



## John A. Burns School of Medicine

### Administration

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Director of Admissions: Satoru Izutsu, PhD  
Associate Dean of Clinical Affairs: Roy Magnusson, MD, MS  
Associate Dean of Medical Education: Richard Kasuya, MD, MEd

### General Information

The John A. Burns School of Medicine (JABSOM) 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 medical sciences and health-related fields; MS, MPH, and DrPH degrees in Public Health; BS and MS degrees 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 9.9 acre site in Kaka'ako, on the water's edge, between Waikiki and downtown Honolulu. The school's previous location, the 33-year-old Biomedical Sciences building on the Mānoa campus, will continue to be occupied by the Office of Public Health Sciences, Department of Medical Technology,

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Department of Communication Sciences and Disorders, and by various research units. The school complex functions as an economic engine for the state that will create quality employment opportunities, increase biomedical research activity, and be a stimulus for the biotechnical 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 American 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 ACGE. Approximately 250 physicians within 16 training programs serve as house staff members in these hospitals under the direction of medical school faculty from eight clinical departments as employees of Hawai'i Residency Programs, Inc. Oversight is provided by the Designated Institutional Official (DIO) and the Directorate of Graduate Affairs. 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).

### **Affiliations**

The school maintains affiliations with many facilities for medical student and resident clinical training including the following: Castle Medical Center; Hawai'i State Hospital, Hilo Medical Center, Kalihi-Palama Health Center, Kaiser Permanente Moanalua Medical Center & Clinic, Kapiolani Medical Center for Women and Children, Kapiolani Medical Center at Pali Momi, Kookia Kalihi Valley Health Center, Kuakini Medical Center, 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, BS in communication sciences and disorders

**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 conducted by Mrs. Ruth Bingham at the Pre-Health/Pre-Law Advising Center.

### **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 are available in the school's Office of Student Affairs.

### **MD Program**

The MD program follows a problem-based curriculum, called the "MD Program," 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 actively involved 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 primarily learned in the context of solving clinical problems; students are trained to think critically and to evaluate new information and research data; 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 as many participating medical schools as designated 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](http://www.aamc.org). The deadline to electronically transmit the application to AMCAS is **November 1** (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-four 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](mailto:medadmin@hawaii.edu). Further information may be obtained on the web at [www.jabsom.hawaii.edu](http://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.

## Postgraduate Medical Education Programs

Postgraduate medical education programs in Hawai'i hospitals 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 University of Hawai'i 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 postgraduate medical education program at Chubu Hospital in Okinawa for graduates of Japanese medical schools.



## Graduate Programs

Please 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?1=gradD](http://jabsom.hawaii.edu/JABSOM/admissions/gradDegrees/index.php?1=gradD).

## Biomedical Sciences

### Cell and Molecular Biology

Mariana Gerschenson, PhD  
Phone: (808) 737-2751  
Email: [gershen@hawaii.edu](mailto:gershen@hawaii.edu)  
Marla Berry, PhD  
Phone: (808) 692-1506  
Email: [mberry@hawaii.edu](mailto:mberry@hawaii.edu)  
Web: [www.hawaii.edu/cmb](http://www.hawaii.edu/cmb)

### Clinical Research

Rosanne Harrigan, EdD  
Phone: (808) 692-0909  
Email: [mscr@hawaii.edu](mailto:mscr@hawaii.edu)  
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### Epidemiology

Eric L. Hurwitz, DC, PhD  
Phone: (808) 956-7425  
Email: [ehurwitz@hawaii.edu](mailto:ehurwitz@hawaii.edu)  
Web: [www.hawaii.edu/publichealth/](http://www.hawaii.edu/publichealth/)

### Medical and Molecular Physiology

W. Steven Ward, PhD  
Phone: (808) 956-5189  
Email: [wward@hawaii.edu](mailto:wward@hawaii.edu)  
Richard Allsopp, PhD  
Phone: (808) 692-1412  
Email: [allsopp@hawaii.edu](mailto:allsopp@hawaii.edu)  
Web: [www2.jabsom.hawaii.edu/Grad\\_Physiol/](http://www2.jabsom.hawaii.edu/Grad_Physiol/)

**Tropical Medicine**

Sandra Chang, PhD  
 Phone: (808) 732-1477  
 Email: sandrac@hawaii.edu  
 Web: apitmid.hawaii.edu/graduate\_studies.html

**Public Health**

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

**Communication Sciences and Disorders**

Dorothy Craven, MS  
 Phone: (808) 956-8279  
 Email: spauh@hawaii.edu  
 Web: www.hawaii.edu/spauh/

**Undergraduate Programs**

For information on medical technology or communication sciences and disorders, refer to the respective sections of the *Catalog*.

**Special Programs****Hawai'i/Pacific Basin Area Health Education Center (AHEC)**

The Hawai'i/Pacific Basin AHEC supports training experiences in rural and under-served areas of Hawai'i and the Pacific Basin for health professional students. Training experiences can be preceptorships, clerkships, electives, cultural immersion experiences, or interdisciplinary training experiences such as the AHEC Community Based Interdisciplinary Training Program (previously known as Ke Ola). AHEC coordinates a rural training track for students wishing to perform training experiences in a particular rural or under-served area during multiple years of training. AHEC also coordinates use of video teleconferencing for health education purposes, performs health careers recruitment programs across the state, and provides CME/CE to health care providers in rural and under-served areas and health education resources for communities, and is conducting a statewide Hawai'i health workforce assessment.

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 withyk@hawaii.rr.com, 692-1060, MEB 401J.

**Overseas Programs**

The school plays an extensive training role at locations outside Hawai'i and expects that its involvement in the Pacific and Asia 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 medical schools and hospitals in Korea, Thailand, the Philippines, and Japan.

**Anatomy, Biochemistry, and Physiology**

John A. Burns School of Medicine  
 651 Ilalo Street  
 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, PhD—mammalian developmental biology
- \*R. Allsopp, PhD—telomerase biology
- \*K. Fong, PhD—developmental genetics, cardiovascular disease
- \*S. Fong, MD, PhD—cell and molecular biology of cancer
- \*Y. Marikawa, PhD—mammalian embryogenesis, cell differentiation, and body pattern formation
- \*D. Merritt, PhD—aging and exercise physiology
- \*S. Moisyadi, PhD—mammalian transgenesis
- \*J. Somponpun, PhD—neurophysiology and fluid balance
- \*M. Ward, PhD—sperm physiology and genetics, assisted reproduction technology
- \*W. S. Ward, PhD—DNA structure, embryogenesis, and sperm biology
- Y. Yamauchi, PhD—assisted reproduction technology
- \*Y. Yamazaki, PhD—mouse cloning, primordial germ cell biology

**Cooperating Graduate Faculty**

- R. V. Cooney, PhD—role of nitrogen oxides in carcinogenesis
- C. W. Weems, PhD—reproductive endocrinology

**Adjunct/Clinical Faculty**

- J. Chen, PhD
- H. Davis, PhD
- M. Diamond, PhD
- R. Dunn, PhD

C. E. Ha, PhD  
 A. Lis, PhD  
 T. Nomura, MD, PhD  
 K. Nonaka, DDS, PhD  
 M. Ohishi, MD, DDS, PhD  
 J. D. Rand, PhD  
 C. Stickley, PhD  
 A. Sumoza-Toledo, 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

### 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 Willied 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 physiology 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 train-



ing 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 provided 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 (Co-Chair)—selenoproteins, antioxidants and human diseases
- \*M. Gerschenson, PhD (Co-Chair)—infectious diseases, HIV mitochondrial medicine
- \*F. P. Bellinger, PhD—selenoproteins in brain function
- \*D. C. Blanchard, PhD—ethoexperimental analysis of defense and aggression; preclined pharmacothology of anxiety, panic and depression; gender differences in emotional behavior
- \*R. L. Cann, PhD—molecular and evolutionary genetics
- \*D. S. Haymer, 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
- \*M. Matter, PhD—integrin regulated cell survival and apoptosis
- \*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

- T. A. Donlon, PhD—human genetics
- A. Fleig, PhD—electrophysiology (patch-clamp); calcium signaling in muscle cells; regulation of calcium signaling; cellular neuroimmunology
- R. Penner, PhD—electrophysiology (patch-clamp); intra- and intercellular signal transduction; regulation of calcium signaling; cellular neuroimmunology
- H. Turner, PhD—immunogenetics, cannabinoid receptors, cell signaling

### 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

1410 Lower Campus Road  
Honolulu, HI 96822  
Tel: (808) 956-8279  
Fax: (808) 956-5482

### Faculty

- \*H. Lew, MD, PhD (Chair)—audiology
- C. Coleman, PhD—speech-language pathology
- E. Hirohata, AuD—audiology
- L. Ing, MS—speech-language pathology
- C. Kikuta, MS—speech-language pathology
- \*R. Weirather, PhD—speech-language pathology

### Adjunct Faculty

- D.C. Craven, MA—speech-language pathology
- A. Gamble, MS—speech-language pathology
- D. Kau, MS—audiology
- P. Mashima, MS—speech-language pathology
- B. Ward, MS—speech-language pathology

**Degrees Offered:** BS in communication sciences and disorders, MS in communication sciences and disorders

### The Academic Program

Communication sciences and disorders (CSD) deals with disorders of speech-language. Speech-language pathology is the study of human communication and its developed or acquired disorders. Through this discipline, students have the opportunity to deal with a wide variety of disabilities and disorders affecting people of all ages. Speech-language pathologists treat children and adults in public and private practice in a wide variety of settings. A recent report by the federal government projected the combined fields of audiology and speech pathology as one of the fastest growing of the next decade.

The practice of speech-language pathology requires a minimum of a master’s degree obtained from a program accredited by the Council of Academic Accreditation in Audiology and Speech-Language Pathology in a regionally accredited univer-

sity. In addition, the practitioner must obtain clinical certification and, in most states, licensure. Standards for practice (and, therefore, educational content) are changing. The prospective student is advised that the standards for graduation may change during the course of his or her study. Program graduates will be required to meet the national standards in force at the time of the student's graduation.

The program for CSD at UH Mānoa is recognized nationally for its quality and is accredited. It is one of the few programs in the U.S. featuring preparation in a multilingual/multicultural environment.

### **Accreditation**

Our program is accredited by the Council of Academic Accreditation (CAA) in Speech-Language Pathology and provides professional preparation for certification by the American Speech-Language-Hearing Association (the national certifying authority).

### **Advising**

Students considering the major may call the Department of Communication Sciences and Disorders to schedule an appointment with an advisor.

## **Undergraduate Study**

### **Bachelor's Degree**

The Undergraduate program is currently on stop-out. The program does not currently accept applications for undergraduate admission. Students should see a departmental advisor to discuss alternatives.

## **Graduate Study**

### **Master's Degree**

The department offers the MS degree in communication sciences and disorders (CSD). The MS degree track in audiology is no longer accepting students and has closed effective December 31, 2006. Background preparation should include basic courses in speech-language pathology, clinical methodology, audiology, testing of hearing, habilitation and rehabilitation of hearing, speech and hearing science, and a minimum of 15 credit hours relating to normal development of speech, hearing, and language. If a course in inferential statistics is not part of the undergraduate record, one must be completed as part of the graduate program.

For admission as a regular classified graduate student, applicants must present (a) a baccalaureate degree from an accredited institution of higher learning, (b) a minimum GPA of 3.0 in the major and/or in all courses taken during the final four semesters or six quarters of undergraduate preparation, (c) adequate, appropriate undergraduate preparation, and (d) satisfactory performance on Graduate Record Exam.

If undergraduate deficiencies are present, students with a minimum cumulative GPA of 3.0 may be considered for admission by exception upon application to the Graduate Division. If undergraduate deficiencies are present, students with a minimum cumulative GPA of 3.0 may be considered for admission as conditional graduate students upon application to

the Graduate Division. This status can be changed to regular when all deficiencies are removed with at least a B average in all courses taken. Students with the best academic records and with limited or no undergraduate deficiencies will be considered for admission first.

Students who do not meet the general admission requirements or who have extensive undergraduate deficiencies should see an academic advisor to discuss the unclassified postbaccalaureate option and other alternatives. Foreign students are not eligible for post-baccalaureate unclassified status. If an unclassified student completes the first 12 credit hours in CSD with a GPA of less than 3.0, no further registration will be permitted.

Each student will have a preliminary conference with an advisor prior to initial enrollment in courses. This evaluation will include a thorough analysis of previous academic preparation to determine the plan of study, including the removal of undergraduate deficiencies if they exist. Recommendations concerning admission to candidacy for fully qualified students will be made at the end of the first semester of study. The student's advisor will determine action to be taken in this regard.

### **Requirements**

Both Plan A (thesis) and Plan B (non-thesis) are available for graduate study. The plan to be followed is determined by the student and his or her advisory committee. The decision is based upon the specific interests of the individual student and future educational and occupational objectives.

Under Plan A, 38 credit hours in course work, a thesis (CSD 700–6 credit hours), and a final oral examination on the thesis subject are required. Plan B requires satisfactory completion of 44 credit hours of course work, including CSD 695 or 696 in which a research study is completed. A seminar appearance is also required for Plan B. For both Plan A and Plan B, a final written comprehensive examination in which the student will be examined on his or her course of study is required.

The median time required for completion of this program by an individual admitted with no undergraduate deficiencies is two years.

Continued enrollment and completion of the master's program require both satisfactory academic progress to maintain minimum Graduate Division GPA standards and demonstrated clinical proficiency in clinical practicum in speech-language pathology and audiology.

Each classified and unclassified graduate student is personally responsible for knowing any additional information and regulations contained in the *Catalog* and the informational circular available through the Department of Communication Sciences and Disorders. If questions arise, the student's advisor should be consulted.

These programs are designed so that students who complete either Plan A or Plan B will meet the academic requirements for the Certificate of Clinical Competence in speech-language pathology as established by the American Speech-Language-Hearing Association (the national certifying authority). Students must complete all academic and practical training requirements for national certification, as well as departmental requirements, to qualify for the master's degree. Following graduation, students may qualify for national certification by taking and passing a national examination and successfully

completing a nine-month clinical fellowship. Upon certification (and, in most states, licensure), an individual may secure employment and/or engage in private practice in his or her area(s) of education.

Admission to courses requires graduate standing, except for certain senior students in their last semester of undergraduate study, and permission of the graduate chair. All graduate courses in the department require instructor's consent.

The Speech and Hearing Clinic is operated by the Department of Communication Sciences and Disorders of the John A. Burns School of Medicine. Staff members and supervised student clinicians provide diagnostic and therapeutic services to UH Mānoa students, children, and adults in the community.

## 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  
S. Berry, MD—family practice  
A. Brown, PhD—nutrition  
E. Cadman, MD—oncology, health disparities  
K. Csiszar, PhD—ethnobotanicals, molecular biology  
Z. Hammatt, MPhil, JD—ethics  
T. Shintani, JD, MD, MPH—nutrition  
K. Withy, MD—health services research, workforce development

### 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; 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 Korean and Chinese studies and Native Hawaiian and Health Ecology 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 biomedical sciences is offered, with an emphasis on clinical research for clinicians, researchers, educators and consumers. Clinical research 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.

## Family Medicine and Community Health

The Physician Center at Mililani  
95-390 Kuahelani Avenue  
Mililani, HI 96789  
Tel: (808) 627-3235  
Fax: (808) 627-3262  
Web: [www2.jabsom.hawaii.edu/FamilyMedicine/](http://www2.jabsom.hawaii.edu/FamilyMedicine/)

### Faculty

N. A. Palafox, MD, MPH (Chair)—family medicine and community health  
L. E. Buenconsejo-Lum, MD—family medicine and community health  
K. A. Heckert, MPH—family medicine and community health  
T. C. K. Forman, MD—family medicine, sports medicine  
A. L. Hixon, MD—family medicine and community health  
W. M. Izumigawa, MBA—Director of business affairs  
M. H. B. Kang, MD—family medicine and community health  
K. K. Kau, MD—family medicine and community health  
D. F. Lee, MD—family medicine and community health  
G. Maskarinec, PhD—medical anthropology  
A. W. Nichols, MD—family medicine, sports medicine  
J. S. Omori, MD—family medicine and community health  
R. D. Reddy, MD—family medicine and community health  
S. Riklon, MD—family medicine and community health  
C. W. Tseng, MD, MPH—family medicine and community health  
V. S. Wong, MD—family medicine and community health

**Degree Offered:** MD

### The Academic Program

The family medicine and community health (FMCH) department is a cooperative effort whose faculty members are involved with community partnerships in health professions education. Teaching goals are based on the assumption that primary medical care includes not only high quality, accessible, and acceptable care for episodes of illness, but also a concern for the promotion of a healthy lifestyle and environment for the population served.

Medical student instruction focuses on basic conceptual tools and practical preceptorships with people providing primary care.

The Sports Medicine Fellowship Program is affiliated with the FMCH Residency Program and provides opportunities in the clinical, research, and educational components of sports medicine and exercise science. The evolution of sports medicine into a medical specialty has paralleled a boom in sports participation at all age levels, and scientific findings that regular physical exercise helps to prevent and treat numerous medical conditions. The mission of the program is to develop academic distinction in the multi-disciplinary field of sports medicine through excellence in education, research, patient care, and community service.

The program offers clinical services including sports medicine, athletic team medical care, orthopedic surgery, sports

physical therapy and rehabilitation, sports psychology, and nutrition. The program also serves as a resource for the dissemination of sports medicine and exercise science-related information for UH Mānoa and the state of Hawai'i.

## Geriatric Medicine

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

### Faculty

K. H. Masaki, MD (Acting Chair)—geriatric medicine  
S. Ahsan, MD—geriatric medicine  
C. Bell, MD—geriatric medicine  
J. D. Curb, MD, MPH—geriatric medicine and clinical epidemiology  
M. Inaba, MD—geriatric medicine  
K. Lubimir, MD—geriatric medicine  
O. Pishchalenko, MD—geriatric medicine  
B. Rodriguez, MD, PhD—epidemiology  
B. Tamura, MD—geriatric medicine  
A. Wen, 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, and ob-gyn; fellows in Geriatric Medicine and Geriatric Psychiatry; and practicing physicians. 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 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](http://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,  
Post-baccalaureate Certificate for Clinical Training

## 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 MLT; 4303 Diamond Head Road, Honolulu, HI 96816; URL: [programs.kcc.hawaii.edu/](http://programs.kcc.hawaii.edu/); 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 and prerequisites. Students considering matriculating to UH Mānoa should seek academic advising from advisors on either campus.

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, 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL, 60631-3415, phone (773) 714-8880, [www.naacls.org](http://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

### 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)

#### 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 499(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: [www.uhmed.org/default.aspx](http://www.uhmed.org/default.aspx)

#### Faculty

E. K. Tam, MD (Chair)—pulmonary  
M. A. Antonelli, MD—general internal medicine, rheumatology  
R. F. Arakaki, MD—endocrinology  
E. F. Bello, MD—infectious disease  
B. W. Berg, MD—pulmonary critical care  
W. Boisvert, PhD—cardiovascular research  
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  
C. Cloak, PhD—MRI researcher  
T. Ernst, PhD—MRI research  
C. Goshima, MD—general internal medicine  
M. R. C. Greenwood, PhD—obesity, women's health, science and higher education policy  
C. S. Hew, MD—general internal medicine  
C. M. Higuchi, MD—oncology  
R. Hong, MD—cardiology  
J. Jacobs, MD—medical informatics  
R. T. Kasuya, MD—general internal medicine

S. K. Kuwada, MD—gastroenterology  
C. Lyden, MBA, MPH—AIDS education  
J. S. Melish, MD—endocrinology  
M. Nagoshi, MD—general internal medicine  
I. Nip, MD—general internal medicine  
J. Onopa, MD—general internal medicine  
J. Rudnick, MD—general internal medicine  
D. Sakai, MD—general internal medicine  
I. J. Schatz, MD—cardiology  
C. M. Shikuma, MD—infectious disease, AIDS  
B. Shiramizu, MD—pediatrics, hematology, oncology  
R. Shohet, MD—cardiology  
B. A. Soll, MD—pulmonary medicine  
K. N. Sumida, MD—hematology  
V. Stenger, PhD—MRI research  
L. M. Tam, MD—general internal medicine  
S. Y. Tan, MD—endocrinology  
N. Tsai, MD—gastroenterology  
M. Watters, 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 Mānoa 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 AIDS Clinical Research Program, the Cardiovascular Research Center, Specialized Neuroscience Research Programs, 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 1016B  
Honolulu, HI 96813  
Tel: (808) 587-8570  
Web: [www.dnhh.hawaii.edu](http://www.dnhh.hawaii.edu)

### Faculty

- J. Kaholokula, PhD (Chair)—health disparities scientist, clinical health psychologist
- K. Blaisdell, MD—emeritus professor
- S. K. Brady, MD, MPH—internal medicine, biostatistics-epidemiology
- D. Carpenter, MD—internal medicine, recruitment and retention
- C. DeCambra, MBA—post baccalaureate education, recruitment and retention
- C. Ha, PhD—biochemistry, post baccalaureate education
- N. Judd, PhD—public health, post baccalaureate education, recruitment and retention
- M. Kamaka, MD—family medicine, cultural competence
- M. Mau, MD, MS—health disparities, Myron Pinky Thompson Endowed Chair
- W. K. Mesiona-Lee, MD—pediatrics, post baccalaureate education
- E. Saito, PhD, MSc—health services research
- K. Sakamoto, MS—post baccalaureate education, student development
- K. Sinclair, PhD, MPH—intervention and evaluation research
- P. M. Tim Sing, MD—post baccalaureate education
- S. Tshako, MD—anatomy and reproductive biology, post baccalaureate education
- K. A. Voloch, MD—pediatrics, post baccalaureate education

### The Academic Program

The mission of the Native Hawaiian Health department 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 who 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 a federally funded project with six legislatively mandated focus areas: (1) Enhance the performance of Native Hawaiian medical students by offering support for external USMLE board preparation and collaboration with the JABSOM retention program; (2) Develop the research and teaching skills of young Native Hawaiian faculty by offering one- to two-year fellowships; (3) Address information resources through the development of an online searchable database covering Native Hawaiian health and develop cultural competency curricula through conferences and workshops; (4) Focus on research by offering an elective for first year medical students emphasizing the research and learning of Native Hawaiian health issues; (5) Promote student training in rural areas by serving as a resource for students choosing to do electives in rural, Native Hawaiian communities; and (6) Develop 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**

- L. K. Millar Sauvage, MD (Chair)—obstetrics and gynecology, maternal fetal
- M. C. Aaronoff, MD—obstetrics and gynecology
- T. C. Aeby, MD—obstetrics and gynecology
- M. L. Bartholomew, MD—obstetrics and gynecology, maternal fetal
- S. S. Brizzolara, MD—obstetrics and gynecology, urogynecology
- J. M. Burlingame, MD—obstetrics and gynecology, maternal fetal
- R. M. Busse, MD—obstetrics and gynecology, gynecologic ultrasound
- A. L. Chang, MD—obstetrics and gynecology
- S. T. Emura, MD—obstetrics and gynecology
- W. L. T. Fong, MD—obstetrics and gynecology
- C. K. Fujimoto, MD—obstetrics and gynecology, gynecologic ultrasound
- G. M. Graham, MD—obstetrics and gynecology, maternal fetal
- M. K. Y. Hiraoka, MD—obstetrics and gynecology
- D. E. Hodgman, CNM, MS—midwifery
- T. T. F. Huang, PhD—reproductive endocrinology, anatomy
- B. E. K. Kaneshiro, MD—obstetrics and gynecology, family planning
- R. M. Kawelo, MD—obstetrics and gynecology
- B. Kessel, MD—obstetrics and gynecology/reproductive endocrinology and infertility
- T. S. Kosasa, MD—obstetrics and gynecology/reproductive endocrinology and infertility
- G. G. Li, MD—obstetrics and gynecology
- R. T. McCartin, MD—obstetrics and gynecology
- S. M. Minaglia, MD—obstetrics and gynecology, urogynecology and pelvic pain
- R. T. Nakayama, MD—gynecology, gynecologic ultrasound
- I. A. Oyama, MD—gynecology, urogynecology and pelvic pain
- M. C. Savala, MD—obstetrics and gynecology
- S. D. Sharma, MD—obstetrics and gynecology
- R. A. Soon, MD—obstetrics and gynecology
- K. Y. Terada, MD—gynecology oncology
- C. E. Wright, PhD—parturition research
- T. E. Wright, MD—obstetrics and gynecology
- G. C. Yokochi, MD—obstetrics and gynecology
- I. Zalud, MD—obstetrics and gynecology, maternal fetal, gynecologic ultrasound

**Degree Offered:** MD

### **The Academic Program**

Instruction in obstetrics and gynecology (OBN) is divided into five general areas: basic clerkship, student electives, residency training, fellowship training, and continuing medical education. The main objectives of the basic 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 an active research program in the clinical area of human reproduction. The department is divided into the following divisions: endocrinology-infertility, maternal-fetal medicine, gynecology, obstetrics, oncology, urogynecology, and family planning.

## Pathology

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

### Faculty

- M. Carbone, MD, PhD (Chair and Interim Director, University of Hawai'i Cancer Center)—thoracic pathology, molecular pathology
- P. K. Bryant-Greenwood, MD, MBA (Vice Chair)—anatomic pathology, molecular pathology
- D. Shimizu, MD (Program Director)—surgical pathology, GYN pathology
- M. Bankowski, PhD—microbiology
- W. Kim, MD—clinical pathology
- B. J. Kaya, MD—anatomic pathology and neuropathology
- K. S. Thompson, MD, MS—pediatric pathology, surgical pathology, genetics
- J. H. Uyehara-Lock, MD—neuropathology

**Degree Offered:** MD

### The Academic Program

Pathology (PATH) is the study of 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. PATH 541 provides essential autopsy experience for all third- and fourth-year medical students, and residents may enroll in one or more of PATH 545 and 699. Instruction in laboratory medicine for the practicing physician, clinical pathology, anatomic pathology, clinical immunology, and molecular diagnostics is offered.

The department directs an integrated residency program in pathology. Residents are based at Kaiser Hospital, Queen's Medical Center, and Kapiolani Medical Center for Women and Children, and participate in the training of medical

students and residents alike. Clinical faculty come from all the community hospitals and provide gross and microscopic specimens for demonstration and clinico-pathologic correlations for medical students and residents. In addition, they participate in seminars and give lectures along with the full- and part-time faculty.

## Pediatrics

Kapi'olani Medical Center for Women and Children  
1319 Punahou Street, Room 742  
Honolulu, HI 96826  
Tel: (808) 956-6525  
Fax: (808) 945-1570

### Faculty

- K. T. Nakamura, MD (Chair)—neonatology
- R. C. Rudoy, MD—infectious disease
- B. Ackermann, MD—pediatrics
- K. M. Ash, MD—neonatology
- V. Balaraman, MD—neonatology
- T. M. Bane-Terakubo, MD—pediatrics
- L. J. Bergert, MD—pediatrics
- R. J. Bidwell, MD—adolescent medicine
- R. B. Boychuk, MD—critical care/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
- D. C. Chow, MD—pediatrics
- W. C. M. Credo, MD—emergency medicine
- D. C. Derauf, MD—pediatrics
- P. J. Eakin, MD—emergency medicine
- G. Erdem, MD—infectious disease
- A. K. Feng, MD—critical care
- K. K. Fernandez, 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
- B. M. Halm, MD—emergency medicine
- J. J. Harrington, MD—critical care
- C. Hirai, MD—neonatology
- A. S. Inaba, MD—emergency medicine
- L. K. Iwaishi, MD—developmental pediatrics
- L. M. Iwamoto, MD—neonatology
- J. R. King, DO—sports medicine/dance medicine
- J. L. King, DO—pediatric gastroenterology
- J. S. Kosut, MD—pediatrics
- S. Kuo, MD—neonatology
- D. K. Kurahara, MD—pediatric rheumatology
- M. S. I. Kyono, MD—pediatrics
- W. T. Kyono, MD—hematology/oncology
- J. J. Lee-Jayaram, MD—emergency medicine
- K. A. Len, MD—pediatrics
- J. C. Lin, MD—pediatrics

S. W. H. Loo, MD—neonatology  
 J. K. Marr, MD—emergency medicine  
 D. Medeiros, MD—hematology/oncology  
 M. E. Melish, MD—infectious disease  
 B. D. Mih, MD—pediatrics  
 S. H. J. T. Mikami, MD—pediatrics  
 D. T. Murai, MD—neonatology  
 J. E. Musgrave, MD—pediatric nephrology  
 L. Y. Nakagawa, MD—emergency medicine  
 C. R. Neal, MD—neonatology  
 B. M. Nishikawa, MD—pediatrics  
 J. K. Okamoto, MD—developmental/behavioral pediatrics  
 M. M. Okihiro, MD—pediatrics  
 A. M. Perry, MD—emergency medicine  
 V. D. Reddy, MD—pediatric cardiology  
 R. C. Rudoy, MD—infectious disease  
 L. H. Seaver, MD—genetics  
 W. P. Shea, MD—pediatrics  
 W. K. T. Shim, MD—pediatric surgery  
 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

**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.

## Psychiatry

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

### Faculty

N. Andrade, MD (Chair)—general psychiatry  
 I. Ahmed, MD—general and geriatric psychiatry; consultation-liaison psychiatry  
 D. Alicata, MD—neuroimaging, research, child and adolescent psychiatry  
 R. Bayola, MD—child and adolescent psychiatry  
 C. Bell, MD—child and adolescent psychiatry  
 B. Carlton, MD—general and adolescent psychiatry, addiction psychiatry  
 J. Chang, PsyD—clinical psychology  
 I. Else, PhD—sociology, Native Hawaiian mental health and medical conditions  
 M. Fukuda, MSW, LSW—healthcare planning and administration  
 A. Ghiasuddin, MD—child and adolescent psychiatry and general pediatrics  
 D. Goebert, DrPH—public health and epidemiology, women's health, addictions  
 A. Guerrero, MD—child and adolescent psychiatry and general pediatrics, consultation-liaison psychiatry  
 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  
 J. Huh, MD—general psychiatry  
 S. Johal, MD—general, child and adolescent, and forensic psychiatry  
 C. Koyanagi, MD—general and addictions psychiatry  
 B. Lu, MD—general, geriatric, and consultation-liaison psychiatry  
 S. Luk, MD—general and child and adolescent psychiatry  
 C. Matsu, MD—general and child and adolescent psychiatry  
 L. Murayama-Sung, MD—general and geriatric psychiatry, end-of-life care  
 L. Nahulu, MD—general and child and adolescent psychiatry  
 H. Nakama, MD—general psychiatry, research  
 S. Nishimura, MSW—behavioral research, adolescent addictions  
 C. Ona—general and consultation-liaison psychiatry  
 J. Onoye, PhD—behavioral neuroscience, women's health  
 J. Pearce, MD—neurology  
 A. Serghi—general and consultation-liaison psychiatry  
 J. Streltzer, MD—general and addictions psychiatry, pain medicine  
 J. Takeshita, MD—geriatric and consultation-liaison psychiatry  
 S. Williams, MD—general 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 IV and in the third year during the Unit VI Psychiatry Clerkship.

## Public Health Sciences

Biomedical Sciences D-204  
1960 East-West Road  
Honolulu, HI 96822  
Tel: (808) 956-8267  
Fax: (808) 956-9174  
Email: ogsas@hawaii.edu  
Web: www.hawaii.edu/publichealth/

### Faculty

- \*J. E. Maddock, PhD (Chair)—social and behavioral health sciences, health policy and management
- \*S. Bennett—infectious diseases
- \*K. L. Braun, MPH, DrPH—social and behavioral health sciences
- \*S. Chang, PhD—infectious diseases
- \*J. D. Curb, MD—epidemiology, chronic diseases
- \*J. Douglas, PhD—infectious diseases
- \*O. Geling, PhD—social and behavioral health sciences
- \*M. T. Goodman, MPH, PhD—epidemiology
- \*A. Grandinetti, PhD—epidemiology
- \*J. S. Grove, PhD—biostatistics
- \*D. J. Gubler, ScD—arboviruses and vector-borne disease, epidemiology and control
- \*E. L. Hurwitz, DC, PhD—epidemiology
- \*D. T. Juarez, ScD—health policy and management
- \*A. R. Katz, MD, MPH—epidemiology
- \*S. Keller, PhD—social and behavioral health sciences
- \*L. Kolonel, MPH, PhD—cancer research
- \*L. Le Marchand, MD, MPH, PhD—epidemiology, cancer research
- \*D. Li, PhD—biostatistics
- \*Y. Lu, PhD—environmental health
- \*G. Maskarinec, MD, MPH—cancer research
- \*S. P. Murphy, PhD—cancer research
- \*V. Nerurkar, PhD—infectious diseases
- \*C. Nigg, PhD—social and behavioral health sciences
- \*R. Novotny, PhD—nutritional epidemiology
- N. Partika, MPH—health policy and management, maternal child health
- \*B. Rodriguez, MD, MPH, PhD—nutritional epidemiology

\*T. L. Sentell, PhD—health policy and management

\*A. Sy, MPH, DrPH—social and behavioral health sciences

\*B. A. Wilcox, PhD—environmental health

\*L. R. Wilkens, DrPH—biostatistics

\*R. Yangihara, MD, MPH—infectious diseases

\*V. Yontz, RN, MPH, PhD—social and behavioral health sciences

### Cooperating Graduate Faculty

C. A. Albright, PhD—University of Hawai'i Cancer Center, prevention and control

D. A. Goebert, DrPH—psychiatry

M. T. Goodman, MPH, PhD—University of Hawai'i Cancer Center, epidemiology

K. Kaholokula, MS, PhD—Native Hawaiian health

H. Lee, PhD—speech

**Degrees and Certificate Offered:** MPH, MS in public health, DrPH, PhD in epidemiology, Graduate Certificate in Global Health and Population Studies (GHAPS). See the "Interdisciplinary Programs" section for more information on the GHAPS 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 master of public health (MPH) and the master of science (MS) degrees with specializations in epidemiology, social and behavioral health sciences, and health policy and management (MPH only), the doctor of public health (DrPH) degree with a specialization in community-based and translational research as well as the doctor of philosophy (PhD) degree in epidemiology. The department also administers the interdisciplinary graduate certificate program in global health and population studies.

### 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: www.hawaii.edu/publichealth/.

### 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 34-40 credit hours for social and behavioral health sciences, 18 or more in courses numbered 600-798
- one graduate seminar
- foundation 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

The importance of educating future public health leaders in the area of health policy and management is apparent. The current escalating rate of health care expenditures cannot be sustained. Reform of the health care system is needed. Training

in health policy and management will enable our students to better understand the issues and to make significant contributions to this debate, as well as other pressing issues in public health. The mission of the health policy and management (HPM) specialization is to provide students with the knowledge and skills to develop, analyze, and advocate for health policies to improve the health and well-being of individuals and populations; and, to administer and manage the delivery, quality, and costs of health care services in communities, with a focus on underserved populations.

The MPH degree in HPM prepares students for a professional career in health services, policy, and management. The curriculum includes core public health coursework and the following advanced courses: 1) Introduction to Health Policy; 2) Health Economics; 3) Program Planning; 4) Program Evaluation; 5) Public Health Leadership and Systems Thinking; and 6) Current Topics in Community Health. 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.

### 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 theories in health promotion; 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.

MS students specializing in social and behavioral health sciences gain knowledge and skills in research methods, biostatistics, theories of health behavior change, the analysis and interpretation of research data, and social epidemiology. The first semester focuses on public health core requirements. The remainder of the program includes specialized and elective course work designated by the student's thesis committee to meet the student's professional goals. The main objective of the specialization courses is the development of a thesis proposal, which includes an individual data analysis project. This project is based on collected research data and is intended to develop skills and document competencies in public health. During the final semester, a public presentation based on the student's thesis culminates a student's MS experience.

### 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 health policy and management specialization, preference may be given to students with training in social science, health, 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 social and behavioral health sciences 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

DrPH students are expected to publish their work in peer-reviewed journals and present at national and international forums. All DrPH students will complete mentoring teaching and research practica. For students entering the DrPH program with an MPH degree, the minimum number of credits for graduation is 39. For students without an MPH degree, the

minimum number of credits for graduation is 39 credits, plus the number of credits associated with missing prerequisites.

#### 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 Microbiology; and the Pacific Basin Research Center. 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 the University of Hawai'i.

#### 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 [www.hawaii.edu/publichealth/faculty/faculty.html](http://www.hawaii.edu/publichealth/faculty/faculty.html). 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](mailto: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  
 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

D. M. Takanishi, Jr., MD (Chair)—general surgery, surgical oncology, surgical critical care  
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—associate specialist  
N. L. Furumoto, MD—general surgery  
M. B. Ghows, MD—anesthesiology, anesthesia critical care  
P. Halford, MD—general surgery  
M. S. Hayashi, MD—general surgery  
J. K. Harpstrite, MD—orthopedic surgery  
D. E. Hemmings, MD—general surgery  
D. S. Inouye MD—general surgery  
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  
S. E. E. Moran, MD—general surgery, surgical critical care, trauma surgery  
M. M. Mugiishi, MD—general surgery  
P. C. Murray, MD—orthopedic surgery  
A. J. Oishi, MD—general surgery  
C. J. M. Oliver, MD—emergency medicine  
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  
S. K. Steinemann, MD—general surgery, surgical critical care, trauma surgery  
A. W. Tan, MD—general surgery, trauma, surgical critical care  
C. M. Ursic, MD—general surgery, surgical critical care, trauma surgery  
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: [jabsom.hawaii.edu/JABSOM/departments/intro.php?departmentid=26](http://jabsom.hawaii.edu/JABSOM/departments/intro.php?departmentid=26)

## Faculty

\*V. R. Nerurkar, PhD (Interim Chair)—pathogenesis of infectious diseases, delineating cellular and molecular mechanisms underlying microbe-host interaction  
\*S. N. Bennett, PhD—molecular evolution and epidemiology of emerging infectious diseases  
\*S. P. Chang, PhD—immunology, molecular biology, molecular approaches to vaccine development  
\*M. L. Chapagain, PhD—medical virology  
\*A. C. Collier, PhD—drug metabolism and pharmacokinetics using in vivo, in vitro and in silico approaches, reproductive pharmacology  
C. B. Cropp, MS—arbovirology  
B. R. Ellis, PhD—arboviruses and virus-vector interrelationships  
\*W. L. Gosnell, PhD—host parasite interactions, malaria, immunology  
\*D. J. Gubler, ScD—arboviruses and vector-borne infectious disease, epidemiology of emerging infectious diseases, prevention and control  
\*G. S. N. Hui, PhD—parasitology, immunology, cell biology  
H. Kang, PhD—molecular biology  
P. H. Kaufusi, PhD—pathogenesis of West Nile virus  
\*K. J. Kramer, PhD—parasitology, epidemiology, leptospirosis, HIV serodiagnosis  
\*F. D. Miller, PhD—epidemiology of infectious diseases  
\*D. W. Taylor, PhD—immunology of malaria in pregnant women and newborns  
\*S. Verma, PhD—molecular, biochemical aspects of viral diseases  
\*W-K. Wang, DSc—pathogenesis of arboviral and zoonotic viruses

## Cooperating Graduate Faculty

J. M. Berestecky, PhD—enteric bacteria  
L. Chang, MD—application of advanced neuroimaging techniques to study brain changes associated with HIV, substance abuse, brain development and aging  
G. Erdam, MD—molecular epidemiology of group A streptococcal and staphylococcal infections; complications of strep infections like acute rheumatic fever

- J. H. Kim, MD—HIV viral neutralization, cytokine gene therapy in HIV specific T-cells, HTLV-I and-II mechanisms of Rex protein function
- S. R. Kim, PhD—basic immunology of HIV-1 infection
- Y. Lu, PhD—gene therapy for HIV-1 infection, gene transfer approaches for neuroAIDS, immunodiagnosis of herpesvirus infection of green turtles, aquaculture virology
- M. E. Melish, MD—staphylococcal infection and toxins, clinical infectious disease, Kawasaki syndrome
- R. C. Rudoy, MD—clinical aspects of viral and bacterial diseases
- B. Shiramizu, MD—pathology of HIV-associated disorders
- E. K. Tam, MD—inflammation, immunologic mechanisms of pulmonary diseases, genetic and environmental determinants of asthma
- S. Verma, PhD—diagnosis of Kawasaki syndrome, effect of selenium deficiency on RNA virus mutations
- B. A. Wilcox, PhD—ecology of infectious diseases, integrative health research, community medicine
- R. Yanagihara, MD—transdisciplinary investigations of emerging and re-emerging infectious diseases, use of infectious agents as biological markers to trace ancient and recent movements of human populations

#### Affiliate Graduate Faculty

- F. Mercier, PhD—mechanisms controlling neural stem cell proliferation and differentiation in the adult brain

**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 20<sup>th</sup> 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.

Ecology and Health focuses on interdisciplinary research and practice with an ecological perspective on health. The role of ecosystems in human health is a critical area of scientific research and education worldwide. The Ecology and Health Group addresses the connections between ecosystem health and human well-being.

Faculty are engaged in research and action focused on the health of Hawai'i's unique local communities and tropical ecosystems. The active research program addresses the infrastructural factors that sustain community health, seeking to identify the best means for supporting the beneficial factors, and remedying those that are detrimental. Research activities involve participation in and support of informal and formal networks in multi-ethnic, low-income communities for the purpose of building capacity, and improving ecosystem health.

Educational activities are focused on the integration of ecology and health in the MD curriculum, including research opportunities for students to fulfill their 2-year research project requirement, and graduate assistantships for masters and doctoral students in a variety of disciplines. Medical and graduate students have the opportunity to enroll in courses and conduct research under the supervision of ecology and health faculty in conjunction with degree programs in other departments and schools.

### 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 rotations in selected aspects of medical virology, parasitology, and bacteriology.

### Master's Degree

Graduates with a master's degree 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 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

The department faculty conduct active research in the areas of dengue, West Nile and other flavivirus virology and epidemiology, hantavirus virology and epidemiology, lentiviruses and polyomaviruses, epidemiology and pathogenesis of hepatitis-associated viruses, HIV and other retroviruses, molecular epidemiology and evolution of viruses, ecology of infectious diseases, evaluation of Hepatitis B vaccination programs in Asia and Pacific countries, molecular biology, genetics of drug-resistant bacteria, autoimmunity in rheumatic diseases, characterization of Group A streptococcus, and *M. tuberculosis* in Pacific Islander and Asian populations. Collaboration with infectious disease clinicians and international research institutes further expand research opportunities in the areas of HIV, Kawasaki disease, dengue, arboviruses, and zoonotic viruses. The department also supports a regional arbovirus diagnostic laboratory that will provide reference services to laboratories in Asian and Pacific countries.

An important aspect of the department's research effort is the development and evaluation of vaccines for the prevention of important tropical diseases. The department's Human Malaria Research Group investigates immunological problems in malaria vaccine development and vaccine-induced and naturally-induced immunity to malaria infection. The group collaborates with other research teams in both academic institutions and in the biotechnology industry, as well as with field site scientists in Papua New Guinea and the Philippines. In addition, the department is developing a field site in

Vietnam that will provide the platform to evaluate dengue vaccines and drugs for tropical diseases, and to conduct detailed epidemiologic, ecologic, and pathogenetic-related studies.

Other research projects in the department include investigations into the relationship of infectious agents to autoimmune diseases, the genetic factors associated with immunological disease, characterization of Group A streptococcus, the study of immune response to *Mycobacterium tuberculosis* in Pacific Islander and Asian populations, genetics of drug-resistant bacteria, including *M. tuberculosis* in Hawaii, ecology of leptospirosis, and evaluation of hepatitis B vaccination programs in Asia and Pacific countries.

Research activities in ecology of infectious disease include investigation of the ecological context of water borne and vector borne pathogens. The emphasis is on the integration of molecular, organismal, and ecological research methods to better understand the transmission dynamics and behavior of infectious disease. This also includes a research focus on Hawaii's unique mountain-to-sea catchments as laboratories of infectious disease ecology, and study of the social, environmental, and development factors interacting within these social-ecological systems. The place-based components of this research often incorporate collaborative and participatory research approaches involving local communities, and integrating between the disciplines and sectors relevant to an ecological understanding of infectious disease.

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.