Joint Meeting of ASN, SSB and SSE
Shuttle Bus Schedule

Saturday, June 14
5:00 pm - 10:00pm Kittredge - Williams Village

Sunday, June 15
7:30 - 9:30am Williams Village, Holiday Inn - UMC
5:00 - 6:30pm UMC - Williams Village, Holiday Inn, Kittredge
7:00 - 8:30pm Williams Village, Holiday Inn, Kittredge - Macky
9:30 - 11:15pm Macky - Williams Village, Holiday Inn, Kittredge

Monday, June 16
7:30 - 9:30am Williams Village, Holiday Inn - UMC
4:30 - 7:00pm UMC - Holiday Inn - Williams Village
7:15 - 8:15pm Williams Village - Macky, Kittredge, Holiday Inn
8:45 - 9:30pm Macky - Williams Village, Kittredge, Holiday Inn

Tuesday, June 17
7:30 - 9:30am Williams Village, Holiday Inn - UMC
5:00 - 7:00pm UMC - Holiday Inn - Williams Village
7:15 - 8:15pm Williams Village, Holiday Inn, Kittredge - Macky
8:45 - 9:30pm Macky - Williams Village, Kittredge, Holiday Inn

Wednesday, June 18
7:30 - 9:30am Williams Village, Holiday Inn - UMC
11:00 - 12:30pm UMC - Holiday Inn, Kittredge, Williams Village

Please note: Participants living at the Broker Inn may walk across the street to Williams Village to board the shuttle bus
Annual Meeting
American Society of Naturalists
Society of Systematic Biologists
Society for the Study of Evolution

June 14 - 18, 1997
Boulder, Colorado

Table of Contents

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Symposia, Contributed Papers and Posters 5
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Meeting Host: Jeff Mitton
Program Organization: Brian Kreiser

Front Cover: An ancient limber pine, Pinus flexilis, near Trail Ridge Road, Rocky Mountain National Park
Back Cover: Common killifish, Fundulus heteroclitus, swimming over a bed of blue mussels, Mytilus edulis
Drawing by Jan Logan

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>6/14</td>
<td>2:00-9:30PM</td>
<td>Proutfest - Symposium and Dinner at the Mountain Research Station</td>
</tr>
<tr>
<td>(Sat)</td>
<td>1:00-9:00</td>
<td>Registration at Williams Village</td>
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<tr>
<td></td>
<td>1:00-3:00</td>
<td>ASN/SSB/SSE Coordinating Council Meeting (Williams Village 103)</td>
</tr>
<tr>
<td></td>
<td>3:00-5:00</td>
<td>ASN, SSB, SSE Council Meetings (Williams Village 101, 103 and 100)</td>
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<tr>
<td></td>
<td>7:00-10:00</td>
<td>Welcome reception, Williams Village</td>
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<tr>
<td>6/15</td>
<td>8:30-12:00</td>
<td>SSB Symposium - &quot;Large Data Sets&quot;</td>
</tr>
<tr>
<td>(Sun)</td>
<td>8:30-12:00</td>
<td>Concurrent Paper Sessions</td>
</tr>
<tr>
<td></td>
<td>12:00-1:30</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td>1:30-5:00</td>
<td>SSE Business Meeting (12:30-1:30)</td>
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<tr>
<td></td>
<td>1:30-5:00</td>
<td>NSF Information Session: Program updates, the review process, and questions and answers</td>
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<tr>
<td></td>
<td>1:30-5:00</td>
<td>ASN Vice President's Symposium - &quot;Adaptive Hypotheses&quot;</td>
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<td>1:30-5:00</td>
<td>Concurrent Paper Sessions</td>
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<tr>
<td></td>
<td>4:30-5:30</td>
<td>SSE Presidential Address: R. Lande</td>
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<tr>
<td></td>
<td>4:30-6:30</td>
<td>Poster Session #1</td>
</tr>
<tr>
<td></td>
<td>8:00-9:00</td>
<td>Address by Professor E.O. Wilson</td>
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<tr>
<td></td>
<td>9:00-11:00</td>
<td>Social for E.O. Wilson</td>
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<tr>
<td>6/16</td>
<td>8:00-12:00</td>
<td>SSE Symposium - &quot;Mutations&quot;</td>
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<td>(Mon)</td>
<td>8:30-12:00</td>
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<td>12:00-1:30</td>
<td>Lunch</td>
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<td>1:30-5:00</td>
<td>ASN Business Meeting (12:30-1:30)</td>
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<td>1:30-5:00</td>
<td>NIH Grants Workshop</td>
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<td>1:30-5:00</td>
<td>SSB Symposium &quot;Developmental Patterns&quot;</td>
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<td>1:30-5:15</td>
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<td>4:30-6:30</td>
<td>Poster Session #2</td>
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<td></td>
<td>6:00-7:45</td>
<td>Barbecue</td>
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<td>8:00-9:00</td>
<td>ASN Presidential Address: G. Vermeij</td>
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<tr>
<td>6/17</td>
<td>8:30-11:30</td>
<td>ASN Young Investigators Symposium</td>
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<tr>
<td>(Tues)</td>
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<td>12:00-1:30</td>
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<td></td>
<td>1:30-5:00</td>
<td>SSB Business Meeting (12:30-1:30)</td>
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<tr>
<td></td>
<td>1:30-5:00</td>
<td>NSF Population Biology: Open Discussion - The role of model organisms in research in population biology</td>
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<td>1:30-5:00</td>
<td>SSE Symposium - &quot;Self-Recognition Systems&quot;</td>
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<td>1:30-5:15</td>
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<td>4:30-6:30</td>
<td>Poster Session #3</td>
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<td>5:30-6:30</td>
<td>ASN/SSB/SSE Coordinating Council Meeting</td>
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<td></td>
<td>6:00-7:45</td>
<td>Banquet</td>
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<td></td>
<td>8:00-9:00</td>
<td>SSB Presidential Address: J. Savage</td>
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<tr>
<td>6/18</td>
<td>8:00-12:00</td>
<td>Concurrent Paper Sessions</td>
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Notice to Speakers and Poster Presenters

Speakers:
Please check the schedule to reconfirm the session and time of your talk. There may have been some minor changes in the presentation number and time of your talk since the preliminary program was posted on the website. The 15 minutes that you are allotted includes both the presentation and question periods. To keep the session on schedule please do not exceed this time limit. The chair of the session will signal you at 12 minutes and then physically remove you from the podium at 15 minutes.

Poster Presenters:
Each poster has been assigned a number corresponding to a reserved space. You are allowed 4 ft. by 4 ft. for your poster. Please do not encroach upon the space of other presenters. There are three separate posters sessions (Sunday, Monday and Tuesday afternoons). Posters may be put up from 2:00-4:00 on the day in which you are presenting. For the Sunday and Monday sessions, posters must be removed by 2:00 the next day. Posters in the Tuesday session must be removed at the end of the session. All posters sessions will be located in UMC East Ballroom.

Exhibitors - Book Publishers

There will be a book publisher's display in the UMC West Ballroom. We hope that all participants will stop by during the course of the meeting to see the books from these fine publishers.

Oxford University Press
Blackwell Science Inc.
Academic Press
Harvard University Press
Princeton University Press
Sinauer Associates, Inc.
The University of Chicago Press
University Press of Colorado
Saturday, 14th June

1:00-9:00  Registration at Williams Village

2:00-9:30  Proutfest - Symposium and Dinner at the Mountain Research Station

1:00-3:00  ASN/SSB/SSE Coordination Council Meeting - Williams Village Darley Commons 103

3:00-5:00  ASN Council Meeting - Williams Village Darley Commons 101
           SSB Council Meeting - Williams Village Darley Commons 103
           SSE Council Meeting - Williams Village Darley Commons 100

7:00-10:00 Welcome Reception - Williams Village
Sunday, 15th June

**UMC Center Ballroom**

8:30-12:00 Symposium 1 - Phylogenetic Analyses of Large Data Sets
Organizers: Pamela Soltis and Douglas Soltis

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>8:30</td>
<td>1</td>
<td>Efficiency of Phylogenetic Methods with Large Data Sets</td>
<td>D.M. Hillis</td>
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<tr>
<td>9:00</td>
<td>2</td>
<td>Tree Comparison Metrics for the Evaluation of Large Data Sets</td>
<td>D. Penny, M. Hendy</td>
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<tr>
<td>9:30</td>
<td>3</td>
<td>Inference and Reliability of Large Phylogenies Under the Minimum Evolution Criterion</td>
<td>S. Kumar</td>
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<tr>
<td>10:00</td>
<td>Break</td>
<td></td>
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<tr>
<td>10:30</td>
<td>4</td>
<td>Advantages of Parsimony Jackknifing</td>
<td>J.S. Farris, V. Albert</td>
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<tr>
<td>11:00</td>
<td>5</td>
<td>The Construction of Maximally Informative Phylogenetic Supertrees</td>
<td>M.J. Sanderson, C. Henze</td>
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**JILA Auditorium**

8:30-10:00 Session 1 - Adaptation and Plasticity
Chair: Sally Aitken

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<th>Time</th>
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<th>Title</th>
<th>Authors</th>
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<tr>
<td>8:30</td>
<td>7</td>
<td>Phenotypic Plasticity and Drought Sensitivity in Douglas-Fir (Pseudotsuga Menziesii)</td>
<td>S.N. Aitken, B.J. Yoder, K.L. Kavanagh, B.L. Gartner</td>
</tr>
<tr>
<td>8:45</td>
<td>8</td>
<td>Causes and Consequences of Variation in Germination for a Winter Annual: Evidence for Adaptation to Desert Environments?</td>
<td>M.J. Clauss, D.L. Venable</td>
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<tr>
<td>9:00</td>
<td>9</td>
<td>Ecophysiology of Water Relations in Arabis Fecunda, a Rare Plant</td>
<td>J. Mckay, J. Richards, T. Mitchell-Olds, A. Sala</td>
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<tr>
<td>9:15</td>
<td>10</td>
<td>Sources of Genotype X Environment Interaction for Fitness in Plantago Lanceolata</td>
<td>S.A. Dudley, J. Schmitt</td>
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<tr>
<td>9:30</td>
<td>11</td>
<td>Parental Effects in Plantago Lanceolata. III. The Measurement of Temperature Effects in the Field</td>
<td>E.P. Lacey, D. Herr</td>
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<tr>
<td>9:45</td>
<td>12</td>
<td>Salt Tolerance in Plantago Coronopus: Responses to Artificial Selection in Constant and Heterogeneous Environments</td>
<td>M. Smekens, P. Van Tienderen</td>
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</tbody>
</table>
Fine Arts N141
8:30-10:00  Session 2 - Life Histories and Development
            Chair: Christian Klingenberg

            *S.F. Craig

8:45  14  Quantifying Fluctuating Asymmetry with Geometric Morphometrics
            *C.P. Klingenberg

9:00  15  Morphogenesis of the Gastropod Radulae: Character States in Transformation
            *D.R. Lindberg, R.P. Guralnick

9:15  16  The Evolution Life History and Population Stability in Laboratory Populations of *Drosophila
            A. Joshi, *L. Mueller

9:30  17  Snail Trematode Interactions: Tests of Gigantism, Fecundity Compensation and Juvenile
            Susceptibility in the Freshwater Snail *Potamopyrgus antipodorum
            *A. Krist, C. Lively

9:45  18  Spontaneous Mutation Accumulation in *Caenorhabditis elegans
            *L.L. Vassilieva, M. Lynch

Chemistry 140
8:30-10:00  Session 3 - Hybridization And Sexual Isolation
            Chair: Jeffrey McKinnon

8:30  19  A Test of Parallel Speciation Using Japanese and British Columbia Populations of the
            Three-Spine Stickleback
            *J.S. McKinnon, D. Schluter, S. Mori

8:45  20  Male Preference for Hybrid Phenotypes in a Gynogenetic Complex of Poeciliid Fishes
            *L. Dries

9:00  21  Hybridization and Introgression Between Two Species of *Orconectes Crayfishes in Northern
            Wisconsin, and It's Implications for Species Invasions
            *W.L. Perry, J.L. Feder, D.M. Lodge

9:15  22  Asymmetric F1 Parentage in a Newt Hybrid Zone
            *G.P. Wallis, J.W. Arntzen

9:30  23  An Incipient Speciation Event in the *Drosophila willistoni Group
            *V.R. DeFilippis, F.J. Ayala

9:45  24  Reproductive Isolation Between Sympatric Populations of Pea Aphids on Two Hosts: Fitness
            of Hybrids
            *S. Via
Chemistry 142
8:30-10:00
Session 4 - Behavior
Chair: Thomas Getty

8:30  25  End-Products of Behaviour vs. Behavioural Characters: Which Gives a More Reliable Phylogeny for Blackflies (Diptera: Simuliidae)?
* A. Stuart, F. Hunter

8:45  26  Variation in Increased Male Mortality Due to Mating with Males of Different Strains of Drosophila melanogaster
R. Smith, *N.A. Johnson

9:00  27  Evolution of Recognition Behavior and Morphological Stasis in the Botryllid Ascidians
*C.S. Cohen

9:15  28  Sex Allocation Patterns in Haplodiploid, Gall-Forming Thrips (Insecta: Thysanoptera)
*B. Kranz, B. Crespi, M. Schwarz, L. Mound

9:30  29  Handicap Signaling: When Fecundity and Viability Do Not Add Up
*T. Getty

9:45  30  Phenotypic Engineering of a Pheromone Reveals a Multi-Component Badge of Status
*P.J. Moore, K.F. Haynes, A.J. Moore

Ramaley C250
8:30-10:00
Session 5 - Population Genetics
Chair: Tracie Jenkins

8:30  31  Phylogeography of a Relict Species: The Iowa Pleistocene Snail (Discus macclintockii)
*T. Ross

8:45  32  Mitochondrial DNA Genetic Patterns in the Subterranean Termite (Isoptera: Rhinotermitidae)
*T.M. Jenkins, B.T. Forschler

9:00  33  Genetic Variation in Populations of the Fathead Minnow (Pimephales promelas) and the Plains Killifish (Fundulus zebrinus) from an Intermittent Stream
*B.R. Kreiser, J.B. Mitton, J. Woodling

9:15  34  Genetic Differentiation among Pygmy Whitefish (Prosopium coulteri) Populations, with Varying Life History Traits, Using RAPD and Mitochondrial Gene Sequence Analysis
*L. Rankin, D.M. Blouw, D.D. Heath

9:30  35  Mitochondrial DNA Variation in the Blue Crab (Callinectes sapidus Rathbun): Are the Highly Diverse Haplotypes Geographically Structured?
*A.L. McMillen-Jackson, T.M. Bert

9:45  36  

8
8:30-10:00  Session 6 - Quantitative Genetics
Chair: Adam Chippindale

8:30  37  Age-Specific Properties of Spontaneous Mutations Affecting Mortality in Drosophila melanogaster
*S.D. Pletcher, J.W. Curtsinger

8:45  38  Mapping of Genetic Factors Causing Genotype-By-Environment Interaction for Fitness in Drosophila melanogaster
*J.D. Fry, S. Nuzhdin, E. Pasyukova, T.F.C. Mackay

9:00  39  Measuring Heritable Variation in Net Fitness: A New Technique Using Cytogenetic Cloning of Drosophila
*A. Chippindale, B. Rice

9:15  40  The Evolution of Threshold Traits: A Quantitative Genetic Analysis of the Physiological and Life History Correlates of Wing Dimorphism
*D. Roff, G. Stirling, D. Fairbairn

9:30  41  Partitioning a Fitness Tradeoff: Genetic and Physiological Components
*G. Stirling, D. Roff

9:45  42

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Old Main Chapel
8:30-10:00  Session 7 - Plant Mating/Breeding Systems
Chair: Phil Gibson

8:30  43  Experimental Test of Differential Seed Fitness in a Gynodioecious Species: Negative Pleiotropy vs. Gametophytic Selection
*L. Delph

8:45  44  Sex Allocation in Monomorphic and Dimorphic Populations of a Gynodioecious Plant, Lobelia siphilitica
*D. Dudle

9:00  45  Evolution of Gynodioecy in a Tropical Tree: Influence of Mating System and Floral Development
*P. Gibson, P. Diggle

9:15  46  Gender Specialization in Andromonoecious Solanum carolinense: Results from Field and Quantitative Genetic Studies
*E. Elle

9:30  47  Factors Influencing Sex Expression in Wurmbea dioica (Colchicaceae): Implications for the Evolution of Dioecy
*A. Case, S.C.H. Barrett

9:45  48  Mating System Evolution in Linanthus (Polemoniaceae): Phylogenetic Evidence from ITS Sequence Data
*C. Goodwillie

10:00-10:30  Break
JILA Auditorium
10:30-12:00
Session 8 - Adaptation and Plasticity
Chair: Susan Mopper

10:30 49
Is Adaptive Radiation Sex Specific? A Case Study in Anolis Lizards
*M. Butler

10:45 50
Phylogenetic and Ecological Aspects of Cooperative Breeding in the Bee-Eaters (Aves: Meropidae)
*B. Burt

11:00 51
Genetic Structure and Local Adaptation in a Dispersive Leafmining Insect
*S. Mopper, K. Landau

11:15 52
Genetic Basis of an Adaptive Radiation: Warning Color in Two Heliconius Species
*W.O. McMillan, C.D. Jiggins

11:30 53
Genetics of Adaptation: The Genetics of Drosophila sechellia's Resistance to a Naturally Occurring Toxin
*C. Jones, H.A. Orr

11:45 54
Variation and Possible Evolution of Dominance of an Insecticide Resistance Gene
*D. Bourguet, F. Didier, R. Michel

Fine Arts N141
10:30-12:00
Session 9 - Life Histories and Development
Chair: David Baum

10:30 55
Demographic Consequences of Variation in Life Histories of a Long-Lived Perennial Monocarpic Gentian, Frasera speciosa
*D.W. Inouye

10:45 56
Inclusive Fitness Theory and the Evolutionary Origin of Endosperm
*W. Friedman

11:00 57
The Molecular Genetic Basis for the Evolution of Solitary Flowers in Brassicaceae
*D. Baum, G. Shu, W. Amaral, E. Freeman

11:15 58
Evolution of Response to Light Signals in Wild Populations of Arabidopsis thaliana
*H. Callahan, M. Pigliucci

11:30 59
Ontogeny and Phylogeny of Marsileaceous Ferns: Evidence for Heterochrony
*K. Pryer

11:45 60

Chemistry 140
10:30-12:00
Session 10 - Geographic Variation and Hybrid Zones
Chair: Jon Bridle
10:30 61 A Mosaic Hybrid Zone Between Species of the *Bipalium* Group of Chorthippus Grasshoppers in Northern Spain
   *J. Bridle, R. Butlin*

10:45 62 The Role of Host-Plant Choice in the Local Adaptation of Divergent Pea Aphid Populations in Sympatry
   *M. Caillaud, S. Via*

11:00 63 Fine Scale Structure of a Field Cricket Mosaic Hybrid Zone
   *C. Ross*

11:15 64 Role of *Wolbachia* Infections in Two Hybrid Zones
   *R. Giordano, J.J. Jackson, H.M. Robertson*

11:30 65 Evidence of Hybridization Among Black Oaks of Eastern North America Based on Molecular Markers and Quantitative Morphometrics
   *M.A. Thomas, B.A. McPheron, J.C. Schultz*

11:45 66 An Ancient Polyploid Hybrid Zone in Birch (*Betula*).
   *J.H. Williams, Jr, M.L. Arnold*

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Chemistry 142

10:30-12:00 Session 11 - Ecological Genetics
Chair: Joe Pollard

10:30 67 Intra-population Sex Ratio Variation in the Salt Grass *Distichlis spicata*.
   *S. Eppley, M.L. Stanton, R.K. Grosberg*

10:45 68 Relative Fitness of Polyploid Cytotypes of Big Bluestem *Andropogon gerar* (Poaceae)
   *K. Keeler*

11:00 69 Fitness Consequences of Transplantation in *Lotus scoparius*: Preliminary Test of the Outbreeding Depression Hypothesis
   *A. Montalvo*

11:15 70 Natural Selection on a Leaf Shape Polymorphism in the Ivyleaf Morning Glory (*Ipomoea hederacea*)
   *K. Bright*

11:30 71 Ecological Genetics of Heavy Metal Hyperaccumulation in *Thlaspi caerulescens*
   *J. Pollard, K. Dandridge, E. Jhee*

11:45 72

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Ramaley C250

10:30-12:00 Session 12 - Population Genetics
Chair: Janice Bossart

10:30 73 Genetic Structure in a Coastal Dune Spider (*Geolycosa piket*) on Long Island, New York Barrier Islands: A Test of the Linear Stepping-Stone Model
   *A.M. Boulton, M.G. Ramirez, C.P. Blair*
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<th>Session</th>
<th>Title</th>
<th>Authors/References</th>
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<tbody>
<tr>
<td>10:45</td>
<td>74</td>
<td>Comparative Population Genetics of Endemic Sonoran Desert <em>Drosophila</em></td>
<td>*C. Breitmeyer</td>
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<tr>
<td>11:00</td>
<td>75</td>
<td>Minimal Genetic Variation in Coastal Dune Wolf Spiders</td>
<td>*M.G. Ramirez, A.M. Boulton, J.M. Lenes, W.J. Farr, K.K. Lay</td>
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<tr>
<td>11:30</td>
<td>77</td>
<td>Evolution in Fragmented Populations: Testing an Extinction/Recolonization Metapopulation Genetics Model Using Visible Genetic Markers</td>
<td>*A.M. McMillan</td>
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**UMC 235**

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors/References</th>
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<tbody>
<tr>
<td>10:30</td>
<td>79</td>
<td>Retrospective Selection Gradient Analysis of Sexual Dimorphism in <em>Silene latifolia</em></td>
<td>*T.R. Meagher</td>
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<tr>
<td>11:00</td>
<td>81</td>
<td>Evolution of Insect Resistance in <em>Arabidopsis thaliana</em></td>
<td>*B. Barker, T. Mitchell-Olds, M. Tobler</td>
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<tr>
<td>11:15</td>
<td>82</td>
<td>Responses to Selection on Male and Female Investment in <em>Spergularia marina</em> (Caryophyllaceae): The Second Generation</td>
<td>*S.J. Mazer, V.A. Delesalle, P. Neal</td>
</tr>
<tr>
<td>11:30</td>
<td>83</td>
<td>Diminishing-Returns Epistasis in an <em>Escherichia coli</em> DNA Repair Mutant</td>
<td>J. Blanchard, M. Lynch*</td>
</tr>
<tr>
<td>11:45</td>
<td>84</td>
<td>Genetic Integration of Maternal and Offspring Characters</td>
<td>*J.B. Wolf, E.D. Brodie III</td>
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**Old Main Chapel**

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<tbody>
<tr>
<td>10:30</td>
<td>85</td>
<td>Fitness Benefits of Induced Responses to Herbivory in a Wild Mustard</td>
<td>*A.A. Agrawal</td>
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<tr>
<td>11:00</td>
<td>87</td>
<td>The Dimensions of Plant Resistance to Herbivory: Looking Beyond Phytochemistry</td>
<td>*A.E. Weis</td>
</tr>
<tr>
<td>11:15</td>
<td>88</td>
<td>Evolutionary Consequences of Differential Host Utilization By Two Parasites of Ponderosa Pine</td>
<td>*Y.B. Linhart, M.A. Snyder</td>
</tr>
</tbody>
</table>
11:30 89 Selection on Flower Color Polymorphism From Foliage-Feeding Herbivores?  
*S.Y. Strauss, A. Emerson

11:45 90 Genetic Variability for Tolerance to Defoliation in *Datura stramonium*  
*J.E. Fornoni, J. Núñez-Farfán

12:00-1:30 - Lunch  
- SSE Business Meeting (12:30-1:30) - UMC 157  
- UMC Forum  
NSF Information Session: Program updates, the review process, and questions and answers  
L. Lyons, M. Courtney (Population Biology) & C. O'Kelly (Systematic Biology)

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1:30-5:00 UMC Center Ballroom  
Symposium 2 - Testing Adaptive Hypotheses Through Genetic and Physiological Manipulation  
Organizer: Johanna Schmitt

1:30 91 Manipulative Approaches to the Study of Adaptive Plasticity  
*J. Schmitt

2:00 92 Phenotypic Engineering: Using Hormones to Explore Adaptation  
*E. Ketterson, V. Nolan

2:30 93 Experimental Manipulations of Reproductive Allocation and Life History Adaptation  
*B. Sinervo

3:00-3:30 Break

3:30 94 Transgenes in the Analysis of Stress Tolerance and Life Histories  
*M. Tatar

4:00 95 Evolutionary Physiology of Heat Shock Proteins and the Stress Response in *Drosophila*:  
How Directed Mutagenesis and Natural Variation Can Contribute to Understanding Adaptation  
*M. Feder

4:30 96 Exploring the Evolution of Plant Defenses with Transgenes  
*J. Bergelson, C. Purcell

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JILA Auditorium  
1:30-3:00 Session 15 - Coevolution  
Chair: William Rice

1:30 97 Correlation Between Virulence and Vertical Transmission in a Plant Pathogen and It's Consequences on the Evolution of Pathogen's Virulence.  
*P.X. Kover, K. Clay

1:45 98 A Model of Endosymbiotic Mutualism with Horizontal Transmission: Host Strategies to Minimize Symbiont Cheating  
*T. Wilcox
2:00 99  The Intraspecific Red Queen as a Catalyst in Evolution  
*W.R. Rice

2:15 100  Red Queen Meets Santa Rosalia: Evolution of Specialization Driven by Arms-Races  
*T.J. Kawecki

2:30 101  The Evolution of Specialization in the Seed Beetle Genus Stator  
(Coleoptera: Chrysomelidae: Bruchinae)  
*G. Morse, B. Farrell, C.D. Johnson

2:45 102  Host-Plant Use Drives Polymorphism in Heliconius Butterflies  
*D.D. Kapan

***********************************************************************  
Old Main Chapel  
1:30-3:00  Session 16 - Sexual Selection  
Chair: Robert Warner

1:30 103  Antagonistic Seduction - A New Hypothesis for the Evolution of Ornaments  
*B. Holland

1:45 104  Variation Among Taxa in a Pre-Existing Bias  
*A.L. Basolo

2:00 105  Courtship as an Indicator of Safety Rather Than Male Quality  
*R.R. Warner

2:15 106  Polyandry as a Hedge Against Genetic Incompatibility  
*J.A. Zeh, D.W. Zeh

2:30 107  Sexual Selection, Nearly Neutral Theory and the Rate of Molecular Evolution  
*P. Wimberger, R. Reis

2:45 108  Empty Nuptial Gifts in an Empidid Fly, Empis snoddyi: Bigger Isn't Always Better  
*J.A. Sadowski, A.J. Moore, E.D. Brodie III

***********************************************************************  
UMC 235  
1:30-3:00  Session 17 - Molecular Evolution  
Chair: Scott Edwards

1:30 109  Test of Convergent and Parallel Evolution at the Amino Acid Sequence Level  
*J. Zhang, S. Kumar

1:45 110  Something Odd Has Happened in a Mus Histone H2a Pseudogene  
*R.W. Debry

2:00 111  Cloning and Evolution of Mhc Class II Genes from North American Songbirds  
*S.V. Edwards, J. Gasper

2:15 112  Selective Regimes Affecting Replacement Substitutions in D. melanogaster and E. coli Are Revealed Through Quantifying the Bioenergetic Costs of Amino Acid Synthesis  
*C.L. Craig, R.S. Weber
2:30 113 Evolution of Abalone Sperm Fertilization Proteins and Characterization of the Egg Receptor  
*W.J. Swanson, V.D. Vacquier

2:45 114 Contrasting Patterns of Molecular Evolution Among Invertebrate Sperm-Egg Recognition  
Loci  
*E.C. Metz, V.D. Vacquier

Ramaley C250
1:30-3:00 Session 18 - Population Genetics  
Chair: Matthew Hare

1:30 115 Using Introns to Measure Intraspecific Genetic Structure: Distinguishing Loci, Alleles, and  
Polymerase Errors  
*S.C. France, S.R. Palumbi

1:45 116 Multilocus Approaches to Individual and Population Origins  
*N. Davies, F.X. Villablanc, G.K. Roderick

2:00 117 Use of Multiple Analyses (Phylogeny, Nucleotide Diversity, and Patterns of Sequence  
Variation) to Determine Effects of Historical Processes on Current Patterns of MtDNA  
Variation  
*C.A. Tibbets

2:15 118 Moving Beyond MtDNA: Finding and Utilizing Nunt (Nuclear DNA of Mitochondrial  
Origin) for the Construction of Intraspecific Gene Trees.  
*M. Hare, S. Palumbi

2:30 119 Inferring Ancient Human Demographic History from Nuclear Microsatellite Haplotype Data  
*S.A. Tishkoff, A.G. Clark

2:45 120 Using Coalescent Theory to Infer Historical Demography in the Phytophagous Beetle  
Ophraella  
*L.L. Knowles, D.J. Futuyma

Chemistry 140
1:30-3:00 Session 19 - Molecular Systematics  
Chair: Mark Springer

1:30 121 Molecular Phylogeny of the Marmots (Rodentia: Sciuridae) and Its Significance for Holarctic  
and Amphiberian Biogeography.  
*S. Steppan, M. Hakhverdyan, E. Lyapunova, M. Braun

1:45 122 Phylogeny of the Extant Malagasy Lemuriformes Based on 16S Sequence Data and a Review  
of the Current Evidence  
*K.F. Stanger-Hall, C. Cunningham

2:00 123 Molecular Evidence for a Diverse Clade of Endemic African Mammals  
*M. Springer, M. Stanhope, W. De Jong

2:15 124 The Artiodactyl Radiations  
*J. Gatesy

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<td>2:30</td>
<td>125</td>
<td>Mountain Sheep Evolution: Molecular and Morphological Perspectives</td>
<td>*R.R. Ramey II</td>
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<td>2:45</td>
<td>126</td>
<td>Evidence From Two Mitochondrial Genes for the Relationships Within Perissodactyla</td>
<td>*J.E. Norman, M.V. Ashley</td>
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<td>Session 20 - Phylogenetic Methodology</td>
<td>Chair: Brian Crother</td>
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<td>Sensitivity of Phylogeny Estimation to Incomplete Taxonomic Sampling</td>
<td>*S. Poe</td>
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<td>128</td>
<td>Parsimony, Step Matrices, and the Interpretation of Homoplasy</td>
<td>*R. Ree, M. Donoghue</td>
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<td>129</td>
<td>The Behavior of the PTP Test</td>
<td>*B.I. Crother, J.B. Slowinski</td>
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<td>2:15</td>
<td>130</td>
<td>Is It Better to Add Characters or Taxa to a Difficult Phylogenetic Problem? A Simulation Study</td>
<td>*A. Graybeal</td>
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<td>132</td>
<td>Tree Shape Bias, Character Weighting, and the Impact of Noise on Phylogenetic Analysis.</td>
<td>*N. Caithness</td>
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<td>133</td>
<td>Session 21 - Plant Mating/Breeding Systems</td>
<td>Chair: Judy Stone</td>
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<td>Differential Siring Success of PGI Genotypes in Clarkia unguiculata</td>
<td>*S.E. Travers</td>
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<td>135</td>
<td>Phenotypic and Genetic Components of Floral Display in Eichhornia paniculata (Pontederiaceae)</td>
<td>*A.C. Worley, S.C.H. Barrett</td>
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<td>Diploid-Tetraploid Mating and the Evolution of Polyploidy in Epilobium angustifolium (Onagraceae)</td>
<td>*B.C. Husband</td>
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<td>Models for Packaging and Provisioning in Plant Reproduction</td>
<td>*D.L. Venable</td>
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<td>The Effects of Pollen Transport Characteristics on the Evolution of Pollen Size</td>
<td>*L.D. Harder</td>
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<td>3:30-5:00</td>
<td>JILA Auditorium</td>
<td>Session 22 - Evolutionary Theory</td>
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<td>Chair: Sally Otto</td>
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<td>139</td>
<td>QTL and Epistasis: The Quantitative Genetics of Metapopulations</td>
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<td>*C. Goodnight</td>
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<td>140</td>
<td>The Origin of Order and Organization in Evolution: The Role of the Persistibility</td>
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<td>The Effect of Recombination on Adaptive Peak Shifts in a Structured Population.</td>
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<td>142</td>
<td>Estimating Ancestral States of Behavior Under Varying Microevolutionary Scenarios</td>
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<td>143</td>
<td>Rates of Evolution in Changing Environments</td>
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<td>144</td>
<td>Population Dynamics Under Cytonuclear Selection</td>
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<td>*M.A. Asmussen, C.S. Babcock</td>
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Old Main Chapel

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<td>Session 23 - Sexual Selection</td>
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<td>146</td>
<td>The Influence of Opposing Selection Pressures on Cricket Calling Behavior</td>
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<td>3:45</td>
<td>147</td>
<td>Genetic Tradeoffs in the Calling Behavior of Male Field Crickets</td>
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<td>148</td>
<td>Females Prefer Leading Males: Precedence Effects Drive Chorus Structure in the</td>
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<td>149</td>
<td>Precedence Effects and the Evolution Of Chorusing</td>
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<td>150</td>
<td>Species and Mate-Quality Recognition in Spadefoot Toads</td>
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<td>151</td>
<td>Historical Influences on Mate Recognition: Using Neural Networks to Model Sensory</td>
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<td>Biases in the Tungara Frog</td>
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Fine Arts N141

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<td>Session 24 - Speciation and Cladogenesis</td>
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<td>Chair: Chris Schneider</td>
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3:30 153 Historical Allopatry, Divergence, and Speciation in the Prosobranch Snail Genus Nucella
   *P. Marko

3:45 154 Phylogeographic Patterns in Lowland Amazonian Frogs
   *A. Chek, S. Lougheed, J. Bogart, P. Boag

4:00 155 Multiple Independent Origins of Tetraploid Tragopogon Species (Asteraceae): Evidence
   from RAPD Markers

4:15 156 Recent Ice Age Origins for North American Songbirds: A Failed Paradigm.
   *J. Klicka, R.M. Zink

4:30 157 The Effect of Pleistocene Climate Change on Diversification in Australian Rainforests: The
   End of the Pleistocene Speciation Model
   *C. Schneider, C. Moritz

4:45 158 A Phylogenetic Assessment of the African Pycnonotidae and Its Implications for Speciation
   in the Afrotropics
   *K. O'Keefe, T.B. Smith

5:00 159 Adaptive Radiations in the Shrub Genus Ceanothus: An Examination of Proposed Models
   Using Internal Transcribed Spacer (ITS) Region Sequence Data.
   *T.M. Hardig, P.S. Soltis, D.E. Soltis

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UMC 235
3:30-5:00 Session 25 - Molecular Evolution
Chair: Hsiu-Ping Liu

3:30 160 Evolution of Two Mitochondrial Gene Regions in a Sea Star (Leptasterias) Cryptic Species
   Complex
   *A.W. Hrincevich, D.W. Foltz

3:45 161 End Products of Animal MtDNA Recombination
   *D.H. Lunt, B.C. Hyman

4:00 162 Evolutionary Patterns of Doubly Uniparental Inheritance in Freshwater Mussels
   *H-P Liu, M. Mulvey, J.B. Minton

4:15 163 Evolution of Mitochondrial COII and New World Monkeys (Primates, Platyrhini)
   *M. Von Dornum, M. Ruvolo

4:30 164 How Many Types of Mitochondrial DNA in a Grasshopper?
   *D. Bensasson, D. Zhang, G.M. Hewitt

4:45 165 Cytochrome-b Evolution in Birds and Mammals: Evidence for Increased Constraint in
   Birds?
   *S. Stanley

Ramaley C250
3:30-5:00 Session 26 - Population Genetics
Chair: Victoria Apsit

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<td>167</td>
<td>Population Genetic Variation in the Alpine Endemic <em>Eutrema penlandii</em> (Brassicaceae) and Its Widespread Relative <em>E. edwardsii</em>.</td>
<td>*R.C. Hardwick, L.P. Brudelerle</td>
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<td>4:00</td>
<td>169</td>
<td>Population Genetics of <em>Rhizophora mangle</em> from Mexico</td>
<td>*J. Nuñez-Farrán, L.E. Eguiarte, C.A. Dominguez, R. Dirzo</td>
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<td>4:15</td>
<td>170</td>
<td>Fragmentation and Pollen Movement in a Costa Rican Dry Forest</td>
<td>*V.I. Apsit, J.L. Hamrick</td>
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<td>4:30</td>
<td>171</td>
<td>DNA Sequence Variation at Two Basic Chitinase Genes in <em>Arabis secunda</em>, a Rare Plant</td>
<td>*J. Bishop, T. Mitchell-Olds, D. Pedersen, B. Stranger</td>
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<td>4:45</td>
<td>172</td>
<td>The Effect of Mutation and Adaptive History in Experimental Evolution Of <em>E. coli</em></td>
<td>*A. de Visser, C. Zeyl, J. Blanchard, R. Lenski</td>
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Chemistry 140

3:30-5:00
Session 27 - Molecular Systematics
Chair: Paul Chippindale

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<td>3:30</td>
<td>174</td>
<td>The Evolution of Diapause in the Rivulidae: A Molecular Phylogenetic and Biogeographic Perspective</td>
<td>*T. Hrbeck, A. Larson</td>
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<td>175</td>
<td>Ancient Species Flocks in Marine Fishes? Tests Based on Molecular Phylogenetic Appraisals of the Sebastes Rockfish and Other Groups</td>
<td>*G.C. Johns, J.C. Avise</td>
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<td>Molecular Systematics and Evolution of the Strike in Natricine Snakes (Colubridae)</td>
<td>*M.E. Alfaro</td>
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<td>Phylogenetic and Population Genetic Utility of the Mitochondrial D-Loop Region in Central Texas Spring and Cave Salamanders, <em>Eurycea</em> and <em>Typhlodonolge</em></td>
<td>*P. Chippindale, K. Burnside, P. Perryman, J. Willard</td>
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<td>4:45</td>
<td>179</td>
<td>Evolution of North American Softshell Turtles: A Possible Exception to the Theory of Slow Rates</td>
<td>*D.W. Weisrock, F.J. Janzen</td>
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Chemistry 142

3:30-5:15
Session 28 - Phylogenetic Methodology
Chair: Guy Hoelzer

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<td>181</td>
<td>Bayesian Phylogenetic Inference Using DNA Sequences</td>
<td>*B. Rannala, Z. Yang</td>
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<td>Extracting Species Trees from Complex Gene Trees</td>
<td>*R. Page, M. Charleston</td>
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<td>183</td>
<td>Relative Apparent Synapomorphy Analysis (RASA): A Tree-Independent Method of Phylogenetic Data Analysis.</td>
<td>*G.A. Hoelzer, J. Lyons-Weiler</td>
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<td>184</td>
<td>Detection and Remediation of the Effects of Long Branch Attraction Using RASA</td>
<td>*J. Lyons-Weiler, G.A. Hoelzer</td>
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<td>185</td>
<td>Molecular Systematics and Biogeography of Antillean Plant Groups</td>
<td>*E. Santiago-Valentin, R.G. Olmstead</td>
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<td>186</td>
<td>Inferring Species Trees from Gene Trees</td>
<td>*J.B. Slowinski, R. Page</td>
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<td>5:00</td>
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<td>Causes And Consequences of Star-Phylogeny</td>
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**UMC Forum**

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<td>*Russell Lande</td>
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**UMC East Ballroom**

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<td>Non-Linear Simulation of Natural Selection with Feedback</td>
<td>*M.C. Grant, D. Robertson</td>
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<td>Detecting Epistatic Fitness Interactions in Haploids And Diploids</td>
<td>*A.D. Peters</td>
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<td>A Computer Simulation Model of Parapatric Speciation</td>
<td>*T. Gregg, J. Bloom</td>
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<td>A Graphical Model for the Occurrence and Frequency of Cannibalism in Polyphenic Salamanders</td>
<td>*C. Beck</td>
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<td>How the Life History of Carp (<em>Cyprinus carpio</em>) Has Adapted to Regulated Rivers: The Role Of Naturalization and Domestication</td>
<td>*P.D. Driver, R. Norris, G. Closs, J. Harris</td>
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<td>Genetic Diversity for Reaction Norms to Nutrient Availability in <em>Datura stramonium</em></td>
<td>*J. Núñez-Farfán, J.E. Fornoni, S.A. Careaga, F.A. Bazzaz</td>
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<td>The Genetic Architecture of Shade Avoidance Responses in <em>Impatiens capensis</em></td>
<td>*K. Donohue, J. Schmitt</td>
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<td>Tests of Evolutionary Hypotheses Using Hybrids Between <em>Drosophila serrata</em> and <em>D. birchii</em>.</td>
<td>*D. Berrigan, M. Blows</td>
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196 Site-Directed Mutations Reveal Long-Range Compensatory Interactions in the Adh Gene of Drosophila melanogaster
   *J. Parsch, S. Tanda, W. Stephan

197 Evolution of Senescence in Laboratory Populations of Drosophila melanogaster
   C.A. Michieli, K. McGill, *P.M. Service

198 The Hormonal Basis of Life-History Variation: Juvenile Hormone Levels in Genetic Stocks of Gryllus firmus Differing in Early Reproduction
   *G. Cisper, A.J. Zera

199 Theories of Aging: Testing a Fundamental Assumption
   *P. Mack, L. Pearse, D. Promislow

200 Female Preference and Male Age in Drosophila
   *D. Price

201 When Are Good Genes Good? Variable Outcome of Female Choice in Wax Moths
   *F. Jia, M. Greenfield

202 Hybridization Among Three Species of Strongylocentrotus Urchins in the Pacific Northwest
   *W.C. Prather, D.R. Levitan

203 An Association Between X-Linked Traits and Speciation in Fall Armyworm Moths
   *D.P. Prowell, M. McMichael

204 Phylogeography of Lake Populations of Daphnia in Oregon
   *D. Straughan, N. Lehman

205 Arthropod Phylogeography in Hawaii: 4 Paths in Paradise
   *R. Gillespie, G. Roderick

206 Plant Response to Environmental Variation in the Big Sagebrush Hybrid Zone
   *J.H. Graham, D.C. Freeman, H. Wang, E.D. McArthur

207 Selection Against Mating with Immigrants as a Mechanism of Sympatric Speciation - Computer Simulation
   *N. Muge

208 Decline in a Cline: P Elements in Eastern Australian Drosophila melanogaster Populations
   M. Itoh, *I.A. Boussy, R.C. Woodruff

209 Molecular Composition of B Chromosomes in the Grasshopper Eyprepocnemis plorans
   *J. Cabrero, M.D. López-León, M. Bakkali, J.P.M. Camacho

210 Long Term vs. Short Term Genetic Structures of Self-Incompatible Populations Revealed by S-Allele and Neutral Gene Genealogies
   *Y. Lu, N. Takahata, M.K. Uyenoyama

211 Interspecific Evolution of Linked Microsatellites in the Adaptively Radiating Hawaiian Silversword Alliance
   *M. Barrier, R.H. Robichaux, M. Purugganan

212 Using Molecular Phylogeny to Infer Direction of Flight Evolution in Stoneflies
   *M.R. Wolf, K.A. Walsh, G.H. FitzHugh, J.H. Marden
213  RAGE (Rapid Assessment of Genomic Evolution): An Approach Based on Random Sequencing, and a Trial Application to the Genome of the House Fly (Musca domestica)  
*S.A. McComas, L. Fulton

214  Characterization of the Alpha-Tubulin Gene from the Macronucleus and Micronucleus of Two Ciliate Species: Chilodonella uncinata and Euplotes crassus  

215  Heterochrony in the Molecular Development Cascade of Drosophila  
*J. Kim, J. Kerr

216  Characterization of LINE-1 Elements in Microtus  
*C.D. Yarber, R.A. Grahn, H.A. Wichman

217  Factors Maintaining Androdioecy in the Desert Shrimp, Eulimnadia texana  
*S.C. Weeks, N. Zucker

218  Microsatellite Markers Reveal Details of Family Structure in Ants  
*J.M. Herbers

219  Hybrids as General-Purpose Genotypes: Phenotypic Plasticity and Predator-Driven Species Dynamics in Daphnia Hybrid Systems  
*C. Wilson

220  Mating System and Progeny Characteristics of Nectar and Nectarless Honey Mesquites (Mimosoideae): Is Nectar Production an Adaptation?  
*J. Golubov, L. Eguiarte, J. Lopez-Portillo, M. Madujano, C. Montana

221  Likelihood-Based Paternity Inference in Natural Populations  
*T. Marshall, J. Slate, L. Kruuk, J. Pemberton

222  Climate Changes and Community Stability in a California Rocky Intertidal System  
*S.E. Gilman, R.D. Sagarin, C.H. Baxter, J.P. Barry

223  An Ultrasensitive Method for Detection of Single Crab Larvae (Sesarma reticulatum) Using PCR Amplification of Highly Repetitive DNA Sequences  
*A.L. Evans, D.L. Felder, J.E. Neigel

224  Modeler's Tool: An Algorithm for Teachers and Researchers  
*R.F. Shaw

225  Mutation Rate: A Simple Concept Has Become Complex  
*J.N. Thompson Jr., R.C. Woodruff

226  Population Genetic Structure of the Begonia dregel Complex Along the East Coast of South Africa  
*L.O. Matolweni, T. McLellan, K. Balkwill

227  Sex Differences in Coalescent Times (A Theoretical Model)  
*R.B. Campbell

228  Genetics and Evolution of the Mariner DNA Element in Drosophila simulans  
*A.L. Russell, R.C. Woodruff
229 Within and Among-Population Size Homoplasy at a Microsatellite Locus in the Freshwater Snail *Bulinus truncatus* (Basommatophora: Planorbidae)  
*F. Viard, M-P Dubois, P. Jarne*

230 The Effects of Unidirectional Incompatibility Selection on Cytonuclear Disequilibria in Hybrid Zones  
*R. Dean, J. Arnold*

231 Estimates of Heritability of Male Effects on Female Oviposition in Two Populations of *Drosophila melanogaster*  
*E. Guthrie, P. Service*

232 Juvenile Hormone Esterase and the Evolution of Flightlessness in *Gryllus firmus*  
*H. Yuan, A. Zera*

233 Multivariate Evolution: An Island-Continent Model with Selection and Gene Flow  
*A. Queral-Regil, R.B. King*

234 Elongation Factor 1-Alpha Sequences Elucidate Phylogenetic Relationships Within the Swallowtail Butterfly Genus *Papilio* (Lepidoptera: Papilionidae).  
*R.D. Reed, F.A.H. Sperling*

235 Conflicting Phylogenetic Signals from a Single Molecular Data Set  
*B.N. Campbell, P.T. Boag*

236 Phylogeny of *Ips* Bark Beetles (Scolytidae) Based on Mitochondrial Cytochrome Oxidase I Sequence  
*A.I. Cognato, F.A.H. Sperling*

237 Population Structure and Intraspecific Phylogeny of the Flour Beetle, *Tribolium castaneum*  
*L.D. Roberts, P.T. Chippindale, N.A. Johnson*

238 Evolution of Hawaiian Island and Insular Pacific *Pittosporum* (Pittosporaceae) Species as Estimated by Nuclear Ribosomal DNA Internal Transcribed Spacer Sequences  
*C.E.C. Gemmill, W.L. Wagner, E.A. Zimmer*

239 Phenetic and Phylogenetic Comparisons Between 5.8S Ribosomal DNA in Plant Parasitic Cyst Nematodes and *C. elegans*  
*V.R. Ferris, J.M. Ferris, J. Faghihi*

240 Phylogenetic History and Diversity of the Ant Genus *Gnamptogenys* in the New World  
*J. Lattke*

241 On Weighting and Congruence  
*M.W. Allard*

*H. Severeyn, Y.G. De Severeyn*

243 Phylogeography of the California Legless Lizard *Anniella pulchra*: Evidence for Parallel Evolution of the Nigra Phenotype from Cytochrome b Sequence Data  
*D.E. Pearse, G. Pogson*

244 Climatic Change and the Molecular Biogeography of Coleoptera  
*R.A. Reiss*
A New Polynomial Time Method for Inferring Trees Which Is Consistent and Has Great Statistical Power
P. Erdos, K. Rice, M. Steel, L. Szekely, T. Warnow

Large-Scale Experimental Study of Different Phylogenetic Reconstruction Methods on Very Large Trees
K. Rice, T. Warnow

Phylogeny of the Terebellomorpha and Sabellida (Annelida) and the Evolution of Larval Developmental Modes
D. McHugh

Estimating Food Preference in the Eastern Gray Squirrel, Sciurus carolinensis
E.L. Barthelmess

Stabilimenta and Prey Capture Success in Argiope (Araneae: Araneidae)
T.A. Blackledge

Molecular Evolution of Duplicated Growth Hormone Genes in Salmonid Fishes
S. Mckay, R. Devlin, M.J. Smith

Seed Number, Ethylene Production, and Sex Expression in Cucurbita texana
G.A. Krupnick, A.G. Stephenson

Self-Sterility in Milkweeds: Distinguishing Between Late-Acting Self-Incompatibility and Inbreeding Depression
S. Lipow

Inbreeding Depression in Autogamous and Outcrossing Populations of Arenaria uniflora (Caryophyllaceae)
L. Fishman

Intra- and Interspecific Genetic Variation Among Groups of Freshwater Mussels in North Carolina: Implications for Conservation
A.E. Stiven

Analysis of Genetic Diversity in the Western Mosquitofish, Gambusia affinis, Using Microsatellite DNA Techniques
C.C. Spencer

T. Bert, B. Chernoff

Evidence of Positive Selection in the Mammalian Milk Protein Kappa-Casein
T. Ward, R. Honeycutt, J.N. Derr

Conservation Genetics of Tursiops truncatus

Temporal and Spatial Variation in Hybridization Between Two Toads in Central Arizona
K. Malmos, B. Sullivan
Monday, 16th June

UMC Center Ballroom
8:00-12:00 Symposium 3 - Slightly Deleterious Mutations in Evolution
Organizers: Michael Nachman and Nancy Moran

8:00 265 Slightly Deleterious Mutations in Animal Mitochondrial DNA
*M. Nachman

8:15 266 Slightly Deleterious Mutations in Endosymbiotic Bacteria
*N. Moran

8:30 267 Evolution by Nearly Neutral Mutations
*T. Ohta

9:00 268 Deleterious Alleles in Populations with Fluctuating Sizes
*J. Gillespie

9:30 269 Mitochondrial DNA Mutations, Aging, and Degenerative Diseases
*M. Brown

10:00-10:30 Break

10:30 270 Decline of Fitness in two Panmictic Populations of Drosophila melanogaster Maintained under Relaxed Natural Selection
S.A. Shabalina, L.Y. Yampolsky, *A.S. Kondrashov

11:00 271 Natural Selection and the Population Genetics of "Silent" DNA Mutations in Drosophila
*H. Akashi

11:30 272 Deleterious Mutation Accumulation in the Mitochondrion
*M. Lynch

JILA Auditorium
8:30-10:00 Session 29 - Life Histories and Development
Chair: Chi-hua Chiu

8:30 273 Body-Patterning Genes and the Evolution of Asexual Reproduction and Regeneration in Annelids
*A.E. Bely, G.A. Wray
8:45    274    Bet-Hedging and Sex Specific Differences in the Size at Phase Change in the Bluehead Wrasse, *Thalassoma bifasciatur*  
* L. Rogers

9:00  275    Sexual Modes of Modular Animals: Gonochorism, Hermaphroditism, or Both at Once?  
* K. Wasson

9:15  276    Genetics of Sex Determination in a Parasiid Wasp  
* A. K. Holloway, M. F. Antolin

9:30  277    What Controls the Timing of Ovarian Maturation in Larvally Reproductive Gall Midge (Insecta: Diptera: Cecidomyiidae): Parallelisms or Simple Convergence?  
* J. Hodin, L. Riddiford

9:45  278    Spontaneous Facultative Parthenogenesis in Snakes  
* G. W. Schuett, P. J. Fernandez, W. F. Gergits, D. Chiszar, H. M. Smith, J. B. Mitton

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Chemistry 140

8:30-10:00  
Session 30 - Molecular Systematics  
Chair: Jerome Reiger

8:30  279    The Scaling of the Phylogenetic Estimating Problem  
* J. Kim

8:45  280    Comparison of Morphological and Molecular Divergence in the *Anopheles minimus* Complex of Malarial Mosquitoes from Thailand  
* R. Sharpe, R. Butlin, R. Harbach

9:00  281    Phylogenetic Signal in the COI and 16S Mitochondrial Genes for Inference of Generic Relationships Among Microgastrine Parasitoid Wasps  
* P. Mardulyn, J. B. Whitfield

9:15  282    Phylogeny of the Tachinid Family-Group (Diptera) Based on Mitochondrial DNA  
* J. D. Wells, T. Pape, F. A. H. Sperling

9:30  283    Phylogenetic Characterization of Bacterial Endosymbionts of Adelgids and Psyllids (Hemiptera: Sternorrhyncha)  
* A. Spaulding, C. D. Von Dohlen

9:45  284    Nuclear Genes for Arthropod Systematics  
* J. C. Reiger, J. W. Schultz, C. Mitter

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CIMES Auditorium

8:30-10:00  
Session 31 - Combined-Data Systematics  
Chair: Barry Campbell

8:30  285    Morphology Versus Molecules in the Caribbean Boas.  
* B. N. Campbell, P. T. Boag

8:45  286    Comparing and Combining Molecular and Morphological Data: Practical Approaches in the Anatini  
* K. P. Johnson, M. D. Sorenson
9:00 287 Combined-Data Analysis Can Amplify Phylogenetic Signal: A Computer Simulation Study
*A.D. Yoder, T. Eriksson, M. Donoghue

9:15 288 Evolution of the Chiropteran Hindlimb: A Phylogenetic Perspective Based on a Combined-
Data Analysis of Fossil and Extant Bats
*W.A. Schutt, Jr., J. Geisler, N.B. Simmons

9:30 289 Molecular Phylogenetics of the Carnivorans (Mammalia, Carnivora): Evidence from Intron I
of the Transthyretin Gene
*M. Nedbal, J. Flynn

9:45 290

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Fine Arts N141

8:30-10:00 Session 32 - Biogeography
Chair: Cristina Miyaki

8:30 291 Biogeographic Constraints on Patterns of Colonization and Migration in Melanochromis
auratus (Cichlidae) During the Most Recent Inundation of the South-Eastern Basin
of Lake Malawi: An Analysis of Fine Scale Population Structure Using SSR Loci
*J. Markert, P. Danley, M. Arnegard, T. Kocher

8:45 292 Parrot Evolution and Paleogeographic Events: Mitochondrial DNA Evidences
*C.Y. Miyaki, S.R. Matioli, T. Burke, A. Wajnral

9:00 293 Mitochondrial DNA Control-Region Sequences Indicate a Sequential Range Expansion and
Low Current Levels of Gene Flow Among European Populations of Common Chaffinches
(Fringilla coelebs)
*H.D. Marshall, A.J. Baker

9:15 294 Role of the Columbia River Gorge in Shaping Ground Squirrel Phylogeography: Vicariance
or Dispersal Barrier?
*G.J. Kenagy, F.X. Villablanc

9:30 295 MtDNA Variation in Stephen's Kangaroo Rat (Dipodomys stephensi): The Influence of
Landforms
*A.E. Metcalf, L.P. Nunney, B.C. Hyman

9:45 296 Speciation and Phylogeography Within the Dusky Shrew (Sorex monticolus) Species
Complex
*J.R. Demboski, J.A. Cook

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UMC Forum

8:30-10:00 Session 33 - Phylogenetic Methodology
Chair: Paul Lewis

8:30 297 Recovering Reticulation in Human Evolution: Trees, Nets, and Polynesian Languages
*R.D. Gray

8:45 298 Evolution of the Rate of Molecular Evolution
*J.L. Thorne, H. Kishino

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9:00 299  The Consistency of Maximum Likelihood Estimation of Phylogenetic Trees from Nucleotide Sequences
*J.S. Rogers

9:15 300  Estimating Parameters of Mixed-Distribution Models of Among-Site Rate Variation in ML Phylogenetic Analysis Is Difficult, but Does It Matter?
*J. Sullivan, D.L. Swofford

9:30 301  Fast Algorithm for the Maximum Likelihood Method of Phylogenetic Reconstruction
*A. Rodin, W-H Li

9:45 302  A Genetic Algorithm for Inferring Phylogeny
*P. Lewis

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8:30-10.00  
Session 34 - Behavior  
Chair: Richard Prum

8:30 303  Phylogeny of the Frog Genus Physalaemus with Implications for Evolution of Call Types in the Group
*M. Holder, D. Cannatella, S. Rand, M. Ryan

8:45 304  The Sensory Basis of Background Color Matching in a Color-Polymorphic Treefrog: Implications for the Evolution of Assortative Mating Within an Interbreeding Population.
*W.H. Wente, J.B. Phillips

9:00 305  Why Birds of a Feather Should Flock Together
*C.W. Benkman, J. Smith, K. Coffey

9:15 306  Hormonal Correlates of Breeding Behavior in Female Eastern Bluebirds: Implications for Alternative Mating Strategies
*N. Buschhaus, P. Gowaty, J. Downhower, J. Harder

*R.O. Prum

9:45 308  Unequal Partitioning of Reproductive and Investment Tasks Between Cooperating Queens in the Fire Ant, Solenopsis invicta, as Revealed by Microsatellites
*G. Bernasconi, M.J. Krieger, L. Keller

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8:30-10.00  
Session 35 - Evolution of Sex and Recombination
Chair: Jack da Silva

8:30 309  Test of Synergistic Interactions Among Deleterious Mutations in Bacteria
*S.F. Elena, R.E. Lenski

8:45 310  Sex Facilitates Adaptation to a Changing Environment: An Experiment with Chlamydomonas
*J. da Silva

9:15 312 Virulence and Infectivity of Microsporidians in Sexual and Parthenogenetic Snails *S.G. Johnson

9:30 313 Multiple B Chromosomes in a Parthenogenetic Hermaphrodite: Lineage Markers or Remnants of Genetic Leakage? *T.F. Sharbel, L.W. Beukeboom, N.K. Michiels

9:45 314

10:00-10:30 Break

10:30-12:00 JILA Auditorium

10:30 315 Evidence for Recent Selection on Codon Usage in Drosophila *R.M. Kliman, A. Eyre-Walker

10:45 316 Molecular Evolution Is Not Male-Driven in Drosophila melanogaster And D. simulans *V.L. Bauer, C.F. Aquadro

11:00 317 A Strand Bias to Non-Neutral Mitochondrial DNA Evolution: Evidence from the CytB and ND5 Genes in Drosophila *L.M. Kann, D.M. Rand

11:15 318 The Hobo Transposable Element Invaded Drosophila melanogaster Twice *I.A. Boussy, M. Itoh

11:30 319 Molecular Evolution of P Elements: Snail's Pace for a Jumping Gene? *J.C. Silva, J. Clark, P.M. O'Grady, M.G. Kidwell

11:45 320 Molecular Evolution in Pheromone Systems in Moths: Pheromone Binding Proteins of the European Corn Borer (Ostrinia nubilalis) *C.S. Willett

10:30-12:00 CIRES Auditorium

10:30 321 Quantitative Genetic Analysis of Seed Dormancy, a Threshold Trait in Collinsia verna (Scrophulariaceae). *D.A. Thiede, S. Kalisz, M. McPeek

11:00 323 The Role of Epistasis in Population Differentiation of Chamaecrista fasciculata: A Natural Field Experiment.  
* C.B. Fenster, L.F. Galloway

11:15 324 Components of Variance in an Experimentally Inbred Population of Nemophila menziesii  
* D. Byers, F. Shaw, R. Shaw

11:30 325 Between Year Genetic Correlations in the Annual Plant, Nemophila menziesii  
* R. Shaw, G.A.J. Platenkamp

11:45 326

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Chemistry 140

10:30-12:00  
Session 38 - Molecular Systematics  
Chair: James Danoff-Burg

10:30 327 Quantitative Phylogenetic Analysis of Life-History Evolution in the Bark Beetle Genus Dendroctonus (Coleoptera: Scolytidae).  
* S.T. Kelley, B.D. Farrell

10:45 328 Phylogenesis of Host Use and Host Specialization in Papaipema (Lepidoptera: Noctuidae)  
* P.Z. Goldstein

11:00 329 Phylogeny of Noctuid Moths (Insecta: Lepidoptera) Inferred from Two Nuclear Genes, EF-1 Alpha and DDC  
* A. Mitchell, Q.Q. Fang

11:15 330 Phylogeny of Papilio (Insecta: Lepidoptera)  
* M.S. Caterino, F.A.H. Sperling

11:30 331 Utility of Nuclear 18S rDNA in Reconstructing Relationships Among Basal Beetles (Coleoptera: Polyphaga)  
* J.A. Danoff-Burg

11:45 332 Evolution of Species-Rich Lineages: Cladogenesis, Biogeography and Sequence Variation in Cicindela Tiger Beetles  
* A.P. Vogler, T.G. Barraclough, A. Diogo

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Fine Arts N141

10:30-12:00  
Session 39 - Speciation and Cladogenesis  
Chair: Jim Leebens-Mack

10:30 333 Host-Plant Dependent Tradeoffs in the Apple Maggot Fly, Rhagoletis pomonella: The Relationship Between Larval Emergence, Fruit Rot and Allozyme Loci.  
* K. Filchak, J.L. Feder, J.B. Roethele, U. Stolz

10:45 334 Host-Plant Associated Fitness Tradeoffs in the Apple Maggot Fly, Rhagoletis pomonella: A Synopsis of the Past, and Perspective for the Future  
* J.L. Feder, J.B. Roethele, K. Filchak, U. Stolz

11:00 335 Genomic Structure in the Apple Maggot Fly, Rhagoletis pomonella: Is Inversion Polymorphism Involved in Reducing Effective Gene Flow Between the Host Races?  
* J.B. Roethele, J.L. Feder

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11:15 336 Host Associations and Patterns of Diversification Among Yucca Moth Populations  
*J. Leebens-Mack, O. Pellmyr

11:30 337 Reproductive Mode and Speciation: Why We Need Alternatives to the Drosophila Model System  
*D.W. Zeh, J.A. Zeh

11:45 338 What Initiates Speciation in Heliconius Butterflies?  
*C. Jiggins

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UMC Forum
10:30-12:00 Session 40 - Macroevolution  
Chair: Richard Palmer

10:30 339 The Influence of Phylogenetic Scale in Determining Evolutionary Patterns  
*P.A. Zani

10:45 340 Taxonomies and Temporal Patterns of Lineage Diversity: Alternative Simulations  
*H. Robeck, C. Mailey, M. Donoghue

11:00 341 Evolution and Development of Flower Symmetry in Asterid Angiosperms  
*M. Donoghue, R. Ree, D. Baum

11:15 342 Alternative Evolutionary Routes to Fixed Bilateral Asymmetry: The Ontogenetic Role of Genotype Versus Environment  
*A.R. Palmer

11:30 343 Juvenile Delinquency and Clandestine Variation in the Macroevolution of Heart Urchins  
*G. Eble

11:45 344 Interpreting Sister-Group Tests of Key Innovation Hypotheses  
*A. de Queiroz

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UMC 235
10:30-12:00 Session 41 - Geographic Variation and Hybrid Zones  
Chair: Robert Latta

10:30 345 Microgeographic Patterns of CpDNA Introggression in Carpobrotus (Aizoaceae)  
*V.V. Symonds, K.A. Schierenbeck

10:45 346 Influence of Historical and Contemporary Gene Flow Patterns on Geographic Variation in Ponderosa Pine  
*R.G. Latta

11:00 347 The Historical Pattern of Gene Flow Among Migratory and Non-Migratory Populations of Prairie Warblers (Aves: Emberizidae)  
*C.A. Buerkle

11:15 348 Inferring the Relative Influences of Drift and Gene Flow on Regional Population Structure Via Correlation Analyses  
*D. Hutchison
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| 11:30 | 349     | What Type of Data Is Best for the Estimation of Migration Rate?  
          *P. Beerli |
| 11:45 | 350     | Non-Equilibrium Patterns of Genetic Differentiation Across Partial and Complete Gene Flow Boundaries  
          *A. Porter |
| 10:30-12:00 |  | UMC 158  
          Session 42 - Evolution of Sex and Recombination  
          Chair: Shawn Meagher |
| 10:30 | 351     | The Effect of Sex on Fitness in Experimental Yeast Populations  
          *C. Zeyl |
| 10:45 | 352     | Evidence for a Cost of Sex in a Freshwater Snail *Potamopyrgus antipodarum*  
          *J. Jokela, C.M. Lively, M.F. Dybdahl, J.A. Fox |
| 11:00 | 353     | Fitness Effects of Facultative Parthenogenesis in the Cockroach, *Nauphoeta cinerea*  
          *L.S. Corley, A.J. Moore |
| 11:15 | 354     | Sex and the Single Worm: An Examination of the Utility of Outcrossing in the Partially Selfing Nematode, *Caenorhabditis elegans*  
          *A. Stewart, P.C. Phillips |
| 11:30 | 355     | Fitness Consequences of a Single Generation of Full-Sib Mating in Wild House Mice (*Mus domesticus*)  
          *S. Meagher, W. Potts |
| 11:45 | 356     | Parasitism, Mutation Accumulation and the Maintenance of Sex Under Epistatic Fitness Functions  
          S. Howard, *C.M. Lively |
| 12:00-1:30 |  | - Lunch  
          - ASN Business Meeting (12:30-1:30) - UMC 157  
          - UMC Forum  
          NIH Grants Workshop  
          I.A. Ekstrand (Genetics & Developmental Biology Division) |
| 1:30-5:00 |  | UMC Center Ballroom  
          Symposium 4 - Systematics and the Evolution of Developmental Patterns  
          Organizers: Billie J. Swalla and Andres Collazo |
| 1:30  | 357     | Systematics and Developmental Biology: A Future for Experimental Biology  
          *E. Zimmer |
| 2:00  | 358     | Morphological Homology and the Pharyngula Stage  
          *A. Collazo |
| 2:30  | 359     | Molecular Approaches to Understanding the Origin and Diversification of Echinoderm Body Architecture  
          *G.A. Wray |
3:00-3:30 Break

3:30 360 Developmental Processes as Sources of Characters in Systematics
* R. Desalle

4:00 361 Developmental Regulatory Mechanisms and the Evolution of Arthropod Body Patterns
* S. Carroll

4:30 362 Evolution of the Chordate Body Plan: Lessons from the Urochordate Larvae
B.J. Swalla

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Fine Arts N141
1:30-3:00 Session 43 - Adaptation and Plasticity
Chair: Kenneth Halama

1:30 363 Adaptive Significance of Territoriality in the Australian Scincid Lizard, Ctenotus fallens
* W.B. Jennings

1:45 364 A Quantitative Study of Background Matching and Alternative Cryptic Defenses Among Populations of the Oregon Tiger Beetle (Cicindela oregona)
* T.D. Schultz

2:00 365 Testing Models of Habitat Selection in Ricefishes
* J. Albert

2:15 366 Morphological Correlates to Habitat Selection in Western Fence Lizards: Evidence for a Resource Polymorphism?
* K.J. Halama

2:30 367 Developmental Plasticity and the Ecology of Body Size in Two Seed Beetles
* C.W. Fox, U.M. Savalli

2:45 368 Genetic and Environmental Components of Differential Hostplant Use in a Specialist Herbivore (Coleoptera: Curculionidae)
* S.L. Solarz, R.M. Newman

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UMC 235
1:30-3:00 Session 44 - Molecular Evolution
Chair: Jonathan Eisen

1:30 369 Molecular Evolution of Colicin Gene Clusters in E. coli
* Y. Tan, M.A. Riley

1:45 370 Coalescent Approaches to Studying HIV Populations
* A. Rodrigo, G. Learn, J. Felsenstein, J. Mullins

2:00 371 Comparative Study of the Molecular Evolution of HIV-1 Epidemics: A Coalescent Approach
* G. Learn, A. Rodrigo, J. Mullins

33
2:15  372  Riodinid, Lycaenid And Nymphalid Butterflies: Different Rates of DNA Evolution?  
D. Campbell

2:30  373  Evolution of DNA Repair Genes and Processes: Comparison of Repair in Bacteria, Archaea,  
and Eukaryotes.  
*J.A. Eisen, P.C. Hanawalt

2:45  374

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Old Main Chapel
1:30-3:00  Session 45 - Ecological Genetics  
Chair: William Etges

1:30  375  Inversion Phylogenies and Parallel Population Structures in Cactophilic Drosophila  
mojavensis and D. pachea.  
*W.J. Etges, W.R. Johnson, G. Huckins, G.A. Duncan, W.B. Heed

1:45  376  The Effect of Queen Number on Queen and Colony Survivorship in the Facultatively  
Polygynous Ant Myrmica tahoensis  
*J. Evans

2:00  377  A Micro-Evolutionary Study of the Drosophila-Macrocheles System: Fitness Consequences  
of Ectoparasitism and Heritability of Resistance  
*M. Polak

2:15  378  Analysis of Paternity and Sperm Competition in Dungeness Crab (Cancer magister) Using  
Microsatellites  
*P.C. Jensen, P. Bentzen

2:30  379  Factors Influencing Host Colonization by the Plant Virus BYDV  
*S.K. Remold, A.G. Power

2:45  380

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JILA Auditorium
1:30-3:00  Session 46 - Population Genetics  
Chair: David Rand

1:30  381  A Prototype Population Genetics Object Database for Animal MtDNA  
*J. Neigel

1:45  382  New Software for Measuring Genetic Relatedness and Kinship Patterns in Populations  
*K.F. Goodnight

2:00  383  Near Neutrality or Relaxed Selection?: Neutrality Tests of Amino Acid Polymorphism in  
Commensal and Non-Commensal Species  
*D.M. Rand, L.M. Kann

2:15  384  Sex Linkage Among Genes Controlling Sexually-Selected Traits in Animals  
*K. Reinhold

2:30  385  Inbreeding Effective Size: Comparisons Among Complex Life Histories  
*B. Milligan, A. Strand

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2:45  386  Testing Hypotheses About Heterosis Using Meta-Analysis
       *D. Houle

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1:30-3:00  UMC 157
   Session 47 - Quantitative Genetics
   Chair: Susan Jacobs

1:30  387  Apparent Selection Inferred From Pleiotropic Effects of P-Element Insertions
       *A. Clark

1:45  388  Quantitative Trait Loci for Fluctuating Asymmetry of Quasi-Continuous Skeletal Characters in Mice
       *L.J. Leamy, E.J. Routman, J.M. Cheverud

2:00  389  Variation in Hox Gene Expression in Threespine Stickleback Fish.
       D-G Ahn, *G. Gibson

2:15  390  Evolution of Mandibular Morphology Among Tamarins
       *S.C. Jacobs, J.M. Cheverud

2:30  391  Composite Traits and the G Matrix: Does Ontogeny Matter?
       *J. Reeve

2:45  392  Patterns of Quantitative Trait Variation in *Daphnia arenata*
       *M. Pfender

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Chemistry 140

1:30-3:00  Session 48 - Molecular Systematics
   Chair: Kevin Omland

1:30  393  Population Structure and Glacial Refugia Inferred from MtDNA Control Region Sequences in the Song Sparrow
       *A.J. Fry, R.M. Zink

1:45  394  Sexual Selection, Hybridization, and Phylogenetics in the Avian Genus *Monacus*
       *R.T. Brumfield, M.J. Braun

2:00  395  MtDNA Sequence Phylogeny for Orioles (*Icterus*): A Framework for Studying Plumage Evolution
       *K.E. Omland, S.M. Lanyon

2:15  396  Phylogenetic Relationships and the Evolution of Migration in the Avian Genus *Muscisaxicola*
       *R.T. Chesser

2:30  397  Birds and Amazonian Headwaters: Molecular Evidence of Genetic Structure
       *J. Bates, J. Haffer

2:45  398  Evolutionary Relationships of the Hawaiian Hawk and Phylogeny of the Genus *Buteo*
       *R.C. Fleischer, P. Cordero, C. McIntosh
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<td>C250</td>
<td>The Genetic Basis of Inbreeding Depression in Two Species of <em>Mimulus</em> with Contrasting Mating Systems</td>
<td>*D.E. Carr, M.R. Dudash</td>
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<td>1:45</td>
<td>400</td>
<td>How Much Inbreeding Depression in <em>Mimulus guttatus</em> Is Caused by Mutations of Large Effect?</td>
<td>*J.H. Willis</td>
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<td>2:00</td>
<td>401</td>
<td>Evolutionary Implications of Stigma Closure in <em>Mimulus aurantiacus</em></td>
<td>*A.E. Fetscher</td>
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<td>2:15</td>
<td>402</td>
<td>Sexual Variation in a Highly Clonal Plant, <em>Decodon verticillatus</em> (Lythraceae)</td>
<td>*M. Dorken, C.G. Eckert</td>
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<td>2:30</td>
<td>403</td>
<td>The Mixed Mating System of the Chestnut Blight Fungus, <em>Cryptomeria parasitica</em></td>
<td>*R.E. Marra, M.G. Milgroom</td>
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<td>2:45</td>
<td>404</td>
<td>Among-Family Differences in Inbreeding Depression in Gynodioecious <em>Lobelia siphilitica</em></td>
<td>*P. Mutikainen, L. Delph</td>
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<td>3:30</td>
<td>405</td>
<td>Natural Selection of the Ldh-B Promoter and Coding Region Within and Between Populations of the Teleost, <em>Fundulus heteroclitus</em></td>
<td>*D.A. Powers, P. Schulte</td>
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<td>406</td>
<td>Directed Selection on Ldh-B Proximal Promoter</td>
<td>*D.L. Crawford</td>
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<td>4:00</td>
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<td>Molecular Evolution in an Alternating Environment</td>
<td>*W.D. Crill, J.J. Bull, A. Gulati</td>
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<td>408</td>
<td>Redundancy, Pleiotropy, and the Shape of Multigene Family Evolution</td>
<td>*M. Ronshaugen, A. Martin</td>
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<td>409</td>
<td>Correlated Evolution in Proteins</td>
<td>*D. Pollock, W. Taylor</td>
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<td>410</td>
<td>Phylogenetic Signal and Structural Constraints on the Evolution of Protein-Coding Genes</td>
<td>*C. Griffiths</td>
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3:30-5:15  Fine Arts N141
Session 51 - Phylogenetic Methodology
Chair: Michel Milinkovitch

3:30  412  Problems with the Interpretation of Partial Warps as Biological Variables
       *F.J. Rohlff

3:45  413  Why Morphometrics Isn't Special: Coding Quantitative Data for Phylogenetic Analysis
       *D.L. Swiderski, M.L. Zelditch, W.L. Fink

4:00  414 Are Morphometrics and Phylogenetics Incommensurable
       *M.L. Zelditch, W.L. Fink, D.L. Swiderski

4:15  415  Phylogenetic Analysis of Interspecific Polymorphism in Higher-Level Terminal Taxa
       *J.J. Wiens

4:30  416  Matrix Representation as a Means of Combining Phylogenetic Information
       *O.R.P. Bininda-Emonds, H.N. Bryant

4:45  417  Analytical Developments Help to Solve the Whale Phylogeny Controversy
       *M.C. Milinkovitch

5:00  418  Allozyme Data and Phylogenetic Analysis: A Comparison of Coding Methods
       *M.J. Mahoney

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Old Main Chapel
3:30-5:00  Session 52 - Coevolution
Chair: Dieter Ebert

3:30  419  Host-Parasite Interactions and Local Adaptation of Two Microparasites of *Daphnia magna*
       *D. Ebert

3:45  420  Parasite Host-Range Evolution: Experimental Analyses of Host-Specific Adaptation and Host-Switching
       *A. Gemmell

4:00  421  A Population Genetic Model for a Host-Pathogen System
       *M.S. Sanchez, M. Asmussen, J. Arnold

4:15  422  Evolution of Host Range in Nematodes Parasitizing *Drosophila*
       J. Jaenike, *S. Perlman

4:30  423  Differential Susceptibility to Parasitism in Two Populations of Pea Aphids
       *R.A. Hufbauer, S. Via

4:45  424  Evolution of Expanded Host Range in Wild Viruses by Recombination Between Strains
       *G.P. Krukonis, F.M. Cohan

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JLLA Auditorium
3:30-5:00  Session 53 - Population Genetics
Chair: Michael Purugganan

3:30  426  Temporal Changes in Allele Frequencies in Two Directionally Selected Maize Populations
       *J.A. LaBate, K.R. Lamkey, M. Lee
3:45  427  Genetic Variation at the CAULIFLOWER Locus, an Arabidopsis Floral Homeotic Gene
* M. Purugganan, J. Suddith

4:00  428  The Effective Size of an Age-Structured Population that Reproduces Partially by Selfing
* E. Pollak

4:15  429  DNA Sequence Variation at Glb1: No Evidence of a Bottleneck Associated with the
Domestication of Maize
* H. Hilton, B. Gaut

4:30  430  Quantitative and Molecular Population Genetics at Enzyme Loci In Arabis fecunda and A.
lyrata
* J-Z Lin, T. Mitchell-Olds

4:45  431  Disentangling Pollen from Seed Dispersal: Molecular Genetics of Aquilegia
* A. Strand, B. Milligan

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Chemistry 140
3:30-5:15  Session 54 - Molecular Systematics
Chair: Steve O'Kane

3:30  433  Phylogeny of the Family Bignoniaceae Based on CpDNA Sequences of RbcL and NdhF
* R.E. Spangler, R.G. Olmstead

3:45  434  Molecular Evolution and Systematic Implications of Two Non-Coding Chloroplast DNA
Regions in Cyperaceae Tribe Cariceae.
* A.C. Yen, R.G. Olmstead

4:00  435  Phylogenetic Utility of the Nuclear Gene Vicilin in Sterculiaceae
* B.A. Whitlock, D.A. Baum

4:15  436  Testing Assumptions About Sequence Evolution: Implications for Parsimony Analysis
* R.G. Olmstead, P. Reeves, A. Yen

4:30  437  Phylogeny of Apioidae (Apiaceae): A Comparison of Chloroplast Restriction Site Data to
DNA Sequence Data
* G.M. Plunkett, S.R. Downie

4:45  438  A Molecular Systematic Examination of Lesquerella and Physaria (Brassicaceae)
* S.L. O'Kane, Jr.

5:00  439  Phylogenetic History of Narcissus L. (Amaryllidaceae) Based on the Chloroplast Gene NdhF
* S.W. Graham, S.C.H. Barrett

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UMC 157
3:30-5:15  Session 55 - Biogeography
Chair: Townsend Peterson

3:30  440  Intraspecific Phylogeography Across the Pt. Conception Biogeographic Boundary
* R.S. Burton

3:45  441  Breaching of the Eastern Pacific Barrier by Genes of the Sea Urchin Echinothrix
* H.A. Lessios, B.D. Kessing
4:00 442 Independent Invasions of Fresh Water: Analysis of the Phylogeny and Physiology of a Cosmopolitan Copepod  
*Carol Eunmi Lee

4:15 443 Speciation, Gene Flow and Allopatric Divergence in Australian *Daphnia*  
*C. Wilson, P.D.N. Hebert, J. Colbourne

4:30 444 When Distributional Models Fail: Mirroring History, Ecology, and Speciation  
*A.T. Peterson, S.L. Egbert, J. Soberón-Mainero

4:45 445 Phylogeography of the American pika (Lagomorpha)  
*K. Agnew

5:00 446 Transatlantic Flight: Systematics and Biogeography of the Locust Genus *Schistocerca*  
*N.R. Lovejoy, R.G. Harrison, R.F. Chapman, G.A. Sword

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3:30-5:15
3:30 447 Evolution of Self-Fertilization in Perennials  
*M.T. Morgan, D.J. Schoen, T.M. Bataille

3:45 448 Pollination and Late-Acting Self-Incompatibility in *Apocynum cannabinum*  
*S. Lipow

4:00 449 Evolutionary Dynamics of Sporophytic Self-Incompatibility Alleles in Plants  
*M.H. Schierup, X. Vekemans, F.B. Christiansen

4:15 450 The Evolution of Autogamy in *Arenaria uniflora* (Caryophyllaceae): Reproductive Insurance Against Interspecific Pollination?  
*L. Fishman, R. Wyatt

4:30 451 Pollen Transfer Dynamics and the Evolution of Gametophytic Self-Incompatibility  
*J. Steinbachs, K. Holsinger

4:45 452 Implications of Selfing and Inbreeding Depression for Plant Colonization of Marginal Habitats  
*R. Sherry, C. Galen

5:00 453 Mixed Mating, Gene Flow, and Founder Effects in the Native Hawaiian Colonizer *Odonotusoria chinensis* (Lindsaeaceae)  
*T.A. Ranker, C.E.C. Gemmill, P.G. Trapp

UNC East Ballroom

4:30-6:00

454 A Test for Gene Conversion and Its Application to HLA Polymorphism  
*T. Wiche, J. Mountain

455 Long Term Evolutionary Dynamics of Gene Substitutions in Populations Undergoing Darwinian Selection  
*D.A. Vasco

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<td><em>J.K. Cooper</em></td>
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<td><em>J. Smith, G. Bush</em></td>
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*H. Wang

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*N. Giannasi, R.S. Thorpe, A. Malhotra

Gene Flow Between Chromosomal Races of House Mice Inferred from Microsatellite Alleles
*C.J. Hamus, M.W. Nachman

Molecular Evolution of Enzyme Loci in the Plant Genus Leavenworthia
*F. Liu, D. Charlesworth, L. Zhang

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*J. Bridle, R. Bailey, R. Butlin, C. Thomas

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*B.C. Congdon, D.A. Harrison, M.G. Kidd, V.L. Friesen

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Gamma-Globin Gene Evolution and Expression in New World Monkeys (Platyrrhini, Primates)
*C-H Chiu, M. Goodman

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*T.C. McElroy, W.J. Diehl

Heterosis in the Earthworm Eisenia fetida andrei: Effects of Fine-Grained Environmental Heterogeneity
*W.J. Diehl, D.E. Hart

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489 Interspecific Competition Between *Hetagonovstilum minense* and *Cotesia flavipes*, Parasitoids of Sugarcane Borer
*E. Weir, L. Sagarzazu*

490 Frequency and Distribution of t-Haplotypes in the House Mice (*M. m. castaneus*) in Taiwan
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491 Genetic Variation in the Grass Shrimp *Palaemonetes paludosus* from the Florida Everglades
*A. Quinones, J. Trexler, T. Turner*

493 Phylogeny of the Selaginellaceae and Variation in the Chloroplast Gene RbcL
*P. Korall, P. Kenrick*

494 Molecular Population Genetics of G6PD in Humans
*S.M. Peterson, M.W. Nachman*

495 MHC Sequence Variation in the Northern Elephant Seal from the Southern California Channel Islands
*D. Weber, B. Stewart, N. Lehman*

496 Genetic Basis of Plasticity for Flowering Date in *Arabidopsis*
*D. Stratton*

497 Quantitative Genetics and the Persistence of Environmental Effects in Clonally Propagated Organisms
*K. Schwaegerle*

498 Software for the Analysis of Covariance Matrices and Quantitative Genetic Data Using Resampling Methods
*P.C. Phillips*

499 Molecular Systematics of the Old World Monkeys (Cercopithecidae): Evidence from Gamma-Globin Nucleotide Sequences
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500 Apparent Rates of Morphological Evolution and Genotype-Environment Interactions in the Mediterranean Fruit Fly, *Ceratitis capitata*, in Hawaii
*D. Foote*

501 Molecular Phylogeny of *Gryllus* spp. Based on Cytochrome B and Nuclear rDNA Sequences
*M. Sutherlin, R. Bromley, H. Yuan, A. Duhachek, D. Siegel-Causey, A. Zera*

502 Phylogeny of the Opilionid Subfamilies (Insecta: Hymenoptera: Ichneumonidae) Inferred from Mitochondrial DNA Sequences
*K.I. Suh, J.B. Whitfield*

503 Ribosomal RNA and Phylogeny of the Ascaridoidea (Nemata: Secernentea)
*S.A. Nadler, D.S.S. Hudspeth*

504 Recent Radiation of New Zealand Alpine Cicadas (*Maoricicada*)
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505 Molecular Systematics of *Liposyphla* Using 12S rRNA and NADH2 Sequences
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*C.B. Cameron

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*B.M. Wiegmann, D. Yeates, S-C Tsaur

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*D.J. Rees, B.C. Emerson, P. Oromi, G.M. Hewitt

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*J. Villinski, E. Popodi, M. Byrne, R. Raff

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*C.A. Dominguez, L. Eguiarte

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Conservation Genetics of the Threatened Freshwater Mussel, *Margaritifera hembeli*
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Partial Sequence of a Demosponge Mitochondrial Genome
*R.F. Watkins
Kin Selection and Dynamic Optimization in Evolutionary Biology
*T. Day, P.D. Taylor

Population Structure of the Vector of Bird Malaria in Hawaii, *Culex quinquefasciatus:
Preliminary Data from Microsatellite and MtDNA Variation
*D.M. Fonseca, C.T. Atkinson, R.C. Fleischer

6:00-7:45 Barbecue - (Williams Village)

Macky Auditorium
8:00-9:00
ASN Presidential Address:
The Ecology of Informational Advantage: Transforming Natural History into an Economic
View of Evolution
*G. Vermeij

Tuesday, 17th June

UMC Center Ballroom
8:30-11:30 Symposium 5 - ASN Young Investigators Symposium
Organizer: Tim Wootton

8:30  529  Estimating Genomic Mutation Parameters in Natural Populations
      *H-W Deng

9:00  530  Quantitative Trait Evolution in Partially Self-Fertilizing Populations
      *J. Kelly

9:30  531  Some Implications of Direct Positive Interactions for Community Species Diversity
      *S. Hacker

10:00-10:30 Break

10:30 532  Beetle Development Limits Male Horn Evolution: Perturbation Experiments Reveal
        Allocation Tradeoffs Between Horns and Eyes
        *D.J. Emlen

11:00 533  The Genetics of Inbreeding Depression: Implications for Conservation
        *L. Pray

UMC 157
8:30-10:00 Session 57 - Evolutionary Theory
Chair: Daphne Fairbairn

8:30  535  The macroevolutionary consequences of sexual conflict in the water strider
        genus *Rheumatobates* (Heteroptera: Gerridae)
        *K. Westlake

8:45  536  A Model of the Effects of Gene Flow on Reinforcement
        *M. Servedio, M. Kirkpatrick
9:00  537  The Evolution and Adaptive Significance of Sexual Size Dimorphism in the Water Strider, *Aquarius remigis*  
* D. Fairbairn, R. Preziosi, J. Reeve

9:15  538  Multi-Locus Data, Migration, and Hybrid Zones  
*M.E. Orive, N.H. Barton

9:30  539  Niche Evolution in "Black-Hole" Sink Populations Maintained by Recurrent Immigration  
*R. Gomulkiewicz, R.D. Holt, M. Barfield

9:45  540  The Maintenance of Genetic Variance in a Subdivided Population  
*M. Whitlock

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UMC 235

8:30-10:00  
Session 58 - Life Histories and Development  
Chair: Anthony Zera

8:30  541  Fitness Consequences of Overwintering: The Cost of Diapause in the Pitcher-Plant Mosquito, *Wyeomyia smithii*  
*W.E. Bradshaw, P.A. Armbruster, C.M. Holzapfel

8:45  542  Physiology of Life-History Trade-Offs: Characterization of a Hormonally-Induced Life-History Trade-Off in *Gryllus assimilis*  
*A.J. Zera

9:00  543  On the Virtue of Being the First Born: The Influence of Date of Birth on Components of Fitness in the Mosquitofish, *Gambusia affinis*  
*D. Reznick, E. Schultz, S. Morey

9:15  544  Fitness Consequences of Alternative Life Histories in Tiger Salamanders  
*H. Whitman

9:30  545  Physiologically Structured, Individual Based Models, Genetic Algorithms and Tradeoffs Between Offspring Size and Number  
*P.H. Niewiarowski, A.E. Dunham

9:45  546  Potential Adaptive Variation in the Sex-Ratio of the Least Killifish, *Heterandria formosa*  
*J. Leips, J. Travis

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UMC Forum

8:30-10:00  
Session 59 - Sexual Selection  
Chair: David Haskell

8:30  547  Color Polymorphism in the Bioluminescent Click Beetle, *Pyrophorus plagiophthalanus*: Measures of Spectral Emission and Absorbance  
*U. Stolz, J.L. Feder, K. Filchak

8:45  548  Genetic Basis of Female Mate Preferences in an Ultrasonic Moth (*Achroia grisella*, Pyralidae, Lepidoptera)  
*Y. Jang, M. Greenfield

45
9:00 549 Evolution of Sexual Dichromatism in Birds: The Roles of Carotenoid- Versus Melarin-Based Plumage Coloration
* A. Badyaev, G. Hill

9:15 550 The Darwin-Wallace Debate Revisited: Can Natural Selection on Female Plumage Color Explain Interspecific Variation in Avian Sexual Dichromatism?
* D. Haskell

9:30 551 Dimorphic Males in an Amphipod: Do Juveniles with High Growth Rates Choose to Be Minors?
* J.P. Kurdziel, J.S. Levinton

9:45 552 Evolution of Novel Wing Morphology for Sound Production by Sexual Selection in Machaeroporus (Aves)
* K.S. Bostwick, R.O. Prum

*****************************************************************************

JILA Auditorium

8:30-10:00 Session 60 - Molecular Evolution
Chair: Frank Cipriano

8:30 553 Microsatellites in Genus Apodemus with Implications to Multiple Paternity and Evolution of Repeat Flanking Sequences

8:45 554 6000 Miles Across the Pacific: Microsatellite and MtDNA Variation in Dolphins from Peru and New Zealand
* F. Cipriano, K. Ingram, S.R. Palumbi

9:00 555 A Test for Heterogeneity of Levels of Microsatellite Variation
* J.K. Pritchard

9:15 556 Fast Approximate Likelihood Calculations for Microsatellites, Mostly Within Species
* J. Felsenstein, P. Beerli

9:30 557 Microbial Microsatellites: Genome Structure, Stability and Evolution
* D. Field, C. Wills

9:45 558 Tests for Selection at MtDNA Loci in Natural Populations of Western Minnow (Genus Gilia)
* A.S. Gerber, C.A. Tibbetts, T.E. Dowling

*****************************************************************************

Chemistry 140

8:30-10:00 Session 61 - Molecular Systematics
Chair: Doug Eernisse

8:30 559 Mitochondrial DNA Evolution in North American Bufonids
* A.M. Goebel

8:45 560 Molecular Systematics and Biogeography of Caribbean Rock Iguanas (Cyclura)

9:00 561 Molecular Systematics of the Anolis Lizards of the Southern Lesser Antilles
* D. Creer, K. de Queiroz, T. Jackman, J. Losos, A. Larson
Phylogenetic Relationships Among Phrynosomatid Sand Lizards as Inferred from Mitochondrial DNA Sequences
*J. Wilgenbusch, K. de Queiroz

A Molecular Analysis of Chelicerate Head Development and Arthropod Phylogeny
M.J. Telford, *R.H. Thomas

Why Have Previous 18S rRNA Analyses Not Found a Monophyletic Mollusca?
*D.J. Eernisse

CIRES Auditorium
Session 62 - Macroevolution
Chair: Brian Farrell

A Critical Evaluation of the Reality of the Cambrian Explosion Based on 18S rRNA Data
E. Aboulheif, R. Zardoya, *A. Meyer

Modeling the Cambrian Explosion: Recovering Trees Successfully from Simulated Sequence Data
*J. Levinton, L. Dubb, J. Felsenstein, G. Wray

K-T Mass Extinction, Explosive Paleocene Diversification, and Cenozoic Diversity Equilibrium in Mammals: The Fossil Record Says Yes
*J. Alroy

Haldane's Conundrum Explained: Why There Are so Many Beetles
*B.D. Farrell

Morphological Evolution of the Fishes of the Genus Bryconops (Teleostei: Characidae)
*B. Chernoff, A. Machado-Allison

Adaptive Radiation in Spiders: The Role of Key Innovation in the Orb Weaving Clade
*J.E. Bond, B.D. Opell

Fine Arts N141
Session 63 - Behavior
Chair: Hugh Dingle

The Association of Activity Level, Burst Speed, and Caudal Morphology with Vulnerability to Predation in Two Species of Salamanders
*C.S. Wells, R.N. Harris, S.K. Babcock

Pathogen Transmission as a Selective Force Against Cannibalism
*D. Pfennig

Evolved Migration Syndromes: Migration Is Not Dispersal and Vice-Versa
*H. Dingle

A Theoretical Analysis of Costly Signaling Among Relatives
*C.T. Bergstrom, M. Lachmann

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<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>9:30</td>
<td>575</td>
<td>Maternal Effects on Offspring Fitness in the Strawberry Arrow Poison Frog, <em>Dendrobates pumilio</em></td>
<td>*M. Maple</td>
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<tr>
<td>9:45</td>
<td>576</td>
<td>Correlates of Relatedness in the Western Harvester Ant, <em>Pogonomyrmex occidentalis</em></td>
<td>*B.J. Cole, D.C. Wiernasz</td>
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<td>10:00-10:30</td>
<td>Break</td>
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<td>10:30-12:00</td>
<td>UMC 157</td>
<td>Session 64 - Adaptation and Plasticity</td>
<td>Chair: Leonard Nunney</td>
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<tr>
<td>10:30</td>
<td>577</td>
<td>Local Adaptation Despite Plasticity in a Marine Invertebrate</td>
<td>*D. Brumbaugh</td>
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<td>10:45</td>
<td>578</td>
<td>Maternal Death Relaxes Developmental Inhibition in Nymphal Aphid Defenders</td>
<td>*J.H. Withgott, D.K. Abbot, N.A. Moran</td>
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<tr>
<td>11:00</td>
<td>579</td>
<td>The Effect of Temperature on Fecundity in Female <em>Drosophila melanogaster</em>: Evidence for Adaptive Plasticity</td>
<td>*L. Nunney</td>
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<tr>
<td>11:15</td>
<td>580</td>
<td>Host Specificity and Mode of Transmission: Their Role in Parasitic Nematode Speciation</td>
<td>*S.N. Bennett, M.L. Adamson</td>
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<tr>
<td>11:30</td>
<td>581</td>
<td>When Do Specialists and Generalists Evolve? Insights from Experiments with <em>Chlamydomonas</em></td>
<td>*R. Kassen, G. Bell</td>
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<td>11:45</td>
<td>582</td>
<td>Diet- and Temperature-Induced Norms of Reaction for Size and Age in Grasshoppers</td>
<td>*D.B. Thompson</td>
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<td>10:30-12:00</td>
<td>UMC 235</td>
<td>Session 65 - Life Histories and Adaptation</td>
<td>Chair: Steven Orzack</td>
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<td>10:30</td>
<td>583</td>
<td>Demographic Effects of Size and Inter-Colony Fusion in a Reef Coral</td>
<td>*D.B. Carlon</td>
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<td>10:45</td>
<td>584</td>
<td>Foundations of Gregariousness: A Dispersal Polyphenism Among the Larvae of a Marine Invertebrate</td>
<td>*R.J. Toonen, J.R. Pawlik</td>
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<tr>
<td>11:00</td>
<td>585</td>
<td>Bateman's Principle and Gamete Evolution in Sperm-Limited Sea Urchins</td>
<td>*D.R. Levitan</td>
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<tr>
<td>11:15</td>
<td>586</td>
<td>Reproductive Effort in Variable Environments or Environmental Variation Is for the Birds</td>
<td>*S. Orzack, S. Tuljapurkar</td>
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<tr>
<td>11:30</td>
<td>587</td>
<td>Divergence in Life History and Architecture Between Grazed and Ungrazed Populations of <em>Silene gallica</em></td>
<td>*D.S. Posner, M.L. Stanton</td>
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</table>
Size Variation in Reproductives and Reproductive Allocation in the Western Harvester Ant, *Pogonomyrmex occidentalis*  
*D.C. Wiernasz, B.J. Cole*

UMC Forum  
10:30-12:00  
Session 66 - Sexual Selection  
Chair: Daniel Promislow

Sexual Selection in the Western Harvester Ant, *Pogonomyrmex occidentalis*  
*A.J. Abell, B.J. Cole, D.C. Wiernasz*

Sexual Selection and the Fitness Consequences of Male Body Size in a Seed Beetle  
*U. Savalli, C. Fox*

Sexual Differences in Response to Larval Food Stress in Katydids: Do Females Conserve Characters Important to Sexual Competition? (Orthoptera: Tettigoniidae)  
*D. Gwynne*

Fitness Consequences of Sexual Selection in *Drosophila*: Artificial Selection Experiments  
*D. Promislow, L.Pearse*

Effects of Sex Ratio Manipulation on Female Fitness in *Drosophila melanogaster*  
*K.A. McKeen*

Sperm Transfer and Copulation Duration in *Drosophila silvestris* and *Drosophila heteroneura*  
*M. DeAngelis*

JILA Auditorium  
10:30-12:00  
Session 67 - Molecular Evolution  
Chair: Brandon Gaut

Molecular Evolution and Expression of Anthocyanin Multigene Families in *Ipomoea purpurea* (Morning Glory)  
*B.C. McCaig, M.L. Durbin, M.T. Clegg*

Molecular Evolution of C1, a Regulatory Gene in the Anthocyanin Pathway, in the Grass Family  
*V.M. Oberholzer, M.T. Clegg*

DNA Sequence Evidence for the Segmental Allotetraploid Origin of Maize  
*B.S. Gaut, J.F. Doebley*

Molecular Evolution of Three Noncoding Regions in Angiosperms  
*E. Friar, J.M. Porter*

Evolution of Orthologous and Homoeologous Nuclear Sequences from Diploid and Allopolyploid Cottons  
*R. Cronn, J.F. Wendel*

Evolution in Group II Introns in Chloroplasts as Shown by the Rpl16 Intron  
*S. Dickie, S. Kelchner, R. Wallace, J. Wendel*
Cires Auditorium
10:30-12:00
Session 68 - Ecological Genetics
Chair: Michael Turelli

10:30  601
Changing Genetic Structure of a Bur Oak Savannah: Microsatellite Analysis of Adults and Saplings
*M.V. Ashley, B.D. Dow

10:45  602
Complex Inheritance of Plant Size and Fitness in Ipomoea purpurea (Common Morning Glory)
*R. Miller, D. Higdon, M. Rausher, E. Simms

11:00  603
Protected Polymorphism for Flower Color in Linanthus parryae: Wright Sings the Blues
*M. Turelli

11:15  604
Genetic Constraints: An Experimental Approach Using Induced Mutations in Arabidopsis thaliana
*M.D. Camara, N. Turner, M. Pigliucci

11:30  605
Fingerprint-Based Spatial Genetic Tests for Isolation by Distance and Local Adaptation in the Coastal Plant Limonium carolinianum
*M. Hamilton

Chemistry 140
10:30-12:00
Session 69 - Molecular Systematics
Chair: Carey Krajewski

10:30  607
Improved Resolution of Crane Phylogeny from Combined Cytochrome b and ND6 Sequences
*M. Fain, C. Krajewski

10:45  608
Molecular Systematics and Evolution of the Honeyeaters (Passeriformes: Meliphagidae)
*A.C. Driskell

11:00  609
Multigene Analysis of Phylogeny Within Dasyurid Marsupials
*C. Krajewski, M. Westerman

11:15  610
Comparisons of MtDNA Gene Regions in Resolving Avian Species Relationships
*G. Voelker, S.V. Edwards

11:30  611
A Multiple Gene Perspective on the Phylogeny of the Avian Genus Tachyphonus
*K.J. Burns

11:45  612
Fibrinogen Introns and Avian Systematics
*S. Hackett, F.K. Barker, E. Grismer

Fine Arts N141
10:30-12:00
Session 70 - Conservation Genetics
Chair: Laura Lundquist
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<td>10:30</td>
<td>613</td>
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</table>
|       | Patterns of Geographic Genetic Differentiation and Lack of Inbreeding Depression in a Rare Perennial  
* D. Leeper, T. Mitchell-Olds |
| 10:45 | 614  |
|       | Genetic Consequences of Extensive Clonality in the Endangered Shrub *Haloragodendron lucasii*  
* M. Sydes, R. Peakall |
| 11:00 | 615  |
|       | The Role of Genetic Variation in Stress Tolerance and Population Persistence: An Experimental Study with *Brassica rapa*  
* C. A. Wise, Y. B. Linhart, T. Ranker |
| 11:15 | 616  |
|       | Extraordinary Genetic Variation in a Narrow Endemic Annual Plant Species  
* N. J. Ferguson, N. C. Ellstrand, R. Whitkus |
| 11:30 | 617  |
| 11:45 | 618  |
| 12:00-1:30 | - Lunch |
|         | - SSB Business Meeting (12:30-1:30) - UMC 157 |
|         | - UMC Forum  
NSF Population Biology: Open Discussion - The role of model organisms in research in population biology  
L. Lyons & M. Courtney (Population Biology) |
| 1:30-5:00 | Chemistry 140 |
| 1:30 | 619  |
|       | Population Genetics and Genealogical Properties of Self-Recognition Systems  
* X. Vekemans |
| 2:00  | 620  |
|       | Allelic Genealogy and Its Application to HLA DNA Sequence Data  
* N. Takahata |
| 2:30  | 621  |
|       | Evolutionary Process and the Structure of Genealogies among Self-Incompatibility Alleles in Flowering Plants  
* M. Uyenoyama |
| 3:00-3:30 | Break |
| 3:30  | 622  |
|       | Evolution in the Extreme: Variation at Fungal Mating Loci  
* G. May |
| 4:00  | 623  |
|       | The Spawning Game: Evolution of Gamete Recognition Loci in Free-Spawning Marine Species  
* S. Palumbi |
| 4:30  | 624  |
|       | Sequence Divergence of Mating Incompatibility Genes at the Population Level  
* A. Richman |
1:30-3:00 UMC 157
Session 71 - Hybridization and Sexual Isolation
Chair: Daniel Howard
1:30 625 The Effect of DNA Sequence Divergence on Sexual Isolation in Bacteria
*J. Majewski, F. Cohan
1:45 626 Reproductive Isolation and Divergence of Gamete Recognition Proteins Between Allopatric Versus Sympatric Species of Tropical Sea Urchins.
*M.A. McCartney
2:00 627 Conspecific Sperm Precedence Is an Effective Barrier To Hybridization Between Closely Related Species
*D.J. Howard, P.G. Gregory, J. Chu
2:15 628 Courtship Song & Sexual Isolation in Drosophila pseudoobscura and D. persimilis
*M.A.F. Noor, C.F. Aquadro
2:30 629 Haldane’s Rule in the Fruit Fly Anastrepha: Why so Different from Drosophila?
*P. Dos Santos, S.R. Matioli
2:45 630 Head Width, a Sexually Selected Trait in Drosophila heteroneura, Is Not Used by Females in Species Recognition
*C.R.B. Boake, D.K. Andreadis

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1:30-5:00 UMC 235
Session 72 - Adaptation and Plasticity
Chair: Mark Belk
1:30 631 Predator Induced Temporary Colour Changes in Tadpoles of the European Waterfrog (Rana esculenta)
*C. Rauter
1:45 632 Morphological Evolution of Utah Chub, Gila Atraria, in Populations with and Without Predation from Cutthroat Trout, Oncorhynchus clarki
*M.C. Belk, M.A. Nannini, C.Walser, J.B. Johnson
2:00 633 Evidence For Phenotypic Selection on Escape Performance in Natural Populations of Guppies
*A.J. Cullum, A.F. Bennett
2:15 634 Can Predation History or Locomotor Phenotype Predict Predator Avoidance Success? An Experimental Test Among Guppy (Poecilia reticulata) Populations of Trinidad
*S. O'Steen, A.F. Bennett
2:30 635 Ontogenetic Reaction Norms: Predator Induced Morphological Shape Change in a Dragonfly Larva
*F. Johansson
2:45 636 Why Be a Generalist? Insights from a Lycænid Butterfly with Multiple Ant Associates
*A.M. Fraser

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JILA Auditorium
1:30-3:00
Session 73 - Population Genetics
Chair: Craig Moritz

1:30 637  Segregating Sites in Wright's Island Model
*J.R. Wakeley

1:45 638  Molecular Population Genetics of the Cane Toad (*Bufo marinus*)
*C. Moritz

2:00 639  Effects of Variable Population Size and Heterogenous Mutation Rate on Estimation of Population Genetic Parameters
*D.A. Vasco, H-W Deng, X-X Fu

2:15 640  Tracking Geographic Variation in Cave Swallows (*Hirundo fulva*) Using Microsatellites
*J.J. Kirchman

2:30 641  Polymorphism and Divergence at Mitochondrial Genes in South American Rodents
*P. Kennedy, M.W. Nachman

2:45 642  Gene Flow in the Squid, *Loligo pealei*, in the Atlantic Ocean and the Northern Gulf of Mexico
*S.W. Herke, D.W. Foltz

Old Main Chapel
1:30-3:00
Session 74 - Molecular Systematics
Chair: Ken Halanych

1:30 643  Issues and Answers in the Molecular Phylogeny of the Crustacea
*T. Spears, L.G. Abele

1:45 644  Vestimentiferan and Pogonophoran Origins Based on Nuclear Ribosomal Genes; An Assessment of Phylogenetic Signal.
*K.M. Halanych, R.C. Vrijenhoek

2:00 645  Phylogenetic Relationships Within the Anthozoa (Phylum Cnidaria) as Inferred from 18S rDNA Sequences Obtained from Recent Specimens and Historical Museum Collections
*E.A. Berntson, F.M. Bayer

2:15 646  Molecular Diversity of Zoanthellae in Octocorals
*T.L. Goulet, M.A. Coffroth

2:30 647  A New Hypothesis for the Evolution of Scleractinian Corals Based on Mitochondrial 16S and Nuclear 28S Ribosomal RNA
*S.L. Romano

2:45 648  Use of Ribosomal ITS Sequences to Resolve Intragenic Relationships in the Soft Coral Genus *Alcyonium*
*C.S. McFadden

Ramaley C250
1:30-3:00
Session 75 - Combined-Data Systematics
Chair: Bradley Shaffer
1:30  649  Between Scylla and Carvopteris: Struggling with the Linnaean Strait Jacket  
*P.D. Cantino, R.G. Olmstead, S.J. Wagstaff

1:45  650  Tests of Turtle Phylogeny: The Effect of Fossils on Phylogenetic Stability  
*H.B. Shaffer, P. Meylan, M.L. McKnight

2:00  651  Does Total Evidence Reweave or Unravel the Avian "Tapestry"? 1. Morphology Versus Molecules  
*P. Beresford, J. Cracraft

2:15  652  Does Total Evidence Reweave or Unravel the Avian "Tapestry"? 2. Morphology and Molecules  
*J. Cracraft, S. Stanley, P. Beresford, A. Espinosa, J. Feinstein

2:30  653  Bird Vocalizations as Phylogenetic Characters: A Heron Example  
K.G. McCracken, *F.H. Sheldon

2:45  654  Expected Divergence Times Within Crocodylia from Molecules and Fossils: Conflict and Congruence  
*C. Brochu

*UMC 158

1:30-3:00  Session 76 - Comparative Method  
Chair: David Ackerly

1:30  655  Phrynosoma Morphology and Diet: Re-Evaluating the Relationship Using Independent Contrasts.  
*W.L. Hodges

1:45  656  Ontogeny and Phylogeny in Swordtail Fishes: Understanding Growth Patterns in a Phylogenetic Context.  
*J.M. Marcus, A. McCure

2:00  657  Prey Capture Thread Stickiness and the Evolution of Orb Weaving Spiders: A Comparative Approach  
*B.D. Opell

2:15  658  Phylogenetic Tests of Natural Selection Using Catostomid Gill Rakers  
*P. Willink

2:30  659  Community Assembly and Comparative Methods  
*D. Ackerly

2:45  660  Increasing Statistical Complexity in Comparative Studies: Is It Always Worth It?  
*E. Abouheif

*UMC Forum

1:30-3:00  Session 77 - Conservation Genetics  
Chair: Francis Villablanc

1:30  661  Genetic Identity of the Invasive Ruffe Gymnocephalus cernuus (Teleostei: Percidae) in the Great Lakes: DNA Sequence Evidence for a Southern European Origin and a "Cryptic" Species  
*C.A. Stepiec, A.K. Dillon
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<th>Authors/Contributors</th>
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<tr>
<td>1:45</td>
<td>662</td>
<td>Microsatellites, Allozymes and Conservation Genetics of the White Sands Pupfish</td>
<td>C.A. Stockwell, M. Mulvey, A.G. Jones</td>
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<td>2:00</td>
<td>663</td>
<td>Reproductive Success of Captively-Reared, Naturally Spawning Coho Salmon</td>
<td>L. Park, B. Berejikian, J. Hard, E. Lahood</td>
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<td>2:15</td>
<td>664</td>
<td>Assessing the Utility of Genetic Markers as Indicators of Habitat Fragmentation: Lessons from Real and Virtual Pocket Gophers</td>
<td>E. Steinberg, C. Jordan</td>
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<td>2:30</td>
<td>665</td>
<td>Paraphyletic Clades and the Conservation Genetics of Black-Footed Ferrets</td>
<td>F. Villablanca</td>
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<td>2:45</td>
<td>666</td>
<td>Can Molecular Genetics Assist Species Recovery Programmes? Arabian Oryx as a Case Study</td>
<td>T. Marshall</td>
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<td>3:00-3:30</td>
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<td>3:30-5:15</td>
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<td>UMC 235</td>
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<td>3:30</td>
<td>667</td>
<td>Why Is There Not a Positive Relationship Between Phenotypic Plasticity and Environmental Variability? A Test of Three Hypotheses</td>
<td>G. Davidowitz</td>
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<tr>
<td>3:45</td>
<td>668</td>
<td>A Theory of Developmental Stability</td>
<td>J.H. Graham, D.C. Freeman, J.M. Emlen</td>
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<td>4:00</td>
<td>669</td>
<td>A Selection Model for Plasticity in Coarse-Grained Environments in Its Simplest Form</td>
<td>P.H. van Tienderen</td>
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<td>4:15</td>
<td>670</td>
<td>Experimental Analyses of Selection on Wing Size and Wing Loading in Pierid Butterflies</td>
<td>J. Kingsolver, R. Srygley</td>
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<td>4:30</td>
<td>671</td>
<td>Effects of Stressful Larval Environment on Adult Phenotype in an Aposematic Ladybird Beetle</td>
<td>C.P. Grill, A.J. Moore</td>
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<tr>
<td>4:45</td>
<td>672</td>
<td>Geographic Variation and Phenotypic Plasticity in Shell Shape Within the Pulmonate Pond Snail Genus Physella: Implications for Classification of Extant and Fossil Mollusca</td>
<td>C.A. Burnside, R.F. McMahon</td>
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<td>5:00</td>
<td>673</td>
<td>Factors of Safety in the Structure of Crab Claws: Variation Among Six Parasympatric Cancer Species of the Pacific Northwest</td>
<td>G.M. Taylor, A.R. Palmer, A. Barton</td>
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<td>UMC 157</td>
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<td>3:30</td>
<td>674</td>
<td>Local Clocks Between Snapping Shrimps in Different Ecological Environments</td>
<td>C.L. Morrison, L.G. Abele</td>
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</table>
Rate Heterogeneity in MtDNA 16S rRNA Genes in the Genus *Centropomus* and Evolutionary Divergence Between Its Transisthmian Species-Pairs  
*M.D. Tringali, T.M. Bert*

Comparative Genomics of Extreme Microbes  
*R. Feldman, G. Olsen, E. Delong, C. Woese, R. Swanson*

Isocitrate Dehydrogenase and Carboxylesterase: Two Extreme Cases of Gene Evolution  
*A. Nekrutenko, J.C. Patton, R.D. Bradley, R.J. Baker*

Phylogenetic Analyses and Chromosomal Mapping of the CXC Chemokine Subfamily  
*W.S. Modi, A. Chidambaram, T.L. Chen, T. Yoshimura*

The Importin Gene in Ciliates: New Perspectives on the Evolution of an Important Protein  
*L.A. Katz*

Modular Evolution of Spider Silk Genes  
*C.Y. Hayashi*

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**JILA Auditorium**

**Session 80 - Ecological Genetics**  
Chair: Michael Antolin

Small Scale Genetic Variation in Marine Mussels: Evidence for Selection?  
*D. Heath*

Phylogeography of MtDNA Sequences in Barred Owls (Aves: Strigidae)  
*G.F. Barrowclough, J.G. Groth*

Microsatellite and MtDNA Analyses of a Highly Polymorphic Cichlid Species, *Cichlasoma citrinellum*  
*K. Noack, A. Meyer*

The Melding of Demographics and Genetics in the Townsend's Ground Squirrel  
*M.F. Antolin, B. Van Horne*

Microstratigraphic Variation and Selection in Fossil Stickleback Fish  
*D.M. Blow, *M.A. Bell*

Extinction, Persistence, and Evolutionary Change in Response to Environmental Stress in the Pitcher-Plant Mosquito, *Wyeomyia smithii*  
*P. Armbruster, A. Steiner, W.E. Bradshaw, C.M. Holzapfel*

Balancing Selection at the Mpi Locus in *Semibalanus balanoides*  
*P. Schmidt, D. Rand*

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**Old Main Chapel**

**Session 81 - Molecular Systematics**  
Chair: Roberta Mason-Gamer

Phylogenetics of Subtribe Orchidinae (Orchidoideae, Orchidaceae) Based on Nuclear ITS Sequences and Polyphyly of *Orchis* s.l.  
*A.M. Pridegton, R.M. Bateman, A.V. Cox, M.W. Chase*
3:45 689 Chromosome and Genome Size Evolution in the Slipper Orchids (Cypripedioideae: Orchidaceae)
*A.V. Cox, G.J. Abdelnour, M.D. Bennett, I.J. Leitch

4:00 690 Phylogenetic Relationships Within Orchidaceae as Inferred From RbcL and MatK Sequence Data

4:15 691 Saprophytism in Orchidaceae: Origins and Character Evolution
*M. Molvray, P. Kores, K. Cameron, J. Freudenstein, M. Chase

4:30 692 A Revolutionary View of the Parasitic Scrophulariaceae/Orobanchaceae
*N.D. Young, K.E. Steiner, C.W. DePamphilis

4:45 693 Addition of Nuclear Starch-Synthase Gene Sequences to the Ongoing Phylogenetic Analysis of the Triticeae (Poaceae).
*R.J. Mason-Gamer, E.A. Kellogg

5:00 694 Neighboring Base Composition and Substitution Rate in Chloroplast Genes
*B.R. Morton

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UMC Forum
3:30-5:15 Session 82 - Conservation Genetics
Chair: Suzanne Edmands

3:30 695 Implied Population Structure for the Bornean Orangutan
*C. Muir, A.T. Beckenbach

3:45 696 Genetic Mechanisms Underlying Outbreeding Effects in an Intertidal Copepod
*S. Edmands

4:00 697 MitDNA and Microsatellite Data Suggest a Recent Origin for Pacific Swordfish Populations out of the Atlantic
*C. Reeb, B. Block, L. Arcangeli

4:15 698 Genetic Monitoring in the Restoration of Endangered Chinook Salmon in the Snake River Basin
*P. Moran, D.A. Dightman, R.S. Waples, L.K. Park

4:30 699 Extinction through Hybridization: A Simulation Study
*D.E. Wolf, L.H. Rieseberg

4:45 700 Patterns Of Genetic Diversity in Rare and Widespread Plant Congeners: Do Rare Species Have Low Genetic Variability?
*M.A. Gitzendanner, P.S. Soltis

5:00 701 Analysis of Populations of an Endangered Clematis and an Endangered Seneio Using Molecular Marker and Sequence Data
*R. Bellsey, D. Mount
Session 83 - Plant/Animal Interactions

Chair: Duncan Mackay

3:30 702 Consequences to the Reproductive Fitness of Predatory Wasps from Consuming Chemically Defended Caterpillar Prey.
*L.S. Rayor

3:45 703 Phylogenetic Analysis of Host-Use Evolution in Agromyzidae (Diptera): Evidence from DNA Sequence Data
*S.J. Scheffer, B.M. Wiegmann

4:00 704 Evolution of Host Plant Use in Leaf Beetles (Phratora sp.)
*N. Rank, A. Koepf

4:15 705 Macroevolutionary Chemical Trends in Host Plant Use by Blepharida (Chrysomelidae) Beetles
*J.X. Becerra

4:30 706 Geographic Variation in Dispersal and Seed Characteristics of an Australian Euphorb
*D. Mackay, M. Whalen

4:45 707 Inter- and Intra-Seasonal Variation in Effective Pollinators of Swamp Milkweed (Asclepias incarnata)
*C.T. Ivey, R. Wyatt

5:00 708 The Costs and Benefits of Sequestering Plant Toxins in North American and Finnish Nymphalid Butterflies.
*M.D. Camara, N. Turner, M. Pigliucci

Session 84 - Evolution of Sex and Recombination

Chair: Rosie Redfield

3:30 709 Evolution of RecA Homologs in Deep-Branching Eukaryotes: Implications for the Origin of Meiosis
*J.M. Logsdon, Jr., W.F. Doolittle

3:45 710 The Hotspot Paradox and the Evolution of Meiotic Crossing Over
A. Boulton, R.S. Myers, *R.J. Redfield

4:00 711 Add Sex and Stir: On the Evolution of Recombination and Meiosis
*D. Gessler

4:15 712 Sequence Variation Within and Between the Neo-X and Neo-Y Chromosomes of Drosophila americana, Implications for Sex Chromosome Evolution
*B. McAllister

4:30 713 The Evolution of Sex Ratio Diversity in Neochlamisus Leaf Beetles
*D.J. Funk, L.H. Shapiro

4:45 714 Sequence and Karyotype Evolution of Obligately Parthenogenetic Aphids (Tribe Tramini)
*B. Normark

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Ramaley C250

3:30-5:15

Session 84 - Evolution of Sex and Recombination

Chair: Rosie Redfield
5:00  715  Red Queen Coevolution: Differential Infection of Common Snail Clones in Natural and Experimental Populations
*M. Dybdahl, C. Lively

UMC East Ballroom
4:30-6:30  Poster Session 3

716  Logistic Regression for Statistical Analyses of Multivariate Selection
*F. Janzen, H. Siern

717  Regulation of Transposable DNA Elements in Heterochromatin: The P Element of Drosophila melanogaster
*B.S. Haller, R.C. Woodruff

718  Rapid Evolution and Genetic Instability Coupled Via Clustered Mutations
*H. Huai, R.C. Woodruff

719  Physiological Mechanisms of Evolved Urea Resistance in D. melanogaster
*V. Pierce, A. Gibbs

720  Evolution of Water Balance in the Genus Drosophila
*A. Gibbs, L. Matzkin

721  Experimental Evolution of an Essential Transgene: A Role for Single Mutations of Large Effect?
*W.D. Crill

722  A Quantitative Genetic Model for the Maintenance of Predator-Induced Polymorphism
*W. Hazel, R. Smock

724  Sudden Evolution in the Soapberry Bug: Distinguishing Selective Pathways
*S. Carroll, H. Dingle

725  Molecular Evidence for Sympatric Divergence in Madeiran Storm Petrels (Oceanodroma castro)
*V. Lodha

726  Suites of Life History Traits (Growth Trajectories, Maturation Patterns, Asymptotic Sizes) in Guppies from Different Predation Regimes
*F.H. Rodd, J.A. Stamps, D.N. Reznick

727  The Functional Matrix and Evolutionary Innovations in Bats
*R.A. Adams, S.C. Pedersen

728  Interpretation of Developmental Ossification Patterns in Teleost Fishes
*P. Mabec, C. Cubbage

729  Know Thy Self or Know Thy Kin: Crossfostering Reverses MHC Matting Preferences
D. Penn, *W. Potts

730  The Evolution of Sterile Spermatophores in the Hawaiian Cricket Laupala cerasina
*K.L. Shaw, A.H. Khine

59
Synodontis multipunctatus - The Cuckoo Catfish from Lake Tanganyika
*A. Cruz, S. Pawlowski, C. Wilks

Peripheral Speciation in Indo-West Pacific Sea-Urchins
*L.B. Geyer, S.R. Palumbi

Molecular Phylogeny and Historical Biogeography of the South American Genus Austrofundulus
*T. Hrbek, J.E. Thomerson, A. Larson

Gene Flow in the Killfish Fundulus heteroclitus
*K.A. Callicott, D.A. Powers

A Genomic Parasite (B Chromosome) and an Ectoparasite (Mite) Decrease Female Fertility in a Grasshopper
*J.P.M. Camacho, E. Muñoz, F. Perfectii

The KNOTTED Family of Angiosperm Homeodomain Proteins-Origin and Evolution
*G. Bharathan, B-J Janssen, E.A. Kellogg, N. Sinha

Reshaping the Zootype: Cnidarians and the Evolution of the Hox Clusters
*D. Martinez, D. Bridge, K. Kuhn, P. Cartwright

A Molecular Phylogeny of New-World Jays Based on Mitochondrial Control Region
*M.A. Saunders, S.V. Edwards

A Phylogeny for Isoptera
*S. Kambhampati

Evolution of HOM-C Complex in Arthropods
*A. Abzhanov, T.C. Kaufman, A. Popadic

Substitution Processes and the Molecular Clock
*S. Schrodi, J. Gillespie, R. Hudson

Variation at Homologous Microsatellite Loci in Three Poecilia (Poeciliidae) Species
*J.S. Taylor, F. Breden

Identification of Polymorphic Microsatellites in Baboons Using Human PCR Primers, and Construction of a Baboon Genetic Map
*P.A. Morin, C.M. Kammerer, J. Rogers

Impact of Insularization on Genetic Variation Among Deer Mice (Peromyscus maniculatus) Populations
*P-A Landry, F-J Lapointe

Local Coadaptation Between Lupines and Bradyrhizobia
*E.L. Simms, L. Gades, A. Pringle

Local Genetic Structure Of Sagittaria isoetiformis (Alismataceae) Along an Environmental Gradient
*A.L. Edwards, R.R. Sharitz

Patterns of Extra-Pair Paternity in Multiple Broods of the Tree Swallow
*T.M. Roeneem, R.J. Robertson, C. Crossman, P.T. Boag
749  Ecological Strategies of Invading Ants in Hawaii
    *K. Ingram

750  Genetic Structure Across a Univoltine and Bivoltine Gradient in the Mud-Daubing Wasp,
    *Trypoxylon politum
    *S.A. Chien, H.J. Brockmann

751  Microsatellite Genotypes in the Four-Toed Salamander (Caudata: Plethodontidae)
    *I. Knight, R.N. Harris

752  Effects of Geographic Isolation on Genetic Diversity in the Western Pond Turtle, *Clemmys marmorata*: A Study Based on Microsatellites
    *C.M. Ingram

753  Comparisons of Rough-Winged Swallow Populations Using Mitochondrial DNA Sequences
    *M.J. Babin

754  Mitochondrial DNA Diversity of the Modern, Cosmopolitan Peoples of Mexico
    *L. Green, J. Derr, A. Knight

755  Hollywood Medfly: Alien or Resident at P < 0.05?
    *G. Roderick, F. Villablanca, N. Davies, S. Palumbi

756  Population Structure of *Strongylocentrotus purpuratus*: Genetic Analysis of Recruits and Young of the Year
    *P.E. Moberg, R.S. Burton

757  Detecting Recent Immigration Using Multilocus Genotypes
    *J.L. Mountain, B. Rannala

758  Mutation Accumulation for Chemosensory Behavior in the Nematode, *Caenorhabditis elegans*
    J. Morpeth, *P.C. Phillips

759  Preponderance of Mildly Deleterious Mutations Affecting Male Fertility in Long-Term
    Mutation Accumulation Lines of *Drosophila melanogaster*
    *J.D. Fry, T.F.C. Mackay

760  Methods for Estimating Phenological Assortative Mating, with an Application
    to Australian *Ranunculus* Species
    *G.A. Fox, C.M. Pickering

761  Phylogenesis of Host Range in Heliothine Moths (Insecta: Lepidoptera: Noctuidae)
    S. Cho, *C. Mitter, J. Reiger

762  Phylogenetic Relationships Among Megapode Birds (Megapodiidae): Preliminary Results
    from Non-Coding Nuclear DNA Sequences
    *S.M. Birks, S.V. Edwards

763  Morphological Evolution and Biogeography in Pines Using Phylogenetic Evidence from ITS
    Sequences and Restriction-Site Variation
    *G. Mendez-Cardenas, A. Castañeda, S. Ortiz-Garcia, A. Liston, E. Alvarez-Buylla, D.
    Piñero

61
Phylogenetic Relationships of Eastern North American Phlox L. (Polemoniaceae) Based on Molecular Data: Evidence for Hybrid Speciation?
* C.J. Ferguson, R.K. Jansen

Microsatellite Variation Across Three Species of Non-Domestic Felids
* C. Driscoll, S. O'Brien

Molecular Systematics of the Myriapods
* J. Shultz, J. Reiger

Testing Hypotheses of the Evolution of the Genus Kikihia (New Zealand Cicadas)
* P. Arensburger, C. Simon, T. Buckley, G. Chambers

* S. Zaklan

Global Diversity of the Cool Desert Green Alga Bracteacoccus
* L.A. Lewis

Molecular and Fossil Evidence on an Early Divergence of Neotropical Pygmy Squirrels
* V.L. Roth, M.H. Kim, J.M. Mercer

Evolution in Tetraploid Plant Populations
R.D. Overath, *M.A. Asmussen

A Cladistic Biogeography of Gleditsia Based on NdhF and Rpl16 Chloroplast Gene Sequences
* A. Schnabel, J.F. Wendel

Ordinal Relationships and Character Evolution in Holothuroidea (Echinodermata)
* A.M. Kerr

The Association of Nest Material and Mandible Shape: A Morphometric Comparison
* N.M. Williams, K. Goodell

De Novo Evolution of Sense Organs Mediating a Postural Reflex in Flies
* C. Gilbert, R. Edgecomb

A Phylogenetic Analysis of Tent Caterpillar Social Evolution (Lasiocampidae: Melacosoma spp.)
* J.T. Costa

Initial Estimates of Inbreeding Depression in Rapid Cycling Brassica rapa
* P.V. Mandrekar, D.M. Waller

Geitonogamous Selfing Balancing the Effect of Herkogamy in Ipomoea purpurea
* S-M Chang

Association Between Floral Traits and Inbreeding Depression in Gilia achilleifolia (Polemoniaceae)
* N. Takebayashi
782 Natural Selection and Genetic Constraints on the Evolution of Tolerance to Herbivory in the Common Morning Glory, Ipomoea purpurea
*P. Tiffin

783 Sex Ratio Bias and Recombination in a Neo-Y Chromosome in the Housefly (Musca domestica)
*M.E. Clark, E.H. Bryant

784 Isolation and Initial Characterization of Clones from the W and Z Chromosomes in Birds
*N.W. Kahn, T.W. Quinn

785 Molecules, Morphology and Movement: Transcontinental Mitochondrial Analysis of Sage Grouse Includes a Morphologically and Behaviorally Unique Newly Described Species
*T.W. Quinn, C.E. Braun, J.R. Young, N.W. Kahn

786 Developmental Anomaly in Bristle Formation in Interspecific Hybrid of Drosophila
*T. Takano

Williams Village Darley Commons 103
5:30-6:30
ASN/SSB/SSE Coordinating Council Meeting

UMC Center Ballroom
6:00-7:45
Banquet

Macky Auditorium
8:00-9:00
SSB Presidential Address:
A frog he would a-wooing go
*Jay M. Savage

Wednesday, 18th June

CIRES Auditorium
8:30-10:00
Session 85 - Adaptation and Plasticity
Chair: Pamela Diggle

8:30 791 Competition, Photomorphogenesis and Fitness
*C. Weinig

8:45 792 Patterns of Danthonia spicata (Poaceae) Reproductive Allocation in Relation to Environmental Heterogeneity
*M. McCormick, K. Gross

9:00 793 Phenotypic Plasticity and Constraints of Inflorescence Architecture in Arabidopsis thaliana
*P. Diggle

9:15 794 The Labile Evolution of Epigyny in Lithophragma (Saxifragaceae)
*R.K. Kuzoff, L. Hufford, D.E. Soltis

9:30 795 Genotype-Environment Interaction and Natural Selection in Field Populations of Arabidopsis
*B. Stranger, T. Mitchell-Olds

9:45 796 Patterns of Phenotypic Plasticity in Clarkia (Onagraceae): Alloployploids and Their Diploid Relatives
*J.J. Butler, C.D. Schlichting
8:30-10:00  UMC 157
Session 86 - Life Histories and Development
Chair: Robert Krebs

8:30 797 Evolutionary Constraints on Thermotolerance Across the Life Cycle of *Drosophila melanogaster*
*R.A. Krebs

8:45 798 Evolution of the First Step in Development: Axis Specification in Nematode Embryos
*B. Goldstein

9:00 799 Heterochrony in the Evolution of Pigment Patterns in Fishes of the Genus *Danio* (Teleostei: Cyprinidae)?
*M. McClure

9:15 800 Genetic Variation of Senescence Reaction Norms Among Populations
*J.L. Dudycha

9:30 801 Limbs: An Embryonic Innovation in Direct-Developing Anurans
*T.F. Carl, J. Hanken

9:45 802 Molecular Phylogenetic Analysis of Life History Evolution in Asterinid Starfish
*M.W. Hart, M. Byrne, M.J. Smith

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8:30-10:00  UMC 235
Session 87 - Hybridization and Sexual Isolation
Chair: Michael Wade

8:30 803 Hybrid Fitness in the Louisiana Irises: Evidence from Experimental Analyses
*J.M. Burke, S.E. Carney, M.L. Arnold

8:45 804 Are Hybridizing Acacias Adapted to Soil Type?
*A. Hempel, J.M. Burke, M.L. Arnold

9:00 805 A Putative Case of Very Rapid Hybrid Speciation in Sunflowers (*Helianthus*)
*S.E. Carney, L.H. Rieseberg

9:15 806 Pollen Swamping and Hybridization by an Introduced Plant (*Spartina alterniflora*) Threaten an Endemic Cordgrass (*Spartina foliosa*)
*C.K. Anttila, C.C. Daehler, N.E. Rank, D.R. Strong

9:30 807 Crop to Weed Gene Flow?
*N. Ellstrand

9:45 808 Gene Interactions and the Origin of Species
*M. Wade

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8:30-10:00  Fine Arts N141
Session 88 - Molecular Evolution
Chair: Ronald Adkins

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8:30  809  Molecular Evolutionary Biology of Pax Genes -- Implications for Eye Evolution  
*H. Sun, A. Rodin, Y-H Zhou, D. Dickinson, W-H Li

8:45  810  Variation at the Human Melanocyte Stimulating Hormone Receptor Locus -- Possible Role  
in Human Skin Pigmentation Variation  
*B. Rana, D. Hewett-Emmett, W-H Li

9:00  811  Molecular Evolutionary Genetics of Primate Color Vision  
*W-H Li, S-K Shyue, Y-H Zhou, S. Boissinot

9:15  812  Structural and Functional Coevolution of Human Growth Hormone and Its Receptor  
*R.M. Adkins, W-H Li

9:30  813  The Evolution of Visual Pigment Genes in Butterflies (Lepidoptera)  
*A. Briscoe

9:45  814  The Evolution of Codon Bias at the PsbA Locus of Flowering Plants  
*B.R. Morton

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UMC Forum
8:30-10:00  Session 89 - Population Genetics  
Chair: Michael Nachman

8:30  815  Silencing of Duplicate-Gene Expression in a Highly Selfing Polyploid Freshwater Snail  
*T. Staedler

8:45  816  Determinants of Microsatellite Evolution in Drosophila melanogaster  
*M.D. Schug, C.F. Aquadro

9:00  817  Molecular Population Genetics of the Y Chromosome in Drosophila melanogaster and  
D. simulans  
*W. Eanes, M. Zurovcova

9:15  818  Polymorphism and Divergence at the Pgm Locus of Drosophila  
*B.C. Verrelli, W.F. Eanes

9:30  819  Queen Relatedness in Fire Ants Estimated with Nuclear and Mitochondrial Markers  
*M.A.D. Goodisman, K.G. Ross

9:45  820  DNA Variability, Selection, and Recombination at X-Linked Genes in House Mice and  
Humans  
*M.W. Nachman, V.L. Bauer, S.L. Crowell, C.F. Aquadro

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Chemistry 140
8:30-10:00  Session 90 - Combined-Data Systematics  
Chair: Sandra Baldauf

8:30  821  Consensus Phylogeny of Eukaryotes Based on Molecular Data  
*S. Baldauf, W.F. Doolittle

8:45  822  Molecular Phylogenetics of Cancer Crabs: DNA, Morphology, and Fossils  
*M. Harrison, B. Crespi
9:00  823 The Evolution of Bipedal Hopping in Kangaroos  
*A. Burk, M. Springer, M. Westerman

9:15  824 Is Saturation of Substitutions Such a Big Problem?  
*Z. Yang

9:30  825 Monophyly of the Ant Genus Messor  
*M. Bennett

9:45  826

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JILA Auditorium
8:30-10:00 Session 91 - Biogeography  
Chair: Michael Charleston

8:30  827 Species Range Expansion and Drosophila-Parasitoid Interaction  
H.R. Koepfer, *P.C. Chabora, A. Kermarrec

8:45  828 Jungles: A New Solution to the Host/Parasite Phylogeny Reconciliation Problem  
*M.A. Charleston

9:00  829 Phylogeny and Biogeography of the North Temperate Disjunct Aralia sect. Aralia  
(Araliaceae)  
*J. Wen

9:15  830 Rarity and the Biogeography of the Large-Flowered Piptoloboid Clade of Astragalus L.  
(Fabaceae).  
*J.W. White

9:30  831 Genetic Structure of the Giant Tiger Prawn, Penaeus monodon, in Australia: MtDNA  
Evidence of Founder Effect and Post-Glacial Population Spread  
*J. Benzie, E. Ballment

9:45  832

10:00-10:30 Break

CIRES Auditorium
10:30-12:00 Session 92 - Experimental Evolution  
Chair: Laura Landweber

10:30  833 Experimental Evolution of Temperature Sensitivity in Drosophila: Fitness Estimates on  
Selected Lines  
*G.W. Gilchrist, R.B. Huey

10:45  834 Expression of the 70-kD Heat Shock Protein in Drosophila Populations: Laboratory  
Evolution at Different Temperatures  
*B.R. Bettencourt, M.E. Feder, S. Cavicchi

11:00  835 In Vitro Evolution of a Small RNA Ligase Ribozyme from Random Sequences  
*L. Landweber

11:15  836 An Experimental Test of Fisher's Geometric Model: Evolution by Small or Large Steps?  
*C.L. Burch, L. Chao

66
11:30 837  The Consequence of Genetically Homogeneous and Heterogeneous Host Passages for Population Size, Virulence, and Infectivity of a Viral Pathogen  
*G. Park, S.E. Kelley

11:45 838  Propagation of a Vertically Transmitted Virus in an Experimental Population Under Relaxed Selection  
L.Y. Yampolsky, *C. Webb, A. Kondrashov, S. Shabalina

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UMC 157

10:30-12:00  Session 93 - Sexual Selection  
Chair: Joseph Travis

10:30 839  Polygynandry in Two Species of Male-Pregnant Pipefish (*Syngnathus floridae* and *S. typhle*): An Analysis Based on Microsatellite Data  
*A.G. Jones, J.C. Avise

10:45 840  Evolutionary Reconstruction of Sexually Selected Characters in the Trinidad Guppy and Related Species  
*F. Breden, M. Bertrand

11:00 841  Interspecific Female Choice Between High-Fin and Low-Fin Species of Mollies (*Poecilia latipinna*, *P. mexicana* and *P. orri*)  
*M.B. Ptacek

11:15 842  The Evolution of Vertical Body Bars in Swordtail Fishes  
*M.R. Morris

11:30 843  Secondary Sex Character Differentiation in Male Sailfin Mollies (*Poecilia latipinna*)  
*J. Travis, M. Ptacek, N. Martin

11:45 844  Paternity Distributions in a Pelagically Spawning Fish - *Thalassoma bifasciatum*  
*L. Wooninck

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UMC 235

10:30-12:00  Session 94 - Speciation and Cladogenesis  
Chair: Lisa Marie Meffert

10:30 846  Unstable Courtship Repertoire of Founder-Flush Populations of the Housefly  
*L.M. Meffert

10:45 847  Change in Pigmentation Pattern As it Relates to Speciation in Caribbean *Drosophila*  
*H. Hollocher, J. Hatcher

11:00 848  Individuals, Food Webs, and Speciation in a Simulated Ecosystem  
*C.C. Maley

11:15 849  Systematics and Evolution of New Zealand Cicadas  
*P. Arensburger, C. Simon, T. Buckley, G. Chambers

11:30 850  Sexual Selection, Courtship Signals and Species Diversity in Teleost Fishes: Has Sexual Dimorphism Promoted Diversification?  
*S. Mesnick

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11:45  851  Contrasting Diversification Patterns Between Sister Clades *L.igeria* and *Nassopsidia* (Gastropoda: Thiaridae) from Lake Tanganyika: Morphology and DNA Sequence Variation  
  *E. Michel

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Fine Arts N141

10:30-12:00  Session 95 - Geographic Variation and Hybrid Zones  
Chair: Theresa Bert

10:30  853  Signs for the Hybrid Speciation on the *Fundulus heteroclitus* (Teleostei; Fundulidae) Subspecies Boundary  
*N. Mugue, J. Wei

10:45  854  Social Incompatibility and Gene Flow Across a Behavioral Hybrid Zone  
*S. Cahan

11:00  855  Mitochondrial DNA Variation in a Supposed Hybrid Zone Between "*Akodon* olivaceus" and "*Akodon* xanthorhinus" (Rodentia: Sigmodontinae)  
*M.F. Smith

11:15  856  Geographic Differentiation in the Jumping Spider *Habronattus pugillis*: Evidence for Sexual Selection on a Gene Tree?  
*S. Masta, W. Maddison

11:30  857  The Project from Hell: Spanish Sardines, Speciation or Ecophenotypic Variation?  
*T. Bert, B. Chernoff

11:45  858  Sexual and Microgeographical Variation in Body Size and Trophic Morphology Among Island Populations of Water Snakes  
*A. Queral-Regil

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Chemistry 140

10:30-12:00  Session 96 - Population Ecology  
Chair: Emily Lyons

10:30  859  Geographic Distribution of *S. latifolia* and *M. violaceum* in the Eastern U.S.  
*E.J. Lyons, A.M. Jarosz

10:45  860  Consequences of Phenotypic Variation in the Pheromone System of a Bark Beetle  
*A.M. Shumate

11:00  861  A Population-Regulatory Mechanism for Limiting the Spread of Cheating in a Mutualism  
*D.W. Yu, N.E. Pierce

11:15  862  Detection and Quantification of Stone Crab Larvae (*Menippe* sp.) from Marine Plankton Samples Using Competitive PCR  
*J.G. Makinster, D.L. Felder, J.E. Neigel

11:30  863  Host-Parasite Interactions in Populations of Monarch Butterflies (*Danaus plexippus*) and a Protozoan Parasite (*Ophryocystis elektroscirrh*): Disease Dynamics in Relation to Host Migratory Behavior  
*S.M. Altizer

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Spatial Dispersion and Sexual Selection in the Digger Wasp, *Microbembex*
*T. Fratzei*

**UMC Forum**
10:30-12:00 Session 97 - Population Genetics
Chair: Ellen Williamson

10:30 865 Developmental Rate, Polymorphism, and Natural Selection in *Fundulus heteroclitus*
*E. Williamson, L. DiMichele*

10:45 866 Microsatellite Analysis of Genetic Relatedness and Inbreeding in *Oncotrips*
*T. Chapman, B. Crespi*

11:00 867 Genetic Structuring in Populations of European Wild Rabbits (*Oryctolagus cuniculus*)
*A.K. Surridge, D.J. Bell, G.M. Hewitt*

11:15 868 Fig Wasps and the Effect of Population Size on Genetic Divergence
*C. Machado*

11:30 869 The Mediterranean-Atlantic Connection: MtDNA Variation Among Different Geographical Population of Several Species of Marine Teleosts (Sparidae, Perciformes)
*L. Bargelloni, E. Penzo, L. Ostellari, T. Patarnello*

11:45 870 Gone with the Wind Drift: Intraspecific MtDNA Variation for Two Circum-Antarctic Fish Species with Different Dispersal Ability
*L. Bargelloni, E. Penzo, L. Ostellari, T. Patarnello*

**JILA Auditorium**
10:30-12:00 Session 98 - Molecular Evolution
Chair: Niles Lehman

10:30 872 Continuous Evolution in Vitro of a Ligating Ribozyme
*N. Lehman, M. Wright*

10:45 873 An Ancient Retrovirus-Like Element, Mys 9, Is a Hot Spot for SINE Insertion
*M.A. Cantrell, B.J. Filanoski, A.E. Ingerman, H.A. Wichman*

11:00 874 Comparison of Orthologous Mys Retrotransposons in Two Species of *Peromyscus*
*L. Scott, R. Sawby, C.J. Brown, H.A. Wichman*

11:15 875 Competitive Dominance of Symbiotic Bacteria in a Luminous Bacterial-Squid Mutualism
*M.K. Nishiguchi, E.G. Ruby, M.J. McFall-Ngai*

11:30 876

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<td><a href="mailto:AdvamEdge@lighlink.com">AdvamEdge@lighlink.com</a></td>
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<td>Warner, R.R., 105*</td>
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<td>Watkins, R.F., 521*</td>
<td>Simon Fraser University, Canada</td>
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<td>Wen, J., 829*</td>
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