Aging and Gerontology

Degrees and Certificates Offered: Undergraduate Certificate in Aging, BA in interdisciplinary studies (emphasis on aging), Advanced Certificate in Gerontology

See the “John A. Burns School of Medicine” section of the Catalog for more information.

Cell and Molecular Biology Graduate Program

John A Burns School of Medicine
BSB 222
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1514
Fax: (808) 692-1968
Web: web.me.com/cmb2011/CMB/Home.html

Graduate Faculty
M. J. Berry, PhD (Co-chair)—selenoprotein synthesis
M. Gerschenson, PhD (Co-chair)—infectious diseases, HIV mitochondrial medicine

Biochemistry
D. M. Jameson, PhD—energetics and dynamics of protein interactions; fluorescence spectroscopy
S. E. Seifried, PhD—molecular recognition and transcriptional control

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A. Yanagihara, PhD—biochemistry of neurotoxins, neuroactive compounds in cnidarians

Cancer Biology
T. Donlon, PhD—molecular diagnostics of cancer
D. C. Fritzinger, PhD—natural products and cancer biology
A. F. Lau, PhD—oncogenes, cellular transformation and signal transduction
L. Le Marchand, MD, PhD—cancer epidemiology, breast cancer risk
P. S. Lorenzo, PhD—diacylglycerols and their participation in carcinogenesis and malignant transformation
J. Ramos, PhD—MAP kinase pathway
C. W. Vogel, MD, PhD—biochemistry of cellular toxins, neuroblastoma
R. K. Wada, MD—molecular oncology, oncogene regulation, tumor differentiation

Cardiovascular
R. Shohet, MD—cardiovascular research
W. Boisvert, PhD—immunologic and inflammatory aspects of cardiovascular medicine

Cell Signaling
A. Fleig, PhD—excitation-contraction coupling in muscle
R. Penner, MD, PhD—calcium signaling in neurons and immune cells
H. Turner, PhD—molecular biology of ion channels in the immune and nervous system

Developmental Biology
R. Allsopp, PhD—cell biology
H. G. de Couet, PhD—neurogenetics, cytoskeleton, cell motility
T. D. Humphreys, PhD—immune system of sponges, evolutionary foundations of animal immunity, molecular biology of hemichordates
S. Lozanoff, PhD—developmental biology and craniofacial development
M. Martindale, PhD—cellular, molecular and evolutionary basis of biological pattern formation
E. Seaver, PhD—segment polarity signals in annelids

Genetics and Molecular Biology
M. J. Berry, PhD—selenoprotein synthesis
F. Bellinger, PhD—neurobiology of selenoproteins
R. L. Cann, PhD—molecular and evolutionary genetics of animal populations
M. Gerschenson, PhD—infectious diseases, HIV mitochondrial medicine
D. S. Haymer, PhD—molecular genetics of Diptera
The Academic Program

The Cell and Molecular Biology Graduate Program (CMB) in biomedical sciences represents an interdisciplinary approach to graduate education with faculty in many sub-disciplines of biology dedicated to helping qualified students pursue original research using modern approaches to cell and molecular biology. The CMB graduate program brings together faculty from three colleges and various research institutes. Planning for collaborative research is emphasized in this program, as well as solid training in a variety of laboratory techniques.

The CMB graduate program provides fellowships for PhD students in their first year, and additional support in the way of research or teaching assistantships are available for qualified applicants in subsequent years. The program is intended to prepare students for careers in academia, research institutes, and in expanding areas of biotechnology in the private sector.

Master’s students fall into two categories, depending on whether they opt for a Plan A (thesis) or Plan B (non-thesis). The MS Plan B is usually a terminal degree, appropriate for professionals in medical technology, government, and related fields who wish to obtain broad training in modern cell biology to advance their credentials in their chosen fields. The completion of the MS Plan A serves as a qualifying examination for students who intend to continue toward the PhD in cell and molecular biology. It may also serve as a terminal degree for those who wish to pursue careers as research technicians, either in the public or private sector.

Advising

For complete details regarding the program, contact Lyn Hamamura at msbiosci@hawaii.edu or visit the website at web.me.com/cmb2011/CMB/Home.htm.

Graduate Study

Applicants are expected to have at least a bachelor’s degree emphasizing biological or physical sciences with courses in calculus, organic chemistry, biochemistry, and cellular and molecular biology. Applicants with MD degrees are welcome. Results of the Graduate Record Examination (GRE) general test should be submitted with the application, and students whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL). Three letters of recommendation from former instructors or research supervisors, a CMB program graduate express form, and transcripts from previous universities or colleges attended must also be submitted.

Master’s Degree

The curriculum core of the CMB program is a specialized lecture class, spanning two semesters (CMB 621-622). Additional required courses are CMB 611 Seminar in Biomedical Science and CMB 626 Ethics in Biomedical Research. The remaining credit requirements can be fulfilled by specialized courses, seminars, and research units as recommended by the particular committee and research advisor each student picks to guide their academic program. Following the completion of the two semester core course, the student is expected to pass a qualifying exam, form a committee, and then propose, complete, and defend an original research project (MS Plan A) or study plan and research paper (MS Plan B).
Doctoral Degree

PhD candidates do not need to have completed a master’s degree. If an MS was not earned through the CMB program, the core lecture class is required (CMB 621-622). Formal course requirements beyond the core include additional courses specified by the dissertation committee, including CMB 611 Seminar in Biomedical Science, CMB 626 Ethics in Biomedical Research and three laboratory rotations. The student is expected to form a committee, propose, complete, and defend an original research project and publish at least one paper in a peer-reviewed journal during their graduate career.

Neuroscience Specialization

The Cell and Molecular Biology Graduate Program participates in the interdisciplinary “Area of Concentration in Neuroscience.” This is a graduate “specialization” rather than a free-standing graduate program. CMB students interested in this specialization will take normal requirements for CMB plus additional coursework as determined by the Neuroscience Specialization. They will be eligible for graduate degrees in Cell and Molecular Biology (Neuroscience), presuming that their dissertation research includes an emphasis on application of Cell and Molecular Biological techniques to a Neuroscience research issue (or vice versa).

Selected Specialized Courses

Cell Biology
- MBBE 620 Plant Biochemistry
- TPSS 614 Molecular Genetics of Crops
- TRMD 604 Concepts in Immunology and Immunopathogenesis
- TRMD 671 Advanced Medical Parasitology
- TRMD 690 Seminar in Tropical Medicine and Public Health
- ZOOL 610 Topics in Development and Reproductive Biology

Molecular Biology
- CMB 625 Advanced Topics in Genetics
- CMB 654 Genetics Seminars
- MICR 625 Advanced Immunology
- MICR 671 Bacterial Genetics
- MBBE 680 Methods in Plant Molecular Biology
- MBBE 691 Advanced Special Topics in MBBE

Neurobiology
- CMB 606 Introduction to Neurosciences
- CMB 705 Special Topics in Neuroscience
- PHYL 606 Human Neurophysiology
- ZOOL 712 Topics in Nerve/Muscle Physiology

Communication and Information Sciences

2550 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-5813
Fax: (808) 956-5835
Email: cis-chair@lists.hawaii.edu
Web: www.hawaii.edu/cis

Graduate Faculty

D. Suthers, PhD (Chair)—human-computer interaction; social informatics; technology-enhanced learning
N. Asato, PhD—Japanese/Japanese American print cultures; Asian librarianship; censorship
K. Baek, PhD—computer vision, neural computation, machine learning
E. S. Biagioni, PhD—networking protocol design
K. A. Binsted, PhD—artificial intelligence, software design for mobile devices, human-computer interaction
T. X. Bui, PhD—electronic commerce, information policy
H. Casanova, PhD—high performance computing, distributed systems
H. M. Chen, PhD—e-business, service engineering, business-IT alignment, electronic customer relationship management, multimedia database systems, software engineering, enterprise architecture, MIS
D. Chin, PhD—artificial intelligence, natural language processing, user modeling, intelligent agents, intelligent user interfaces, intelligent software maintenance, empirical evaluation, geographic information systems
W. G. Chismar, PhD—information technology, telecommunications, medical informatics
M. E. Crosby, PhD—human-computer interaction, cognitive science, interface design for searching
E. J. Davidson, PhD—social cognitive aspects of information systems development methods
D. Davis, PhD—social impact of communication technologies and computer-based services, communication and gender, gendered applications of telecommunication technologies
G. M. Fontaine, PhD—intercultural and organizational communication
R. S. Gazan, PhD—social aspects of information technology
V. H. Harada, PhD—library management, information literacy
C. S. Ikehara, PhD—biometrics and physiological sensors, adaptive human-computer interfaces
S. Y. Itoga, PhD—database systems, expert systems, logic programming, information and computer sciences
P. Jacso, PhD—digital libraries, webometrics, database content evaluation
P. M. Johnson, PhD—software engineering, high-tech entrepreneurship
R. Kazman, PhD—software engineering, human-computer interaction
T. Kelleher, PhD—public relations, online media, communication campaigns, mass communication, organizational communication
J-I. Kim, PhD—communication research methods, communication theories, diffusion of innovations
R. Knuth, PhD—information policy, children’s materials, international librarianship, history of the book and libraries
D. M. Nahl, PhD—human-computer interaction, affective computing, information literacy, driving informatics
D. Pager, PhD—compiler theory, theory of computability, artificial intelligence
R. R. Panko, PhD—risks in information systems, organizational communication and technology
J. Patriarche, PhD—image and signal processing algorithms applied to clinical medical image analysis
G. Poisson, PhD—cognitive informatics, bioinformatics, machine learning
D. Port, PhD—software economics, management information systems, software engineering
L. Quiroga, PhD—information filtering systems, virtual collaboration, information retrieval, databases, library systems
N. Reed, PhD—artificial intelligence, autonomous agents
S. Robertson, PhD—human-computer interaction, digital government and digital democracy
J. Stelovsky, DrTechSc—computer hypermedia, human-computer interaction, cognitive science
S. Still, PhD—bioinformatics/theoretical biology, information theory, machine learning
D. Streveler, PhD—medical informatics, international public health, issues in the electronic medical record and in telemedicine
K. Sugihara, DrEng—algorithms, distributed computing and database systems, visual languages
D. J. Wedemeyer, PhD—telecommunication policy and planning, new media and society, forecasting methods and application in communication development in Asia and the Pacific
A. Wertheimer, PhD—information science, library history, Japanese-American print culture
R. G. Worthley, PhD—statistics, information technology management

Cooperating Graduate Faculty
J. C. Ady, PhD—organizational communication, sojourner adjustment, international negotiation, conflict management
D. L. Alden, PhD—marketing communications
A. R. Arno, PhD—ethnography of communication, communication and law, social theory, news media
D. Ashworth, PhD—learning technology
R. W. Brislin, PhD—intercultural communication
T. J. Brislin, PhD—mass communications, ethics
R. Doktor, PhD—international business, organizational behavior, strategy
C. P. Ho, PhD—instructional technology
M. K. Lai, PhD—research methods
M. P. McGranaghan, PhD—computer cartography, geographical information systems
N. Ordway, PhD—real estate
J. R. Wills, DBA—technology marketing
S. Zhang, PhD—quantitative research methodology, statistics

Degree Offered: PhD in communication and information sciences

The Academic Program
The Interdisciplinary Doctoral Program in Communication and Information Sciences (CIS) offers a PhD degree integrating and drawing faculty from the fields of communication, computer science, library and information science, and management information systems. Because of the broad knowledge base required to support this interdisciplinary approach, the program also draws on such fields as political science, economics, engineering, operations research, and behavioral sciences.

Recipients of the PhD will undertake careers in colleges and universities, industry, government, and private organizations.

Complete details on this program are outlined on the website, www.hawaii.edu/cis/.

Admission Requirements
Requirements in addition to those set by the Graduate Division are:
- Master’s degree in business administration, communication, library and information science, information and computer sciences, or a closely related field
- Knowledge of computing
- Demonstrated potential for conducting independent research
- Proficiency in English. Minimum TOEFL scores of at least 6600/250/100 (paper/computer/Internet based TOEFL) are required for admission.

Application Requirements
In addition to the information required by the Graduate Division, the following must be sent directly to the CIS program (see www.hawaii.edu/cis/?page=application):
- CIS Preliminary Express Application
- CIS Supplementary Application, including a statement of purpose, samples of relevant published or unpublished work, and skills applicable to teaching or research assistantships
- Three letters of recommendation

Program Requirements
The student will select one primary and two secondary areas of emphasis from those currently supported: see www.hawaii.edu/cis/?page=focus. At this printing, the areas are: biomedical informatics, communication and information theories, communication policy and planning, human-computer interaction, information systems and services, management information systems, and social informatics.

Students must pass comprehensive exams in the chosen three areas of emphasis, publish a research paper, and complete and defend an original dissertation.

Course Requirements
Regardless of area of emphasis, students are required to complete the following three core courses with a grade of at least a B:
CIS 701 Communication/Information Theories (3)
CIS 702 Communication/Information Technologies (3)
CIS 703 Communication/Information Research Methods (3)

Courses to be taken in preparation for the comprehensive exams are to be selected from graduate offerings in related disciplines as directed by the focus area examination committees. Recommended courses as of this printing are listed below. Other directed readings are also required by some committees: see www.hawaii.edu/cis/?page=exams.

Biomedical Informatics
ICS 614 Medical Informatics I (3)
ICS 675 Bioinformatics: Sequences Analysis (3)
Communication/Information Theories

CIS 701 Communication/Information Theories (3)

Communication Policy and Planning

COM 633 Information and Communication Technologies (3)
LIS 715 Information Policy and Planning (3)

Human Computer Interaction

ICS 464 Human Computer Interaction I (3)
ICS 664 Human-Computer Interaction II (3)
ICS 667 HCI Design Methods (3)
ICS 668 Social Informatics (3)
LIS 677 Human Dimension in Information Systems (3)

Information Systems and Services

LIS 663 Basic Database Searching (3)
LIS 671 Digital Librarianship (3)
LIS 678 Personalized Information Delivery (3)
ICS 624 Advanced Data Management (3)

Management Information Systems

BUS 630 Managing Information Technology for Strategic Advantage (3)
ITM 660 Current Topics in Information Systems (3)
ITM 685 Electronic Commerce (3)
ITM 704 Doctoral Seminar in Information Systems (3)

Social Informatics

ICS 668 Social Informatics (3)
ICS 691 Topics in Software (3)
COM 634 Social Media (3)

Environmental Studies

Degrees and Certificates Offered: Undergraduate Certificate in Environmental Studies, BA in interdisciplinary studies (emphasis on environmental studies)

See the “Colleges of Arts and Sciences” section of the Catalog for more information.

Global Health and Population Studies

Office of Public Health Studies
John A. Burns School of Medicine
Biomedical Sciences D209
1960 East West Road
Honolulu, HI 96822
Tel: (808) 956-9023
Fax: (808) 956-6041
Email: popstudy@hawaii.edu
Web: www.hawaii.edu/publichealth/ghaps/index.html

Graduate Faculty

J. Maddock, PhD (Director)—public health sciences
C. M. Douglas, PhD—urban and regional planning
T. Halliday, PhD—economics
S. J. La Croix, PhD—economics
H. R. Lee, PhD—speech
S. H. Lee, PhD—economics
Y. J. Lee, PhD—sociology
A. Mason, PhD—economics
S. Millman—sociology
G. Russo, PhD—economics
C. Stephenson, PhD—political sciences
B. Wilcox, PhD—public health

Affiliate Graduate Faculty

L. J. Cho, PhD—sociology and economics
R. Retherford, PhD—sociology


The Academic Program

The Global Health and Population Studies Program (GHAPS) is an interdisciplinary graduate certificate program jointly offered by the University of Hawai’i and the East West Center. The Population Studies Program was established in 1969, and its name and curriculum was modified in 2009 to include training in global health concepts and methodology. The mission of GHAPS is to promote scholarship in global health and population studies, to develop evidence-based practical solutions, and to promote health for all through accessible interdisciplinary education and training, research, service, and community partnership.

Global health is defined by the Institute of Medicine as “health problems, issues and concerns that transcend national boundaries, may be influenced by circumstances or experiences in other countries, and are best addressed by cooperative actions and solutions.” The discipline of global health is concerned with developing theories and methods to understand the roots of social, economic, political, and environmental determinants of health, with a focus on the nature of health inequalities. The program explores the effects of globalization, environmental change, macroeconomic policy, and culture on population health and population demography. GHAPS uses a systems approach to study social, demographic, political, environmental, and economic change in the contemporary world, and the association between these global changes and such global health issues as fertility, communicable, and non-communicable diseases, maternal and child health, migration and humanitarian assistance, population growth, aging, and sustainable development. The subject matter is addressed from an interdisciplinary perspective with an emphasis on policy-oriented study and research.

Given the location of the East-West Center and UH Manoa and the expertise of its faculty, the graduate program emphasizes policies and issues of importance in the Asia-Pacific region. The program’s curriculum draws on the strengths of its interdisciplinary faculty, who represent such disciplines as public health, sociology, demography, economics, tropical medicine, geography, anthropology, political science, and urban and regional planning. GHAPS seeks to prepare students for careers in international health and health policy, population studies and demographic methods, and interdisciplinary academic research.
Certificate Requirements
The interdisciplinary Graduate Certificate in Population Studies consists of 16 credits of course work, earning a grade of more than B- in any course, and a capstone project or comprehensive examination.

Specific Requirements are:
1. A core of three courses (7 credits), Introduction to Human Population (PPST 650/ PH 651/SOC 650, 3 credits), Introduction to Global Health (PPST 690/ PH 690, 3 credits), and Interdisciplinary Seminar (PPST 649/ PH 652, 1 credit)
2. Three courses numbered 600 or above (9 credits) selected from any graduate level course with approval of the certificate director. Students may choose to enroll for Directed Reading and Research (PPST 699) when undertaking their capstone project. Up to 3 credits of PPST 699 can be applied to the 9-credit requirement. The program director may also accept up to 3 credits of 400-level course. Courses taken for credit may be applied to both a graduate degree and the interdisciplinary certificate.
3. A capstone project. Either a research paper of publishable quality on a global health and/or population topic, a grant proposal with the student as principal author, or other capstone project with the prior written approval of the director of the program. At the end of their project, students must present their results in a seminar. It is the responsibility of the student to identify an appropriate faculty member to serve as an academic advisor of his or her capstone project. The program director then appoints the faculty advisor in consultation with the student and the proposed faculty advisor. The capstone project will be evaluated by a three-member assessment committee, consisting of the faculty advisor and two additional faculty members appointed by the program director in consultation with the student. Students may also choose to take a comprehensive exam in lieu of a capstone project.

Graduate Interdisciplinary Specializations
Graduate specializations offer graduate students the opportunity to complete a course of study utilizing courses and faculty from several different fields. Participants must apply for admission and be admitted to a ‘regular’ graduate program.

Ecology, Evolution, and Conservation Biology
Snyder 407
2538 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-4602
Fax: (808) 956-4707
Email: eecb@hawaii.edu
Web: www.hawaii.edu/eecb/

Graduate Faculty
R. H. Cowie, PhD (Chair)—evolutionary biology and conservation of land and freshwater snails
L. Arita-Tsutsumi, PhD—behavioral ecology of insects
W. W. Au, PhD—sensory biology of cetaceans
K. E. Barton, PhD—evolutionary ecology
C. Birkeland, PhD—coral reef ecology and management, marine community ecology
B. Bowen, PhD—phylogeography, evolution and conservation, genetics of marine vertebrates
R. L. Cann, PhD—conservation genetics and molecular evolution
D. Carlon, PhD—population regulation, life-history evolution and speciation
K. S. Cole, PhD—evolution of sexual patterns, behavioral ecology
S. Conant, PhD—conservation biology, life history and ecology of Hawaiian birds
C. C. Daehler, PhD—invasive plants, plant-insect interactions
J. A. Davidson, PhD—ecology of plant diseases in natural ecosystems
M. J. deMaintenon, PhD—evolution of gastropod organogenetic patterns
D. Drake, PhD—plant ecology, conservation biology, plant-animal interactions
D. C. Duffy, PhD—conservation biology (basic and applied)
L. A. Freed, PhD—evolutionary ecology, behavioral ecology and conservation biology
M. G. Hadfield, PhD—larval biology of marine invertebrates, conservation and demography of Hawaiian tree snails
D. Haymer, PhD—molecular evolution
B. S. Holland, PhD—molecular ecology, systematics and conservation genetics
T. Hunt, PhD—evolutionary theory, including ecology and biogeography
T. Idol, PhD—forest soils and nutrient cycling
K. Y. Kaneshiro, PhD—sexual selection and biology of small populations
D. D. Kapan, PhD—evolution and genetics of warning color and mimicry in Lepidoptera and applied evolutionary ecology and molecular population genetics
S. C. Keeley, PhD—plant molecular systematics and evolution
R. A. Kinzie, PhD—aquatic ecology, coral reefs and tropical streams
C. A. Lepczyk, PhD—wildlife ecology, landscape ecology, human dimensions of natural resources
C. M. Litton, PhD—ecosystem ecology and biogeochemistry of forested systems
T. W. Lyttle, PhD—population genetics and chromosome evolution
W. J. Maurer, PhD—environmental physiology, environmental toxicology, ecological energetics, respiration physiology, and herpetology
M. D. Merlin, PhD—biogeography, ethnobotany, Pacific natural history
C. W. Morden, PhD—molecular systematics and evolution of plants and algae
R. Ostertag, PhD—community structure and nutrient dynamics of tropical forests
D. K. Price, PhD—evolutionary genetics of behaviors
M. A. Ridgley, PhD—human-environment systems analysis: modeling and evaluation of society-environment interactions
D. Rubinoff, PhD—insect systematics, conservation biology, and the evolution of ecological traits
A. R. Sherwood, PhD—evolution, systematics and population genetics of Hawaiian algae
C. M. Smith, PhD—physiological ecology of marine macrophytes, marine ecology
J. S. Stimson, PhD—population ecology
A. D. Taylor, PhD—population ecology
A. Teramura, PhD—environmental stress physiology, global climate change, ecosystem analysis and biodiversity
T. Ticktin, PhD—ethnecology and conservation
R. Toonen, PhD—population biology and larval ecology of marine invertebrates
T. Tricas, PhD—behavior and sensory biology of sharks, rays and reef fishes
L. Wester, PhD—plant geography, biogeography of islands, human-plant relationships
B. A. Wilcox, PhD—natural resource management, ecology of infectious diseases
C. Womersley, PhD—environmental physiology, biochemical adaptation, parasitology

Affiliate Graduate Faculty
A. Allison, PhD—systematics and population biology
L. V. Basch, PhD—ecology, evolution and conservation of marine life histories and benthic communities
N. L. Evenhuis, PhD—systematics and evolution of Diptera
A. M. Friedlander, PhD—nearshore fisheries
F. G. Howarth, PhD—evolutionary biology of cave ecosystems and insect conservation
L. L. Loope, PhD—conservation biology, plant ecology
J. E. Maragos, PhD—human impact on marine ecosystems and coral reefs
D. Ragone, PhD—Pacific Island ethnobotany, especially conservation and use of traditional crops, focusing on breadfruit

The Academic Program
The objectives of the interdisciplinary graduate specialization in ecology, evolution, and conservation biology (EECB) are to:

- Use the unique opportunities that Hawai‘i offers to integrate tropical population biology and natural history studies with modern laboratory techniques;
- Provide the interdisciplinary, conceptual, and technical training that will allow our graduates to participate in academic and research programs in ecology, evolution, and conservation biology; and
- Foster scholarly training in research programs involving expertise in ecology, evolution, and conservation biology.

Modern theories of ecology, evolution, and conservation biology share a core of concepts and techniques that span classical academic disciplines. This common core, coupled with the emergence of powerful new technologies, invites cross-disciplinary approaches, which generate many of today’s most exciting scientific advances.

The EECB program provides opportunities for students at UH Mānoa to expand their knowledge and gain experience in this integrative discipline. Our interdisciplinary graduate program brings together faculty members from agronomy and soil science, anthropology, biomedical sciences (genetics and molecular biology), botanical sciences, entomology, geography, horticulture, microbiology, oceanography, and zoology—with all their skills and technologies—to provide the training students need to contribute effectively to this research area.

EECB is implemented as a “specialization” within existing graduate programs of the departments whose faculty participate in this program. This means that the primary duties and responsibilities of each EECB student are to satisfy the requirements of their own home academic department. The EECB specialization serves to allow students to expand beyond the traditional departmental boundaries in terms of formulating research questions, choosing thesis/dissertation committee members and taking academic courses. EECB graduate students can be enrolled in either the doctor of philosophy or master of science degree in their home department.

Students accepted to the EECB graduate specialization must already have been accepted into the graduate program of the various departments participating in the EECB program. Course work in statistics, organic chemistry, biochemistry, genetics, evolution, and ecology are considered most important for admission into the EECB program.

Details on the EECB program and application forms can be found at the EECB website www.hawaii.edu/eecb/.

Admission Procedures and Policy
All applicants must submit:

- UH Mānoa graduate application, including
  - Results of the Graduate Record Examination
  - Copy of official transcripts (UH Mānoa to be included if applicant is an existing student)
  - Three letters of recommendation
  - Statement of career goals

All applicants must also submit (in this case directly to the EECB office):

- Letter expressing your interest in EECB (up to 3 pages), including, at a minimum
  - information on past academic experience
  - goals for graduate study in general and graduate study in EECB in particular
  - what you feel you can contribute to EECB
  - what you expect to gain by participation in EECB
- Letter of support from your EECB faculty sponsor

Only students who have been accepted by a graduate program in one of the academic departments at UH Mānoa can be considered for admission to the EECB program.

New students applying to UH Mānoa
Regardless of department admission deadlines, the EECB program deadline is February 1 for admission the following fall semester.
If you are applying for admission to EECB you must enter “EECB” in addition to the academic program to which you are applying (Zoology, Botany, etc.) in the box labeled “intended graduate program” on your original UH application. The Graduate Division will automatically forward your entire application (including the letters of recommendation) to the department you are applying to, and it will then be forwarded to EECB if you are accepted into that department. You do not need to submit a copy directly to EECB.

In addition, you should also submit, in this case directly to the EECB office, a letter specifically expressing your interest in EECB (see above for what it should include).

Your EECB faculty sponsor should also submit a letter of support, directly to the EECB office.

Students already at UH Mānoa

Students already at UH Mānoa may be admitted to EECB in either the fall or spring semester. The deadline for applications for admission in the fall semester is February 1 and for admission in the spring semester is October 15.

Your original UH Mānoa application will be obtained directly by the EECB office from the Graduate Division and does not need to be submitted with your application to EECB.

You should submit, directly to the EECB office, a letter expressing your interest in EECB (see above for what it should include). In addition, if you have been a UH Mānoa student for more than two semesters, you should have three new reference letters submitted directly to the EECB office by the application deadline.

Your EECB faculty sponsor should also submit, directly to the EECB office, a letter of support.

Admission criteria

Details can be found on the EECB website: www.hawaii.edu/eeceb/.

Course Requirements for Specialization in Ecology, Evolution and Conservation Biology

Course requirements for ALL EECB graduate students:

- Complete all degree requirements of the home academic department
- Participate in EECB activities, particularly the Evoluncheon seminar series
- One course in ecology at the 600 or 700 level (at least 2 credits with an A or B grade)
- One course in evolution at the 600 or 700 level (at least 2 credits with an A or B grade)
- One course in conservation biology at the 600 or 700 level (at least 2 credits with an A or B grade)

Acceptable graduate (600-700 level) courses currently being offered are listed below. Because some offerings change from semester to semester, consult the EECB webpage for an updated list.

In addition to course requirements for the specialization in EECB, each academic department has its own course requirements. Courses from the EECB course list that are taken to fulfill departmental requirements can also be used to fulfill EECB requirements, however, a single course can only satisfy one of the three EECB requirements.

Course Offerings

(Updated October 2010)

(New courses or one-time offerings not listed here but approved by the EECB curriculum committee may also count towards the ecology, evolution, or conservation biology requirement. Please check with the EECB website and consult with the graduate education committee.)

Ecology

- ANTH 606 Anthropology of Infectious Disease (3)
- BOT 644 Ethnecological Methods (3)
- BOT 651 Invasion Biology (3)
- BOT/ZOOL 652 Population Biology (3)
- BOT 676 Environmental Physiology Seminar (2)
- IS 650 Principles of Applied Evolutionary Ecology (3)
- MICR 680 Advances in Microbial Ecology (3)
- NREM 680 Ecosystem Ecology (3)
- NREM 682 Restoration Ecology (3)
- NREM 691 (001) Landscape Ecology (V)
- NREM 691 (002) Foundations of Conservation and Natural Resources
- OCN 626 Marine Microplankton Ecology
- OCN 627 Ecology of Pelagic Marine Animals (3)
- OCN 628 Benthic Biological Oceanography (4)
- OCN 629 Molecular Methods in Marine Ecology (2)
- PEPS 671 Insect Ecology (3)
- ZOOL 606 Principles of Animal Behavior (2)
- ZOOL 606L Principles of Animal Behavior Lab (1)
- ZOOL 620 Marine Ecology (3)
- ZOOL 621 Evolutionary Ecology (4)
- ZOOL 623 Quantitative Field Ecology (3)
- ZOOL 652 Population Biology (3)

Evolution

- ANTH 604 Physical Anthropology (3)
- BOT 661 Hawaiian Vascular Plants (3)
- BOT 669 Molecular Phylogenetics and Evolution (3)
- CMB 625 Advanced Topics in Genetics (2)
- CMB 650 Population Genetics (3)
- MICR 671 Bacterial Genetics (3)
- PEPS 662 Systematics and Phylogenetics (3)
- PEPS 691 Biogeography Seminar (2)
- TPS 615 Quantitative Genetics (3)
- ZOOL 487 Molecular Ecology (3)
- ZOOL 606 Principles of Animal Behavior (2)
- ZOOL 606L Principles of Animal Behavior Lab (1)

Conservation Biology

- ANTH 620H Ecology (3)
- BOT 651 Invasion Biology (3)
- BOT/ZOOL 690 Conservation Biology (3)
- NREM 691 Foundations of Conservation and Natural Resources (3)
- OCN 621 Biological Oceanography (3)
- PEPS 675 Biological Control of Pests (3)
- TCBES 600 (UH Hilo) Conservation Biology and Environmental Science (3)

Content Varies (but may be count towards a specific area, depending the topic)
The Academic Program

The marine biology specialization is a UH Mānoa-wide program focusing on recent advances in the understanding of marine systems at the ecological, organismic, and cellular-molecular levels. Students can select courses, advisors, and research opportunities from a wide range of specialties, including: marine botany, ecology, genetics, virology, microbiology, zoology, aquaculture, behavioral biosystematics, biological oceanography, coral reef biology, fisheries, and molecular biology.

The marine biology specialization is available to graduate students in botany, microbiology, oceanography, and zoology. Prospective graduate students must apply first to one of these programs. Applications from students who have been accepted to botany, microbiology, oceanography, or zoology who have also indicated a desire to specialize in marine biology are reviewed by the Marine Biology Admissions Committee.

Students specializing in marine biology supplement the courses required for a degree in their chosen field with courses specific to marine biology. The actual selection is determined by the student in consultation with his or her advisor. Graduate student research is carried out in the laboratories of the graduate faculty. These include laboratories in Edmondson Hall, Snyder Hall, the St. John Laboratory (botanical sciences), the Marine Science Building, the Hawai‘i Institute of Marine Biology (located on Coconut Island in Kaneohe Bay), the Bekesy Laboratory, and the Kewalo Laboratory of the Pacific Biomedical Research Center. Research capabilities include DNA sequencing using PCR technology; video and acoustic recording for ecological and behavioral studied of coral reef and planktonic organisms; transmission and scanning electron, ultraviolet, and light microscopy; electrophoretic analysis; flow cytometry; and radioisotope tracer studies.

Selected Courses:

- ANSC 450 Aquaculture Production (3)
- BOT 480 Algal Diversity and Evolution (4)
- BOT 680 Marine Macrophytes Seminar (2)
- OCN 450 Aquaculture Production (3)
- OCN 621 Biological Oceanography (3)
- OCN 626 Marine Microplankton Ecology (4)
- OCN 627 Ecology of Pelagic Marine Animals (4)
- OCN 628 Benthic Biological Oceanography (4)
- OCN 750 Topic in Biological Oceanography (V)
- ZOOL 466 Fisheries Science (3)
- ZOOL 467 Ecology of Fishes (3)
- ZOOL 475 Biology of Invertebrates (3)
- ZOOL 620 Marine Ecology (3)
Neurosciences Graduate Specialization

Graduate Faculty
M. Berry, PhD (Chair)—cell and molecular biology
D. C. Blanchard, PhD—cell and molecular biology
R. Blanchard, PhD—psychology
T. Blank, PhD—cell and molecular biology
L. Chang, MD—medicine
A. Dunn, PhD—Bekesy Laboratory of Neurobiology
T. Ernst, PhD—medicine
A. Fleig, PhD—cell and molecular biology
M. Gerschenson, PhD—medicine
D. Hartline, PhD—Bekesy Laboratory of Neurobiology
V. Nerurkar, PhD—tropical medicine and medical microbiology
R. Nichols*, PhD—cell and molecular biology
H. Petrovitch, MD—geriatric medicine
M. Rayner*, PhD—cell and molecular biology
G. Webster Ross, MD—medicine and geriatric medicine
C. Shikuma, MD—medicine
B. Shiramizu, MD—medicine/pediatrics
A. Stenger, PhD—medicine
L. Takahashi, PhD—psychology
L. White, MD, PhD—pediatrics

Neuroscience
The purpose of this specialization is to allow graduate students pursuing masters and doctoral degrees in various disciplines (e.g., medicine, psychology, engineering, computer science, molecular bioscience, etc.) to formally specialize in neuroscience. This is accomplished by taking a minimum of 4 courses plus participate in a “journal club” focusing on neuroscience as approved by the Graduate Chair.

Courses
- CMB 606 Introduction to Neurosciences (4)
- CMB 621 Cell Molecular Biology I (4)
- CMB 622 Cell Molecular Biology II (4)
- CMB 626 Ethics in Biomedical Research (2)
- CMB 705 Special Topics in Neurosciences (V)
- PHRM 640 Neuropharmacology (2)
- PSY 622 Animal Learning (3)
- PSY 626 Cognitive Psychology (3)
- PSY 631 Comparative Psychology (3)
- PSY 642 Cognitive Development (3)
- PSY 719 Research in Psychometrics (3)
- TRMD 607 Neurovirology (1)
- ZOOL 642 Cellular Neurophysiology (3)
- ZOOL 712 Topics in Nerve/Muscle Physiology (V)

Interdisciplinary Studies
Degree Offered: BA in interdisciplinary studies

See the “Colleges of Arts and Sciences” section for more information.

International Cultural Studies

UHM/EWC International Cultural Studies Graduate Certificate Program
Burns Hall Rm 2069
1601 East-West Road
Honolulu, HI 96822
Tel: 808-944-7593
Fax: 808-944-7070
Email: culture@hawaiiedu
Web: www2.hawaii.edu/~culture

Faculty
W. Dissanayake, PhD (Director)—media studies
C. Andrade, PhD—Hawaiian studies
A. Arno, PhD—anthropology
C. Bacchilega, PhD—English
T. Bigalke, PhD—EWC education
E. Buck, PhD—EWC
G. Chan, PhD—art and art history
M. Chapman, PhD—geography
M. Das Gupta, PhD—ethnic studies
K. Ferguson, PhD—political science and women’s studies
C. Franklin, PhD—English
C. Fujikane, PhD—English
V. Gonzalez, PhD—American Studies
T. Gonzaelis PhD—American Studies
N. Goodyear-Ka’opua, PhD—political science
D. Grace, PhD—education
J. Hamilton, PhD—art and art history
D. Hanlon, PhD—history
M. Helbling, PhD—American studies
J. Henry, PhD—English
V. Hereniko, PhD—Pacific Island studies
P. Ho, PhD—ethnic studies
P. HOFFENBERG, PhD—history
R. Hsu, PhD—English
K. Kane, PhD—political science
J. Kaomea, PhD—curriculum studies
N. Kent, PhD—ethnic studies
M. Koikari, PhD—women’s studies
K. Kosasa, PhD—American studies
F. Lau, PhD—music
J. LOGAN, PhD—languages and literatures of Europe and the Americas
L. Lyons, PhD—English
P. Lyons, PhD—English
R. MABANGLO, PhD—Philippine studies
R. NETTELL, PhD—English
J. OKAMURA, PhD—ethnic studies
J. OSORIO, PhD—Hawaiian studies
K. PAUCA, PhD—theater
R. PERKINSON, PhD—American studies
R. RATH, PhD—history
S. REISS PhD—history
J. Rieder, PhD—English
A. Robillard, PhD—sociology
S. Shankar, PhD—English
M. SHAPIRO, PhD—political science
M. SHARMA, PhD—Asian studies
Interdisciplinary Programs

N. Sharma, PhD—ethnic studies and sociology
N. Silva, PhD—political science
C. Sinavaiana, PhD—English
N. Soguk, PhD—political science
R. Sullivan, PhD—English
T. Tengan, PhD—ethnic studies and anthropology
R. Trimillos, PhD—Asian studies
M. Wesendorf, PhD—theatre and dance
T. Wesley-Smith, PhD—Pacific Island studies
E. White, PhD—ethnic studies
G. White, PhD—EWC and anthropology
H. Wood, PhD—English (HPU)
C. Yano, PhD—anthropology
M. Yoshihara, PhD—American studies
M-B. Yue, PhD—East Asian languages and literatures
J. Zuern, PhD—English

Certificate Offered: Graduate Certificate in International Cultural Studies

The Academic Program

The Graduate Certificate in International Cultural Studies offers an interdisciplinary course of study that enhances existing degrees in Arts and Sciences, area studies, and the professional schools.

Given that the language of culture is increasingly heard in debates about issues as diverse as nationalism, human rights, immigration, trade, the environment, education, media, and the arts, the certificate program develops tools for a more informed and critical understanding of the role of culture in public debates and policy.

Hawai‘i’s location at the intersection of local, U.S. and Asian spheres of influence provides an important vantage point from which to take up the social and cultural transformations taking place in today’s era of economic globalization and restructuring. Issues of cultural identity and politics are sharply drawn in the distinctive mix of indigenous, local and international communities in Hawai‘i today. Program courses and activities support a variety of approaches to analyzing and understanding the significance of culture, and of cultural difference, as global flows of people, culture, and capital increase the heterogeneity and flux of everyday life throughout the world.

The certificate program brings together faculty whose research and teaching focus on the politics and production of culture in the context of local, national, and international relations. Faculty research methods and styles emphasize the interpretive approaches of the humanities and social sciences.

Certificate Requirements

The certificate program combines course work with directed research and, where possible, community involvement.

- A core of three courses (7 credits), including:
  - International Cultural Studies: History and Theory (CUL 610)
  - Faculty Seminar Series (CUL 609)
  - International Cultural Studies: Research Project (CUL 750). The Capstone Experience is an individual research project supervised by a participating faculty member.
- Three electives (9 credits), including two taken outside the student’s department and no more than one undergraduate course.

Peace Studies

Degrees and Certificates Offered: Undergraduate Certificate in Peace Studies, BA in interdisciplinary studies (emphasis on peace studies). See the “Colleges of Arts and Sciences” section for more information.

Resource Management

Saunders Hall 107
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-7381

Certificate Offered: Graduate Resource Management Certificate

The Academic Program

The Graduate Resource Management Certificate is a cooperative program primarily involving the College of Social Sciences, the Department of Urban and Regional Planning (anthropology, economics, geography), the College of Tropical Agriculture and Human Resources (natural resources and environmental management), and the East-West Center (Program on Environment, Program on Resources: Energy and Minerals). Because of its diverse topical components, multidisciplinary faculty, and practical application throughout Asia and the Pacific, the program is ideal for students who are pursuing graduate studies in traditional disciplines and also seeking expertise in environmental resource management.

This program provides students with specialized training in an area that augments their primary field and develops their pragmatic problem-solving and decision-making skills through analysis of real-world problems. Any student who has previously been admitted as a classified graduate student at UH Mānoa is eligible to apply for admission to this certificate program. Interested applicants should contact their advisor or any representative of the program in the collaborating departments and institutions.

To earn this certificate, students are expected to complete 15 credit hours, at least 9 of which are at the graduate level. For more information, contact the Department of Urban and Regional Planning.