Animal Biology (A Graduate Group)

Russell C. Hovey, Ph.D., Associate Professor

Silas S.O. Hung, Ph.D., Professor (Animal Science)

Amy S. Kapakli, D.V.M., Professor

(Surgical & Radiological Sciences; School of Veterinary Medicine)

Ermias Kebreab, Ph.D., Professor (Animal Science)

Kirk C. Klasing, Ph.D., Professor (Animal Science)

Dietmar Kuehl, Ph.D., Professor

(Animal Science)

Elizabeth Maga, Ph.D., Associate Researcher and Lecturer (Animal Science)

Brenda J. McCowan, Ph.D., Adjunct Associate Professor (Veterinary Medicine Teaching and Research Center and California National Primate Research Center)

Juan F. Medrano, Ph.D., Professor (Animal Science)

Joy A. Mench, Ph.D., Professor (Animal Science)

Deanne Meyer, Ph.D., Specialist in Cooperative Extension and Lecturer (Animal Science)

Stuart Meyers, Ph.D., Professor

(Anatomy, Physiology and Cell Biology; School of Veterinary Medicine)

Michael R. Miller, Ph.D., Professor (Animal Science)

Frank M. Miltoeiner, Ph.D., Associate Professor (Animal Science)

James D. Murray, Ph.D., Professor (Animal Science)

Anita M. Oberbauer, Ph.D., Professor (Animal Science)

James W. Oltjen, Ph.D., Specialist in Cooperative Extension and Lecturer (Animal Science)

Peter H. Robinson, Ph.D., Specialist in Cooperative Extension and Lecturer (Animal Science)

Jan F. Ross, Ph.D., Professor (Animal Science)

Pablo J. Ross, Ph.D., Assistant Professor (Animal Science)

Heidi A. Rossow, Ph.D., Assistant Professor (Population, Health, and Reproduction; School of Veterinary Medicine)

Benjamin N. Sacks, Ph.D., Assistant Adjunct Professor (Population, Health, and Reproduction; School of Veterinary Medicine)

Carolyn L. Stull, Ph.D., Specialist in Cooperative Extension (School of Veterinary Medicine)

Brain D. Todd, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)

Anne Todgham, Ph.D., Professor (Animal Science)

M. Cecilia Torres-Penedo, Ph.D., Associate Research Geneticist (Veterinarian Genetics Laboratory; School of Veterinary Medicine)

Cassandra B. Tucker, Ph.D., Associate Professor (Animal Science)

Allison L. Van Eenennaam, Ph.D., Specialist in Cooperative Extension and Lecturer (Animal Science)

Huijuan Zhou, Ph.D., Assistant Professor (Animal Science)

Richard A. Zinn, Ph.D., Professor (Animal Science; located at Desert Research and Extension Center)

Animal Biology (A Graduate Group)

James D. Murray, Ph.D., Chairperson of the Group

Group Office, 1249 Meyer Hall
530 757-2382; Fax 530 757-0175
http://animalbiology.ucdavis.edu

Faculty

Danika L. Bannash, Ph.D., Associate Professor (Population Health and Reproduction; School of Veterinary Medicine)

Trish Berger, Ph.D., Professor (Animal Science)

Chris C. Calvert, Ph.D., Professor (Animal Science)

Ernie Chang, Ph.D., Professor (Animal Science; located at Soderno Marine Lab)

Bruce W. Christopher, Ph.D., V.M., Professor (Population Health and Reproduction; School of Veterinary Medicine)

Alan J. Conley, Ph.D., Professor (Population Health and Reproduction; School of Veterinary Medicine)

Richard E. Connan, Ph.D., Professor (Anatomy, Physiology & Cell Biology; School of Veterinary Medicine)

Mary E. Delany, Ph.D., Professor (Animal Science)

Edward J. DePeters, Ph.D., Professor (Animal Science)

Serge I. Doroshov, Ph.D., Professor (Animal Science)

Holly B. Ernest, D.V.M., Ph.D., Associate Professor (Population Health and Reproduction; School of Veterinary Medicine)

James G. Fadel, Ph.D., Professor (Animal Science)

Thomas R. Fanula, Ph.D., Professor (Animal Science)

Nann A. Fangue, Ph.D., Assistant Professor (Wildlife, Fish and Conservation Biology)

Andrea J. Facsett, V.M.D., Ph.D., Professor (Molecular Biosciences; School of Veterinary Medicine)

Preparation. Applicants should have undergraduat preparation in a field appropriate to the course of study selected, including upper division coursework in most of the following subjects: biochemistry, genetics, nutrition, physiology, and integrative animal biology such as animal management.

Graduate Advisers. R.C. Hovey, S.O.H. Hung, E.A. Maga, C.B. Tucker, J.D. Murray

Quarter Offered: I-Fall, II-Winter, III-Spring, IV-Summer; 2015-2016 offering in parentheses.

Pre-Fall 2011 General Education (GE): ArtHum-Arts and Humanities; Scien-Science and Engineering; SocSci-Social Sciences, DivDom-Domestic Diversity, Writ-Writing Experience

Fall 2011 and on Revised General Education (GE): ArtHum-Arts and Humanities; Scien-Science and Engineering; SocSci-Social Sciences, AgChm-American Cultures, DivDom-Domestic Diversity, OralOral Skills, QuantQuantitative, SciVis-Scientific, Visu-Visual, WC-World Cultures, Writ-Writing Experience

Neurobiology, Physiology, and Behavior 123

Evolution and Ecology 100 101 102 103 104 105 106 107 108

One course from: Environmental Science and Policy 100, 121; Evolution and Ecology 101, 102, 103, 104, 105, 106, 107, 108

Animal Biology 189 and 190

Restricted Electives 25

Courses in Animal Biology (AB)

Lower Division

50A. Animal Biology Laboratory (2)

Lecture/laboratory—4 hours. Scientific methods for answering questions in animal biology by doing exercises to demonstrate hypothesis testing and reporting, short laboratory, population and field experiments. Maintain notebooks, analyze data, interpret results and write reports. —I (I) Kimsey

50B. Animal Biology (3)

Lecture—3 hours. Prerequisite: Biological Sciences 1A, Biological Sciences 1B (may be taken concurrently). Basic biological disciplines important to an understanding of practical animal biology issues including the evolution of animal groups, genetic mechanisms, animal physiology as it relates to maintenance and reproduction, and aspects of comparative anatomy, behavior and ecology. —II (II) Caswell-Chen, Johnson, Williams

50C. Animal Biology (3)

Lecture—3 hours. Prerequisite: Biological Sciences 1A, Biological Sciences 1B (may be taken concurrently). Basic biological disciplines important to an understanding of practical animal biology issues including the evolution of animal groups, genetic mechanisms, animal physiology as it relates to maintenance and reproduction, and aspects of comparative anatomy, behavior and ecology. —II (II) Caswell-Chen, Johnson, Williams

98. Directed Group Study (1-5)

(P/NP grading only)

99. Special Study for Advanced Undergraduates (1-5)

(P/NP grading only)

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Courses in Animal Biology (ABG)
Graduate

200A. Integrated Animal Biology I (3)
Lecture/discussion—3 hours. Prerequisite: graduate standing; Biological Sciences 101 or the equivalent or consent of the instructor. Natural history, management, historical and current uses, and specialized disciplinary features of model and novel animal systems used in research. Development of conceptual approaches in organismal biology to improve experimental design and interpretation of interdisciplinary research studies. Limited enrollment; first pass restricted to Animal Biology Graduate Group students. —I (I.) DePeters

200B. Integrated Animal Biology II (3)
Lecture/discussion—3 hours. Prerequisite: course 200A. Natural history, management, historical and current uses, and specialized disciplinary features of model and novel animal systems used in research. Development of conceptual approaches in organismal biology to improve experimental design and interpretation of interdisciplinary research studies. Limited enrollment; first pass restricted to Animal Biology Graduate Group students. —I (I.) Conley, Murray

202. Grant Procurement and Administration (2)
Lecture—1 hour; discussion/laboratory—1 hour. Prerequisite: consent of instructor. Restricted to Animal Biology Graduate Group students. Topics include: structure of grants, attention to specifications, concise persuasive writing, and grant budgeting. Identify grant opportunities, pursue a persuasive research grant proposal, and administer grants. Limited enrollment. —I (I.)

250. Mathematical Modeling in Biological Systems (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing; Mathematics 16A, 16B, or equivalents required; Mathematics 16C or equivalent recommended; Statistics 100 or equivalent required; more than one course in statistics recommended; Animal Biology 102 or Biological Sciences 102 recommended or equivalent course in biochemistry. Limited enrollment. Model development and evaluation including sensitivity analyses using R. Four principle modeling methodologies included: algebraic functions of biological processes, physiological-based compartmental models, linear programming and matrix analysis. Fundamental background and understanding of mathematical modeling principles in biological systems. —II (II.) Fadel, Kebreab

255. Physiology of the Stress Response (2)
Lecture/discussion—2 hours. Prerequisite: graduate student; Definition of Stress; Physiological mechanisms of adaptation to stress; Hormonal control of the systemic stress response; Mechanisms of the cellular stress response; Discussion of current trends in stress physiology and current methods for studying the stress response. (Same course as Molecular, Cellular, and Integrative Physiology 255.) —III (III.) Kueltz

290. Seminar in Animal Biology (1)
Seminar—1 hour. Prerequisite: graduate standing. Seminar on advanced topics in animal biology. Presentations by members of the Animal Biology Graduate Group and guest speakers. May be repeated for credit. —I (I, III, IV)

290C. Research Conference (1)
Discussion—1 hour. Prerequisite: graduate standing and consent of instructor. Student presentations of research in Animal Biology and discussions among participating students and Animal Biology faculty. May be repeated for credit. (S/U grading only.)—I, II, III, IV (I, II, III, IV)

298. Group Study in Animal Biology (1-5)
Prerequisite: graduate standing.

299. Research (1-11)
Prerequisite: graduate standing and consent of instructor. Research with a faculty member in Animal Biology Graduate Group. May be repeated for credit. (S/U grading only.)—I, II, III, IV (I, II, III, IV)

Professional

300. Methods in Teaching Animal Biology (2)
Lecture/discussion—2 hours. Prerequisite: graduate standing and consent of instructor. Practical experience in the methods and problems of teaching animal biology. Includes analysis of laboratory exercises, discussion of teaching techniques, grading scientific essays, preparing for and conducting discussion or laboratory sections, formulating quiz and exam questions under instructor supervision. May be repeated up to three times for credit. (S/U grading only) —I, II, (I, II) Flemura, Oberbauer

396. Teaching Assistant Training Practicum (1-4)
Variable—3-12 hours. Prerequisite: graduate standing and consent of instructor. May be repeated for credit. (S/U grading only) —I, II, III, (I, II, III)

Animal Genetics

Animal Genetics

299. Research (1-11)
Prerequisite: graduate standing and consent of instructor. Research with a faculty member in Animal Biology Graduate Group. May be repeated for credit. (S/U grading only.)—I, II, III, IV (I, II, III, IV)

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Lecture—1 hour; discussion/laboratory—1 hour. Prerequisite: consent of instructor. Restricted to Animal Biology Graduate Group students. Topics include: structure of grants, attention to specifications, concise persuasive writing, and grant budgeting. Identify grant opportunities, pursue a persuasive research grant proposal, and administer grants. Limited enrollment. —I (I.)

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