Western Reserve University, ⁴Uppsala University, Uppsala, N/A, Sweden

3:00 PM  Population genomics and floral syndrome divergence in a Penstemon species complex
Carrie Wessinger¹, John Kelly², Lena Hileman²
¹University of South Carolina, Columbia, SC, ²University of Kansas
Investigating the effect of gene flow on the genetic architecture of ultraviolet floral phenotype using sympatric and allopatric populations of Mimulus guttatus and M. lacinatus

Caroline Dong¹, Kathleen Ferris²
¹Tulane University, New Orleans, ²Tulane University, New Orleans, Louisiana

Evidence for a general relationship between phenotypic divergence and trait mismatch in hybrids

Ken A. Thompson, Stanford University, Menlo Park, British Columbia

Sexual Selection II

Sun, June 26
2:30 PM - 3:45 PM
Room 19
Regular

Presentations

2:30 PM
Genomic signatures of sexual selection in the Yellow Fever mosquito Aedes aegypti
Claudia Wyer¹, Brian Hollis², Lauren Cator³
¹Imperial College London, Ascot, United Kingdom, ²University of South Carolina, Columbia, SC, ³Imperial College London

2:44 PM
Who's the daddy: A selfish genetic element and sperm competition in Teleopsis dalmanni
Sade Bates¹, Andrew Pomiankowski²
¹University College London, London, United Kingdom, ²UCL

3:00 PM
Sperm Competition and Its Effects on the Evolution of Prostatic Acid Phosphatase in Hominids
Brandon L. Dimick¹, Michael Jensen-Seaman¹
¹Duquesne University, Pittsburgh, PA

3:15 PM
Drosophila melanogaster females can adjust sperm use patterns in response to perceived changes in
male quality
Brooke Peckenpaugh\textsuperscript{1}, Leonie Moyle\textsuperscript{2}
\textsuperscript{1}Indiana University, Bloomington, IN, \textsuperscript{2}Indiana University, Bloomington, Indiana

Coffee break

\textbullet{} Sun, June 26
\textbullet{} 3:45 PM - 4:15 PM
\textbullet{} Grand Ballroom BC
\textbullet{} Social event

Computational Biology

\textbullet{} Sun, June 26
\textbullet{} 4:15 PM - 5:30 PM
\textbullet{} Room 21
\textbullet{} Regular

Presentations

4:15 PM Evolution of Induced and Constitutive Defenses in Stochastic Environments
Danial Asgari, University of Houston, Houston

4:30 PM Investigating the effects of pleiotropy on immune system evolution
Reese Martin\textsuperscript{1}, Ann Tate\textsuperscript{2}
\textsuperscript{1}Vand, Nashville, \textsuperscript{2}Vanderbilt University, Nashville, TN

4:45 PM A Penalized Likelihood Approach for Estimating Haplotypes from Environmental DNA
Maya Lemmon-Kishi\textsuperscript{1}, Rasmus Nielsen\textsuperscript{2}
\textsuperscript{1}University of California, Berkeley, \textsuperscript{2}University of California Berkeley & Natural History Museum of Denmark

5:00 PM Can genetic networks predict the fitness effects of mutations?
Rob W. Ness, University of Toronto
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:15 PM</td>
<td>Evolutionary Engineering of Microbial Communities</td>
<td>Chang-Yu Chang¹, Alvaro Sanchez²</td>
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<tr>
<td></td>
<td></td>
<td>¹Yale University, New Haven, ²Yale University</td>
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<td>5:29 PM</td>
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<td></td>
<td>Ecological Genetics II</td>
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<td>4:15 PM - 5:30 PM</td>
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<td>Room 15</td>
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<td></td>
<td>Regular</td>
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<td></td>
<td>Presentations</td>
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<tr>
<td>4:15 PM</td>
<td>Orange is the new Red: introgression and trait convergence during a plant invasion on the Galápagos Islands</td>
<td>Leonie Moyle, Indiana University, Bloomington, Indiana</td>
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<td>4:29 PM</td>
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<tr>
<td>4:30 PM</td>
<td>Immunogenetic evolution at an invasion front: do invasive Anolis lizards experience selection on their MHC genes??</td>
<td>Iris Holmes¹, Andrew M. Durso², Michael Yuan³, Tory Hendry⁴</td>
</tr>
<tr>
<td></td>
<td></td>
<td>¹Cornell University, Freeville, ²Department of Biological Sciences, Florida Gulf Coast University, ³University of California, Davis, Davis, ⁴Cornell University, ITHACA</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>Host associated divergence in populations of the redheaded pine sawfly on two northern hosts</td>
<td>Robin Bagley¹, Carson Kephart², Catherine R. Linnen³</td>
</tr>
<tr>
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<td></td>
<td>¹The Ohio State University at Lima, Lima, ²Ohio State University, Columbus, ³University of Kentucky, Lexington, KY</td>
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<tr>
<td>5:00 PM</td>
<td>Investigating the genomic basis of rapid adaptation in an invasive migratory fish</td>
<td>Azwad Iqbal, Cornell University, ITHACA</td>
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<td>5:14 PM</td>
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Field Safety and Ethics in Evolution and Ecology: Experiences and Tools for Inclusive Practices IVa

Sun, June 26  
4:15 PM - 5:30 PM  
Room 26BC  
Symposium

Description

Organizers: Susana Wadgymar, Rich Kliman, and Cathy Rushworth
Field work is a critical part of many biologists’ lives. It serves an entry point to a career in science, and it provides vital data for dissertations and funded projects. However, field work also presents physical, psychological, and emotional safety hazards for many, especially scientists from historically excluded groups. In the first ever tri-society Diversity Symposium, we discuss experiences in the field, colonialism and field work, and tools for creating safer, more inclusive, and positive field experiences for all.

Info


Field Safety and Ethics in Evolution and Ecology: Experiences and Tools for Inclusive Practices IVb

Sun, June 26  
4:15 PM - 5:30 PM  
Grand Ballroom A  
Workshop / Information session

Description

This is a workshop session of the Field Safety & Ethics symposium and it is open to pre-registered student/postdoc members only.

Organizers: Susana Wadgymar, Rich Kliman, and Cathy Rushworth
Field work is a critical part of many biologists’ lives. It serves an entry point to a career in science, and it provides vital data for dissertations and funded projects. However, field work also presents physical,
psychological, and emotional safety hazards for many, especially scientists from historically excluded
groups. In the first ever tri-society Diversity Symposium, we discuss experiences in the field, colonialism
and field work, and tools for creating safer, more inclusive, and positive field experiences for all.

Info

Talk type:
Symposium

Title:
Building a Better Fieldwork Future workshop for Students/postdocs

Abstract:
Fieldwork is an important and often necessary component of many scientific disciplines, yet research
suggests that it presents a high-risk setting for incidents of sexual/gender-based harassment and
assault. The Building a Better Fieldwork Future (BBFF) Program involves a 90-minute workshop
developed by a team of field researchers at UC Santa Cruz. It identifies the unique risks posed by
fieldwork and offers a suite of evidence-based tools for field researchers, instructors, and students to
prevent, intervene in, and respond to sexual harassment and assault. Through a series of practical
intervention scenarios, this workshop guides participants on how to be an active and engaged bystander,
how to report incidents, and how to plan field settings to minimize risk. Armed with these tools,
participants can play a role in ensuring that field settings are safer, more equitable, and more welcoming
for the next generation of field scientists.

Author

Allison Payne
UCSC

Macroevolution II

📅 Sun, June 26
⏰ 4:15 PM - 5:30 PM
📍 Room 16
🗂 Regular
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
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<tbody>
<tr>
<td>4:15 PM</td>
<td>Evolution of avicularia in the Cretaceous cheilostome bryozoan Wilbertopora</td>
<td>Sarah Leventhal, University of Colorado, BOULDER, CO</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>The impact of fossil data on the power and accuracy of estimates under state-dependent diversification models</td>
<td>WITHDRAWN</td>
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<td>Bruno do Rosario Petrucci\textsuperscript{1}, Walker Pett\textsuperscript{2}, Tracy Heath\textsuperscript{2}</td>
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<td>\textsuperscript{1}Iowa State University, Ames, IA, \textsuperscript{2}Iowa State University, Ames, Iowa</td>
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<tr>
<td>4:45 PM</td>
<td>Irreversible convergence on hummingbird pollination in Neotropical Costus provides insight into the causes of pollinator shifts</td>
<td>Dena Grossenbacher\textsuperscript{1}, Kathleen M. Kay\textsuperscript{2}</td>
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<td></td>
<td></td>
<td>\textsuperscript{1}California Polytechnic State University, San Luis Obispo, San Luis Obispo, \textsuperscript{2}University of California Santa Cruz, Santa Cruz, CA</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>The macroevolution of sexual size dimorphism in birds</td>
<td>Fernanda d. Caron\textsuperscript{1}, Marcio R. Pie\textsuperscript{2}</td>
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<td></td>
<td></td>
<td>\textsuperscript{1}Universidade Federal do Paraná, Curitiba, Brasil, Brazil, \textsuperscript{2}Edge Hill University, Ormskirk, PR, United Kingdom</td>
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<tr>
<td>5:15 PM</td>
<td>Molecular footprints of local adaptation of a native herbivore on a toxic invasive plant</td>
<td>Nitin Ravikanthachari\textsuperscript{1}, Rachel Steward\textsuperscript{2}, Carol L. Boggs\textsuperscript{3}</td>
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<td>\textsuperscript{1}University of South Carolina, Columbia, SC, \textsuperscript{2}Stockholm University, \textsuperscript{3}University of South Carolina, Biological Sciences</td>
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</table>
4:15 PM

Relaxed-clock dating analysis with phylogenetic uncertainty
Jose Barba-Montoya\textsuperscript{1}, Sudip Sharma\textsuperscript{2}, Sudhir Kumar\textsuperscript{3}
\textsuperscript{1}Institute for Genomics and Evolutionary Medicine, Temple University, Philadelphia, PA, \textsuperscript{2}Temple University, Philadelphia, Pennsylvania, \textsuperscript{3}iGEM @ Temple, Philadelphia, PA

4:30 PM

Transcription factors evolve faster than their structural gene targets in the flavonoid pigment pathway
Lucas C. Wheeler\textsuperscript{1}, Joseph F. Walker\textsuperscript{2}, Julienne Ng\textsuperscript{2}, Rocio Deanna\textsuperscript{3}, Amy Dunbar-Wallis\textsuperscript{3}, Alice Backes\textsuperscript{3}, Pedro Henrique H. Pezzi\textsuperscript{4}, Virginia Palchetti\textsuperscript{4}, Holly Robertson\textsuperscript{4}, Andrew Monaghan\textsuperscript{4}, Loreta B. Freitas\textsuperscript{5}, Gloria Barboza\textsuperscript{6}, Edwige Moyroud\textsuperscript{6}, Stacey D. Smith\textsuperscript{7}
\textsuperscript{1}University of Colorado-Boulder, Boulder, Colorado, \textsuperscript{2}University of Illinois Chicago, Chicago, MI, \textsuperscript{3}University of Colorado - Boulder, Boulder, \textsuperscript{4}Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil, \textsuperscript{5}Federal University of Rio Grande do Sul (UFRGS), Brazil, \textsuperscript{6}Instituto Multidisciplinario de Biología Vegetal, \textsuperscript{7}University of Colorado Boulder, Boulder, CO

4:45 PM

Unbiased inference of the fitness landscape ruggedness from imprecise fitness estimates
Siliang Song\textsuperscript{1}, Jianzhi Zhang\textsuperscript{2}
\textsuperscript{1}University of Michigan, Ann Arbor, MI, \textsuperscript{2}University of Michigan

5:00 PM

Genetic mechanisms underlying a sexually dimorphic trait in Drosophila erecta
Haosu Cong\textsuperscript{1}, Jian Pu\textsuperscript{1}, Zinan Wang\textsuperscript{2}, Henry Chung\textsuperscript{1}
\textsuperscript{1}Michigan State University, East Lansing, Michigan, \textsuperscript{2}Michigan State University, East Lansing, MI

5:15 PM

101 Evolutions: Evaluating maize gene annotations with genome sequences across the Andropogoneae
WITHDRAWN
Aimee Schulz, Cornell University, Ithaca

Mutualism / Coevolution I
Presentations

4:15 PM  
**Evolutionary stability of host-endosymbiont mutualism is reduced by multi-infection**  
Shakeal Hodge\(^1\), Zhen Ren\(^1\), Anya E. Vostinar\(^2\), Emily Dolson\(^3\)  
\(^1\)Carleton College, \(^2\)Carleton College, Northfield, MN, \(^3\)Michigan State University, East Lansing, MI

4:30 PM  
**Maternally biased homoeologous exchange of chloroplast-targeted rbcS genes in allotetraploid Coffee**  
Catherine Batchelder\(^1\), Justin L. Conover\(^1\), Evan Forsythe\(^1\), Corrinne Grover\(^1\), Joel Sharbrough\(^1\)  
\(^1\)New Mexico Institute of Mining and Technology, Socorro, NM

4:45 PM  
**Wolbachia reduces virus infection in a natural population of Drosophila**  
Rodrigo Cogni\(^1\), Shuai Dominique Ding\(^2\), André Pimentel\(^3\), Jonathan Day\(^2\), Francis Jiggins\(^2\)  
\(^1\)Universidade de Sao Paulo, Sao Paulo, SP, Brazil, \(^2\)University of Cambridge, \(^3\)Universidade de São Paulo

5:00 PM  
**Coevolution and chemical communication between tardigrades and their host mosses**  
Jason pienaar\(^1\), Sogol Momeni\(^2\), Lukasz Ciesla\(^2\)  
\(^1\)Florida International University, Miami, \(^2\)University of Alabama

5:15 PM  
**The role of indirect effects in coevolution as mutualism transitions into antagonism**  
Fernando Pedraza Perez\(^1\), Jordi Bascompte\(^2\), Klementyna A. Gawecka\(^2\), Hanlun Liu\(^3\)  
\(^1\)University of Zurich, Zurich, Switzerland, \(^2\)University of Zurich, \(^3\)Sun Yat-sen University, China
Parallel / Convergent Evolution

Sun, June 26  
4:15 PM - 5:30 PM  
Room 22  
Regular

Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:15 PM</td>
<td>Uncovering the genetic architecture of replicated adaptation WITHDRAWN</td>
<td>Maddie James¹, Robin Allsopp¹, Jeffrey Groh², Avneet Kaur³, Melanie J. Wilkinson⁴, Daniel Ortiz-Barrientos⁵</td>
<td>¹The University of Queensland, Brisbane, Queensland, Australia, ²UC Davis, Davis, California, ³The University of Queensland, Brisbane, Australia, ⁴The University of Queensland, ⁵The University of Queensland, St Lucia, QLD, Australia</td>
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<tr>
<td>4:30 PM</td>
<td>Spotlight on cephalopods: Revealing multi-level convergence in photophores</td>
<td>Bridget A. Vincent¹, Emily S. Lau², Sriram Ramamurthy³, Clara Bourguignon³, Todd H. Oakley³</td>
<td>¹University of California, Santa Barbara, Goleta, CA, ²University of California, Santa Barbara, Santa Barbara, California, ³University of California, Santa Barbara</td>
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<td>4:44 PM</td>
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<td>4:45 PM</td>
<td>Mutually exclusive constraints dictate path dependence during rapid convergent evolution of chiton eyes</td>
<td>Rebecca Varney, University of California, Santa Barbara, Santa Barbara</td>
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<td>4:59 PM</td>
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<tr>
<td>5:00 PM</td>
<td>How frogs get their stripe: genomics and evolution of a widespread color pattern in anurans</td>
<td>Sandra Goutte¹, Imtiyaz Hariyani², Kole Utzinger², Yann Bourgeois³, Stephane Boissinot²</td>
<td>¹New York University Abu Dhabi, Abu Dhabi, United Arab Emirates, ²New York University Abu Dhabi, ³University of Portsmouth</td>
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Tri-society field clothing and gear swap

**Description**

Announcing the first inaugural tri-society field clothing and gear swap! This year, as part of the first biennial tri-society diversity symposium (focusing on field safety), we’re offering a clothing and gear swap for field biologists. **Bring something you no longer use or wear that’s in good to excellent condition to share, take something you could wear or make use of!**

We aim to especially support our junior colleagues who are just getting started in their field careers. Donations will be accepted at the DEI Booth prior to the symposium, or in the back of the room during the symposium. We will also be raffling away FREE GIFT CARDS from outdoor clothing companies. Students and postdocs can pick up a free raffle ticket at the DEI Booth - drawings will happen at the end of the symposium!

Open to all meeting attendees; registration not required.

International Mixer

**Description**

Registration is not required.

The international mixer is an opportunity for members from outside the US to connect, share
experiences, and socialize. We will have some interactive games to help break the ice and help people to interact with each other. We are looking forward to hearing dozens of different accents!

SSB Presidential Address - Dr. Laura Kubatko

Mon, June 27
8:00 AM - 9:20 AM
Grand Ballroom A
Plenary

Info

Talk type:
Plenary/Award

Title:
Embracing variability

Author

Laura Kubatko
Professor
The Ohio State University

Evolution in action I

Mon, June 27
9:30 AM - 10:45 AM
Room 26BC
Symposium

Description

Organizers: Dr. John Benning, Dr. Ruth Hufbauer, and Dr. Christopher Weiss-Lehman
Recent years have thrown into sharp relief an intimidating set of global issues. Drug resistance, invasive species, global pandemics, species extinctions, threats to biodiversity from climate change — these are
existential crises with no easy answers. Solutions to these problems will depend in large part on basic research into the evolutionary processes underlying these phenomena. This symposium will be a timely assessment of how evolutionary biology is helping to solve pressing problems in society today, while seeking to catalyze a closer integration of basic and applied research moving forward. Symposium speakers will explore the COVID-19 pandemic, climate change adaptation, conservation, drug resistance, invasive species, and the history of evolutionary biology as a tool for societal progress. These talks will highlight how fundamental evolution research informs our understanding of, and solutions to, this varied set of global issues. At the same time, talks will demonstrate how these so-called “applied” research topics offer unique opportunities to advance our understanding of basic evolutionary patterns and processes. The speakers span a range of career stages and study organisms from across the tree of life using a variety of experimental, theoretical, and molecular approaches. By highlighting exciting junctures of basic and applied research, we hope the symposium will help to chart a course for the role of evolutionary biology in society moving forward.

### Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
</table>
| 9:30 AM       | Exceptions to the rule: Why does resistance evolution not undermine antibiotic therapy in all bacterial infections? | Amrita Bhattacharya¹, Anton Aluquin², David A. Kennedy²  
Pennsylvania State University, University Park, PA, Pennsylvania State University |
| 9:59 AM       |                                                                                                 |                                                                                                               |
| 10:00 AM      | SARS-CoV-2: an evolving pandemic                                                                | Sarah (Sally) Otto, UBC, Vancouver, BC                                                                         |
| 10:29 AM      |                                                                                                 |                                                                                                               |
| 10:30 AM      | Teasing apart environmental variation and evolutionary relationships to assess climate vulnerability in native bees. | Carmen da Silva¹, Rosalyn Gloag², Vanessa Kellermann³  
Monash University, Melbourne, Australia, University of Sydney, Monash University, Hawthorn, Australia |
| 10:44 AM      |                                                                                                 |                                                                                                               |

### Evolutionary Ecology I

📅 Mon, June 27  
⏰ 9:30 AM - 10:45 AM  
📍 Room 19  
🗂️ Regular
Progress and shortcomings in pursuing inclusivity in EEB and within the tri-societies

Cathy Rushworth¹, Susana Wadgymar², Paula Assis³, Isabella Lima Borges⁴, Janet Buckner⁵, Kelsey J. Byers⁶, Andreas Chavez⁷, Timothy J. Colston⁸, Alonso Delgado⁹, Katherine Eisen¹⁰, Anahi Espindola¹¹, Vincent Formica¹², Austin G. Garner¹³, Tracy Heath¹⁴, Manpreet K. Kohli¹⁵, Joel McGlothlin¹⁶, Maria E. Orive¹⁷, Luca Pozzi¹⁸, Maria Rebollo-Gomez¹⁹, Sarah Schack¹²⁰, Arun Sethuraman¹²¹, Scott Taylor²², Nancy Chen²³, Jessica ware²⁴

¹Utah State University, Logan, CA, ²Davidson College, Davidson, NC, ³University of Montana, Missoula, SP, ⁴Michigan State University, Hickory Corners, Michigan, ⁵University of Texas at Arlington, Arlington, Texas, ⁶John Innes Centre, Norwich, Norfolk, United Kingdom, ⁷The Ohio State University, Columbus, OH, ⁸University of Florida, Gainesville, FL, ⁹Ohio State University, Columbus, OH, ¹⁰Department of Ecology and Evolutionary Biology, Cornell University, Ithaca, NY, ¹¹University of Maryland, College Park, College Park, MD, ¹²Swarthmore College, Swarthmore, PA, ¹³Harvard University, Roslindale, MA, ¹⁴Iowa State University, Ames, Iowa, ¹⁵Rutgers University, Newark, NJ, ¹⁶Virginia Tech, Blacksburg, VA, ¹⁷University of Kansas, Lawrence, KS, ¹⁸UNIVERSITY OF TEXAS AT SAN ANTONIO, SAN ANTONIO, TX, ¹⁹University of California, Irvine, New Haven, CT, ²⁰Reed College, Portland, OR, ²¹San Diego State University, San Diego, California, ²²University of Colorado Boulder, Boulder, CO, ²³University of Rochester, Rochester, NY, ²⁴Ware Lab, Cranbury, NJ

Evolutionary innovation by the entanglement of cooperation and competition

Michael Travisano¹, William Driscoll²

¹University of Minnesota, St. Paul, ²Penn State Harrisburg

Ecological gradients oppose spatial sorting during biological invasions

John W. Benning¹, Ruth A. Hufbauer², Topher Weiss-Lehman³

¹University of Wyoming, Minneapolis, MN, ²Colorado State University, ³University of Wyoming

The correlated evolution of foraging mode and reproductive output in lizards

Dylan J. Padilla¹, Michael J. Angilletta², Dale DeNardo¹

¹Arizona State University, Tempe, AZ, ²Arizona State University
Genomics III

Mon, June 27
9:30 AM - 10:45 AM
Room 16
Regular

Presentations

9:30 AM
Insights from the draft genome assembly for the hydrozoan Podocoryna carnea: Just the tip of the tentacle
E. Sally Chang¹, Matthew Travert², Steven M. Sanders³, Anna M.L. Klompen², Paul Gonzalez⁴, Sofia Barreira⁵, Paulyn Cartwright², Andy Baxevanis⁶
¹National Human Genome Research Institute, National Institutes of Health, Washington, DC, ²University of Kansas, ³University of Pittsburgh, Pittsburgh, PA, ⁴National Institutes of Health, Bethesda, MD, ⁵National Human Genome Research Institute, NIH, Bethesda, Maryland, ⁶National Human Genome Research Institute, NIH, Bethesda, MD

9:45 AM
Evolutionary history and divergence of tuna species using whole genome comparisons
Pavel Dimens¹, Eric Saillant²
¹University of Southern Mississippi, Gulf Coast Research Lab, Ocean Springs, Mississippi, ²University of Southern Mississippi

10:00 AM
Genome Assembly of a Meloid Beetle (Meloe sp. cf. dianella) Provides Insight into Genome Size Evolution in Beetles and Biosynthetic Pathways of Cantharidin Proteins
How do we make decisions about data and analyses in systematic biology? It depends! I

Mon, June 27
9:30 AM - 10:45 AM
Grand Ballroom A
Symposium

Description

Organizers: Dr. Natya Hans, Dr. Alexandra Hernandez, and Chloe Nash, PhD candidate

When conceiving and developing evolutionary studies, scientists must confront a vast array of difficult questions, such as how to choose among different data types and methods of data collection, and determine which analyses will best address hypotheses. These decisions can affect study outcomes, and often depend upon the scope of the question, the data currently available, and other logistical challenges. In this time of ever-expanding quantities of data and elaborate statistical and computational tools, what is the best way for systematists and evolutionary biologists to make informed decisions about data collection and analysis? The answer we often encounter is “it depends,” which causes confusion among new scientists entering the field or those exploring a new topic in evolutionary biology. The first step towards dispelling this confusion and guiding the future work of systematists is assembling a catalog of benefits and pitfalls of current approaches. This symposium brings together a wide range of experts studying molecular and morphological evolution, paleobiology, and biogeography to discuss practical and theoretical considerations faced when designing and conducting research in each of these fields. Experts will discuss the caveats and assumptions they grapple with when choosing data and methods.
methods to apply to a particular question, focusing both on successful approaches as well as setbacks they have encountered throughout the process.

Presentations

9:30 AM - 9:59 AM

**Genomic and transcriptomic dynamics within Ctenophora: Insights from the genome of a ctenophore-eating ctenophore**

**Alexandra Hernandez**¹, Melissa DeBiasse¹, Lana Dykes¹, Allison Edgar¹, Mark Martindale¹, Joseph Ryan²

¹Whitney Laboratory for Marine Bioscience, ²Whitney Laboratory for Marine Bioscience, University of Florida, ST AUGUSTINE, FL

10:00 AM - 10:14 AM

**Decreasing bias against marine invertebrates in comparative genomics studies through machine learning.**

**Jennifer L. Spillane**¹, Rebecca Dikow²

¹Smithsonian Institution, Brunswick, NH, ²Smithsonian Institution, Washington, DC

10:15 AM - 10:29 AM

**Data types, taxon sampling, and other decisions in phylotranscriptomics and inferring whole genome duplications: a study in ferns**

**Jessie Pelosi**¹, Emily Kim², W. Brad Barbazuk³, Emily Sessa⁴

¹University of Florida, Gainesville, ²Department of Microbiology and Cell Sciences, University of Florida, ³University of Florida, Biology, ⁴University of Florida, Gainesville, FL

10:30 AM - 10:44 AM

Panel discussion/Q&A

Invasive Species

📅 Mon, June 27
⏰ 9:30 AM - 10:45 AM
📍 Room 20
🔒 Regular
Climate anomalies and competition reduce establishment success during biological invasion

Dan Nicholson¹, Rob Knell², Rachel McCrea³, Lauren Neel⁴, John David Curlis⁵, Claire Williams⁶, Albert Chung⁷, Owen McMillan⁸, Trent Garner⁹, Christian Cox¹⁰, Michael Logan¹⁰

¹University of Texas Arlington, Arlington, ²Queen Mary University London, ³University of Kent, ⁴Arizona State University, ⁵University of Michigan, ⁶University of Nevada Reno, ⁷Princeton University, ⁸Smithsonian Tropical Research Institute, ⁹Institute of Zoology, ¹⁰Florida International University

Trait Shifts in Range Expansions: a Meta-Analysis

Christopher Peterson, University of Texas at Austin, Austin, TX

How do soil and root-associated bacteria in an invasive plant vary with genotype and geography?

Mae Berlow¹, Katrina M. Dlugosch²

¹University of Arizona, Tucson, ²University of Arizona, Tucson, AZ

Founder effects reduce fitness at the range edge of an expanding invasive bee population

Thomas Hagan¹, Rosalyn Gloag²

¹BEELab, University of Sydney, Sydney, Australia, ²University of Sydney

Genetic Applications to Inform Invasive Species Management: Sitka Black-tailed Deer in Haida Gwaii

WITHDRAWN

Brock Burgess¹, Robyn Irvine², Michael Russello³

¹The University of British Columbia, ²Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve and Haida Heritage Site, Parks Canada, ³University of British Columbia Okanagan

Phylogeography I

📅 Mon, June 27
⏰ 9:30 AM - 10:45 AM
📍 Room 15
Presentations

9:30 AM
Phylogeography within the Peromyscus maniculatus species group: Understanding past distribution of genetic diversity and areas of refugia in western North America
Robert Boria¹, Jessica Blois²
¹Harvard University, Cambridge, MA, ²University of California-Merced

9:45 AM
The genetic history of Nasonia
Garima Prazapati¹, Rhitoban Raychoudhury², John Werren³
¹Indian Institute of Science Education and Research, Mohali, Mohali, Punjab, India, ²Indian Institute of Science Education and Research, Mohali, ³University of Rochester

10:00 AM
Apicoplast phylogeny illuminates worldwide dispersal history of Plasmodium vivax
Benjamin D. Redelings¹, Greg Wray², Valerie Gartner²
¹Duke University, Durham, NC, ²Duke University

10:15 AM
Understanding human phylogeography through reconstructed genealogies
Andrew Vaughn¹, Rasmus Nielsen²
¹UC Berkeley, Moraga, ²University of California Berkeley & Natural History Museum of Denmark

10:30 AM
The story behind the strains: Examining the phylogeography of wild yeast from woodlands
Jacqueline Peña¹, Eduardo Scopel², Douda Bensasson²
¹University of Georgia, Athens, GA, ²University of Georgia
<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
<th>Authors</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td><strong>Colombian Aedes aegypti and the evolution of insecticide resistance</strong></td>
<td>Becca Love¹, Daniel R. Matute², Daniel R. Schrider³</td>
<td>¹University of North Carolina, Carrboro, ²University of North Carolina, Chapel Hill, Chapel Hill, NC, ³University of North Carolina, Chapel Hill, NC</td>
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<td>9:44 AM</td>
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<td>9:45 AM</td>
<td><strong>Evolutionary history of a sex-ratio supergene in Formica ants</strong></td>
<td>German Lagunas-Robles¹, Madison Sankovitz², Jessica Purcell², Alan Brelsford²</td>
<td>¹University of California, Riverside, Riverside, CA, ²University of California, Riverside</td>
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<td>9:59 AM</td>
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<tr>
<td>10:00 AM</td>
<td><strong>Evolutionary history and population genomic structure of American alligators</strong></td>
<td>John Konvalina¹, Eric Hoffman²</td>
<td>¹University of Central Florida, Orlando, ²University of Central Florida</td>
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<td>10:14 AM</td>
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<tr>
<td>10:15 AM</td>
<td><strong>Gene flow and inversions shape evolution of garter snake life-history ecotypes</strong></td>
<td>Jessica Judson¹, Anne Bronikowski²</td>
<td>¹KBS Michigan State University, ²Iowa State University Department of Ecology, Evolution, and Organismal Biology</td>
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<td>10:29 AM</td>
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<tr>
<td>10:30 AM</td>
<td><strong>Pangenomes of Woodhouse's Scrub-Jay (Aphelocoma woodhouseii) reveal fitness effects of abundant structural variation</strong></td>
<td>Scott V. Edwards¹, Timothy B. Sackton², Erik Garrison³, Li⁴</td>
<td>¹Harvard University, Cambridge, MA, ²Harvard University, ³University of Tennessee Health Science Center, ⁴Dana Farber Cancer Institute</td>
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<tr>
<td>10:44 AM</td>
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Presentations

**9:30 AM - 10:45 AM**

**Room 21**

**Regular**

**9:30 AM - 10:14 AM**

**Bee taxa differ in their pollen movement patterns and contribution to the male fitness of a self-incompatible prairie perennial**

Avery Pearson¹, Zeke Zelman¹, Lauryn Hill¹, Mia Stevens¹, Evan Jackson¹, Miyauna Incarnato¹, Ren Johnson¹, Stuart Wagenius², Jennifer L. Ison³

¹The College of Wooster, ²Chicago Botanic Garden, ³The College of Wooster, Wooster

**9:45 AM - 10:00 AM**

**Gametophytic selection and selective embryo abortion in Mimulus guttatus**

WITHDRAWN

Karla d. Berg¹, Jaime A. Schwoch², Mitch Cruzan¹

¹Portland State University, Portland, Oregon, ²Portland State University, Portland, OR

**10:00 AM - 10:14 AM**

**Pollination effectiveness of different floral visitors to Mimulus ringens**

Randy J. Mitchell¹, Dana Starvaggi², Victor Fitzgerald³, Jeffrey D. Karron⁴

¹University of Akron, Akron, OH, ²Akron Public Schools, ³Miami University Ohio, ⁴University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

**10:15 AM - 10:29 AM**

**A drought-driven hypothesis for the origin of obligate apomixis in ferns**

Amanda Grusz¹, Michael D. Windham², Kathryn Picard³, Kathleen Pryer², Eric Schuettpelz³, Christopher Haufler⁴

¹University of Minnesota Duluth / Smithsonian Institution, ²Duke University, ³Smithsonian Institution, ⁴University of Kansas

**10:30 AM - 10:44 AM**

**Causes and consequences of biparental inbreeding in two marine invertebrates with limited potential for dispersal**
Coffee break

📅 Mon, June 27
⏰ 10:45 AM - 11:15 AM
📍 Grand Ballroom BC
💡 Social event

PUI Mixer

📅 Mon, June 27
⏰ 10:45 AM - 11:15 AM
📍 Room 25ABC
💡 Social event

Description

Registration not required.

An opportunity for evolutionary biologists working at primarily undergraduate institutions (PUIs) to meet up with colleagues, and discuss common experiences, challenges, and opportunities. Grab a beverage - come and meet friends, network, and have fun! ?

Evolution in action II

📅 Mon, June 27
⏰ 11:15 AM - 12:30 PM
📍 Room 26BC
💡 Symposium

Description

Organizers: Dr. John Benning, Dr. Ruth Hufbauer, and Dr. Christopher Weiss-Lehman

Recent years have thrown into sharp relief an intimidating set of global issues. Drug resistance, invasive...
species, global pandemics, species extinctions, threats to biodiversity from climate change — these are existential crises with no easy answers. Solutions to these problems will depend in large part on basic research into the evolutionary processes underlying these phenomena. This symposium will be a timely assessment of how evolutionary biology is helping to solve pressing problems in society today, while seeking to catalyze a closer integration of basic and applied research moving forward. Symposium speakers will explore the COVID-19 pandemic, climate change adaptation, conservation, drug resistance, invasive species, and the history of evolutionary biology as a tool for societal progress. These talks will highlight how fundamental evolution research informs our understanding of, and solutions to, this varied set of global issues. At the same time, talks will demonstrate how these so-called “applied” research topics offer unique opportunities to advance our understanding of basic evolutionary patterns and processes. The speakers span a range of career stages and study organisms from across the tree of life using a variety of experimental, theoretical, and molecular approaches. By highlighting exciting junctures of basic and applied research, we hope the symposium will help to chart a course for the role of evolutionary biology in society moving forward.

Presentations

11:15 AM  The interplay of evolution and plasticity has shaped insect responses to recent climate change
Lauren Buckley1, Joel G. Kingsolver2
1University of Washington, Seattle, WA, 2University of North Carolina, Chapel Hill, NC

11:44 AM

11:45 AM  Evolution in the dynamics and management of biological invasions
Ben Phillips, University of Melbourne, Parkville, Australia

11:45 AM  Harnessing genomics for informing genetic rescue of small populations
Sarah W. Fitzpatrick1, Brendan N. Reid2
1Kellogg Biological Station; Michigan State University, HICKORY CORNERS, MI, 2Rutgers University, New York, NY

Evolutionary Ecology II

📅 Mon, June 27  ⏰ 11:15 AM - 12:30 PM  📍 Room 19  🗓️ Regular
Evolution of viviparity drives convergent phenotypes in phrynosomatid lizards

Saúl F Domínguez-Guerrero¹, Martha Muñoz²
¹Yale University, New Haven, ²Yale University, New Haven, CT

Ancestral genetic variation in phenotypic plasticity underlies rapid evolutionary changes in resurrected populations of waterfleas

Alex Landy¹, Matthew R. Walsh²
¹University of Tampa, TAMPA, ²University of Texas at Arlington, Arlington, TEXAS

Nematode infection of male fig wasps: potential benefits for nematodes and consequences for fig-fig wasp communities

Justin M. Van Goor, Derek Houston³, John Nason⁴, Eric Haag⁵
¹University of Maryland College Park, ²University of Kansas, College Park, MD, ³Western Colorado University, ⁴Iowa State University, ⁵University of Maryland College Park

Seed borne endophytic bacteria modulate the season of seed germination and exert cascading effects on the expression of post-germination traits and natural selection

Byungwook Choi¹, Taemin Kim², Seorin Jeong², Yousuk Kim², Eunsuk Kim²
¹Gwangju Institute of Science and Technology, South Korea, ²Gwangju Institute of Science and Technology

Novel insights evolution of temperature-dependent sex determination

Mariel Terebiznik¹, Njal Rollinson²
¹University of Toronto, Toronto, ²University of Toronto
Presentations

11:15 AM | The impact of clonal propagation on DNA methylation in angiosperms
Eleanore Ritter¹, Chad Niederhuth²
¹Michigan State University, East Lansing, ²Michigan State University

11:30 AM | Genome size changes by duplication, divergence and insertion in Caenorhabditis
Janna Fierst¹, Paula Adams², Joshua Millwood³, Jason Pienaar¹, John Sutton⁴
¹Florida International University, Miami, ²University of Alabama, Tuscaloosa, AL, ³The University of Alabama, ⁴Absci

11:45 AM | Sex chromosome evolution in beetles
Ryan Bracewell¹, Anita Tran², Doris Bachtrog²
¹Indiana University, ²UC Berkeley

12:00 PM | A high-resolution map of Drosophila hybrid pairing connects BLACK heterochromatin to pairing loss, reproductive incompatibility, and DNA underreplication
James G. Baldwin-Brown, University of Utah, Salt Lake City, UT

12:15 PM | Genomics reveals repeated convergent body size evolution in Solomon Islands Leaf-nosed Bats WITHDRAWN
Devon DeRaad¹, Tyrone Lavery², Karen Olson², Lucas H. DeCicco³, Robert Moyle³
¹University of Kansas, Lawrence, KS, ²The Australian National University, ³University of Kansas

How do we make decisions about data and analyses in systematic biology? It depends! II

Mon, June 27
Description

Organizers: Dr. Natya Hans, Dr. Alexandra Hernandez, and Chloe Nash, PhD candidate

When conceiving and developing evolutionary studies, scientists must confront a vast array of difficult questions, such as how to choose among different data types and methods of data collection, and determine which analyses will best address hypotheses. These decisions can affect study outcomes, and often depend upon the scope of the question, the data currently available, and other logistical challenges. In this time of ever-expanding quantities of data and elaborate statistical and computational tools, what is the best way for systematists and evolutionary biologists to make informed decisions about data collection and analysis? The answer we often encounter is “it depends,” which causes confusion among new scientists entering the field or those exploring a new topic in evolutionary biology. The first step towards dispelling this confusion and guiding the future work of systematists is assembling a catalog of benefits and pitfalls of current approaches. This symposium brings together a wide range of experts studying molecular and morphological evolution, paleobiology, and biogeography to discuss practical and theoretical considerations faced when designing and conducting research in each of these fields. Experts will discuss the caveats and assumptions they grapple with when choosing data and methods to apply to a particular question, focusing both on successful approaches as well as setbacks they have encountered throughout the process.

Presentations

11:15 AM - 12:30 PM
Grand Ballroom A
Symposium

**Evolution of species interactions: from tanglegrams to ancestral networks**
Mariana P Braga, SLU, Uppsala, Sweden

11:45 AM - 12:00 PM
Testing the robustness of evidence for genomic parallelism associated with climatic adaptation
Samridhi Chaturvedi¹, Zachariah Gompert², jeffrey L. feder³, Owen Osborne⁴, Moritz Muschick⁵, Rudiger Riesch⁶, Patrik Nosil⁷

¹University of California, Berkeley, Berkeley, CA, ²Utah State University, Logan, UT, ³University of Notre Dame, granger, Indiana, ⁴Bangor University, ⁵University of Bern, ²EAWAG Center for Ecology, Evolution & Biogeochemistry, Bern, BE, Switzerland, ⁶Department of Biological Sciences, Royal Holloway University of London, ⁷University Paul Valéry Montpellier
Evolution of substrate use across global assemblages of the goatfishes (Mullidae)

Chloe M. Nash¹, Linnea Lungstrom², Mark W. Westneat²
¹University of Chicago, Chicago, IL, ²University of Chicago

Panel discussion/Q&A

Organellar genomes of Silene nutans: two genomes, two tales

Zoe Postel¹, Daniel Sloan², Sophie Gallina³, Jean-Stéphane Varré⁴, Cécile Godé³, Eric Schmitt³, Pascal Touzet⁵
¹Laboratoire EEP-CNRS 8198 - France, Villeneuve d'Ascq, Haut de France, France, ²Colorado State University, ³Univ. Lille, CNRS, UMR 8198 - Evo-Eco-Paleo, F-59000 Lille, France, ⁴Univ. Lille, Inria, UMR CNRS 9189 - CRISTAL F-59000 Lille, France, ⁵Univ. Lille, CNRS, UMR 8198 - Evo-Eco-Paleo, F-59000 Lille, France, Villeneuve d'Ascq, Nord, France

Cytonuclear stoichiometry in the wake of genome duplication

Joel Sharbrough¹, Evan Forsythe¹, Matheus Fernandes Gyorfy¹, Raymond Castillo², Emma Dostal², Corrinne Grover², Mae-Ling Kao³, Jonathan Wendel⁴, Daniel Sloan⁵
¹New Mexico Institute of Mining and Technology, Socorro, NM, ²New Mexico Tech, Socorro, NM, ³New Mexico Institute of Mining and Technology, Socorro, ⁴Iowa State University, Ames, IA, ⁵Colorado State University

Evolutionary patterns of plastid RNA editing and its ties to DNA substitution rates: insights from
Phylogeography II

Mon, June 27
11:15 AM - 12:30 PM
Room 15
Regular

Presentations

11:15 AM
Incipient or ephemeral? Lineage formation and fusion in a widespread terrestrial salamander (Plethodon cinereus)
Brian Waldron1, Emily F. Watts, Donald Morgan2, Maggie M. Hantak3, Emily C. Lemmon4, Alan Lemmon5, Shawn Kuchta6
1Ohio University, Athens, OH, 2Ohio University, 3Florida Museum of Natural History, Gainesville, Florida, 4Florida State University, Department of Biological Science, Tallahassee, Florida, 5Florida State University, Department of Scientific Computing, Center for Anchored Phylogenomics, 6Ohio University, Athens

12:00 PM
Mitochondrial function in sexual vs. asexual P. antipodarum
Cameron Steffensen1, Aaron Ortiz1, Danielle Turner2, Snezna Rogelj2, Omera Matoo3, Kristi L. Montooth4, Maurine Neiman5, Joel Sharbrough6
1New Mexico Tech, Socorro, NM, 2New Mexico Tech, 3University of Nebraska-Lincoln, Lincoln, Nebraska, 4University of Nebraska-Lincoln, Lincoln, NE, 5University of Iowa, Iowa City, Iowa, 6New Mexico Institute of Mining and Technology, Socorro, NM

12:15 PM
Heteroplasmy in Mexican populations of the ant Ectatomma ruidum
Ian Butler1, Alejandro Zaldívar-Riverón2
1Instituto de Biología, Universidad Nacional Autónoma de México, Ciudad de Mexico, Mexico, 2Instituto de Biología, Universidad Nacional Autónoma de México
Phylogeographic and population genomics of a widespread trunk-ground anole (Anolis cybotes) on Hispaniola
WITHDRAWN
Guin Wogan¹, Luke Mahler², Ian Wang³
¹Oklahoma State University, gwogan@berkeley.edu, ²University of Toronto, ³University of California, Berkeley, Berkeley, CA

Testing cryptic species hypotheses in four woodland salamanders.
Tom Radomski¹, Kevin de Queiroz², Donald Shepard³, Kenneth H. Kozak⁴
¹University of Minnesota, St. Paul, MN, ²National Museum of Natural History, ³Louisiana Tech University, ⁴University of Minnesota

Tropical-temperate gradients of species and genetic diversity across the rugged landscapes of the American Cordillera
Chaz Hyseni¹, Camilo A. Calderón-Acevedo², Marcelo Gehara³, Isaac Overcast⁴
¹US Forest Service, Oxford, MS, ²Rutgers University Newark, ³American Museum of Natural History, New York, NY, ⁴Institut de Biologie de l'Ecole Normale Superieure, Paris, ile-de-france, France

Geographic patterns of genetic diversity in Darwin Wasps (Ichneumonidae, Hymenoptera)
Jessica Castellanos-Labarcena, University of Guelph, Guelph
Pleiotropy in the melanocortin system and frequency-dependent selection may influence bimodal melanic morph frequencies across populations.

Eve Humphrey¹, Joseph Travis², Kimberly A. Hughes³
¹Lincoln University, Lincoln University, Pennsylvania, ²Florida State University, Tallahassee, FL, ³Florida State University

CYP1A expression in freshwater fish of western New York as an indicator of pollution levels

Rebecca Williams, The College of Wooster, Wooster

Genome Analysis Traces Regional Dispersal of Rice in Taiwan and Southeast Asia

Ornob Alam¹, Rafal Gutaker², Michael Purugganan³, Ronald K. Bocinsky⁴, Jade d'Alpoim Guedes⁵
¹New York University, New York, ²New York University, ³Center for Genomics and Systems Biology, Department of Biology, 12 Waverly Place, New York University, New York, NY USA, ⁴Crow Canyon Archaeological Center, Cortez, CO, ⁵University of California, San Diego

The genetic, anatomical, and evolutionary origin of convergent evolution in poison frog coloration

Roberto Márquez, University of Michigan, ANN ARBOR

Exploiting natural genetic variation to quantify developmental constraints

Haoran Cai¹, David Des Marais²
¹Massachusetts Institute of Technology, MA, ²Massachusetts Institute of Technology, Cambridge

Reproductive Biology II
## Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>11:15 AM</td>
<td>Reproductive metabolism scaling across ectotherms</td>
<td>Samuel Ginther&lt;sup&gt;1&lt;/sup&gt;, Hayley Cameron&lt;sup&gt;2&lt;/sup&gt;, Craig White&lt;sup&gt;3&lt;/sup&gt;, Dustin Marshall&lt;sup&gt;4&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;Monash University, Melbourne, Australia, &lt;sup&gt;2&lt;/sup&gt;Monash University, Eltham, Australia, &lt;sup&gt;3&lt;/sup&gt;Monash University, &lt;sup&gt;4&lt;/sup&gt;Monash University, Australia</td>
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<tr>
<td>11:30 AM</td>
<td>High larval temperature alters synchrony of adult eclosion in the European corn borer moth</td>
<td>Genevieve M. Kozak&lt;sup&gt;1&lt;/sup&gt;, Brittany Velikaneye&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;UMass-Dartmouth, Dartmouth, MA, &lt;sup&gt;2&lt;/sup&gt;UMass-Dartmouth, North Dartmouth</td>
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<tr>
<td>11:45 AM</td>
<td>MLH3 an endonuclease, has a non-enzymatic role in mitigating germ line aneuploidy</td>
<td>Tolkappiyan Premkumar, MD Anderson, Houston</td>
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<tr>
<td>12:00 PM</td>
<td>Evolution of Imprinted Expression in the Mouse Placenta</td>
<td>Fernando Rodriguez Caro&lt;sup&gt;1&lt;/sup&gt;, Emily C. Moore&lt;sup&gt;2&lt;/sup&gt;, Jeff M. Good&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;University of Montana, Missoula, &lt;sup&gt;2&lt;/sup&gt;University of Montana, Missoula, &lt;sup&gt;3&lt;/sup&gt;Division of Biological Sciences, University of Montana, Missoula</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>The limiting factor of sexual isolation; variation and divergence in female preference functions in natural and artificially selected Drosophila species</td>
<td>Roman Yukilevich, Union College, Schenectady, NY</td>
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## American Naturalist editorial board meeting

📅 Mon, June 27  
⏰ 12:30 PM - 2:30 PM  
📍 Room 24  
_topics: Meeting

## Description
Open to editors/associate editors of the journal only. Lunch is provided.

**Faculty-Student networking lunch**

📅 Mon, June 27  
⏰ 12:30 PM - 2:30 PM  
📍 Offsite  
xEF Social event

### Description

Pre-registration required.

The SSE Graduate Student Advisory Council organized small group networking lunches to facilitate interactions between students and faculty. Interest was indicated during conference registration and surveys were sent out to match students with faculty. Resulting groups will be responsible for finding their own lunch venues.

**Joint council exit meeting**

📅 Mon, June 27  
⏰ 12:30 PM - 2:30 PM  
📍 Room 14  
xEF Meeting

### Description

Open to members of the ASN/SSB/SSE Joint council only. Lunch is provided.

**Lunch**

📅 Mon, June 27  
⏰ 12:30 PM - 2:30 PM  
📍 Offsite  
xEF Social event
**Description**

Attendees are on their own; lunch is not provided.

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**Postdoc networking lunch**

📅 Mon, June 27  
🕒 12:30 PM - 2:30 PM  
📍 Offsite  
💬 Social event

**Description**

Prior registration required.

The SSE Graduate Student Advisory Council organized small group networking lunches to facilitate interactions among postdocs. Signup was during conference registration and a survey was sent out to set up groups. Groups are responsible for finding their own lunch venues.

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**Project Baseline**

📅 Mon, June 27  
🕒 12:30 PM - 2:30 PM  
📍 Room 13  
💬 Workshop / Information session

**Description**

Pre-registration required. Lunch is provided.

This lunch session will facilitate and promote the national and international use of the Project Baseline seed bank for evolutionary comparisons between current populations and their antecedents. At this lunch, Project Baseline leaders will be available to answer questions, and participants can brainstorm their research plans and network with others for discussion and collaboration to generate research proposals for projects that employ the Project Baseline collection in evolutionary studies. Early career investigators and researchers from underrepresented groups are especially encouraged to join. Limited funding to cover registration for Evolution 2022 and lunch is available for up to 20 attendees. For more information, and to apply to attend, see here.
Evolution in action III

Mon, June 27
2:30 PM - 3:45 PM
Room 26BC
Symposium

Description

Organizers: Dr. John Benning, Dr. Ruth Hufbauer, and Dr. Christopher Weiss-Lehman

Recent years have thrown into sharp relief an intimidating set of global issues. Drug resistance, invasive species, global pandemics, species extinctions, threats to biodiversity from climate change — these are existential crises with no easy answers. Solutions to these problems will depend in large part on basic research into the evolutionary processes underlying these phenomena. This symposium will be a timely assessment of how evolutionary biology is helping to solve pressing problems in society today, while seeking to catalyze a closer integration of basic and applied research moving forward. Symposium speakers will explore the COVID-19 pandemic, climate change adaptation, conservation, drug resistance, invasive species, and the history of evolutionary biology as a tool for societal progress. These talks will highlight how fundamental evolution research informs our understanding of, and solutions to, this varied set of global issues. At the same time, talks will demonstrate how these so-called “applied” research topics offer unique opportunities to advance our understanding of basic evolutionary patterns and processes. The speakers span a range of career stages and study organisms from across the tree of life using a variety of experimental, theoretical, and molecular approaches. By highlighting exciting junctures of basic and applied research, we hope the symposium will help to chart a course for the role of evolutionary biology in society moving forward.

Presentations

2:30 PM
Hard limits to contemporary evolution along stress gradients
Robert I. Colautti, Queen’s University, Kingston, Kingston, ON

3:00 PM
Masters of Tomorrow: How Technocracy Promised to Unlock the Future of Human Evolution for J. B. S. Haldane, J. D. Bernal, and Julian Huxley.
Luis Felipe Eguiarte Souza, University of Minnesota, Minneapolis

3:30 PM
Panel Discussion
Evolutionary Ecology III

Mon, June 27
2:30 PM - 3:45 PM
Room 19
Regular

Presentations

2:30 PM
pH as an eco-evolutionary driver of priority effects
Tadashi Fukami¹, Callie R. Chappell¹, Manpreet Dhami², Mark C. Bitter³, Lucas Czech⁴, Sur H. Parades³, Katherine Eritano³, Lexi-Ann Golden³, Veronica Hsu⁵, Clara Kieschnick³, Nicole Rush³
¹Stanford University, Stanford, CA, ²Manaaki Whenua Landcare Research, ³Stanford University, ⁴Carnegie Institution for Science, Stanford, California, ⁵MIT

2:45 PM
Temporal Dynamics of Predator Learning in a Batesian Mimicry Complex
Abby Robinson, Boston University, Boston

3:00 PM
Investigating frequency- and density-dependent inbreeding depression in Sabatia angularis
Mark J. Walker¹, Rachel Spigler¹
¹Temple University, Philadelphia, PA

3:15 PM
Antagonistic effects of thermoregulation and mate recognition shape contemporary evolution of a complex melanin trait
Angie Lenard¹, Sarah Diamond²
¹Case Western Reserve University, SOUTH EUCLID, OH, ²Case Western Reserve University, Cleveland, OH

3:30 PM
Balancing selection and drift in a polymorphic salamander metapopulation
Sean Giery, Pennsylvania State University, University Park, PA

Genomics V
Presentations

2:30 PM  
Transposon insertional mutagenesis of diverse yeast strains suggests coordinated gene essentiality polymorphisms
Piaopiao Chen¹, Agnès Michel¹, Jianzhi Zhang²
¹University of Michigan, Ann arbor, ²University of Michigan

2:45 PM  
The transposable element landscape in neotropical salamanders.
Paul P. Decena, Cinvestav, Irapuato, Guanajuato, Mexico

3:00 PM  
Paleoneurobiology of the Tetrapod Olfactory Bulb Inferred from Extant Olfactory Receptor Repertoires
Laurel Yohe¹, Matteo Fabbri², Nicholas Krell³, Bhart-Anjan Bhullar⁴
¹UNC Charlotte, Charlotte, CT, ²Field Museum of Natural History, ³University of North Carolina at Charlotte, Charlotte, ⁴Yale University

3:15 PM  
Natural variation in copper resistance among mining and agricultural sites
Elizabeth Everman, University of Kansas, Lawrence, Lawrence, KS

3:30 PM  
From morphology to genomics: reconstructing the history of a host shift in an invasive insect
Jeremy S. Davis¹, Catherine R. Linnen¹
¹University of Kentucky, Lexington, KY

How do we make decisions about data and analyses in systematic biology? It depends! III
Mon, June 27  
2:30 PM - 3:45 PM
**Description**

**Organizers:** Dr. Natya Hans, Dr. Alexandra Hernandez, and Chloe Nash, PhD candidate

When conceiving and developing evolutionary studies, scientists must confront a vast array of difficult questions, such as how to choose among different data types and methods of data collection, and determine which analyses will best address hypotheses. These decisions can affect study outcomes, and often depend upon the scope of the question, the data currently available, and other logistical challenges. In this time of ever-expanding quantities of data and elaborate statistical and computational tools, what is the best way for systematists and evolutionary biologists to make informed decisions about data collection and analysis? The answer we often encounter is “it depends,” which causes confusion among new scientists entering the field or those exploring a new topic in evolutionary biology. The first step towards dispelling this confusion and guiding the future work of systematists is assembling a catalog of benefits and pitfalls of current approaches. This symposium brings together a wide range of experts studying molecular and morphological evolution, paleobiology, and biogeography to discuss practical and theoretical considerations faced when designing and conducting research in each of these fields. Experts will discuss the caveats and assumptions they grapple with when choosing data and methods to apply to a particular question, focusing both on successful approaches as well as setbacks they have encountered throughout the process.

**Presentations**

2:30 PM  
**Automated landmarking via multiple templates**  
Chi Zhang¹, Arthur Porto², Sara Rolfe³, Altan Kocatulum⁴, A. Murat Maga⁵

¹Seattle Children's Research Institute, Seattle, ²Department of Biological Sciences, Louisiana State University, ³Seattle Children's Research Institute, ⁴Alfred University, ⁵University of Washington

2:45 PM  
**Morphometrics as a tool for molluscan systematics: a paleobiological perspective**  
Shamindri Tennakoon, University of Florida, Gainesville

3:00 PM  
**Inferring diversification rates from fossil data: assumptions, choices, challenges**  
David Cerný¹, Orlando Schwery²

¹University of Chicago, Chicago, Illinois, ²Southeastern Louisiana University, Hammond, ID
<table>
<thead>
<tr>
<th>Time</th>
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| 3:15 PM  | Evaluating different approaches to handling taxonomic uncertainty using the fossilized birth-death process  
Rachel C. Warnock¹, Joëlle Barido-Sottani², Kenneth De Baets³, Jérémie Sciré⁴, Alexander Pohle⁵, Duncan Murdock⁶  
¹FAU, Erlangen, Germany, ²ENS PSL, Paris, France, ³University of Warsaw, ⁴ETH Zurich, ⁵University of Zurich, ⁶Oxford Museum of Natural History |
| 3:30 PM  | Panel discussion/Q&A                                                                            |
| 3:44 PM  |                                                                                                 |

### Phylogenetic Methods III

📅 Mon, June 27  
⏰ 2:30 PM - 3:45 PM  
📍 Room 15  
 ├── Regular

#### Presentations

<table>
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<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>2:30 PM</td>
<td><strong>PhyloHerb: a high-throughput phylogenomic pipeline for processing genome-skimming data</strong></td>
</tr>
</tbody>
</table>
|          | Liming Cai¹, Hongrui Zhang², Charles C. Davis³  
¹UT Austin, Austin, MA, ²Texas A&M, ³Harvard University |
| 2:45 PM  | **PATHTREES: a Python package to explore the tree landscape**                                      |
|          | Marzieh Khodaei¹, Megan Owen², Peter Beerli³  
¹Florida State University, Tallahassee, ²Lehman College and Graduate Center, CUNY, ³Florida State University |
| 3:00 PM  | **Fast and accurate bootstrap confidence limits on genome-scale maximum-likelihood phylogenies using little bootstraps**  
Sudip Sharma¹, Sudhir Kumar²  
¹Temple University, Philadelphia, Pennsylvania, ²iGEM @ Temple, Philadelphia, PA |
Phylogenetic inference using Generative Adversarial Networks

Megan L. Smith, Matthew Hahn

1Indiana University, Bloomington, IN, 2Indiana University

Bayesian Phylogenetic Inference of HIV Latent Lineage Ages

Anna Nagel, Bruce Rannala

1University of California, Davis, Davis

Population Genetics V

Mon, June 27
2:30 PM - 3:45 PM
Room 16
Regular

Presentations

2:30 PM
Population genomics of the common kingsnake complex

Sean Harrington, University of Wyoming, HI

2:45 PM
Pitfalls and promise of detecting demographic declines using population genetics in species with long lifespan and overlapping generations

Meaghan Clark, Gideon Bradburd

1Michigan State University, East Lansing, MI, 2Michigan State University, East Lansing, Michigan

3:00 PM
Population genomics of the Phyllotis xanthopygus species complex in Chile

Schuyler Liphardt, Zachary Cheviron, Guillermo D'Elía, Jay Storz, Marcial Quiroga-Carmona, Timothy J. Thurman, Jeff M. Good

1University of Montana, Division of Biological Sciences, 2University of Montana, Missoula, MT, 3Instituto de Cs. Ambientales y Evolutivas, Universidad Austral de Chile, Valdivia, Chile, 4University of Nebraska, 5Instituto de Cs. Ambientales y Evolutivas Universidad Austral de Chile, Venezuela, 6Division of Biological Sciences,
Recurrent mutation in the ancestry of a rare allele: theory and application to human data

John Wakeley¹, Wai-Tong (Louis) Fan², Evan Koch³, Shamil Sunyaev³

¹Harvard University, Cambridge, MA, ²Department of Mathematics, Indiana University, ³Department of Biomedical Informatics, Harvard Medical School

The best of both worlds: combining population genetic and quantitative genetic models

Léonard Dekens¹, Sarah (Sally) Otto², Vincent Calvez²

¹Université Claude Bernard Lyon 1, Institut Camille Jordan, Villeurbanne Cedex, Rhône, France, ²UBC, Vancouver, BC

Sexual Selection III

Mon, June 27
2:30 PM - 3:45 PM
Room 20
Regular

The genetic and neural basis of female mate preference in Drosophila.

WITHDRAWN
Tabashir Chowdhury¹, William Yeung¹, Sebastian Heine¹, Asil El Galad¹, Amanda Moehring²

¹Western University, ²Western University, London, ON

Inferring the influence of sexual selection on primate protein evolution

Brianna Ports¹, Michael Jensen-Seaman¹

¹Duquesne University, Pittsburgh, PA

Temperature, size and density drive sperm metabolism across the tree of life
3:14 PM  | Ashley Potter¹, Craig White², Dustin Marshall³
          | ¹Monash University, Australia, ²Monash University, ³Monash University, Monash University, Australia

3:15 PM  | Evolution of visual opsins in freshwater threespine sticklebacks in response to environment and behavior
          | Thomas (TJ) Firneno¹, Gabrielle Welsh², Jennifer Gumm³, Erica Larson², Robin Tinghitella²
          | ¹University of Denver, Denver, ²University of Denver, Denver, CO, ³US Fish and Wildlife Service

3:30 PM  | Early social learning shapes male mating strategy in Trinidadian guppies
          | Yusan Yang¹, Eleanor Grant², Ellen Urquhart², Katie Talbert², Shayna Rosenbloom³, Lauren Johnson², Zakiya Walker², Kyle Hsiao², Swanne Gordon²
          | ¹Living Earth Collaborative, Washington University in St. Louis, St. Louis, ²Washington University in St. Louis, ³University of Louisville, Louisville

Coffee break
Mon, June 27
3:45 PM - 4:15 PM
Grand Ballroom BC
Social event

Bioinformatics
Mon, June 27
4:15 PM - 5:30 PM
Room 16
Regular

Presentations
4:15 PM  | Machine learning assisted gene annotation of a nematode phylogeny by proteotranscriptomics
Evolutionary Ecology IV

Mon, June 27
4:15 PM - 5:30 PM
Room 19
Regular

Presentations

4:15 PM
Combined effects of heat stress and a novel, introduced hostplant on a tritrophic system

Anna Parker¹, Tyler Pereira¹, Madison Milotte¹, joel g. Kingsolver²
¹University of North Carolina - Chapel Hill, ²University of North Carolina, Chapel Hill, NC

4:44 PM
Building better genome annotations across the tree of life: choosing tools and making them work

Adam H. Freedman¹, Timothy B. Sackton², Nathan Weeks²
¹Harvard University, Cambridge, MA, ²Harvard University

4:59 PM
SIDR: A software package for decontaminating eukaryotic genome assemblies with machine learning

Paula Adams¹, Janna Fierst²
¹University of Alabama, Tuscaloosa, AL, ²Florida International University, Miami

5:14 PM
Deducing the Common Ancestor of the Nucleolar Transcription Factor and its Potential Role in Regeneration

Sofia Barreira¹, Andy Baxevanis²
¹National Human Genome Research Institute, NIH, Bethesda, Maryland, ²National Human Genome Research Institute, NIH, Bethesda, MD
Population-specific patterns of toxin sequestration in monarch butterflies from around the world

Micah Freedman¹, Sue-Ling Choquette², Santiago Ramirez², Sharon Y. Strauss³, Mark Hunter⁴, Rachel Vannette²
¹University of Chicago, Chicago, CA, ²University of California, Davis, ³University of California, Davis, Davis, CA, ⁴University of Michigan

Hawaiian lava tube biology and evolution along the space-time continuum

Becky Chong, University of Hawaii, Honolulu, Hawaii

Color scales with climate in North American ratsnakes: a test of the thermal melanism hypothesis using community science images

Maggie M. Hantak, Florida Museum of Natural History, Gainesville, Florida

Timing and duration of temperature elevation alters reproduction of the European corn borer moth

Brittany Velikaneye¹, Genevieve M. Kozak²
¹UMass-Dartmouth, North Dartmouth, ²UMass-Dartmouth, Dartmouth, MA

Genomics VI

Mon, June 27
4:15 PM - 5:30 PM
Room 21
Regular

Presentations

Double-Strand Break Resolution in Saccharomyces uvarum

Enrique Schwarzkopf¹, Nathan Brandt², Caiti Smukowski Heil¹
¹North Carolina State University, Raleigh, NC, ²North Carolina State University
Comparative genomics of skink genomes supports multiple mechanisms of limb reduction in squamate reptiles
Daren Card¹, Sangeet Lamichhaney², Mark Hutchinson³, Steve Donnellan⁴, Michael Lee⁵, Scott V. Edwards¹
¹Harvard University, Cambridge, MA, ²Kent State University, Kent, OH, ³Flinders University, ⁴South Australian Museum, ⁵South Australian Museum & Flinders University, Australia

Whole genome sequencing combined with nextRAD validates a single sex-specific genetic marker in the sexually monomorphic Hybognathus amarus (Cypriniformes: Leuciscidae)
Guilherme Caeiro Dias¹, Megan Osborne², Hannah Waterman³, Trevor Krabbenhoft, Thomas Turner²
¹University of New Mexico, Albuquerque, ²Department of Biology and Museum of Southwestern Biology, University of New Mexico, ³University at Buffalo, BUFFALO, NY

The morphological and genetic basis of parallel evolution in seed dispersal in weedy rice
Ana Caicedo¹, Xiang Li¹
¹University of Massachusetts Amherst, Amherst, MA

Genomic diversification of Acinetobacter in floral nectar environments
Vivianna Sanchez¹, Tory Hendry, Tanya Renner²
¹Cornell University, Ithaca, ²Penn State University

Mutualism / Coevolution II
📅 Mon, June 27
⏰ 4:15 PM - 5:30 PM
📍 Room 20
مؤ Normal

Presentations

4:15 PM
Diverse evolutionary histories in the diverse yet conserved turtle ant gut community
Cryptic community structure and within-host ecology of heritable pea aphid microbiomes
Linyao Peng¹, Andrew Smith², Danielle Rock², Jessica Hoban², Melissa Carpenter¹, Jonah Joffe², Kerry Oliver³, Jacob Russell⁴
¹Drexel University, Philadelphia, PA, ²Drexel University, ³Beijing Normal University, ⁴Drexel University, PHILADELPHIA, Pennsylvania

Testing the roles of hybridization and introgression in the evolution of a Panamanian fig and pollinator mutualism
Jordan Satler¹, Allen Herre², Tracy Heath³, Carlos Machado⁴, Adalberto Gomez², Charlotte Jander⁵, Deren A. Eaton⁶, John Nason⁷
¹The Ohio State University, ²Smithsonian Tropical Research Institute, ³Iowa State University, Ames, Iowa, ⁴University of Maryland, ⁵Uppsala University, ⁶Columbia University, New York, NY, ⁷Iowa State University

Mobile plasmids, gene expression, and symbiotic partner quality in the rhizobial symbionts of legumes WITHDRAWN
Katy D. Heath, University of Illinois at Urbana-Champaign, Urbana, IL

Gene Flow Accelerates Adaptation to a Parasite
Jordan Lewis¹, Prathyusha Kandala², McKenna Penley³, Levi Morran³
¹Emory University, Atlanta, ²Emory University, ³Emory University, Atlanta, GA

Paleobiology
📅 Mon, June 27
⏰ 4:15 PM - 5:30 PM
📍 Room 22
Presentations

4:15 PM
The impact of paleoclimatic changes on body size evolution in marine fishes
Emily M. Troyer¹, Ricardo Betancur-R.², Lily Hughes³, Mark W. Westneat⁴, Giorgio Carnevale⁵, William White⁶, John Pogonoski⁶, James Tyler⁷, Carole Baldwin⁸, Guillermo Ortí⁹, Andrew Brinkworth¹⁰, Julien Clavel¹¹, DAHIANA ARCILA¹²
¹University of Oklahoma, NORMAN, OK, ²University of Oklahoma, ³University of Chicago, Chicago, IL, ⁴University of Chicago, ⁵Università degli Studi di Torino, ⁶CSIRO Australian National Fish Collection, ⁷National Museum of Natural History, Smithsonian Institution, Washington DC, ⁸National Museum of Natural History, Smithsonian Institution, ⁹George Washington University, Washington, DC, ¹⁰University of Bath, ¹¹The Natural History Museum, London, London, United Kingdom, ¹²University of Oklahoma, Norman, Oklahoma

4:30 PM
Fossil nightshade berries reveal the global radiation of an Andean-centered family in the Eocene
Rocio Deanna¹, Camila Martinez², Steven Manchester³, Abel Campos⁴, Sandra Knapp⁵, Peter Wilf⁶, Franco Chiarini⁷, Gloria Barboza⁷, Gabriel Bernardello⁸, Hervé Sauquet⁹, Ellen Dean¹⁰, Andres Orejuela¹¹, Stacey D. Smith¹²
¹University of Colorado - Boulder, Boulder, ²Universidad EAFIT, ³Florida Museum of Natural History, ⁴University of Colorado Boulder, ⁵Natural History Museum, London, ⁶Pennsylvania State University, ⁷Instituto Multidisciplinario de Biología Vegetal, ⁸IMBIV (CONICET-Universidad Nacional de Córdoba, Argentina), Córdoba, Córdoba, Argentina, ⁹Royal Botanic Gardens and Domain Trust, Sydney, NSW, Australia, ¹⁰University of California, Davis, ¹¹Jardín Botánico José Celestino Mutis, ¹²University of Colorado Boulder, Boulder, CO

4:45 PM
Resolving cryptic evolutionary histories of problematic trilobite orders
Mark Nikolic¹, Melanie Hopkins²
¹American Museum of Natural History, New York City, NY, ²American Museum of Natural History
<table>
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<tr>
<th>Time</th>
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<th>Authors</th>
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<tr>
<td>5:00 PM</td>
<td>High morphological disparity in a bizarre Paleocene fauna of predatory freshwater reptiles</td>
<td>Chase D. Brownstein, Yale University, Stamford, Connecticut</td>
</tr>
</tbody>
</table>
| 5:15 PM      | Maximizing molecular data for systematics from “low-quality” fluid-preserved specimens in natural history collections | Justin M. Bernstein¹, Sara Ruane²  
¹Rutgers University-Newark, Newark, NJ, ²Field Museum of Natural History |

**Phylogenetic Methods IV**

📅 Mon, June 27  
⏰ 4:15 PM - 5:30 PM  
📍 Room 15  
смотр Regular

**Presentations**

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<th>Time</th>
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<th>Authors</th>
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| 4:15 PM      | Exploring the space of phylogenetic networks under a birth-death-hybridization process | Joshua Justison¹, Tracy Heath¹  
¹Iowa State University, Ames, Iowa                                                                 |
| 4:30 PM      | Accounting for gene tree discordance while estimating substitution rate shifts in non-coding elements | Han Yan¹, Zhirui Hu², Gregg Thomas¹, Timothy B. Sackton¹, Scott V. Edwards³, JUN LIU³  
¹Harvard University, ²Tsinghua University, China, ³Harvard University, Cambridge, MA |
| 4:45 PM      | Prioritizing loci for ILS-aware rate analyses using phylogenetic concordance factors | Gregg Thomas¹, Han Yan¹, zhirui hu², Scott V. Edwards, JUN LIU, Timothy B. Sackton¹  
¹Harvard University, ²Harvard University, CAMBRIDGE, MA |
| 5:00 PM      |                                                                      |                                                                                                   |
Inferring phylogenetic trees and divergence times using epimutations
Nan Yao\textsuperscript{1}, Zhilin Zhang\textsuperscript{2}, Hosung Jang\textsuperscript{3}, Rashmi Hazarika\textsuperscript{2}, Frank Johannes\textsuperscript{2}, Robert Schmitz\textsuperscript{3}
\textsuperscript{1}University of Georgia, Athens, \textsuperscript{2}Technical University of Munich, \textsuperscript{3}University of Georgia

Deep learning from phylogenies for diversification analyses
Sophia Lambert\textsuperscript{1}, Jakub Voznica\textsuperscript{1}, Hélène Morlon\textsuperscript{2}
\textsuperscript{1}Institute of Biology of ENS (IBENS), Paris, Paris, Paris, France, \textsuperscript{2}IBENS, Université PLS, CNRS

Population Genetics VI

\textbullet Mon, June 27
\textbullet 4:15 PM - 5:30 PM
\textbullet Room 26BC
\textbullet Regular

Presentations

4:15 PM
Testing Wright’s intermediate population size hypothesis – when genetic drift is a good thing
Mitch Cruzan, Portland State University, Portland, Oregon

4:30 PM
Population Genetics of Loss-Of-Function Mutations
Raymond Castillo\textsuperscript{1}, Joel Sharbrough\textsuperscript{2}
\textsuperscript{1}New Mexico Tech, Socorro, NM, \textsuperscript{2}New Mexico Institute of Mining and Technology, Socorro, NM

4:45 PM
The evolution of resistance: dissecting sources of gene copy number variation
Sarah Yakimowski, Queen’s University (Kingston, ON, Canada), Kingston, Ontario

5:00 PM
SNP-level FST outperforms whole window statistics for detecting soft sweeps in local adaptation
Tiago da Silva Ribeiro\textsuperscript{1}, John Pool\textsuperscript{2}
\textsuperscript{1}University of Wisconsin-Madison, Madison, WI, \textsuperscript{2}UW-Madison
Monday poster session

Mon, June 27
5:30 PM - 8:00 PM
Grand Ballroom BC
Poster

Presentations

Behavioral and chemical changes during development in Hawaiian crickets (genus Laupala) (Poster board 1)
Bhaavya Srivastava¹, KERRY SHAW¹
¹Cornell University, Ithaca, New York

SNPfiltR: an R package for interactive and reproducible SNP filtering (Poster board 2)
WITHDRAWN
Devon DeRaad, University of Kansas, Lawrence, KS

Complete Parasitic Bacterial Genome Assembled from a Eukaryote (Poster board 3)
Kimberly Louisor¹, Christopher A. Osborne², Kiara Furey³, Marilena Papavassiliou³, Meaghan Birkemeier³, Alice Tarun⁴, Trevor Krabbenhoff⁵
¹University at Buffalo, NY, ²University at Buffalo, Lockport, New York, ³University at Buffalo, ⁴St. Lawrence University, ⁵University at Buffalo, Buffalo, NY

Transfer, differentiation, and maintenance of the symbiosis region under environmentally-dependent selection in Rhizobium leguminosarum. (Poster board 4)
David Vereau Gorbitz¹, Jennifer A. Lau², Rachel Whitaker³, Carin Vanderpool⁴, Katy D. Heath⁵
¹University of Illinois at Urbana Champaign, Urbana, ²Indiana University Bloomington,
Adaptation and constraints in endotherm and ectotherm body temperature evolution. (Poster board 5)
Elizabeth Daniel¹, Emma White², Martha Muñoz³, Brooke L. Bodensteiner⁴, Josef C. Uyeda⁵
¹Virginia Polytechnic Institute and State University, Blacksburg, ²George Mason University, ³Yale University, New Haven, CT, ⁴Yale University, ⁵Virginia Tech, Blacksburg, VA

Assessing genetic diversity of Greater One-Horned Rhinoceros of Nepal (Poster board 6)
Abhinaya Pathak¹, Yu-Cheng Hsu², Amir Sadaula³, Janardan Joshi Joshi³, Kamal Prasad Gairhe⁴, Ram Chandra Kandel⁵, Prashamsa Paudel⁶

Examining the dynamics of synthetic phototrophs in a resource-limiting environment (Poster board 7)
Autumn Peterson¹, Anthony Burnetti², Will Ratcliff¹
¹Georgia Tech, Atlanta, ²Georgia Institution of Technology

Approximate Bayesian computational methods to estimate the strength of divergent selection in population genomics models (Poster board 8)
Martyna Lukaszewicz¹, Ousseini Issaka Salia², Paul A. Hohenlohe³, Erkan Buzbas⁴
¹University of Idaho, Moscow, ²University of Idaho, Moscow, Idaho, ³University of Idaho, Moscow, ID, ⁴University of Idaho

Experimental validation of genome-environment associations using t-DNA knockouts and drought experiments in Arabidopsis (Poster board 9)
Yuxin Luo¹, Claire Lorts², Diana Gamba³, Erica Lawrence⁴, Jesse Lasky⁴
¹Pennsylvania State University, State College, ²Penn State University, ³Pennsylvania State University, University Park, Pennsylvania, ⁴Pennsylvania State University, University Park, PA

Why do symbiotic mutualisms often increase parasite infection? (Poster board 10)
Eunnuri Yi¹, Corlett W. Wood²
¹University of Pennsylvania, Philadelphia, PA, ²University of Pennsylvania
Alternative splicing facilitates local adaptation in house mice (Poster board 11)
David N. Manahan¹, Michael Nachman²
¹UC Berkeley, Berkeley, CA, ²UC Berkeley

Investigating the genetic basis of life history and shoot architecture diversity in Mimulus guttatus (Poster board 12)
Madison Plunkert¹, Annie Zell², Dena Grossenbacher³, David B. Lowry⁴
¹Michigan State University, East Lansing, ²Cal Poly, San Luis Obispo, ³California Polytechnic State University, San Luis Obispo, San Luis Obispo, ⁴Michigan State University, East Lansing, MI

Stress and evolutionary innovations in vision and bioluminescence (Poster board 13)
WITHDRAWN
Todd Oakley, UC Santa Barbara, Santa Barbara

Predicting locus phylogenetic utility using machine learning (Poster board 14)
Rachel S. Schwartz¹, Alexander Knyshov²
¹University of Rhode Island, Kingston, RI, ²University of Rhode Island, Kingston, Rhode Island

The role of pollinators in shaping plant population structure (Poster board 15)
Grace Burgin¹, Robin Hopkins¹
¹Harvard University, Boston, MA

Dissecting the Role of Mobile Elements in Shaping Placental Evolution using Single-Cell Multi-omics (Poster board 16)
Francisca L. Catalan¹, Peter H Sudmant², Kaitlin Allen³, Juan Vazquez³
¹University of California, Berkeley, Berkeley, CA, ²UC Berkeley, Berkeley, California, ³University of California, Berkeley

The use of genomic diversity as a key conservation metric: an example using mammalian whole-genome resequencing data (Poster board 17)
Jong Yoon Jeon¹, Andrew Black², Anna Brüniche-Olsen³, Janna Willoughby⁴, Erangi Heenkenda, Safia Janjua⁵, Andrew Mularo⁶, Gina Lamka⁷, John Bickham⁸, J. Andrew A. DeWoody
¹Purdue University, West Lafayette, ²Purdue University, ³University of Copenhagen, Copenhagen N, Denmark, ⁴Auburn University, ⁵Purdue university, West Lafayette, IN, ⁶Purdue University, Lafayette, ⁷Auburn University, MI, ⁸Texas A&M University
Constraint in limb length allometry across lizards (Poster board 18)
Bailey Howell¹, Travis Hagey², Josef C. Uyeda³
¹Virginia Tech, Blacksburg, ²Mississippi University for Women, Columbus, MS, ³Virginia Tech, Blacksburg, VA

Evolution and genetic basis of wing dimorphism in North American field crickets (Gryllus spp.) (Poster board 19)
Lisa Treidel¹, Renee Box¹, Ibrahim El Shesheny¹, Caroline Williams¹, Colin Meiklejohn¹, Kristi L. Montooth²
¹University of Nebraska, Lincoln, Lincoln, ²University of Nebraska-Lincoln, Lincoln, NE

Age-specific changes in resource use can lead to the evolution of the life history (Poster board 20)
Eliza Jansujwicz¹, Ron D. Bassar²
¹Williams College, ²Williams College, Williamstown, MA

The Dragon Man Revisited: Hominin Phylogenetic Inference with Rogue Taxa and Incomplete Datasets (Poster board 21)
Walker L. Sexton¹, Michael Landis²
¹Washington University in St. Louis, DOTHAN, AL, ²Washington University in St. Louis, St. Louis, MO

Gene networks underlying adaptation to high altitude in the world’s highest dwelling mammal Phyllotis vaccarum. (Poster board 22)
Paula Assis¹, Chandrasekhar Natarajan², Timothy J. Thurman³, Marcial Quiroga-Carmona⁴, Guillermo D’Elia⁵, Jeff M. Good⁶, Jay Storz², Zachary Cheviron⁷
¹University of Montana, Missoula, SP, ²University of Nebraska, ³Division of Biological Sciences, University of Montana, ⁴Instituto de Cs. Ambientales y Evolutivas Universidad Austral de Chile, Venezuela, ⁵Instituto de Cs. Ambientales y Evolutivas, Universidad Austral de Chile, Valdivia, Chile, ⁶Division of Biological Sciences, University of Montana, Missoula, ⁷University of Montana, Missoula, MT

How does realistic plant biodiversity loss select on soil microbial communities? (Poster board 23)
Rebecca Bland¹, Amelia Wolf², Erika Zavaleta³, Katrina M. Dlugosch⁴
¹University of Arizona, ²University of Texas at Austin, AUSTIN, TX, ³University of California Santa Cruz, ⁴University of Arizona, Tucson, AZ

In-silico comparative genomics illuminate turtle chromosome evolution. (Poster board 24)
Surveying the Lepidopteran Community in a Restored Prairie (Poster board 25)

Marie Walton¹, Robin Bagley²
¹The Ohio State University, ²The Ohio State University at Lima, Lima

Variation in fitness in response to increased temperature within and among clones of the freshwater crustacean Daphnia pulex (Poster board 26)

Allison Nalesnik¹, Margaret Bui¹, Catherine Searle¹, Mark Christie¹
¹Purdue University

Discovery of XX/XY male heterogamety in Emydura subglobosa turtles exposes a novel trajectory of sex chromosome evolution in Emydura (Poster board 27)

LingSze Lee¹, Eugenia E. Montiel², Nicole Valenzuela³
¹Iowa State University, Ames, Iowa, ²Iowa State University, ³Iowa State University, AMES, IA

Investigating evolution of gene regulation across 300+ grass species (Poster board 29)

Charlie O. Hale¹, Aimee Schulz², Thuy La³, Evan Long³, Zachary Miller³, Brandon Monier³, Arun Seetharam⁴, Taylor AuBuchon-Elder⁵, Cinta Romay³, Matthew Hufford⁶, Elizabeth Kellogg⁷, Ed Buckler⁸
¹Cornell University, Ithaca, New York, ²Cornell University, Ithaca, ³Cornell University, ⁴Iowa State University, ⁵Donald Danforth Plant Science Center, ⁶Iowa State, ⁷Donald Danforth Plant Science Center, St. Louis, MO, ⁸Cornell

Local adaptation in the native and invaded ranges of cheatgrass (Poster board 30)

Diana Gamba¹, Peter Adler², Dana Blumenthal³, Matt Germino⁴, Mevin Hooten⁵, Elizabeth A. Leger⁶, Lauren Porensky³, Jesse Lasky⁷
¹Pennsylvania State University, University Park, Pennsylvania, ²Utah State University, ³USDA-ARS (CO), ⁴USGS (ID), ⁵University of Texas Austin, ⁶University of Nevada - Reno, ⁷Pennsylvania State University, University Park, PA

Song, chemical, and morphometric variation in a putative cricket hybrid zone (Poster board 31)

Raunak Sen¹, Bhaavya Srivastava², KERRY SHAW²
¹Cornell University, Ithaca, NY, ²Cornell University, Ithaca, New York
Looking for new clues to an old puzzle: revisiting the invasion conundrum with individual-based genomic simulations (Poster board 32)

Prothama Manna¹, Diego F. Alvarado-Serrano²
¹Ohio University, Athens, Ohio, ²Ohio University, Athens, OH

Quantifying geographic variation and color variation in populations of Mimulus ringens with divergent life histories. (Poster board 33)

Sarah White¹, Anne M. Royer²
¹The University of Scranton, Brooklyn, ²University of Scranton, Scranton, PA

Resolving Phylogenetic Relationships of New World Leaf-nosed Bats Utilizing Ultra-Conserved Elements (Poster board 34)

Jonathan Richards¹, Liliana M. Davalos², Laurel Yohe³
¹University of North Carolina at Charlotte, Charlotte, ²Stony Brook University, Stony Brook, New York, ³UNC Charlotte, Charlotte, CT

The Causes and Consequences of Synanthropic Life-History Evolution of Fungus Moths (Family Tineidae): Some Moths Eat Weird Stuff (Poster board 35)

Isabel Novick¹, Jasmine Alqassar²
¹Boston University, Waltham, ²Boston University, Providence, RI

Does past reproductive success influence subsequent reproductive performance? (Poster board 36)

Rick Lehtinen¹, David Raines²
¹The College of Wooster, Wooster, OH, ²The College of Wooster

Understanding host-specific malaria adaptation in Brazilian Howler Monkeys (Poster board 37)

Katherine McVay¹, Katharine Korunes², Amy Goldberg¹
¹Duke University, ²Duke University, Durham, NC

Neotropical Bat Nasal Microbiome: Interplay Between Microbial Hosting and Unique Immunity (Poster board 38)

Stevie Clemens¹, Laurel Yohe²
¹University of North Carolina at Charlotte, Chapel Hill, ²UNC Charlotte, Charlotte, CT

Using RNA from silica dried specimens for phylogenetic reconstruction (Poster board 39)
Examining the role of oxygen-binding proteins in the evolution of multicellularity (Poster board 40)

**Whitney Wong**\(^1\), Anthony Burnetti\(^2\), William C. Ratcliff\(^1\)

\(^1\)Georgia Institute of Technology, \(^2\)Georgia Institution of Technology

The biogeography of adaptive resilience to climate change: insights from genotype-environment associations and plasticity of gene expression (Poster board 41)

**Luciano B. Beheregaray**\(^1\), Peter Unmack\(^1\), Louis Bernatchez\(^2\), Jonathan B. Sandoval-Castillo\(^3\), Chris Brauer\(^4\), Katie Gates\(^1\), Martin Laporte\(^5\), Catherine Attard\(^6\), Steve Smith\(^6\)

\(^1\)Flinders University, Adelaide, SA, Australia, \(^2\)Université Laval - Institut de Biologie Intégrative des systèmes, \(^3\)Flinders University, \(^4\)Flinders University, Bedford Park, SA, Australia, \(^5\)Université Laval - Institut de Biologie Intégrative des systèmes, Québec, Quebec, \(^6\)University of Vienna

Complex interactions among quantitative trait loci explain natural variation in C. elegans germ stem cell niche activity (Poster board 42)

**Sarah Fausett**\(^1\), Asma Sandjak\(^2\), Bénédicte Billiard\(^3\), Christian Braendle\(^4\)

\(^1\)University of North Carolina Wilmington, WILMINGTON, North Carolina, \(^2\)Université Côte d’Azur, CNRS, Inserm, iBV, France, NICE, Alpes-Maritimes, France, \(^3\)Université Côte d’Azur, CNRS, Inserm, iBV, France, \(^4\)CNRS Nice, France, Nice, France

Investigating variation in phage susceptibility within and among lung-derived populations of a pathogenic bacterium (Poster board 43)

**Noah S. Houpt**\(^1\), Paul E. Turner\(^2\)

\(^1\)Yale University, New Haven, Ontario, \(^2\)Yale University, New Haven, CT

Local adaptation in leaf shape plasticity along an elevational cline in Mimulus laciniatus (Poster board 44)

**Jill Syrotchen**\(^1\), Kathleen Ferris\(^1\)

\(^1\)Tulane University, New Orleans, Louisiana

Role of learned song in the evolution and speciation of Eastern and Spotted Towhees (Poster board 45)

**Ximena Leon**\(^1\), Nicole Creanza\(^1\)

\(^1\)Vanderbilt University
Higher female reproductive expression of pollen performance genes in outcrossing species (Poster board 46)
Timothy Biewer-Heisler¹, Matthew Gibson², Leonie Moyle²
¹Indiana University Bloomington, Bloomington, IN, ²Indiana University, Bloomington, Indiana

Seed dispersal mutualisms affect species' geographic ranges (Poster board 47)
Christopher Moore¹, Sihang Chen²
¹Colby College, Waterville, Maine, ²Stanford University, Stanford, California

Mitochondrial genome architecture in a New Zealand freshwater snail (Poster board 48)
Emily Cook¹, Joel Sharbrough², Peter Fields³, Laura Bankers⁴, Joseph Jalinsky⁵, John Logsdon⁵, Maurine Neiman⁶, Kyle E. McElroy⁷, Jeffrey Boore⁸
¹New Mexico Tech, Socorro, NM, ²New Mexico Institute of Mining and Technology, Socorro, NM, ³University of Basel, ⁴University of Colorado, ⁵University of Iowa, Iowa City, IA, ⁶University of Iowa, Iowa City, Iowa, ⁷Iowa State University, Ames, IA, ⁸Providence St. Joseph Health & Institute for Systems Biology, Seattle, WA

CloudForest: A Framework for Intuitive and Flexible Analysis of Phylogenomic Datasets (Poster board 49)
Benjamin S. Toups¹, Jeremy M. Brown¹, Kyle Gallivan², Reid Wagner³, Zhifeng Deng², James Wilgenbusch³
¹Louisiana State University, Baton Rouge, LA, ²Florida State University, ³University of Minnesota

Quantifying the influence of mutations on competitive ability in Daphnia magna (Poster board 50)
Jon deVries¹, Sarah Schaack²
¹Reed College, Portland, ²Reed College, Portland, OR

Catch a fish, catch a ride: alternate methods of piscivory drive divergent skull evolution (Poster board 51)
JoJo West¹, Kory Evans¹
¹Rice University, Houston

Characterization of hybrid genetic incompatibilities within Caenorhabditis briggsae (Poster board 52)
Lesly Pereira-Fita¹, Jordan Montgomery¹, Joel Rodriguez¹, Leonardo Velazco-Cruz¹, Marisol Lauri¹, Morgan Montelongo¹, Joseph Ross²
¹California State University, Fresno, ²California State University, Fresno, Fresno
Predation-induced plasticity in mate preference in Trinidadian guppies (Poecilia reticulata) (Poster board 53)

Katie Talbert¹, Yusan Yang², Eleanor Grant¹, Lauren Johnson¹, Ellen Urquhart¹, Shayna Rosenbloom³, Zakiya Walker¹, Kyle Hsiao¹, Swanne Gordon¹
¹Washington University in St. Louis, ²Living Earth Collaborative, Washington University in St. Louis, St. Louis, ³University of Louisville, Louisville

Correlated trait evolution impacts ecological interactions of the bacterial plant pathogen Pseudomonas syringae (Poster board 54)

Cathy Hernandez, Yale University, New Haven, CA

Is metabolic rate sex-specific in Tigriopus californicus? (Poster board 55)

Murad Jah¹, Suzanne Edmands², Scott Applebaum³
¹University of Southern California, Los Angeles, ²University of Southern California, Los Angeles, CA, ³University of Southern California

Updated site concordant factors minimize effects of homoplasy and taxon sampling (Poster board 56)

Yu Mo¹, Dan Vanderpool¹, Robert Lanfear², Minh Bui³, Matthew Hahn⁴
¹Indiana University, Bloomington, ²Australian National University, ³Australian National University, Canberra, ACT, Australia, ⁴Indiana University

Does infection increase host metabolic rates? A meta-analysis spanning multiple hosts, elicitors, and pathogens. (Poster board 57)

Justin Buchanan, University of Wisconsin-Madison, Madison, WI

Evolution of the Parrotfish Beak Across Space and Time. (Poster board 58)

Kory Evans¹, Olivier Larouche², Samantha M. Gartner², Mark W. Westneat³
¹Rice University, Houston, ²Rice University, Houston, Texas, ³University of Chicago

Evaluating the Hymenopteran parasitoid community of the redheaded pine sawfly, Neodiprion lecontei (Poster board 59)

Carson Kephart¹, Robin Bagley², Wasequddin Mohammed³
¹Ohio State University, Columbus, ²The Ohio State University at Lima, Lima, ³The Ohio State University at Lima

Detecting horizontal gene transfers from diverse taxa in the pea aphid genome (Poster board 60)
Rose Driscoll¹, John Werren², Jenn Brisson²
¹University of Rochester, Rochester, NY, ²University of Rochester

Developing the Drosophila innubila Nudivirus into a model to study host-pathogen coevolution and interaction (Poster board 61)
Maggie Schedl¹, Rob L. Unckless², Kent Mulkey³
¹The University of Kansas, Lawrence, ²University of Kansas, LAWRENCE, KS, ³The University of Kansas

Thermal tolerance of cryptobenthic fishes in the northern Gulf of Mexico (Poster board 62)
Logan F. Turner, Auburn University, Auburn, AL

Direct estimate of the germline mutation rate in opossums. (Poster board 63)
Yadira Peña-García¹, Richard Wang², Muthuswamy Raveendran³, R. Alan Harris³, Paul Samollow⁴, Jeffrey Rogers³, Matthew Hahn⁵
¹Indiana University, Bloomington, Indiana, ²Indiana University, Bloomington, IN, ³Baylor College of Medicine, ⁴Texas A&M University, ⁵Indiana University

Heritable somatic mutation as a mechanism for adaptation in Mimulus guttatus (Poster board 64)
Ariana Walczyk¹, Mitch Cruzan², Jaime A. Schwoch³
¹Portland State University, Portland, NY, ²Portland State University, Portland, Oregon, ³Portland State University, Portland, OR

The effect of demography on the evolutionary dynamics of altruism (Poster board 65)
Daniel A. Priego Espinosa¹, Jeremy Van Cleve¹
¹University of Kentucky, Lexington, KY

Treatment-specific expression correlates with nonsynonymous divergence and diversity in Arabidopsis thaliana genes (Poster board 66)
Miles Roberts¹, Emily Josephs²
¹Michigan State University, East Lansing, ²Michigan State University, East Lansing, MI

Not just flowering time: A resurrection approach shows floral attraction traits are changing over time (Poster board 67)
Sasha Bishop¹, Regina Baucom²
¹University of Michigan, Ann Arbor, MI, ²University of Michigan, Ann Arbor, Michigan
Co-variation of leaf and floral traits in the evolution of Rhododendron diversity (Poster board 68)
Juliana Medeiros¹, Jean Burns², Andrea Case³, Adam Roddy⁴
¹The Holden Arboretum, Kirtland, ²Case Western Reserve University, ³Kent State University, Kent, Ohio, ⁴Florida International University

An Evolving Pandemic: A Systematic Review on the Virulence of SARS-CoV-2 Variants (Poster board 69)
Nathan Steffens, University of Louisville, Louisville

Parallel evolution of independently acquired LEA genes in tardigrades and mosses? (Poster board 70)
Justin Rosario, Florida International University, Miami

Tardigrade coevolution with cryptogams (Poster board 71)
Ana Perezsanchez, Florida International University, Miami

Predicting gene expression response to environment in Arabidopsis thaliana using DNA sequence (Poster board 72)
Margarita Takou¹, Jesse Lasky², Emily Bellis³
¹Pennsylvania State University, ²Pennsylvania State University, University Park, PA, ³Penn State University, University Park, PA

Identifying introgressed regions in subgenome of Shepherd's Purse (Poster board 73)
Maya Wilson Brown¹, Emily Josephs²
¹Michigan State University, Lansing, Michigan, ²Michigan State University, East Lansing, MI

The Biogeography of Polyploid Plants in Historical and Phylogenetic Context (Poster board 74)
Eric Hagen¹, James Boyko², Thais Vasconcelos², Jeremy Beaulieu²
¹University of Arkansas, ²University of Arkansas, Fayetteville, AR

Diet-based RNAi mediated gene knockdowns in Tigriopus californicus (Poster board 75)
Rujuta V. Vaidya¹, Morgan Kelly²
¹Louisiana State University, Baton Rouge, LA, ²Louisiana State University, Baton Rouge
Genomic consequences of translocations within an imperiled Florida Scrub-jay metapopulation (Poster board 76)

Tyler Linderoth\textsuperscript{1}, Lauren Deaner\textsuperscript{2}, Reed Bowman\textsuperscript{3}, Raoul Boughton\textsuperscript{4}, Sarah W. Fitzpatrick\textsuperscript{5}
\textsuperscript{1}Kellogg Biological Station, \textsuperscript{2}Flatwoods Consulting Group Inc., \textsuperscript{3}Archbold Biological Station, \textsuperscript{4}The Mosaic Company, \textsuperscript{5}Kellogg Biological Station; Michigan State University, HICKORY CORNERS, MI

The influence of aggressive calls on mating choice in females of Gray treefrogs (Hyla chrysoscelis) (Poster board 77)

Alejandro Marcillo\textsuperscript{1}, Michael Reichert\textsuperscript{2}
\textsuperscript{1}Oklahoma State University, Stillwater, \textsuperscript{2}Oklahoma State University

Invasive Potamopyrgus antipodarum appear more resilient to heat stress than native counterparts. (Poster board 78)

Humu Mohammed, University of Iowa, Iowa

Evolution of Immune Genes in a Model System for Host-Parasite Coevolution (Poster board 79)

Chelsea Higgins\textsuperscript{1}, Laura Bankers\textsuperscript{2}, Kyle E. McElroy\textsuperscript{3}, Doug Houston\textsuperscript{4}, Jeffrey Boore\textsuperscript{5}, John Logsdon\textsuperscript{6}, Maurine Neiman\textsuperscript{1}
\textsuperscript{1}University of Iowa, Iowa City, Iowa, \textsuperscript{2}University of Colorado, \textsuperscript{3}Iowa State University, Ames, IA, \textsuperscript{4}University of Iowa, \textsuperscript{5}Providence St. Joseph Health & Institute for Systems Biology, Seattle, WA, \textsuperscript{6}University of Iowa, Iowa City, IA

Shallow scale application of ultraconserved elements parse relationships and inform taxonomy in the aquatic Notomicrus traili species complex (Coleoptera: Adephaga). (Poster board 80)
WITHDRAWN

Stephen Baca, University of Kansas, Lawrence, KS

Olfactory Receptor Diversity In Turtles May Depend On Ecology (Poster board 81)

Charles Vesely\textsuperscript{1}, Matteo Fabbri\textsuperscript{2}, Scott Yohe\textsuperscript{3}, Miccaella Estefania Vergara\textsuperscript{3}, Daniel Smith Paredes\textsuperscript{4}, Bhart-Anjan Bhullar\textsuperscript{5}, Laurel Yohe\textsuperscript{6}
\textsuperscript{1}University of North Carolina at Charlotte, Charlotte, \textsuperscript{2}Field Museum of Natural History, \textsuperscript{3}Yale, \textsuperscript{4}Mfn, Germany, \textsuperscript{5}Yale University, \textsuperscript{6}UNC Charlotte, Charlotte, CT

Latitudinal variation of type III antifreeze protein gene regions in Zoarcid fish (Poster board 82)

Tait Algayer\textsuperscript{1}, Scott Hotaling\textsuperscript{2}, Joanna Kelley\textsuperscript{2}
\textsuperscript{1}Washington State University, Pullman, \textsuperscript{2}Washington State University
Human genome complete? Extensive underestimation of duplicated genes in largest protein-coding gene family (Poster board 83)
Nicholas Krell1, Laurel Yohe2
1University of North Carolina at Charlotte, Charlotte, 2UNC Charlotte, Charlotte, CT

Genetic Analysis of UV Pattern and Red Spotting Using Sympatric Species of Mimulus (Poster board 84)
Whitney Murchison-Kastner1, Caroline Dong1, Kathleen Ferris2
1Tulane University, New Orleans, 2Tulane University, New Orleans, Louisiana

Comparative genomics of geminate Damselfish across the Isthmus of Panama (genus Abudefduf) (Poster board 85)
Claire Tracy1, Owen McMillan2, Carlos Arias2, Marc Höppner3, Moises A. Bernal4
1Auburn University, 2Smithsonian Tropical Research Institute, 3Kiel University, 4Auburn University, Auburn, AL

Widespread changes in gene expression accompany body size evolution in nematodes (Poster board 86)
Gavin Woodruff1, John H. Willis2, Erik Johnson2, Patrick Phillips2
1University of Oklahoma, 2University of Oregon

Methods for detecting TE PAVs in a maize diversity panel (Poster board 87)
Nathan Catlin1, Adrian E. Platts1, Emily Josephs2
1Michigan State University, East Lansing, 2Michigan State University, East Lansing, MI

Inferring phylogenetic trees and divergence times using epimutations (Poster board 88)
Nan Yao1, Zhihlin Zhang2, Hosung Jang3, Rashmi Hazarika2, Frank Johannes2, Robert Schmitz3
1University of Georgia, Athens, 2Technical University of Munich, 3University of Georgia

Variable testes abnormalities associated with hybrid breakdown between African and European populations of Drosophila melanogaster (Poster board 89)
Myron B. Child1, Matthew Lollar2
1University of Wisconsin, Madison, Madison, UT, 2University of Wisconsin, Madison

Doors and dead-ends in the evolution of avian migratory behavior (Poster board 90)
Understanding Coping Styles in a fish with Alternative Reproductive Tactics (Poster board 91)
Sunishka Thakur, University of Texas at Austin, AUSTIN, TX

Assessing the adequacy of morphological models used in phylogenetic palaeobiology (Poster board 92)
Laura Mulvey¹, April Wright², Sebastian Höhna³, Rachel C. Warnock⁴
¹Friedrich Alexander University, Erlangen, Bavaria, Germany, ²Southeastern Louisiana University, Hammond, LA, ³LMU Munich, ⁴FAU, Erlangen, Germany

Red coloration and the evolution of aposematism in arboreal sciurids (Poster board 93)
Alec Sheets¹, Andreas Chavez²
¹Ohio State University, Columbus, OH, ²The Ohio State University, Columbus, OH

Potexvirus Detection, Taxonomy, and Transmission as Revealed by Phylogenomics of Cacti (Poster board 94)
Alexa Tyszka¹, Karolis Ramanauskas², Boris Igic³
¹University of Illinois at Chicago, ²University of Illinois at Chicago, Oak Park, Illinois, ³University of Illinois at Chicago, Chicago, IL

The Evolution of Multicellularity as a Response to Experimental Snowball Earth Viscosities (Poster board 95)
Andrea Halling, University of Colorado Boulder, Boulder

Do DNA methylation and gene expression mediate adaptive plastic responses to temperature and competition in threespine stickleback? (Poster board 96)
Emily Kerns¹, Trey Sasser², Jesse Weber³
¹University of Wisconsin-Madison, Madison, ²University of Wisconsin, Madison, ³University of Wisconsin-Madison, Madison, AK

Positioning the tragedy of the commons within density-dependent selection (Poster board 97)
Fiona McCann, The University of Arizona, Tucson, AZ
How does the Male Secreted Short (MSS) glycoprotein provide a competitive advantage to Caenorhabditis sperm? (Poster board 98)

Justin M. Van Goor, Eric Haag

1University of Maryland College Park, 2University of Kansas, College Park, MD, 3University of Maryland College Park

Scale shape vs Trophic position: Testing form and function relationships in an assemblage of reef fishes (Poster board 99)

Sean Trainor, Rice University

Herodotools: An R package to integrate Macroevolution, Community Ecology and Biogeography (Poster board 101)

WITHDRAWN

Gabriel Nakamura1, Arthur Rodrigues2, André Luza3, Vanderlei Debastiani2, Renan Maestri4, Leandro Duarte4

1Texas A&M University, Corpus Christi, 2Universidade Federal do Rio Grande do Sul, Departamento de Ecologia, Porto Alegre, Brazil, 3Universidade Federal de Santa Maria, Universidade Federal do Rio Grande do Sul, Brazil

An unbiased approach selecting multiple templates for automated landmarking (Poster board 102)

Chi Zhang1, Arthur Porto2, Sara Rolfe3, Altan Kocatulum, A. Murat Maga5

1Seattle Children’s Research Institute, Seattle, 2Department of Biological Sciences, Louisiana State University, 3Seattle Children’s Research Institute, 4Alfred University, 5University of Washington

Population Differentiation for Plasticity in Arabidopsis thaliana (Poster board 103)

Sophie F. Buysse1, Emily Josephs1, Jeff Conner2

1Michigan State University, East Lansing, MI, 2Kellogg Biological Station, Hickory Corners, MI

Evolution of cooperation in the chemostat (Poster board 104)

Bryan K. Lynn, Oregon State University, Corvallis, OR

Molecular and morphological evolution across the most species-rich radiation in mammals (Poster board 105)

Gregg Thomas1, Carl R. Hutter2, Paula Assis3, Emily Kopania4, Sebastian M. Mortimer5, Colin Callahan5, Pierre-Henri Fabre6, Kevin C. Rowe7, Jacob A. Esselstyn8, Jeff M. Good9

1Harvard University, 2Louisiana State University, Baton Rouge, LA, 3University of Montana, Missoula, SP, 4University of Utah; University of Montana, 5Oregon State University, Corvallis, Oregon, 6ISEM lab Montpellier University, 7Sciences Department, Museums Victoria; School of
Pattern, process, and the evolution of sexual dimorphism in Three-spine stickleback fish (Gasterosteus aculeatus) (Poster board 106)

Katie Van Dame, Loyola University Chicago, Chicago

Let's globalize the voices of science! PeerEdits.org (Poster board 107)

Andrew McAdam¹, Gladiana Spitz²

¹University of Colorado, Boulder, Ontario, ²University of Colorado Boulder, Boulder, CO

What’s in a territory anyways? Ecological components of a territorial phenotype in the North American red squirrel (Poster board 108)

Gladiana Spitz¹, Stan Boutin², Ben Dantzer³, Jeffrey Lane⁴, Andrew McAdam⁵

¹University of Colorado Boulder, Boulder, CO, ²University of Alberta, ³University of Michigan, ⁴University of Saskatchewan, ⁵University of Colorado, Boulder, Ontario

Guane: A flexible shiny platform for learning, teaching, and analyses in comparative biology (Poster board 109)

Viviana Romero Alarcon, Universidad Católica de la Santísima Concepción, Concepción, Chile

One size does not fit all: Variation in anatomical traits associated with emersion behavior in mudskippers (Gobiidae: Oxudercinae) (Poster board 110)

Joel Corush¹, Jie Zhang¹²

¹University of Illinois - Illinois Natural History Survey, Champaign, ²Key Laboratory of Animal Ecology and Conservation Biology, Chinese Academy of Sciences

Evolution's Rainbow

📅 Mon, June 27
⏰ 7:30 PM - 10:00 PM
📍 Grand Ballroom A
✉️ Social event

Description
Registration required. If you purchased a ticket during conference registration, you will receive it when you pick up your conference name badge. Tickets may still be available here.

Join us for an exciting evening of engaging talks and discussion on evolution’s rainbow, with special guest host Nina West. This event will start with a series of talks from experts on the diversity of sex, sexuality, and gender that exist in nature, and end with a panel discussion on how this diversity fits into a broader evolutionary context and what we as a community can do to support and retain our LGBTQ+ students and colleagues. We aim to facilitate dialogue, inspire wonder, and provide a community-oriented, light-hearted evening of curiosity!

The event welcomes in-person attendance from both conference goers and the general public. Cost $5 is for in-person attendees, with profits donated to the LGBT Community Center of Greater Cleveland. Registered virtual Evolution 2022 participants are also welcome and may view a live-stream of the event for free. Light refreshments and a cash bar will be available during the event.

Door open at 7:30pm, event starts at 8pm.

IDEA Award Lecture - Dr. Adriana D. Briscoe

📅 Tues, June 28
⏰ 8:00 AM - 9:20 AM
📍 Grand Ballroom A
NSURLSession

Description

The Inclusiveness, Diversity, Equity, and Access (IDEA) Award was created in 2019 by the ASN, SSE, and SSB. The IDEA Award is given to a person at any career stage who has strengthened the ecology and evolutionary biology community by promoting inclusiveness and diversity in our fields. The award can also be presented to a group.

Dr. Adriana Briscoe is the recipient of the 2021 IDEA Award. Over her entire career, Dr. Briscoe has shown a commitment to diversity, equity and inclusion that has resulted in the recruitment and retention of diverse scientists in the evolution workforce at all professional levels. Dr. Briscoe also contributes to international inclusion, regularly publishing research with co-authors from global south countries. Her DEI work also includes published scholarship and popular media related to her outreach. Dr. Briscoe has also been recognized for her research excellence and contributions to education by the largest STEM diversity organization in the country, the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS). Thank you to Dr. Briscoe for your commitment and contributions to the community!
Presentations

IDEA Award introduction
Janet Buckner, University of Texas at Arlington, Arlington, Texas

Familia, comunidad y maestros: How I became a Latina science professor
Adriana D. Briscoe, UC Irvine, Irvine

Adaptation V

📅 Tue, June 28
⏰ 9:30 AM - 10:45 AM
📍 Room 22
📜 Regular

Presentations

9:30 AM
**Landscape genomics reveals environmental drivers of local adaptation and speciation in desert adapted Mexican ducks**
Joshua Brown¹, Philip Lavretsky¹
¹University of Texas at El Paso

9:44 AM

9:45 AM
**Habitat-linked genetic variation supports microgeographic adaptive divergence in an island-endemic bird species**
Rebecca Cheek¹, Brenna Forester², Patricia Salerno³, Daryl Trumbo³, Kathryn Langin³, Nancy Chen⁴, T S. Sillett⁵, Scott A. Morrison⁶, Cameron Ghalambor³, Chris Funk³
¹Colorado State University, Fort Collins, ²Colorado State University, ³Colorado State University, ⁴University of Rochester, Rochester, NY, ⁵Smithsonian Migratory Bird Center, ⁶The Nature Conservancy

10:00 AM
**Mechanisms of Organismal Persistence to Rapid Environmental Change; Plasticity vs. Genetic Adaptation**
WITHDRAWN
Catalina C. Palacios¹, Pengcheng Wang², Nan Wang³, Megan Brown¹, Sangeet Lamichhaney¹
Presentations

10:15 AM
Adaptive shifts in size and shape in response to climate change
Tiffany Dias¹, Marketa Zimova¹, Brian Weeks²
¹University of Michigan, Ann Arbor, Michigan, ²University of Michigan

10:30 AM
Genetic variation for adaptive traits is associated with polymorphic inversions in the Atlantic silverside
Maria Akopyan¹, Arne Jacobs¹, Aryn Wilder², Hannes Baumann³, Nina O. Therkildsen⁴
¹Cornell University, Ithaca, NY, ²San Diego Zoo, ³University of Connecticut, ⁴Cornell University

Biogeography

📅 Tue, June 28
⏰ 9:30 AM - 10:45 AM
📍 Room 15
平常 Regular

Presentations

9:30 AM
A conceptual framework to integrate cold-survival strategies: torpor, resistance, and seasonal migration
Giorgia Auteri, University of Michigan, Columbus

9:45 AM
Biogeographical patterns of the Ironcolor shiner (Notropis chalybaeus) in North America.
Joel Corush¹, Roberto V. Cucalón², MArk Davis³, Milton Tan⁴, Brian Metzke⁵, Jeffrey Stein³, Haruma Kurita⁶
¹University of Illinois - Illinois Natural History Survey, Champaign, ²University of Illinois at Urbana Champaign, Urbana, Illinois, ³University of Illinois, ⁴Illinois Natural History Survey, Champaign, Illinois, ⁵Illinois Department of Natural Resources, ⁶University of Illinois at Urbana-Champaign
Can species trait-based models of contemporary range shifts be rescued?  
Sarah Diamond, Case Western Reserve University, Cleveland

Species delimitation on Eastern Pine snakes  
Basanta Khakurel¹, April Wright¹  
¹Southeastern Louisiana University, Hammond, LA

Conserved niches and phenotypic convergence underscore speciation in hoary bats  
Angelo Soto-Centeno¹, Nancy Simmons²  
¹Rutgers University, Newark, ²Department of Mammalogy, American Museum of Natural History

Evolutionary Ecology V
📅 Tue, June 28
⏰ 9:30 AM - 10:45 AM
🔍 Room 16
 ├── Regular

Presentations

9:30 AM  
Evolution at the rear edge: phenotypic variation within and among populations  
Antoine PERRIER¹, Laura Galloway²  
¹University of Virginia, CHARLOTTESVILLE, ²University of Virginia, Charlottesville, VA

9:45 AM  
The effects of plant inbreeding on the legume-rhizobia mutualism  
Isabela Lima Borges¹, Sarah W. Fitzpatrick²  
¹Michigan State University, Hickory Corners, Michigan, ²Kellogg Biological Station; Michigan State University, HICKORY CORNERS, MI

10:00 AM  
Evolution of coexistence in Trinidadian guppies and Hart's killifish
Evolutionary Theory

**Genetic variation in reproductive investment across an ephemerality gradient in Daphnia pulex.**

Karen Barnard-Kubow¹, Alan Bergland², Dörthe Becker³, Andrew Beckerman³, Connor Murray⁴, Robert Porter⁵, Joaquin Nunez⁶, Priscilla Erickson⁷, Erin R. Voss⁸

¹James Madison University, Harrisonburg, VA, ²University of Virginia, Charlottesville, VA, ³University of Sheffield, ⁴University of Virginia, ⁵University of Virginia, Troy, Virginia, ⁶University of Virginia, Charlottesville, ⁷University of Richmond, ⁸University of California, Berkeley, Berkeley, CA

The evolution of the annual cycle across time and space in migratory birds

Ben M. Winger¹, Frank La Sorte²

¹University of Michigan Museum of Zoology, ²Cornell Lab of Ornithology

Evolutionary Theory

📅 Tue, June 28
⏰ 9:30 AM - 10:45 AM
📍 Room 19
気軽に Regular

**Presentations**

9:30 AM

Morphological integration of the hominoid os coxa: implications for human bipedalism

Mark Conaway¹, Dean Adams²

¹Department of Ecology, Evolution, & Organismal Biology, Iowa State University, Ames, ²Iowa State University, Ames, IA

9:45 AM

Eco-evolutionary dynamics of autotomy
10:00 AM  The effect of positive niche construction on evolutionary rescue  
Alex Longcamp¹, Jeremy Draghi  
¹Virginia Tech, Blacksburg, Virginia

10:15 AM  A Hidden Markov Model of the evolution body size and host shifting strategies in a parthenogenetic wasp  
WITHDRAWN  
Arun Sethuraman, San Diego State University, San Diego, California

10:30 AM  Rock-Paper-Scissors: The myriad and complex ways that organisms adapt to various environments  
Sam Scheiner, National Science Foundation, Alexandria, VA

Experimental Evolution IV

📅 Tue, June 28  
🕒 9:30 AM - 10:45 AM  
📍 Room 21  
🗓️ Regular

Presentations

9:30 AM  Selection mediated by stage of invasion in experimental plant communities  
Taylor Zallek¹, Martin M. Turcotte²  
¹University of Pittsburgh, Pittsburgh, ²University of Pittsburgh, Pittsburgh, PA

9:45 AM  Why are some antibiotics seemingly evolution-proof? The case of vancomycin-resistant Staphylococcus aureus  
Sam Blechman, University of Pittsburgh
10:00 AM | **Characterization of trait drift in the field and laboratory: Shifts in microbial community composition**  
Monica Sanchez, Los Alamos National Labs, LOS ALAMOS

10:15 AM | **Directed evolution of resistance to a bacterial Type VI Secretion System**  
Katie MacGillivray¹, Siu Lung Ng², Sophia Wiesenfeld¹, Tahrima Jubery¹, William C. Ratcliff¹, Brian Hammer¹  
¹Georgia Institute of Technology, ²Georgia Tech

10:30 AM | **Rates and spectra of de novo structural mutation in Chlamydomonas reinhardtii**  
Rory Craig¹, Eugenio López-Cortegano², Jobran Chebib³, Eniolaye Balogun⁴, Peter Keightley⁵  
¹UC Berkeley, Berkeley, ²University of Edinburgh, Edinburgh,  
³University of Edinburgh, Edinburgh,  
⁴University of Toronto Mississauga, Mississauga, ⁵University of Edinburgh

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**Macroevolution III**

📅 Tue, June 28  
⏰ 9:30 AM - 10:45 AM  
📍 Room 20  
👥 Regular

**Presentations**

9:30 AM | **Adequacy of Fossilised Birth-Death models: a test case in ants**  
Orlando Schwery¹, Basanta Khakurel², April Wright²  
¹Southeastern Louisiana University, Hammond, ID, ²Southeastern Louisiana University, Hammond, LA

9:45 AM | **On the origin of patterns of temperature-dependent sex determination**  
Caleb Krueger¹, Fredric Janzen²  
¹W. K. Kellogg Biological Station, Michigan State University, ²Iowa State University
10:00 AM
Developmental rules of primates dental evolution align microevolution with macroevolutionary tempo and mode

Fabio Machado1, Carrie Mongle2, Graham J. Slater3, Anna Penna4, Anna Soffin5, Vitor Dutra6, Josef C. Uyeda7
1Virginia Tech, Blacksburg, Virginia, 2Stony Brook University, 3University of Chicago, Chicago, IL, 4University of Texas San Antonio, San Antonio, Texas, Brazil, 5Virginia Tech, 6Florida International University, 7Virginia Tech, Blacksburg, VA

10:15 AM
Molecular early burst associated with the diversification of birds at the K–Pg boundary

1University of Michigan, Ithaca, NY, 2CSU Dominguez Hills, Carson, CA, 3University of Cambridge, 4Washington University in St. Louis, St Louis, VA, 5Max-Planck-Institut für Verhaltensbiologie, 6Cornell Laboratory of Ornithology, 7University of Florida, 8NC Museum of Natural Sciences, Raleigh, NC, 9Yale University, 10University of Michigan

10:30 AM
Topernawi: A New Oligocene site in West Turkana, Kenya

Emmanuel Aoron1, Patricia Princehouse2
1Harvard University, Lodwar, Kenya, 2Case Western Reserve University Institute for the Science of Origins

Species distributions and coexistence: the intersection of evolution and ecology I

📅 Tue, June 28
⏰ 9:30 AM - 10:45 AM
📍 Grand Ballroom A
📂 Symposium

Description
Organizers: Dr. Laura Galloway and Dr. Lynda Delph
Talks in this symposium will explore threads such as what determines species’ distributions, the extent to which coexistence between congeners impacts distributions, and how reproductive isolation impacts distributions and rates of speciation. In other words, what keeps species apart both genetically and spatially?

Livestream will commence with the second talk of the morning session, by Dr. Anna Hargreaves, at 9:45 am.

Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>symposium introduction</td>
<td>Lynda F. Delph</td>
<td>Indiana University, Bloomington, IN</td>
</tr>
<tr>
<td>9:44 AM</td>
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<tr>
<td>9:45 AM</td>
<td>How often and when do species interactions limit species distributions?</td>
<td>Anna Hargreaves</td>
<td>McGill University, Montreal</td>
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<tr>
<td>10:14 AM</td>
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<tr>
<td>10:15 AM</td>
<td>Leveraging clinal variation to investigate ecological specialization in the face of gene flow</td>
<td>Adriana Hernandez</td>
<td>Cornell University, Plant Biology, Ithaca</td>
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<td>10:44 AM</td>
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Towards the Network of Life: Phylogenetic networks as a tool to understand complex evolutionary histories I

📅 Tue, June 28
⏰ 9:30 AM - 10:45 AM
📍 Room 26BC
🗂️ Symposium

Description

Organizers: Dr. Kevin Kong and Dr. Rejuan Haque
While phylogenetic trees have been essential in understanding how species evolve and are useful for a tremendous range of practical applications, they cannot adequately describe some types of evolutionary processes, such as hybrid speciation, introgression, recombination, horizontal gene transfers, and gene duplication and loss. In these cases, a phylogenetic network, a modification and generalization of a
phylogenetic tree that allows two branches to merge into a single node to create a directed acyclic structure called a reticulation, represents the true evolutionary history more appropriately than a phylogenetic tree. The talks in this symposium will be focused around the development of techniques for inferring phylogenetic networks from multilocus data and on their application to empirical problems. Speakers in the session will address computational challenges that arise from analyzing large-scale data, challenges in interpreting the inferred networks, as well as future directions for solving these challenges.

## Presentations

<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>9:30 AM</td>
<td>Lost in the jungle of phylogenetic network classes? An overview of popular constraints on phylogenetic network topologies and why they are useful.</td>
<td>Sungsik Kong¹, Joan Carles Pons², Laura Kubatko³, Kristina Wicke³ ¹The Ohio State University, Columbus, OH, ²University of the Balearic Islands, ³The Ohio State University, Columbus, Ohio</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>Reconstructing phylogenetic networks from small building blocks</td>
<td>Simone Linz, University of Auckland, New Zealand</td>
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<tr>
<td>10:00 AM</td>
<td>Fast inference of highly entangled phylogenetic networks with RF-Net</td>
<td>Alexey Markin¹, Sanket Wagle², Tavis Anderson¹, Eulenstein Oliver² ¹USDA-ARS, ²Iowa State University</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>Testing tree-likeness of phylogenetic network data with tripletized cross-validation</td>
<td>James Degnan¹, Md Rashidul Hasan¹ ¹University of New Mexico</td>
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<tr>
<td>10:30 AM</td>
<td>Panel Discussion</td>
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Coffee break

📅 Tue, June 28
<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>11:15 AM</td>
<td><strong>Gene expression evolution across organs and species of Hawaiian Drosophila</strong>&lt;br&gt;Samuel Church, Yale university</td>
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<td>11:29 AM</td>
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<tr>
<td>11:30 AM</td>
<td><strong>Genetic evidence for widespread population size expansion in North American boreal birds prior to the Last Glacial Maximum</strong>&lt;br&gt;Abby Kimmitt&lt;sup&gt;1&lt;/sup&gt;, Teresa Pegan&lt;sup&gt;2&lt;/sup&gt;, Andrew Jones&lt;sup&gt;3&lt;/sup&gt;, Courtney Brennen&lt;sup&gt;4&lt;/sup&gt;, Jocelyn Hudon&lt;sup&gt;5&lt;/sup&gt;, Jeremy Kirchman&lt;sup&gt;6&lt;/sup&gt;, Kristen C. Ruegg&lt;sup&gt;7&lt;/sup&gt;, Brett Benz&lt;sup&gt;8&lt;/sup&gt;, Rachael Herman&lt;sup&gt;9&lt;/sup&gt;, Ben M. Winger&lt;sup&gt;10&lt;/sup&gt;&lt;br&gt;&lt;sup&gt;1&lt;/sup&gt;University of Michigan, Ecology and Evolutionary Biology, Ann Arbor, &lt;sup&gt;2&lt;/sup&gt;University of Michigan, Ann Arbor, MI, &lt;sup&gt;3&lt;/sup&gt;Cleveland Museum of Natural History; Spring Island Land Trust, &lt;sup&gt;4&lt;/sup&gt;Cleveland Museum of Natural History, &lt;sup&gt;5&lt;/sup&gt;Royal Alberta Museum, &lt;sup&gt;6&lt;/sup&gt;New York State Museum, &lt;sup&gt;7&lt;/sup&gt;Colorado State University, &lt;sup&gt;8&lt;/sup&gt;Department of Ecology and Evolutionary Biology and Museum of Zoology, University of Michigan, &lt;sup&gt;9&lt;/sup&gt;Stony Brook University, &lt;sup&gt;10&lt;/sup&gt;University of Michigan Museum of Zoology</td>
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<tr>
<td>11:44 AM</td>
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<tr>
<td>11:45 AM</td>
<td><strong>Ecological Opportunity Drives Morphological Evolution in the Ecologically Diverse Garter and Water Snakes (Thamnophiini)</strong>&lt;br&gt;Leroy Nuñez&lt;sup&gt;1&lt;/sup&gt;, Frank Burbrink&lt;sup&gt;2&lt;/sup&gt;&lt;br&gt;&lt;sup&gt;1&lt;/sup&gt;American Museum of Natural History, New York, New York, &lt;sup&gt;2&lt;/sup&gt;American Museum of Natural History, New York, NY</td>
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<tr>
<td>11:59 AM</td>
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<td>12:00 PM</td>
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</tbody>
</table>
Investigation of convergent evolution with the southern marsupial mole and other subterranean mammals

Sarah Lucas¹, Stephen Frankenberg², Charles Feigin³, Andrew Pask², Nathan Clark⁴
¹University of Utah, Salt Lake City, ²University of Melbourne, ³Princeton University, ⁴University of Utah

Population genomic analyses reveal hybridization and marked differences in genetic structure of Scurria limpet sister species with parapatric distributions across the southeastern pacific

Pablo Saenz-Agudelo¹, Livia Peluso², Roberto Nespolo², Bernardo Broitman³, Pilar Haye⁴, Marco Lardies⁵
¹Universidad Austral de Chile, Valdivia, Chile, ²Universidad Austral de Chile, ³Universidad Adolfo Ibañez, ⁴Universidad Católica del Norte, ⁵Universidad Adolfo Ibañez, Chile

Exploring patterns of persistence in rediscovered Harlequin frogs

Kyle Jaynes¹, Monica Paez-Vacas², David Salazar-Valenzuela³, Juan Guayasamin⁴, Andrea Terán-Valdez⁵, Fausto Siavichay⁶, Sarah W. Fitzpatrick⁷, Luis A. Coloma⁵
¹Michigan State University, ²Universidad Indoamerica, Quito, Pichincha, Ecuador, ³Universidad Tecnologica Indoamerica, Quito, Pichincha, Ecuador, ⁴Universidad San Francisco de Quito, ⁵Centro Jambatu de Investigación y Conservación de Anfibios, ⁶Amaru Zoológico Bioparque, ⁷Kellogg Biological Station; Michigan State University, HICKORY CORNERS, MI

Eco-evolutionary models of population decline: How much migration is necessary for at risk
Mutualism / Coevolution III

Presentations

11:45 AM
Time-series data reveal the genomic ramifications of a fishery collapse
R. Nicolas Lou¹, Harmony Borchardt-Wier², Nina O. Therkildsen²
¹Cornell University, Ithaca, NY, ²Cornell University

11:59 AM
Disease dynamics of the world's highest elevation amphibians after expansion into recently deglaciated terrain
Emma C. Steigerwald¹, Cassandra C. Gendron², Juan C. Chaparro³, Rosemary G. Gillespie⁴, Allie Q. Byrne⁵, Erica B. Rosenblum⁶, Rasmus Nielsen⁷
¹The University of California, Berkeley, Berkeley, CA, ²The University of California, Berkeley, ³Museo de Biodiversidad del Peru, Cusco, Peru, Peru, ⁴University of California Berkeley, Berkeley, CA, ⁵University of California, Berkeley, Berkeley, CA, ⁶UC Berkeley, Berkeley, California, ⁷University of California Berkeley & Natural History Museum of Denmark

12:00 PM

12:15 PM
An evolutionary perspective on genetic load in small isolated populations
Samarth Mathur¹, John Tomeček², Luis Tarango-Arámbula³, Robert Perez⁴, J. Andrew A. DeWoody⁵
¹Ohio State University, Dublin, OH, ²Texas A&M University, College Station, ³Colegio de Postgraduados, Campus San Luis Potosí, ⁴Texas Parks and Wildlife Department, ⁵Purdue University, West Lafayette, IN

Tue, June 28
11:15 AM - 12:30 PM
Room 15
Regular
11:15 AM | **Coupled population genomic patterns in corals (Acropora spp.) and their symbionts help predict optimal partnerships**
Brendan Cornwell\(^1\), Stephen Palumbi\(^2\)
\(^1\)Stanford University, Pacific Grove, \(^2\)Hopkins Marine Station of Stanford University

11:30 AM | **Host-associated transmission rapidly reduces cooperative symbiont traits**
Kayla S. Stoy\(^1\), Erika Diaz-Almeyda\(^2\), Levi Morran\(^3\), Nicole Gerardo\(^4\)
\(^1\)Emory University, Atlanta, GA, \(^2\)New College of Florida, Sarasota, \(^3\)Emory University, Atlanta, \(^4\)Emory University

12:00 PM | **Mitochondrial effects on sexual dimorphism in Tigriopus californicus**
Suzanne Edmands\(^1\), Jacob Denova\(^2\), Ben A. Flanagan, Murad Jah\(^3\), Scott Applebaum\(^4\)
\(^1\)University of Southern California, Los Angeles, CA, \(^2\)University of Southern California, Los Angeles, \(^3\)University of Southern California, Los Angeles, \(^4\)University of Southern California

12:15 PM | **Comparative genomics support reduced-genome Paraburkholderia symbionts of Dictyostelium discoideum amoebas are ancestrally adapted professional symbionts**
Suegene Noh\(^1\), Benjamin Capodanno\(^2\), Songtao Xu\(^3\), Marisa Hamilton\(^2\), Joan Strassmann\(^4\), David Queller\(^4\)
\(^1\)Colby College, Waterville, ME, \(^2\)Department of Biology, Colby College, \(^3\)Department of Biology, Colby College, China, \(^4\)Washington University in St. Louis
11:15 AM | cancelled talk
11:29 AM

11:30 AM | Polyphenisms and polymorphisms: genetic variation in plasticity and color variation within and among bluefin killifish populations
Becky Fuller¹, Joseph Travis², Benjamin A. Sandkam³, Katie E. McGhee⁴, Matthew Schrader⁵
¹University of Illinois, Champaign, IL, ²Florida State University, Tallahassee, FL, ³University of British Columbia, ⁴University of the South, Sewanee, TN, ⁵University of the South, Department of Biology, Sewanee, TN

11:45 AM | Chromatin contributes to developmental plasticity of genotype-dependent reproductive arrest
Abigail DiVito Evans¹, Regina Fairbanks², Paul Schmidt¹, Mia Levine¹
¹University of Pennsylvania, ²University of California, Davis

12:00 PM | Plasticity and evolution of brain morphology in divergent Trinidadian guppies
Caleb Axelrod, Washington University in St. Louis, St. Louis

12:15 PM | Social interactions and ecological challenges shape the evolvability of fertility in a small-scale human society
Jordan Martin, University of Zurich, Switzerland

Population Genetics Theory / Methods I

Tue, June 28
11:15 AM - 12:30 PM
Room 16
Regular

Presentations
11:15 AM | The spatial distribution of rare deleterious alleles: evolutionary modeling & implications for study
Species distributions and coexistence: the intersection of evolution and ecology II

**Statistical inference in population genomics**

Parul Johri¹, Charles F. Aquadro², Mark Beaumont³, Brian Charlesworth⁴, Laurent Excoffier⁵, Adam Eyre-Walker⁶, Peter Keightley⁴, Michael Lynch⁷, Gil McVean⁸, Bret Payseur⁹, Susanne P. Pfeifer⁷, Wolfgang Stephan¹⁰, Jeffrey D. Jensen⁷

¹Arizona State University, Tempe, AZ, ²Cornell University, ³University of Bristol, UK, ⁴University of Edinburgh, ⁵University of Berne, ⁶University of Sussex, ⁷Arizona State University, ⁸University of Oxford, UK, ⁹University of Wisconsin-Madison, ¹⁰Leibniz-Institute for Evolution and Biodiversity Science, Berlin, DE, Germany

**Dominance can increase genetic variance after a population bottleneck: a synthesis of the theoretical and empirical evidence**

Andrew Mularo¹, Ximena Bernal⁴, J. Andrew A. DeWoody³

¹Purdue University, Lafayette, ²Purdue University, ³Purdue University, West Lafayette, IN

**An Efficient Exact Algorithm for Identifying Hybrids Using Population Genomic Sequences**

Sneha Chakraborty¹, Bruce Rannala²

¹University of California Davis, Davis, ²University of California, Davis, Davis

**Mutation load paradox resolved by large-effect compensation: Why we haven’t ‘died 100 times over’**

Walid Mawass¹, Joseph D. Matheson², Joanna Masei³

¹University of Arizona, Tucson, QC, ²University of Arizona, Tucson, AZ, ³University of Arizona
Description

Organizers: Dr. Laura Galloway and Dr. Lynda Delph
Talks in this symposium will explore threads such as what determines species’ distributions, the extent to which coexistence between congeners impacts distributions, and how reproductive isolation impacts distributions and rates of speciation. In other words, what keeps species apart both genetically and spatially?

Presentations

11:15 AM

• From disjunct to aggregated: explaining patterns of spatial overlap of close relatives across scales
  Andrea Case¹, Christopher Blackwood², Lynda F. Delph³
  ¹Kent State University, Kent, Ohio, ²Kent State University, ³Indiana University, Bloomington, IN

11:45 AM

Disentangling the historical routes to community assembly in the global epicentre of biodiversity
  Bouwe Reijenga¹, Benjamin Freeman², David Murrell³, Alex Pigot⁴
  ¹University College London, London, London, United Kingdom, ²University of British Columbia, Vancouver, BC, ³University College London, United Kingdom, ⁴University College London

12:00 PM

Estimating spatial demographic patterns in a dynamic environment with species distribution models and genome-wide data
  Connor M. French¹, Michael J. Hickerson², Ana C. Carnaval³
  ¹City University of New York, New York, NY, ²The City College of New York, ³City College of New York

Towards the Network of Life: Phylogenetic networks as a tool to understand complex evolutionary histories II

📅 Tue, June 28
⏰ 11:15 AM - 12:30 PM
📍 Room 26BC
ImGui Symposium
Description

Organizers: Dr. Kevin Kong and Dr. Rejuan Haque

While phylogenetic trees have been essential in understanding how species evolve and are useful for a tremendous range of practical applications, they cannot adequately describe some types of evolutionary processes, such as hybrid speciation, introgression, recombination, horizontal gene transfers, and gene duplication and loss. In these cases, a phylogenetic network, a modification and generalization of a phylogenetic tree that allows two branches to merge into a single node to create a directed acyclic structure called a reticulation, represents the true evolutionary history more appropriately than a phylogenetic tree. The talks in this symposium will be focused around the development of techniques for inferring phylogenetic networks from multilocus data and on their application to empirical problems. Speakers in the session will address computational challenges that arise from analyzing large-scale data, challenges in interpreting the inferred networks, as well as future directions for solving these challenges.

Presentations

11:15 AM  
**Leveraging graph-theoretic results for phylogenetic networks to estimate admixture graphs**
Erin Molloy, University of Maryland, College Park

11:30 AM  
**Avoiding model misspecification is crucial for accurate species network inference**
Huw A. Ogilvie¹, Zhen Cao², Zhi Yan², Luay Nakhleh²
¹Rice University, Houston, TX, ²Rice University

11:45 AM  
**Deconstructing spatial genealogical variation across genomes**
Deren A. Eaton¹, Patrick McKenzie¹
¹Columbia University, New York, NY

12:00 PM  
**Statistical challenges to infer phylogenetic networks**
Claudia Solis-Lemus, University of Wisconsin-Madison, Madison, WI

12:15 PM  
**Panel Discussion**
**Lunch**

📅 Tue, June 28  
⏰ 12:30 PM - 2:30 PM  
📍 Offsite  
🧳 Social event

**Description**

Attendees are on their own; lunch is not provided.

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**SSE council exit meeting**

📅 Tue, June 28  
⏰ 12:30 PM - 2:30 PM  
📍 Room 14  
💼 Meeting

**Description**

Open to members of the SSE council only. Lunch is provided.

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**ASN council exit meeting**

📅 Tue, June 28  
⏰ 1:30 PM - 2:30 PM  
📍 Room 13  
💼 Meeting

**Description**

Open to members of the ASN council only. Lunch is provided.

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**Latines in Evolution Mixer**

📅 Tue, June 28
Description

Join the ‘Latines in Evolution’ mixer to get to know other Latines doing fantastic science in and outside Latin America. We welcome the participation of people from diverse backgrounds to stimulate conversations about the perspective of evolutionary biology in Latin America and strategies to strengthen local communities. We aim to foster more interactions across organisations from different Latin American countries and the SSE, ASN & SSB communities.

This event is open to all conference attendees. Lunch is not provided but if you get takeout, you can bring it to the mixer.

SSB council exit meeting

📅 Tue, June 28
⏰ 1:30 PM - 2:30 PM
📍 Room 24
話し

Description

Open to members of the SSB council only. Lunch is provided.

ASN Early Career Investigator Award Symposium

📅 Tue, June 28
⏰ 2:30 PM - 3:45 PM
📍 Room 26BC
話し

Presentations

<table>
<thead>
<tr>
<th>2:30 PM</th>
<th>Introduction</th>
</tr>
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<tbody>
<tr>
<td>2:44 PM</td>
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</tbody>
</table>
2:45 PM | **Understanding processes that structure communities at multiple spatial scales**  
Laura Melissa Guzman, University of Southern California

3:15 PM | **Symbionts and stresses: the impact of protective microbes on host and pathogen evolution**  
Kim Hoang, Kayla King, Levi Morran, Nicole Gerardo  
1Emory University, Georgia, 2University of Oxford, 3Emory University, Atlanta, GA, 4Emory University

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**Diversification**

📅 Tue, June 28  
⏰ 2:30 PM - 3:45 PM  
📍 Room 20  
颏 Regular

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**Presentations**

2:30 PM | **Phylogenetic history, allometry and elevational range influence skull diversification of the New World toads of the genera Anaxyrus, Incilius and Rhinella**  
Julia Soares Parreiras, Tod W. Reeder  
1San Diego State University, San Diego, California, 2San Diego State University, San Diego, CA

2:45 PM | **The effect of genetic background on phenotypic diversification of Pseudomonas aeruginosa**  
Alex Hicks, Rees Kassen  
1University of Ottawa, Ottawa, 2University of Ottawa, Ottawa, Ontario

3:00 PM | **Ecology and Biogeography of the Diversification of Minnows (Cypriniformes: Leuciscidae) of the Holarctic**  
Milton Tan, Jonathan W. Armbruster  
1Illinois Natural History Survey, Champaign, Illinois, 2Auburn University
Phylogenetic Methods V

Tuesday, June 28
2:30 PM - 3:45 PM
Room 15
Regular

Presentations

2:30 PM
Integrating ecological niche models with phylogenetic inference using the FBD process
Joëlle Barido-Sottani¹, Simon Darroch², Erin Saupe³, Rachel C. Warnock⁴
ENS PSL, Paris, France, Vanderbilt University, University of Oxford, FAU, Erlangen, Germany

2:45 PM
Fast phylogenies from genomic big data, without compromising accuracy
Jing Peng¹, Haseena Rajeevan², Laura Kubatko¹, Arindam RoyChoudhury³
The Ohio State University, Columbus, Ohio, Yale University, Weill Cornell Medicine, Cornell University, New York

3:00 PM
Introducing the early high disparity phylogenetic comparative model, with applications to body size evolution in whales (Mammalia: Cetacea) and ichthyosaurs (Reptilia: Ichthyosauroida) Arctic Mammals
Ricardo Ely, Indiana University, Bloomington, Indiana

3:30 PM
An effect size for comparing the strength of morphological integration across studies
Dean Adams¹, Mark Conaway²
Iowa State University, Ames, IA, Department of Ecology, Evolution, & Organismal Biology, Iowa State University, Ames

3:15 PM
Extreme variation in paper wasp facial color patterns
Sara Miller¹, Michael J. Sheehan¹, James P. Tumulty²
Cornell University, Ithaca, NY, Dept Neurobiology and Behavior, Cornell University, Ithaca, NY
## Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
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<tbody>
<tr>
<td>2:30 PM</td>
<td>Models for the evolution of conformity</td>
<td>Kaleda Denton¹, Uri Liberman², Marcus Feldman¹</td>
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<tr>
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<td>¹Stanford University, Stanford, ²Tel Aviv University</td>
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<tr>
<td>2:45 PM</td>
<td>Allelic gene conversion softens selective sweeps</td>
<td>Daniel R. Schrider, University of North Carolina, Chapel Hill, NC</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Inference of the proportion of recessive lethal mutations in humans and Drosophila</td>
<td>Chris C. Kyriazis¹, Emma Wade², Maria Izabel A. Cavassim³, Kirk E. Lohmueller⁴</td>
</tr>
<tr>
<td></td>
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<td>¹UCLA Department of Ecology and Evolutionary Biology, Los Angeles, CA, ²Mississippi State University, ³UCLA, Brazil, ⁴UCLA, Los Angeles, CA</td>
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<tr>
<td>3:15 PM</td>
<td>Examining polygenic adaptation in time-stratified genome samples</td>
<td>WITHDRAWN</td>
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<td>Xiaoheng Cheng¹, Matthias Steinrücken²</td>
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<td></td>
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<td>¹University of Chicago, Chicago, IL, ²University of Chicago</td>
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## Social Evolution

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</tbody>
</table>
| 2:30 PM    | Learning from microbial collective behavior in complex, natural environments | Emily Hager\(^1\), Allyson Sgro\(^2\)  
  \(^1\)Boston University, Boston, MA, \(^2\)Boston University |
| 2:45 PM    | Robust evolution of altruism based on similarity of complex phenotypes | Linnea Bavik\(^1\), Rohan S. Mehta\(^2\), Daniel B. Weissman\(^3\)  
  \(^1\)Emory University, Atlanta, \(^2\)Emory University, Decatur, GA, \(^3\)Emory University, Atlanta, GA |
| 3:15 PM    | Cheating and the Evolution of Multipartite Viral Genomes              | Asher Leeks\(^1\), Paul E. Turner\(^2\), Geoff Wild\(^3\), Stuart West\(^4\)  
  \(^1\)Yale, New Haven, \(^2\)Yale University, New Haven, CT, \(^3\)Queens University, Ontario, \(^4\)University of Oxford |
| 3:15 PM    | Indirect Genetic Effects across ontogeny in the Florida Scrub-Jay    | Gladiana Spitz\(^1\), Elissa J. Cosgrove\(^2\), Reed Bowman\(^3\), John Fitzpatrick\(^4\), Nancy Chen\(^5\)  
  \(^1\)University of Colorado Boulder, Boulder, CO, \(^2\)Cornell University, \(^3\)Archbold Biological Station, \(^4\)Cornell Lab of Ornithology, \(^5\)University of Rochester, Rochester, NY |

**Speciation III**

📅 Tue, June 28  
⏰ 2:30 PM - 3:45 PM  
📍 Room 19  
💼 Regular

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<th>Time</th>
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<tr>
<td>2:30 PM</td>
<td>Hotspots of disruption in placental regulatory gene networks reflect a common genetic architecture underlying hybrid placental dysplasia in rodents</td>
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\(^1\)Boston University, Boston, MA, \(^2\)Boston University  
\(^1\)Emory University, Atlanta, \(^2\)Emory University, Decatur, GA, \(^3\)Emory University, Atlanta, GA  
\(^1\)Yale, New Haven, \(^2\)Yale University, New Haven, CT, \(^3\)Queens University, Ontario, \(^4\)University of Oxford  
\(^1\)University of Colorado Boulder, Boulder, CO, \(^2\)Cornell University, \(^3\)Archbold Biological Station, \(^4\)Cornell Lab of Ornithology, \(^5\)University of Rochester, Rochester, NY
Species distributions and coexistence: the intersection of evolution and ecology III

Emily C. Moore¹, Kate Wilsterman², Fernando Rodriguez Caro³, Paigan J. Aspinall⁴, Quynh McKelvey-Pham⁵, Leslie Turner⁶, Jeff M. Good⁷
¹University of Montana, Missoula, MT, ²Colorado State University - Fort Collins, Fort Collins, ³University of Montana, Missoula, ⁴University of Bath, Bath, Bath, United Kingdom, ⁵Hellgate High School, Missoula, MT, ⁶Milner Centre for Evolution, Univ of Bath, Bristol, Bristol, United Kingdom, ⁷Division of Biological Sciences, University of Montana, Missoula

2:45 PM  The phoenix hypothesis of speciation
Ryo Yamaguchi¹, Bryn Wiley², Sarah (Sally) Otto³
¹Hokkaido University, Sapporo, Hokkaido, Japan, ²UBC, ³UBC, Vancouver, BC

2:59 PM  Impacts of changing host plant ranges on the evolutionary history of a specialist insect species
Alaine Hippee, University of Iowa, Iowa City, Iowa

3:15 PM  Diverse mechanisms contribute to reproductive isolation between selfing and outcrossing morning glory species
Kate Ostevik¹, Joanna Rifkin², Irene Liao³, Mark D. Rausher³
¹UC Riverside, Riverside, ²ISPA Environmental Labs, Toronto, Ontario, ³Duke University, Durham, NC

3:30 PM  The buildup from intra to inter-specific variation in an ecologically important ant complex
Gabriella I. Quartuccia¹, Thomas H. Powell², Kirsten M. Prior³, Carmela M. Buono³
¹Binghamton University, Bronx, NY, ²Binghamton University (SUNY), Binghamton, NY, ³Binghamton University

Species distributions and coexistence: the intersection of evolution and ecology III

📅 Tue, June 28
⏰ 2:30 PM - 3:45 PM
📍 Grand Ballroom A
🗝️ Symposium
Description

Organizers: Dr. Laura Galloway and Dr. Lynda Delph
Talks in this symposium will explore threads such as what determines species’ distributions, the extent to which coexistence between congeners impacts distributions, and how reproductive isolation impacts distributions and rates of speciation. In other words, what keeps species apart both genetically and spatially?

Presentations

2:30 PM  Reproductive isolation and reproductive interactions shape plant species distributions at fine scales
Kyle Christie, Michigan State University / Northern Arizona University, Flagstaff

3:00 PM  Form genes to speciation: how ecological divergence causes reproductive isolation
Catherine R. Linnen, University of Kentucky, Lexington, KY

3:30 PM  Panel Discussion - Dr. Laura Galloway

Coffee break

📅 Tue, June 28  
🕒 3:45 PM - 4:15 PM  
📍 Grand Ballroom BC
🔗 Social event

Ecology

📅 Tue, June 28  
🕒 4:15 PM - 5:30 PM  
📍 Room 16
🔗 Regular
### Presentations

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>4:15 PM</td>
<td><strong>Could phosphorus limitation contribute to the maintenance of sex and ploidy polymorphism in a New Zealand snail?</strong>&lt;br&gt;Briante Najev¹, Amy Krist², Josie Bliss³, Chase McInville³, Maurine Neiman¹&lt;br&gt;¹University of Iowa, Iowa City, Iowa, ²University of Wyoming, ³University of Iowa</td>
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<tr>
<td>4:30 PM</td>
<td><strong>Evolutionary Opportunity and the Limits of Community Similarity in Replicate Radiations of Island Lizards</strong>&lt;br&gt;Luke Frishkoff¹, Gavia Lertzman-Lepofsky², Luke Mahler²&lt;br&gt;¹University of Texas at Arlington, ²University of Toronto</td>
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<td>4:45 PM</td>
<td><strong>The role of climate change and niche shifts in divergent range dynamics of a sister-species pair</strong>&lt;br&gt;Jeremy Summers¹, Dieter Lukas², Corina Logan², Nancy Chen¹&lt;br&gt;¹University of Rochester, Rochester, NY, ²Max Planck Institute</td>
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<td>5:00 PM</td>
<td><strong>Drivers of gut microbiome community assembly in oreohelix land snails</strong>&lt;br&gt;Ian Oiler¹, T. Mason Linscott², Christine Parent¹&lt;br&gt;¹University of Idaho, Moscow, ²University of Idaho, Moscow, ID</td>
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<td>5:15 PM</td>
<td><strong>Evolutionary history limits adaptation of color sensitivity across Metazoa</strong>&lt;br&gt;Matthew Murphy¹, Erica Westerman²&lt;br&gt;¹University of Arkansas, Fayetteville, ²University of Arkansas</td>
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### Modeling

📅 **Tue, June 28**<br>⏰ **4:15 PM - 5:30 PM**<br>📍 **Room 20**<br>寻常

### Presentations
Mutation

📅 Tue, June 28
⏰ 4:15 PM - 5:30 PM
📍 Room 15
🌐 Regular

Presentations

4:15 PM | **Modelling the evolution and predictors of mutation rate variation**
Madeleine Oman¹, Rob W. Ness²
¹University of Toronto, ON, ²University of Toronto

4:30 PM | **Generation times across human history inferred from the mutation spectrum**
Richard Wang¹, Samer Al-Saffar², Jeffrey Rogers³, Matthew Hahn²
¹Indiana University, Bloomington, IN, ²Indiana University, ³Baylor
<table>
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<td>4:45 PM</td>
<td>Contribution of spontaneous mutations to quantitative and molecular variation at the highly repetitive rDNA locus in yeast</td>
<td>Nathaniel Sharp, University of Wisconsin-Madison, Madison, WI</td>
</tr>
</tbody>
</table>
| 5:00 PM| How Low Can We Go? Measuring E. coli Mutation rates with DNA rolling circles | Stephan Baehr¹, Michael Lynch², Jean-Francois Gout³  
¹Arizona State University, Tempe, ²Arizona State University, ³Mississippi State University |
| 5:15 PM| Synonymous mutations in representative yeast genes are mostly strongly nonneutral | Xukang Shen¹, Siliang Song², Jianzhi Zhang³  
¹University of Michigan, Ann Arbor, ²University of Michigan, Ann Arbor, MI, ³University of Michigan |

**Speciation IV**

📅 Tuesday, June 28  
⏰ 4:15 PM - 5:30 PM  
📍 Room 19  
_pdf Regular_

### Presentations

<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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| 4:30 PM| Isolating the mutational basis of reinforcement in Phlox             | Austin G. Garner¹, Andrea E. Berardi², Robin Hopkins³  
¹Harvard University, Roslindale, MA, ²Harvard University, Cambridge, MA, ³Harvard University, Boston, MA |
| 4:45 PM| Genomic signatures of reinforcement speciation in monkeys            | Nick Bailey¹, Isaac Niedzwiecki¹, Cody Ruiz², Anthony Tosi², Laurie Stevison³  
¹Auburn University, Auburn, AL, ²Kent State University, ³Auburn University |
Strength of postzygotic isolation within and between closely related taxa of monkeyflowers (Mimulus)

Irene Martinez\textsuperscript{1}, James M Sobel\textsuperscript{2}
\textit{\textsuperscript{1}Binghamton University, Binghamton, NY, \textsuperscript{2}Binghamton University, Binghamton}

A Lethal Genetic Incompatibility between Naturally Hybridizing Species in Mitochondrial Complex I

Benjamin M. Moran\textsuperscript{1}, Cheyenne Payne\textsuperscript{2}, Daniel Powell\textsuperscript{3}, Erik N. Iverson\textsuperscript{4}, Shreya Banerjee\textsuperscript{5}, Angel Madero\textsuperscript{5}, Theresa Gunn\textsuperscript{5}, Quinn Langdon\textsuperscript{1}, Fang Liu\textsuperscript{4}, Rowan Matney\textsuperscript{5}, Kratika Singh\textsuperscript{5}, Ryan Leib\textsuperscript{5}, Osvaldo Hernandez-Perez\textsuperscript{6}, Russell Corbett-Detig\textsuperscript{7}, Judith Frydman\textsuperscript{5}, Manfred Schartl\textsuperscript{8}, Justin C. Havird\textsuperscript{9}, Molly Schumer\textsuperscript{1}
\textit{\textsuperscript{1}Stanford University, Stanford, CA, \textsuperscript{2}Stanford University, Stanford, California, \textsuperscript{3}Stanford University, Belmont, Ca, \textsuperscript{4}University of Texas at Austin, Austin, Texas, \textsuperscript{5}Stanford University, \textsuperscript{6}Centro de Investigaciones Científicas de las Huastecas “Aguazarca”, A.C., \textsuperscript{7}UC Santa Cruz, Santa Cruz, CA, \textsuperscript{8}University of Würzburg, Wuerzburg, Bavaira, Germany, \textsuperscript{9}University of Texas at Austin, Austin, TX}

ASN Early Career Investigator Award Symposium

\textbullet\ Tue, June 28
\textbullet\ 4:15 PM - 5:45 PM
\textbullet\ Room 26BC
\textbullet\ Symposium

Presentations

Mechanisms and consequences of repeated evolution
Rachel Moran, University of Chicago, Chicago

Assortative mating enhances post-zygotic barriers to gene flow via ancestry bundling.
Pavitra Muralidhar\textsuperscript{1}, Graham Coop\textsuperscript{2}, Carl Veller
\textit{\textsuperscript{1}University of California, Davis, Davis, CA, \textsuperscript{2}University of California - Davis, DAVIS, CA}
Super Social - Rock & Roll Hall of Fame

📅 Tue, June 28
⏰ 7:00 PM - 11:00 PM
📍 Rock & Roll Hall of Fame
🎉 Social event

Description

Pre-registration (ticket purchase) required. No on-site ticket sales.

This is the final conference dinner and social event. It will be held at the Rock & Roll Hall of Fame, a waterfront indoor/outdoor venue that is only 0.5 miles (~10 min. walk) from the Huntington Convention Center (Uber vouchers are available if you need mobility assistance - please contact us). One drink ticket and a selection of food items are included with the cost and cash bars will be on-site. We will have full access to all of the Rock Hall exhibits throughout the evening.

Beta diversity in a nutshell: a hypervolume geometric approach to measure community composition variations

Chuliang Song¹, Muyang Lu², Joseph R. Bennett³, Benjamin Gilbert⁴, Marie-Josée Fortin⁴, Andrew Gonzalez⁵

¹McGill University and University of Toronto, MONTREAL, MA, ²Yale University, ³Carleton University, ⁴University of Toronto, ⁵McGill University

Tue, June 28
7:00 PM - 11:00 PM
Rock & Roll Hall of Fame
Social event