Athena Soulika, Ph.D., Assistant Professor
(Dermatology)
Charles B. Steenstra, Ph.D., Adjunct Professor
(Western Human Nutrition Research Center)
Jeffrey L. Stott, Ph.D., Professor
(Pathology; Microbiology, and Immunology)
Yoshikazu S. Takada, M.D., Ph.D., Professor
(Dermatology)
Suzanne S. Teuber, M.D., Professor
(Rheumatology, Allergy and Clinical Immunology)
Joe V. Torres, Ph.D., Professor
(Microbiology, and Immunology)
Renee M. Tsolis, Ph.D., Associate Professor
(Microbiology, and Immunology)
Joseph M. Tuscano, M.D., Professor
(Hematology and Oncology)
Judy Van der Water, Ph.D., Professor-in-Residence
(Rheumatology, Allergy and Clinical Immunology)
Andrew Vaughan, Ph.D., Professor
(Radiation Oncology)
Robert H. Weiss, M.D., Associate Professor
(Nephrology)
Reem Wu, Ph.D., Professor
(Anatomy, Physiology and Cell Biology)
Heike Wulff, Ph.D., Associate Professor
(Pharmacology)
Susan Yang, Ph.D., Associate Adjunct Professor
(Nutrition)
Huijuan Zhou, Ph.D., Assistant Professor
(Animal Science)

Graduate Study. The Graduate Group in Immunology offers an introductory program of study in an exciting field of biology and medicine leading to the M.S. and Ph.D. degrees. Participating faculty from various Schools and Departments at UC Davis provide research opportunities in diverse areas of applied immunology. Areas of focus include infection and immunity (including host response regulation to parasites, viruses and bacteria), nutrition and immunity, autoimmunity, immune regulation, innate immunity, cancer therapy and immune mediators and their uses for diagnosis and treatment.

Preparation. Applicants for candidacy to these programs should have completed undergraduate preparation in mathematics, physics, chemistry, biochemistry, molecular and cellular biology or related biological and medical sciences.

For work leading to the Ph.D. degree, the requirements include cell biology, chemical immunology, cellular immunology, immunohematology, and advanced immunology. In addition to these general requirements, more specialized preparation in at least one of the following is required:

(a) microbiology: special topics (bacteriology, virology, parasitology, medical microbiology);
(b) zoological specialties (cell biology, endocrinology, embryology, protozoology, histology, cytology, physiology);
(c) medical specialties (anatomy, pharmacology, clinical pathology, reproduction, hematopoiesis, epidemiology);
(d) biochemistry/bioinformatics specialties (biologically active molecules, control mechanisms of cell specialization, development, genetics, population genetics, cytogenetics, molecular genetics).

Graduate Adviser. See the graduate program website at http://immunology.commed.ucdavis.edu/people/.

Courses in Immunology (IMM)
Additional courses are available and listed under the individual sponsoring departments. Contact the Group office for information.

Graduate
201. Introductory Immunology (4)
Lecture—4 hours. Prerequisite: graduate standing. Enrollment limited to 30 students. Comprehensive introduction to the principles of immunology. —F. (F.) Miller

201L. Advanced Immunology Laboratory (4)
Laboratory/discussion—12 hours. Laboratory assignment in two research laboratories. Individual research problems with emphasis on methodological and procedural experience and experimental design. Student writes a project outline and gives oral presentation; may be repeated two times for credit. (S/U grading only). —F. (F.) McSorley

202L. Advanced Immunology Laboratory Rotations (5)
Laboratory/discussion—15 hours. Laboratory assignment in two research laboratories. One four-week and one six week assignment in immunology research laboratories. Individual research problems with an emphasis on methodological/procedural experience and experimental design. May be repeated two times for credit. (S/U grading only). —W. (W.) McSorley

203. Cancer Immunology (2)
Lecture—1 hour; term paper. Covers concepts in cancer biology, progression and immune evasion. It will also cover topics such as: immune surveillance, immune effector mechanisms and current concepts in immune therapy. Offered in alternate years. —S. Murphy

204. Topics in Innate Immunity (2)
Extensive writing or discussion—1 hour; performance instruction—1 hour. Prerequisite: course 201 or equivalent; course 293 preferred. Restricted to first- or second-year GGI and MGG students; others with permission of instructor; enrollment limited to 18 students. Covers current topics in the field of innate immunity through student seminar presentations and critical evaluation of the literature. Concepts include: pathogen recognition, intercellular communication, specialized cellular function and effector/signaling molecules. Offered in alternate years. —J. Bevins

210. Topics on Neuroimmunology and Neuroinflammation (1)
Seminar—1 hour. Prerequisite: consent of instructor. Topics will include a broad range of frontiers in neuroimmunology and neuroinflammation. Research articles in current literature will serve to guide in-depth discussions of experimental approaches, technical aspects of experimental techniques, data interpretation, and other relevant aspects of each topic. (S/U grading only). —F. (F.) Soulika

292. Immunochemistry Seminar (2)
Seminar—2 hours. Prerequisite: graduate standing in Pharmacology/Toxicology, Immunology, Physiology, or Biochemistry. Seminar presentations dealing with principles of xenobiotic effects on immune system functions and specific examples of drugs and environmental chemicals exerting toxic effects on the immune system. (S/U grading only.)

293. Current Concepts in Immunology (4)
Lecture/discussion—4 hours. Prerequisite: Pathology, Microbiology, and Immunology 126 or consent of instructor. Innate and acquired immunity as defense mechanisms against disease. Mechanisms regulating the distinct cell types driving these responses and current concepts in the literature. —W. (W.) Baumgart

294. Comparative Clinical Immunology (4)
Lecture/discussion—4 hours. Prerequisite: Pathology, Microbiology, and Immunology 126 or consent of instructor. Clinical immunology in animals and man. Pathogenesis of representative infectious diseases, hypersensitive reactions, and autoimmunity. Emphasis on species-specific and non-specific immune effector mechanisms to combat infections or mediate pathology. Not open for credit to students who have completed course 294A. Offered in alternate years. —C. Shacklett

295. Cytokines (3)
Lecture—2 hours; discussion—1 hour. Prerequisite: course 293 or consent of instructor. Cytokines and their involvement in human and animal physiology/disease, molecular mechanisms and receptor signaling. Immune and non-immune actions. Overlapping/redundant functions (refers to as the “cytokine network”).

296. Advanced Topics in Immunology (2)
Seminar—2 hours. Prerequisite: graduate standing or consent of instructor. Presentation, discussion, and analysis of faculty research topics in immunology.

Required for Immunology Graduate Students every year until they have passed their qualifying exam. May be repeated for credit (S/U grading only). —F. (F.) Mavericks

297. Mucosal Immunology (2)
Lecture—1 hour; discussion—1 hour; term paper. Prerequisite: course 201 or equivalent. Basic concepts and current research topics in the field of mucosal immunology, with an emphasis on human immunology. Major emphasis includes innate and adaptive mucosal immunity, the gastrointestinal tract, the lung, lymphocyte trafficking, and mucosal vaccination. Offered in alternate years. —W. (W.) Shacklett

Independent Study Program

Information. Chairperson, Committee on Courses of Instruction, c/o Academic Senate Office 530-752-2231

The Independent Study Program provides an opportunity for upper division students to design and pursue a full quarter (12-15 units) of individual study in an area of special interest.

A program qualifying as Independent Study will consist of one or more courses in the 190–199 series. While the theme of such a program may be reasonably broad, a recognizable common thread should unite all the academic work you undertake during an independent study quarter. Regularly offered formal courses will only be acceptable as part of such a program if they clearly fit its theme and contribute something essential toward the realization of its objectives. The program is not to be considered a way to take more variable-unit courses than normally permitted.

The procedure for enrolling in an Independent Study Program is as follows:

1. Develop, in general terms, a plan of study;
2. Locate a faculty sponsor or panel of sponsors and with their help and approval develop a detailed plan;
3. Complete a project proposal form (obtained from the Academic Senate office) and submit it to the Academic Senate Committee on Courses of Instruction.

The deadline for applications is the tenth day of instruction of the term before; see the Academic Calendar, on page 1, for specific dates.

You must report the completion or termination of the project to the Committee on Courses of Instruction.

Individual Major

[College of Agricultural and Environmental Sciences, College of Biological Sciences, College of Letters and Science]

The Major Program

The Individual Major, an integrated program composed of courses from two or more disciplines, is designed by the student and is subject to approval by faculty advisers and appropriate college committees. This major enables a student to pursue a specific interest that cannot be accommodated within the framework of an existing major. It must clearly and specifically meet the student’s educational goals as well as meet university and college academic standards.

College of Agricultural and Environmental Sciences

The Individual Major in this College has been suspended indefinitely.

Program Office. 150 Mrak Hall 530-752-0108
http://www.caes.ucdavis.edu/students/current/ADVISING
College of Letters and Science Program Office, 200 Social Sciences and Humanities Building (Undergraduate Education and Advising office); http://www.lhs.ucdavis.edu/ students

Committee in Charge
John Teming, Ph.D., Chairperson (Physics)
Adewale Adejumo, Ph.D. (African American and African Studies)
Prabir Burman, Ph.D. (Statistics)
Diana Davis, Ph.D. (History)
Sara Perrasoul, Ph.D. (University Writing Program)

Student Proposal. A student who wishes to propose an individual major must submit the proposal to the Faculty Committee on Individual Majors in the College of Letters and Science prior to reaching 120 units. The proposal must be submitted by the end of the fourth week of the quarter. This proposal will consist of (1) an essay, identifying the specific educational and professional objectives, including an indication of why the objectives cannot be met within existing majors, (2) a list of courses planned to complete the major, and (3) faculty adviser recommendations. It is critical that students contact a college counselor in the Dean’s Office for consultation and development of the proposal.

Preparatory Subject Matter (variable) Lower division courses basic to the program or needed to satisfy prerequisites for upper division requirements.

Depth Subject Matter 45-54 Upper division course work must include: (a) interrelated courses of 45 upper division units from two or more areas of study; (b) at least one of the two or more areas of study must be within the College of Agricultural and Environmental Sciences; (c) at least 30 of the 45 upper division units that are required in the program must be taken from courses provided by the College of Agricultural and Environmental Sciences.

Total Units for the Degree 180 A.B. and B.S. Major Requirements: UNITS

Preparatory Subject Matter (variable) Lower division courses basic to the program or needed to satisfy prerequisites for upper division requirements.

Depth Subject Matter 45-54 Upper division course work must include: (a) interrelated and complementary courses from two or more departments which provide a unified pattern and focus; (b) at least 30 units from Letters and Science teaching departments or programs; (c) no more than 10 units in courses numbered 194H, 198 and 199; (d) for the B.A. degree, a maximum of 80 units toward the major, for the B.S. degree, a maximum of 110 units toward the major.

Total Units for Degree 180 A.B. and B.S. Major Requirements: UNITS

College of Biological Sciences

Program Office, Biology Academic Success Center; 1023 Sciences Laboratory Building; 530-752-0410

Student Proposal. A student who wishes to propose an individual major must submit the proposal to the Committee on Undergraduate Student Petitions prior to reaching 120 units. It is important for the student to make arrangements to speak with an adviser in the Biology Academic Success Center early in the development of his/her major as no individual major will be approved after a student has completed 120 units.

A.B. and B.S. Major Requirements: UNITS

Preparatory Subject Matter (variable) Lower division courses basic to the program or needed to satisfy prerequisites for upper division requirements.

Depth Subject Matter 45 units minimum Upper division course work must include: (a) at least 30 units from courses offered by departments in the College of Biological Sciences; (b) additional requirements as determined by the Committee on Undergraduate Student Petitions. See the Biology Academic Success Center for details. (c) for the B.A. degree, a maximum of 80 units toward the major; for the B.S. degree, a maximum of 110 units toward the major.

All University, General Education, and College of Biological Sciences Bachelor’s degree requirements (variable) Total Units for the Degree 180 Principal Adviser (selected by student). A faculty member in a department or program in the College of Biological Sciences.

Fall 2011 and on Revised General Education (GE) ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; Div-Domestic Diversity; Wrt-Writing Experience Quarter Offered: F-Fall, W-Winter, S-Spring, Su-Summer; 2017/2018 offering in parentheses

Integrative Genetics and Genomics (A Graduate Group) Formerly Genetics
Fred Chedin, Ph.D., Chairperson of the Group
Group Office. 227A Life Sciences 530-752-4863; http://ig3.ucdavis.edu/

Faculty
Sharon Aviran, Ph.D., Assistant Professor (Biomedical Engineering)
Danika Bannasch, Ph.D., Professor (VM: Population Health and Reproduction)
Jacqueline Barlov, Ph.D., Professor (Microbiology and Molecular Genetics)
Diane Beckles, Ph.D., Associate Professor (Plant Sciences)
David Begun, Ph.D., Professor (Evolution and Ecology)
Rebecca Bellone, Ph.D., Associate Adjunct Professor (VM: Population Health and Reproduction)
Craig Benham, Ph.D., Professor (Biomedical Engineering, Graduate Group)
Alan B. Bennett, Ph.D., Professor (Plant Sciences)
Linda F. Bissan, Ph.D., Professor (Viticulture and Enology)
Simeon Boyd, Ph.D., Associate Professor (Pediatrics Medicine)
Siobhan Brady, Ph.D., Associate Professor (Plant Biology)
Anne B. Brit, Ph.D., Professor (Plant Biology)
Nadean Brown, Ph.D., Associate Professor (Cell Biology and Human Anatomy)
Sean Burgess, Ph.D., Professor (Molecular and Cellular Biology)
Judy Callis, Ph.D., Professor (Molecular and Cellular Biology) Academic Senate Distinguished Teaching Award
Dario Cantu, Ph.D., Assistant Professor (Viticulture and Enology)
Luis G Carvajal-Carmona, Ph.D., Assistant Professor (Biochemistry and Molecular Medicine)
Frederic Chedin, Ph.D., Professor (Molecular and Cellular Biology)
Judith Chen, Ph.D., Professor (Molecular and Cellular Biology)
Hongwu Chen, Ph.D., Professor (Molecular and Cellular Biology)
Roger Chetelat, Ph.D., Agronomist (Plant Sciences)
Joanna Chiu, Ph.D., Assistant Professor (Entomology)
Lucia Comai, Ph.D., Professor (Plant Biology)
Douglas Cook, Ph.D., Professor (Plant Pathology)
Gino A. Cortopassi, Ph.D., Professor (Molecular Biosciences)
Michael E. Dahmus, Ph.D., Professor Emeritus (Molecular and Cellular Biology)
Abhayad Dandekar, Ph.D., Professor (Plant Sciences)
Sathy Dandekar, Ph.D., Professor (Microbiology—Medicine)
Mary Delany, Ph.D., Professor (Animal Science)
Megan Dennis, Ph.D., Assistant Professor (Biotechnology of Food and Molecular Medicine)
Bruce Draper, Ph.D., Associate Professor (Molecular and Cellular Biology)
Siobhan Draper, Ph.D., Professor (Plant Sciences)
Jan Dvorak, Ph.D., Professor (Plant Sciences)
Jonathan Eisen, Ph.D., Professor (Plant Sciences)
Sharon Aviran, Ph.D., Assistant Professor (Plant Sciences)
Kael F. Fagard, Ph.D., Professor (Molecular and Cellular Biology)
Thomas R. Famula, Ph.D., Professor (Animal Science)
Annie A. Fidje, Ph.D., Assistant Professor (Wildlife, Fish and Conservation Biology)
Carrie Finne, Ph.D., Assistant Professor (Wildlife, Fish and Conservation Biology)