

BIOLOGY 2009-10



UNIVERSITY OF CALIFORNIA, SANTA CRUZ

THE BIOLOGY MAJORS

The biology departments at UC Santa Cruz offer a broad spectrum of courses that reflect the exciting new developments and directions in the field of biology. An outstanding group of faculty, each with a vigorous, internationally recognized research program, are available to teach courses in their specialties as well as core courses for the major. Areas of research strength include RNA molecular biology, molecular and cellular aspects of genetics and development, neurobiology, endocrinology, immunology, microbial biochemistry, plant biology, animal behavior, physiology, evolution, ecology, marine biology, and conservation biology.

- ◆ Biology (B.A., B.S., M.A., Ph.D., B.A. concentration in bioeducation, undergraduate minor)

HIGH SCHOOL PREPARATION

In addition to the courses required for UC admission, high school students who intend to major in biology should take high school courses in biology, chemistry, advanced mathematics (precalculus), and physics.

TRANSFER PREPARATION

The faculty encourage applications from transfer students in biology. Students and their college advisers are strongly recommended to examine the degree requirements for the student's intended major: undergrad.pbsci.ucsc.edu/programs/biol. Students should satisfy as many introductory requirements as possible prior to transfer. Courses offered at the student's institution should be compared to the UC Santa Cruz transfer agreements (found at www.assist.org) and/or course descriptions to ensure that they will qualify for transfer. It is very important for transfer students to complete science prerequisite courses before transfer, especially calculus, general chemistry with labs, and an introductory biology sequence. Students whose intended major requires organic chemistry should also complete that requirement prior to transfer, if possible. Prospective transfer students should visit the Physical and Biological Sciences Undergraduate Affairs web site at undergrad.pbsci.ucsc.edu for further information (see the *For More Information* section). In addition, please see the *Course Substitution/Transfer Credit* section.

COURSE SUBSTITUTION/TRANSFER CREDIT

At least half of the upper-division courses (Biol/Bioe 100–190) required for each biological sciences major must be taken through the MCDB and EEB programs at UC Santa Cruz, not as transfer credits from another department or institution. Transfer students are advised to review the Transferring Credit section on the Physical and Biological Sciences Undergraduate Affairs web site at undergrad.pbsci.ucsc.edu/advising and/or speak with an adviser before enrolling in numerous upper-division courses at other institutions.

EDUCATION CONCENTRATION

Biology B.A. students have the option of completing an education concentration which offers a rigorous education in biology, a solid background in education theory and practice, and additional breadth courses to prepare students to demonstrate subject matter competence in the General Sciences and Biology/Life Sciences via the California Subject Matter Examination for Teachers (CSET).

EDUCATION ABROAD OPPORTUNITIES

The UC Education Abroad Program (EAP) offers qualified students unique opportunities to broaden their educational horizons. The biology departments encourage interested students to participate. Many programs are in English-speaking countries or use English for advanced courses. Many programs offer small classes and extensive laboratory and/or field research experience.

There are excellent programs for biology students in Costa Rica, Australia, New Zealand, the United Kingdom, Denmark, and Germany, among others. The Costa Rica Tropical Biology Program is of note to students interested in tropical biology and ecology. Held spring and fall quarters at the Monteverde Research Station, this program gives students experience with hands-on field research, offers a homestay program, and carries credit for upper-division biology courses. The University of Queensland (Australia) offers an intensive, full-semester Marine Science Program, which includes a stay at a research station on the Great Barrier Reef, near sheltered mangrove and seagrass habitats. Molecular, cell, and developmental biology majors and premedical students might want to consider the Human Biology Program at the Panum Institute in Denmark. This program is taught in English for advanced students planning careers in medicine or biomedical research.

Students interested in study abroad need to get an early start on their basic science requirements, including general and organic chemistry, math, and introductory biology. Visit the EAP office as soon as possible to begin planning, and seek advice about your academic plan from the Physical and Biological Sciences Undergraduate Affairs adviser and/or faculty adviser.

ALUM FOCUS

Dr. Jonathan Gershenzon (B.A., biology, '77) is director of the Max Planck Institute for Chemical Ecology in Jena, Germany. He is one of the world's leading experts on terpenes, the largest group of chemical defenses in plants.

Nina Grove (B.A., biology, '79) is vice president for commercial planning & strategy at the Institute for OneWorld Health. Grove led the product development and commercialization planning for OneWorld Health's malaria project and spearheaded a partnership selection process and due diligence review for OneWorld Health's semisynthetic artemisinin grant. She holds a Masters in Medical Microbiology and a Masters in Public Health from UC Berkeley.

Teresa Ish (B.A., environmental studies/biology, '00; M.S., marine sciences, '03) cofounded the nonprofit organization Sustainable Fisheries Associates, which administers a color-coded information system called FishWise that helps consumers identify sustainable seafood choices.

Julie Packard (B.A., '74, M.A., '78, biology) helped found the world-famous Monterey Bay Aquarium and now serves as executive director. In 1998, she was awarded the Audubon Medal for Excellence in Environmental Protection, and in 2004 she received the Ted Danson Ocean Hero Award from the conservation group Oceana.

Dr. Cheryl Scott (B.A., biology, '74) spent four years as the director of the U.S. Centers for Disease Control and Prevention operations in Tanzania, combating the spread of AIDS, which affects nearly 1.5 million Tanzanians. Her public health career has taken her around the world, from the Ivory Coast, Kenya, India, to the Caribbean. Currently a medical director at CDC headquarters in Atlanta, Dr. Scott is a captain in the U.S. Public Health Service Commissioned Corps and has received several Public Health Service awards.

ACADEMIC ADVISING

Academic advising is available from Physical and Biological Sciences Undergraduate Affairs. Undergraduate Affairs publishes the web site at undergrad.pbsci.ucsc.edu, which contains detailed information about the degree programs, sample schedules, transferring credit, placement exams, faculty research, and opportunities in the Physical and Biological Sciences majors.

FOR MORE INFORMATION

For further information about biology at UC Santa Cruz, see:

reg.ucsc.edu/catalog/html/programs_courses/biolPS.html

Information about the biology majors can also be found at: undergrad.pbsci.ucsc.edu/programs/biol or by e-mailing biologyadvising@ucsc.edu.

For specific information regarding the Ecology and Evolutionary Biology faculty and research, please visit the department web site at: www.eeb.ucsc.edu.

For specific information regarding the Molecular, Cell, and Developmental Biology faculty and research, please visit the department web site at: www.mcdb.ucsc.edu.

If you have other questions, contact:

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