The John A. Burns School of Medicine strives to improve the quality, effectiveness, and equity of health care delivery in Hawai‘i and the Pacific region. The school provides opportunity for qualified residents of Hawai‘i and the Pacific Islands, including students from various underrepresented socioeconomic and minority groups to qualify for an MD degree; provides MD graduates with competency to enter postgraduate programs; and provides residency training programs with emphasis on primary-care specialties.

The school also administers graduate research and professional programs that lead to MS and PhD degrees in the basics of biomedical sciences and health-related fields; MS, MPH, and DrPH degrees in Public Health; and MS degree in Communications Sciences and Disorders; and, BS and a post-baccalaureate certificate in medical technology. Medical school faculty participate in undergraduate courses for majors in nursing, dental hygiene, biology, nutrition, and related fields. In addition, the medical school, in partnership with the Hawai‘i Medical Association and the Hawai‘i Consortium for Continuing Medical Education, sponsors continuing medical education for physicians in the state of Hawai‘i.

The school provides instruction for five major categories of students:

1. Candidates for the MD degree who are admitted directly by the school’s own admissions committee;
2. Candidates for MS degrees in biomedical sciences (with concentrations in cell and molecular biology, clinical research, physiology, and tropical medicine), public health, or in communication sciences and disorders apply through the Graduate Division of UH Mānoa;
3. Candidates for the MPH or DrPH degree who apply through the Graduate Division of UH Mānoa;
4. Candidates for PhD degrees in biomedical sciences with concentrations in clinical research, cell and molecular biology, epidemiology, physiology, and tropical medicine who apply through the Graduate Division of UH Mānoa; and
5. Candidates for an undergraduate degree in medical technology, who apply through the Admissions Office.

In addition, a post-baccalaureate certificate for medical technology clinical training is offered.

### The Kaka‘ako Waterfront Complex

In 2005, the John A. Burns School of Medicine relocated to a new 9.898 acre site in Kaka‘ako, on the water’s edge, between Waikiki and downtown Honolulu. The school’s previous location, the 42-year-old Biomedical Sciences building on the Mānoa campus, continues to be occupied by the Office of Public Health Sciences, Department of Medical Technology, and by various research units. The school complex functions as an economic engine for the state that will create quality emplo-
ment opportunities, increase biomedical research activity, and be a stimulus for the biotechnological industry in Hawai'i.

Target areas of research, which include innovations in problem-based learning medical education, are retrovirology/infectious diseases/AIDS, molecular biology/genetics/neuroscience, genomic medicine, proteomics, and bioinformatics/computational biology.

Plans also include building an incubator center (leasable research space) to provide biotechnology and bioscience companies a campus-like environment enabling collaboration with academic researchers. A major medical research center, with surrounding space for such companies, as well as Honolulu’s technology infrastructure and ties to Asia and the Pacific, will make the city of Honolulu a prime environment for the growing technology and biomedical research industries.

The school is accredited by the Liaison Committee for Medical Education (LCME) of the Association of American Medical Colleges and the Residency and Fellowship Programs are accredited by the Accreditation Council on Graduate Medical Education (ACGME).

Additionally, all civilian postgraduate medical education programs in Hawai'i hospitals are accredited as UH John A. Burns School of Medicine-sponsored residency programs by the ACGME. Approximately 250 physicians (employees of Hawai'i Residency Programs, Inc.) within 10 training programs serve as house staff members in these hospitals under the direction of medical school faculty from eight clinical departments. Oversight is provided by the Designated Institutional Official (DIO). Continuing Medical Education (CME) programs are accredited by the Hawai'i Consortium for Continuing Medical Education (HCCME), a liaison committee between the Hawai'i Medical Association and JABSOM, while the public health degrees are accredited by the Council on Education in Public Health (CEPH), Medical Technology (MEDT), and Communication Sciences and Disorders (CSD).

Affiliations
The school maintains affiliations with facilities for medical student and resident clinical training that include the following: Castle Medical Center, Hawai'i State Hospital, Hilo Medical Center, Kalili-Palama Health Center, Kaiser Permanente Moanalua Medical Center & Clinic, Kapiolani Medical Center for Women and Children, Kapiolani Medical Center at Pali Momi, Kooka Kalih Valley Health Center, Kuakini Health Systems, Leahi Hospital, Maui Memorial Medical Center, The Queen's Medical Center, Queen Emma Clinics, Rehabilitation Hospital of the Pacific, Shriners Hospital for Children, Spark Matsunaga VA Medical Center, Straub Clinic and Hospital, Tripler Army Medical Center, Wahiawa General Hospital, and The Physician Center.

Degrees
Bachelor's Degrees: BS in medical technology, BA in public health

Master's Degrees: MS in biomedical sciences (cell and molecular biology, clinical research, physiology, and tropical medicine); MPH and MS in public health; MS in communication sciences and disorders

Professional Degree: MD

Doctoral Degrees: PhD in biomedical sciences (cell and molecular biology, clinical research, epidemiology, and tropical medicine); PhD in developmental and reproductive biology; DrPH in public health

Advising
Premedical advising is available through the Pre-Health/Pre-Law Advising Center, Queen Lili'uokalani Center for Student Services.

Academic Policies
Undergraduate and graduate students in the School of Medicine must adhere to the academic policies of UH Mānoa. Medical students are exempted from certain UH Mānoa policies and instead must follow academic policies germane to the MD program. Copies of relevant policies are available in JABSOM's Office of Student Affairs.

MD Program
The MD program follows a problem-based curriculum, the "MD Program," which was implemented in fall 1989 and includes the following key features: knowledge is acquired in problem-based modules; self-directed learning is fostered in small group tutorials; students are involved actively in the learning process, not simply passive recipients of information; the small group leaders function as facilitators of learning; content experts function as resources to the learning process; laboratory exercises, demonstrations, the library and audiovisual-computer centers supplement faculty input; basic sciences are learned primarily in the context of solving clinical problems; students are trained to think critically and to evaluate new information and research data; and evaluation of students is based on competence in a variety of problem-solving exercises.

The learning activities in the first two years of the curriculum take place in the school’s state-of-the-art Medical Education Building and in community health sites. The advanced clinical instruction that constitutes the bulk of the second two years of instruction takes place in affiliated community hospitals and clinics.

Admission Requirements/Application Process
Candidates for MD training must complete a minimum of 90 college-level semester credit hours of which the following specific science coursework is required for entry into the MD curriculum.

- 8 semester credit hours of biology with lab
- 8 semester credit hours of general physics with lab
- 8 semester credit hours of general chemistry with lab
- 8 semester credit hours of organic chemistry with lab
- 3 semester credit hours of biochemistry (no lab required)
- 3 semester credit hours of cell and molecular biology (no lab required)

Each course should be acceptable for students majoring in the above science disciplines. Additional enrichment in the biological and social sciences is encouraged. Applicants must also be fully competent in reading, speaking, and writing the English language.

Applicants are required to apply through the American Medical Colleges Application Service (AMCAS). The service permits an applicant to file a single web-based application, which is forwarded to participating medical schools as desig-
nated on the AMCAS application. AMCAS will implement a criminal background check on applicants applying to medical schools. The AMCAS application is available from June 1 at the AMCAS website: www.aamc.org. The deadline to transmit the application to AMCAS is November 1 for regular admission (EST) or August 1 (EST) for Early Decision.

Applicants must also take the nationally administered Medical College Admissions Test (MCAT), which deals with knowledge of the physical and biological sciences and skills in verbal reasoning and writing. The Medical College Admissions Test (MCAT) must be taken within three years of an applicant’s anticipated matriculation to medical school. The latest MCATs screened or re-screened in the admissions process is September of the year of application (May for Early Decision).

Applicants who achieve the required screening cut-off points will be requested to submit additional materials and invited for interviews. Sixty-six MD candidates are accepted to the entering first-year class.

Inquiries regarding admissions should be directed to the Office of Student Affairs, Admissions, John A. Burns School of Medicine, 651 Ilalo Street, MEB 3rd floor, Honolulu, HI 96813 or via email medadmin@hawaii.edu. Further information may be obtained on the web at www.jabsom.hawaii.edu.

**Honors and Awards**

Alpha Omega Alpha is the honorary society for medical students. Delta Omega is the honorary society for public health students.

**Graduate Medical Education Programs**

Graduate medical education programs in Hawai‘i hospitals are in family medicine, sports medicine, internal medicine, geriatric medicine, obstetrics and gynecology, orthopaedic surgery, pathology, pediatrics, neonatal-perinatal medicine, developmental-behavioral pediatrics, psychiatry (adult, child and adolescent, geriatric, addiction), general surgery, surgical critical care, cardiology, and transitional year. Also offered are a fellowship in maternal-fetal medicine accredited by the American Board of Obstetrics and Gynecology, and a fellowship in addiction medicine leading to certification by the American Board of Addiction Medicine. The UH John A. Burns School of Medicine acts as the institutional sponsor for these residency training programs. Approximately 250 physicians are involved in training, which lasts one to seven years. These physicians serve as members of the house staff in the affiliated hospitals while studying their chosen specialty.

The medical school also conducts a graduate medical education program at Chubu Hospital in Okinawa for graduates of Japanese medical schools.

**Graduate Programs**

Refer to the department/program sections of the Catalog for more information on each graduate program. Note: Information on the clinical research program is listed under the Department of Complementary and Alternative Medicine and information on the cell and molecular biology graduate program is located in the “Interdisciplinary Programs” section of the Catalog.

Graduate program inquiries should be directed to the appropriate program chair. General information is available on the web at jabsom.hawaii.edu/JABSOM/admissions/gradDegrees/index.php?l1=gradD.

**Biomedical Sciences**

**Cell and Molecular Biology**
Mariana Gerschenson, PhD
Phone: (808) 692-1518
Email: gerschen@hawaii.edu
Marla Berry, PhD
Phone: (808) 692-1506
Email: mberry@hawaii.edu
Web: www.hawaii.edu/cmb

**Clinical Research**
Rosanne Harrigan, EdD
Phone: (808) 692-0909
Email: mscr@hawaii.edu
Web: mscr.jabsom.hawaii.edu/wordpress/

**Epidemiology**
Eric L. Hurwitz, DC, PhD
Phone: (808) 956-7425
Email: e hurwitz@hawaii.edu
Web: manoa.hawaii.edu/publichealth/

**Developmental and Reproductive Biology**
W. Steven Ward, PhD
Phone: (808) 956-5189
Email: wward@hawaii.edu
Richard Allsopp, PhD
Phone: (808) 692-1412
Email: allsopp@hawaii.edu
Web: www3.jabsom.hawaii.edu/Grad_DRB/index.html

**Tropical Medicine**
Sandra Chang, PhD
Phone: (808) 692-1607
Email: sandrac@hawaii.edu
Web: blog.hawaii.edu/tropicalmedicine/

**Public Health**
Jay Maddock, PhD
Phone: (808) 956-8267
Email: ogsas@hawaii.edu
Web: manoa.hawaii.edu/publichealth

**Communication Sciences and Disorders**
Henry Lew, MD, PhD, CCC-A
Phone: (808)692-1582
Email: spauh@hawaii.edu
Web: manoa.hawaii.edu/csd/

**Undergraduate Programs**

For information on medical technology, refer to the respective section of the Catalog.

**Special Programs**

**Hawai‘i/Pacific Basin Area Health Education Center (AHEC)**

The Hawai‘i/Pacific Basin Area Health Education Center (AHEC) supports health professions training experiences in rural and under-served areas of Hawai‘i and the U.S.-Affiliated Pacific Islands (Guam, American Samoa, Commonwealth of the Northern Mariana Islands, Republic of the Marshall Islands, Republic of Palau, and Federated States of Microne-
Training experiences can be preceptorships, clerkships, electives, cultural immersion experiences, or interprofessional training experiences such as the AHEC Community Based Interdisciplinary Training Program (previously known as Ke Ola). AHEC supports continuity of rural training for students wishing to perform training experiences in a particular rural or under-served area during multiple years of training. AHEC staff perform and support health careers recruitment programs across the state, coordinate science teacher training that incorporates career awareness, support use of video teleconferencing for health education purposes, and provide CME/CE to health care providers in rural and under-served areas. Finally, AHEC is conducting a statewide physician workforce assessment and students can participate in studying aspects of the workforce, such as migration patterns and use of telehealth.

AHEC is funded by the U.S. Department of Health and Human Services, Health Resources and Services Administration. The federal mandate is to improve the diversity, distribution, and quality of the health professions workforce. The mission of Hawai’i/Pacific Basin AHEC is: To improve the health of the under-served through education. Activities focus on five primary areas: 1) Health education and recruitment to health professions for students across the state from kindergarten through college; 2) Educating health professions students in rural and under-served areas, often in interdisciplinary teams; 3) Recruitment, retention, and continuing education of practicing health professionals in medically under-served areas; 4) Providing community health based and community driven health education in over a dozen community learning centers across the state; and, 5) Providing video connectivity for health education, communication, and other health care services to rural and under-served areas across the state. Contact Dr. Kelley Withy for more information at withy@hawaii.rr.com, (808) 692-1060.

Overseas Programs

The school plays an extensive training role at locations outside Hawai’i and expects that its involvement in the Pacific and Asia regions will continue. In the scattered islands of Micronesia, the school has trained medical officers (MOs) and physician assistants to bring primary care to a widely dispersed population. The curricula were relevant to the clinical and community health needs of the Pacific Basin. Graduates of the MO program received a Diploma in Community Health, Medicine, and Surgery. Training of other health professionals in the Pacific Basin area continues. On Okinawa, the school conducts a residency training program for graduates of Japanese medical schools. This program is financed by the Okinawa prefectural government. The school conducts a medical student exchange program with affiliated medical schools and hospitals in Korea, Thailand, the Philippines, Japan, Indonesia, Taiwan, Australia, and New Zealand.

Anatomy, Biochemistry, and Physiology

John A. Burns School of Medicine
651 Ilalo Street, BSB 110
Honolulu, HI 96813
Tel: (808) 692-1446
Web: jabsom.hawaii.edu/JABSOM/departments/intro.php?departmentid=11

Faculty
*S. Lozanoff, PhD (Chair)—renal and craniofacial morphogenesis
*V. B. Alarcon, Ph.D—mammalian developmental biology
*R. Allsopp, PhD—telomerase biology
K. Cummins, MS—physiology
*B. Fogelgren, PhD—cell and molecular biology of kidney diseases
*K. S. K. Fong, PhD—neural tube and craniofacial genetics and development
*T. Humphreys, PhD—psychoderaflava and stem cells
S. Labrash, CFSP—plastination, willed body program, continuing education
*Y. Marikawa, PhD—mammalian embryogenesis, cell differentiation, and body pattern formation
*T. Matsui, MD, PhD—cardiovascular research
*D. Merritt, PhD—aging and exercise physiology
*S. Moisyadi, PhD—mammalian transgenesis
Z. Stoytcheva, PhD—transcriptional regulation of renal development
J. Urschitz, PhD—gene therapy, obesity, pregnancy
*M. Ward, PhD—sperm physiology and genetics, assisted reproduction technology
*W. S. Ward, PhD—DNA structure, embryogenesis, and sperm biology
*Y. Yamazaki, PhD—mouse cloning, primordial germ cell biology

Cooperating Graduate Faculty
R. V. Cooney, PhD—role of nitrogen oxides in carcinogenesis

Adjunct/Clinical Faculty
J. Chen, PhD
H. Davis, PhD
R. Dunn, PhD
C. E. Ha, Ph.D
T. Nomura, MD, PhD
K. Nonaka, DDS, PhD
M. Ohishi, MD, DDS, PhD
C. Stickley, PhD
S. Tunali, PhD, MD
C. F. T. Uyehara, PhD
J. Wu, PhD
S. Yang, MD

Degree Offered: MS in developmental and reproductive biology, PhD in developmental and reproductive biology

* Graduate Faculty
The Academic Program

The Department of Anatomy, Biochemistry, and Physiology supports the interdisciplinary nature of modern biomedical research and exposes both medical and graduate students to the type of research environment they will encounter in their professional career. The department was formed in acknowledgment of the MD program’s ongoing need for discipline-based expertise in the areas of anatomy, physiology, and reproductive biology, which provides a broad base of knowledge in biological structure and function from the molecular level to the body as a whole, as well as biochemistry, which involves the study of the chemistry and physics of living systems and is fundamental to the understanding of many of the disciplines of medical, biological, and agricultural sciences.

The department offers upper- and lower-level courses in biochemistry and physiology as preparatory coursework for prospective medical students as well as 500-level electives in human anatomy and physiology for medical students that supplement knowledge gained in the tutorials. The training of medical students and post-graduate training of physicians would not be possible without the department’s Willed Body Program.

Students seeking health-related careers in areas such as dentistry, medicine, nursing, nutrition, physical therapy, public health, and the social sciences need many of the department’s physiology courses. Formal programs of study leading to MS and PhD degrees in developmental and reproductive biology are also offered. These students may elect to conduct research at the molecular or cellular level, on organs such as the lungs, or on the whole animal or person. Through the interdisciplinary Cell and Molecular Biology Graduate Program, qualified graduate students have the opportunity to work with faculty from other JABSOM departments and programs within the university system as well.

The MS (Plan A) program in developmental and reproductive biology requires a combination of course work and original research, the latter forming the basis of the student’s thesis. The MS (Plan B) degree serves as training for teaching positions at the high school, community college, or four-year college level. It may also be a prelude to a medical or dental education. Candidates for the MS Plan B degree are required to prepare a written paper and give an oral presentation as well as fulfilling course requirements (total of 30 credits). The MS concentration in exercise physiology provides adequate preparation for a career in sports medicine and training and in health and fitness programs in hospitals and private businesses.

The PhD degree in developmental and reproductive biology prepares students for teaching careers in universities, community colleges, and high schools, as well as for research careers at universities, hospitals, government laboratories, and large pharmaceutical companies. Candidates must take a written qualifying examination, an oral comprehensive examination, and submit an acceptable outline of their proposed dissertation research. They must also submit and defend their dissertation. PhD graduates usually obtain postdoctoral positions elsewhere as further preparation for a career in teaching and research at the university level.

Applicants must submit three letters of recommendation together with either GRE or MCAT scores. All applicants are expected to have adequate backgrounds in biology, chemistry, mathematics, molecular biology, and physics. The course requirements for admitted students vary with their degree and specialization, but all candidates for the MS and PhD degrees must take a written qualifying examination.

The department’s anatomy and reproductive biology faculty are world-renowned for their research in the areas of fertilization, reproductive endocrinology, and neurobiology of sexual behavior. Department faculty established the Institute for Biogenesis Research and pioneered the successful “Honolulu Technique” cloning technology, which provides scientists with a new and valuable tool for researching the molecular processes involved in embryo formation, cell differentiation, aging, and disease. The biochemistry faculty offer laboratory and research experience either through formal courses or through participation in funded research programs in areas such as clinical biochemistry, bioenergetics, biochemistry of reproduction, and chemical carcinogenesis. Department faculty also have appointments in the Pacific Biosciences Research Center and the University of Hawai‘i Cancer Center.

Cell and Molecular Biology

John A. Burns School of Medicine
BSB 222
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1514
Fax: (808) 692-1968
Web: www.hawaii.edu/cmb

Faculty

*M. J. Berry, PhD (Chair)—selenoproteins, antioxidants and human diseases
*F. P. Bellinger, PhD—selenoproteins in brain function
*R. L. Cann, PhD—molecular and evolutionary genetics
*M. Gerschenson, PhD—infectious diseases, HIV mitochondrial medicine
*D. S. Hayner, PhD—molecular evolution and developmental genetics
*P. Hoffmann, PhD—selenoproteins in asthma and inflammation
*D. M. Jameson, PhD—fluorescence spectroscopy; biomolecular dynamics and interactions; ribosomal proteins
*O. LeSaux, PhD—genetic disorders; dystrophic calcification
*R. A. Nichols, PhD—neuropharmacology, neuroscience and physiology
*J. Panee, PhD—selenoproteins and natural products as antioxidants
*M. D. Rayner, PhD—structure-function relationships in voltagegated ion channels
*S. E. Seifried, PhD—macromolecular interactions, transcription factor recognition of specific DNA sequences, protein subunit assembly
*A. Stokes, PhD—biochemistry and physiology of ion channel proteins
*C. Todorovic, PhD—neurobiology

Adjunct Faculty

A. Bachmann, PhD—cancer, pharmacology
T. A. Donlon, PhD—human genetics
A. Fleig, PhD—electrophysiology (patch-clamp); calcium signaling in muscle cells; regulation of calcium signaling; cellular neuroimmunology
K. Pellegrin, PhD—pharmacy, psychology, research training
R. Penner, PhD—electrophysiology (patch-clamp); intra- and intercellular signal transduction; regulation of calcium signaling; cellular neuroimmunology
J. Pizzuto, PhD—pharmacy, drug discovery, natural products
H. Turner, PhD—immunogenetics, cannabinoid receptors, cell signaling

* Graduate Faculty
The Academic Program

Faculty in the Department of Cell and Molecular Biology have ongoing research programs in areas such as genetics, cell biology, biochemistry, and neurophysiology. The department also provides instruction in the basic principles and concepts of genetics, biochemistry, and molecular biology to medical students, graduate students from various disciplines, and undergraduates.

The faculty also participate in the training of PhD and MS graduate students in the interdisciplinary Cell and Molecular Biology Program. This program brings together faculty with expertise in biochemistry, cell biology, cell signaling, developmental biology, genetics, immunology/retrovirology, neurobiology/neurophysiology, plant molecular physiology, and reproduction function for collaborative teaching and research activities. Information on the Cell and Molecular Biology (CMB) Graduate Program can be found in the “Interdisciplinary Programs” section of this Catalog, on the CMB website, or interested applicants can contact:

Lyn Hamamura
John A. Burns School of Medicine
Cell and Molecular Biology Graduate Program
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1514
Email: lynh@hawaii.edu

Communication Sciences and Disorders

677 Ala Moana Blvd., Suite 625
Honolulu, HI 96813
Tel: (808) 692-1581
Fax: (808) 566-6292
Email: keithy@hawaii.edu
Web: manoa.hawaii.edu/csd

Faculty

*H. Lew, MD, PhD (Chair)—audiology
*C. Fiestas, PhD—speech-language pathology
*E. Hirohata, AuD—audiology
*A. Lower, MS—speech pathology
*C. Tanaka, PhD—audiology
B. Ward, MS—speech-language pathology
R. Ziolkowski, PhD—speech-language pathology

Affiliate Faculty

*S. Ching, AuD—audiology

Adjunct Faculty

*C. Bell, MD, PhD—geriatric medicine
*V. Chinen, MS—speech-language pathology
*J. Hiu, MS—speech-language pathology
*R. Ito, AuD—audiology
*H. Kuniho, MS—speech-language pathology
*P. Mashima, PhD—speech-language pathology
*K. Mays, MS—speech-language pathology

Degrees Offered: MS in communication sciences and disorders

The Academic Program

The study of communication sciences and disorders focuses on the basic understanding in speech, language, swallowing, cognitive-communication, and hearing processes, as well as disorders in these areas. The Department of Communication Sciences and Disorders (CSD) prepares students to become a speech-language pathologist, a health-allied professional who evaluates and treats individuals with speech, language, cognitive-communication, and swallowing disorders across lifespan, from infants to the elderly. The practice of speech-language pathology (SLP) requires a minimum of a master’s degree in specialized area such as CSD and obtaining clinical certification and licensure. Currently, the CSD department is the only program in the State of Hawai‘i who offers a Master of Science (MS) degree in CSD and one of the few programs in the U.S. featuring preparation in a multilingual/multicultural environment. The time required for completion of the CSD program by an individual is two years (six semesters including summer sessions).

The CSD department defines our mission using the C.A.R.E.S. Model to establish a center of excellence for:
1. Clinical Service to rehabilitate people challenged with speech language and/or hearing disorders.
2. Administrative infrastructure for internal and external networking.
3. Research to support evidence based practice.
4. Educational training to prepare highly qualified speech and language professionals.
5. Service to develop public awareness at the university, state, national, and international levels.

The MS degree education program in SLP at UH Mānoa is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA), 2200 Research Boulevard #310, Rockville, Maryland 20850, 800-498-2071 or 301-296-5700. Students who obtained the UH Mānoa MS degree and judged by the program as having acquired all of the knowledge and skills mandated by the current ASHA standards are eligible to apply for an ASHA Certificate of Clinical Competence in Speech-Language Pathology (CCC-SLP) after successful completion of post-graduate clinical fellowship.

Advising

Students considering the major in CSD may contact the CSD department by email or phone listed above. The CSD website offers useful information for the program and admission requirements. Academic counseling from the Pre-Health Pre-Law Advising Center is also available (manoa.hawaii.edu/pac/spa.html), especially for UH undergraduate students.

Graduate Study

Master’s Degree

- Maintenance of a minimum grade of B- for all required courses and clinical practicum
- Completion of required graduate course work
- Completion of a minimum of 375 direct-contact clock hours in clinical practicum at internship and externship and additional 25 clock hours in observation.
Completion of a thesis (Plan A) or a research project and submission of a manuscript (Plan B)

Passing scores on Praxis examination in Speech-Language Pathology

Clinical Practicum
All CSD graduate students are required to complete clinical practicum at on-campus clinic and externship sites. The University of Hawai‘i Speech and Hearing Clinic (UHSHC) is an on-campus internship site and serves as a core clinical teaching facility. Graduate students work directly with patients under the close supervision of a clinical supervisor (a certified speech-language pathologist and/or audiologist). The UHSHC provides speech, language, cognitive-communication, and hearing services to all individuals across the lifespan. The UHSHC is affiliated with University Clinical, Education and Research Associates (UCERA), which is the faculty practice organization created to support the clinical, academic, and research activities of the faculty of the JABSOM. After successful completion of the internship at the UHSHC, students will be placed at externship at a variety of settings, including hospitals, rehabilitation facility, nursing homes, private practice, early intervention, and schools.

Research Project (Plan B) and Thesis (Plan A)
Under the supervision of a research or thesis advisor, the CSD students must complete either a research project (Plan B) or thesis (Plan A) as part of the graduation requirements. The project or thesis aids the student in developing and learning evidence based practice (EBP), which is an integral component of clinical practice in SLP. The ASHA advocates the EBP and defines the goal of EBP as “the integration of: (a) clinical expertise/expert opinion, (b) external scientific evidence, and (c) client, patient, caregiver values to provide high-quality services reflecting the interests, values, needs and choices of the individuals we serve (www.asha.org/Members/ebp/intro/)”.

Praxis Examination
The Praxis examination in SLP is offered by Educational Testing Service (ETS) and assesses knowledge and current practices in SLP for beginning practitioners. Importantly, the Praxis examination is an essential component in obtaining the ASHA CCC-SLP and state licensures. The CSD students are required to pass the Praxis examination to graduate from the program.

Online Undergraduate CSD Courses
The CSD program offers seven online undergraduate courses (CSD 431-437) through the Outreach College. By completing these courses, undergraduate students can fulfill CSD-specific prerequisites for entering the CSD MS program.

Complementary and Alternative Medicine
John A. Burns School of Medicine
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-0909

Faculty
R. Harrigan, EdD (Chair)—women’s health, health disparities
N. Apau, MD, MS—asthma
A. Brown, PhD—nutrition
M. Carbone, MD
E. C. Christenson, MD
K. Csizsar, PhD—ethnobotanicals, molecular biology
J. Davis, PhD
P. Deleon, PhD
T. Hoffman, MD
T. Huynh, MD
H. Liu, MD
M. Long, MD
K. Lyce, MD
J. Panee, PhD
B. Rodriguez, MD
T. Shintani, JD, MD, MPH—nutrition
K. Withy, MD—health services research, workforce development
S. Wu, PhD
S. Yamada, MD—medical education
I. Zunin, MD

The Academic Program
The State of Hawai‘i is an environment with the unique, rich blend of cultures and ethnicities and many healing traditions, some of ancient origins. Complementary and Alternative Medicine (CAAM) takes on increased significance in Hawai‘i because the diverse population of the state uses these treatment modalities frequently.

The department is committed to conducting both basic and applied research related to complementary and alternative therapies in Hawai‘i and the Pacific region, especially dietary supplements; educating the next generation of physicians and other healthcare personnel about the potential risks and benefits of complementary and alternative therapies; providing culturally competent care for people within the state of Hawai‘i by understanding the use of patterns of complementary care used by the Hawaiian population; facilitating the study of medicinal plants, including varieties unique to Hawai‘i and/or the Pacific Rim; and promoting health service research to assess the clinical and financial benefits—or lack thereof—of CAAM therapies for the Hawaiian population.

Models of integrative care teams strategically placed in Hawai‘i’s major hospitals, large medical groups and/or health maintenance organizations together with the development of relevant educational materials for clinicians, researchers, educators and consumers of health care is another major goal. Collaborations with other UH Mānoa programs such as Chinese studies and the School of Hawaiian Knowledge faculties will energize progress towards this goal to reduce and eliminate health disparities in Hawai‘i and improve the health of Hawai‘i’s people.
**Graduate Study**

A graduate program leading to the MS in clinical and translational science is offered, with an emphasis on development, of multidisciplinary research teams composed of clinicians, researchers, educators, and community members. Clinical and translational science is the study of methods used to investigate clinical problems in medicine. Available in Plan A (thesis), the program requires a combination of course work and original research, the latter forming the basis of the master’s thesis.

Students enrolled in the program acquire skills in biostatistics and epidemiology, and master the scientific principles that underlie clinical research methods. They develop the ability to identify and resolve ethical issues in clinical research, to ensure the safeguarding of human subjects, and to understand the workings of Institutional Review Boards and other relevant requirements. In addition, students increase their capacity in obtaining research funding from agencies such as the National Institute of Health.

In addition to offering knowledge and skills needed for careers in clinical research, the program functions as a supportive mechanism for newly trained investigators, actively facilitating career development and encouraging research collaborations, particularly those related to research on health disparities. By providing high quality training to doctoral and post-doctoral candidates, the program aims to increase the mass of clinical researchers at UH Mānoa, including minority investigators. Targeting junior faculty, fellows, residents, and doctoral candidates from biomedical sciences, nursing, social work, psychology and public health, the interdisciplinary nature of the program broadens students’ perspectives and increases opportunities for innovative, cross-disciplinary collaborations in clinical research.

Graduates of the program pursue teaching careers in academia; as well as research careers in academia, government laboratories, and pharmaceutical companies. In addition, some graduates find employment in hospitals or private businesses.

The department also has a doctoral program leading to a PhD in biomedical sciences with a concentration in clinical research.

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**Family Medicine and Community Health**

The Physician Center at Mililani
95-390 Kuahelani Avenue
Mililani, HI 96789
Tel: (808) 627-3235
Fax: (808) 623-7872
Web: www2.jabsom.hawaii.edu/FamilyMedicine/

**Faculty**

A. L. Hixon, MD (Chair)—family medicine and community health
L. Aggarwal, MD—family medicine and community health
L. E. Buenconsejo-Lum, MD—family medicine and community health
S. Hankins, MD—family medicine and community health
W. M. Izumigawa, MBA—Director of business affairs
G. Maskarinec, PhD—medical anthropology
A. W. Nichols, MD—family medicine, sports medicine
J. S. Omori, MD—family medicine and community health
N. A. Palafox, MD, MPH—family medicine and community health
S. Riklon, MD—family medicine and community health
M. Tubianosa, MD, MPH—family medicine and community health
C. W. Tseng, MD, MPH—family medicine and community health
S. Yamada, MD, MPH—family medicine and community health

**Degree Offered:** MD

**The Academic Program**

The Department of Family Medicine and Community Health (DFMCH) is focused on community-based collaborations to improve patient outcomes across the lifecycle through direct clinical care, primary care workforce development, and research. The department has a particular focus on caring for cross-cultural, rural, and under-served communities in Hawai‘i and throughout the Pacific. The department, in conjunction with our partner hospitals, sponsors a three-year ACGME accredited Family Medicine Residency Program and a one-year ACGME accredited Sports Medicine Fellowship.

Teaching goals for students, residents, and fellows are based on a philosophy of contextualized care that understands health and illness in relation to the individual, family, and community, and responds not only to episodes of illness, but also attempts to understand and address the broader social determinants of health. Medical student instruction focuses on basic conceptual tools and clinical strategies in real world settings through community based preceptorships.

The Sports Medicine Fellowship Program is affiliated with the DFMCH Residency Program and provides clinical, research, and educational exposure to athletes, patterns of athletic injuries, and rehabilitation. The program serves as a resource for the dissemination of sports medicine and exercise science-related information for UH Mānoa and the state of Hawai‘i.

* Graduate Faculty
Geriatric Medicine

John A. Burns School of Medicine
347 N. Kuakini Street HPM-9
Honolulu, HI 96817
Tel: (808) 523-8461
Fax: (808) 528-1897

Faculty
K. H. Masaki, MD (Chair)—geriatric medicine
S. Ahsan, MD—geriatric medicine
C. Bell, MD, PhD—geriatric medicine
R. Fernandes, MD, MPH—geriatric medicine
D. Fischberg, MD—pain and palliative medicine
M. Inaba, MD, PhD—geriatric medicine
K. Lubimir, MD—geriatric medicine
L. Okamoto, MD—geriatric medicine
O. Pishchalenko, MD—geriatric medicine
B. Rodriguez, MD, PhD—epidemiology
C. Takenaka, MD—geriatric medicine
B. Tamura, MD—geriatric medicine
A. Wen, MD—geriatric medicine
B. Willcox, MD—geriatric medicine

Degree Offered: MD

The Academic Program

Geriatric medicine is dedicated to the care of older people and to healthy aging throughout life, so that the frailties and disabilities common in older years can be prevented. To provide comprehensive care, geriatrics is often interdisciplinary, and clinical instruction takes place in a wide variety of settings, including outpatient, acute hospital, nursing home, retirement community, home care, rehabilitation, and palliative care settings. As an age-based specialty like pediatric medicine, geriatric medicine includes aspects of internal medicine, pharmacology, psychiatry, adult development, family medicine, neurology, urology, gynecology, rehabilitation, and palliative medicine.

The Department of Geriatric Medicine provides education for: medical students; residents in internal medicine, family medicine, ob-gyn, and other specialties; fellows in Geriatric Medicine and Geriatric Psychiatry; practicing physicians; and allied health professionals and students in the field of aging. The fully accredited Geriatric Medicine Fellowship Program is for physicians who are graduates of either internal medicine or family medicine residency programs. The first year of fellowship training is designed to lead to eligibility for board certification in geriatric medicine. Additional years of fellowship are devoted to research, consultative medicine, medical education, and medical administration.

The Division of Palliative Medicine is located in the department, and many faculties have double board certifications in Geriatric Medicine and Palliative Medicine.

The Department of Geriatric Medicine is involved in an extensive array of funded research programs, thus providing training and experience in research for students at all levels.

Medical Technology

Biomedical Sciences C-206
1960 East-West Road
Honolulu, HI 96822
Tel: (808) 956-8557
Fax: (808) 956-5457
Web: www.hawaii.edu/medtech/Medtech.html

Faculty
D. Y. Teshima, MPH (Chair)—medical technology
N. N. Ebisu, BS—medical technology
S. M. Gon, MPH—medical technology
J. S. Ha, PhD—clinical biochemistry
K. K. Morton, BS—medical technology
L. Onaka, MBA, MT—medical technology
R. Yamaguchi, MPH—medical technology

Degree and Certificate Offered: BS in medical technology

The Academic Program

Medical technology (MEDT) is a health-care profession in which medical technologists (medical laboratory scientists) perform laboratory procedures used for the promotion of health and the diagnosis, monitoring, and treatment of diseases. Technical skills needed to carry out the tasks include microscopy, venipuncture, manipulation of various labware and operation of automated instruments. Results of these procedures are essential to the delivery of quality health care. The field is broad and involves several disciplines: chemistry, hematology, immunohematology (blood banking), immunology, and microbiology.

Medical technology is a constantly evolving profession. Advances in healthcare and new career opportunities have fueled the demand for medical laboratory scientists. Employment opportunities are in hospitals, physician’s offices, reference labs, DNA labs, research, veterinary clinics, and other labs. Education and training in medical technology also enables graduates to pursue careers as physicians, forensic scientists, researchers, educators, health administrators, consultants, and many more.

Admission Requirements

The curriculum is a career-pathway structure that begins with medical lab technician (MLT) associate degree at a community college and culminates in a BS degree in medical technology. Students master the basic skills and knowledge in medical laboratory as MLT, then clinical applications and problem solving skills that are required of the baccalaureate level practitioners are learned at UH Mānoa. Kapiolani Community College (KCC) offers an associate degree in MEDT; 4303 Diamond Head Road, Honolulu, HI 96816; URL: www.kapiolani.hawaii.edu/academics/programs-of-study/medical-laboratory-technician-program/; 808-734-9270.

Among eligible candidates, 10 to 15 students will be selected by the Admissions Committee to be admitted. Eligibility criteria are:

- Associate degree in Medical Laboratory Technician (MLT).
- National certification as an MLT.
- Cumulative GPA of at least 2.5 in the MLT program.

While at KCC, students are encouraged to select courses applicable to UH Mānoa General Education, major requirements
School of Medicine

Medical technologists perform various procedures that directly impact patient care, so it is important that all applicants be able to perform certain essential functions. With appropriate accommodations, if needed, everyone must be able to perform the activities listed below. These skills are assessed in the MLT program. Additional professional skills are taught in classes after admission.

- Manipulate labware to transfer or prepare reagents and samples (e.g., charge hemocytometer, prepare blood smear).
- Operate simple instruments according to instructions (e.g., cell counter, centrifuge, spectrophotometer).
- Perform microscopic examinations on various specimens and report the results (e.g., leukocyte differential count, cell morphology, urinary sediments).
- Follow written and verbal directions to perform laboratory tests and report results.

**Other Requirements**

Medical technology majors are required to have professional liability insurance, which costs about $40 per year. Immunization for Hepatitis B virus is highly recommended. Clinical affiliates, for those who opt to participate in the post-graduate clinical training, may have additional requirements (e.g., vaccinations, CPR/AED training, criminal background check).

**Advising**

Students are encouraged to see a medical technology advisor as soon as possible and prior to each registration period. Appointments can be made through the department office.

**Clinical Training**

Clinical training at affiliated clinical labs in Hawai‘i follows graduation. Alternatively, as certified MLT, students may qualify for medical lab scientist (MLS) certification through work experience.

**Accreditation**

The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N. River Rd. Rosemont, IL 60018, phone (773) 714-8880, www.naacls.org.

**Certification and Licensure**

After clinical training, students are eligible to take a national certification exam. In Hawai‘i, state licensure is also required for employment.

**Undergraduate Study**

**Bachelor’s Degree**

**Requirements**

- Complete the degree requirements that satisfy UH Mānoa’s General Education Core requirements and program requirements. Second language is not required.
- Earn a minimum cumulative GPA of 2.0
- Submit by the specified deadline an application for graduation to the Cashier’s Office during the semester preceding the awarding of the degree.

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**Curriculum for Medical Technology**

MEDT 151(2) is offered at UH Mānoa for those who start at UH Mānoa. MLT curriculum is offered at KCC.

**Junior Year**

- Semester 1: †MEDT 301 (3); †MEDT 331 (3); CHEM 272/L (3/2); PHYL 301 (4)
- Semester 2: †MEDT 431 (3); †MEDT 471 (4); CHEM 273 (3), BIOL 172 (3); PHYL 302 (4); TRMD 431 (2)

**Senior Year**

- Semester 1: †MEDT 451/L (1/2), †MEDT 472 (4), †MEDT 477 (2); †MICR 461 (3)
- Semester 2: †MEDT 464 (3); †MEDT 478 (2); †MEDT 481 (1); †MICR 463 (3), BIOL 275 (3)

**Post-baccalaureate Study**

**Certificate for Clinical Training**

†MEDT 591 (28)

*Note: Grade of C or equivalent is required for courses highlighted with a dagger (†).*

**Medicine**

University Tower, Queen’s Medical Center
1356 Lusitana Street, 7th Floor
Honolulu, HI 96813
Tel: (808) 586-2910
Fax: (808) 586-7486
Web: uhmed.org

**Faculty**

E. K. Tam, MD (Chair)—pulmonary
C. Akau, MD—rehabilitation medicine
R. F. Arakaki, MD—endocrinology
W. Azimi, DO—hospitalist
E. F. Bello, MD—infectious disease
B. Berg, MD—pulmonary critical care
W. Boisvert, PhD—cardiovascular research
D. Bolger, MD—general internal medicine, hospitalist
R. Boulay, PhD—cardiovascular research education
T. Bowen, MPH—AIDS education
J. Brown, MD—infectious disease
L. Chang, MD—neurology
D. Chow, MD—general internal medicine, meds/peds
H. Chung, MD—infectious disease
C. Cloak, PhD—neuroscience, mr research
W. Deng, PhD—neuroscience, mr research
E. Diep, MD—internal medicine
T. Ernst, PhD—neuroscience, mr research
S. Evans, MD—pulmonary disease, critical care
S. Gallacher, MD—critical care
E. Ganitano, MD—critical care
C. Goshima, MD—general internal medicine
M. Haruno, MD—critical care
C. S. Hew, MD—general internal medicine
C. M. Higuchi, MD—oncology
R. Hong, MD—cardiology
F. Igno, MD—general internal medicine
R. Ikeda, MD—critical care
E. Kajioka, MD—infectious disease
B. Keating, PhD—neuroscience, mr research
S. Kim, MD—infectious disease
C. Kimura, MD—general internal medicine

* Graduate Faculty
M. Kiyokawa, MD—general internal medicine
S. K. Kuwada, MD—gastroenterology
S. Kwee, MD—nuclear medicine
T. Le, MD—infectious disease
K. Lian, MD—hospitalist
S. Loo, MD—hospitalist
C. Lyden, MBA, MPH—AIDS education
T. Matsui, MD, PhD—cardiovascular research
J. S. Melish, MD—endocrinology
J. Misailidis, MD—general internal medicine
M. Nagoshi, MD—general internal medicine
B. Nakamoto, MD, PhD—neurology
S. Nakamoto, MD—general internal medicine
R. Ng, MD—nephrology
J. Onopa, MD—general internal medicine
N. Parikh, MD—cardiology
G. Rediger, MD—general internal medicine
T. Seto, MD—cardiology
D. Shigaki, MD—internal medicine
C. Shikuma, MD—infectious disease, AIDS
R. Shimamoto, MD—general internal medicine
B. Shiramizu, MD—pediatrics, hematology, oncology
R. Shoher, MD—cardiology
V. Stenger, PhD—neuroscience, mr research
K. Sumida, MD—hematology
M. Tallquest, PhD—cardiovascular medicine
K. Tata, PhD—mir research
K. Uramoto, MD—rheumatology
B. Uyeno, MD—general internal medicine, pediatrics
C. Walton, PhD—cardiovascular research
G. Watt, PhD—infectious disease
M. Yee, MD—neurology

Degree Offered: MD

The Academic Program

Internal Medicine is the medical discipline that specializes in the prevention, diagnosis, and management of illnesses in adults. The Department of Medicine contributes to the general education of medical students, and provides post-doctoral and continuing education in the discipline of Internal Medicine and its sub-specialties. Faculty also maintain active, funded research programs in HIV/acquired immunodeficiency syndrome (AIDS), cardiology, diabetes, neurology, and respiratory diseases, in addition to patient-oriented, community-based, or medical education research. Faculty also provide direct patient care and medical services in hospital and outpatient settings, particularly to the under-served or under-insured. In delivering medical education, conducting research, and providing patient care, the department helps Hawai`i meet its health care needs, develop an important work force, and advance our understanding of health disparities in the context of Hawai`i’s unique ethnic and environmental diversity.

Education

The department provides education for medical students, interns and residents (post-MD students), faculty, and practitioners. In the first two years of medical student education, departmental faculty hold key leadership and teaching roles in Problem-Based Learning, Colloquia, Basic Science Correlations, Clinical Skills Preceptorship, and many BIOM courses. In these early years, the curriculum integrates humanities, social sciences, and the physical and biological sciences. The curriculum also promotes skills in hypothesis formulation, data acquisition and evaluation, clinical problem-solving, and effective communication with patients, their families, and other members of the health team.

For third year students, the department coordinates required clerkships that provide students supervised, formative experiences in the evaluation and management of patients in hospital and outpatient settings. For fourth year medical students, faculty in general medicine and internal medicine sub-specialties also offer required and elective learning opportunities that focus on particular aspects of internal medicine. In brief, the department helps the learner achieve graduation objectives and helps assure accreditation of the school by the Liaison Committee on Medical Education.

The department also provides the faculty and the educational oversight for interns and residents in the UH MÃ­noa Internal Medicine Residency Program, which is accredited by the American Council of Graduate Medical Education. Each year, nearly 20 post-MD students complete the 3-year Categorical program. Faculty develop and deliver curricula that address fundamental concepts in general medicine and in each of the Internal Medicine sub-specialties: Allergy and Immunology, Cardiology, Critical Care Medicine, Dermatology, Endocrinology, Gastroenterology, Geriatric Medicine, Hematology, Infectious Diseases, Nephrology, Neurology, Oncology, Pulmonary Diseases, and Rheumatology. The curricula are delivered in inpatient and outpatient sites that provide opportunities for supervised direct patient care and that embody the practical experiences for which the internist must be prepared. They prepare the resident for certification by the American Board of Internal Medicine. Increasing emphasis on medical education and scholarship help assure that residents will learn and teach well beyond their graduation from the Residency. Indeed, post-doctoral residents are integral to the education of our medical students.

As part of the departmental commitment to post-graduate training, the department also educates up to 6 preliminary residents who complete a year of Internal Medicine before focusing in Neurology, Dermatology, and other specialties. It shares in the education of as many as 9 transitional residents who complete a year of medical and surgical training before focusing in programs such as Anesthesiology, Ophthalmology, or Radiology. Finally, our faculty supervises rotations for residents in other disciplines, as required by their respective accrediting Boards. These include Family Practice and Community Medicine, Obstetrics and Gynecology, and Psychiatry.

The department is also accredited by the American Consortium in Continuing Medical Education to provide weekly seminars and special learning activities in topics pertinent to the practicing internist. Through its regular evaluation and discourse with practicing physicians as well as academic researchers, the department shares scientific advances with the community and gains practical insights that help shape the education of our future physicians.

Research

Faculty are principal investigators of and contributors to several federally funded research programs, including the Hawai`i Center for AIDS, the Center for Cardiovascular Research, Neuroscience and MR Research Program, and Asthma and Immunogenetics Research. Many ongoing translational and clinical research projects help address racial disparities in prevalence, detection, and management of illnesses. Reflecting
the collaboration with basic scientists, several faculty also have adjunct appointments in basic science departments and programs. Research in bioethics, medical education, public health, community outreach, and community-based participatory research promote teaching and learning approaches, and advance the health literacy of the medical and public communities. The diverse scientific and scholarly activities provide rich learning opportunities for UH Mānoa undergraduates, JABSOM medical students, UHIMRP residents, and practitioners.

Service
In addition to supporting department, school, and university needs, faculty also provide clinical services in settings that benefit under-served communities and that enhance medical student and post-doctoral learning. The faculty practice provides a continuum in the prevention, diagnosis, evaluation, and management of illness. Complex cases that result from interactions between genetics, environment, and culture benefit from multi-disciplinary inquiry and collegial discussion fostered by the medical school and its faculty.

Native Hawaiian Health
John A. Burns School of Medicine
677 Ala Moana Blvd., Suite 10168
Honolulu, HI 96813
Tel: (808) 587-8570
Web: jabsom.hawaii.edu/JABSOM/departments/intro.php?departmentid=19

Faculty
J. Kaholokula, PhD (Chair)—behavioral scientist, clinical health psychologist
K. Blaisdell, MD—emeritus professor
S. K. Brady, MD, MPH—internal medicine, biostatistics-epidemiology
D. Carpenter, MD—internal medicine, clinical teaching, cultural competence
C. DeCambra, MBA—post baccalaureate education, recruitment and retention
S. Fernandez, MD—pediatrics, student recruitment and retention
C. Ha, PhD—biochemistry, post baccalaureate education
N. Judd, PhD—emeritus professor
M. Kamaka, MD—family medicine, cultural competence
S. Kaulukukui, MS—faculty and student development
M. Mau, MD, MS—health disparities, Myron Pinky Thompson Endowed Chair
A. Maunakea, PhD—biomedical science, epigenomics
W. K. Mesiona-Lee, MD—pediatrics, post baccalaureate education, student recruitment and retention
K. Sakamoto, MS—post baccalaureate education, student development
M. Taualii, PhD—Queen’s Health Care System Scholar
P. M. Tim Sing, MD—post baccalaureate education, internal medicine/pediatrics
S. Tsuhako, MD—anatomy and reproductive biology, post baccalaureate education
K. Voloch, MD—pediatrics, post baccalaureate education
V. Wong, MD—family medicine, faculty and student development

The Academic Program
The mission of the Department of Native Hawaiian Health is to be a center of excellence in education, research, and quality health care practices committed to the optimal health and wellness of Hawai‘i Maoli, their families, and communities that embraces traditional Hawaiian values and practices. To accomplish this mission, the program will actively seek “grass-roots” partnerships with others in the community who share their vision of Ku Pono: Hawai‘i Maoli achieving optimal health and wellness.

Research efforts will be focused on reducing and eliminating health disparities in Native Hawaiians and other Pacific-based populations. This includes activities such as conducting hypothesis driven research, developing pilot studies, training new researchers and networking with Native Hawaiian communities to disseminate research information via the Center for Native and Pacific Health Disparities Research, the Heart Failure Disparities in Native Hawaiians Study, the PILI ‘Ohana Obesity study, and other NIH funded grants.

Two programs are dedicated to increasing and improving the health workforce serving Hawai‘i, especially in Native Hawaiian communities: the ‘Imi Ho‘ola Post-Baccalaureate Program and the Native Hawaiian Center of Excellence.

‘Imi Ho‘ola Post-Baccalaureate Program
‘Imi Ho‘ola (Hawaiian for “those who seek to heal”) is a post-baccalaureate program designed to provide educational opportunities to students from disadvantaged backgrounds capable of succeeding in medical school. Although ‘Imi Ho‘ola is not limited to persons of Hawaiian, Filipino, Samoan, Chamorro, and Micronesian descent, a large number of these students have been able to demonstrate that they are from a disadvantaged socioeconomic and/or educational background and have demonstrated a commitment to serve areas of need in Hawai‘i and the Pacific. ‘Imi Ho‘ola has expanded its outreach efforts and developed partnerships with local high schools, colleges, and community-based health organizations.

Native Hawaiian Center of Excellence (NHCOE)
NHCOE is funded through state, federal, and private funds and focuses on: (1) Enhancing the performance of Native Hawaiian medical students by offering support for USMLE board preparation and collaboration with JABSOM retention efforts; (2) Developing the research and teaching skills of Native Hawaiian faculty by offering one- to two-year fellowships; (3) Addressing information resources by developing Native Hawaiian health resources, cultural competency, and curricula through conferences and workshops; (4) Focusing research by offering an elective for first year medical students on introducing research and topics of Native Hawaiian health issues; (5) Promoting student training in rural areas by serving as a resource for students choosing to do electives in rural Native Hawaiian communities; and (6) Developing a competitive applicant pool through active involvement in the establishment of collaborative efforts with colleges and high schools to develop programs aimed at increasing the numbers of Native Hawaiian medical students.
Obstetrics, Gynecology, and Women’s Health

Kapi’olani Medical Center for Women and Children
1319 Punahou Street, Room 824
Honolulu, HI 96826
Tel: (808) 203-6500
Fax: (808) 955-2174

Faculty
T. Zalud, MD (Chair)—obstetrics and gynecology, maternal fetal medicine, gynecologic ultrasound
M. C. Aaronoff, MD—obstetrics and gynecology
T. C. Aebly, MD, MEd—obstetrics and gynecology
M. L. Bartholomew, MD—obstetrics and gynecology, maternal fetal medicine
S. S. Brizzolara, MD—obstetrics and gynecology, urogynecology
J. M. Burlingame, MD—obstetrics and gynecology, maternal fetal medicine
M. E. Carney, MD—gynecologic oncology
A. L. Chang, MD, MPH—obstetrics and gynecology
J. L. Elia, MPH—public health
S. T. Emura, MD—obstetrics and gynecology
W. L. T. Fong, MD—obstetrics and gynecology
M. A. Gaspar-Oishi, MD—obstetrics and gynecology
M. K. Y. Hiraoka, MD, MS—obstetrics and gynecology
T. T. F. Huang, PhD—reproductive endocrinology, anatomy
B. E. K. Kaneshiro, MD, MPH—obstetrics and gynecology, family planning
R. M. Kawelo, MD—obstetrics and gynecology
B. Kessel, MD—obstetrics and gynecology, reproductive endocrinology and infertility
R. J. Kim, MD—gynecologic oncology
T. S. Kosasa, MD—obstetrics and gynecology, reproductive endocrinology and infertility
G. G. Li, MD—obstetrics and gynecology
J. P. Lum, MD—obstetrics and gynecology
R. T. McCartin, MD—obstetrics and gynecology
S. M. Minaglia, MD, MBA—obstetrics and gynecology, urogynecology and pelvic pain
I. A. Oyama, MD, MBA—gynecology, urogynecology and pelvic pain
J. L. Salcedo, MD, MPH, MPP—obstetrics and gynecology, family planning
M. C. Savala, MD—obstetrics and gynecology
R. A. Soon, MD, MPH—obstetrics and gynecology, family planning
S. Y. Tasaka, MA—chief of administration, operations, and finance
S. K. Taylor, MD—obstetrics and gynecology, maternal fetal medicine
K. Y. Terada, MD—gynecology oncology
D. R. Towner, MD—obstetrics and gynecology, maternal fetal medicine
T. E. Wright, MD, MS—obstetrics and gynecology
G. C. Yokochi, MD—obstetrics and gynecology

Degree Offered: MD

The Academic Program

Instruction in obstetrics and gynecology (OBGN) is divided into five general areas: basic clerkship, student electives, residency training, fellowship training, and continuing medical education. The main objectives of the clerkship during the third year is to give students an overall perspective of the field, an in-depth knowledge of women’s health care and the ability to perform those technical skills necessary for the care of women. The elective experiences are developed to allow interested students the opportunity to acquire detailed knowledge and experience in women’s health care or within specific areas of care.

The Department directs a residency training program for medical graduates who desire specialty training in the field. The MD education program is closely integrated with residency training to maintain communication and learning experience throughout training. The department has fellowships in Maternal Fetal Medicine and Family Planning Fellowship. Research is focused in public health, health disparities, human reproduction, family planning, and human reproduction. The department is divided into the following divisions: endocrinology—infertility, maternal-fetal medicine, obstetrics and gynecology—ambulatory and hospitalist, gynecologic oncology, urogynecology, and family planning.

Pathology

John A. Burns School of Medicine
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1130

Faculty
A. L. Schiller, MD (Chair)—orthopaedic pathology, autopsy pathology
P. K. Bryant-Greenwood, MD, MBA (Vice Chair)—molecular pathology, anatomic pathology
D. Shimizu, MD (Program Director)—GYN pathology, anatomic pathology
A. Powers, MD (Residency Program Associate Director)—transfusion medicine, clinical pathology
M. Bankowski, PhD—microbiology
D. Horio, MD—anatomic and clinical pathology
B. J. Kaya, MD—neuropathology, anatomic pathology
W. Kim, MD—clinical pathology
C. Lum, MD—dermatopathology, molecular pathology
K. S. Thompson, MD, MS—pediatric pathology, anatomic pathology, genetics
J. H. Uyehara-Lock, MD—neuropathology, anatomic pathology

Degree Offered: MD

The Academic Program

Pathology (PATH) is the study of aberrations or deviations of organs or systems that result in disease. Instruction in pathology is open to undergraduate, graduate, medical students, and residents. All medical students may elect to take PATH 515 as a part of the problem-based learning curriculum. The required PATH 541 provides essential autopsy experience for all third- and fourth-year medical students. Third and fourth-year students may choose electives PATH 545 and 699 that include instruction in laboratory medicine for the practicing physician, clinical pathology, anatomic pathology, clinical immunology, and molecular diagnostics and directed research projects.

The department directs an integrated residency program in pathology. Residents are based at Kaiser Hospital, Queen’s Medical Center, Kapiolani Medical Center for Women and Children, the Honolulu Medical Examiner Office, and the Blood Bank of Hawai‘i. Clinical faculty come from all the community hospitals and provide gross and microscopic specimens for demonstration, clinicopathologic correlations, seminars, and lectures.

* Graduate Faculty
**Faculty**

K. T. Nakamura, MD (Chair) — neonatology  
K. K. Abe, MD — pediatric neurology  
B. Ackermann, MD — pediatrics  
K. M. Ash, MD — neonatology  
V. Balaraman, MD — neonatology  
T. M. Bane-Terakubo, MD — pediatrics  
L. J. Berget, MD — pediatrics  
R. B. Boychuk, MD — emergency medicine  
A. G. Britten, MD — critical care  
M. O. J. Chang, MD — pediatrics  
R. K. S. Chang, MD — critical care  
S. S. P. Chen, MD — pediatrics  
O. Chikovani, MD — critical care  
N. S. Clarke, MD — pediatrics  
W. C. M. Credo, MD — emergency medicine  
J. R. Di Rocco, DO — pediatrics  
P. J. Di Rocco, MD — emergency medicine  
P. J. Eakin, MD — emergency medicine  
G. Erdem, MD — infectious disease  
A. K. Feng, MD — critical care  
K. K. Fernandez, MD — pediatrics  
C. B. Finnegan, MD — pediatrics  
P. H. Francisco-Natanuan, MD — pediatrics  
G. M. French, MD — developmental/behavioral pediatrics  
B. Gangaram, MD — pediatrics  
F. J. Garcia, MD — emergency medicine  
D. W. Glaser, MD — hematology/oncology  
J. J. Harrington, MD — critical care  
C. Hirai, MD — neonatology  
T. K. F. Hong, MD — emergency medicine  
A. S. Inaba, MD — emergency medicine  
L. K. Iwaishi, MD — developmental pediatrics  
L. M. Iwamoto, MD — neonatology  
N. L. KIhihina, MD — pediatrics  
J. R. King, DO — sports medicine/dance medicine  
J. L. King, DO — pediatric gastroenterology  
J. S. Kosut, MD — pediatrics  
S. Kuos, MD — neonatology  
D. K. Kurahara, MD — pediatric rheumatology  
M. S. I. Kyono, MD — pediatrics  
W. T. Kyono, MD — hematology/oncology  
R. L. A. Lau, MD — pediatric nephrology  
J. J. Lee-Jayaram, MD — emergency medicine  
K. A. Len, MD — pediatrics  
J. C. Lin, MD — pediatrics  
D. Medeiros, MD — hematology/oncology  
J. C. Meister, MD — pediatrics  
M. E. Melish, MD — infectious disease  
B. D. Mih, MD — pediatrics  
S. H. J. T. Mikami, MD — pediatrics  
B. M. Mizuo, MD — pediatrics  
D. T. Murai, MD — neonatology  
J. E. Musgrave, MD — pediatric nephrology  
L. Y. Nakagawa, MD — emergency medicine  
K. Natarajan, MD — pediatrics  
C. R. Neal, MD — neonatology  
B. M. Nishikawa, MD — pediatrics  
C. K. Okado, MD — pediatrics  
J. K. Okamoto, MD — developmental/behavioral pediatrics  
M. M. Okihiro, MD — pediatrics  
P. Patel, MD — pediatrics  
A. M. Perry, MD — emergency medicine  
D. V. Reddy, MD — pediatric cardiology  
L. H. Seaver, MD — genetics  
W. P. Shea, MD — pediatrics  
W. K. T. Shim, MD — pediatric surgery  
M. L. Shimokawa, MD — pediatrics  
B. T. Shiramizu, MD — hematology/oncology  
C. C. J. Sia, MD — pediatrics  
T. P. Slavin, MD — genetics  
S. L. Sood, MD — neonatology  
L. Y. Tanaka, MD — critical care  
T. H. Tjoeng, MD — neonatology  
M. Uehara, MD — developmental/behavioral pediatrics  
R. K. Wada, MD — hematology/oncology  
R. W. Wilkinson, MD — hematology/oncology  
Y. C. Wu, MD — pediatrics  
K. P. Xoinis, MD — critical care  
F. Y. Yamamoto, MD — allergy/immunology  
K. S. Yamamoto, MD — pediatric rheumatology  
L. G. Yamamoto, MD — emergency medicine  
R. T. Yanagihara, MD — infectious disease  
M. K. Yunghans, MD — pediatrics  

* Graduate Faculty

**Degree Offered:** MD

**The Academic Program**

Pediatrics (PED) is the specialty of medical science concerned with the physical, emotional, and social health of children from birth to young adulthood. The discipline deals with biological, social, and environmental influences on the developing child and with the impact of disease and dysfunction on development.

The Department of Pediatrics offers specialty training for the medical student, as well as post-MD residency training and subspecialty experience. The medical student curriculum consists of the core curriculum for pediatrics completed during the third year of the MD program. A wide variety of electives in different sub-specialties are offered during the fourth year of the MD program in addition to sub-internship opportunities in various clinical disciplines. The Post-MD residency program accommodates eight MDs (yearly) in a three year ACGME-accredited curriculum preparing them for a career in pediatrics or furthering their training in a subspecialty within pediatrics. There is also ACGME-accredited training in Neonatal Perinatal Medicine (Neonatology), which is a three year program following the Pediatric Residency Training and is jointly sponsored by Kapi’olani Medical Center for Women and Children and Tripler Army Medical Center as the clinical training sites.

The Department of Pediatrics is very active in clinical and quality improvement research with majority of the activities being done at Kapi’olani Medical Center for Women and Children.
Psychiatry

University Tower, Queen’s Medical Center, 4th Floor
1356 Lusitana Street
Honolulu, HI 96813
Tel: (808) 586-2900
Fax: (808) 586-2940

Faculty

A. Guerrero, MD (Chair)—general child and adolescent psychiatry and general pediatrics, consultation-liaison psychiatry
D. Alicata, MD, PhD—general and child and adolescent psychiatry, neuroscience and neuroimaging
J. Andrade, MD—general and child and adolescent psychiatry
N. Andrade, MD—general psychiatry
B. Carlson, MD—general and adolescent psychiatry, addiction psychiatry, general pediatrics
S. Chock, MD—psychiatry, child and adolescent psychiatry, forensics
M. Fukuda, MSW, LCSW—healthcare planning and administration
G. Gavero, DO—general psychiatry
A. Ghiauddin, MD—general and child and adolescent psychiatry and general pediatrics
D. Goebert, DrPH—public health and epidemiology, women’s health, addictions
W. Haning, MD—general and addictions psychiatry
S. Helm, MD—community and cultural psychology
E. Hishinuma, PhD—behavioral research and psychometrics-statistics, youth violence prevention
L. Karan, MD—internal medicine
D. Kissinger, DO, PhD—general, child and adolescent, and additions psychiatry
R. Koli, MD—general child and adolescent psychiatry, women’s health
C. Koyanagi, MD—general and additions psychiatry
J. Lee, DO—general and geriatric psychiatry
B. Lu, MD, PhD—general, geriatric, and consultation-liaison psychiatry
L. Morland, PsyD—Post traumatic stress disorder
J. Onoye, PhD—neuroscience, women’s health, youth violence prevention research
J. Pearce, MD—neurology
A. Schroepfer, MD—general and child and adolescent psychiatry
J. Spira, PhD—post traumatic stress disorder
J. Streitz, MD—general and additions psychiatry, pain medicine
J. Sugimoto-Matsuda, DrPH—policy
J. Takeshita, MD—general geriatric and consultation-liaison psychiatry
S. Williams, MD—general and child and adolescent psychiatry
M.D. Zuniga, MD—general psychiatry and child and adolescent psychiatry

Degree Offered: MD

The Academic Program

Psychiatry (PSTY) is a branch of medicine that derives its theoretical foundations from the neurosciences, as well as the psychological and social sciences. The investigation of the biological basis of mental illness is one of the most exciting areas of medical research today and is revolutionizing our understanding of mind-body relationships.

The Department of Psychiatry contributes to the overall mission of the School of Medicine by providing leadership in psychiatric training, teaching, research, and services in Hawai’i, Asia, and the Pacific Basin. The department is committed to expanding knowledge within a cross-cultural and bio-psycho-social framework.

Traditional courses have been replaced with the problem-based learning curriculum. Psychiatric issues are addressed throughout the curriculum but are particularly emphasized in the second year during the brain and behavior sub-unit of Unit MD6 and in the third year Psychiatry Clerkship.

Public Health Sciences

Biomedical Sciences D-204
1960 East-West Road
Honolulu, HI 96822
Tel: (808) 956-3368
Fax: (808) 956-9174
Email: pubhlth@hawaii.edu
Web: manoa.hawaii.edu/publichealth/

Faculty

*J. E. Maddock, PhD (Chair)—social and behavioral health sciences, health policy and management
*K. L. Braun, MPH, DrPH—social and behavioral health sciences
*O. V. Buchthal, DrPH—social and behavioral health sciences
*D. V. Canyon, PhD, DBA, MPH, FACTM—health policy and management
*J. J. Chung-Do, DrPH—social and behavioral health sciences
*R. Cooney, PhD—epidemiology, environmental sciences
*T. Delormier, PhD—Indigenous health
*A. Grandinetti, PhD—epidemiology
*E. L. Hurwitz, DC, PhD—epidemiology
*A. R. Katz, MD, MPH—epidemiology
*D. Li, PhD—biostatistics
*Y. Lu, PhD—environmental health
*E. McFarlane, MPH, PhD—social and behavioral health sciences, health policy and management
*D. Nelson-Hurwitz, MPH, PhD—Indigenous health
*C. Nigg, PhD—social and behavioral health sciences
*N. Partika, MPH—health policy and management, maternal child health
*T. L. Sentell, PhD—health policy and management
*M. M. Taulii, MPH, PhD—Indigenous health
*R. J. Williams, MPH, DrPH—social and behavioral health sciences
*V. Yontz, RN, MPH, PhD—social and behavioral health sciences

Emeritus Faculty

G. Baruffi, MD, MPH—social and behavioral health sciences
J. Grove, PhD—biostatistics

Cooperating Graduate Faculty

C. A. Albright, PhD—social and behavioral health sciences
K. Cassel, MPH—epidemiology
J. J. Chen, PhD—biostatistics
J. Davis, PhD—biostatistics
J. Douglas, PhD—epidemiology
T. S. Dye, PhD—social and behavioral health sciences
P. Fagan, PhD—social and behavioral health sciences
S. N. K. Fernandes, MD—social and behavioral health sciences
L. Gavero, DO—public health and epidemiology, women’s health
S. Helm, MD—community and cultural psychology
W. Haning, MD—general and addictions psychiatry, women’s health, addictions
J. Grove, PhD—biostatistics

* Graduate Faculty
F. Li, PhD—epidemiology  
G. Maskarinec, MD, MPH—epidemiology  
M. Mau, MD, MPH—Indigenous health  
A. Maunakea, PhD—Indigenous health  
C. M. Nishita, PhD—social and behavioral health sciences  
R. Novotny, PhD—epidemiology, social and behavioral health sciences  
I. S. Pagano, PhD—epidemiology  
B. Rodriguez, MD, MPH, PhD—epidemiology  
R. Soon, MD, MPH—social and behavioral health sciences  
J. Sugimoto-Matsuda, DrPH—social and behavioral health sciences  
L. R. Wilkens, DrPH—biostatistics  
R. Yanagihara, MD, MPH—epidemiology

**Affiliate Graduate Faculty**  
*J. R. Campbell, PhD—global health and population studies  
*D. K. Hayes, MD, MPH—epidemiology  
*L. Kolonel, MPH, PhD—epidemiology

**Degrees and Certificate Offered:** BA in public health, MPH, MS in public health, DrPH, PhD in epidemiology, Graduate Certificate in Global Health Protection and Security (GHPS). See the “Interdisciplinary Programs” section for more information on the GHPS program.

**The Academic Program**  
The mission of the Department of Public Health Sciences is to advance the health of the people of Hawai‘i, the nation, and the Asia-Pacific region through the education and training of public health professionals, innovative research in public health sciences, and service to the community.

The department offers the bachelor of arts (BA) degree in public health; the master of public health (MPH) with specializations in epidemiology, social and behavioral health sciences, Native Hawaiian and Indigenous health, and health policy and management; the master of science (MS) degree with specializations in epidemiology and social and behavioral health sciences; the doctor of public health (DrPH) degree with specialization in community-based and translational research; and the doctor of philosophy (PhD) degree in epidemiology. The department also administers the interdisciplinary graduate certificate program in global health protection and security.

**Advising**  
Information, applications, and initial advising about degree programs in public health are available from the Office of Graduate Student Academic Services, Biomedical Science D-204, 1960 East-West Road, Honolulu, HI 96822; phone (808) 956-8267; fax (808) 956-9174; email: ogsas@hawaii.edu; website: manoa.hawaii.edu/publichealth/.

**Undergraduate Study**  
The bachelor of arts (BA) degree in public health is designed to educate undergraduates interested in public health and/or health profession training in the broad basic concepts in public health education, practice, and research. The primary focus of public health education is to improve health and quality of life through the population-based prevention and treatment of disease and other physical and mental health conditions, through surveillance of cases and the promotion of healthy behaviors.

**Admission Requirements**  
Students applying to UH Mānoa may declare public health as their major upon entry. Requirements for admission are described in the “Undergraduate Education” section of the Catalog.

For current UH Mānoa undergraduate students seeking a concurrent degree in public health, the requirements for admission include the completion of PH 201 Introduction to Public Health with a B- or better, a minimum cumulative GPA of 3.25, meeting with a public health academic advisor, and an approved Concurrent Undergraduate Degree Application.

Current UH Mānoa undergraduate students who wish to change their major to public health must first complete PH 201 Introduction to Public Health with a B- or better and meet with a public health academic advisor before filing a Major Declaration Form.

**Graduation Requirements**
1. Meet all UH Mānoa and departmental requirements;  
2. Complete the public health curriculum, applied learning experience, and capstone seminar for letter grades;  
3. Complete a minimum of 120 semester credit hours;  
4. Have a minimum cumulative GPA of 2.0 or higher in order to graduate; and  
5. Complete an application for graduation in the semester preceding the award of the degree.

**Course Requirements**
A total of 36 major credits (45 credits with public health related courses) are required to graduate with a bachelor’s degree in public health. All students are encouraged to work closely with the undergraduate advising staff in the Office of Public Health Studies in planning their coursework.

**Public Health Related Courses (9 credits)**
- PSY 100 Survey of Psychology (3) (DS)
- MATH 140 Precalculus or higher (3) (FS)
- Statistics, select one: PH 350, ECON 321, EDEP 429, NREM 310 or SOCS 225/PSY 225 (3)

**Public Health Required Core Courses (24 credits)**
- PH 201 Introduction to Public Health (3)  
- PH 202 Public Health Issues in Hawai‘i (3)  
- PH 203 Seminar in Global Public Health (3)  
- PH 310 Introduction to Epidemiology (3)  
- PH 341 Public Health Biology and Pathophysiology (3) (DB)  
- PH 480 Application of Public Health Principles in Research and Practice (3)  
- PH 485 Public Health Applied Learning Experience (3)  
- PH 489 Public Health Undergraduate Capstone Seminar (3)

**Public Health Elective Courses (12 credits)**
Visit our website at manoa.hawaii.edu/publichealth/courses for a current list of public health courses. Since public health is by nature interdisciplinary, students will be encouraged to take electives in areas outside of the department. The list of recommended electives offered in other departments to complete the 12 credits of advisor-approved upper division public health electives is available on our website at manoa.hawaii.edu/publichealth/degrees/undergraduate/non-public-health-electives.

Students seeking additional information and advising on our bachelor’s degree program should contact a public health academic advisor at phadvise@hawaii.edu.
Graduate Study

Master's Degree

MPH students follow a Plan B (non-thesis) program. MS students follow a Plan A (thesis) degree program.

MPH Requirements
- minimum of 42 credit hours, 18 or more in courses numbered 600-798
- one graduate seminar
- required and core courses
- other courses as designated by the student’s program committee
- field training experience (PH 791)
- final competency assessment

MS Requirements
- minimum of 31 credit hours for epidemiology or 36-42 credit hours for social and behavioral health sciences, 18 or more in courses numbered 600-798
- one graduate seminar
- required courses
- 6 credit hours of thesis research (PH 700)
- other courses as designated by the student’s thesis committee
- final oral examination conducted by the thesis committee

*Most students will exceed the 31-credit hour minimum to meet their educational objectives.

Areas of Specializations

Epidemiology

Epidemiology is the study of the distributions and determinants of health-related events in human populations. A basic tenet of epidemiology is that diseases are not randomly distributed in the population. Determining the prevalence and risk factors associated with these events, as well as measuring the magnitude of such occurrences, is the basis of public health action. An essential part of this determination involves the utilization of epidemiologic and biostatistical methods to evaluate the effectiveness of disease control measures.

The master’s program generally requires two years of combined study and field work but may vary depending on academic background, experience, and academic goals of the student. The curriculum provides both breadth and depth. It instills knowledge and skills in epidemiologic methods, biostatistics, the collection and analysis of epidemiologic data, and the epidemiology of chronic and infectious diseases. Each student will have an academic advisor and committee with whom the student will work closely in scheduling and completing the academic requirements of the program.

Students are required to take advanced level training in chronic and infectious disease epidemiology, advanced biostatistics, and research design. There is opportunity for students to choose from epidemiology electives in the following areas: infectious diseases, nutrition, genetics, environment, aging, HIV/AIDS, cancer, and cardiovascular diseases. Course work in specialized statistical applications is also available. Students participate in on-going epidemiological research programs throughout the UH Mānoa system or community during their fieldwork assignment or thesis research.

The curriculum includes a core of required basic and public health offerings that cover such topics as environmental health, health care delivery and organization, health education, and health behavior. The courses provide background and breadth in public health. A capstone paper and presentation during the final term integrates the MPH experience. The MS degree follows a similar but more research-oriented curriculum and requires the completion of a thesis.

Health Policy and Management

Health policy and management (HPM) is a multidisciplinary field of inquiry and practice concerned with the delivery, quality and costs of health care for populations. HPM professionals concern themselves with managerial and policy aspects of the structure, process and outcomes of health services including improving the safety and efficiency of health care, expanding health insurance coverage, eliminating disparities, reducing out-of-pocket costs, financing, organization, accessibility of care, maintaining high quality of services and improving the performance of health systems.

The HPM specialization prepares students for a professional career in health services, policy and management through the provision of knowledge, skills, attitudes and practical experience. Students are taught to contribute to advancing the health of populations by improving the effectiveness and efficiency of personal and health services in public and private health organizations. The development of critical thinking and applied problem-solving skills with a focus on public health challenges and under-served populations is encouraged.

Within the HPM specialization, students may select their electives and practicum with a view to focusing more on policy or management. The practical experiences beyond the coursework are a key component of public health education and HPM’s strong ties to leading public health policymakers and practitioners provide students with ample opportunities to apply themselves to actual health policy and management challenges in the US and abroad.

The two-year curriculum includes core public health coursework and the following advanced courses: 1) PH 641 Introduction to Health Policy; 2) PH 660 Current Topics in Community Health; 3) PH 672 Leading and Managing Health Programs; 4) PH 673 Health Ethics, Law and Politics; and 5) PH 677 Global Health Management. MPH students are also required to complete a fieldwork practicum as well as a capstone presentation on a topic relating to health policy and management.

Native Hawaiian and Indigenous Health

The Native Hawaiian and Indigenous health (NHIH) specialization is designed to provide students with skills and training necessary to serve Indigenous people and assist in addressing their health and wellness needs. Indigenous people throughout the world experience grave health and socioeconomic disparities. Many of the current inequities are the result of historical national and local policies designed to eliminate and/or assimilate Indigenous people. Knowledge of history, policy, health determinants and ethics is essential to address and eliminate the inequities faced by Indigenous people.

The NHIH specialization will prepare students for leadership roles in Indigenous health policy and culturally safe health services. Graduates will better meet the social and cultural needs of Indigenous people, thereby enhancing the quality and effectiveness of those health services and policies. The improved quality and effectiveness of Indigenous health services contributes to the reduction of Indigenous health disparities and the improvement of Indigenous peoples’ health.
Students enrolled in this specialization are required to take advanced level training in Indigenous health policy, ethics and research design. There is opportunity for students to choose from Native Hawaiian and Indigenous health electives in many areas across the campus. Students will participate in on-going research programs with Indigenous communities through a practicum assignment.

For MPH students specializing in NHIH, the following coursework is required: 1) Indigenous Seminar; 2) Health Ethics, Law, and Politics; 3) Advanced Native Hawaiian Health Determinants; 4) Indigenous Applied Research Methods; 5) Community Engaged Research and Practice; 6) Indigenous Peoples’ Food Systems, Environment & Health; and 7) Integrative Seminar. MPH students are also required to complete a fieldwork practicum and during their final semester, students will prepare a report on their practicum experience, complete a research-intensive final paper, and deliver a public presentation as a demonstration of mastery of program competencies and present their finding in a capstone presentation.

Social and Behavioral Health Sciences

Over the last century, chronic diseases have replaced infectious diseases as the leading causes of death and, despite advances in medicine and technology, health disparities are increasing in almost every country. Unhealthy lifestyle behaviors such as tobacco use, lack of physical activity, poor nutrition, unsafe sexual practices, substance abuse, and overexposure to the sun are major contributors to disability and death. Social factors, such as discrimination, poverty, dangerous living and work environments, and unequal distribution of resources (including health care resources), also affect health status. In the social and behavioral health sciences specialization, students will examine: a) behavioral and social theories in health promotion; b) behavioral, social, environmental, and political interventions that can promote health; and c) skills required for assessing health problems and for planning and evaluating health programs. Course assignments provide students the opportunity to apply knowledge, to practice skills, to enhance computer literacy, and to improve oral and written communications. Opportunities to participate in university-based and community-based research and service programs are provided.

MPH students specializing in social and behavioral health sciences gain knowledge and skills in public health research methods, biostatistics, theories of health behavior change, needs assessment, planning, and evaluation. The first semester focuses on public health core requirements. In subsequent semesters, students take required and elective course work to meet the social and behavioral health sciences competencies, as well as the student’s professional goals. A required 240-hour field practicum allows students to apply knowledge and skills in a community public health setting. During the final semester, students complete an integrative seminar, prepare a capstone paper, and deliver a public presentation as a demonstration of mastery of program competencies and integration of classroom knowledge and field experience. A student-selected faculty advisor and program committee guides the student’s course of study, practicum experience, and capstone. The MS degree follows a similar but more research-oriented curriculum and requires the completion of a thesis.

MPH and MS Requirements

Applicants will be expected to have the academic background, experience, interests, and commitment for professional training in public health. Applicants must also have computer skills in word processing, spreadsheet construction, and internet applications. Academic preparation for the epidemiology specialization should include one year of coursework in a biological science, chemistry, and at least one semester of calculus. For the HPM specialization, preference may be given to students with training in social science, health, economics, business, or human services. Prior paid or voluntary work experience in the health care or human services fields is preferred, but not required. Academic preparation for the NHIH specialization includes course work in mathematics or statistics, public policy or political sciences, and psychology or sociology. Work or research experience in an applied health/social sciences field which serves an Indigenous population is preferred. Academic preparation for the SBHS specialization includes prior course work in mathematics or statistics, biology, or human development, and sociology or psychology. Experience in an applied health/social sciences field or in health/social sciences research is preferred.

Doctoral Degrees

Doctor of Public Health (DrPH)

The DrPH program with a specialization in community-based and translational research will prepare students to lead programs and conduct independent investigations addressing public health topics relevant to culturally diverse groups, with a special focus on those in the state of Hawai‘i and the Asia-Pacific region. Translational research is the investigation of how to successfully transform scientific discoveries arising from laboratory, clinical, or population studies into community applications to reduce incidence, morbidity, and mortality. Community-based participatory research in health is a collaborative approach to research that equitably involves investigators and members of the community in the research process and recognizes the unique strengths that each brings. This approach increases the likelihood that interventions will be embraced by the community and that the community members will gain knowledge, skills, and other benefits from the research.

DrPH Requirements

All DrPH students will complete required and elective coursework in health disparities, evidence-based public health, advance policy, leadership, cultural competence, community-based participatory research, and qualitative and quantitative methods. They also complete a qualifying exam, mentor teaching and research practica, a comprehensive exam, and a three-paper dissertation. DrPH students are expected to publish their work in peer-reviewed journals and present at national and international forums.

A few teaching and research assistantships are available for degree candidates. Qualified students may also apply for East-West Center fellowships. Contact Dr. Kathryn Braun (Chair) for additional details at kbraun@hawaii.edu

Doctor of Philosophy (PhD)

The PhD in epidemiology is comprised of graduate faculty from the Department of Public Health Sciences; University of Hawai‘i Cancer Center; Department of Tropical Medicine, Medical Microbiology, and Pharmacology; Department of
Candidates who successfully complete this program will be able to teach in academic and other settings, conduct independent and collaborative epidemiologic research, and provide consultative services to academic, not-for-profit, governmental, and private organizations.

Although applicants to this program are not required to have a master’s degree in epidemiology or a closely related field, all applicants are expected to have a strong background in the natural and/or social sciences. Because we look for applicants who are committed to epidemiologic research and practice, past research and related work experience are important factors in selecting candidates. We encourage applications from candidates who have well-focused research interests and career goals. The Graduate Record Examination (General Test) and three letters of recommendation are required for application. Applicants must also include a written statement with the application indicating why they want to pursue a doctoral degree in epidemiology and why they want to pursue this degree here at UH Mānoa.

PhD Requirements

A prospective applicant is expected to communicate with one of our graduate faculty members in his or her area of interest or with the program’s chair and to be accepted as an applicant by a faculty member prior to admission. The faculty member involved will serve as an interim advisor upon the individual’s admission into the PhD program. A listing of the PhD in epidemiology faculty is available at manoa.hawaii.edu/publichealth/faculty-and-staff. All candidates take a qualifying examination upon completion of all required courses in epidemiology and biostatistics and core courses in infectious diseases and chronic disease epidemiology (usually after their first year of enrollment). This is followed by elective courses in the candidate’s area(s) of interest, a teaching practicum, an oral comprehensive examination, and dissertation research. Candidates should refer to the Catalog for procedural and substantive details.

A few teaching and research assistantships are available for degree candidates. Qualified students may also apply for East-West Center fellowships. Contact Dr. Eric Hurwitz (Chair), at ehurwitz@hawaii.edu for additional details.

Honors and Awards

Joseph E. Alicata Award in Public Health
Elmer J. Anderson Professional Travel Award
Chin Sik Chung Memorial Award
Abraham Kagan, MD Endowed Fellowship
Koseki Award for Excellence in Community Service
Frances Ayako Matsuda Sano Fellowship in Public Health
Pauline Stitt Outstanding Student Award
Robert M. Worth Epidemiology Scholarship

Surgery

University Tower, Queen’s Medical Center
1356 Lusitana Street, 6th Floor
Honolulu, HI 96813-2421
Tel: (808) 586-2920
Fax: (808) 586-3022

Faculty

S. K. Steinemann, MD (Chair)—general surgery, surgical critical care, trauma surgery
R. E. Atkinson, MD—orthopedic surgery, hand surgery
R. S. Bueno-Smith, MD—general surgery, minimally invasive/robotic/bariatric surgery
L. P. A. Burgess, MD—otolaryngology
A. H-S. Cheung, MD—general surgery, transplant surgery
K. P. A. Christensen, MD—orthopedic surgery
M. B. J. Chun, PhD—specialist
N. L. Furumoto, MD—general surgery
P. Halford, MD—general surgery
J. K. Harpstrite, MD—orthopedic surgery
J. M. Isa, MD—anesthesiology
W. M. L. Limm, MD—general surgery, transplant surgery
C. S. F. Lorenzo, MD—general surgery, minimally invasive/robotic/bariatric surgery
J. B. Machi, MD, PhD—general surgery, ultrasonography
E. M. Masuda, MD—vascular surgery, general surgery
M. M. Mitsunaga, MD—orthopedic surgery
M. M. Mugiishi, MD—general surgery
P. C. Murray, MD—orthopedic surgery
A. J. Oishi, MD—general surgery
P. P. Pedro, MD—general surgery
F. D. Parsa, MD—plastic surgery
W. K. T. Shim, MD—pediatric surgery
S. G. Smith, MD—orthopedic surgery, sports medicine
G. A. Suares, MD—emergency medicine
D. M. Takanishi, Jr., MD—general surgery, surgical oncology, surgical critical care
L. L. Wong, MD—transplant surgery, general surgery
W. J. Yarbrough, MD—urology
M. Yu, MD—general surgery, surgical critical care, trauma surgery

Degree Offered: MD

The Academic Program

Surgery emphasizes the use of interventional techniques to treat injury and disease. The educational program encompasses the pathology, pathophysiology, diagnosis, treatment, and perioperative management of surgical disease and trauma.

The department provides instruction to medical students in all surgical disciplines, as well as the related fields of anesthesiology, radiology, and emergency medicine. It directs general surgical and orthopedic residency programs, as well as a surgical critical care fellowship. Research and continuing medical education programs are provided.
Tropical Medicine, Medical Microbiology, and Pharmacology

John A. Burns School of Medicine
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1600
Email: sandrac@hawaii.edu
Web: blog.hawaii.edu/tropicalmedicine/

Faculty
*V. R. Nerurkar, PhD (Chair)—pathogenesis of infectious diseases, delineating cellular and molecular mechanisms underlying microbe-host interaction
*J. Barbour, PhD—HIV immunology
*S. P. Chang, PhD—immunology, molecular biology, molecular approaches to vaccine development
*J. J. Chen, PhD—biostatistics
*W. L. Gosnell, PhD—host parasite interactions, malaria, immunology
*S. H. Gu, PhD—hantavirus phylogenetics
*V. Hinshaw, PhD—influenza virus ecology
*G. S. N. Hui, PhD—parasitology, immunology, cell biology
*P. H. Kauful, PhD—pathogenesis of West Nile virus
J. F. Kelley, PhD—dengue virus pathogenesis
*K. J. Kramer, PhD—parasitology, epidemiology, leptospirosis, HIV serodiagnosis
M. Kumar, PhD—virus host interaction
*F. Mercier, PhD—mechanisms controlling neural stem cell proliferation and differentiation in the adult brain
*F. D. Miller, PhD—epidemiology of infectious diseases
*L. Ndhlouvu, MD, PhD—HIV immunology
B. Shiramizu, MD—pathology of HIV-associated disorders
*D. W. Taylor, PhD—immunology of malaria in pregnant women and newborns
A. T. Lehrer, PhD—filovirus, immunology and vaccinology
A. Imrie, PhD—dengue immunology and epidemiology
V. E. Ansell, MD—tropical and infectious diseases and clinical microbiology
M. J. Bankowski, PhD—clinical and molecular microbiology and infectious disease
S. N. Bennett, PhD—molecular evolution and epidemiology of emerging infectious diseases
A. Imrie, PhD—dengue immunology and epidemiology
A. T. Lehrer, PhD—filovirus, immunology and vaccinology
M. M. Lieberman, PhD—arbovirus and vaccinology

Affiliate Graduate Faculty
A. C. Collier, PhD—drug metabolism and pharmacokinetics using in vivo, in vitro and in silico approaches, reproductive pharmacology
K. L. Palmer, PhD—global public health and tropical diseases

Degrees Offered: MS in biomedical sciences (tropical medicine), PhD in biomedical sciences (tropical medicine)

The Academic Program
Tropical medicine is the study of diseases that occur more commonly in the tropical regions of the world. However, in today’s era of globalization and modern transportation, diseases that were once confined to the tropics have spread geographically and played a significant role in the 20th century global resurgence of infectious diseases. As such, research in the area of tropical medicine and medical microbiology has greatly increased in importance in the past 20 years. Tropical medicine faculty conduct studies on infectious organisms and the diseases they cause, including dengue, West Nile, AIDS, hepatitis, viral and bacterial encephalitis, malaria, tuberculosis, and Kawasaki disease. The faculty employs a multidisciplinary approach, including immunology, pathogenesis, ecology, epidemiology, diagnosis, prevention, control, treatment, socio-ecological systems, human ecology, microbial and vector ecology, environmental change, and participatory action research to answer fundamental questions associated with the pathogenesis of these diseases. These studies can be laboratory-based, field-based, clinical-based, or include a combination of all three. The field of tropical medicine requires knowledge of virology, bacteriology, parasitology, entomology, immunology, cell and molecular biology, epidemiology, ecology, behavioral science, and clinical medicine.

Pharmacology is a medical science concerned with the effects of drugs and chemicals on living organisms. The subject embraces knowledge of the chemistry, actions, absorption, fate, excretion, and uses of drugs. Traditionally, the greatest interests in drugs have been with the health professions. Today, however, knowledge of pharmacology and the allied field of toxicology are relevant to all segments of society.

Graduate Study
The department offers courses for undergraduate, medical, and graduate students. Faculty participate in the MD program by providing tutorial and elective courses in medical microbiology, clinical immunology, molecular biology, pharmacology, and clinical aspects of tropical medicine and pharmacology. Electives for medical students are team taught and coordinated with unit objectives throughout the problem-based learning curriculum. In addition, the department plays an important role in the Basic Science Foundation course, and participates in the Pathology Residency Program by offering

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* Graduate Faculty
rotations in selected aspects of medical virology, parasitology, and bacteriology.

**Master’s Degree**
Graduates with a master’s degree in tropical medicine have gone on to careers in science education at the secondary and college level, technical and research positions in universities, government agencies, and biotechnology companies, or have continued on in PhD and MD training programs at other universities.

**Requirements**
The MS degree requires 21 credits of course work, nine credits of thesis research, completion of a thesis, and a final oral examination. A general examination, oral or written, is required before a student is advanced to candidacy for the MS (Plan A) degree. Although not encouraged, in very unusual circumstances, a non-thesis MS (Plan B) may be allowed. This program requires 30 credits of course work, a written examination, and participation in a research project.

**Doctoral Degree**
Graduates with a PhD degree have pursued professional research, teaching, and administrative careers at various academic institutions, state and federal government agencies, international health agencies, and biotechnology companies.

**Requirements**
The tropical medicine PhD program requires course work as determined necessary by the student’s advisory committee, a qualifying examination, comprehensive examination, drafting a written research proposal, dissertation, and final oral examination/defense of dissertation. Students are encouraged to take course work covering a broad array of the disciplines involved in the field of tropical medicine, including coursework offered by other academic departments as relevant to their area of concentration.

**Faculty**
Department faculty conduct active research in the following areas:
- virology and epidemiology of dengue, West Nile, and other flaviviruses
- diagnostic assays for flaviviruses
- hantavirus virology and epidemiology
- lentiviruses and polyomaviruses
- epidemiology and pathogenesis of hepatitis-associated viruses
- pathobiology and immunology of HIV and other retroviruses
- molecular epidemiology and evolution of viruses
- vaccines against paramyxoviruses using virus-like particles
- evaluation of hepatitis B infection and vaccination programs
- molecular and clinical epidemiology of streptococcal and staphylococcal infections
- malaria immunology and vaccine development
- malaria in pregnancy, maternal, and childhood immunity to malaria
- reproductive and developmental pharmacology
- emerging and re-emerging infectious diseases

Collaboration with infectious disease clinicians and international research institutes further expand research opportunities in the areas of HIV, Kawasaki disease, malaria, asthma, dengue, arboviruses, and zoonotic viruses. Research projects take place within the research laboratories in the department and at field sites in Africa, Asia, and the Pacific.

Pharmacology research within the department focuses on drug metabolism and pharmacokinetics. Research into developmental pharmacology in pregnancy and pediatric medicine is also a strong theme. The newly established human organ bank, in partnership with Organ Donor Center of Hawai’i, is a central part of our translational research effort and provides tissues to researchers throughout the UH Mānoa and JABSOM campuses.

A major goal of the department is to provide Asian and Pacific countries the expertise needed to expand laboratory and epidemiologic capacity in tropical infectious diseases research. The department also has active research programs with several community hospitals and collaborates closely with the State of Hawai’i Department of Health, providing instruction and expertise in bioterrorism preparedness and diagnosis of infectious diseases using the latest technology.