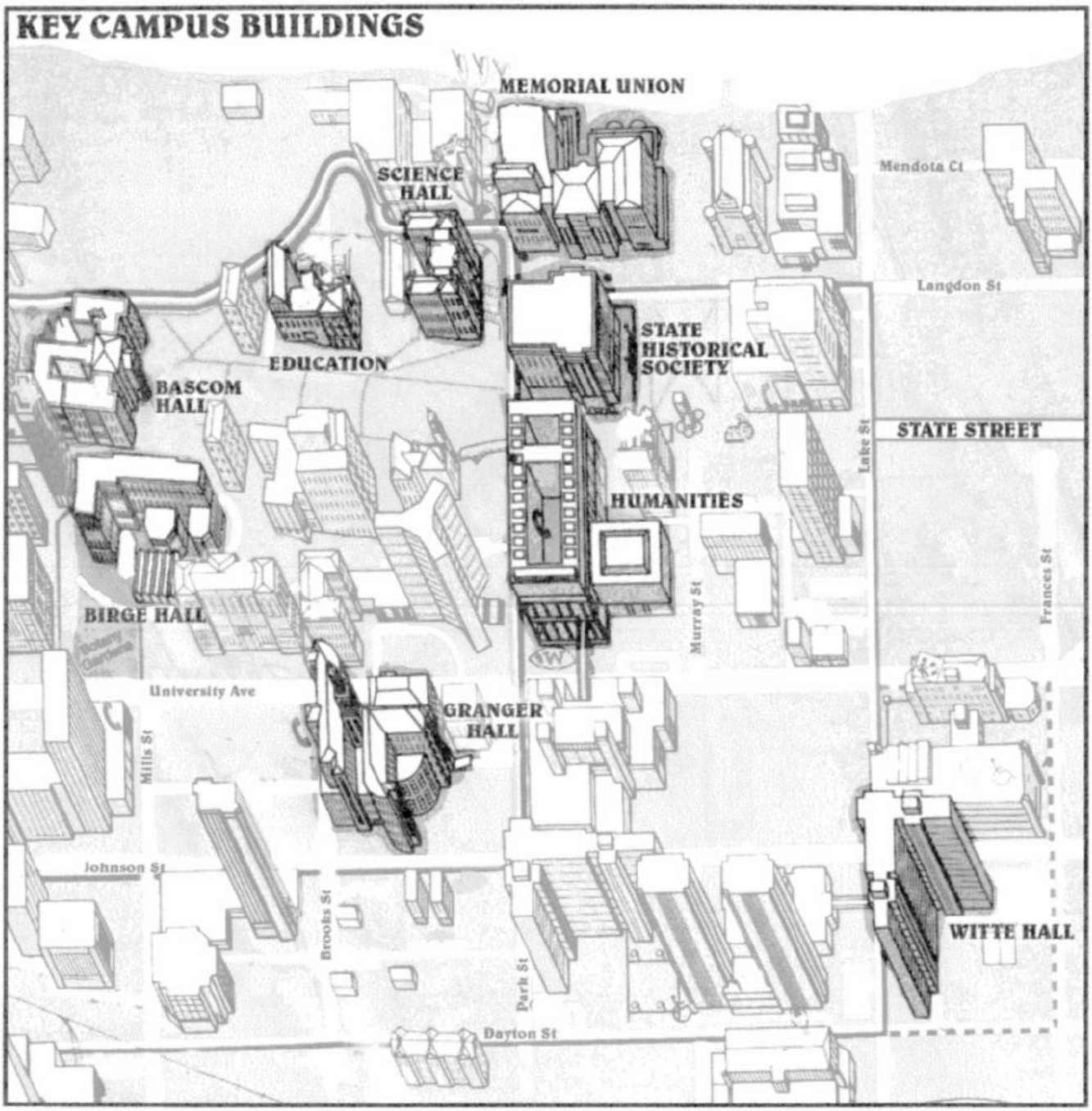
EVOLUTION '99

University of Wisconsin
Madison, Wisconsin
June 22–26, 1999

- The Society for the Study of Evolution
- The American Society of Naturalists
- The Society of Systematic Biologists


KEY CAMPUS BUILDINGS
MEMORIAL UNION
SCIENCE HALL
Mendota Ct
Langdon St
STATE HISTORICAL SOCIETY
EDUCATION
BASCOM HALL
STATE STREET
Lake St
HUMANITIES
Frances St
Murray St
BIRGE HALL
University Ave
GRANGER HALL
Mills St
Johnson St
Brooks St
WITTE HALL
Park St
Dayton St

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ACKNOWLEDGEMENTS

A meeting of this size and complexity required the skills and cooperation of many individuals most of whom toiled behind the scenes for months to create our meeting. While this list is doubtless incomplete, it serves to thank some of the key people who helped make things happen how and (more or less) when they needed to. If you see these individuals, consider thanking them in person. If you're upset with some aspect of the meeting, blame me and let me know as it's doubtless my fault. I will then be in a position to pass along my hard-earned wisdom to future meeting organizers.

Don Waller, Local Organizer

David Mindell and **Alec Lindsay** (U. Michigan) worked long and efficiently to bring the order of our final Scientific Program out of the chaos of hundreds of individual paper and poster title submissions over a period of months. They also managed to upload the orderly set of Contributed Paper sessions they organized onto our meeting web site, providing speakers with early glimpses of the entire program.

Owen Boyle (UW-Botany) provided much of the design and execution of our main meeting web site and associated web pages. He also laid out the final Program, organized the cadre of students manning the AV equipment for all our sessions, and acted as liason for many aspects of the meeting.

Irene Eckstrand of the NIH and **Lilian Tong** and **Jan Cheetam** of UW's Center for Biology Education worked together to organize and publicize our first annual **Teaching Evolution** workshop. Early indications are that this will be a successful and regular part of our meetings.

Alex Kondrashov (Cornell) and **Joe Felsenstein** (the other UW) generously donated their time and expertise to organize an entertaining and informative tribute to **James Crow**, a guiding light in population genetics and evolutionary theory both locally and internationally.

Kandis Elliott (UW-Botany) performed customarily excellent and speedy design and artwork for the meeting brochure, this Program, and the tote bag.

Terry Devitt and **David Mindell** co-wrote a press release and Terry helped make contacts with individual reporters.

Jeffrey Mc Kinnon, **Sally Otto**, and **Owen Boyle** worked together as an informal Social Committee to plan and schedule the musical and social events for the meeting.

Ted Garland, Tom Givnish, Ken Sytsma, and **Alan Wolf** served as the Local Organizing Committee to consult on various aspects of meeting organization.

Maureen Sundell, **Pat Gaitan**, **Carol Strmiska, Gloria Eichenseher** and **Patti McDowell** of UW Extension Conference Services worked hard as a team on overall meeting organization, registration, liason with housing and classrooms, and myriad other tasks, as well as providing much of the information on local attractions for this Program.

EXHIBITORS – BOOK PUBLISHERS

The exhibit of book publishers' materials will be in the Memorial Union's Reception Room on the 4th floor. This area is located adjacent to conference poster sessions and refreshment breaks. You are encouraged to take some time to visit the displays from many of the most active and distinguished publishers in evolutionary and systematic biology. Exhibit hours are Thursday from 10 a.m. to 9 p.m.; Friday from 10 a.m. to 6 p.m.; and Saturday from 10 a.m. to 5 p.m.

Academic Press

American Institute of Biological Sciences

Blackwell Science, Inc.

Harvard University Press

Johns Hopkins University Press

McGraw-Hill Publishers

Oxford University Press

Prentice Hall

Princeton University Press

Sinauer Associates, Inc.

Taylor and Francis

University of Chicago Press

Yale University Press

SPONSOR

The organizers gratefully acknowledge the financial support of **Taylor and Francis** as a sponsor of the 1999 Joint Meeting of the Society for the Study of Evolution, The American Society of Naturalists, and The Society of Systematic Biologists.

WELCOME TO MADISON!

You are invited to experience one of the most beautiful and nationally acclaimed cities in the United States. Situated on an isthmus between Lakes Mendota and Monona, Madison is a truly charming and picturesque city. Five lakes, 200 parks, miles of biking and hiking paths, and one the loveliest university campuses in the country offer an abundance of outdoor activities. These, combined with a stimulating cultural environment, great shopping and dining, and an "irreverent spirit of fun," make Madison a great place to be.

While you're here...

Check out State Street and Downtown... The Wisconsin State Capitol building is open to the public—worth a look, as are the lovely flowers and grounds surrounding the building. Free guided tours begin at 9, 10, 11, 1, 2, 3pm, Monday – Saturday; 1, 2, & 3pm on Sunday.

The Frank Lloyd Wright-designed Monona Terrace Convention Center is the site of your Friday evening banquet. Originally proposed in 1938 and opened in the summer of 1997, this Convention Center brings to life one of Wright's final creative visions. The Terrace is located two blocks east of the State Capitol on the shore of Lake Monona. Shuttle service will be available; please check the Shuttle Schedule in this program book.

A walk down State Street will acquaint you with all kinds of ethnic cafes, restaurants, coffeehouses and shops, a feast for the eye and the palate. If you're short on time, buses run up and down State Street every 10 minutes, between 9:30 AM and 3:00 PM, for only 25 cents. Look for bus route #1, *Downtown Get Around.*

The Farmers' Market... Every Saturday morning, the Capitol Square wakes up early (really early), to host the Dane County Farmers' Market. Described as one of the biggest and best farmers' markets in the midwest, this is not just a place to shop, it's an event. Grab a pastry (lots to choose from) and a cup of gourmet coffee and join the slow walk around the Square. Hours are 6:30 AM to 2:00 PM.

Discover the University of Wisconsin campus... Take your time, it's big. The University of Wisconsin is one of the finest universities in the United States and one of the largest with over 40,000 students. Take a walk down the "Lake Path" or through the center of campus and enjoy the view from Observatory Hill. It's worth the hike.

Open doors with your nametag... If you present your nametag at the entrance to a UW recreation center (see campus map for locations), you can pay a daily fee and use indoor tracks, pools, equipment rooms, maybe even work in an aerobics class.

Your nametag also allows you to buy a cool brew at the Memorial Union. With its many social areas and location on Lake Mendota, the Union is considered the living room of the campus. It offers beautiful sunsets, sometimes live music, the opportunity to get a brat, beer, or just a bag of popcorn, and then sit back and watch the world go by.

Explore, enjoy, have a great time!

SHUTTLE SCHEDULE
June 22-27, 1999

Look for the buses with the "Evolution '99" sign in the window.

Friday, June 25, 1999

5:30 – 10:30 PM	Continuous shuttle service will depart from the Memorial Union for the 10-minute ride to Monona Terrace for the reception and banquet that begin at 6:00. Return will be to area hotels, the Lowell Center, the Memorial Union, Witte Hall, and the J.F. Friedrick Center.

Sunday, June 27, 1999

7:00 – 11:40 a.m.	Shuttle service to the airport will depart from the J.F. Friedrick Center, Witte Hall (use the Johnson Street entrance), and the Lowell Center (cross Langdon Street, at the Frances Street corner) approximately every 20 minutes. The trip takes 20-25 minutes from the Lowell Center. The last pick up will begin at approximately 11:40.

THINGS TO DO IN MADISON
June 23 – 28, 1999

Wednesday, June 23

Wednesday Farmers' Market. The Wednesday version of Madison's famous Farmers' Market is held just off the Capitol Square. Pick up homegrown fruits and vegetables, bakery goods, cheeses, and more. 9 a.m.–2 p.m., Martin Luther King, Jr. Blvd.

Open Mic. University and Union members entertain the masses. 8-11 p.m., Memorial Union Terrace (rain location is the Rathskeller).

Washburn Observatory Public Viewing. Telescope viewing of the moon, planets, and stars when the sky is at least 75% clear. 9 p.m., Washburn Observatory, 1401 Observatory Dr. Call 262-9274.

Thursday, June 24

Badger State Summer Games-*Finals.* Olympic-style sports festival for WI residents of all ages. Various times and places throughout Madison. Call 251-3333. Free to the public; participants pay a fee.

African Studies Program Summer Film Festival-*Films from North Africa.* *Insan (Human Being) Sudan.* 7 p.m., 4070 Vilas Hall, 821 University Ave. Call 262-4461.

University Summer Forum-*The State and the University: 1848-1998.* The New Wisconsin Idea. 7-9 p.m., 1100 Grainger Hall, 975 University Ave. Call 263-1956.

Terrace Music-*NoahJohn, old-time country and Accident Clearinghouse, honky tonk.* Live music on Memorial Union's Terrace. (Rain location is the Rathskeller.) 9:30 p.m.-midnight.

Friday, June 25

Badger State Summer Games-*Finals.* Olympic-style sports festival for WI residents of all ages. Various times and places throughout Madison. Call 251-3333. Free to the public; participants pay a fee.

Concerts on the Rooftop-*Goongoo Peas.* Enjoy a view of the lake while listening to Caribbean folk music. 5:30-7:30 p.m. Monona Terrace Rooftop (Rain location is Exhibition Hall.)
Terrace Music-*The Mary Janes, country folk rock and Robbie Fulks, pop, twang, and rock.* Live music on Memorial Union's Terrace. (Rain location is the Rathskeller.) 9:30 p.m.-midnight.

Saturday, June 26

Badger State Summer Games-*Finals.* Olympic-style sports festival for WI residents of all ages. Various times and places throughout Madison. Call 251-3333. Free to the public; participants pay a fee.

Dane County Farmers' Market. One of the finest farmer's markets in the country and a Madison tradition. Over 300 local vendors offer homegrown produce and plants, cheeses, bakery goods, coffee and more. 6 a.m.-2 p.m., Capitol Square.

Michael Feldman's Whad 'Ya Know. Live radio broadcast of this hilarious call-in quiz/humor program broadcast on National Public Radio. 9:30 a.m.-11:30 a.m., Monona Terrace Community and Convention Center, One John Nolen Dr.
Call 261-4000.

University Theatre Production-*Ernest in Love.* This musical follows two young men as they bend the truth in order to add a dash of excitement to their bachelor lives. Enjoy drinks and snacks in the popular cabaret setting. 5 and 8:30 p.m., Gilbert Hemsley Theatre, Vilas Hall, 821 University Ave. Call 262-1500. Fee.

Terrace Music-*Richard Buckner, Americana.* Live music on Memorial Union's Terrace. (Rain location is the Rathskeller.) 9:30 p.m.-midnight. Call 262-2215.

Sunday, June 27

Badger State Summer Games-*Finals.* Olympic-style sports festival for WI residents of all ages. Various times and places throughout Madison. Call 251-3333. Free to the public.

Badger State Games Bike Race. 8:30 a.m., Capitol Square. Call 266-6033 or 266-4711.

Elvehjem Tour for Drop-in Visitors. 1:30 p.m., Paige Court, Elvehjem Museum of Art, 800 University Ave. Call 263-2246.

Carillon Recital. Tower tour following concert. 3-4 p.m., UW Memorial Carillon Tower, Observatory Dr. (near Bascom Hall). Call 262-1197 or 263-2374.

Things to do with Children at (and near) UW-Madison

Campus Assistance Center, 420 N Lake St, (608)263-2400

ARBORETUM (1207 Seminole Highway, 263-7888) A 1,240 acre outdoor ecological laboratory which is maintained by the UW-Madison for research and instruction, the Arboretum provides living examples of the major plant communities in the Midwest: prairies, woodlands, marshes, ponds and lakes. It's got lots of space for kids to run; great trails, too. Short (8-10 minutes) introductory slide shows, maps and information are available at the McKay Center which is open weekdays 9:30am to 4pm, weekends 12:30-4:00pm (weekend summer hours: 11am-3pm).

BABCOCK HALL (1605 Linden Dr., 262-3045) There is a dairy store on the 1st floor where freshly made milk, ice cream treats and Wisconsin cheese are for sale 9:00-5:30 Monday through Friday and 10:00-1:30 Saturday (open until 5:30 on Saturdays of home football games). From a 2nd floor observation balcony you can watch a modern dairy processing plant in operation Monday through Friday mornings; a brochure is available which describes the equipment and processes.

BIRGE HALL (Bascom Hill) On the 1st floor and 1st basement level there are rotating exhibits of natural history, biology and historical interest. Tours of the greenhouse, for groups of 10 or less, are available on a limited basis with advance notice. M-F 8am-4pm. (Visitors to the greenhouse must be older than 10 years old; greenhouse contact is Mohammed Mehdi Fayyaz, 262-2235.)

CAMPUS GREEN AREAS provide space, quiet, squirrels and a break from concrete, stop signs and right angles. Check a campus map or call Campus Assistance Center (263-2400) if you need directions to these oases: Picnic Point; Class of 1918 Marsh; Allen Centennial Gardens; John Muir Park and Knoll; Observatory Hill; Lakeshore Path; Camp Randall Park; Henry Mall; and Botany Garden.

CARILLON TOWER (1160 Observatory Dr.; recorded information, 262-1197) Carillon recitals are given at 3pm Sundays during Fall and Spring semesters and 8-week summer session. In addition, the tower is open during or following recitals (varies by month; consult recording).

CONCERTS (Call School of Music Concert Line, 263-9485).

DAIRY CATTLE CENTER (1815 Linden Dr., 262-2271) Visitors can observe the University's dairy research and instructional herd being milked seven days a week, starting at 3 pm. Reservations are not required.

ELVEHJEM MUSEUM OF ART (800 University Ave., 263-2246) The museum is one of the largest college galleries in the country. In addition to featuring special exhibitions, the Elvehjem has a permanent collection of paintings, sculptures and graphics from ancient times to the present. Open 9am to 5pm Monday through Sunday.

HENRY VILAS ZOO (702 S. Randall St., 266-4732) True, it's not a campus attraction, but it's a great zoo! It's Children's Zoo is open Memorial Day to Labor Day, and there are camel rides for kids on Sunday mornings in summer. Located nine blocks south of Union South on Randall; open 9:30am-4:45pm daily.

METEOROLOGY BUILDING (1225 W. Dayton St.) You can see live weather satellite pictures in the lobby whenever the building is open. (This satellite view is also available outside room 333 Bascom Hall and in Union South near the Dayton St. entrance.)

UW SPACE PLACE (1605 S. Park St., 262-4779) The Space Place offers regular public lectures, guest speakers and Saturday children's workshops; call for current schedule. (It is located just south of Arby's on S. Park St.)

UNION TERRACE on Lake Mendota behind Memorial Union is a nice location to enjoy the view of the lake.

UNIVERSITY THEATER (Call Vilas Box Office, 262-1500).

VIEWS FROM TALL BUILDINGS can be a real kick for kids. During regular building hours, you're welcome to check the views from Van Vleck Hall, Van Hise Hall, Educational Sciences or Wisconsin Alumni Research Foundation buildings.

WASHBURN OBSERVATORY (1401 Observatory Dr., 262-9274) On the 1st and 3rd Wednesday evenings of each month, if the sky is 75% clear, the Observatory is open to the public to see celestial sights such as the moon, planets, star clusters or nebulae. During the 8 week summer session the Observatory is open every Wednesday. The observatory opens at 9pm April through October, and at 7:30pm November through March.

A trip up State Street to the Capitol Square will get you in the neighborhood of these attractions:

MADISON CHILDRENS MUSEUM (State St. at Capitol Square, 256-6445) A museum devoted to the philosophy that learning by diong is child's play. On-going and changing exhibits appropriate for children ages 1-13. Admission: $3, children under age 2 free. Open Tues-Sun 10am-5pm (Thurs until 8pm); closed Monday.

STATE CAPITOL TOURS (266-0382) Tours are free and leave from the ground floor of the rotunda; offered Mon-Sat 9, 10, 11am; 1, 2, 3pm. Sunday 1, 2, 3pm (call for holiday hours). Building is open 6am-8pm daily.

STATE HISTORICAL MUSEUM (30 N. Carroll St., 264-6555) Free; contains permanent exhibits on Wisconsin Indians, other exhibits that change three times each year, a gift shop and theater. Open Tues-Sat 10-5, Sunday Noon-5pm (closed Mondays and holidays).

WISCONSIN VETERANS MUSEUM (30 W. Mifflin St., 266-1680) Free; focuses on the contributions of state citizens to American military activities from the Civil War through the Persian Gulf conflict. Open Tues-Fri 9am-4:30pm, Sundays 12-4 Nov-April (closed Mondays).

Call us for all your information needs!

Campus Assistance Center

263-2400

Mad Fun in The Mad City

LET'S TALK FOOD!

American Family Restaurants

Friday's	420 Gammon Place	833-8443
Houlihan's	1262 John Hammons Dr	827-0334
Chili's Grill & Bar	7301 Mineral Point Road	833-8851
Hooters	6654 Mineral Point Road	829-4668
Ovens of Brittany	3244 University Avenue	233-7701
Bluephies	2701 Monroe	231-3663

Pizza

Pizzeria Uno Chicago Bar & Grill	222 West Gorham	833-7200
Edwardo's Natural Pizza Restaurant	6601 Mineral Point Road	833-9100
Sal's Pizzaria	313 State Street	251-2800

Mexican

El Charro Mexican Food	1831 Monroe	255-1828
Pasqual's	2534 Monroe	238-4419
La Hacienda	515 South Park	255-8227
Taqueria Gila Monster	106 King Street	255-6425

Asiatic

Imperial Garden	2039 Allen Boulevard	238-6445
Ginza of Tokyo	6734 Odana Road	833-8282
Sa-Bai Tong	2840 University Avenue	238-3100
Ton Ton Restaurant	122 State Street	251-2171
Wasabi	449 State Street	255-5020
Bahn Tai	944 Williamson	256-0202

Fancy

Blue Marlin	101 North Hamilton	255-2255
Deb & Lola's	227 State Street	255-0820
Kosta's Restaurant	117 State Street	255-6671
L'Etoile	25 North Pinckney	251-0500
Louisianne's	7464 Hubbard Avenue	831-1929
Opera House	117 Martin Luther King Jr. Blvd	284-8466
White Horse Inn	202 North Henri	255-9933
Wild Iris Café	1225 Regent Street	257-4747

From the Islands

Creole Café	2611 Monroe	233-6311
Jolly Bob's	1210 Williamson	251-3902

Caspian Café	17 University Square	259-9009
Horn of Africa	117 East Mifflin	255-2077
Kabul	541 State Street	256-6322

Steak and Ribs

Damon's	8150 Excelsior Drive	836-6466
Big Mama & Uncle Fats Barbeque & Blues	6804 Odana Road	829-2683
Prime Quarter Steak House	3520 East Washington	244-3520

Great Burgers

Dotty Dumplings Dowry	116 North Fairchild	255-3175

Italian

Pasta per Tutti	2009 Atwood Drive	242-1800
Tutto Pasta	State Street	
Granita Restaurant	5518 University Avenue	233-2200

A good lunch

Sunporch	2701 University Avenue	231-1111
Radical Rye	231 State Street	256-1200
Delitalia	2850 University Avenue	233-4800
Lou Lou's Deli and Restaurant	2524 University Avenue	233-2172

WAKE ME UP IN THE MORNING!

The Best Pancakes Ever

The Original Pancake House	320 North Midvale	231-3666

Coffee, Café and Caffe

Victor Allen's	2858 University Avenue	231-3222
Steep & Brew	2871 University Avenue	238-6878
Starbuck's	Across from Victor Allen	
Ancora Coffee	3310 University Avenue	

Bagels

Bruegger's Bagels	3310 University Avenue	
Bagels Forever	2947 University Avenue	231-2427

NIGHT LIFE AND PARTY TIME!

Pub and Breweries

Blue Moon Bar & Grill	2535 University Avenue	233-0441
Great Dane Pub & Brewing Company	123 East Doty	284-0000
Angelic Brewery	322 West Johnson	257-2707
Café Montmartre	127 East Mifflin	255-5900
Union Terrace	Campus Memorial Union – great view of the lake Langdon Street (remember your nametag)	

Comedy Clubs

Comedy Sports	449 State Street	255-8888
Funny Business	117 State Street	256-0099

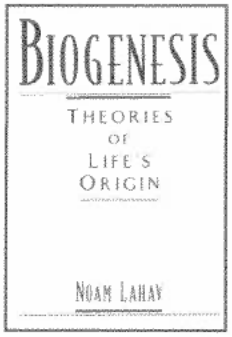
Dancing

Bullwinkles	624 University Avenue	257-1122
Flashback	1313 John Q Hammon Drive	831-0202
The Cardinal (Salsa, Techno, etc.)	418 East Wilson	251-0080
Karoeke Kid	Next to Bullwinkle's	
Dry Bean (Country)	5264 Verona Road	274-2326

Please Check the Isthmus for weekly listings of local bands and concerts in various bars. All the movie theaters are listed in the local newspapers and the Isthmus for your browsing.

Note that the above are only recommendations. Please let your fingers do the walking in the yellow pages of the phone book and ask your friends and the locals for advice.

Enjoy **Madison**, the #1 mid-size city to live in the United States of America.



BIOGENESIS
Theories of Life's Origin

Noam Lahav, Emeritus Professor, *Hebrew University of Jerusalem*

This extraordinary new book provides a detailed, critical discussion of the modern scientific study of the origin of life. It includes biological, geological, and cosmological background material and explains the rationale behind the main assumptions and experimental strategies.

February 1999 368 pp.; 6 halftones, & 53 line illus

0-19-511754-9 cloth $65.00
0-19-511755-7 paper $35.00

ENDLESS FORMS
Species and Speciation

Daniel Howard, *New Mexico State University*, and Stewart Berlocher, *University of Illinois*

This volume presents the newest findings on speciation, bringing readers up to date on species concepts, modes of speciation, and the nature of reproductive barriers. Topics include the forces that drive divergence, the genetics of reproductive isolation, and hybrid zones.

December 1998 496 pp.; 125 linecuts

0-19-510900-7 cloth $90.00
0-19-510901-5 paper $39.95

REEF EVOLUTION

Rachel Wood

Using more than 250 illustrations and specially drawn ecological reconstructions of reef communities, Rachel Wood provides an evolutionary approach to understanding ancient coral reef ecosystems. This book is a useful resource for students and researchers in evolution, marine biology, ecology, paleontology, biodiversity, and geology.

July 1999 432 pp.; 162 halftones, and 122 linecuts

0-19-854999-7 cloth $100.00
0-19-857784-2 paper $37.50

EVOLUTION OF BIOLOGICAL DIVERSITY
From Population Differentiation to Speciation

Anne Magurran, *University of St. Andrews*, and Robert May, *Oxford University*

This volume contains work by some of the world leaders in the field, including Simon Conway-Morris, Sir Robert May, and Stephen Jay Gould, who examine a variety of aspects from the ecological and behavioral basis for differentiation to the role of natural selection.

June 1999 352 pp.; 51 line, 2 halftones

0-19-850304-0 cloth $105.00
0-19-850305-9 paper $45.00

EVOLUTIONARY MEDICINE

Wenda Trevathan, *New Mexico State University*, James McKenna, *University of Notre Dame*, and E.O. Smith, *Emory University*

Evolution is the single most important idea in modern biology, shedding light on virtually every biological question, from the shape of orchid blossoms to the distribution of species across the planet. Collecting work from leaders in the field, this volume describes an array of new and innovative approaches to human health that are based on an appreciation of evolutionary history, covering issues at every stage of life from infancy to adulthood.

May 1999 512 pp.; 6 halftones, 33 linecuts

0-19-510355-6 cloth $70.00
0-19-510356-4 paper $35.00

FOSSILS AND EVOLUTION

Tom Kemp, *Oxford University*

This book focuses on the ideas, methodology and scope of contemporary palaeobiology, examining the complex interdependence of evolutionary theory and the interpretation of the fossil record. It demonstrates that this is not the circular argument between pattern and process sometimes alleged but a matter of the interrelationship between palaeontological and neontological evidence.

April 1999 304 pp.; 151 line, 10 halftones

0-19-850345-8 cloth $80.00
0-19-850424-1 paper $37.00

MATERNAL EFFECTS AS ADAPTATION

Timothy Mousseau, *University of South Carolina*, and Charles Fox, *Fordham University*

"Its main message is that maternal effects may often have evolved as adaptations for life in heterogeneous environments. The nineteen chapters fall into four groups: theoretical and conceptual issues; assessing and measuring maternal effects; reviews of maternal effects in various taxa...; and specific case studies in four taxa..." — *Environment*

1998 400 pp.; 73 illus.

0-19-511163-X $65.00

EVOLUTION ON ISLANDS
Originating from Contributions to a Discussion Meeting of the Royal Society of London

Isolated from the continental process of gene flow, islands display remarkable rapidity of diversifying evolution, as well as unique species. This book surveys our current knowledge and understanding of microevolution, speciation, and adaptive radiation on islands and is ideal for students and researchers.

1998 352 pp.; 96 halftones, linecuts, and maps

0-19-850172-2 cloth $105.00
0-19-850171-4 paper $55.00

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www.oup-usa.org

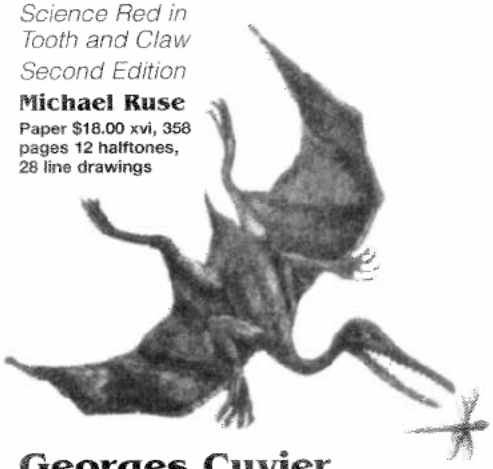
the diversity of life

Forthcoming
French DNA
Trouble in Purgatory
Paul Rabinow
Cloth $25.00 200 pages (est.)

Forthcoming
Morphological Integration
Everett C. Olson and Robert L. Miller
With a New Afterword by Barry Chernoff and Paul Magwene
Paper $18.00 viii, 352 pages 81 line drawings, 111 tables

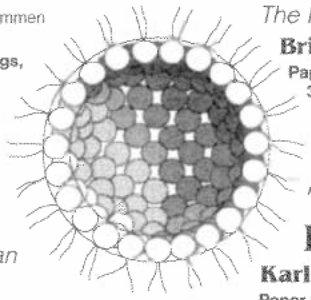
The Shape of Life
Genes, Development, and the Evolution of Animal Form
Rudolf A. Raff
Paper $29.95 xxiv, 520 pages 2 halftones, 59 line drawings, 3 tables

Forthcoming
The Darwinian Revolution
Science Red in Tooth and Claw
Second Edition
Michael Ruse
Paper $18.00 xvi, 358 pages 12 halftones, 28 line drawings



Georges Cuvier, Fossil Bones, and Geological Catastrophes
New Translations and Interpretations of the Primary Texts
Martin J. S. Rudwick
Paper $19.00 xvi, 302 pages 20 halftones, 4 line drawings

Forthcoming
Killer Algae
Alexandre Meinesz
Translated by Daniel Simberloff
With a Foreword by David Quammen
Cloth $25.00 352 pages 8 color plates, 5 line drawings, 7 maps



Forthcoming
Tadpoles
The Biology of Anuran Larvae
Edited by Roy W. McDiarmid and Ronald Altig
Cloth $70.00 456 pages (est.), 118 halftones, 181 line drawings, 23 tables

Mammals of the Neotropics, Volume 3
The Central Neotropics: Ecuador, Peru, Bolivia, Brazil
John F. Eisenberg and Kent H. Redford
Cloth $80.00 644 pages (est.), 16 color plates, 3 halftones, 140 line drawings, 582 maps, 68 tables

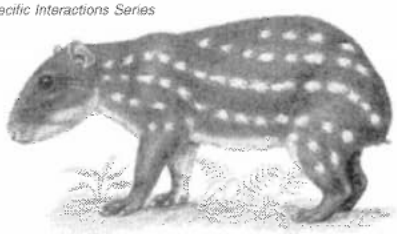
Forthcoming
Cetacean Societies
Field Studies of Dolphins and Whales
Edited by Janet Mann, Richard C. Connor, Peter L. Tyack, and Hal Whitehead
Paper $35.00 400 pages 16 color plates, 93 halftones, 2 maps, 41 line drawings, 21 tables

Cognitive Ecology
The Evolutionary Ecology of Information Processing and Decision Making
Edited by Reuven Dukas
Paper $30.00 x, 420 pages 97 line drawings, 2 tables

Untangling Ecological Complexity
The Macroscopic Perspective
Brian A. Maurer
Paper $18.00 x, 252 pages 36 line drawings, 6 tables, 1 map

The Evolutionary Biology of Plants
Karl J. Niklas
Paper $20.00 xx, 450 pages 2 halftones, 126 line drawings, 7 tables

Induced Responses to Herbivory
Richard Karban and Ian T. Baldwin
Paper $17.95 x, 320 pages 20 line drawings, 40 tables
Interspecific Interactions Series



The Coevolutionary Process
John N. Thompson
Paper $20.00 xii, 376 pages 6 halftones, 41 line drawings, 15 tables

Journals available at this meeting:

- **American Naturalist**
- **Quarterly Review of Biology**
- **Physiological and Biochemical Zoology**

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SCHEDULE AT A GLANCE

	Tuesday	Wednesday	Thursday	Friday	Saturday
8-10am		CONTRIBUTED PAPERS **Sessions 1-7** **8:30-10** **SYMPOSIUM 1A** ASN Young Investigator Awards	**SYMPOSIUM 3A** SSB: The evolutionary biology of prokaryotes **8:30-10** CONTRIBUTED PAPERS **Sessions 28-33**	CONTRIBUTED PAPERS **Sessions 53-58** **8-9:45** **SYMPOSIUM 5A** SSE: What about molecular clocks?	**8:30-10** CONTRIBUTED PAPERS **Sessions 78-83**
10-10:30am	Break	Break	Break	Break	Break
10:30-noon		CONTRIBUTED PAPERS **Sessions 8-13** **SYMPOSIUM 1B** ASN Young Investigator and SSE Dobzhansky Award winners	CONTRIBUTED PAPERS **Sessions 34-39** **SYMPOSIUM 3B** SSB: The evolutionary biology of prokaryotes	CONTRIBUTED PAPERS **Sessions 59-64** **10-12:00** **SYMPOSIUM 5B** SSE: What about molecular clocks?	CONTRIBUTED PAPERS **Sessions 84-89**
noon-1:15pm	**12:00-2:00** Joint SSE/ASN/SSB STEERING COMM.	Lunch **Education Lecture**: Dr. Jay Labov Individual SSB/ ASN/ SSE EDITORIAL BOARD MTGS.	Lunch **NSF Open forum**: Collaboratories in Evolutionary Biology	Lunch SSE BUSINESS MTG. ASN BUSINESS MTG.	Lunch
1:15-3pm	**1-5:00** SSE WORKSHOP Teaching evolution to undergraduates 1111 Genetics/Biotech	CONTRIBUTED PAPERS **Sessions 14-20** **SYMPOSIUM 2A** ASN: Species interactions and adaptive radiation	CONTRIBUTED PAPERS **Sessions 40-46** **SYMPOSIUM 4A** SSB: Molecular systematics and protein structure in the post-genomic world	CONTRIBUTED PAPERS **Sessions 65-70** **SYMPOSIUM 6A** SSE: Evolutionary biology of host-parasite systems	**1-2:00** SSE PRESIDENTIAL ADDRESS **2-3:00** CONTRIBUTED PAPERS **Sessions 90-94**

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	2:15-5:00 Individual SSE/ASN/SSB COUNCIL MTGS.				
3-3:30pm	Break	Break	Break	Break	Break
3:30-5pm		CONTRIBUTED PAPERS **Sessions 21-27** **SYMPOSIUM 2B** ASN: Species interactions and adaptive radiation	CONTRIBUTED PAPERS **Sessions 47-52** **SYMPOSIUM 4B** SSB: Molecular systematics and protein structure in the post-genomic world **4:30-5** SSB BUSINESS MTG.	CONTRIBUTED PAPERS **Sessions 71-77** **SYMPOSIUM 6B** SSE: Evolutionary biology of host-parasite systems	**3:30-4:45** CONTRIBUTED PAPERS **Session95-98**
5-6pm			**5-6:00** ASN PRESIDENTIAL ADDRESS (MU Theatre)	**5:50-6:30** Buses to MT	**5-6:00** *Special recognition event* James Crow and his legacy (MU Theatre)
6-10pm	**6-9:00** **Opening Reception** (MU Tripp Commons and Terrace)	**7-9:00** **POSTER SESSION 1** (MU)	**6-7:30** **Picnic Supper** (MU Terrace and Balcony) **7-9:00** **POSTER SESSION 2** (MU)	**6-7:15** *Reception* (MT Rooftop Garden) **7:15** *Banquet* (MT Ballroom) **8:45** *Awards Ceremony* **9:30-10** Buses return to MU	**6-9:00** *Final Reception* (MU) **9-2:00am** *End of Conference Dance Party* (Tripp Commons and Terrace, MU)

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new books from yale

Watching, from the Edge of Extinction
Beverly Peterson Stearns and Stephen C. Stearns

Master Control Genes in Development and Evolution
The Homeobox Story
Walter J. Gehring
Foreword by Frank Ruddle

Visit us at our booth

Reclaiming the Commons
Community Farms and Forests in a New England Town
Brian Donahue
Foreword by Wes Jackson

The Birth of the Cell
Henry Harris

Birds of Madagascar
A Photographic Guide
Peter Morris and Frank Hawkins

The Ambonese Curiosity Cabinet

Georgius Everhardus Rumphius
Translated, edited, annotated, and with an introduction by E. M. Beekman

Life in the Treetops
Adventures of a Woman in Field Biology
Margaret D. Lowman
Foreword by Robert Ballard

Joseph Leidy
The Last Man Who Knew Everything
Leonard Warren

Mammals of Madagascar
Nick Garbutt

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Nigel Cleere
Illustrated by Dave Nurney

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Barry Taylor
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New in paper

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Alan Feduccia

Manual of Ornithology
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Noble S. Proctor and Patrick J. Lynch
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Foreword by Roger Tory Petersor

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Darwinism Today is a series of books by leading figures in the field of evolutionary theory. The series developed out of a program at the London School of Economics that presents the latest Darwinian thinking and explores its application to humans. Helena Cronin and Oliver Curry, Series Editors

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Kingsley Browne

Neanderthals, Bandits, and Farmers
How Agriculture Really Began
Colin Tudge

Shaping Life
Genes, Embryos, and Evolution
John Maynard Smith

The Truth About Cinderella
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Education Lecture

Dr. Jay Labov

National Research Council

Improving Undergraduate Science Education: Roles and Opportunities for Professional Societies

When: June 23 at 12 noon
Where: State Historical Society Auditorium

Jay Labov, Director of the Division on Postsecondary Policy and Practice at the National Research Council's Center for Science, Mathematics, and Engineering Education, will discuss the "landscape" of national initiatives to improve undergraduate education and how professional disciplinary societies can contribute to these efforts. Topics to be discussed will include the National Science Education Standards for Grades K-12 and their implications for undergraduate education, the changing nature of introductory courses, and the roles and responsibilities of scientists in improving the preparation of future K-12 teachers. Following the presentation, SSE members will have the opportunity to discuss specifics about how the Society can become more effectively engaged in these kinds of activities.

What has the Education Committee Done Lately?

November 4-5, 1998. Aimed primarily at high school teachers, the SSE/SMBE symposium at the National Association of Biology Teachers entitled "Building the Web of Life: Evolution in Action." featured speakers David Jablonski, Linda Strausbaugh, and Steve Palumbi.

June 22, 1999. A workshop entitled "Teaching Evolution to Undergraduates" brought together a number of excellent speakers and faculty to discuss approaches to improving the teaching of evolution.

June 23, 1999. The Education Poster Session at this meeting is greatly expanded and will feature a wide variety of topics from curricula to public understanding of evolution.

1998-1999. A membership survey indicated that many members are interested in working in their local schools. Other members have volunteered to serve as expert consultants for curriculum developers, construct laboratory exercises, and contribute to planning an SSE Web site.

October 8, 1999. The SSE will sponsor a scientific symposium at SACNAS (Society for the Advancement of Chicanos and Native Americans in Science) featuring speakers Jeff Long, Allen Rodrigo, Scott Williams, and Linda Strausbaugh.

Have more ideas?
Please meet the members of the committee and share your thoughts at the Education Poster Session.

Schedule Of Sessions

WEDNESDAY, 23 JUNE

8:30-10:00	SYMP. 1A: ASN YOUNG INVESTIGATOR AWARDS	RM: MUT

8:00-10:00	Contributed Paper Sessions 1-7	Room
1	Adaptation: behavior	SHSA
2	Coevolution	MUTC
3	Developmental Evolutionary Biology	G1100
4	Quantitative Genetics	H3650
5	Macroevolution	MUPC
6	Mating/Breeding Systems: animals	H1111
7	Molecular Systematics: plants	ED147

10:30-12:00	SYMP. 1B: ASN YOUNG INVESTIGATOR AND SSE DOBZHANSKY PRIZE AWARDS	RM: MUT

10:30-12:00	Contributed Paper Sessions 8-13	Room
8	Adaptation: life histories	MUPC
9	Biogeography/Geographic Variation: vertebrates	MUTC
10	Molecular Systematics: metazoans	ED147
11	Speciation and Cladogenesis	H3650
12	Molecular Evolution: population genetics	G1100
13	Conservation Genetics	SHSA

1:15-3:00	SYMP. 2A: ASN SPECIES INTERACTIONS AND ADAPTIVE RADIATION	RM:MUT

1:15-3:00	Contributed Paper Sessions 14-20	Room
14	Conservation Genetics	H3650
15	Combined-Data Systematics	G2080
16	Developmental Evolutionary Biology	MUTC
17	Molecular Systematics: mammals	G2120
18	Molecular Systematics: birds	G1100
19	Mating/Breeding Systems: plants	SHSA
20	Artificial Selection/Experimental Evolution: plants and viruses	MUPC

3:30-5:00	SYMP. 2B: ASN SPECIES INTERACTIONS AND ADAPTIVE RADIATION	RM:MUT

3:30-5:15	Contributed Paper Sessions 21-27	Room
21	Combined-Data Systematics	G2080
22	Hybridization and Hybrid Zones: plants and animals	H3650
23	Mating/Breeding Systems: plants	G1100
24	Molecular Evolution: genomes	SHSA
25	Molecular Evolution	MUPC
26	Molecular Systematics: mammals	G2120
27	Developmental Evolutionary Biology	MUTC

7:00-9:00	POSTER VIEWING	MEMORIAL UNION

ED147= Education 147	G1100= Granger Hall 1100	MUT= Mem. Union Theater
S180= Science Hall 180	G2080= Granger Hall 2080	MUTC= Mem. Union Tripp Commons
H1111= Humanities 1111	G2120= Granger Hall 2120	MUPC= Mem. Union Play Circle
H3650= Humanities 3650	G4151= Granger Hall 4151	SHSA= State Hist. Society Aud.

THURSDAY, 24 JUNE

8:00-10:00	SYMP. 3A: SSB THE EVOLUTIONARY BIOLOGY OF PROKARYOTES (Symposium Starts At 8, Contributed Papers Start At 8:30)	RM: MUT

8:30-10:00	Contributed Paper Sessions 28-33	Room
28	Population and Ecological Genetics	MUTC
29	Molecular Evolution	G1100
30	Mating/Breeding Systems: plants	MUPC
31	Population Genetics	SHSA
32	Molecular Systematics: mammals	ED147
33	Analysis of Life Histories and Sexual Selection	H3650

10:30-12:00	SYMP. 3B: SSB THE EVOLUTIONARY BIOLOGY OF PROKARYOTES	RM: MUT

10:30-12:00	Contributed Paper Sessions 34-39	Room
34	Artificial Selection/Experimental Evolution: mice and flies	SHSA
35	Population Genetics: molecular evolution	MUTC
36	Measuring Selection	MUPC
37	Population Genetics: geographic variation	H3650
38	Molecular Systematics: fish	ED147
39	Ecological Genetics	G1100

1:15-3:00	SYMP. 4A: SSB MOLECULAR SYSTEMATICS AND PROTEIN STRUCTURE IN THE POST-GENOMIC WORLD	RM: MUT

1:15-3:00	Contributed Paper Sessions 40-46	Room
40	Analysis of Life Histories	G2080
41	Conservation Genetics	MUPC
42	Species Interactions	G1100
43	Sexual Selection	H1111
44	Ecological Genetics	MUTC
45	Molecular Systematics: arthropods	H3650
46	Population Genetics and Fluctuating Asymmetry	SHSA

3:30-5:00	SYMP. 4B: SSB MOLECULAR SYSTEMATICS AND PROTEIN STRUCTURE IN THE POST-GENOMIC WORLD	RM: MUT

3:30-5:00	Contributed Paper Sessions 48-53	Room
47	Artificial Selection/Experimental Evolution	G2080
48	Sexual Selection	MUPC
49	Biogeography/Geographic Variation: mammals	G1100
50	Quantitative Trait Loci	SHSA
51	Systematics: methods	H3650
52	Population Genetics: geographic variation	MUTC

5:00-6:00	ASN PRESIDENTIAL ADDRESS	RM: MUT
7:00-9:00	POSTER VIEWING	MEMORIAL UNION

ED147= Education 147
S180= Science Hall 180
H1111= Humanities 1111
H3650= Humanities 3650

G1100= Granger Hall 1100
G2080= Granger Hall 2080
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G4151= Granger Hall 4151

MUT= Mem. Union Theater
MUTC= Mem. Union Tripp Commons
MUPC= Mem. Union Play Circle
SHSA= State Hist. Society Aud.

FRIDAY, 25 JUNE

8:00-9:45	SYMP. 5A: SSE WHAT ABOUT MOLECULAR CLOCKS?	RM: MUT

8:00-10:00	Contributed Paper Sessions 53-58	Room
53	Biogeography/Geographic Variation: insects	MUTC
54	Coevolution	H3650
55	Molecular Systematics: arthropods	S180
56	Sexual Selection	MUPC
57	Molecular Systematics: plants	G1100
58	Analysis Of Life Histories: senescence and trade-offs	SHSA

10:00-12:00	SYMP. 5B: SSE WHAT ABOUT MOLECULAR CLOCKS?	RM: MUT

10:30-12:00	Contributed Paper Sessions 59-64	Room
59	Biogeography: fish	H3650
60	Evolution of Sex and Sex Determination	MUPC
61	Speciation and Cladogenesis	G2080
62	Combined-Data Systematics	SHSA
63	Ecological Genetics	S180
64	Evolutionary Biology of Parasites, Pathogens and Their Hosts (Companion session to afternoon SSE Symposium 6)	MUTC

1:15-3:15	SYMP. 6A: SSE EVOLUTIONARY BIOLOGY OF PARASITES, PATHOGENS AND THEIR HOSTS	RM: MUT

1:15-3:00	Contributed Paper Sessions 65-70	Room
65	Biogeography: birds	MUTC
66	Adaptation: life histories	H3650
67	Sexual Selection	S180
68	Population Genetics: molecular evolution	SHSA
69	Molecular Evolution: genomes	G2080
70	Molecular Systematics: metazoa	G1100

3:30-5:00	SYMP 6B: SSE EVOLUTIONARY BIOLOGY OF PARASITES, PATHOGENS AND THEIR HOSTS	RM: MUT

3:30-5:15	Contributed Paper Sessions 71-77	Room
71	Biogeography: plants	G2120
72	Ecological Genetics	H1111
73	Systematics and Character Evolution	MUTC
74	Species Interactions	G1100
75	Biogeography: metazoans	SHSA
76	Molecular Evolution: phylogeny-based comparative analyses	S180
77	Adaptation: life histories	H3650

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SATURDAY, 26 JUNE

8:30-10:00	Contributed Paper Sessions 78-83	Room
78	Molecular Systematics: methods	G2080
79	Hybridization and Hybrid Zones: animals	MUPC
80	Phenotypic Plasticity	H3650
81	Molecular Systematics: birds	G2120
82	Population Genetics	MUTC
83	Molecular Evolution	G1100

10:30-12:00	Contributed Paper Sessions 84-89	Room
84	Mating/Breeding Systems	G2080
85	Hybridization and Hybrid Zones: plants	S180
86	Developmental Evolutionary Biology	G1100
87	Molecular Evolution: population genetics	MUTC
88	Phenotypic Plasticity	H3650
89	Molecular Evolution: rates and constraints	MUPC

1:00-2:00	SSE PRESIDENTIAL ADDRESS	RM: MUT

2:00-3:00	Contributed Paper Sessions 90-94	Room
90	Analysis of Life Histories	MUPC
91	Population Genetics: theory and methods	MUTC
92	Quantitative Genetics	G1100
93	Molecular Systematics: methods	H3650
94	Mechanisms of Post-Mating Reproductive Isolation	G2080

3:30-4:45	Contributed Paper Sessions 95-98	Room
95	Molecular Systematics: vertebrates	MUTC
96	Population Genetics: coevolution and conservation	G1100
97	Quantitative Genetics	H3650
98	Speciation and Cladogenesis	MUPC

5:00-6:00	CROWFEST	RM: MUT

ED147= Education 147
S180= Science Hall 180
H1111= Humanities 1111
H3650= Humanities 3650

G1100= Granger Hall 1100
G2080= Granger Hall 2080
G2120= Granger Hall 2120
G4151= Granger Hall 4151

MUT= Mem. Union Theater
MUTC= Mem. Union Tripp Commons
MUPC= Mem. Union Play Circle
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Scientific Program

Oral Presentation Schedule

Wednesday, 23 June 8:00-10:00

SYMPOSIUM 1A ASN: YOUNG INVESTIGATOR AWARDS **8:30-10:00 RM:MUT**

Organizer: Guy Bush

1 8:30 Multi-level selection and the general life history problem
T. Day

2 9:00 Induced plant defense against herbivory: adaptive plasticity and beyond
A.A. Agrawal

3 9:30 Are terrestrial ecologists all wet or are aquatic ecologists all dried up? Viewing traits and trade-offs at the macro-scale and the context dependence of ecological patterns
J.M. Chase

SESSION 1 ADAPTATION: BEHAVIOR **8:00-10:00 RM: SHSA**

Chair: Catherine Craig

4 8:00 Surviving attack by predators: behavior, speed, and escape success of guppies
*S. O'Steen, A. F. Bennett

5 8:15 Host choice and genetic differentiation among populations of the weevil *Larinus cynarae*
*I.Olivieri, Y. Dubois, Y. Michalakis

6 8:30 Sensory drive in the evolution of stabilimenta in spider webs
T.A. Blackledge

7 8:45 Heritable variation in web-decorating is maintained by a selective conflict between the predators of spiders and spider prey
C. Craig

8 9:00 Morphology, physiology, and locomotor performance in phrynosomatid lizards
*K.E. Bonine, T.T. Gleeson, T. Garland, Jr.

9 9:15 Has 130 year-old Mullerian mimicry theory been overturned?
J. Mallet

10 9:30 Evolutionary diversification of a sound producing apparatus in spiny lobsters (Palinuridae)
S. Patek

11 9:45 CANCELLATION

SESSION 2 COEVOLUTION **8:00-10:00 RM:MUTC**

Chair: Andrew Peek

12 8:00 Cospeciation of deep-sea clams and their symbiotic sulfur-oxidizing gill bacteria
A.S. Peek†

13 8:15 Coevolution in dioecious fig pollination: inferences from phylogeny
G. D. Weiblen†

14 8:30 Primates and their pinworm parasites: the Cameron hypothesis revisited
*J.P. Hugot

15 8:45 Phylogeny and co-evolution of galliform birds and *gag* retroelements
*D.E. Dimcheff†, S. Drovetskii, D.P. Mindell

16 9:00 Lizard malaria in a Caribbean jungle: reconciling phylogenies of *Anolis* and *Plasmodium*
*S.L. Perkins, M.A. Charleston

17 9:15 The role of host immunity in the evolution of virulence in malaria parasites
*M.J. Mackinnon, A.F. Read

18 9:30 Virulence and transmission dynamics of parasitic nematodes
*D.L. Medica, P.E. Smouse, M.V.K. Sukhdeo

19 9:45 Playing by different rules: evolution of virulence in pathogens that sterilize
*K.J. O'Keefe, S.A. Richards, W.G. Wilson

SESSION 3 DEVELOPMENTAL EVOLUTIONARY BIOLOGY 8:00-10:00 RM:G1100

Chair: Gunter Paul Wagner

20 8:00 Hox gene expression and modes of digit development: implications for the homology of the urodele autopodium
*G.P. Wagner, M. DiLuna, C.-H. Chiu

21 8:15 Developmental consequences of natural hyperthermia and heat-shock proteins in *Drosophila melanogaster*
*S.P. Roberts, M.E. Feder

22 8:30 Morphometric analysis of a *Drosophila* mutant with a wing phenotype of variable expressivity
*J.M. Marcus, C.P. Klingenberg

23 8:45 Development and evolution of allometry in insects
*D.J. Emlen, D.L. Stern

24 9:00 Why do almost all mammals have 7 cervical vertebrae? Developmental constraints, hox genes and cancer.
F. Galis

25 9:15 Detecting global heterochrony: how similar do ontogenies have to be?
*M.L. Zelditch, W.L. Fink

26 9:30 Ontogeny and phylogeny of the crocodylian limb skeleton
H.C.E. Larsson

SESSION 4 QUANTITATIVE GENETICS 8:00-10:00 RM:H3650

Chair: Derek Roff

27 8:00 Predicting correlated responses in natural populations: changes in JHE activity in the Bermuda population of the sand cricket
*D.A. Roff, D.J. Fairbairn

28 8:30 Quantitative genetics of function-valued traits: estimating mutational variance for age-specific mortality rates in *Drosophila*
*S.D. Pletcher, C.J. Geyer

29 8:45 The rate of mildly deleterious mutation in *Drosophila*: new estimates, a reanalysis of the old studies, and the effects of genotype-environment interactions on the estimates
J.D. Fry

30 9:00 Genetic variation and phenotypic plasticity in the timing of migration of the blackcap (*Sylvia atricapilla*)
*F. Pulido, P. Berthold

31 9:15 Comparing levels of selection over a range of competitive environments: does the level of analysis, phenotypic, paternal, or maternal, alter predicted response to selection?
*D.A. Thiede, M.L. Stanton, B.A. Roy

32 9:30 A demographic - evolutionary model for the effects of supplementation and introgression
J. Tufto

33 9:45 A covariance approach to understanding interspecific selection
*E.D. Brodie III, B. Ridenhour, A. Agrawal

SESSION 5 MACROEVOLUTION 8:00-10:00 RM:MUPC

Chair: Gunther Eble

34 8:00 Origination patterns in the fossil record
G.J. Eble

35 8:15 Assessing evolutionary patterns in floral morphology
M.S. Brady

36 8:30 Life-history evolution, biogeography, and diversification in Hydrophyllaceae: a test of the angiosperm family-pairs hypothesis
D.M. Ferguson†

37 8:45 Comparative methods, classes, and individuals: what does catostomid gill raker length have to do with this mess?
P.W. Willink

38 9:00 Phylogenetic perspectives on cauliflory.
B. A. Whitlock†

39 9:15 Can molecular data demonstrate ancient mass extinctions and adaptive radiations?
J. Alroy

40 9:30 Interval directed graphs and stratigraphic constraints
*G.F. Estabrook, F.R. McMorris

41 9:45 A proposed method for increasing the power and rigor of replicated tests of key innovation hypotheses
*B.R. Moore, K.M.A. Chan

SESSION 6 MATING/BREEDING SYSTEMS: ANIMALS 8:00-10:00 RM: H1111

Chair: Jodie Painter

42 8:00 Multiple paternity in wood mice: causes and consequences
*G. Gerlach, J. Seckinger

43 8:15 Emancipation in harems? Paternity, reproductive success and relatedness in the bat *Saccopteryx bilineata*
G. Heckel

44 8:30 Using microsatellites to untangle relatedness and helping behaviour in a cooperatively breeding bird
*J. Painter, R.H. Crozier, M.F. Clarke

45 8:45 tra-2 regulation and mating system evolution in the nematode genus *Caenorhabditis*
*E.S. Haag, J.E. Kimble

46 9:00 Breeding systems and hummingbird evolution
R. Bleiweiss

47 9:15 Microsatellite analyses of parentage and nest-guarding in the tesselated darter (PISCES: Percidae)
*J.A. DeWoody, D. Fletcher, J.C. Avise

48 9:30 Origin and diversification of haplodiploid, inbreeding scolytid beetle lineages
*B.B. Normark, B.H. Jordal, B.D. Farrell

49 9:45 Genetic analysis of sequential clutches in the Painted Turtle, *Chrysemys picta*: sperm storage and remating behavior of individual females
*D.E. Pearse, F.J. Janzen, J.C. Avise

SESSION 7 MOLECULAR SYSTEMATICS: PLANTS **8:00-10:00 RM:ED147**

Chair: Susanne Renner

50 8:00 Phylogenetics of the genus *Dahlia* (Asteraceae)
*D.E. Saar, P.D. Sorensen, N.O. Polans

51 8:15 Molecular phylogenetics and character evolution in the recently resurrected plant family Themidaceae
*J.C. Pires†, K.J. Sytsma

52 8:30 The molecular systematics and biogeography of the Australian scleromorphic genus *Banksia* (Proteaceae)
*A.R. Mast†, T.J. Givnish

53 8:45 Dating branching times in Melastomataceae (Myrtales)
*S.S. Renner, G. Clausing, K. Meyer

54 9:00 Building grass trees
*G. Petersen, O. Seberg

55 9:15 Phylogeny of gingers
L. Buchholt Pedersen†

56 9:30 Phylogeny of a newly circumscribed Saxifragales: implications for floral diversification in an ancient clade of eudicots.
*M. Fishbein, C. Hibsch-Jetter, D. Soltis, L. Hufford, S.B. Hoot

57 9:45 A phylogenetic analysis of the tribes Beslerreae and Napeontheae (Gesnerraceae): parsimony and maximum likelihood analyses of ndhF sequences
J. F. Smith

SYMPOSIUM 1B: ASN YOUNG INVESTIGATOR WINNERS AND SSE DOBZHANSKY PRIZE PRESENTATION **10:30-12:00 RM:MUT**

Organizer: Guy Bush

58 10:30 Extinctions, colonizations and genetic differentiation of populations
P.K. Ingvarsson

59 11:00 Incest ain't always best: causes and consequences of inbreeding in a natural vertebrate population
L. Keller

60 11:30 Indirect genetic effects from social interactions
J. Wolf - *SSE Dobzhansky Prize*

SESSION 8 ADAPTATION: LIFE HISTORIES **10:30-12:00 RM:MUPC**

Chair: John Endler

61 10:30 Evolution of crypsis during signaling: when colorful does not matter
J. A. Endler

62 10:45 A comparative test of ecological factors that influence character release in Adirondack sunfish
B.W. Robinson

63 11:00 Covariation of morphology, ecology and locomotor performance in dragonfly larvae
*J.V. Robinson, M.L. Price

64 11:15 Morphological plasticity and trade-offs induced by an invading crab predator
*G.C. Trussell, L.D. Smith

65 11:30 Sexual dimorphism and adaptive patterns in Caribbean Anolis lizards: have males and females evolved independent "niches"?
M.A. Butler

66 11:45 CANCELLATION

SESSION 9 BIOGEOGRAPHY/GEOGRAPHIC VARIATION: VERTEBRATES 10:30-12:00 RM:MUTC

Chair: Anne Yoder

67 10:30 Paleodispersals of the orangutan: population genetics meets GIS and bathometry
C. Muir†

68 10:45 Pleistocene glaciation, population substructure, and genetic differentiation in long-generation time vertebrates: a case study in eastern Australian turtles
*H. B. Shaffer, B. L. Storz, A.E. Georges, D. Starkey

69 11:00 Intra- and interspecific phylogenies of *Desmognathus* salmanders across the eastern Continental Divide
L.J. Rissler

70 11:15 Population genetic analysis of the evolution of a color pattern polymorphism shared among species of frogs
A. J. Crawford

71 11:30 Riverine diversification of Amazonian rats: uncoupling history from local ecology
*M.D. Matocq, M.N.F da Silva, J.L. Patton

72 11:45 Genetic data contradict established views of mouse lemur biogeography and taxonomy
*A.D. Yoder, R. Rasoloarison, J.A. Irwin, J. Ganzhorn, S. Goodman, S. Atsalis

SESSION 10 MOLECULAR SYSTEMATICS: METAZOANS 10:30-12:00 RM:ED147

Chair: Jeffrey Boore

73 10:30 Assessing the origins and monophyly of lophophorate metazoans with hox genes
*K.M. Halanych, Y. Passamaneck

74 10:45 Long-branch attraction in metazoan phylogenetics: investigation of examples from real data
*F.E. Anderson†, D.L. Swofford

75 11:00 Comparing complete mitochondrial genomes for metazoan phylogeny
*J.L. Boore, D.V. Lavrov, K.G. Helfenbein, L. Rosenberg, W.M. Brown

76 11:15 Arthropod phylogeny based on gene arrangement and other characters from mtDNA
*D.V. Lavrov†, W.M. Brown

77 11:30 Lophophorate phylogeny: An analysis of mtDNA
*K. G. Helfenbein, J. L. Boore, W. M. Brown

78 11:45 Are the Microhylidae (Anura:Neobatrachia:Ranoidea) monophyletic?
*H.E. Robeck†

SESSION 11 SPECIATION AND CLADOGENESIS 10:30-12:00 RM:H3650

Chair: Maria Servedio

79 10:30 Reinforcement and the genetics of non-random mating
M.R. Servedio

80 10:45 Null models of phylogenetic asymmetry and the estimation of cladogram probabilities
*K.M.A. Chan†, B.R. Moore

81 11:00 Genetic differentiation and speciation in *Silene*
*L.C. Moyle, J. Antonovics

82 11:15 Cryptic crab spiders: molecular evidence for adaptive radiation in Hawaii
*J.E. Garb†, R.G. Gillespie

83 11:30 Positive selection promotes lineage-specific evolution of gamete incompatibility in neotropical sea urchins
M.A. McCartney

84 11:45 Evolution of pollination systems in Sinningieae (neotropical gesneriads): a phylogenetic approach based on molecular, morpholgical, and biochemical data
*M. Perret, V. Savolainen, A. Chautems, R. Spichiger

SESSION 12 MOLECULAR EVOLUTION: POPULATION GENETICS 10:30-12:00 RM:G1100

Chair: Mary Kuhner

85 10:30 DNA variation in a 10 kb noncoding region in human populations
*Z. Zhao, L. Jin,Y-X. Fu, W-H. Li

86 10:45 Polymorphism and divergence in *Drosophila* accessory gland proteins
*A.G. Clark, B. Todd, D.J. Begun

87 11:00 Use of single nucleotide polymorphism data to estimate population parameters
*M.K. Kuhner, J. Yamato, P. Beerli, J. Felsenstein

88 11:15 Molecular evolution of a yeast prion
*M. A. Jensen, H. True-Krob, Y. O. Chernoff, S. L. Lindquist

89 11:30 Molecular evolution of genes on the neo-sex chromosomes of *Drosophila miranda*
*S. Yi, B. Charlesworth

90 11:45 Gene duplication and the origin of vertebrates
A. P. Martin

SESSION 13 CONSERVATION GENETICS 10:30-12:00 RM:SHSA

Chair: Melanie Culver

91 10:30 An evaluation of the usefulness of microsatellite DNA for measuring genetic diversity in bottlenecked populations
*C.C. Spencer, J.E. Neigel, P.L. Leberg

92 10:45 Automated genetic typing using oligonucleotide ligation assay - an example for whale species identification
*F. Cipriano, S. R. Palumbi

93 11:00 Genetic diversity of a captive breeding colony of the endangered swift fox, using microsatellites
*S.Bremner, M.J. Stanhope, P. Prodohl

94 11:15 Genetic evidence for a South American origin of modern pumas (*Puma concolor*): a phylogeographic study using mitochondrial DNA and microsatellites
*M. Culver, W.E. Johnson, J. Pecon-Slattery, S.J. O'Brien

95 11:30 Conservation genetics and molecular systematics of sturgeon
*P. Doukakis, V.J. Birstein, R. DeSalle

96 11:45 Nearly-neutral evolution and persistence of small populations: the paradox of desert fishes
*J. Wilcox†, A. P. Martin

SYMPOSIUM 2A ASN: SPECIES INTERACTIONS AND ADAPTIVE RADIATION 1:15-3:00 RM:MUT

Organizer: Dolph Schulter

97 1:15 Introduction
D. Schluter

98 1:30 The role of ecological character displacement in adaptive radiation
D. Schluter

99 2:00 Comparative analysis of character displacement: a theoretical consideration illustrated by the evolution of *Dalechampia* blossoms
*T.F. Hansen, W.S. Armbruster

100 2:30 Character displacement of species that share predators
P. A. Abrams

SESSION 14 CONSERVATION GENETICS 1:15-3:00 RM:H3650

Chair: Theresa Bert

101 1:15 Family and population ouctrossing rates in the narrow endemic plant *Eriogonum ovalifolium var. vineum*: implications for conservating an endangered taxon
*M. Neel, J. Ross, N.C. Ellstrand

102 1:30 Genetic erosion in traditional crop populations: a case study with avocado
*K. Birnbaum, R. DeSalle, P. Benfey

103 1:45 Buckley's chance mate: European honeybees and plant population genetics in Australia
*T. Celebrezze, D. Ayre, R. Whelan, P. England

104 2:00 Conservation genetics of an endangered land snail in the southwesten USA: what is a Kanab ambersnail?
*M.P. Miller, L.E. Stevens, J.D. Busch, J. Sorensen, P. Keim

105 2:15 Genetic variation in different forms of rare species: a computer model of Rabinowitz's seven forms of rarity
*M.A. Gitzendanner, R. Gomulkiewicz

106 2:30 Population genetics and conservation status of *Speyeria idalia* (Regal Fritillary) (Lepidoptera: Nymphalidae)
B. Williams

107 2:45 Components of a program to monitor the genetic effects of hatchery-based stock enhancement
*T. Bert, M. Tringali, A. Wilbur, C. Crawford, S. Seyoum

SESSION 15 COMBINED-DATA SYSTEMATICS 1:15-3:00 RM:G2080

Chair: Timothy Collins

108 1:15 Temporal congruence and the origin of birds - is there a "temporal paradox?"
*C.A. Brochu, M.A. Norell

109 1:30 Molecular, morphological, and paleontological perspectives on the radiation of the Gastropoda
*T.M. Collins, R. Bieler, T. A. Rawlings

110 1:45 Systematics of cypridinid ostracode crustaceans: evolutionary history of cypridinid bioluminescence and the molecular evolution of luciferase
*E. Torres

111 2:00 Phylogenetic relationships and evolution of biomechanics in labrid fishes
M. W. Westneat

112 2:15 Phylogenetic relationships of boine snakes inferred from multiple data sets
B.P. Noonan†

113 2:30 Phylogenetic relationships, species boundaries, and biogeography of Australasian pythons of the *Morelia amethistina* complex
*P.T. Chippindale, M.B. Harvey, L.K. Ammerman, D.G. Barker, T.L. Barker

114 2:45 The Coleochaetales: multi-gene phylogeny and alpha taxonomy in a key green algal group
*M.T. Cimino, K.G. Karol, K.J. Sytsma, C.F. Delwiche

SESSION 16 DEVELOPMENTAL EVOLUTIONARY BIOLOGY 1:15-3:00 RM:MUTC

Chair: John Finnerty

115 1:15 Ancient origins of axial patterning genes: hox and parahox genes in the Cnidaria
*J.R. Finnerty, M.Q. Martindale

116 1:30 Evolution of chromosomal rearrangements in ciliates
*L.A. Katz, J.L. Riley

117 1:45 Differential gene expression and reproductive caste determination in honey bees
*J. D. Evans, D.E. Wheeler

118 2:00 Rapid incipent speciation via divergence of developmental genetic pathways
*N. A. Johnson, A. H. Porter

119 2:15 The preservation of duplicate genes by degenerative mutations
*M. Lynch, A. Force

120 2:30 Gene duplication, hox genes, and the origin of morphological complexity
A. Force

121 2:45 CANCELLATION

SESSION 17 MOLECULAR SYSTEMATICS: MAMMALS 1:15-3:00 RM:G2120

Chair: Carey Krajewski

122 1:15 SINE flanking sequences and insertions: quantifying relationships among cetartiodactyls
*J.K. Lum, M. Nikaido, N. Okada, M. Hasegawa

123 1:30 Multiple independent SINE insertions at identical loci in deer mouse species
*M.A. Cantrell, H.A. Wichman

124 1:45 A molecular perspective on microbat paraphyly using nuclear and mitochondrial genes
*E. C. Teeling, M. S. Springer, M. J. Stanhope

125 2:00 Highly congruent molecular support, from a variety of loci, for the paraphyly of the elephant shrew genus *Elephantulus*, with hypotheses on its biogeographic origins
*C.J. Douady, F.M. Catzeflis, M.S. Springer, M.J. Stanhope

126 2:15 A molecular phylogenetic examination of interordinal relationships within the mammalian clade Afrotheria, using a large concatenated nuclear gene data set
*M. Scally, M.S. Springer, M.J. Stanhope

127 2:30 Investigating the utility of L1 Retrotransposons in the systematics of homonid primates
*J.E. Norman†, A. Furano

128 2:45 Molecular evidence for the timing of cladogenesis in dasyurid marsupials
*C. Krajewski, S. Wroe, M. Westerman

SESSION 18 MOLECULAR SYSTEMATICS: BIRDS **1:15-3:00 RM:G1100**

Chair: John Bates

129 1:15 Doubt about the darters: spectral analysis suggests that increased taxa sampling may not always aid phylogenetic estimation
M. Kennedy†

130 1:30 Molecular systematics and evolution of the honeyeaters (Passeriformes, Meliphagidae)
A.C. Driskell†

131 1:45 Whole mt genomes and an ancient origin for the perching birds (Passeriformes)
*D.P. Mindell, J. Garcia-Moreno

132 2:00 Species concepts and the historical biogeography of the African forest avifauna
P. Beresford†

133 2:15 DNA sequence of the mitochondrial control region and the phylogeny of cranes
*M.G. Fain†, C. Krajewski

134 2:30 Loon (Gaviidae) phylogenetics: molecules, morphology and vocalizations
*A.R. Lindsay†, D.P. Mindell

135 2:45 Molecular, vocal, and morphological differentiation in the white-flanked antwren (*Myrmotherula axillaris*)
*J.M. Bates, S. J. Hackett, M.L. Isler, P.R. Isler, J. Hunt

SESSION 19 MATING/BREEDING SYSTEMS: PLANTS **1:15-3:00 RM:SHSA**

Chair: Sarah Eppley

136 1:15 Gender-specific selection in a plant species exhibiting spatial segregation of the sexes.
S. M. Eppley

137 1:30 Variation in functional gender of an annual plant, *Raphanus raphanistrum*, under environmental stress
T.E. Hickox

138 1:45 Selection for mixed mating? - field studies with *Collinsia verna*
*S. Kalisz, D. Vogler

139 2:00 Intra-tetrad selfing and the evolution of linkage relationships
*M. Heuhsen, J. Antonovics

140 2:15 Evolutionary consequences of floral display size in a self-compatible plant
*J.D. Karron, R.J. Mitchell

141 2:30 Self-incompatibility in *Ipomopsis tenuifolia* (Polemoniaceae)
T. LaDoux

142 2:45 Sex ratio evolution with nuclear-cytoplasmic sex inheritance in the gynodioecious annual plant *Nemophila menziesii*
C.M. Barr

SESSION 20 ARTIFICIAL SELECTION/EXPERIMENTAL EVOLUTION: PLANTS AND ANIMALS **1:15-3:00 RM:MUPC**

Chair: Mark Fellowes

143 1:15 Trade-offs and genetics of host resistance to parasitoid attack
M.D.E. Fellowes

144 1:30 The dynamics of genetic constraints in Arabidopsis: a manipulative approach using induced mutations and artificial selection
M. Camara

145 1:45 Multispecies communities as evolvable units: artificial selection of soil communities for their effect on aboveground biomass of *Arabidopsis thaliana*
D.S. Wilson, *W. Swenson

146 2:00 Response to pollinator-mediated selection on *Nicotiana* floral traits
*A. Ippolito, T.P. Holtsford

147 2:15 Variation of quasispecies cloud size in Sindbis-like plant viruses
*W.L. Schneider, M.J. Roossinck

148 2:30 Experimental evolution of bacteriophage S13 to high temperature in two hosts
*L.A. Scott, C.D. Yarber, H.A. Wichman

149 2:45 Fisherian selection in experimental populations of *Arabidopsis thaliana*
*M.C. Ungerer, C.R. Linder, L.H. Rieseberg

SYPOSIUM 2B ASN: SPECES INTERACTIONS AND ADAPTIVE RADIATION 3:30-5:15 RM:MUT

Organizer: Dolph Schluter

150 3:30 Constraints on adaptive radiation
*M. Travisano, P.B. Rainey

151 4:00 Evolutionary branching caused by different types of ecological interactions
*M. Doebeli, U. Dieckmann

152 4:30 Life history diversification in yucca moths: species interactions and the origins of cheaters
*O. Pellmyr, J. Leebens-Mack

SESSION 21 COMBINED-DATA SYSTEMATICS 3:30-5:15 RM:G2080

Chair: Maureen O'Leary

153 3:30 Total evidence analyses that include fossils: using resampling techniques to test the effects of missing molecular data on tree topology
*M.A. O'Leary, A. Johnson

154 3:45 The phylogeny of the Arachnid order Opiliones: a combined analysis (18S rDNA, 28S rDNA and morphology) using direct optimization
*G. Giribet, C. Babbitt, W.C. Wheeler

155 4:00 Phylogenetic relationships of calamoceratid (Trichoptera) genera: the evidence of molecules and morphology
A.L. Prather†

156 4:15 Evolution and systematics of Holothuroidea (Echinodermata)
*A.M. Kerr†, J. Kim

157 4:30 Evolution of wasp mimicry structures in euchromiine tiger moths (Arctiidae)
R.B. Simmons†

158 4:45 A multi-locus phylogenetic approach to detect cryptic species and recombination in a genus of lichenized fungi
*S. Kroken†, J.W. Taylor

159 5:00 CANCELLATION

SESSION 22 HYBRIDIZATION AND HYBRID ZONES: PLANTS AND ANIMALS 3:30-5:15 RM:H3650

Chair: Christiane Biermann

160 3:30 The nature of racial differentiation in *Drosophila melanogaster*
*J. Alipaz†, T. Karr, C. Wu

161 3:45 Pollinator behavior and the evolution of Louisiana iris hybrid zones
*R.A. Wesselingh, M.L. Arnold

162 4:00 Pollinator-mediated selection in a Louisiana iris hybrid zone
*S.K. Emms, M.L. Arnold

163 4:15 Crossing boundaries: the role of individual behavior in animal hybridization
P.M. Willis

164 4:30 The effects of fecundity, early survivorship, and growth rates on a crayfish hybrid zone in northern Wisconsin between *Orconectes rusticus* and *O. propinquus*
*W.L. Perry, J. L. Feder, D. M. Lodge

165 4:45 Variability in sperm-egg recognition in free-spawning sea urchins
C. H. Biermann

166 5:00 Reproductive isolation in polyploids: gene silencing and patterns of hybrid survival in a highly selfing freshwater snail
T. Staedler

SESSION 23 MATING/BREEDING SYSTEMS: PLANTS 3:30-5:15 RM: SHSA

Chair: Diana Wolf

167 3:30 Do plant populations purge their genetic load? Effects of population size and mating history on inbreeding depression
*D.L. Byers, D.M. Waller

168 3:45 Paternity studies in an androdioecious population of *Datisca glomerata*
*T. Nakazato, L.H. Rieseberg, D.E. Wolf

169 4:00 Association between floral traits and inbreeding depression in *Gilia achilleifolia*
*N. Takebayashi, L.F. Delph

170 4:15 Offspring quality in relation to excess flower production in *Pultanaea gunnii*
M. Burd

171 4:30 Modifications to bee foraging by inflorescence architecture
*C.Y. Jordan, L.D. Harder

172 4:45 Genetics of sex determination in androdioecious and dioecious *Datisca*
*D.E. Wolf, L.H. Rieseberg

173 5:00 Escaping Baker's Rule: self-incompatibility in the Hawaiian silversword alliance
*E.A. Friar

SESSION 24 MOLECULAR EVOLUTION: GENOMES 3:30-5:15 RM:G1100

Chair: Laura F. Landweber

174 3:30 Evolution by molecular mimicry: spandrels of the RNA world
L.F. Landweber

175 3:45 Adaptation and the genetic code
*S.J. Freeland, R.D. Knight, L.D. Hurst, L.F. Landweber

176 4:00 Similar, coordinated LINE and SINE activity in South American rodents
*T.A. Rinehart, R. Grahn, H. Wichman

177 4:15 Different techniques used to isolate LINE-1 elements produce biased datasets which affect inferred phylogenies
*R.A. Grahn, H.A. Wichman

178 4:30 Origin of new genes: the forces driving evolution of exon-intron structures of genes
M. Long

179 4:45 The microsatellites of *E. coli*: dynamics and distributions of short repetitive DNAs in a non-pathogenic prokaryotic genome
D. Metzgar, E. Thomas, *C. Davis, D. Field, C. Wills

180 5:00 CANCELLATION

SESSION 25 MOLECULAR EVOLUTION 3:30-5:15 MUPC

Chair: Dusan Kordis

181 3:30 RNA editing in slime molds: how many distinct histories for four forms of sequence change?
*T.L. Horton†, L.F. Landweber

182 3:45 Molecular evolution of spider dragline silk
J. Gatesy

183 4:00 Molecular evolution of X-linked color vision genes in prosimians
*Y. Tan, W-H. Li

184 4:15 Loss of a histidyl tRNA synthetase homolog in evolution is correlated with lateral transfer of HisG
*J.P. Bond, C. Francklyn

185 4:30 Evolution of pharmacological activities in snake venom phospholipases A2
*D. Kordis, F. Gubensek

186 4:45 Duplication, rapid diversification and differential expression of toxin genes of the venomous gastropod *Conus*
*T.F. Duda, Jr., S.R. Palumbi

187 5:00 Binding site evolution in *Drosophila*
*C.M. Bergman†, M. Ludwig, M. Kreitman

SESSION 26 MOLECULAR SYSTEMATICS: MAMMALS 3:30-5:15 RM: G2120

Chair: Ronald Adkins

188 3:30 DNA/DNA hybridization and murine evolution : some implications for phylogeny, biogeography and taxonomy
*P. Chevret, F. Catzeflis

189 3:45 A mitochondrial DNA phylogeny of kangaroo rats (Dipodomys:Rodentia)
*D.P. Pires†, G.S. Spicer

190 4:00 Higher-level molecular systematics of rodents
*R.M. Adkins, R.L. Honeycutt

191 4:15 Taxon sampling and monophyly: artiodactyls and whales as a test case
J. M. Theodor

192 4:30 Molecular-genetic characterization of leopard subspecies (*Panthera pardus*)
* O.V. Uphyrkina, S.J. O'Brien

193 4:45 Application of universal mammalian sequence-tagged sites to the phylogenetic analysis of otters (Carnivora: Mustelidae)
*K.-P. Koepfli†, R. K. Wayne

194 5:00 Phylogeography of baboons (*Papio hamadryas*) based on mtDNA sequence variation
*T.K. Newman, J. Roger

SESSION 27 DEVELOPMENTAL EVOLUTIONARY BIOLOGY 3:30-5:15 RM:MUTC

Chair: Damhnait McHugh

195 3:30 Evolution of larval development modes in a group of polychaete annelids inferred from phylogenetic analysis of two protein-coding genes
*D. McHugh, J.M. Hay

196 3:45 Evolutionary constraints and the development of wing patterns in the butterfly *Bicyclus anynana*
*P. do O Beldade, P.M. Brakefield

197 4:00 Testing hypotheses of genotype-phenotype map organization
*J.G. Mezey, J. Kim, G.P. Wagner

198 4:15 *Drosophila* melanin synthesis genes as candidates in pattern evolution.
*J.R. True, S.B. Carroll

199 4:30 The evolutionary and developmental genetic basis of wing polymorphism in ants
*E. Abouheif and G.A. Wray

200 4:45 Phylogeny, ontogeny, and heterochrony in Ceratophryine frogs
E. R. Wild

201 5:00 The evolution of wing patterns in the butterfly genus *Bicyclus*
A. Monteiro

7:00-9:00 POSTER PRESENTATIONS (LISTED SEPARATELY: #700-808) **MEMORIAL UNION**

Thursday, 24 June

SYMPOSIUM 3A SSB: THE EVOLUTIONARY BIOLOGY OF PROKARYOTES 8:00-10:00 RM:MUT

Organizers: Matthew D. Kane and James R. Brown

202 8:00 Introduction and significance
R. Colwell (Director, National Science Foundation)

203 8:30 Prokaryotic view of the universal tree of life
J.R. Brown

204 9:00 A genome-based perspective of prokaryotic evolutionary history
H.-P. Klenk

205 9:30 Diversity and environmental distribution of microbes
N.R. Pace

SESSION 28 POPULATION AND ECOLOGICAL GENETICS 8:30-10:00 RM:MUTC

Chair: Dina Fonseca

206 8:30 The efficacy of detecting environmental gradients in multilocus data: a simulation study
R.J. Dyer

207 8:45 Diet, stress, and adaptation at Mpi in the northern acorn barnacle
P. Schmidt

208 9:00 Avian malaria vectors in Hawaii: population genetics of an introduced pest
*D.M. Fonseca, D. LaPointe, R.C. Fleischer

209 9:15 The population genetics of colonizing populations of the plant *Myrica cerifera*
*D.L. Erickson, J.L. Hamrick

210 9:30 Genetic and physiological comparisons of polyploidy in diverse species of alfalfa
*K.Y. Niehaus, R.B. Hunter, K.L. Hunter

211 9:45 Sky island-hopping: patterns of population genetic differentiation in a montane grasshopper
*L.L. Knowles, D.J. Futuyma

SESSION 29 MOLECULAR EVOLUTION **8:30-10:00 RM:G1100**

Chair: Brian Bettencourt

212 8:30 Positive Darwinian selection in the evolution of a neural isozyme
*T.J.S. Merritt, J.M. Quattro

213 8:45 Natural variation and response to selection at *Drosophila* hsp70 loci
*B.R. Bettencourt, J.A. Maresca, M.E. Feder

214 9:00 Comparative molecular genetics of antibody selection on HIV-1
*J. da Silva, A.L. Hughes

215 9:15 Detecting events of positive selection using protein-coding DNA sequences
*K.A. Dyer†, J.P. Huelsenbeck

216 9:30 A comparative analysis of codon usage bias in land plants
J.T. Herbeck, *D.P. Wall†

217 9:45 Strand asymmetry and codon usage bias in plastid genomes
B.R. Morton

SESSION 30 MATING/BREEDING SYSTEMS: PLANTS **8:30-10:00 RM:MUPC**

Chair: Elizabeth Elle

218 8:30 How should we measure inbreeding depression?
D.M. Waller

219 8:45 Herbivory, H2O, and herkogamy: environmental effects on outcrossing rate in *Datura wrightii*
*E. Elle, J. D. Hare

220 9:00 Whole-genome evaluation of embryonic stage inbreeding depression in a selfed loblolly pine family
*D.L. Remington, D.M. O'Malley

221 9:15 The role of floral design in pollen dispersal by tristylous *Pontederia cordata*
*L.D. Harder, S.C.H. Barrett, B.E. Kendall

222 9:30 The bigger, the better: pollen size and post-pollination competitive ability
*T.S. Sarkissian, L.D. Harder

223 9:45 Performance of a prairie mating system in fragmented habitat: self-incompatibility and limited pollen dispersal hinder *Echinacea angustifolia*
S. Wagenius

SESSION 31 POPULATION GENETICS **8:30-10:00 RM: SHSA**

Chair: Hopi Hoekstra

224 8:30 Maintenance of XY females: the role of mutation, selection and meiotic drive.
*H.E. Hoekstra, J.M. Hoekstra

225 8:45 Founder effects and human influences on introduced African honeybees
*M.R. Palmer, M.E. Orive, O.R. Taylor, D.R. Smith

226 9:00 On the analyses of mutation-accumulation experiments by methods of moments and maximum likelihood
*H-W. Deng, J.-Li, J-L. Li, W-M. Chen, Y. Zhou

227 9:15 Sex-limited mutations and the evolution of sexual dimorphism
T. Rhen

228 9:30 Genetic differentiation in marine organisms: the effects of larval behavior and habitat structure on population subdivision in blennioid fishes
*C. Riginos, M.W. Nachman

229 9:45 Sex ratio distortion in *Drosophila simulans/D. sechellia* introgression lines: simple or complex trait?
*E.T. Dermitzakis, J.P. Masly, A.G. Clark

SESSION 32 MOLECULAR SYSTEMATICS: MAMMALS **8:30-10:00 RM:ED147**

Chair: Mark Springer

230 8:30 A multigene analysis of dipodoid rodent relationships
B.R. Stein, *M.F. Smith

231 8:45 Upheavals in mammalian phylogenetics and the implications of molecular data for eutherian origins
*M. Springer, H. Amrine, M. Stanhope

232 9:00 The performance of mitochondrial versus nuclear genes in recovering deep level mammalian clades
*H. Amrine, R. DeBry, M. Stanhope, M. Springer

233 9:15 Kangaroo phylogenetics: evidence from mitochondrial and nuclear sequences
*A. Burk†, M. Springer

234 9:30 Molecular systematics of pikas inferred from mt DNA sequences
*N.Yu, C. Zheng, Y. Zhang

235 9:45 CANCELLATION

SESSION 33 ANALYSIS OF LIFE HISTORIES AND SEXUAL SELECTION **8:30-10:00 RM:H3650**

Chair: Stephen Stearns

236 8:30 The experimental evolution of life history traits in *Drosophila*
S.C. Stearns

237 8:45 The relationship among genome size, development rate, and body size in copepods: evidence for the role of chromatin diminution
*G.A. Wyngaard, N.M. Rouse, E.C. Colliver, K. Gasser, R. Domangue, E.M. Rasch

238 9:00 Metabolic needs and home range size: a comparative test of Kleiber's Law in primates
*C.L. Nunn†, R.A. Barton

239 9:15 Male sexual harassment as a cost for sailfin molly females: bigger males cost less
*I. Schlupp, R. McKnab, M.J. Ryan

240 9:30 Evolutionary biology of multiple mating in *Tribolium castaneum*
*A. Pai, G. Yan

SYMPOSIUM 3B SSB: THE EVOLUTIONARY BIOLOGY OF PROKARYOTES **10:30-12:00 RM:MUT**

Organizers: Matthew D. Kane and James R. Brown

241 10:30 Phylogeny and environmental diversity of Archaea
E.F. DeLong

242 11:00 The origins of bacterial species
F.M. Cohan

243 11:30 Genome structure and inferences of bacterial speciation
J.G. Lawrence

SESSION 34 ARTIFICIAL SELECTION/EXPERIMENTAL EVOLUTION: MICE AND FLIES 10:30-12:00 RM: SHSA

Chair: Adam Chippindale

244 10:30 Gender and the genetics fitness in *Drosophila*
*A.K. Chippindale, J.R. Gibson, W.R. Rice

245 10:45 Artificial selection for increased voluntary wheel-running behavior in house mice
*T. Garland, Jr., J.G. Swallow, P.A. Carter, P. Koteja, J.S. Rhodes, I. Girard

246 11:00 Life history and maternal care in house mice artificially selected for high voluntary wheel-running behavior
*I. Girard, J.G. Swallow, P.A. Carter, P. Koteja, J.S. Rhodes, T. Garland, Jr.

247 11:15 Body temperatures of house mice artificially selected for high voluntary wheel-running behavior
*J.S. Rhodes, P. Koteja, J.G. Swallow, P.A. Carter,T. Garland, Jr.

248 11:30 Changing effects of early-age selection during post-natal ontogeny
*P.A. Carter, J.S. Swallow, T.J. Morgan, T. Garland, Jr.

249 11:45 CANCELLATION

SESSION 35 POPULATION GENETICS: MOLECULAR EVOLUTION 10:30-12:00 RM:MUTC

Chair: Kathryn Goddard

250 10:30 Molecular signature of positive selection in regions of low recombination in *Drosophila*
*J.C. Fay, C-I. Wu

251 10:45 Nucleotide variability at the Notch locus in *Drosophila melanogaster*: inferences from a local reduction in variability.
*V.L. Bauer, J. Fay, C.F. Aquadro

252 11:00 Can their unique genetics explain observations of excess amino acid replacement mutations segregating in animal mtDNA?
*D.M. Weinreich

253 11:15 Heterogeneity in nucleotide variation among introns suggests differences in natural selection among four genes in field crickets
*R.E. Broughton, R.G. Harrison

254 11:30 Population genetics of the Odysseus locus in *Drosophila simulans* clade
*C.-T. Ting, S. C. Tsaur, C.-I Wu

255 11:45 Restriction analysis and sequence analysis of cytochrome b in *Fundulus heteroclitus*, *Fundulus diaphanus* and their clonal hybrids
*D. Letting, B. Nath, R. Hopkins, B. Jahanbin, R. Dawley, K. Goddard

SESSION 36 MEASURING SELECTION 10:30-12:00 RM:MUPC

Chair: Erik Svensson

256 10:30 Selection in natural populations of *Salmonella* in a variable thermal environment
*A.M. Bronikowski, A.F. Bennett, R.E. Lenski

257 10:45 Experimental excursions on adaptive landscapes: density-dependent selection on egg size
*E. Svensson, B. Sinervo

258 11:00 Selection on behavior: use of supplemental oxygen and death rates on Everest and K2
*R.B. Huey, X. Eguskitza

259 11:15 Rapid morphological change in Channel Islands deer mice
*O.R.W. Pergams†, M.V. Ashley

260 11:30 Advances in measuring natural selection: path analysis, nonlinear selection coefficients, and phenotypic plasticity
*S.M. Scheiner, H.S. Callahan, R.J. Mitchell

261 11:45 Phenotypic selection on life history timing in *Psilocorsis quercicella* (Lepidoptera: Oecophoridae)
J. T. Lill

SESSION 37 POPULATION GENETICS: GEOGRAPHIC VARIATION 10:30-12:00 RM:H3650

Chair: Bonnie Bowen

262 10:30 Microsatellite analysis of genetic structure in a highly social bird, the Mexican Jay
B.S. Bowen

263 10:45 Analysis of genetic diversity in geographically structured populations: a Bayesian approach
K. Holsinger

264 11:00 Investigation of genetic variation in the clonal orchid *Tipularia discolor*
*J.L. Smith, R.B. Hunter, K.L. Hunter

265 11:15 A non-equilibrium migration model applied to human history
J. Wakeley

266 11:30 Microsatellite- and allozyme-based estimates of gene flow among island and mainland garter snake populations.
*T.D. Bittner, R.B. King

SESSION 38 MOLECULAR SYSTEMATICS: FISH 10:30-12:00 RM:ED147

Chair: Guillermo Orti

267 10:30 Are cartilaginous fishes in a derived position in the piscine tree?
*G. Orti, J.A. Ryburn, J.A. Lopez, O. Fedrigo, G.J.P. Naylor

268 10:45 Molecular systematics and zoogeography of the subgenus *Sebastomus* (Sebastes, Scorpaenidae)
*A. Rocha-Olivares†, R.H. Rosenblatt, R.D. Vetter

269 11:00 A molecular phylogenetic examination of the perplexing echeneoid intrarelationships (Perciformes: Coryphaenidae, Rachycentridae, and Echeneididae)
*M.D. Tringali†, T.M. Bert

270 11:15 Phylogeny and evolution of the Gobiid genus *Coryphopterus*: molecules, morphology and reproduction
*C.E. Thacker and K.S. Cole

271 11:30 Systematics, behavior and coloration of *Limia*: evaluating the role of female choice in the evolution of secondary sexual characteristics
A.T. Hamilton

272 11:45 CANCELLATION

SESSION 39 ECOLOGICAL GENETICS 10:30-12:00 RM:G1100

Chair: Richard Gomulkiewicz

273 10:30 Probabilistic aspects of local adaptation and niche evolution in sink environments
*R. Gomulkiewicz, R.D. Holt, M. Barfield

274 10:45 Variability of microsatellite loci in populations of *Apodemus* (*Sylvaemus*) *flavicollis* in Chernobyl and Western Ukraine
*T.K. Oleksyk, T.C. Glenn

275 11:00 Ecological genetics of an exotic invasive: variation across lattitide
J.P. Sexton, A.S. Sala, *J.K. McKay

276 11:15 Estimates of reproductive success of lizards, *Sceloporus undulatus*, in a natural population using DNA fingerprinting
*G.J. Haenel, H. John-Alder, L. Seitz

277 11:30 Genetic diversity in the freshwater snail *Lymnaea ovata*: a role for parasites?
*J. Wiehn, J. Jokela, P. Mutikainen

278 11:45 The genetics of *Drosophila sechellia's* adaptation to its host
C.D. Jones

SYMPOSIUM 4A SSB: MOLECULAR SYSTEMATICS AND PROTEIN STRUCTURE IN THE POST-GENOMIC WORLD **1:15-3:00 RM:MUT**

Organizers: Nick Goldman and David Pollock

279 1:15 Introduction
N. Goldman

280 1:30 Protein structure and protein sequences: studying the relationship between phenotype and genotype at the molecular level
J. Thorne

281 2:00 Co-evolving protein residues: maximum-likelihood identification and relationship to structure
D. Pollock

282 2:30 Incorporation of phylogenetic analysis in reconstructing the protein phenotype
W. Taylor

SESSION 40 ANALYSIS OF LIFE HISTORIES **1:15-3:00 RM:G2080**

Chair: David Lytle

283 1:15 Disturbance predictability and life history evolution: how caddisflies avoid flash floods
D.A. Lytle

284 1:30 Predator life history traits under different prey densities: a mechanism for coexistence?
*S. Magalhaes, F.M. Bakker, M.W. Sabelis

285 1:45 Costs and interactions of defenses in snails
*M.C. Rigby, J. Jokela

286 2:00 Colonies that don't communicate: the evolution of localized allorecognition in botryllid ascidians
S. Cohen

287 2:15 Effects of *Wolbachia*infection on sperm production
*R.R. Snook, D. Tetin, T.L. Karr

288 2:30 Environmental conditions favoring matrotrophy in fishes
*J.C. Trexler, D. DeAngelis

289 2:45 Age-specificity of novel mutations for male mating ability
*P.D. Mack, D.E.L. Promislow

SESSION 41 CONSERVATION GENETICS 1:15-3:00 RM:MUPC

Chair: Oliver Pergams

290 1:15 Conservation and management of Anacapa Island deer mice
*O.R.W. Pergams, M.V. Ashley

291 1:30 Phylogenetic relationships and divergence times among squirrel monkeys
*S. Cropp, S. Boinski, W.-H. Li

292 1:45 Conservation genetics of California gnatcatchers (Aves)
*G.F.Barrowclough, R.M.Zink

293 2:00 Conservation genetics of sandhill cranes: subspecies or clinal variation?
*J.M. Rhymer, M.G. Fain, C. Krajewski

294 2:15 Population structure of a Neotropical migrant, wilson's warbler (*Wilsonia pusilla*)
*M. Kimura, D.J. Girman, T.B. Smith

295 2:30 Mitochondrial sequence variation among vocal dialects of the yellow-naped amazon
*T.F. Wright, G.S. Wilkinson

296 2:45 Analysis of diversity in the endangered rock iguana (*Cyclura*) using microsatellites
*C. Malone†, S. Davis

SESSION 42 SPECIES INTERACTIONS 1:15-3:00 RM:G1100

Chair: Louise Mead

297 1:15 Sex, salamanders, and speciation: variation in allozymes, mtDNA, and behavior across a salamander hybrid zone
*L.S. Mead, S.G. Tilley, L.A. Katz

298 1:30 Frequency-dependent reproductive success and the persistence of gynogens
L.A. Dries

299 1:45 Ecomorphology of a guild of rhinolophoid bats from Malaysia - evidence for competitive structuring.
*T. Kingston, G. Jones, A. Zubaid, T. H. Kunz

300 2:00 Fitness costs of surviving parasitism
A.Hoang

301 2:15 Do "cryptic" species of the *Bacillus subtilis* complex fill different niches or do they compete?
*M. Feldgarden, F.M. Cohan

302 2:30 Geographic patterns of genetic variation and homology of wild bacteriophage of *Bacillus* from the desert southwest
*G.P. Krukonis, F.M. Cohan

303 2:45 A generalized randomization model for the analysis of cross-species data
*F.-J. Lapointe, T. Garland

SESSION 43 SEXUAL SELECTION 1:15-3:00 RM:H1111

Chair: Susan Masta

304 1:15 The evolution of olfactory signals for courtship display in male *Saccopteryx bilineata* (Chiroptera)
C.C. Voigt

305 1:30 Microsatellite-based parentage assessment in captive sex-role-reversed pipefish: effects of the operational sex ratio and mate quality on *Syngnathus typhle* mating behavior
*A.G. Jones, G. Rosenqvist, A. Berglund, J.C. Avise

306 1:45 Measuring sexual selection using Bateman curves in a courtship feeding katydid, *Conocephalus nigropleurum*: sexual conflict over mating frequency?
*P.D. Lorch, L.F. Bussière, D.T. Gwynne

307 2:00 Individual movement and sexual conflict in water striders: a patch dynamics perspective
*R.E. Ziemba, P.H. Crowley, A. Sih

308 2:15 Pre-existing male traits and the evolution of elaborated male displays
G. Borgia

309 2:30 Quantitative trait loci mapping of an exaggerated trait: eye span in stalk-eyed flies
*L.L. Wolfenbarger, G.S. Wilkinson

310 2:45 Sexual selection driving diversification in jumping spiders
*S. Masta, W. Maddison

SESSION 44 ECOLOGICAL GENETICS — 1:15-3:00 RM:MUTC

Chair: Steven Kelley

311 1:15 Insecticide resistance: a paradigm for ecological genetics studies
T. Lenormand

312 1:30 Patterns of virulence in a plant virus with different transmission modes
S.E. Kelley

313 1:45 Short-term evolution of plant virus with differing modes of transmission
*A.D. Stewart, S.E. Kelley

314 2:00 Costs and benefits in the Systemic Acquired Resistance (SAR) pathway
*A. Heidel, J. Clarke, X. Dong, J. Antonovics

315 2:15 The evolution of induced defense and induced resistance in *Brassica rapa*
*K.A. Stowe, E.L. Simms

316 2:30 Microsatellite analysis of warfarin resistant Norway rats
M.H. Kohn

317 2:45 CANCELLATION

SESSION 45 MOLECULAR SYSTEMATICS: ARTHROPODS — 1:15-3:00 RM:H3650

Chair: Trisha Spears

318 1:15 Molecular phylogeny of freshwater crabs
T. Spears

319 1:30 So many crabs! Mitochondrial gene rearrangements clarify higher-level anomuran phylogeny
*C.L. Morrison, C.W. Cunningham

320 1:45 Molecular evolution and the Isthmus of Panama - divergence at mitochondrial and nuclear genes in snapping shrimp
*S.T. Williams, N. Knowlton

321 2:00 Molecular phylogeny of Lake Baikal amphipods
*K.S. Macdonald†, J.E. Duffy, L.Y. Yampolsky

322 2:15 Has host-switching been common or rare in specialist bees? A molecular phylogenetic analysis of *Diadasia* (Hymenoptera: Apidae)
*S.D. Sipes, P.G. Wolf, V.J. Tepedino

323 2:30 Origin of New Zealand cicadas, how did they get there?
*P. Arensburger, T. Buckley, C. Simon

324 2:45 Molecular systematics of Encarsia (Hymenoptera: Aphelinidae)
*C.S. Babcock, J.M. Heraty

SESSION 46 POPULATION GENETICS AND FLUCTUATING ASSYMETRY 1:15-3:00 RM: SHSA

Chair: Sally Otto

325 1:15 Shifting balance in continuously distributed populations: the merger of phases 2 and 3
J.S. Heywood

326 1:30 Two steps forward and one step back: the evolutionary effects of pleiotropy
S.P. Otto

327 1:45 Consequences of population subdivision under self-incompatibility and other systems of strong balancing selection
*C.A. Muirhead, M. Slatkin

328 2:00 Inferring the evolutionary history of disease haplotypes
S.K. McWeeney

329 2:15 Probability of identity by descent in metapopulations
I. Kaj, *M. Lascoux

330 2:30 Metabolic control theory and developmental stability in novel environments
*M.A. VanderMeulen, S.J. Tonsor

331 2:45 Developmental integration of fluctuating asymmetry in fly wings
*C.P. Klingenberg, S.D. Zaklan

SYMPOSIUM 4B SSB: MOLECULAR SYSTEMATICS AND PROTEIN STRUCTURE IN THE POST-GENOMIC WORLD 3:30-5:00 RM:MUT

Organizers: Nick Goldman and David Pollock

332 3:30 Mapping Evolutionary change onto protein structure: understanding evolutionary freedom to vary, and its consequences for the accuracy of phylogenetic analysis
G. Naylor

333 4:00 Modeling protein evolution at the codon level: relating selection parameters to substitution rates
W. Bruno

334 4:30 Physical-chemistry based evolutionary models in phyogenetic reconstruction
R.Goldstein

SESSION 47 ARTIFICIAL SELECTION/EXPERIMENTAL EVOLUTION 3:30-5:00 RM:G2080

Chair: James Cheverud

335 3:30 Reversibility in the experimental evolution of *Drosophila melanogaster*
*H. Teotonio, M.R. Rose

336 3:45 Antagonistic pleiotropy versus mutation accumulation: what drives specialization in laboratory bacterial populations?
*V.S. Cooper, R.E. Lenski

337 4:00 Adaptation of diverse strains of *E. coli* in a common environment: how does phylogentic history affect genetic potential?
*F.B.G. Moore, R. E. Lenski

338 4:15 Epistasis and the evolution of additive genetic variance in bottleneck populations
*J. M. Cheverud, T. T. Vaughn, L. S. Pletscher

339 4:30 Effects of predation on polymorphism in cryptic prey: the virtual ecology approach
*A.B. Bond, A.C. Kamil

340 4:45 Direct and correlated responses to artificial selection on acute thermal stress tolerance in a livebearing fish
*C.F. Baer, J. Travis

SESSION 48 SEXUAL SELECTION **3:30-5:00 RM:MUPC**

Chair: Richard Prum

341 3:30 Male tree crickets adjust courtship gift size in relation to the abundance of receptive females
*L.F. Bussière, V. Ramlogan

342 3:45 Sexual selection in blue grosbeaks: separating male-male competition from female choice
*A.J. Keyser, G.E. Hill, B.E. Ballentine

343 4:00 The evolution of lek mating systems by female preference
S. Williamson, R. Gomulkiewicz, and R.O. Prum

344 4:15 Evolution of nanostructured color producing avian tissues by intersexual selection
R.O. Prum

345 4:30 Evolution of courtship displays in chaenopsid blennies
P.A. Hastings

346 4:45 CANCELLATION

SESSION 49 BIOGEOGRAPHY/GEOGRAPHIC VARIATION: MAMMALS **3:30-5:00 RM:G1100**

Chair: Luis Ruedas

347 3:30 Evolution and phylogeography of African forest elephants (*Loxodonta africana cyclotis*)
*L.S. Eggert†, D.S. Woodruff

348 3:45 Pairwise and multipopulation estimation of migration rates and human mtDNA
P. Beerli

349 4:00 Biogeographical implications of a robust gibbon phylogeny constructed by combining and not combining 5 genetic datasets.
*S. M. Zehr, A. Mootnick, M. Ruvolo

350 4:15 Ecomorphological niche partitioning, genetic variation, and evolution in *Rousettus amplexicaudatus* and *R. celebensis* (MAMMALIA: Chiroptera: Pteropodidae) from the island of Sulawesi (Indonesia)
*L.A. Ruedas, J.C. Morales

351 4:30 Characterizing a region of contact between two lineages: marten of the Pacific Northwest.
*K.D. Stone, J.A. Cook

352 4:45 Pocket gophers in the Felsenstein Zone? Phylogenetic evidence for extinction and recolonization of *Thomomys mazama* in the Pacific Northwest
E.K. Steinberg†

SESSION 50 QUANTITATIVE TRAIT LOCI **3:30-5:00 RM: SHSA**

Chair: Chen-Hung Kao

353 3:30 Metabolism as a complex trait in *Drosophila*
*K.L. Montooth, J.H. Marden, A.G. Clark

354 3:45 Multiple interval mapping for quantitative trait loci
*C.-H. Kao, Z.-B. Zeng, R. D. Teasdale

355 4:00 Epistatic and environmental interactions of QTL involved in maize evolution: morphological and molecular evidence.
*L. Lukens and J. Doebley

356 4:15 Quantitative trait loci for upper thermal tolerance in rainbow trout, *Oncorhynchus mykiss*
*G.M.L. Perry, T. Sakamoto, M.M. Ferguson, R.G. Danzmann

357 4:30 Measuring the effects of epistasis using QTLs during population bottlenecks
*T.T. Vaughn, J.M. Cheverud

SESSION 51 SYSTEMATICS: METHODS **3:30-5:00 RM:H3650**

Chair: Diana Lipscomb

358 3:30 New insights into optimality criteria for large-scale phylogeny inference
*K. Takahashi, S. Kumar, M. Nei

359 3:45 Analysis of large datasets: comparing the rachet to parsimony jackknifing
*D. Lipscomb

360 4:00 Phylogenetic analysis of large datasets: evaluation and feasibility using simulated and real molecular data for angiosperms
*V. Savolainen, M. W. Chase, N. Salamin, D. E. Soltis, P. S. Soltis

361 4:15 Estimating phylogenies from incomplete distance matrices: a comparison of direct and indirect methods
C. Levasseur, *F.-J. Lapointe, P.-A. Landry, V. Makarenkov

362 4:30 Models in phylogenetics: likelihood models for discrete morphological characters
P.O. Lewis

363 4:45 Comparative performance of gamma and site-specific corrected general-time-reversible (GTR) likelihood models on simulated protein coding datasets
*J.P. Bollback, J.P. Huelsenbeck

SESSION 52 POPULATION GENETICS: GEOGRAPHIC VARIATION **3:30-5:00 RM:MUTC**

Chair: Avis James

364 3:30 Does lava flow prevent gene flow? Population structure of Hawaiian *Tetragnatha* spiders
*A.G. Vandergast, R.G. Gillespie, G.K. Roderick

365 3:45 Genetic variation in populations of the yellow violet (*Viola pubescens*), a species with chasmogamous and cleistogamous flowers
*T.M. Culley, A.D. Wolfe

366 4:00 Spatial genetic structure in populations of two species of small mammals
*D.L. Rabosky, G. E. Svendsen, M. M. White

367 4:15 Genetic variation, frequency-dependent selection and parasites: surveys of fish and birds
*H.G. Spencer, L.J. Marshall, R. Poulin

368 4:30 Molecular genetic markers discriminate breeding sites of origin for admixed wintering populations of migratory waterfowl
*K.T. Scribner, J.M. Pearce, B.J. Pierson, S.L. Talbot

369 4:45 Population dynamics of *Wolbachia*infestions in *Drosophila* species
*A.C. James, J.W.O. Ballard

7:00-9:00 POSTER PRESENTATIONS (LISTED SEPARATELY:#809-916) **MEMORIAL UNION**

Friday, 25 June

SYMPOSIUM 5A SSE: WHAT ABOUT MOLECULAR CLOCKS? 8:00-9:45 RM:MUT

Organizer: Tomoko Steen
Chairs: Tomoko Steen and William Provine

370 8:00 Introduction
T. Steen

371 8:15 Are molecular clocks a key to the neutral theory?
A. Eyre-Walker

372 8:30 Near neutrality and the molecular clock
T. Ohta

373 8:45 Testing molecular clocks within and between species: how rare is adaptive protein evolution?
H. Akashi

374 9:00 Molecular clocks in vertebrates?
W.-H. Li

375 9:15 Practical clocks: issues of genes, organisms and ages
C. O'huigin

9:30-9:45 Panel discussion

SESSION 53 BIOGEOGRAPHY/GEOGRAPHIC VARIATION: INSECTS 8:00-10:00 RM:MUTC

Chair: Rosemary Smith

376 8:00 Predicting patterns of invasion: lessons from Argentine ants
*A.V. Suarez, D.A. Holway, T.J. Case

377 8:15 Altitudinal variation in body size and reproductive behavior in a burying beetle (*Nicrophorus*)
R.J. Smith

378 8:30 Life history variations in wild populations of *Drosophila melanogaster* along a latitudinal cline
*L.M. Matzkin, B. Verrelli, W.F. Eanes

379 8:45 Male and female body size clines in New World and Old World *Drosophila subobscura*
*G.W. Gilchrist, R.B. Huey, D. Berrigan, M. Carlson

380 9:00 Clines revisted: examining geographic variation in *Drosophila melanogaster* metabolic enzymes at the nucleotide level
*B.C. Verrelli, W.F. Eanes

381 9:15 What can geographic variation in calling song reveal about species interactions between the field crickets?
L.A. Higgins

382 9:30 Oviposition preference in a generalist butterfly: evidence for local differentiation
*A.L. Seidl, A.K. Brody

383 9:45 CANCELLATION

SESSION 54 COEVOLUTION 8:00-10:00 RM:H3650

Chair: Kevin Johnson

384 8:00 The relationship between host specificity and cospeciation in dove lice
*K.P. Johnson, D.H. Clayton

385 8:15 Parasite mediated natural selection in a *Daphnia*-microparasite system
T.J. Little

386 8:30 Molecular studies of co-phylogeny: microbes, insects, and mammals
*D.L. Reed†, M.S. Hafner

387 8:45 Have lice cospeciated with their hosts?
V.S. Smith†

388 9:00 The evolutionary genetics of extinction
C. Webb

389 9:15 Preliminary evidence of snake-newt coevolution: TTX toxicty in newts
*C.T. Hanifin, E.D. Brodie III, E.D. Brodie Jr.

390 9:30 The coevolution of competing foraging strategies
*S.A. Richards, W.G. Wilson, R.M. Nisbet

391 9:45 Gene flow and geographically structured coevolution
*S.L. Nuismer, J.N. Thompson, R. Gomulkiewicz

SESSION 55 MOLECULAR SYSTEMATICS: ARTHROPODS 8:00-10:00 RM:S180

Chair: Richard Kliman

392 8:00 History of a mutualism in sap-feeding insects (Sternorrhyncha): the rapidly evolving eubacterial endosymbionts of psyllids and whiteflies
*A.W. Spaulding†, C.D. von Dohlen

393 8:15 Resolving arthropod phylogeny using multiple nuclear genes
*J.C. Regier, J.W. Shultz

394 8:30 Evolution of haplodiploidy in dermanyssine mites (Acari: Mesostigmata)
*R.H. Cruickshank

395 8:45 Phylogenetic relationships of lower Diptera: evidence from molecules and morphology
*V.L. Kulasekera, R. DeSalle

396 9:00 Addressing the "gene tree/species tree" problem in the *Drosophila simulans* complex
*R.M. Kliman, J. Hey

397 9:15 History of the *Synalpheus* dynasty: a phylogenetic analysis of social evolution in sponge-dwelling shrimps
*J.E. Duffy, C.L. Morrison, R. Rios

398 9:30 Phylogenetic analysis and comparative life history variation in Australian drywood termites
*G.J. Thompson, R.H. Crozier

399 9:45 CANCELLATION

SESSION 56 SEXUAL SELECTION 8:00-10:00 RM:MUPC

Chair: John Swaddle

400 8:00 Sperm competitive success in *Drosophila*: the fate of sperm inside the female's storage organs.
A. Civetta

401 8:15 Developmental isolation and subsequent adult behavior of *Drosophila paulistorum*: VI. Quantitative variation in cuticular hydrocarbons
*Y.-K. Kim, T. Chao, L. Ehrman

402 8:30 Theoretical investigations of female mate choice in populations with lethal parasites
*A. C. Fiumera, M. A. Asmussen

403 8:45 Rapid evolution of male reproductive genes in the descent of man
*G.J. Wyckoff, W. Wang, C.-I Wu

404 9:00 Receiver biases are shared between the sexes....sometimes
A.L. Basolo

405 9:15 Perceptual mechanisms and selection against asymmetry
J. P. Swaddle

406 9:30 Females that mate more live longer
*W.E. Wagner Jr, K.R. Tucker, R. Kelly, C.J. Harper

SESSION 57 MOLECULAR SYSTEMATICS: PLANTS 8:00-10:00 RM:G1100

Chair: Elena Conti

407 8:00 Phylogenetic utility of nuclear Adh loci for inferring relationships in *Carex* section *Acrocystis* (Cyperaceae)
E.H. Roalson†

408 8:15 Homoplastic involucral bract morphology and diversification in Eriogonoideae (Polygonaceae)
*R.P. Pant†, J.M. Porter

409 8:30 Evolution in Espeletia: insights from outgroups, hybrids and nested gene trees
J.T. Rauscher†

410 8:45 Phylogenetics near the limit of sequence alignment: an example from Malvaceae using ITS
*R. Nyffeler, D.A. Baum

411 9:00 Molecular phylogenetic analysis of an allotetraploid genus in the wheat tribe, Triticeae
*R.J. Mason-Gamer

412 9:15 Molecular systematics of wild and domesticated species of *Cucurbita* (Cucurbitaceae)
*O.I.Sanjur†

413 9:30 Evolution of unisexuality in *Bouteloua* (Poaceae: Chloridoideae)
*M.S. Kinney, E.A. Friar, J.T. Columbus

414 9:45 Phylogenetic relationships of *Saxifraga* sect. *Ligulatae* Haworth: implications for the evolution of life histories and substrate specificity
*E. Conti, D. Soltis, M. Hardig, J. Schneider

SESSION 58 ANALYSIS OF LIFE HISTORIES: SENESCENCE AND TRADE OFFS 8:00-10:00 RM: SHSA

Chair: Deborah Roach

415 8:00 An empirical perspective on senescence combining mortality and fecundity
J.L. Dudycha

416 8:15 Negligible senescence during reproductive diapause in *Drosophila melanogaster*
*S.A. Chien, N.K. Priest, M. Tatar

417 8:30 The demographic consequences of phenotypic variation in rates of senescence
P.M. Service

418 8:45 Demography of aging in a natural plant population
D.A. Roach

419 9:00 Testing life history trade offs using comparative field experiments: an example with birds
*C.K. Ghalambor, T.E. Martin

420 9:15 Higher ectoparasite loads on birds with specialized bills: a tradeoff between feeding and preening defense?
*D.H. Clayton, B.R. Moyer

421 9:30 Countergradient variation and the evolution of growth rate in fishes: trade-offs in growth, consumption, and swimming performance
*J.M. Billerbeck, D.O. Conover

422 9:45 Modern theory of evolution
L. Whicher

SYMPOSIUM 5B SSE: WHAT ABOUT MOLECULAR CLOCKS? 10:00-12:00 RM:MUT

Organizer: Tomoko Steen
Chairs: Tomoko Steen and William Provine

423 10:00 An erratic molecular clock: implications for phylogenetic inference
R. Nielsen

424 10:15 More evidence of weak selection in *Drosophila*: evidence against the neutral molecular clock
M.Kreitman

425 10:45 Fisher and the molecular clock
*L. Chao, C. L. Burch

426 11:15 Calibration of divergence dates during the Cretaceous-Tertiary transition: conflicts between fossil-based and molecular-based estimates
M. Novacek

11:45 Panel Discussion

SESSION 59 BIOGEOGRAPHY: FISH 10:00-12:00 RM:H3650

Chair: Harilaos Lessios

427 10:30 Phylogeny and biogeography of the family Triacanthodidae (Tetraodontiformes, PISCES)
F. Santini†

428 10:45 Mitochondrial DNA divergence of transpacific species across the "Eastern Pacific Barrier"
*H.A. Lessios, D.R. Robertson, B.D. Kessing

429 11:00 Phylogenetic systematics of the genus *Ptychocheilus* (Teleostei: Cyprinidae) based on mitochondrial DNA cytochrome B sequences
*M.J. Whitney, D.K. Shiozawa, M.F. Whiting

430 11:15 A contradiction of Cope's rule using an extant continental biota
*J.H. Knouft

431 11:30 Morphometry as a potential cost of rapid growth in pumpkinseed sunfish: ontogeny and population differences in body shape
*J.D. Arendt, D.S. Wilson

432 11:45 Coastal phylogeography and zoogeography of Pacific North America
*M.N Dawson†, D.K. Jacobs

SESSION 60 EVOLUTION OF SEX AND SEX DETERMINATION 10:00-12:00 RM:MUPC

Chair: Kathryn Hanley

433 10:30 A test of the regulation and adaptive value of sex in the bacteriophage phi 6
*K.A. Hanley, P.E. Turner, C. Burch, L. Chao

434 10:45 Microsatellite typing of aphid eggs reveals unexpected distribution of X chromosomes: sex disturbs stable heterozygosity in functionally parthenogenetic aphids
*A.C.C. Wilson, P. Sunnucks, D.F. Hales

435 11:00 Evolution of recombination at low mutation rates
*D. Gessler, S. Xu

436 11:15 Linkage analysis of sex determination in a parasitoid wasp
A.K. Hollowy, M.R. Strand, *M.F. Antolin

437 11:30 The role of maternal behavior in the evolution of temperature-dependent sex determination in reptiles
F.J. Janzen

438 11:45 The first tetraploid mammal: tetraploidy in a South American desert rodent
*M.H. Gallardo, J.W. Bickham, R.L. Honeycutt, R. Ojeda, N. Kohler

SESSION 61 SPECIATION AND CLADOGENESIS 10:00-12:00 RM:G2080

Chair: Sara Via

439 10:30 Genetic architecture of ecological specialization and incipient speciation in pea aphids on two hosts: preliminary results
S. Via

440 10:45 Patterns of evolution in the Galapagos sharp-beaked ground finch revealed with microsatellites
*K. Petren, B.R. Grant, P.R. Grant

441 11:00 Phylogeny of mimetic color patterns in *Alabagrus* (Hymenoptera: Braconidae)
*J. Leathers†, M. Sharkey

442 11:15 Genetic mapping of premating isolation in *Drosophila melanogaster*
*A. Takahashi†, C-T. Ting, C-I. Wu

443 11:30 The effects and interaction of temperature, photoperiod, and winter-length on diapause in the Apple Maggot Fly, *Rhagoletis pomonella*
*K. Filchak, J.L. Feder, J.B. Roethele

444 11:45 Behavioral isolation between two species of Hawaiian *Drosophila*: a role for substrate vibration?
*C.R.B. Boake, D.K. Andreadis, K. Buchanan

SESSION 62 COMBINED-DATA SYSTEMATICS 10:00-12:00 RM: SHSA

Chair: John Gatesy

445 10:30 Testing macroevolutionary hypotheses in the Percidae: perspectives from nuclear and mitochondrial DNA sequence data
T.J. Near†

446 10:45 Iterative and noniterative strongest evidence phylogenetic inference: simulation tests
B.A. Salisbury†

447 11:00 The application of squared change parsimony to discrete characters
M. Sharkey

448 11:15 Whale origins: a reconciliation of molecular and paleontological data
J. Gatesy

449 11:30 Comparison of levels of homoplasy in morphology and cytochrome b sequences from marmotine squirrels
*D.L. Swiderski, S.A. Jansa

450 11:45 The maximum parsimony landscape: will we ever find the shortest tree?
B.C. Kirkup†

SESSION 63 ECOLOGICAL GENETICS **10:00-12:00 RM:S180**

Chair: Michael Hart

451 10:30 Fitness consequences of hybridization between ecotypes of *Chamaecrista fasciculata* grown in contrasting native environments
J.R. Etterson

452 10:45 Pleiotropy and serendipity in fusion-rejection behavior of hydroids
*M.W. Hart, R.K. Grosberg

453 11:00 Ecological genetics of a benthic copepod inhabiting contaminated and clean sediments
*N.V. Schizas, B.C. Coull, G.T. Chandler, J.M. Quattro

454 11:15 Likely corridors of gene flow revealed in a highly migratory pelagic fish
*C.A. Reeb, B.A. Block

455 11:30 Construction and screening of SSR-enriched libraries using PCR
*P.R. Aldrich, W.J. Kress

456 11:45 Ecological influences on genetic structure in an epiphtyic orchid
*C.J. Murren, C.D. Schlichting

SESSION 64 EVOLUTIONARY BIOLOGY OF PARASITES, PATHOGENS AND THEIR HOSTS (COMPANION TO SSE SYMPOSIUM 6) **10:00-12:00 RM:MUTC**

Chair: Susan Mopper

457 10:30 Transitions between mutualism and parasitism: studies of arbuscular mycorrhizal and plant species interactions
*A. Pringle, J. Bever, J. Antonovics

458 10:45 Persistence of pseudogenes in bacterial endosymbionts: silencing of biosynthetic genes may reduce the symbiotic potential of *Buchnera*
*J.J. Wernegreen, J.E. McCormack, N.A. Moran

459 11:00 Host resistance and the evolution of parasite virulence
*S. Gandon, M. van Baalen, V.A.A. Jansen

460 11:15 Trade-offs between transmission and virulence: optimal parasite life history based on within-host dynamics
*M.A. Gilchris, W.G. Wilson, J. Antonovics

461 11:30 Gene matching and local adaptation by parasites: evidence in a trematode-snail system
*M. Dybdahl, C. Lively

462 11:45 Population history and the costs of parasitism in white sands pupfish
*M.L. Collyer, C.A. Stockwell

SYMPOSIUM 6A SSE: EVOLUTIONARY BIOLOGY OF PARASITES, PATHOGENS AND THEIR HOSTS **1:15-3:15 RM:MUT**

Chair: Susan Mopper

463 1:15 Spatiotemporal variation in leafminer population structure and adaptation to individual oak trees
S. Mopper

464 1:45 Host choice and the ideal free distribution in parasites
M. Kirkpatrick

465 2:15 Differential adaptation in spatially heterogeneous environments and host-parasite coevolution
*Y. Michalakis, S. Gandon

466 2:45 Host heterogeneity in susceptibility and coevolution in the interaction between the gypsy moth and its virus
*G.Dwyer, J. Dushoff, S. Levin

SESSION 65 BIOGEOGRAPHY: BIRDS **1:15-3:15 RM:MUTC**

Chair: Gregory Mayer

467 1:15 Are West Indian bird communities saturated?
G.C. Mayer

468 1:30 Determinants of diversity in Mesoamerican highland birds: latitude versus history
*D.M. Watson, A.T. Peterson

469 1:45 A coalescent commentary on comparative phylogeography
*S.V. Edwards, P. Beerli

470 2:00 Genetic evidence for a Pleistocene range expansion and a refugium population in MacGillivray's warbler, a neotropical migratory bird
*B. Mila, D.J. Girman, T.B. Smith

471 2:15 The phylogeographical structure of the mexican jay, a sedentary species
S.-H. Li

472 2:30 Adaptive divergence in sexual dimorphism among recently established bird populations: an ontogenetic perspective
*A.V. Badyaev, G.E. Hill, L.A. Whittingham

2:45 CANCELLATION

SESSION 66 ADAPTATION: LIFE HISTORIES **1:15-3:15 RM:H3650**

Chair: Adrienne Nicotra

473 1:15 Flippers versus feet: is there a difference between aquatic and non-aquatic carnivores?
*O.R.P. Bininda-Emonds†, J.L. Gittleman

474 1:30 Evolution of visual signals in a variable light environment
M.E. Cummings

475 1:45 Comparative myology and osteology of the pelvic regions of *Mabuya capensis* and *Acontias plumbeus* (Scincidae).
*N.J.L Heideman, M.G.J hendricks, B.A. Wilson, S.R. Daniels

476 2:00 The pace of modern life: measuring rates of contemporary micro-evolution
*A.P. Hendry, M.T. Kinnison

477 2:15 Adaptive significance of developmentally based variation in flowering time and breeding system
*M. Geber, V. Eckhart

478 2:30 Phylogenetically independent contrasts reveal patterns in the evolution of root structure comparing Australian mesic and xeric plant species
*A.B. Nicotra, N. Babicka, M. Westoby

479 2:45 20th-century microevolution in translocated salmon populations
*M.T. Kinnison, A.P. Hendry

SESSION 67 SEXUAL SELECTION 1:15-3:15 RM:S180

Chair: Timothy Ehlinger

480 1:15 Intensity of sexual selection and life-history divergence populations of bluegill sunfish
T.J. Ehlinger

481 1:30 Postcopulatory influences on differential sperm storage and male success in the yellow dungfly
*B. Hellriegel, G. Bernasconi

482 1:45 The ontogeny of sexual dimorphism: variation among populations.
*V.N. Rush, E. Eakin, K. Gaetke, R.C. Sargent

483 2:00 Sexy sperm in the red flour beetle
*G. Bernasconi, L. Keller

484 2:15 Reproductive character displacement on male mate selectivity in a unisexual-bisexual complex of live bearing fish (Poeciliidae)
*C. R. Gabor, M. J. Ryan

485 2:30 Can environmental heterogeneity resolve the lek paradox? Ecological genetic analyses of ultrasonic mate signaling in waxmoths
*M.D. Greenfield, F. Jia

2:45 CANCELLATION

SESSION 68 POPULATION GENETICS: MOLECULAR EVOLUTION 1:15-3:15 RM: SHSA

Chair: David Ardell

486 1:15 Comparative Y chromosome variation in the Hominoidea
*T. K. Altheide, M. F. Hammer

487 1:30 The per-nucleotide mutation rate in humans
*M.W. Nachman, S.L. Crowell

488 1:45 A test of background selection: is microsatellite variability correlated with recombination rate in humans?
*B.A. Payseur, C.J. Hanus, M.W. Nachman

489 2:00 Gene conversion may aid adaptive peak shifts
T. Hansen, *A. Carter, C-H. Chiu

490 2:15 Gene scrambling and the origin of the alternative genetic code in *Hypotrichous* ciliates
*D.H. Ardell, L.F. Landweber

491 2:30 Comparisons of AFLP and RFLP markers on the ability to detect population genetic structure of mosquitoes
*G. Yan, J. Romero-Severson, M. Walton, D. D. Chadee, D. W. Severson

492 2:45 Gene flow in the killifish *Fundulus heteroclitus*
*K.A. Callicott, D.A. Powers

SESSION 69 MOLECULAR EVOLUTION: GENOMES 1:15-3:15 RM:G2080

Chair: Dennis Powers

493 1:15 Micro evolution of LDH-B expression between populations of *Fundulus heteroclitus*
H. Glemet, G. Deng, P. Schulte, *D.A. Powers

494 1:30 A case for concerted evolution in prolamin (seed storage protein) gene of *Oryza*, Poaceae
*I.M.Boyle†, K.W.Hilu

495 1:45 The coevolution of ribosomal RNA gene copy number with genome size
*C.D. Prokopowich, T.R. Gregory, T.J. Crease

496 2:00 Low rate of spontaneous DNA loss in large cricket genomes: the C-value paradox revisited
*D.A. Petrov, T.A. Sangster, J.S. Johnston, D.L. Hartl, K.L. Shaw

497 2:15 Characterization of nuclear insertion of mitochondrial DNA sequences (Numt) in the genus *Panthera*
*J. Kim, W.E. Johnson, S.J. O'Brien

498 2:30 Evolution of dynamic gene rearrangements in *Hypotrichous* ciliates
*L. Landweber, T. Kuo, A. Goodman, E. Curtis

499 2:45 Evolutionary rate of sulfur-oxidizing symbiotic bacterial 16S rDNA associated with life history
A.S. Peek†

SESSION 70 MOLECULAR SYSTEMATICS: METAZOANS **1:15-3:15 RM:G1100**

Chair: Charles Delwiche

500 1:15 A tale of sessile "worm-snails": molecular systematics and character evolution within the Vermetidae (Caenogastropoda).
*T.A. Rawlings, R. Bieler, T. M. Collins

501 1:30 Single copy nuclear gene phylogeny for the polyploid clonal clam *Lasaea*
*D. O'Foighil, J.-K. Park

502 1:45 Why sponge paraphyly would imply that our ancestors sucked
D.J. Eernisse

503 2:00 Molecular taxonomy of the clownfish sea anemones (Cnidaria: Actiniaria)
T.R. White†

504 2:15 Phylogenetics of Australian lawn-head onychophorans: a role for chromosome change in speciation?
*M.V. Rockman†, D.M. Rowell

505 2:30 The Edwardsiidae and relationships among the Zoantharia
M. Daly†

506 2:45 Plastids in Alveolata: a laboratory of plastid evolution
*C.F. Delwiche, T.R. Bachvaroff, T. Tengs

SYMPOSIUM 6B SSE: EVOLUTIONARY BIOLOGY OF PARASITES, PATHOGENS AND THEIR HOSTS **3:30-5:15 RM:MUT**

Chair: Susan Mopper

507 3:30 The role of demographic assymetries in local adaptation in host-parasite interactions
B. Holt

508 4:00 Sexually transmitted diseases in polygynous mating systems
*J. Antonovics, P.H. Thrall

509 4:30 Insights from genomics about directions of symbiont and pathogen evolution
*N. Moran, J. Wernegreen

SESSION 71 BIOGEOGRAPHY: PLANTS **3:30-5:15 RM:G2120**

Chair: Jeff Mitton

510 3:30 Phylogeography of *Manihot esculenta* (Euphorbiaceae) based on a single-copy nuclear gene: on the origins of cassava
K.M. Olsen†

511 3:45 Phylogeny and biogeographical relationships in the ancient plant lineage *Selaginella*
*J.P. Therrien, C.H. Haufler, P. Korall

512 4:00 Phylogeography of North and South American *Larrea*: polyploidy and ISSRs
*L.A. Young, A.L. Maier, R.B. Hunter, K.L. Hunter

513 4:15 Population structure of mitochondrial DNA in limber pine
*J.B. Mitton, B.R. Kreiser, R.G. Latta

514 4:30 Implications of chlorplast DNA variation for the evolution of the Macaronesian endemic genus *Pericallis* (Asteraceae, Senecioneae).
S. Park, J. Francisco-Ortega, A. Santos-Guerra, *R.K. Jansen

515 4:45 Establishment of taxonomic boundaries in the *Malesherbia humilis* complex (Malesherbiaceae) using phenetic analyses of morphological traits
K.M. Gengler

516 5:00 Genetic and physiological differences within the polyploids of *Medicago sativa ssp falcata*
*M.J. Scott, R.A. Dumeyer, R.B. Hunter, K.L. Hunter

SESSION 72 ECOLOGICAL GENETICS **3:30-5:15 RM:H1111**

Chair: Carlos Machado

517 3:30 Molecular population genetics of fig wasps: evidence for selection in their mitochondrial genome
*C.A. Machado, E.A. Herre

518 3:45 Polyploidy and genetic variability of invasive populations of *Phragmites australis*
*R.O. Spenst, J. Hauver, R.B. Hunter, K. L. Hunter

519 4:00 Use of microsatellites in examining effects of local extinction in populations of mosquitofish in the Florida Everglades
*K.L. Kandl, J. C. Trexler

520 4:15 Behavior and population genetics of the invasive Argentine ant (*Linepithema humile*) in its native and introduced ranges
*N.D. Tsutsui, A.V. Suarez, D.A. Holway, T.J.Case

521 4:30 Genetic interactions in the evolutionary divergence of populations
*J.R. Getty, W.E. Bradshaw, C.M. Holzapfel

522 4:45 Demographic and genetic structure of rodent populations in a variable environment: an example from north-central Chile.
*W.B. Milstead, P.L. Meserve

523 5:00 Estimation of heritability of secondary chemistry in a natural population of *Quercus laevis* using molecular markers
*R.D. Klaper, M.D. Hunter, T.A. Mousseau

SESSION 73 SYSTEMATICS AND CHARACTER EVOLUTION **3:30-5:15 RM:MUTC**

Chair: Susan Weller

524 3:30 A morphological phylogeny and the evolution of claw shape in fiddler crabs (genus *Uca*)
M.S. Rosenberg†

525 3:45 The evolution of chemical defenses and mating systems in tiger moths (Lepidoptera: Arctiidae).
*S.J.Weller, N.L.Jacobson, W.E.Conner

526 4:00 Patterns of distribution of genital papillae in oxyurids parasitic on primates as revealed by Landmarks analysis
*J.P. Hugot, M. Baylac

527 4:15 Statistical power comparisons among alternative morphometric methods
F.J. Rohlf

528 4:30 The saturation of cladistic character spaces among fossil taxa
P.J. Wagner

529 4:45 The inferential basis of homology
K. Fitzhugh

530 5:00 Species names in a phylogenetic nomenclature: the use of epithets is a logical solution
T. Eriksson

SESSION 74 SPECIES INTERACTIONS **3:30-5:15 RM: SHSA**

Chair: Ken Paige

531 3:30 Overcompensation through the paternal component of fitness
*K.N. Paige, B. Williams, T. Hickox

532 3:45 Plant invasions into coevolved plant/insect systems: heritability of native herbivore response
*C.L. Boggs, R.S. Niell

533 4:00 Competition amplifies the costs and benefits of plant resistance to herbivores
*A.E. Weis, M.E. Hochberg

534 4:15 Competition produces frequency-dependent selection favoring resistance: an experiment with the wild mustard *Brassica rapa*
D.M. Franke, *A.E. Weis

535 4:30 Maternal effects and heritability of host preference in a hemiparasitic plant
*L.S. Adler, J.I. Yoder

536 4:45 Resistance and virulence in an aphid-parasitoid interaction: evidence for evolution following a biological control introduction
R.A. Hufbauer

537 5:00 Seasonality and specificity among luminous bacteria in sympatric species of bobtail squids
M.K. Nishiguchi

SESSION 75 BIOGEOGRAPHY: METAZOANS **3:30-5:15 RM:G1100**

Chair: Jay Schneider

538 3:30 Biogeography and evolution of poecilogony in the polychaete genus *Streblospio*: evidence from molecular genetics and reproductive compatibility trials
*S.R. Schulze, S.A. Karl, S.A. Rice, J.L. Simon

539 3:45 Origin and early evolution of brackish- and freshwater cockles (Bivalvia: Cardiidae)
J.A. Schneider

540 4:00 Speciation in the deep sea: tracing the origin and spread of hydrothermal vent-endemic amphipods
S.C. France

541 4:15 Dispersal can sharpen parapatric contacts. A model of species distributions for a spatially variable domain, species competition and density dependent dispersal
*G. Garcia-Ramos, F. Sanchez-Garduno, P.K. Maini

542 4:30 CANCELLATION

543 4:45 CANCELLATION

SESSION 76 MOLECULAR EVOLUTION: PHYLOGENY-BASED COMPARATIVE ANALYSES 3:30-5:15 RM:S180

Chair: Jim Leebens-Mack

544 3:30 Power analyses and phylogenetically based tests of change in selective constraint on coding genes
*J. Leebens-Mack, C.W. dePamphilis

545 3:45 Separation of phylogenetic and functional associations in biological sequences using the parametric bootstrap
*K.R. Wollenberg, W.R. Atchley

546 4:00 Mhc from songbirds: A test of the "Minimal Essential Mhc"
*C.M. Hess, S.V. Edwards, J. Gasper, D. Garrigan

547 4:15 Fifty million years old polymorphism at an immunoglobulin variable region gene locus in the rabbit evolutionary lineage
*C. Su, M. Nei

548 4:30 Evolution of virulence-associated factors in Shiga toxin-producing *E. coli*
*J. Colbourne, P. Boerlin, S.Chen, R. Johnson, C.Gyles

549 4:45 Presence/Absence of representative sporulation genes in Gram - type positive and negative bacteria and their position in the 16S rDNA-based phylogentic tree
J. Wiegel

550 5:00 Evolutionary origin of the two-component quorum sensing system
*J.A. Rosinski, W.R. Atchley

SESSION 77 ADAPTATION: LIFE HISTORIES 3:30-5:15 RM:H3650

Chair: Robert Fischer

551 3:30 Lipid and reproductive cycles of Bluegills exposed to 35 years of elevated environmental temperatures
R. Fischer

552 3:45 From enzyme to phenotype: re-evaluating metabolic control and its role in evolution
*H. Bagheri-Chaichian, G.P. Wagner

553 4:00 Physiological changes during independent invasions of fresh water
Carol Eunmi Lee

554 4:15 Does morphological diversification promote divergence in locomotor performance?
D.B. Miles

555 4:30 Pleiotropic effects of flower color on herbivory and pathogen attack
R.A. Zufall

556 4:45 Evolutionary genetics of paedomorphosis using laboratory verses wild-caught axolotls
*S.R. Voss, H.B. Shaffer

557 5:00 Patterns of emergence and fixation of beneficial mutations in *E. coli*
*D.E. Rozen, J.A.G.M. de Visser, R.E. Lenski

Saturday, 26 June

SESSION 78 MOLECULAR SYSTEMATICS: METHODS **8:30-10:00 RM:G2080**

Chair: Roderic Page

558 8:30 Combatting the bias inherent in popular applications of the Kishino-Hasegawa test of topologies: two improved tests
*N. Goldman, J. Andersen, A. Rodrigo, H. Shimodaira

559 8:45 Extracting species trees from complex gene trees: reconciled trees and vertebrate phylogeny
R.D.M. Page

560 9:00 Geometry of phylogenetic estimation: mixture models
*J. Kim, K. Atteson

561 9:15 Consistent phylogenetic estimation with dependent and heterogeneous sites
*K. Atteson, J. Kim

562 9:30 A rapid heuristic algorithm for finding minimum evolution trees
*A.S. Rodin, W-H. Li

563 9:45 CANCELLATION

SESSION 79 HYBRIDIZATION AND HYBRID ZONES: ANIMALS **8:30-10:00 RM:MUPC**

Chair: Thore Bergman

564 8:30 A genome wide survey of the impact of historical hybridization events on present-day North American bison populations
*T.J. Ward, S.K. Davis, R.D. Schnabel, J.N. Derr

565 8:45 Reproductive success of hybrid male baboons: implications for gene flow in Ethiopia's Awash National Park
*T.J. Bergman, J.E. Phillips-Conroy, C.J. Jolly, T.R. Disotell

566 9:00 The role of a riverine barrier in obstructing the introgression of positively selected traits: microsatellite data from the *Manacus vitellinus/M. candei* hybrid zone
*R.T. Brumfield, M.J. Braun

567 9:15 Microsatellite markers reveal selection against a Zimbabwe genome in an experimental hybrid zone of *Drosophila melanogaster*
*D.M. Rand, D.M. Weinreich

568 9:30 Associations between cytoplasmic and nuclear loci in hybridizing populations
*M.E. Orive, N.H. Barton

569 9:45 CANCELLATION

SESSION 80 PHENOTYPIC PLASTICITY **8:30-10:00 RM:H3650**

Chair: Richard Miller

570 8:30 Evolution of reaction norms in the common morning glory, *Ipomoea purpurea*
*R.E. Miller, M.D. Rausher

571 8:45 Evolutionary responses to environmental heterogeneity: population differences in plasticity to light-quality cues
C. Weinig

572 9:00 Can phenotypic plasticity evolve in highly variable environments?
*G. Davidowitz

573 9:15 Genetic architecture of plastic shade-avoidance responses in field environments
*K. Donohue, J. Schmitt, E. Hamond-Pyle, S. M. Heschel, D. Messiqua

574 9:30 History stored in a *Daphnia* dormant egg bank: norm of reaction evolution in response to eutrophication.
*C.L. Holtmeier, N.G. Hairston Jr., W. Lampert, J. Fischer

575 9:45 Are environment - dependent fitness effects common among *E. coli* genes?
*S.K. Remold, R.E. Lenski

SESSION 81 MOLECULAR SYTEMATICS: BIRDS **8:30-10:00 RM:G2120**

Chair: Shannon Hackett

576 8:30 Evolution in a clade of manakins: insights from multiple data sets
*S.J. Hackett, J.G. Tello

577 8:45 Variation in the mitochondrial control region in falconiform birds
C.S. Griffiths

578 9:00 What makes a bird a bird: diversity and evolution of feather Beta Keratin DNA sequences
*T.C. Glenn, J. French, R.H. Sawyer

579 9:15 Molecular systematics of the parrot family Cacatuidae
*R. Richey, L.K. Ammerman, M.T. Dixon

580 9:30 Phylogenetic utility of the nuclear c-myc gene applied to the ratite birds
*S.J. Steppan, C.J. Huddlestun, M.J. Braun

581 9:45 The rate and mode of speciation in the Andean avifauna - the importance of isolated communities
*J. Garcia-Moreno, J. Feldsa

SESSION 82 POPULATION GENETICS **8:30-10:00 RM:MUTC**

Chair: Joana Silva

582 8:30 Speciation history at the Odysseus locus of reproductive isolation
*S.C. Tsaur, C.-T. Ting, C.-I Wu

583 8:45 Population genetics of *D. willistoni*, a widespread New World Drosophilid
*J.C. Silva, M.G. Kidwell

584 9:00 A population genetic analysis of nucleotide sequence variation from an 11.2 kb region of the HLA-linked human hemochromatosis locus
*C.M. Toomajian, M. Kreitman

585 9:15 An excess of linkage disequilibrium in the *Drosophila* genome
M. Przeworski, *P. Andolfatto

586 9:30 Asexual reproduction depends on heterozygosity in the facultatively parthenogenetic cockroach *Nauphoeta cinerea*
*L.S. Corley, A.J. Moore

587 9:45 Tests of the Infinite Allele, Stepwise, and Multistep models for microsatellites in two species of tropical trees
*J. Dole, S. Dayanandan, C. Moller, M. Chase, R. Kesseli

SESSION 83 MOLECULAR EVOLUTION **8:30-10:00 RM:G1100**

Chair: Ole Seberg

588 8:30 Extreme homogenization of exons and introns within a modular gene: molecular evolution of spider flagelliform silk
C. Hayashi

589 8:45 Protein structure and protein sequences: studying the relationship between phenotype and genotype at the molecular level
*J.L. Thorne, N. Goldman, D.T. Jones

590 9:00 NeSL-1, a novel lineage of site-specific non-LTR retrotransposons in *C. elegans.*
*H.S. Malik, T.H. Eickbush

591 9:15 Molecular evolution of the protamine P1 sperm protein in mammals
*A.P. Rooney, J. Zhang, M. Nei

592 9:30 The modulation of DNA content: proximate causes and ultimate consequences
*T.R. Gregory, P.D.N. Hebert

593 9:45 Are pairing chromosomes homologous?
*O. Seberg, G. Petersen

SESSION 84 MATING/BREEDING SYSTEMS **10:30-12:00 RM:G2080**

Chair: Suzanne Alonzo

594 10:30 Mate grasping in *Drosophila pegasa*
*C.J. Gronlund, M.P. DeAngelis, J.A. Coyne

595 10:45 Inbreeding depression in a self-compatible, androdioecious crustacean, *Eulimnadia texana*
*S.C. Weeks, N. Zucker

596 11:00 Reproductive investment and modern portfolio theory
J. L. Leonard

597 11:15 Stabilization of mixed-mating systems by differences in the magnitude of inbreeding depression for male and female fitness components
*M. D. Rausher, S.-M. Chang

598 11:30 Games fish play: the effect of conflict within and between the sexes on the evolution of reproductive behavior
*S.H. Alonzo, R.R. Warner

599 11:45 CANCELLATION

SESSION 85 HYBRIDIZATION AND HYBRID ZONES: PLANTS **10:30-12:00 RM:S180**

Chair: Shanna Carney

600 10:30 Genetic assimilation: hybridization as a threat to the California sunflowers
*S.E. Carney, L.H. Rieseberg

601 10:45 Clonal reproduction in Louisiana iris hybrid populations
*J.M. Burke, M.R. Bulger, R.A. Wesselingh, M.L. Arnold

602 11:00 Genotype-by-environment effects on the fitness of wild-crop hybrids of squash (*Cucurbita pepo*)
*L.J. Spencer, A.A. Snow

603 11:15 Introgressive hybridization and the colonization of Texas by the common sunflower
*S.-C. Kim, L. H. Rieseberg

604 11:30 Hybrid speciation in *Delphinium gypsophilum* (Ranunculaceae)
*J.A. Koontz, P.S. Soltis

605 11:45 The origin of hybrid species of paeonies (Paeonia): reconstructing reticulate evolution with the low copy nuclear gene Adh
T. Sang, *D.M. Ferguson

SESSION 86 DEVELOPMENTAL EVOLUTIONARY BIOLOGY 10:30-12:00 RM:G1100

Chair: Chi-hua Chiu

606 10:30 Evolving expression patterns of regulatory genes in direct and indirect developing sea urchins
M.G. Nielsen, R.A. Raff

607 10:45 Convergent maternal provisioning in direct developing sea urchins
*J.T.Villinski, R.A.Raff

608 11:00 Redox control of heterochrony in a basal metazoan
N.W. Blackstone

609 11:15 Segmental homologies and hox gene expression in a model chelicerate arthropod
M.J. Telford, *R.H. Thomas

610 11:30 Transgenic expression of hoxa-11 across the fin-limb transition: investigations into the origin of the tetrapod limb
*C-H. Chiu, G.P. Wagner

611 11:45 The role of floral symmetry genes in the evolution of stamen abortion in Mohavea (Scrophulariaceae, Antirrhineae)
*L.C. Hileman, D.A. Baum

SESSION 87 MOLECULAR EVOLUTION: POPULATION GENETICS 10:30-12:00 RM:MUTC

Chair: Carlos Bustamante

612 10:30 Contrasting rates of molecular evolution for three hexokinase genes in *Drosophila melanogaster* and *D. simulans*
*D.D. Duvernell, W.F. Eanes

613 10:45 Molecular evolution of a retrovirus regulatory protein during progression of disease
*P. Baccam, M. Belshan, G.J. Naylor, J.L. Cornette, S.L. Carpenter

614 11:00 Intron length is modulated by natural selection
*J.M. Comeron, M. Kreitman

615 11:15 Molecular and population genetics of bioluminescence color polymorphisms in the Jamaican click beetle, *Pyrophorus plagiophthalamus*
*U. Stolz, K. Wood, J.L. Feder

616 11:30 The nature of purifying selection: structural constraints on amino acid variation within species
*C.D. Bustamante, J. P. Townsend, D. L. Hartl

617 11:45 Nucleotide sequence diversity at the alcohol dehydrogenase 2 (ADH2) locus in wild barley (*Hordeum valgare spp. spontaneum*)
*J.-Z. Lin, M.T. Clegg

SESSION 88 PHENOTYPIC PLASTICITY 10:30-12:00 RM:H3650

Chair: Lisa Dorn

618 10:30 Phenotypic plasticity in RNA secondary structure: a case study of the Baldwin Effect
*L.W. Ancel, W. Fontana

619 10:45 Plastic responses to resource availability in *Arabidopsis thaliana*: environmentally-induced shifts in variability within and among genotypes
*S.J. Tonsor, M.A. VanderMeulen, P.G. Brautigam

620 11:00 Evolution of polyphenic development in the scarab beetle *Onthophagus taurus*
A.P. Moczek

621 11:15 Family and diet effects on aposematism of an arctiid moth: honest advertising to predators and conspecifics?
*K.C. Kelley, M. Sweeney

622 11:30 Environmental control of male dimorphism in a marine amphipod: the role of diet quality
*J.P. Kurdziel

623 11:45 Genetic variation and adaptive phenotypic plasticity of *Arabidopsis thaliana*
*L.A. Dorn, E. Hammond-Pyle, J. Schmitt

SESSION 89 MOLECULAR EVOLUTION: RATES AND CONSTRAINTS 10:30-12:00 RM:MUPC

Chair: Lindell Bromham

624 10:30 Evolving mutation rates and the mammalian molecular clock
L. Bromham

625 10:45 Cytochrome-b evolution in birds and mammals: an evaluation of the avian constraint hypothesis
*S. Stanley, R. Harrison

626 11:00 Testing the molecular clock hypothesis under nonhomogeneous nucleotide frequencies.
N.J. Tourasse

627 11:15 Among-site rate variation in the mitochondrial D-loop
*Z. Yang, L. Excoffier

628 11:30 Microsatellite mutation rates differ between dinucleotide repeat motifs - evidence from *Drosophila melanogaster*
*D. Bachtrog, C. Schloetterer

629 11:45 CANCELLATION

SESSION 90 ANALYSIS OF LIFE HISTORIES 2:00-3:00 RM:MUPC

Chair: Olav Rüppell

630 2:00 Testing adaptive plasticity: effects of maternal food limitation on offspring life history
F. Bashey

631 2:15 Patterns of queen recruitment in multiple-queen colonies of the fire ant *Solenopsis invicta*
*M.A.D. Goodisman, K.G. Ross

632 2:30 Comparing two queen-dimorphic ant species: genetic evidence for alternative tactics
*O. Rüppell, B. Hölldobler, J. Heinze

633 2:45 Effects of aggressive interactions on predation risk: a mathematical model
R. Diaz-Uriarte

SESSION 91 POPULATION GENETICS: THEORY AND METHODS 2:00-3:00 RM:MUTC

Chair: Daniel Promislow

634 2:00 The evolution of multiple adaptive peaks under Fisherian selection
*M.R. Dickerson, J.S. Heywood

635 2:15 Phylogenetic estimation of parameters for population growth and genetic hitchhiking
*D.A. Vasco, Y-X. Fu

636 2:30 Comparative methods within species: contrasts and migration matrices
J. Felsenstein

637 2:45 Genomic demography: A life history analysis of transposable element evolution
*D. Promislow, I.K. Jordan, J.F. McDonald

SESSION 92 QUANTITATIVE GENETICS **2:00-3:00 RM:G1100**

Chair: Tia-lynn Ashman

638 2:00 Parental effects on growth and development in the Burying beetle *Nicrophorus pustulatus*
*C. M. Rauter, A. J. Moore

639 2:15 Deleterious mutations and floral variation in *Mimulus guttatus*
J. Kelly

640 2:30 A quantitative genetic analysis of locomotor performance and life history traits in the Pacific tree frog
T.B. Watkins

641 2:45 An analysis of quantitative genetic variation in a gynodioecious wild strawberry, *Fragaria virginiana*
T-L. Ashman

SESSION 93 MOLECULAR SYSTEMATICS: METHODS **2:00-3:00 RM:H3650**

Chair: Bret Larget

642 2:00 Compositionally biased branches attract
P.G. Foster

643 2:15 A higher order parsimony method for quartets that reduces long-branch attraction
*S. J. Willson

644 2:30 Phylogenetic Power Analysis: a more straightforward use of bootstrapping in phylogenetics
*G.A. Hoelzer, J. Lyons-Weiler

645 2:45 A comparison of methods for assessing uncertainty in phylogenetic inference
*B. Larget, D.L. Simon

SESSION 94 MECHANISMS OF POST-REPRODUCTIVE ISOLATION **2:00-3:00 RM:G2080**

Chair: Joseph Williams

646 2:00 Detecting quantitative trait loci in a natural hybrid zone
*K. Gardner, J. Whitton, L. Rieseberg.

647 2:15 Fertilization and sperm-egg interactions in Arthropods
T. L. Karr

648 2:30 Gamete competition and reproductive isolation in *Betula*: using DNA content to identify competing gametes in mixed pollinations
*J.H. Williams, W.E. Friedman, M.L. Arnold

649 2:45 A genetic test of the mechanism of *Wolbachia*-induced cytoplasmic incompatibility in *Drosophila*
D. Presgraves

SESSION 95 MOLECULAR SYSTEMATICS: VERTEBRATES **3:30-4:45 RM:MUTC**

Chair: Michael Alfaro

650 3:30 Evolution and systematics of thamnophiine snakes
*M.E. Alfaro, S.J. Arnold

651 3:45 A genetic perspective on the evolution and biogeography of New Zealand reptiles
*J. M. Hay, L. R. Maxson

652 4:00 Molecular phylogeny and evolution of the parrotfishes
*J.T. Streelman, M.E. Alfaro, M.W. Westneat, S.A. Karl

653 4:15 Molecular phylogenetic perspectives on shark evolution: a mitochondrial and nuclear multi-gene analysis on relationships within the Lamnidae, and an interordinal phylogeny based on mt rRNA genes
*M. Dosay, S. Harrison, M.S. Shivji, M.J. Stanhope.

654 4:30 Phylogenetic reconstruction of the order Carnivora using individual and combined single copy nuclear DNA sequences
*L.M. McKenzie, J. Pecon Slattery, T. Laughlin, S.J. O'Brien

SESSION 96 POPULATION GENETICS: COEVOLUTION AND CONSERVATION 3:30-4:45 RM:G1100

Chair: Axayacatl Rocha-Olivares

655 3:30 Dynamics of code-message coevolution and the origin of the standard genetic code
*D.H. Ardell, G. Sella

656 3:45 Transcontinental homogeneity and the population genetics of an aphid / bacterial endosymbiosis
*D.J. Funk, L. Helbling, N.A. Moran

657 4:00 Population genetic structure of the orange roughy (*Hoplostethus atlanticus Collett*): an analysis of a globally-distributed teleost using microsatellite markers
*C.S. Oke, R.H. Crozier, R.D. Ward

658 4:15 Extraordinary genetic divergence among populations of harpacticoid copepods
*A. Rocha-Olivares, J.W. Fleeger, D.W. Foltz

659 4:30 Metapopulation extinction by mutational meltdown
*K. Higgins, M. Lynch

SESSION 97 SPECIATION AND CLADOGENESIS 3:30-4:45 RM:H3650

Chair: Matthew Hare

660 3:30 Natural selection and parallel speciation in sympatric sticklebacks
*H.D. Rundle, L. Nagel, D. Schluter

661 3:45 Testing equality of speciation and extinction rates in sister groups
*J.P. Huelsenbeck, B. Rannala

662 4:00 The evolution of reproductive isolation in a diverse genus of fish (*Etheostoma*, family: Percidae)
T. Mendelson

663 4:15 Testing models for the antitropical speciation of dolphins using estimates of ancestral population size
M.P. Hare

664 4:30 CANCELLATION

SESSION 98 QUANTITATIVE GENETICS 3:30-4:45 RM:MUPC

Chair: Jeff Blanchard

665 3:30 Genetics of niche evolution in *Arabidopsis*
*D.A. Stratton

666 3:45 Things that make G go hmm: selection, drift and genetic covariance structure
*P.C. Phillips

667 4:00 Mutational evolvability: the impact of EMS on several fitness-related traits in *Drosophila melanogaster*
*A.Y. Tanikawa, H.P. Yang, W.A. Van Voorhies, J.C. Silva, A.S. Kondrashov

668 4:15 Artificial mutagenesis as a tool for studying spontaneous mutation
*H.P. Yang, A. Tanikawa, W.A. Van Voorhies, J.C. Silva, A.S. Kondrashov

669 4:30 The influence of genetic background on the rate of fitness decline in small populations of *Escherichia coli*
*J.L. Blanchard, L. Latta, I. Williams, N. Afzali, M. Lynch

Scientific Program

Poster Presentation Schedule

Wednesday, 23 June **7:00-9:00 Memorial Union**

Posters 700 – 724 room: Beefeaters

700 Drip-tips: adaptation or phylogenetic heritage?
*K. C. Millam, C. A. Jaramillo

701 Hydrodynamic drag model predicts shell allometry in larval heterobranch gastropods and bivalves
*R. Cipriani

702 Salinity stress and clonal variation in growth and reproduction in a native Iris population
*P. A. Van Zandt, S. Mopper

703 Verifying contact rate effects on virulence with a game theoretic model
D.A. Ashlock, *N.P. Leahy

704 Locomotor activity, food consumption, and body composition in house mice selected for high wheel-running activity
*J.G. Swallow, T. Garland, Jr., P. Koteja, P.A. Carter

705 Alternative mechanisms of non-independent mate choice
D. F. Westneat, *A. Walters, T. M. McCarthy, M. I. Hatch, W. K. Hein

706 Evolution of the advertisement vocalizations of North American bullfrogs
*A. J. Wolf

707 Factors affecting habitat choice by burrowing crabs in a Spartina-salt marsh
A. Bortolus, *E. Schwindt, O. Iribarne

708 Geographic variation in eusociality of the obligately social sweat bee, *Lasioglossum malachurum*
*M. H. Richards

709 Playing by different rules: evolution of virulence in pathogens that sterilize
*K.J. O'Keefe, S.A. Richards, W.G. Wilson

710 Do *Wolbachia*influence fecundity in *Nasonia vitripennis*?
*S.R. Bordenstein, J.H. Werren

711 Floral specialization of bees and persistence in fragmented, temporally variable environments
*R.L. Minckley, J.H. Cane

712 Host race evolution in the Common Cuckoo
*H.L.Gibbs, M.D. Sorenson, K. Marchetti, M.L. de Brooke, N.B. Davies, H. Nakamura

713 Incidence of nectar-inhabiting microorganisms (NIM's) in males and females of the plant species *Silene latifolia* (= *Silene alba*)
*A.M. Golonka, J. Antonovics

714 Nature of the trade-off that underlies ecological character displacement
*R. Repasky

715 How to impleach large phylogenies from multiple sources: total-evidence and consensus revisited
*F.-J. Lapointe, J.A.W. Kirsch

716 Phylogeny of leeches based on molecular and morphological data
*J.E. Light, K. Apakupakul, M.E. Siddall

717 Conservation genetics of common murres (*Uria aalge*) in the Exxon Valdez spill area through a comparison of mitochondrial control region and cytochrome b sequences
*A. Patirana, J. Piatt, V. Friesen

718 Population subdivision in a fragmented landscape: microsatellite variation among subpopulations of the puma (*Puma concolor*) in Idaho.
*J.L. Loxterman, M.B. Ptacek

719 A model of the growth-differentation trade-off and its evolutionary implications: uniting the cell with the organism
*J.D. Arendt

720 Aspects of the development of melanism in a lady beetle
*T.J. Vess

721 Ecological and historical patterns of morphological integration: developmental stability of jaw morphology in *Sorex* shrews.
*A.V. Badyaev, K.R. Foresman

722 Evolution of nuclear dimorphism in ciliates: insights from the Suctorians
*J. L. Riley, L. A. Katz

723 Parallelisms and convergences of developmental mode in a genus of marine gastropod
*R. Collin

724 Constraints of marsupial forelimb morphology
J. Cooper

Posters 725 – 745 room: Old Madison

725 BugCamp: Its a kids' life
*Z. Preckwinkle, J. Zimmerman, J. William O. Ballard

726 A biogeography and systematics laboratory for non-biology majors
*J.S. McKinnon

727 A case approaach to devloping Darwinian explanations
*S.S. Donovan, J. Rudolph, C. Passmore, *J.H. Stewart

728 A nine-week course in evolutionary biology for high school students (A set of four posters)
*J.H. Stewart, S.S. Donovan, S. Johnson, C. Passmore, J. Rudolph, S. Carpenter

729 An example of using data-rich resources to support student inquiry into evolutionary phenomena
*S.S. Donovan, F. Price

730 An overview of an evolution course for high school students
*J. Rudolph, S.S. Donovan, C. Passmore, J.H. Stewart

731 And now for something completely different.... antievolutionism in North America
*E.C. Scott and B.J. Alters

732 Bee visit and an instructional resouirce for undergraduates: exploring pollinator contribution to the reproductive success of plants
*E. Stanley

733 Developing a model of natural selection with high school students
*C. Passmore, S. Carpenter, S. Johnson, J. Rudolph, J.H. Stewart

734 Evolution: cognition, controversy, misconceptions and pedagogy
*C. E. Nelson

735 EvolveIT: an on-line educational simulation of the evolution of a quantitative trait
*J. Bell

736 Hands-on laboratory exercises for introductory and upper-level courses in evolutionary biology
*D.M. Rand

737 Linking evolution and the nature of science for high school biology teachers
*J. Beard, M.K. Nickels, C. E. Nelson

738 Molecular evolutionary biology's role in curricular reform: bioinformatic problem-solving to investigate homology, similarity and diversity
*J.R. Junck, S. Everse

739 Phylogenetic investigator: software for exploring concepts by contructing evolutionary histories
*S. Brewer

740 Students' concepts of population genetics and evolution
*P. Soderberg

741 Teaching about evolution - how can university scientists help public school educators?
*M. Camara, H. Callahan

742 Teaching and learning about evolution
*B. J. Alters

743 Teaching principles of heritability and plasticity through common garden experiments
*J.M. Brown

744 Teaching the concepts of genetic diversity and natural selection using hemoglobin variants
*C.J. Moore, D.L. Byers

745 The case approach from the perspective of students
*Monona Grove High School students, S. Johnson

Posters 746 – 780 room: Main Lounge

746 Estimates of gene flow and genetic variation in a pan-Arctic seabird (Thick-billed Murre, *Uria lomvia*): an application of Coalescence Theory
*M.S. Damus, V.L. Friesen

747 Evolution and biogeography of Hawaiian butterflies
*N. Davies, S. Lum-King, G.K. Roderick

748 Mangrove fishes of the Thachin estuary,Gulf of Thailand
*S. Premcharoen

749 Genetic discontinuity revealed by chloroplast microsatellites
*C.M.Clark, D.M.O'Malley

750 Morphometric variation among color morphs of *Labeotropheus fuelleborni* (Ahl 1927)
*M. J. Pauers, K. I. Epps, T. J. Ehlinger

751 A comparison of unimodal and bimodal hybrid zones and its implications for speciation
C. Jiggins (Haldane's Rule in *Heliconius* butterflies)

752 Can weak gene flow stop speciation?
*A. H. Porter, N. A. Johnson

753 Conflicting mtDNA and nuclear gene-genealogies suggest extensive hybridization in the Hawaiian cricket genus *Laupala*
*K.L. Shaw

754 Self fertilization and frequency dependent pollination success in gynodioecious *Geranium richardsonii*
*C. F. Williams, M. A. Kuchenreuther, A. Drew, K. O'Malley

755 Testing models of breeding system evolution with Cryptantha (Boraginaceae).
*T.M. Marushak, I.N. Forseth, C.F. Delwiche

756 The quantitative genetic basis and reproductive isolating consequences of mating system divergence in *Arenaria uniflora* (Caryophyllaceae)
*L. Fishman

757 A phylogenetic perspective on sequence mutations in microsatellite loci: tests of the stepwise mutation, ascertainment bias, and directionality hypotheses
*Y. Zhu, D.C. Queller, J.E. Strassmann

758 A survey of archosaurian intron sizes: physiological correlates and implications for the evolution of genome size
*E. Waltari, S.V. Edwards

759 Comparative analysis of intra-individual and inter-species sequence variation in Salmonid rDNA cistrons
*J.D. Hackett, K.M. Reed, R.B. Phillips

760 Cross-correlated substitution rates among sites in DNA and protein sequence evolution
*J. Lyons-Weiler

761 Evolution of compound microsatellite loci
*J.C. Garza, E. Desmarais

762 Evolution of subfamilies of the B1 retroposon in *Mus*
*T.M. Williams, M.E. Raynor, D.H. Kass

763 Evolution of the agouti coat-color gene in the family Felidae (Mammalia, Carnivora)
*E. Eizirik, N. Yuhki, L.A. Lyons, W.E. Johnson, S.J, O'Brien

764 Evolution of the Myb gene family in plants
*E.L. Braun, E. Grotewold

765 Intron loss and the evolution of the cytochrome P450-2 family in mammals
*N. Chen, S. Whitehead, A. Caillat, A. Cook, S. Hoffman

766 Molecular evidence supports the recognition of two cryptic species of killifish: *Fundulus kansae* and *Fundulus zebrinus*
*B.R. Kreiser, J.B. Mitton, J.D. Woodling

767 Molecular insights into Cumacean phylogeny
*P.A. Haye, K. Smith, I. Kornfield

768 Molecular phylogeny of Catarrhine Primates as inferred from two unlinked nuclear genes
*S.L. Page, M. Goodman

769 Molecular phylogeny of the piranhas and their allies (Serrasalminae, Characiformes)
*A. Sivasundar, J.I.R. Porto, P. Petry, G. Orti

770 Molecular phylogeny of the short-tailed shrews (Blarina)
*S. V. Brant, R. A. Benedict, H. H. Genoways, G. Orti

771 Phylogenetic and population genetic studies of the minnow species of the Sacramento River using RAPDs and mitochondrial DNA sequences
*M.A. Kanaan, R. Loggins, J. Bell

772 Phylogenetic relationships and the origin of parthenogenesis in lizards of genus *Leposoma* (Gymnophthalmidae) from Amazonia and Atlantic forests: preliminary results from mitochondrial sequences
*K. C. Pellegrino, D. J. Harris, M. T. Rodrigues, J.W. Sites Jr.

773 Phylogenetic relationships of the order Insectivora based on sequences from mitochondria
G. Emerson

774 Phylogenetic relationships within the *Rhagoletis pomonella* (Diptera: Tephritidae) species group
*V. Gavrilovic, G.L. Bush, J.L. Feder, J.J. Smith

775 Phylogenies of the autotetraploid salmonid fishes based on sequences of rDNA spacers and growth hormone introns
*R. Phillips, S. McKay, M. Matsuoka, N. Konkol

776 Phylogeny of South American Rhagoletis
*M. Jaycox, J.J. Smith, D. Frias, G. Bush

Relationships of Caviomorph rodents: Does behavior contain phylogenetic information?
*D.L. Rowe, R.L. Honeycutt, T.E. Lacher Jr.

Systematics of North American Silene and the Caryophyllaceae: two loci at two levels
*J.G. Burleigh, T. Plume, T.P. Holtsford

The mitochondrial genome of *Priapulus caudatus* and its phylogenetic implications
*L.A. Rosenberg, J.L. Boore, W.M. Brown

The phylogenetic potential of the entire nuclear large-subunit rDNA gene in Daphniidae (Crustacea)
*A.R. Omilian, D.J. Taylor

Posters 781 – 808 room: Tripp Commons

Age of an allele, using both DNA and electrophoretic data
*R. Thomson

Allozyme heterozygosity and growth of interpopulational vs. interspecific hybrids in the earthworm *Eisenia* sp.
*T.C. McElroy, W.J. Diehl

Clusters of identical new mutations can reduce the cost of natural selection
*R.C. Woodruff, H. Huai

Contrasting patterns of Mhc and microsatellite diversity in social and solitary Tuco-tucos [Rodentia]
*T.M. Hambuch, E.A. Lacey

Demography of *Arabidopsis thaliana*
Eli A. Stahl, Joy Bergelson

Estimating mutation rate in the presence of clusters
*Y. X. Fu, H. Y. Huai

EVE: a new package of phylogenetic estimators for variable environments
*D.A. Vasco, Y.-X. Fu

Evolution of pheromone communication:effects of genetic variation
*B.G. Spohn, K.F. Haynes

Fine-scale genetic population structure of wood frogs (*Rana sylvatica*) inferred from microsatellite markers
*R. Newman, T. Squire

Gene flow in southwestern populations of *Trimerotropis pallidipennis*
*A.S. Gerber, G. Davidowitz

Genetic differentiation of Lake Superior lake trout populations:comparison of microsatellite and MHC markers
*Bullock, Leder, Dorschner, Phillips

Genetic diversity in modern maize inbreds compared to ancestral populations using microsatellite markers
*J.A. Labate, K.R. Lamkey, J.S.C. Smith, S. Kresovich, S.E. Mitchell, H. Sullivan

793 Genetic structure and gene flow among populations of Cerulean warblers (*Dendroica cerulea*): a test of the source-sink model in nature
*M.L. Veit, R.J. Robertson, P.B. Hamel, V.L. Friesen

794 Genetic variation in introduced populations of the house mouse (*Mus musculus*) in Hawaii
*P. Kennedy, M. Nachman

795 Allelic dimorphism in a SNP map of *Drosophila melanogaster*
*K.C. Teeter, R. Gasperini, G. Gibson

796 Evolution of zinc hyperaccumulation in *Cardaminopsis halleri*
*S. B. Huitson, M. R. Nacnair

797 Maternal and paternal effects on seed and floral traits in *Nemophila menziesii*
*C.M. Minott, D.L. Byers

798 Microsatellite markers reveal multiple paternity and allow discrimination of maternal and genetic effects on garter snake morphology and behavior
*R. B. King, W. B. Milstead, H. L. Gibbs, M. R. Prosser, G. M. Burghardt, G. F. McCracken

799 QTL analysis of wing shape variation in *Drosophila melanogaster*
*A. Palsson, G. Gibson

800 Genetic analysis of complex behaviors using the Quantitative Trait Loci approach: preliminary analyses and future plans
*D. Price, D. Culter, B. Flesher, C. Grill, H. Lang, E. Laloulu, S. Moore, D. Ratay, J. Viernes

801 A possible non-sexual origin of the mate preference for orange coloration in guppies
*H. Rodd, K. Hughes, G. Grether, C. Baril

802 Dietary carotenoid content, food quality, and sexually dimorphic coloration in female convict cichlids (*Cichlasoma nigrofasciatum*)
*J. K. Jackson, T.K. Lloyd, A.L. Brown

803 Post-copulatory sexual selection in poeciliid fish
*A. S. Aspbury, A. L. Basolo

804 The ontogeny of sexual dimorphism: a comparative analysis
*K. Gaetke, V.N. Rush, R. C. Sargent

805 Competition between resistant and susceptible genotypes of *Arabidopsis* under various herbivory regimes
*H. G. Medina, A. E. Weis

806 Host plant selection in a guild of cactus-specialist bees: pollen preferences of females foraging for larval provisions
*M. E. McIntosh

807 Spatial and temporal variation in frequency and density of fungal pseudoflowers and co-flowering hosts: consequences for fitness
*M. Pfunder

808 The effects of habitat alteration on nest predation dynamics
*A.J. Keyser, G.E. Hill, E. Soehren

Thursday, 24 June — 7:00-9:00 Memorial Union

Posters 809 – 832 — room: Old Madison

809 Accumulating germ-line mutations alter the age-specific mutation load
*D.K. Price, T. F. Hansen

810 Colony fitness through male function in the harvester ant, *Pogonomyrmex occidentalis*
*B. J. Cole, D. C. Wiernasz

811 Demographic consequences of life-history variation in nature: lessons from garter snakes and guppies
*A.M. Bronikowski, S.J. Arnold, D.N. Reznick, W.R. Clark

812 Growth dynamic of an invasive reef building polychaete
*E. Schwindt, O. Iribarne

813 Mother knows best: maternal control of offspring life history.
*N.K. Priest, D. E. L. Promislow

814 The effect of photoperiod on size at emergence in mayflies.
*M. Tseng

815 A molecular systematics approach to the biogeography and diversification of rhinolophid and hipposiderid bats
*A. Guillen-Servent, R. E. Ricklefs

816 A phylogenetic analysis of the Ophiolepididae (Echinodermata: Ophiuroidea) with an evaluation of the origin of its deep-sea members
*S.I. Hottenrott

817 Biogeography and systematics of Metrosideros Banks ex Gaertn. subgenus Metrosideros through the Pacific
*S. O. Grose, S. Wright, R. Gardener, C. W. Morden

818 Comparative avian phylogeography of Cameroon and Equatorial Guinea mountains
*T. B. Smith, D. Girman, K. O'Keefe, B. Larison

819 Earthworms as biogeographical indicator organisms: a test case in the Lesser Antilles and application to the geological history of the Greater Antilles
*S.W. James

820 Historical biogeography of the *Drosophila dunni* Subgroup
*J. A. Wilder, H. Hollocher

821 Isolation and utilization of variable microsatellite loci in Ischnuran damselflies.
*B. Grissom, P.T. Chippindale, J.V. Robinson

822 Origins and host specificity of legume-feeding psyllids (Psylloidea, Homoptera) in the Canary Islands
*D. M. Percy

823 Phylogeography of the genus Iguana using mtDNA sequence
*C. Malone, S. Davis

824 Phylogeography of the Tailed Frog (*Ascaphus truei*)
*M. K. Nielson, K. Lohman, J. Sullivan

825 Spatial distribution of fish meristic, morphometric, and population genetic data and their analysis in a GIS environment
*J.R. Ruiz-Carus

826 Demographic effects of a color polymorphism in male mosquitofish (*Gambusia holbrooki*)
*L.A. Horth, J.A. Travis

827 Evidence of maternal effects on inbreeding depression in fast-cycling *Brassica rapa*
*A.J. Bersch, D.M. Waller

828 Evolution of photoperiodic time measurement
*W. E. Bradshaw, C. M. Holzapfel

829 Genetic relationships among insular populations of deer mouse (*Peromyscus maniculatus*): predominant role of water barriers at a microgeographic scale
*P.A. Landry, F.J. Lapointe

830 Genetic structure and kinship in a philopatric arctic seabird
*G. Ibarguchi, A.J. Gaston, P.T. Boag, V.L. Friesen

831 Sex ratios bias and gender-specific clonal structure in the brittle star *Ophiactis savignyi*
*T. M. McGovern

832 Temporal dynamics of pathotype resistance and ecotypes during a plant-pathogen epidemic
*L.J. Perry, L.A. Real

Posters 833 – 857 room: Main Lounge

833 Comparative analysis of sex-linked markers in salmonids
*J.D. Stein, R.B. Phillips

834 Asymmetry of response in tests designed to distinguish between random walks, directed selection and stabilizing selection in fossil lineages
*H. D. Sheets, C.E. Mitchell

835 Character divergence and reproductive isolation among sympatric, sibling species of salamander: a test of the reinforcement hypothesis
*J.L. Marshall

836 Cyanogenesis and the evolution of food plant choice by humans
*D. A. Jones

837 Fertility selection, genetic selection, and evolution
*R. B. Campbell

838 Geophysiological modeling: new ideas on modeling the evolution of ecosystems
*F. Santini

839 How many beneficial mutations stop Mullers Ratchet?
*L. Loewe, S. Scherer

840 Geometric motion analysis
*D.E. Slice

841 Morphometric analysis of *Triarthrus becki* in the Middle Ordovician of New York, Quebec, and Pennsylvania: testing the Plus ca change model
*K. Kim, C.E. Mitchell

842 Path analytic analysis of developmental stability in the hispid cotton rat
*J. M. Novak, M. H. Smith

843 Quantitative trait loci for directional but not fluctuating asymmetry of mandible characters in mice
*L.J. Leamy, D. Pomp, E.J. Eisen, J.M. Cheverud

844 Origins of Quebec populations of the barnyard grass (*Echinochloa crus-galli (L.) Beauv.*): evidence from RAPD markers and DNA sequences.
*S. Roy, J.P. Simon, F.J. Lapointe

845 Variation and covariation of plant growth traits within and among arctic plant populations
*K.E. Schwaegerle, H. McIntyre

846 Wing pattern quantification of endemic Hawaiian Tephritids
B. O'Fallon, J Brown

847 Zoogeographical patterns among distinctive Malawi Cichlid endemics: microsatellite signatures
*P.F. Smith, I.L. Kornfield

848 Distribution of *Wolbachia*across a field cricket hybrid zone
*M.J. Mandel, C.L. Ross, R.G. Harrison

849 CANCELLATION

850 ITS polymorphisms as evidence of past hybridization events in the soft coral genus *Alcyonium*
*C.S. McFadden, A. Tuan, B. Hadland

851 Estimates of inbreeding depression in two populations of the ephemeral pond crustacean, *Eulimnadia texana*
*B.R. Crosser, B. Exley, S.C. Weeks, N. Zucker

852 Fertilization rates in two populations of the androdioecious ephemeral pond crustacean, *Eulimnadia texana*
*J. A. Hutchison, J.A. Kljun, S.C. Weeks, N. Zucker

853 On the number of reproductives contributing to a half-sib progeny array
*J.A. DeWoody, Y.D. DeWoody, A.C. Fiumera, J.C. Avise

854 Pollination, seed predation and flowering phenology in an experimental population of *Silene latifolia*
*J.W. Wilcox, T.R. Meagher

855 Fitness in a gynodioecious population: variation among sexual morphs and among families
*M. F. Bailey

856 Molecular genetic mapping of genes of reproductive isolation between *Drosophila melanogaster* and *D. simulans*
*K. Sawamura, C.-I Wu, M-T. Yamamoto

857 The digital genome project: simulations of the evolution of coadapted gene complexes and the consequences of their disruption
*S. Edmands, C.C. Timmerman

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858 Investigation of retroposons in the bat genome
*S.W. Murray, D.H. Kass

859 MHC variation and evolution in the Little Greenbul (*Andropadus virens*)
*A. Aguilar, S. V. Edwards, T. B. Smith, R. K. Wayne

860 Mitochondrial DNA sequence variation in *Anopheles dirus*
C. Walton, J. Handley, *R. K. Butlin

861 Molecular evolution of doublesex in the *Drosophila melanogaster* subgroup
*R.J. Kulathinal, R.S. Singh

862 Quantifying the lenght dependence of microsatellite mutation rates in *E. coli*
*M. Imhof, C. Schloetterer

863 The kinetics of DNA transposable element autoregulation
*J.P. Townsend, D.L. Hartl

864 Unusual evolution of mitochondrial RNA gene sequences in spiders (Salticidae: Habronattus)
*S. Masta

865 A new species of salamander from the Cumberland Plateau of Tennessee
*J.A. Anderson, S.G. Tilley

866 Cichlid phylogeny: total evidence analysis and molecular rate heterogeneity among taxa
*I.P. Farias, A. Meyer, G. OrtÃ

867 Comparison of Arctic charr-Dolly Varden phylogenies based on mtDNA RFLPs, microsatellite loci, and DNA sequences
*E.H. Leder, R.B. Phillips

868 Complete coding sequence of the Alligator c-myc gene: phylogenetic implications
*A. Mitchell, M.J. Braun

869 Convergent evolution detected in pied woodpeckers (genus: *Picoides)* resulting from systematic revision
*A.C. Weibel, W.S. Moore

870 Evolution of nuclear and mtDNA in the *Rana catesbeiana* species group
*A. J. Wolf, W. M. Brown

871 Evolutionary history and biogeography of the damselfly genus *Ischnura*
*J. Morgan, J.V. Robinson, P.T. Chippindale

872 Intrageneric phylogeny, sectional classification, and breeding system evolution in *Primula:* a preliminary study
*E. Suring, E. Conti, D. Boyd, S. Kelso

873 Microsatellite inferences from the Felidae
*C.A. Driscoll, S.J. O'Brien

874 Mitochondrial ribosomal sequences coupled with fossil evidence support a rapid radiation of aphid tribes in the Cretaceous
*C.D. von Dohlen, N.A. Moran

875 Molecular evidence for multiple origins of endemic Inuleae (Asteraceae) from the Macaronesian Archipelagos.
*J.P. Mower, S. Park, J. Francisco-Ortega, A. Santos-Guerra, R.K. Jansen

876 Molecular evidence for the position of Takhtajania in the Winteraceae
*E.A. Zimmer, K.G. Karol, Y. Suh and G. Schatz

877 Alternative social strategies in a euglossine bee: tradeoffs for solitary and group nesting
*S.L. Soucy, T. Giray, D.W. Roubik

878 Crabs affecting sexual reproduction of the cordgrass *Spartina densiflora*
*A. Bortolus, O. Iribarne

879 Describing the evolution of reaction norm shape: body pigmentation in *Drosophila*
*P. Gibert, B. Moreteau, J. R. David, S. M. Scheiner

880 Deviations from expected height-diameter isometry in *Trillium grandiflorum*
*T. P. Rooney, J. C. Steven, O. D. Boyle

881 Influence of temperature on reproductive rate in *C. elegans:* r vs. Ro
*P.C. Phillips, B.L. Armstrong, C.P. Coucke, R.B. Huey

882 Parental environmental effects in *Arabidopsis thaliana:* effects of elevated temperature and CO2 on offspring phenotype
*E. P. Lacey, J. Ward

883 Selection for light-mediated phenotypic plasticity in *Arabidopsis thaliana*
*H. S. Callahan

884 Endosymbiont community transmission in pea aphid
*T.E. Leonardo

885 Natural selection in the entire primate immunodeficiency virus genome
*W.J. Diehl, C.R. Cooper, K. S. Coats

886 Phylogenetic analysis of colony queen number in the termite genus *Nasutitermes*
*L. Atkinson

887 Phylogenetic analysis of cooperative breeding in the Class Aves
*V. Shafer, B. Burt

888 Phylogeny of conifer feeding bark beetles in the subfamily Hylesininae (Coleoptera: Scolytidae)
*A. S. Sequeira, B. B. Normark, B. D. Farrell

889 Sexual size dimorphism and its effect on the evolution of chemical defense in tiger beetles
*K. C. Kelley, T. Parchman

890 A simulated look at the decay index
*R. W. DeBry

891 Why do only "bad" trees (or "bad" data sets) have multiple likelihood maxima?
*J.S. Rogers

892 Wide phylogenetic diversity of heterotrophic microbes associated with the marine sponge genus, Discodermia
*J.V. Lopez, P.J. McCarthy, K.E. Janda, R. Willoughby, S.A. Pomponi

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893 Genetic differentiation in *Drosophila ruberrrima* populations: results from chromosomal inversions, allozymes, and mitochondrial DNA
*S. Fang, F.J. Lin, H.C. Chou, H. Chang

894 Genetic variation in the Largemouth bass (*Micropterus salmoides*) from stocked and unstocked lakes in South Carolina
*R. A. Thum, T. C. Glenn

895 Geographic range expansion and population differentiation: simulations of European starlings.
*P. R. Cabe

896 Global population structure of the human commensal *Candida albicans* as determined by microsatellite loci
*R.E. Fundyga, T.J. Lott, J. Arnold

897 Likelihood analysis of population structure using linked diallelic markers
*E.G. Williamson, R. Nielsen, M. Slatkin

898 MHC variation and evolution in the Little greenbul (*Andropadus virens*)
*A. Aguilar, R. K. Wayne

899 Nucleotide variability at L1cam and G6PD on the human X-chromosome; implications for human origins
*M.A. Saunders, M.F. Hammer, M.W. Nachman

900 Nucleotide variability at the Dmd locus in a worldwide sample of humans
*S.L. Crowell, M.W. Nachman

901 Phylogeography, host use, and colonization genetics of a cosmopolitan parasitoid wasp
*C. F. Baer, M. Antolin

902 Population structure versus population history in *Ambystoma tigrinum*
*E. Valdivia, K. Pointer, P. Hill, E. Routman

903 The effect of selection on population differentiation: a case study with HLA
*D. Meyer, G. Thomson

904 Assessing natural variation at a single locus affecting chemotaxis in *C. elegans* using complementation testing
*J.J. Morphew, P.C. Phillips

905 Candidate locus approaches to dissecting genetic architecture: QTL for chemotaxis in *C. elegans*
*M. C. Gurganus, P. C. Phillips

906 Mapping QTLs for average effect in half-sib families of loblolly pine
*D. M. O'Malley, R. Wu, B.C. Lee, J. Vasquez, D.L. Remington, S.E. McKeand

907 Quantitative genetics of lifespan in *D. melanogaster*: effects of genetic background and larval density
*J. Leips, T.F.C. Mackay

908 Estimation of effective population size at different depths in the evolutionary history of the auklets: a test of founder effect speciation using neutral and non-neutral loci
*H. E. Walsh, V. L. Friesen

909 Genetic and molecular analysis of body color as it relates to speciation patterns in Caribbean *Drosophila*
*H. Hollocher, E. Dyreson

910 Mate choice, sex determination and sympatric speciation: a simulation study
*D. Promislow, D.L. Hoyt

911 Molecular, genetic, and cytological evidence for ancestral inversion polymorphism in the Apple Maggot Fly, *Rhagoletis pomonella*
*J.B. Roethele, S. Berlocher, J.L. Feder

912 Possible cases of allopolyploid speciation in the Geum group (Rosaceae) - Implications from phylogenies based on morphology and ITS
*J.E. Smedmark, T. Eriksson

913 Three species of Blepharoneura (Tephritidae) on a single species of host plant
J. Romashko, *M. Condon, D. Pumo

914 Two examples of reproductive character displacement in five West Australian frogs: is reproductive character displacement rare?
*J. D. Roberts

915 Differentiation and speciation in the butterfly genus *Lycaeides* in North America
*N. Anthony, C. Nice, G. Gelembiuk, D. Ganser, R.French-Constant

916 Phylogeny of the Baeini (Hymenoptera: Scelionidae): parasitoids of spider eggs
*A.D. Austin, M. Iqbal

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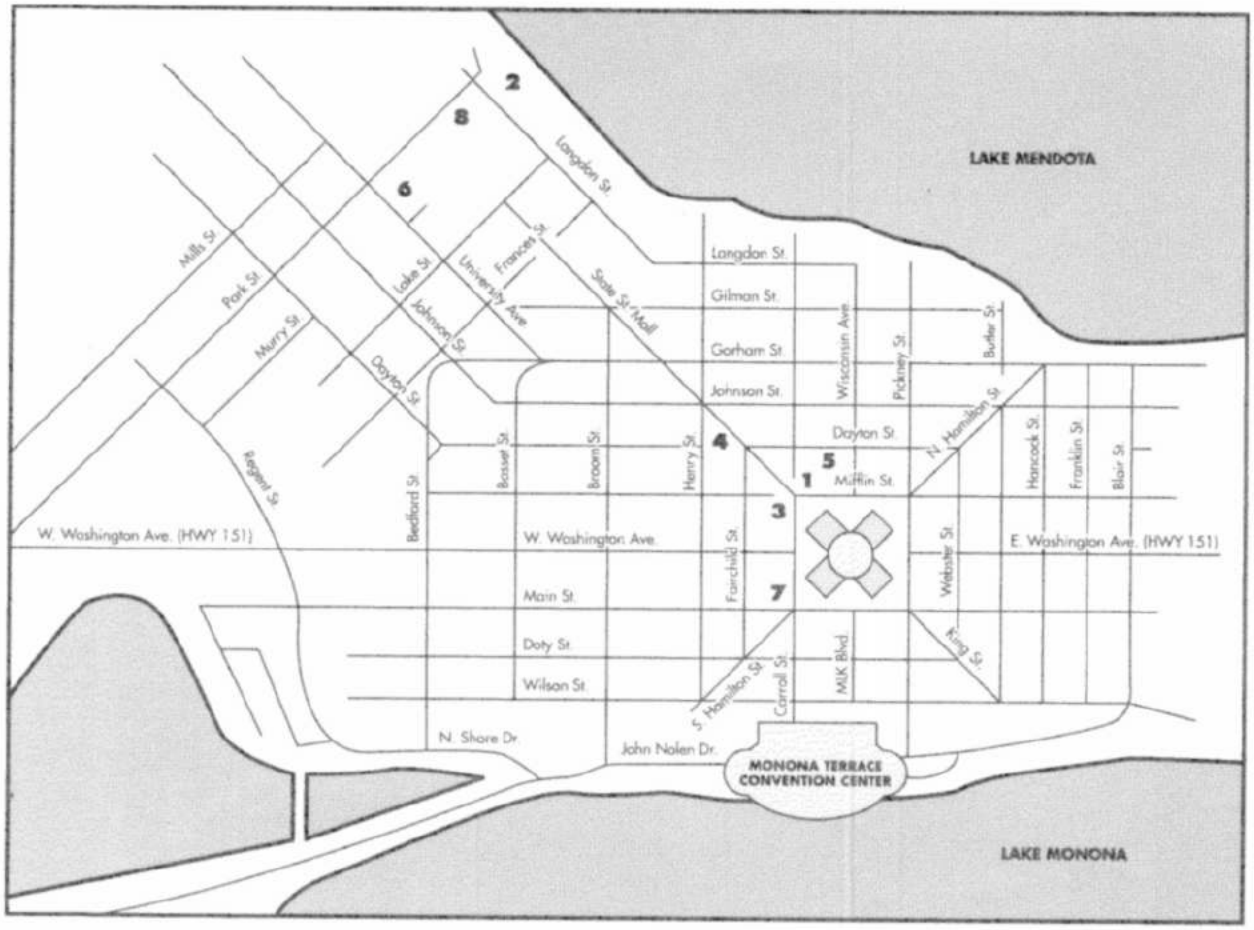

KEY

1. Wisconsin Veterans' Museum
2. Memorial Union
3. State Historical Museum
4. Madison Art Center
5. Concourse Hotel
6. Elvehjem Museum
7. Inn On The Park
8. State Historical Library