Pomology

See Plant Sciences, on page 476.

Population Biology (A Graduate Group)

David J. Begun, Ph.D., Chairperson of the Group

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Faculty

Marissa L. Baskett, Ph.D., Assistant Professor (Environmental Science and Policy)
David J. Begun, Ph.D., Professor (Evolution and Ecology)
Monique Borgerhoff Mulder, Ph.D., Professor (Anthropology)
Louis W. Rothschild, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)
Tim Caro, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)
Graham M. Cuddington, Ph.D., Associate Professor (Evolution and Ecology)
Howard V. Cornwell, Ph.D., Professor (Environmental Science and Policy)
Jonathan A. Field, Ph.D., Professor (Evolution and Ecology)
Valerie Evnir, Ph.D., Associate Professor (Plant Sciences)
James E. Griesemer, Ph.D., Professor (Philosophy)
Richard K. Grosberg, Ph.D., Professor (Evolution and Ecology) Academic Senate Distinguished Teaching Award, UC Davis Prize for Teaching and Scholarly Achievement
Susan P. Harrison, Ph.D., Professor (Environmental Science and Policy)
Alan M. Hastings, Ph.D., Professor (Environmental Science and Policy)
Richard Karban, Ph.D., Professor (Entomology)
Arylom Kopp, Ph.D., Professor (Evolutionary biology)
Charles J. Langley, Ph.D., Professor (Evolution and Ecology)
Sharon P. Lawler, Ph.D., Professor (Entomology)
Susan E. Lott, Ph.D., Assistant Professor (Evolution and Ecology)
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Santiago Ramirez, Ph.D., Assistant Professor (Evolution and Ecology)
Bruce H. Rannala, Ph.D., Professor (Evolution and Ecology)

Jay Rosenheim, Ph.D., Professor (Entomology)
Academic Senate Distinguished Teaching Award
Jeffrey Ross-Robertson, Ph.D., Associate Professor (Plant Sciences)
Eric D. Sanford, Ph.D., Professor (Evolution and Ecology)
Johanna Schreiber, Ph.D., Professor (Evolution and Ecology)
Thomas W. Schoener, Ph.D., Professor (Evolution and Ecology)
Sebastian Schreiber, Ph.D., Professor (Evolution and Ecology)
Mark W. Schwartz, Ph.D., Professor (Environmental Science and Policy) Academic Senate Distinguished Teaching Award
Arthur M. Shapiro, Ph.D., Professor (Evolution and Ecology) Academic Senate Distinguished Teaching Award
Andrew Sih, Ph.D., Professor (Environmental Science and Policy)
John J. Stachowicz, Ph.D., Professor (Evolution and Ecology) Academic Senate Distinguished Teaching Award
Maureen L. Stanton, Ph.D., Professor (Evolution and Ecology) UC Davis Prize for Teaching and Scholarly Achievement
Sharon Y. Strauss, Ph.D., Professor (Evolution and Ecology)
Donald R. Strong, Ph.D., Professor (Evolution and Ecology)
Michael Turelli, Ph.D., Professor (Evolution and Ecology)
Geerat J. Vermeij, Ph.D., Professor (Department of Earth and Planetary Sciences)
William A. Waisner, Ph.D., Professor (Evolution and Ecology) Academic Senate Distinguished Teaching Award
Phil S. Ward, Ph.D., Professor (Entomology)
Andrew Whitehead, Ph.D., Assistant Professor (Environmental Toxicology)
Louise H. Yang, Ph.D., Assistant Professor (Entomology)
Truman P. Young, Ph.D., Professor (Plant Sciences)

Emeriti Faculty

Hugh Dingle, Ph.D., Professor Emeritus
John H. Gillespie, Ph.D., Professor Emeritus
Kevin J. Rice, Ph.D., Professor Emeritus
Judy A. Stamps, Ph.D., Professor Emeritus

Graduate Study. The Graduate Group in Population Biology emphasizes programs of study and research leading to the Ph.D. degree. The Group concentrates on population biology as the broad discipline that blends ecology, evolution, population genetics and systematics into a unified field. The course curriculum consists of first-year core courses offered by the Group faculty, seminars, and advanced courses in population biology, and related disciplines, chosen in consultation with a guiding committee.

Graduate Adviser. Consult the Population Biology Graduate Group office or website.

Courses in Population Biology (PBG)

Graduate

200A. Principles of Population Biology (5)
Lecture—3 hours; discussion—2 hours. Prerequisite: course 231, or consent of instructor. Principles of single-species ecology and evolution. Topics include ecology of individuals, population growth models, structured populations, life history strategies, stochastic populations, basic population genetics theory, deleterious alleles in natural populations, and molecular population genetics. —I. (I.)

200B. Principles of Population Biology (5)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 200A. Principles of multi-species communities. Topics include competition, mutualism, metapopulations, food webs and trophic cascades, interactions between simple ecological communities, island biogeography, succession, and large-scale patterns. —II. (II.)

200C. Principles of Population Biology (6)
Lecture—5 hours; discussion—1 hour. Prerequisite: course 200B. Principles of microevolution and macroevolution. Topics include evolutionary quantitative genetics, analysis of hybrid zones, speciation, the fossil record, biogeography, and phylogeny reconstruction. —III. (III.)

203. Advanced Evolution (3)
Lecture—1 hour; discussion—2 hours. Prerequisite: graduate standing. Adaptation and speciation, and biochemical and morphological evolution in plants and animals with emphasis on the appropriateness of different methods of analysis. Offered in alternate years.

206. Ecology of Insect Parasitoids (4)
Lecture—3 hours; seminar—1 hour. Prerequisite: introductory animal ecology or behavior. Insect parasitoids will be investigated as model systems to address current topics in behavioral, population, and evolutionary ecology. Theory will be synthesized and critical empirical tests of ecological hypotheses or the equivalent, graduate standing, and consent of instructor. Offered in alternate years.

207. Population Biology (3)
Lecture—2 hours, laboratory/discussion—1 hour. Prerequisite: advanced undergraduate ecology course (e.g., Environmental Science and Policy 100, Evolution and Ecology 101, Entomology 104, Plant Biology 117), and advanced undergraduate course in genetics and/or evolution (e.g., Biological Sciences 101 or Evolution and Ecology 100). Introduction to theoretical and empirical research in plant population biology. Emphasis placed on linking ecological and genetic approaches to plant population biology. (Same course as Ecology 207.) Offered in alternate years. —II. Rice

212. Topics in Invertebrate Evolution (2)
Seminar—2 hours. Prerequisite: graduate standing or consent of instructor and Evolution and Ecology 112-112L; courses in evolutionary biology, systematics, and ecology highly recommended. Advanced seminar that critically examines problems relevant to evolutionary patterns among the invertebrates. May be repeated for credit when topic differs. (S/U grading only.).—III. Grosberg

220. Spatial-Temporal Ecology (2)
Lecture/discussion—2 hours. Prerequisite: course 200 or Ecology 204 or Evolution and Ecology 104 or Environmental Science and Policy 121 or consent of instructor. Spatial-temporal ecological theory focusing on population persistence and stability, predation-prey and host-parasitoid interactions, species coexistence and diversity maintenance, including effects of environmental variation, spatial and temporal scale, life-history traits and nonlinear dynamics. Topics vary. (Same course as Ecology 220.) May be repeated one time for credit. (S/U grading only.)

221. Animal Behavior, Ecology and Evolution (3)
Lecture—3 hours. Prerequisite: Neurobiology, Physiology, and Behavior 102, Evolution and Ecology 100 or equivalent, graduate standing, and consent of instructor. The interface between animal behavior, ecology and evolution. New developments in behavioral ecology and development and testing of hypotheses in this discipline. (Same course as Animal Behavior 221.)

224. Field Reconnaissance for Population Biologists (2)
Fieldwork—6 hours. Prerequisite: graduate student in Population Biology, or consent of instructor. Biweekly field trips to acquaint students with plant and animal communities, biodiversity, and ecological and evolutionary research opportunities in northern and central California. (May be repeated for credit. (S/U grading only.)

225. Terrestrial Field Ecology (4)
Seminar—1 hour, field work—12 hours. Prerequisite: introductory ecology and introductory statistics, or consent of instructor. A field course conducted over spring break and four weekends at Bodega Bay emphasizing student projects. Ecological hypothesis testing, data gathering, analysis, and