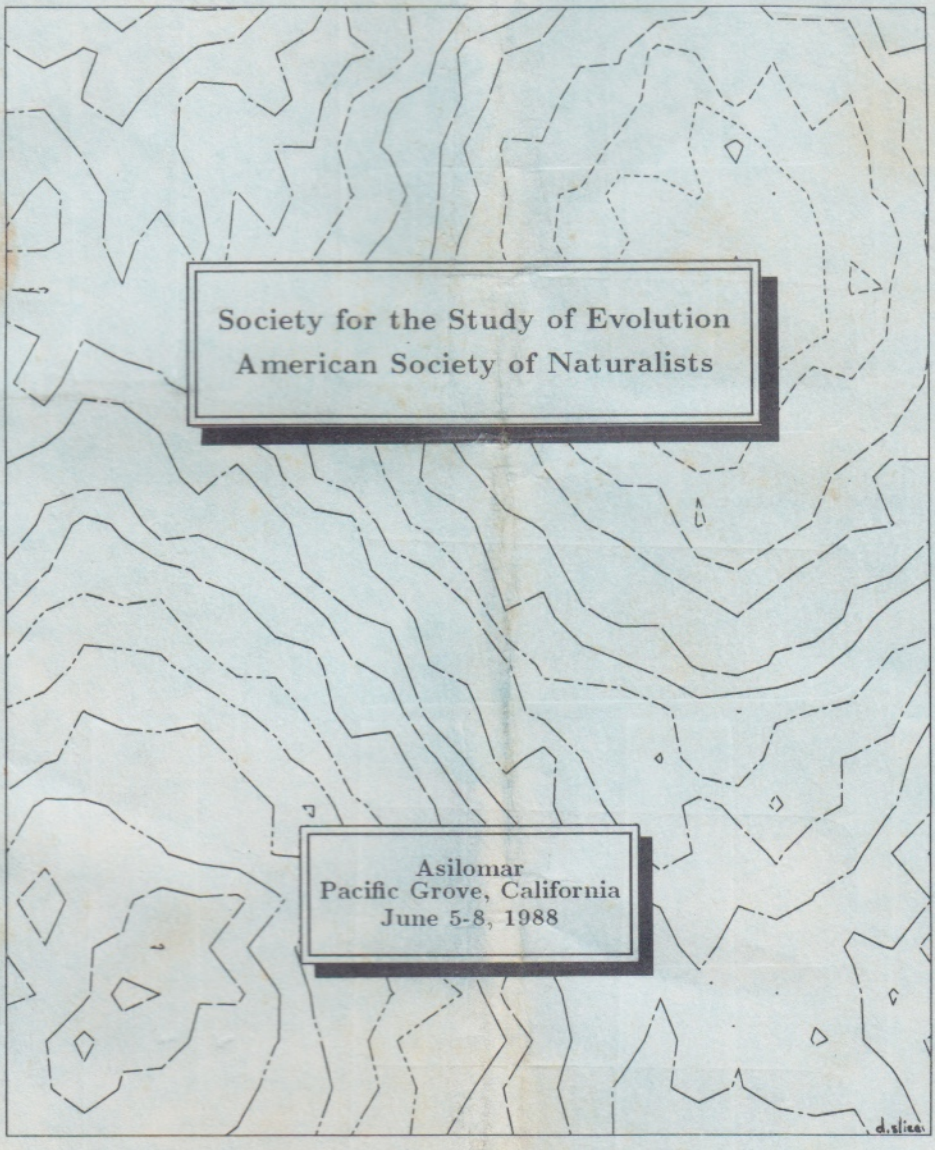
Society for the Study of Evolution
American Society of Naturalists
Asilomar
Pacific Grove, California
June 5-8, 1988

Asilomar

CONFERENCE CENTER

800 Asilomar Boulevard
Post Office Box 537
Pacific Grove, Calif. 93950
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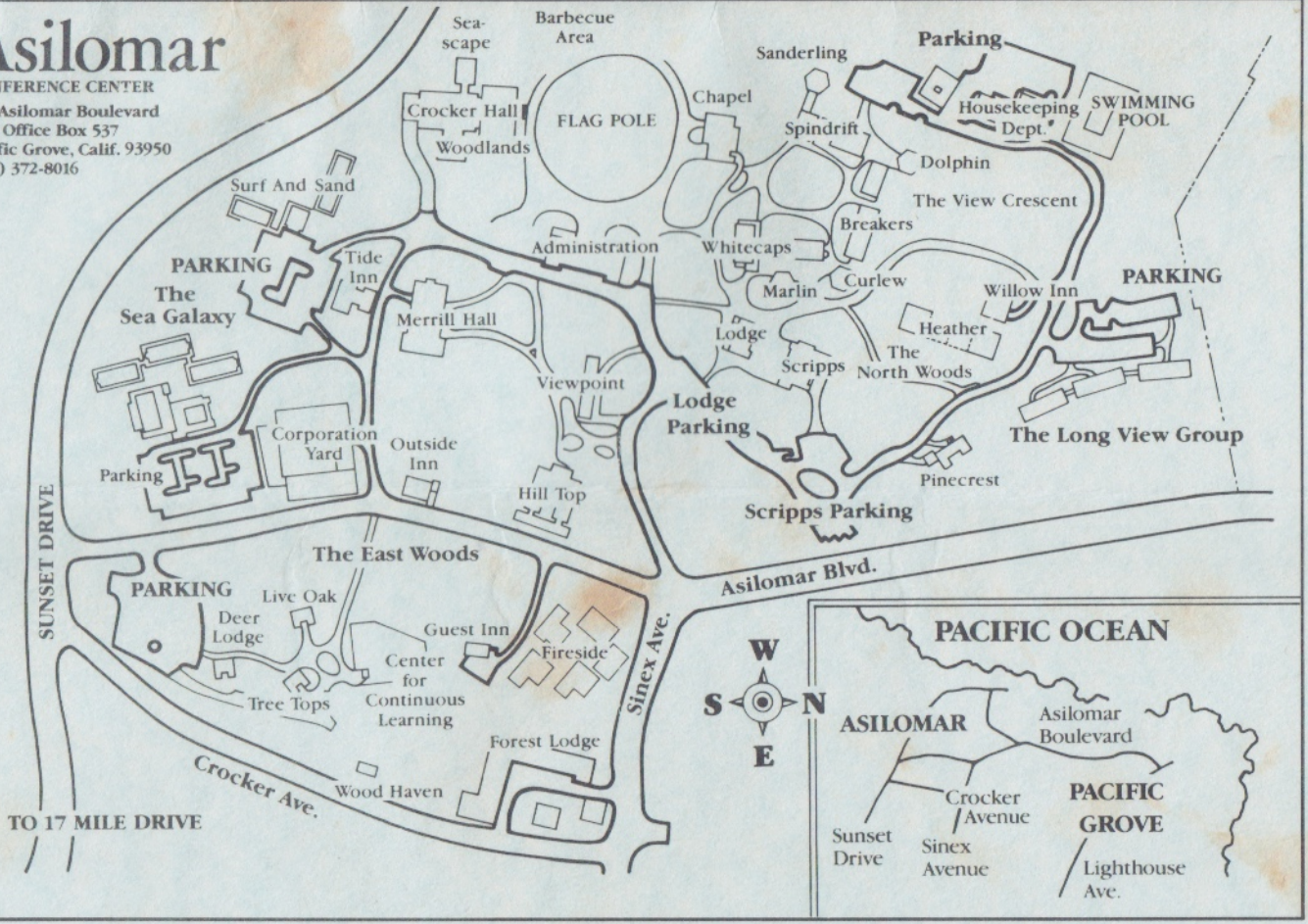

Society for the Study of Evolution
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Asilomar

Pacific Grove, California

June 5–8, 1988

SCHEDULE FOR THE 1988 SSE/ASN ANNUAL MEETING

SUNDAY, JUNE 5

SSE Council Meeting	3:00	Sanderling
Registration	3:00	Administration Bldg.
Reception	7:30	Heather

MONDAY, JUNE 6

Registration	Open 24 hours / day	
Symposia	8:30 – 11:50	
Habitat Selection		Heather
ASN Young Investigators Symposium		Chapel
ASN Executive Committee Meeting	12:00	Sanderling
NSF Update — Questions and Answers: MARK COURTNEY	12:30	Dolphin
Contributed Paper Sessions:	2:00 – 5:15	
Hybrid Zones and Speciation		Curlew
Sex Allocation		Sanderling
Morphology and Development		South Long View
Life History Evolution: Ecology		Chapel
Evolution in Polygenic Systems		Toyon
Natural Selection		Dolphin
DNA Evolution: Genes and Transposons		Acacia
Heterozygosity/Other Evolutionary Studies		North Long View
Poster Session	1:30 – 5:30	Heather
Reception	8:00 –	Monterey Aquarium

MEALS WILL BE SERVED EACH DAY AT CROCKER DINING HALL:
Breakfast: 7:30 – 9:00 am Lunch: 12:00 – 1:00 pm Dinner: 6:00 – 7:00 pm

TUESDAY, JUNE 7

Symposia	8:30 - 12:00	
Habitat Selection (continued)		Acacia
Phylogeny and Evolutionary Processes		Heather
Reaction Norms: Evolutionary, Ecological, and General Significance		Chapel
ASN Business Meeting	1:00	North Long View
Contributed Paper Sessions	2:00 – 5:15	
Molecular Evolution and Systematics		Toyon
Sexual Selection and Mating Systems		Chapel
Geographical Variation: Molecular		Acacia
Speciation and Isolating Mechanisms		Sanderling
Macroevolution and Paleobiology		Curlew
Ecological Genetics and Selection		Heather
Life History Evolution: Growth and Natural Selection		Dolphin
ASN/SSE Dinner	6:00	Crocker Dining Hall
Social	8:00	Chapel
SSE Presidential Address: JOHN MAYNARD SMITH "Evolutionary progress and the units of selection"	9:00	Chapel

WEDNESDAY, JUNE 8

Contributed Paper Sessions	8:30 – 12:00	
Population Structure		Toyon
Reaction Norms		Chapel
Mating Systems and Inbreeding		Heather
Geographic Variation: Phenotypic		Curlew
Life History Evolution: Reproduction		Acacia
Physiological Ecology		Sanderling
DNA Evolution: Multiple Genes		Dolphin
Symposia	2:00 – 5:20	
Phylogeny and Evolutionary Processes (continued)		Heather
Reaction Norms: Evolutionary, Ecological, and General Significance (continued)		Chapel

MONDAY MORNING

YOUNG INVESTIGATORS SYMPOSIUM

Organizer: AMERICAN SOCIETY OF NATURALISTS

ROOM: CHAPEL
CHAIR: J.P. COLLINS

8:30 COWLEY, D., North Carolina State University
Quantitative genetics of holometabolous development.

9:15 ZUK, M., University of New Mexico
Female choice and male ornaments in red jungle fowl.

10:00 BREAK

10:20 HOM, C., Univerisity of California, Davis
Optimization methods in life history theory.

11:05 MOLONEY, K., Cornell University
Determinants of species distributions.

SYMPOSIUM: HABITAT SELECTION

Organizer: GORDON H. ORIANS

ROOM: HEATHER

8:30 HUEY, R.B., University of Washington
Physiological aspects of habitat selection.

9:15 JAENIKE, J., University of Rochester
Genetics and habitat selection.

10:00 BREAK

10:20 BAZZAZ, F., Harvard University
Habitat selection among plants.

11:05 ROSENZWEIG, M.L., University of Arizona
Population interactions and habitat selection.

(Continued Tuesday Morning)

MONDAY AFTERNOON
ROOM: CURLEW

CONTRIBUTED PAPERS: Hybrid Zones and Speciation

CHAIR: R.J. BAKER

2:00 ASMUSSEN, M., and J. ARNOLD, University of Georgia
Cytonuclear desequilibria in hybrid zones: migration models.

2:15 SMITH, M.W., R. W. CHAPMAN, and D.A. POWERS, Johns Hopkins University
Fundulus heteroclitus mitochondrial DNA and isozyme analysis demonstrates multiple zones of secondary intergradation in the Chesapeake and Delaware bays.

2:30 BAKER, R.J., S. K. DAVIS, R. D. BRADLEY, M. J. HAMILTON, and R. A. VAN DEN BUSSCHE, Texas Tech University and Texas A&M University
Evidence for a postmating isolating mechanism in pocket gophers *Geomys* in a hybrid zone population.

2:45 SANDQUIST, D.R., and J.C. HAFNER, Occidental College
Karyotypic variation in a hybrid-zone population of pocket gophers, *Thomomys bottae*.

3:00 HAFNER, J.C., T.B. FRASER, III, and J.J. SMITH, Occidental College
Temporal patterns of genetic varation in a hybrid zone of pocket gophers *Thomomys bottae*.

3:15 CARR, S.M., Memorial University of Newfoundland
Molecular analysis of a hybrid zone between white-tailed deer and mule deer.

3:30 BREAK

3:45 NELSON, K., Harvard University
Mitochondrial DNA evolution in the *Peromyscus leucopus* species group: genetic structure in populations within a hybrid zone.

4:00 FLEISCHER, and R., S. ROTHSTEIN, University of North Dakota and University of California, Santa Barbara
Gene flow across a hybrid zone in Sierran brown-headed cowbirds.

4:15 ISTOCK, C.A., and K.E. DUNCAN, University of Arizona
Variable hybrid stability following genetic exchange between *Bacillus* species.

4:30 PALUMBI, S.R., University of Hawaii
Rapid evolution of reproductive isolation in tropical versus temperate sea urchins.

4:45 McDONALD, M.A., Savannah River Ecology Laboratory
Age-related differences in heterozygosity, size of founding populations, and speciation.

5:00 WEST, D.A., Virginia Polytechnic Institute and State University
Hybridization in swallowtail butterflies: *Papilio glaucus* and *P. eurymedon*.

MONDAY AFTERNOON
ROOM: SANDERLING

CONTRIBUTED PAPERS: Sex Allocation

CHAIR: J. BRUNET

2:00 FRANK, S., University of California, Berkeley
Synergism between sib-rearing and sex ratio in Hymenoptera.

2:15 SULLIVAN, B.K., University of Maine
Mating system variation in woodhouse's toad.

2:30 HEINZ, K.M., University of California, Riverside
Male-biased sex ratio in the parasitic wasp *Diglyphus begini*.

2:45 BROCKMANN, H.J., University of Florida
Male-biased sex ratios in a solitary wasp.

3:00 ECKHART, V.M., University of Utah
Resource allocation and the evolution of gynodioecy.

3:15 DELESALLE, V., Ohio University
Sex allocation theory and gender allocation in a monoecious cucurbit.

3:30 BREAK

3:45 KOHN, J., University of Pennsylvania
Cost of male function in *Cucurbita foetidissima*: allocation versus fitness in females and hermaphrodites.

4:00 BRUNET, J., State University of New York at Stony Brook
Factors affecting the among flower variation in sex allocation in *Aquilegia caerulea* (Ranunculaceae).

4:15 DAWSON, T.E., University of Utah
Patch type, physiological performance and gender diphasy in *Lychnis dioeca*, a perennial understory herb.

4:30 MUENCHOW, G., and V. DELESALLE, Ohio University
Pollination, predation and gender in *Sagittaria* congeners.

4:45 BROADDUS, L., Duke University
Factors determining seed set and seed success in male steriles and hermaphrodites of *Plantago lanceolata*.

5:00 ORZACK, S., and E. D. PARKER, Jr., University of Chicago and McNeese State University
Genetic variation for sex ratio traits and its evolutionary significance.

Monday Afternoon
Room: South Long View

CONTRIBUTED PAPERS: Morphology and Development

Chair: P. Wimberger

2:00 RICE, S.H., University of Arizona
A geometric model for the evolutuon of development.

2:15 ARMBRUSTER, W.S., University of Alaska
Component regression analysis of morphometic data from natural plant populations: insights into ontogenetic, genetic, and selective correlations.

2:30 COWLEY, D.E., North Carolina State University
Ontogenetic dynamics of prenatal uterine effects on mice.

2:45 KINGSOLVER, J., and D. WIERNASZ, University of Washington
Developmental constraints on wing melanization pattern in pierine butterflies: experimental studies.

3:00 JONES, C., University of Califronia, Berkeley
The developmental basis of leaf shape variation in a wild and a cultivated *Cucurbita* species.

3:15 ZELDITCH, M.L., Michigan State University
Ontogenetic and phylogenetic variation in patterns of integration in *Sigmodon*.

3:30 BREAK

3:45 LESSA, E.P., and J.L. PATTON, University of California, Berkeley
Ontogeny and recurrent skull shapes in pocket gopher evolution (genus *Thomomys*).

4:00 MIYAKE, T., and J.D. McEACHRAN, Texas A&M University
Preliminary results of cranio–facial development in batoid fishes (Chondrichthyes, Batoidea): contribution of an embryonic cartilage, lamina–orbitonasalis, to fórmation of the anteroir region of neurocranium.

4:15 WAKE, M.H., University of California, Berkeley
Hyobranchial metamorphosis in *Epicrionops*: a bone–to–cartilage transition.

4:30 QUEATHEM, E., University of Utah
Ontogeny, shape, and locomotion in the Acrididae.

4:45 WIMBERGER, P., Cornell University
Morphological plasticity in the cichlid fishes *Geophagus brazilieusis* and *G. steindachneri*.

5:00 KITCHELL, J., University of Michigan
Evolutionary opportunity via progenesis: shifts in developmental timing associated with a Late Eocene impact event.

Monday Afternoon
Room: Chapel

CONTRIBUTED PAPERS: Life History Evolution: Ecology

Chair: S. Courtney

2:00 ORZACK, S., and S. TULJAPURKAR, University of Chicago and Portland State University
Evolutionary dynamics and neutral life history evolution.

2:15 WYNGAARD, G.A., James Madison University
Genetic relationships among life history traits: Evidence from population crosses.

2:30 ETGES, W.J., University of Arkansas
Genetics of developmental homeostasis in *Drosophila mojavensis*.

2:45 NAEEM, S., University of California, Berkeley
Ecological consequences of dispersal in a heterogeneous environment.

3:00 KINKEL, L., and J.H. ANDREWS, University of Wisconsin–Madison
"Supply–side ecology": fungal immigration and community development on leaf surfaces.

3:15 LINHART, Y.B., University of Colorado
Genetic differentiation of *Arceuthobium* dwarf–mistletoes on their hosts *Pinus ponderosa* and *P. contorta*.

3:30 BREAK

3:45 COURTNEY, S., University of Oregon
The evolution of host choice in mushroom feeding *Drosophila*.

4:00 THOMPSON, J.N., Washington State University
Evolutionary genetics of host selection in swallowtail butterflies.

4:15 KAITALA, A., University of Helsinki
Cost of flight ability and regional changes in reproductive flexibility of the waterstrider, *Gerris thoracicus*.

4:30 GRAVES, J.L., Jr., Wayne State University
The effect of adult population density on longevity, recruitment, and duration in *Drosophila melanogaster* selected for postponed senescence.

4:45 SPITZE, K., University of Illinois
Life history evolution in *Daphnia pulex* in response to predation by *Chaobarus americanus* (Diptera).

5:00 BALDWIN, J.D., University of Iowa
Temperature effects and variation in life–history traits and total fitness in tropical milkweed bugs (*Oncopeltus fasciatus*).

5:15 POSSINGHAM, H.P., Stanford University
Habitat selection by two species of nectarivore in two habitats.

MONDAY AFTERNOON
ROOM: TOYON

CONTRIBUTED PAPERS: Evolution in Polygenic Systems

CHAIR: L. LEAMY

2:00 HERNANDEZ, J.L., and B.S. WEIR, North Carolina State University
A comparson of tests for linkage disequilibrium.

2:15 CRESPI, B.J., University of Michigan
Natural selection of interaction systems.

2:30 HOULE, D., State University of New York at Stony Brook
Maintenance of polygenic variation in finite populations.

2:45 HOM, C.L., and A. HASTINGS, University of California, Davis
Maintenance of genetic variability by antagonistic pleiotropy.

3:00 SCHLUTER, D., University of British Columbia
Estimating the form of natural selection on a quantitative trait.

3:15 FONG, D.W., R.W. JERNIGAN, and D.C. CULVER, The American University
The use of biplots to compare genetic correlation matrices between populations.

3:30 BREAK

3:45 MORENO, G., State University of New York at Stony Brook
Variance components of quantative characters in different genetic backgrounds.

4:00 CARSON, H.L., University of Hawaii
Epistatic variability in populations of *Drosophila silvestris* of Hawaii.

4:15 BRODIE, E.D., III, University of Chicago
Genetic correlations between morphological and behavioral traits in natural populations.

4:30 LOFSVOLD, D., University of Texas at Austin
Random genetic drift in wing vein traits of *Drosophila*.

4:45 CHEVERUD, J.M., Northwestern University
Comparative analysis of morphological integration in the primate facial skeleton.

5:00 LEAMY, L., California State University – Long Beach
Brain size allometry in inbred and hybrid house mice.

MONDAY AFTERNOON
ROOM: DOLPHIN

CONTRIBUTED PAPERS: Natural Selection

CHAIR: H.M. WILBUR

2:00 WILLIAMS, M.B., University of Delaware
Units of evolution, not units of selection.

2:15 KOENIG, W., and R. MUMME, University of California, Berkeley, and Cornell University.
Helping and the future component of indirect fitness.

2:30 SIMONS, L.H., L. S. SIMONS, and T.A. MARKOW, Arizona State University
The evolutionary consequences of punctuated selection.

2:45 WILBUR, H.M., Duke University
Individual selection and population selection by predators on amphibian larvae.

3:00 LONGLAND, W.S., University of California, Riverside
Risk of predation and the adaptive significance of bipedalism among desert rodents.

3:15 REILLO, P.R. University of Maryland
Color polymorphism and the role of selection in a New England spider.

3:30 BREAK

3:45 BOOTH, C.L., University of California, San Diego
Evolutionary significance of ontogenetic color change in animals.

4:00 MULVEY,M., S.A. DIAMOND, and M.C. NEWMAN, Wake Forest University and Savannah River Ecology Laboratory
Differential survival among genotypes of mosquitofish under conditions of acute mercury toxicity.

4:15 CARROLL, S.P., University of Utah
Rapid evolution on introduced plants: beak length and food preference in the seed–feeding hemipteran, *Jadera haematoloma*.

4:30 ALSTAD, D.N., K.W. CORBIN, and G.F. EDMUNDS Jr., University of Minnesota and University of Utah
Effects of selection mediated by individual host trees on the genetic structure of a scale insect population.

4:45 MORT, M.A., J.W. Goethe–Universitat (Frankfurt)
Ecological genetics of *Daphnia*: response of coexisting genotypes to resource manipulation.

5:00 TAYLOR, J., University of New Hampshire
Temporal changes in shape: natural selection or effects of resource limitation?

MONDAY AFTERNOON
ROOM: ACACIA

CONTRIBUTED PAPERS: DNA Evolution: Genes and Transposons

CHAIR: R.C. RICHMOND

2:00 LEHMAN, N., University of California, Los Angeles
Evolution of the genetic code through stop codon takeover.

2:15 CAVENER, D.R., Vanderbilt University
Molecular and developmental evolution of gene expression.

2:30 ALLENDORF, F.W., University of Montana
Evolution of gene regulation in the polyploid salmonid genome.

2:45 EANES, W.F., State University of New York at Stony Brook
Accumulation of a transposable element in inversions from natural populations of *Drosophila melanogaster*.

3:00 OCHMAN, H., Washington University
Insertion sequence evolution in *Escherichia coli*.

3:15 LAUERMAN, T., and D.A. POWERS, Johns Hopkins University
Sequence comparison of cDNA coding for two kinetically different allelic isozymes of LDH–B from the teleost *Fundulus heteroclitus*.

3:30 BREAK

3:45 CRAWFORD, D.L., H.R. COSTANTINO, and D.A. POWERS, Johns Hopkins University
Lactate dehydrogenase–B cDNA from the fish *Fundulus heteroclitus*: evolutionary implications.

4:00 RICHMOND, R.C., Indiana University
Molecular evolutionary genetics of the "Est–6" locus in *Drosophila*.

4:15 AGELLON, L., T.T. CHEN, and D.A. POWERS, Johns Hopkins University
The structure of rainbow trout growth hormone gene and its evolutionary implications.

4:30 VINCENT, K.A., and A.C. WILSON, University of California, Berkeley
Transcriptional and evolutionary analysis of the silent delta globin gene of Old World monkeys.

4:45 SCHAEFFER, S.W., Harvard University
Evolution of synonymous positions of the alcohol dehydrogenase locus in the *obscura* group of *Drosophila*.

5:00 RILEY, M., Harvard University
An analysis of the evolution of synonymous codons in *Drosophila* genes.

MONDAY AFTERNOON
ROOM: NORTH LONG VIEW

CONTRIBUTED PAPERS: Heterozygosity/Other Evolutionary Studies

CHAIR: T.M. SCOTT

2:00 McALPINE, S., University of Georgia
Fluctuating asymmetry as an indicator of genetic variation.

2:15 BOEHM, C.A., J.C. HAFNER, and D.R. SANDQUIST, Occidental College
Nongeographic genetic variation in the wrentit (*Chamaea fasciata*) with comments on heterozygosity, effective population size and gene flow in birds.

2:30 SCOTT, T.M., and R.K. KOEHN, State University of New York at Stony Brook
The effect of environmental stress on the relationship of heterozygosity to growth rate in *Mulinia lateralis*.

2:45 WOODRUFF, D.S., S.J. GOULD, and C.L. BOOTH *, University of California, San Diego (*speaker)
Relationship between heterozygosity and phenotypic variation in the land snail *Cerion*.

3:00 PECON, J., Rutgers University
Demographic genetics of the hard clam, *Mercenaria mercenaria*: heterozygosity, size, and age correlations of differentially distributed populations.

3:15 CHAN, J.W.Y., and R.S. BURTON, University of Pennsylvania and University of Houston
The adaptive significance of ADH activity variants in *Trifolium repens*.

3:30 BREAK

3:45 PAYNTER, K.T., L. DiMICHELE, and D.A. POWERS, The Johns Hopkins University
The metabolic basis for developmental differences between LDH–B genotypes of *Fundulus heteroclitus*.

4:00 GUNN, S.J., U.S. Livestock Insects Laboratory
Parthenogenetic reproduction and it's effect on chromosomal evolution in the cayenne tick (*Amblyomma cajennense*).

4:15 MAYER, S.S., University of California, Berkeley
Genetic evidence for multiple origins of dioecy in Hawaiian *Wikstroemia* (Thymelaeacae).

4:30 TERKANIAN, B., Arizona State University
Factors influencing successful parasitism in a tachinid fly.

4:45 BRUCK, D., and I. DAVILA, University of Puerto Rico
The ecology of some *Drosophila* populations in a xerophytic area south east Puerto Rico.

MONDAY AFTERNOON
ROOM: HEATHER

POSTER SESSION

BASOLO, A., University of Texas at Austin
Differential investment in sons and daughters in platyfish.

BENTZEN, P., McGill University
Geographic variation in mitochondrial genotype frequencies of American shad, *Alosa sapidissima*.

BOULDING, E.G., University of Washington
Genetic differentiation of intertidal snail populations driven by opposing selection pressures on exposed and protected shores.

DEAN, A.M., York University, Toronto
Selection and neutrality in the *Lac* operon in *Echerichia coli*.

DYKHUIZEN, D.E., State University of New York at Stony Brook
Replacement of terminator sequences in alleles of *gnd* of *Escherichia coli*.

GOODNIGHT, C.J., and D.M. CRAIG, University of Illinois at Chicago and Rosary College
The evolution of competitive ability: an experimental study.

GRULA, J.W., Phytogen
Molecular evolution of the phosphoenolpyruvate carboxylase gene that encodes the isozyme involved in C_4 photosynthesis.

HAZEL, W. and T. GRANTHAM, DePauw University
The evolution of environmentally cued polymorphisms.

HEISLER, L., University of Oregon
Dynamics of sexual selection in diploid populations.

HOFFMANN, R.J., Iowa State University
Clone structure and the genetic organization of sea anemone populations.

HOFFMAN, S.M.G., University of Michigan
Genetic variation in a natural hybrid zone: the rare allele phenomenon in *Peromyscus californicus*.

JAMES, A,C., University of Rochester
Physiological trade–offs and feeding specialization in *Drosophila*.

JAMESON, D.L. and N. AYDIN–MUDDERISOGLU, California Academy of Sciences
Mitochondrial DNA evolution in the *Hyla versicolor* complex.

JORDAN, N., Northeast Missouri State University
Path analysis of the response of weed and non–weed populations of *Diodia teres* (Rubiaceae) to soybean interference.

POSTER SESSION (CONTINUED)

KASPARI, M., University of Arizona
Fitness, foraging and the structure of an assemblage of grassland birds.

LAMB, T., J.C. AVISE and J.W. GIBBON, University of Georgia
Phylogeographic patterns in mitochondrial DNA of the desert tortoise, *Xerobates agassizi*.

MORIN, P.A., University of California, San Diego
Ensuring the future evolutionary potential of endangered primates: genetic characterization of the lion–tailed macaque.

NOL, E., Trent University
Quantative genetics of behavioral "traits" in juvenile and adult Japanese quail.

PARK, L.K., Washington University in St. Louis
Mitochondrial evolution in the *mulleri* complex of *Drosophila*.

PARKER, E.D., Jr., McNeese State University
Reaction norms of life history characters: sex ratio and diapause in *Nasonia vitripennis*.

PFENNIG, D., University of Texas at Austin
Development and evolution of alternative morphologies in spadefoot toad tadpoles.

REEVE, J.S., Cornell University
Nitrogen availablity affects behavior and reproduction in founding pairs of the wood – dwelling termite, *Zootermopsis nevadensis*.

SMILEY, J., University of California, Santa Cruz
A model for plant herbivore interactions incorporating heterogeneity among plants.

SMITH, T.B., University of California, Berkeley
Bill size polymorphism and intraspecific niche utilization in an African finch.

STEVENS, L., and M.J. WADE, University of Chicago
Sex–limited transmission of a microorganism in *Tribolium* flour beetles.

SVENDSEN, G.E., Ohio University
Group size, reproductive success, and population density in vicuna (*Vicugna vicugna*).

SVENDSEN, G.E., and M.M. WHITE, Ohio University
Seasonal patterns of genetic variation and population turnover in chipmunks (*Tamial striatus*).

WHITE, M.M., Ohio University
Genetic variation and gene diversity in pteronarcyid stoneflies.

WICHMAN, H.A. and C. T. PAYNE, University of Missouri – Kansas City
Phylogenetic screening of the zebra genome. II. Characterization of hypervariable clones.

SYMPOSIUM: HABITAT SELECTION

Organizer: GORDON H. ORIANS

Room: Acacia

8:40 ORIANS, G.H. and J.F. WITTENBERGER, University of Washington
The stages of habitat selection.

9:25 PULLIAM, H.R., University of Georgia
Patchy habitats and population dynamics.

SYMPOSIUM: PHYLOGENY AND EVOLUTIONARY PROCESSES

Organizer: DOUGLAS J. FUTUYMA

Room: Heather

8:30 FUTUYMA, D.J., State University of New York at Stony Brook
Introduction to the Symposium.

8:40 AVISE, J.C., University of Georgia
Gene trees and organismal histories: a phylogenetic approach to population biology.

9:25 CARSON, H.L., University of Hawaii
Decifering character evolution in populations of Hawaiian *Drosophila* : clues from phylogeny.

10:10 BREAK

10:30 DONOGUE, M.J., University of Arizona
Cladograms and character evolution.

10:15 WAGNER, G.P., University of Vienna and Northwestern University
Is there a biological basis of homology?

(Continued Wednesday Afternoon)

SYMPOSIUM: REACTION NORMS: EVOLUTIONARY, ECOLOGICAL, AND GENERAL SIGNIFICANCE

Organizer: STEPHEN C. STEARNS

8:30 STEARNS, S.C., Zoologisches Institut, Basel
Introduction to the symposium.

8:40 STEARNS, S.C., Zoologisches Institut, Basel
Reaction norms for life history traits: predictions, tests, and consequences.

9:25 VAN NOORDWIJK, A., Zoologisches Institut, Basel
Field experiments on the quantative genetics of reaction norms in Great Tits.

10:10 Break

10:30 SCHARLOO, W., Utrecht
The developmental and physiological basis of reaction norms.

1:15 GABRIEL, W., Max Planck Institute for Limnology, Plon
The relationship between raction norms and environmental tolerance

(Continued Wednesday Afternoon)

TUESDAY AFTERNOON
ROOM: TOYON

CONTRIBUTED PAPERS: Molecular Evolution and Systematics

CHAIR: J.W. ARCHIE

2:00 ARCHIE, J.W., University of Hawaii
Factors affecting the stability of dendrograms from allele frequencies: sample size, coding, methods of analysis.

2:15 WHEELER, W., Harvard University
Logarithmic probabilities and cladogram confidence intervals.

2:30 STEEL, M.A., Massey University
Conditions for the method of parsimony to be consistent.

2:45 SARICH, V.M., University of California, Berkeley
DNA hybridization as a guide to phylogenies: problems and prospects.

3:00 SPRINGER, M., University of California, Riverside
Phylogeny and rates of single–copy DNA evolution in phalangeriform marsupials based on DNA hybridization.

3:15 CACCONE, A., and J.R. POWELL, Yale University
A reevaluation of higher primate phylogeny based on single copy nuclear DNA.

3:30 BREAK

3:45 KOCHER, T.D., and A.C. WILSON, University of California, Berkeley
African origin of humans confirmed by sequencing of mtDNA via the polymerase chain reaction.

4:00 BRAUN, M.J., University of Cinncinnati
An evolutionary perspective on the AIDS virus.

4:15 ZIMMER, E.A., Louisiana State University
Ribosomal gene tracers of seed plant evolution.

4:30 ROGERS, D.S., and J.E. WOMACK, Texas A&M University
Molecular evolution among selected bovid taxa: phylogeny reconstructuon using restiction fragment length polymorphisms.

4:45 STEVENS, T.A., D.A. DUFFIELD, and E.D. ASPER, Portland State University and Seaworld Enterprises, Inc.
Mitochondrial DNA studies in killer whales (*Oreinus orca*).

5:00 DeBRY, R., Michigan State University
Phylogeny and biogeography of some New World *Microtus*.

5:15 KIM, J. State University of New York at Stony Brook
An examination of the parsimony corollary: shorter trees are not good enough.

TUESDAY AFTERNOON
ROOM: CHAPEL

CONTRIBUTED PAPERS: Sexual Selection and Mating Systems

CHAIR: G.C. WILLIAMS

2:00 GAYLEY,T.W., University of Arizona
A simulation study of the complete Fisherian runaway process of sexual selection.

2:15 ENDLER, J.A., University of California, Santa Barbara
Context–dependent conspicuousness, vision, and timing of courtship behavior.

2:30 BREDEN, F., University of Missouri–Columbia
Male predation risk and female preference in the Trinidad guppy.

2:45 HOUDE, A., and J.A. ENDLER, Princeton University
An experimental test for evolutionary effects of female choice.

3:00 KELLY, P.A., University of California, Berkeley
Social organization and breeding structure of the dusky–footed wood rat.

3:15 DICKINSON, J.L., Arizona State University
Remating by female checkerspot butterflies (*Euphydryas chalcedona*): roles of the mating plug and refractory behaviors of females.

3:30 BREAK

3:45 CLARK, S.J., The Rockefeller University
Testing the predictions of two hypotheses of the adaptive significance of prolonged copulation in a water strider.

4:00 KALISZ, S., Kellogg Biological Station, Michigan State University
Early and late fitness consequences of mating systems in *Collinsia verna*.

4:15 LYONS, E.E., Northwestern University
Interpreting correlations in plant reproduction.

4:30 MOTTEN, A.F., Duke University
Genetics of stigma position and outcrossing rate in jimsonweed, (*Datura stramonium*).

4:45 HOLTSFORD, T., and N. ELLSTRAND, University of California, Riverside
Inbreeding depression evaluation of *Clarkia temblorіensis* accessions with different mating systems.

5:00 SCHMITT, J., and D.W. EHRHARDT, Brown University
Inbreeding depression intensified by dominance and suppression in *Impatiens capensis*.

TUESDAY AFTERNOON
ROOM: ACACIA

CONTRIBUTED PAPERS: Geographical Variation: Molecular

CHAIR: R.D. SAGE

2:00 MOORE, W.S., Wayne State University
Mitochondrial DNA variation in the northern flicker.

2:15 SAGE, R.D., H. TICHY, and A.C. WILSON, University of Missouri, Max Planck Institut, and University of California, Berkeley
Mitochondrial DNA variation in western European housemice.

2:30 ASHLEY, M., Columbia University
Genetic relationships among black rhinoceros populations, inferred from mitochondrial DNA analysis.

2:45 CRONIN, M.A., Yale University
Micro- and macrogeographic variation of mitochondrial DNA in North American cervids.

3:00 SIMON, C., University of Hawaii
Mitochondrial DNA, allozymes, geographic variation, and speciation in periodical cicadas.

3:15 MARTIN, A.P., University of Hawaii
Anomolous distribution of mitochondrial DNA genotypes in 13– and 17– year cicadas.

3:30 BREAK

3:45 SMITH, M.F., and J.L. PATTON, University of California, Berkeley
Broadscale genetic structure in the pocket gopher, *Thomomys bottae*, in California.

4:00 SCHAFFER, H.B., University of California, Davis
The polytypic species revisited: an electrophoretic examination of the tiger salamander, *Ambistoma tigrinum*.

4:15 HOLMAN, J.D., and I.F. GREENBAUM, Texas A&M University
Variation and genetic subdivision among allopatric subspecies of the phyllostomid bat species *Sturnira lilium*.

4:30 RIDDLE, B.R., University of New Mexico
Phylogeny and endemism in grasshopper mouse (*Onychomys*) mitochondrial DNA: implications for North American desert and grassland historical biogeography.

4:45 WILLIAMS, R.N., Portland State University
Phylogeography of the polytypic cutthroat trout (*Salmo clarki*) as shown by anlysis of mitochondrial DNA.

5:00 CRAWFORD, D.L., and D.A. POWERS, Johns Hopkins University
Molecular basis for geographical variation in the concentration of LDH–B from the teleost *Fundulus heteroclitus*.

TUESDAY AFTERNOON
ROOM: SANDERLING

CONTRIBUTED PAPERS: Speciation and Isolating Mechanisms

CHAIR: R.K. WAYNE

2:00 MAXON, L., University of Illinois
Speciation in Australian frogs: a critique of current models.

2:15 BRITTON–DAVIDIAN, J., Institut des Sciences de L'Evolution, Montpellier
Chromosomal divergence in house mice: divergence and origin.

2:30 MEYER, A., University of California, Berkeley
Morphological and molecular correlates of the evolution of cicilid fishes.

2:45 WEINBERG, J.R., Woods Hole Oceanographic Institution
Pre– and postmating reproductive isolation between allopatric populations of a marine polychaete.

3:00 FREY, J.E., and G.L. Bush, Michigan State University
Host selection and speciation in *Rhagoletis* fruit flies: the genetics of odor perception.

3:15 FEDER, J., C. CHILCOTE, and G.L. BUSH, Michigan State University
Geographic pattern of genetic variation for apple and hawthorn populations of *Rhagoletis pomonella*: implications for sympatric host race formation and speciation.

3:30 BREAK

3:45 BROWN, J.M., Kellogg Biological Station, Michigan State University
Geographic variation in habitat selection and specialization in phoretic mites.

4:00 WAYNE, R.K., University of California, Los Angeles
Genetic and morphologic differences among potentially competing canids (Mammalia: Canidae).

4:15 KOCHMER, J., Yale University
The role of reinforcement in speciation in the soldier beetle, *Cauliognathus pennsylvannicus*.

4:30 KREBS, R.A., and T.A. MARKOW, Arizona State University
Courtship behavior and the control of reproductive isolation in *Drosophila mojavensis*.

4:45 BENNACK, D.E., Michigan State University
Mechaical Isolaton: testing the relationship between insemimation success and quantitative variation in the fit of the genitalia in *Barytettix* grasshoppers.

5:00 COHAN, F.M., Wesleyan University
Variation among desert strains of *Bacillus subtilis* in competence to exchange genes by transformation.

TUESDAY AFTERNOON
ROOM: CURLEW

CONTRIBUTED PAPERS: Macroevolution and Paleobiology

CHAIR: A.R. McCUNE

2:00 VAN VALKENBURGH, B., University of California, Los Angeles
Species richness in predator guilds: a paleontological perspective.

2:15 MINDELL, D.P., Harvard University
Evolution of allozymes in sceloporine lizards: gradual or episodic?

2:30 STEWART, C-B., University of California, San Francisco
Episodic evolution in the stomach lysozymes of ruminants.

2:45 LEMEN, C.A., University of Nebraska – Lincoln
Testing macroevolutionary hypotheses with cladistic data sets.

3:00 CANNATELLA, D., and K. NISHIKAWA, University of California, Berkeley and University of Kentucky
Evolution of feeding systems in early anurans.

3:15 CLARK, J.M., University of California, Davis
Iterative evolution in an ancient vertebrate lineage: the phlogeny of crocodylomorphs.

3:30 BREAK

3:45 WARHEIT, K.I., University of California, Berkeley
Intraspecific morphometric variation within the genus *Sula* (Aves: Pelecaniformes).

4:00 SESSIONS, S.K., and S.B. RUTH, University of California, Irvine and Science Research and Consulting Services
An explanation for naturally occurring supernumerary limbs in amphibians.

4:15 BELL, M.A., C.E. Wells, and J.A. MARSHALL, State University of New York at Stony Brook
Mass-mortality layers of fossil stickleback fish: catastrophic kills of polymorphic schools.

4:30 McCUNE, A.R., Cornell University
Morphological anomalies in a radiation of fishes: evidence for intensifying selection through time?

4:45 TABACHNICK, R., University of Michigan
Continuous versus discontinuous species boundaries of Miocene planktonic Foraminifera from deep sea cores.

5:00 GLAZIER, D.S., Juniata College
Are genera real? Life history discontinuities between genera of murid rodents.

5:15 WENZEL, J.W., University of Kansas
Differential evolution of early and late construction behaviors in paper wasps.

TUESDAY AFTERNOON
ROOM: HEATHER

CONTRIBUTED PAPERS: Ecological Genetics and Selection

CHAIR: M.K. KRAUSE

2:00 MITTON, J.B., University of Colorado
The adaptive distance model reveals a relationship between allelic frequency and viability in annual ryegrass.

2:15 SCHUSTER, W., University of Colorado
Gene flow in limber pine: evidence from pollination phenology and genetic differentiation along an elevational transect.

2:30 HERNANDEZ, J.D., Savannah River Ecology Laboratory
Factors affecting genetic differentiation of southeastern mosquitofish (*Gambusia holbrooki*) in three drainages.

2:45 McDONALD, J.H., State University of New York at Stony Brook
Geographic patterns of allele frequencies as evidence for direct selection of enzyme loci.

3:00 KRAUSE, M.K., V.M. BRICILJ, and R.K. KOEHN, State University of New York at Stony Brook
The fitness effects of GPI genotype in a cohort of *Argopecten irradians*.

3:15 INNES, D.J., Memorial University of Newfoundland
A genetical analysis of obligately asexual clones of *Daphnia pulex*.

3:30 BREAK

3:45 WHELAN, W.L., National Institutes of Health
Natural variation in the asexual yeast *Candida albicans*.

4:00 KEELER, K.H., University of Nebraska – Lincoln
Polyploid polymorphism in the prairie grass big bluestem *Andropogon gerardii*.

4:15 MITCHELL, R.J., University of California, Riverside
Nectar standing crop and pollen transfer by hummingbirds.

4:30 BOYER, J.F., Union College
Niche displacement in small populations with different satiation and predation levels.

4:45 SMALLWOOD, P.D., University of Arizona
Optimal foraging theory and the evolution of niche partitioning.

5:00 FOX, G.A., University of Arizona
Multiple flowering seasons in a desert annual: developmental versus adaptive explanations.

5:15 VRIJENHOEK, R.C., Rutgers University
Balancing selection under seasonal stresses in *Poeciliopsis*.

TUESDAY AFTERNOON
ROOM: DOLPHIN

CONTRIBUTED PAPERS: Life History Evolution: Growth and Natural Selection

CHAIR: S. VIA

2:00 REINARTZ, J.A., University of Wisconsin–Milwaukee
A quantitative comparison of the patterns of clonal growth in four woody species.

2:15 GEBER, M.A., University of Utah
Genetic variation in branching rules in *Polygonum arenastrum* (Polygonacea): implications for life–history.

2:30 SCULLY, E.P., Towson State University
Comparative patterns of growth and molting in intertidal hermit crabs.

2:45 ARTER, H., University of California, Berkeley
Growth polymorphism in a freshwater mussel.

3:00 SHAW, J., Ithaca College
Growth rate variation within and among haploid–sib families of the moss, *Funaria hygrometrica*.

3:15 BUSH, R., and P. SMOUSE, University of Michigan
Large effects of electrophoretic genotype on growth rate and survival in loblolly pine.

3:30 BREAK

3:45 PHILIPPI, T., University of Utah
Bet hedging and the question of genetic specialization.

4:00 VIA, S., Cornell University
Demographic concepts of fitness: estimates of clonal variation and natural selection on pea aphids in two environments.

4:15 COSTICH, D.E., University of Iowa
Survivorship and fecundity of the monoecious and dioecious subspecies of *Ecballium elaterium* (Cucurbitaceae) in reciprocal transplants across a climatic gradient in Spain.

4:30 STRATTON, D., State University of New York at Stony Brook
Genotype–environment interactions for fitness components in *Erigeron annuus*: can they maintain diversity?

4:45 RANK, N., University of California, Davis
Effects of host plant chemistry on larval survivorship in the willow leaf beetle, *Chrysomela aenicollis* (Chrysomelidae).

5:00 BROWNE, R., Wake Forest University
Microspeciation in an asexual population of *Artemia*.

5:15 MOTRO, U., Hebrew University
Theoretical aspects of vigilance and begging behavior: Should a social parasite expose its nature?

WEDNESDAY MORNING
ROOM: TOYON

CONTRIBUTED PAPERS: Population Structure

CHAIR: A.R. ROGERS

8:30 SLATKIN, M., University of California, Berkeley
Detecting extinctions and recolonizations.

8:45 TULJAPURKAR, S., Portland State University
Uncertainty and extinction.

9:00 McCAULEY, D.E., Vanderbilt University
Effects of local extinction and colonization on the population structure of milkweed beetles.

9:15 NOVAK, J.M., Savannah River Ecology Laboratory
The spandrels revisited: heterozygosity distributions, bottlenecks, and Kipling.

9:30 MELNICK, D.J., S. J. GOLDSTEIN, and J. C. LONG, Columbia University, Princeton University, and University of New Mexico
Mammalian population genetic structure: randomization tests of the statistical significance of Wright's F–statistics.

9:45 GROSBERG, R.K., University of California, Davis
Direct and indirect analysis of gene flow in a natural population of a sessile marine invertbrate.

10:00 BREAK

10:15 DEVLIN, B., University of California, Riverside
Detecting gene movement via pollen in wild radish populations.

10:30 ROGERS, A.R., University of Pittsburgh
Genetic consequences of kin–structured migration.

10:45 MEAGHER, T.R. and E.R. HEITHAUS, Rutgers University and Kenyon College
Genetic subdivision within a natural population of *Trillium catesbei* (Liliaceae).

11:00 GEIGER, H.J., A.M. SHAPIRO, A. PORTER, B. JAKOB and J. LLORENTE, University of Bern, University of California, Davis, and University of Mexico
Eucheira socialis (Lepidoptera, Pieridae): loss of genetic variation as a consequence of the population biology and anthropogenic range extension.

11:15 POTTS, W., C.J. MANNING, C.C. LU and E.K. WAKELAND, University of Florida
Inbreeding and the maintenance of H–2 (MHC) polymorphisms in natural populations of *Mus*.

11:30 LEVIN, D.A., University of Texas at Austin
Paternity pools in plants.

11:45 HEYWOOD, J.S., University of Texas
Micro–spatial genetic structure and sib competition in the annual plant *Gaillardia pulchella*.

12:00 LYNCH, M., University of Illinois at Champaign–Urbana
Estimation of relatidness by DNA fingerprinting.

WEDNESDAY MORNING
ROOM: CHAPEL

CONTRIBUTED PAPERS: Reaction Norms

CHAIR: H. DINGLE

8:30 SCHEINER, S.M., and R.F. LYMAN, Northern Illinois University
The heritability of phenotypic plasticity.

8:45 WADE, M.J., University of Chicago
Random genetic drift and the norm of reaction to climate and competition.

9:00 DINGLE, H., University of California, Davis
Reaction norms to food stress in size-selected lines of milkweed bugs.

9:15 THOMPSON, D., University of Iowa
Diet induced developmental plasticity in head morphology of grasshoppers *Melanoplus sp.*: quantitative genetics and ecological significance.

9:30 SULTAN, S.E., Harvard University
Phenotypic plasticity in response to light in *Polygonum persicaria*.

9:45 EVANS, A.S., University of Chicago
Phenotypic plasticity of physioligical and life history traits: evoutionary implicatons in rapid cycling *Brasseca campestris*.

10:00 BREAK

10:15 GEHRING, J.L., University of Colorado
Differences in phenotypic plasticity between males and females in a dioecious plant, *Silene alba*.

10:30 FARRIS, M.A., Hamline University
Phenotypic and genetic correlation patterns in cocklebur grown in contrasting environments.

10:45 PALMER, A.R., University of Alberta
The change in shell form of a rocky-shore gastropod in response to the scent of a predatory crab.

11:00 WEIS, A.E., and W.L. GORMAN, Northern Illinois University
How the distribution of environmental effects influences the intensity of canalizing selection: a host-parasite example.

11:15 SNYDER, R.J., and H. DINGLE, University of California, Davis
Reaction norms to salinity for life history characteristics of estuary and freshwater threespine sticklebacks (*Gasterosteus aculeatus*).

11:30 TREXLER, J., Eckerd College
Norms of reaction within and among populations of *Poecilia latipinna* (Pisces: Poeciliidae).

11:45 DOBSON, F.S., University of Michigan
The maintenance of life-history plasticity in Columbian ground squirrels.

WEDNESDAY MORNING
ROOM: HEATHER

CONTRIBUTED PAPERS: Mating Systems and Inbreeding

CHAIR: D.L. MARSHALL

8:30 KOELLA, J.C., University of Basel
Sib competition favors genetic recombination in plants.

8:45 KELLEY, S.E., Oxford University
A test of the short-term advantage of sexual reproduction.

9:00 MARSHALL, D.L., University of New Mexico
Pairwise interactions among pollen donors: insights on pollen competition, mate choice and multiple paternity.

9:15 KARRON, J.D., and D.L. MARSHALL, University of New Mexico
Fitness consequences of multiple paternity in wild radish: a test of the sib competition hypothesis.

9:30 CAMPBELL, R.B. University of Northern Iowa
Random and regular systems of inbreeding.

9:45 SCHEMSKE, D.W., University of Chicago
Enviromental variability and the advantages of outcrossing in *Impatiens pallida*.

10:00 BREAK

10:15 SVENSSON, L., University of Lund
Inbreeding, crossing and variation in stamen number in the selfing annual, *Scleranthus annuus* (Caryphyllaceae).

10:30 SAKAI, A.K., and S.G. WELLER, University of California, Irvine
Inbreeding depression in *Schiedea salicaria* (Caryophllaceae), a gynodioecious Hawaiian species.

10:45 MANASSE, R., University of California, Davis
Inbreeding effects on variability in seed size in *Ginum erubescen* (Amaryllidaceae).

11:00 KUNIN, W., University of Washington
Pollen-ovule ratios, seed sizes, and breeding systems of Israel crucifers: a tale of two theories.

11:15 SCHNABEL, A., J.L. HAMRICK, and M. SMITH, University of Georgia and Southern Illinois University at Edwardsville
Estimates of outcrossing rates in three populations of mesquite (*Prosopis glandulosa* L.).

11:30 DUFFIELD, D.A., R.S. WELLS, and J. CHAMBERLIN-LEA, Portland State University and University of California, Santa Cruz
Genetic studies of population structure in bottlenose dolphins (*Tursiops truncatus*).

11:45 THOMAS, R.H., University of Hawaii
Breeding structure in a cactophilic *Drosophila* species.

WEDNESDAY MORNING
ROOM: CURLEW

CONTRIBUTED PAPERS: Geographical Variation: Phenotypic

CHAIR: M.E. DOUGLAS

8:30 BOCK, J.H., and C.L. JOLLIS, University of Colorado, Boulder, and East Carolina University
A biogeographical comparison of alpine plant from the central Rocky Mountains, USA, and the central Caucasus Mountains, USSR.

8:45 SCHWAEGERLE, K.E., University of Alaska
Adaptation to local environment in *Phlox*: sensitivity analysis of population response.

9:00 BOAKE, C.R., University of Hawaii
Interisland differences in the advertisement signal of the cricket, *Teleogryllus oceanicus*.

9:15 GROETERS, F., University of California, Davis
Geographic variation in the production of winged morphs by the milkweed aphid (*Aphis nerii*).

9:30 HARRIS, R.N., James Madison University
Local variation in the genetic basis of paedomorphosis in a salamander.

9:45 LOSOS, J.B., University of California, Berkeley
A phylogenetic analysis of character displacement in Caribbean *Anolis* lizards.

10:00 BREAK

10:15 SALONIEMI, I., University of Chicago
Character displacement in *Hydrobia* snails.

10:30 JAMES, F.C., Florida State University
Does clinal variation in blackbirds contain an environmental component?

10:45 STUTZ, H-P., University of Colorado
Genotypic proportions in Englemann spruce associated with environment.

11:00 DYBDHL, M., University of California, Davis
Local adaptation and life history variaton in a philopatric species *Tigriopus californicus* (Copepoda: Harpacticoida).

11:15 DOUGLAS, M.E., and R.C. VRIJENHOEK, Arizona State University and Rutgers University
Geographic variation in *Poeciliopsis occidentalis*: the congruence between morpholgy and allozymes.

11:30 JONES, R., T.C. KANE and D.C.CULVER, Northwestern University, University of Cincinnati and American University
Genetic and morphological differentiation of cave and spring populations of the amphipod *Gammarus minus*.

11:45 SBORDONI, V., G. ALLEGRUCCI, F. BALDARI, A. CACCONE, and D. CESARONI, Universita di Roma
Evolution of a crayfish in a mexican cave: morphometric, allozymic, and mtDNA data.

WEDNESDAY MORNING
ROOM: ACACIA

CONTRIBUTED PAPERS: Life History Evolution: Reproduction

CHAIR: J. TRAVIS

8:30 WEEKS, S., J.D. WETHERINGTON, and R.C. VRIJENHOEK, Rutgers Univeristy
Genetic variation among synthetic asexual *Poeciliopsis*: reproductive components.

8:45 PIEROTTI, R., University of Wisconsin
Adoption vs. infanticide: an intergenerational evolutionary arms race.

9:00 COCHRAN, M.E., University of California, Davis
Conditions for the evolution of fruit abortion in pollen limited plants.

9:15 CASPER, B.B., University of Pennsylvania
Evidence for selective embryo abortion in *Cryptantha flava*.

9:30 McGINLEY, M.A., University of Utah
Seed mass variation in *Cirsium undulatum*: the importance of the size and quality of the maternal resource pool.

9:45 GILES, B., University of Umea
Seed size variation, population dynamics, and evolution.

10:00 BREAK

10:15 SINERVO, B., University of Washington
Evolution of maternal investment in lizards: a comparative and experimental analysis of the effects of egg size on juvenile fitness.

10:30 BOGGS, C., Stanford University
Fecundity and resource allocation patterns in butterfly species with differing adult nutrition.

10:45 KOUFOPANOU, V., McGill University
Effects of major development genes on the life history of volvox (Chlorophyta: Volvocales): a test for the theory of reproductive cost.

11:00 TRAVIS, J., Florida State University
Life history polymorphism in male sailfin mollies, *Poecilia latipinna* (Pisces: Poeciliidae).

11:15 SHUSTER, S.M., University of California, Riverside
Genetically distinct male alternative reproductive behaviors in a marine isopod crustacean.

11:30 MESSINA, F.J., Utah State University
Ecological and genetic bases of variable oviposition behavior in a seed beetle.

11:45 SPIRA, T.P., Georgia Southern College
Reproductive biology of a "leafless" alpine annual plant.

WEDNESDAY MORNING
ROOM: SANDERLING

CONTRIBUTED PAPERS: Physiological Ecology

CHAIR: S.C. ADOLPH

8:30 KAISER, A., University of California, Davis
Coexistence and competitive exclusion in non–equilibrium phytoplankton communities: an invasibility analysis.

8:45 RICHERSON, P., University of California, Davis
Phytoplankton competition and community structure: an invasion analysis.

9:00 MORSE, S.R., University of California, Berkeley
Physiological correlates and ecological consequences of developmental herterochrony in *Hemizonia luzulifolia* (Compositae).

9:15 BOWEN, S.T., San Francisco State University
Brinksmanship in *Artemia* living at the edge of the range of ionic tolerance.

9:30 BURTON, R.S., University of Houston
Genotypic effects on osmotic response in a marine copepod.

9:45 SMITH, F.A., University of California, Irvine
A nutritional basis for the evolution of insular gigantism in small mammalian herbivores.

10:00 BREAK

10:15 KLIMAN, R.M., G.R. LYNCH, and C.B. LYNCH, Wesleyan University
Genetic analysis of photoperiodic adaptation in the Djungarian hamster, *Phodopus sungorus sungorus*.

10:30 ELDER, B., and C.B. LYNCH, Wesleyan University
Thermoregulatory adaptation in five geographic populations of mice (*Mus domesticus*).

10:45 RAINEY, D., University of Colorado
Associations between enzyme genotypes and dark respiration on pernnial ryegrass *Lolium perenne*.

11:00 ROSENZWEIG, R.F., University of Pennsylvania
Overexpression of glycolytic enzymes influences patterns of carbon utilization, growth, and sporulation in the yeast, *Saccharomyces cerevisae*.

11:15 ADOLPH, S.C. and B. SINERVO, University of Texas and University of Washington
Physiological ecology of *Sceloporus* lizard eggs.

11:30 SCHNEIDER, J.E., and G.N. WADE, University of Massachusetts, Amherst
Litter size and sex ratio in hamsters: influence of the mother's fatness and food supply.

11:45 HILBISH, T.J., University of South Carolina,
Physiological genetics of incipient speciation in the mussel, *Mytilus edulis*.

WEDNESDAY MORNING
ROOM: DOLPHIN

CONTRIBUTED PAPERS: DNA Evolution: Multiple Genes

CHAIR: J.R. POWELL

8:30 HEY, J., Harvard University
Directional selection and hitchhiking: how much of the genome will be affected?

8:45 BRUNS, T., University of California, Berkeley
Evolution of fungal mitochondrial DNA in *Suillus* and related genera.

9:00 BOYCE, T., Cornell University
Mitochondrial DNA evolution in the pine weevils.

9:15 CREASE, T. University of Illinois at Champaign–Urbana
Mitochondrial DNA variation in *Daphnia pulex* reproducing by cyclic and obligate parthenogenesis.

9:30 COLLINS, T., Yale University
Mitochondrial DNA evolution at a snail's pace: rates of divergence of marine molluses across the Isthmus of Panama.

9:45 GODDARD, K.A., A. CACCONE, and J.R. POWELL, Yale University
Single copy nuclear DNA evolution in the *Drosophila obscura* group.

10:00 BREAK

10:15 EDWARDS, S.V., and A.C. WILSON, University of California, Berkeley
Analysis of length variation in the mitochondrial DNA's of Australian babblers (Aves).

10:30 MILLIGAN, B., University of Texas at Austin
Rapid evolution and population variation in clover chloroplast DNA.

10:45 HONEYCUTT, R.L., and W.C. WHEELER, Harvard University
Satellite DNA variation in peromyscine rodents.

11:00 RAND, D.M., Harvard University
Population genetics of mtDNA size variation in crickets: evolution of nuclear–cytopasmic interactions?

11:15 FORBES, S., University of Montana
Mitochondrial and nuclear genotypes in introgressed populations of cutthroat trout.

11:30 GOLENBERG, E., University of California, Riverside
Linkage disequilibrium between and among chloroplast and nuclear markers in *Hordeum spontaneum*.

11:45 CHAPMAN, R.W., Johns Hopkins University
Mitochondrial and nuclear gene dynamics in introduced populations of bluegill sunfish.

Wednesday Afternoon

PHYLOGENY AND EVOLUTIONARY PROCESSES

Organizer: DOUGLAS J. FUTUYMA

Room: Heather

2:00 RISKA, B., University of California, Davis
Trait complexity, selection response, and homology.

2:45 FELSENSTEIN, J., University of Washington
Phylogenies and quantative characters.

Zhen 1988
Evolution

3:30 BREAK

3:50 WAKE, D. B., University of California, Berkeley
Phylogeny, functional morphology, and evolution: tongue projection mechanisms in salamanders.

4:35 FUTUYMA, D. J., State University of New York at Stony Brook
Concluding remarks.

SYMPOSIUM: REACTION NORMS: EVOLUTIONARY, ECOLOGICAL, AND GENERAL SIGNIFICANCE

Organizer: STEPHEN C. STEARNS

Room: Chapel

2:00 BAKER, R. J., University of Saskatchewan
Genotype X environment interactions in crop genetics: their evolutionary significance.

2:45 SCHLICHTING, C., Pennsylvania State University
Plasticity of correlations and correlation of plasticities: design and constraint in the evolution of phenotypic plasticity.

3:30 BREAK

3:50 DODSON, S. University of Wisconsin
Cyclomorphosis in cladocerans: the paradigmatic reaction norm.

4:35 CHARNOV, E., University of Utah
The environmental determination of sex and of sex allocation.