



Administration

John A. Burns School of Medicine
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Associate Dean of Academic Affairs: J. Alan Otsuki, MD, MBA
FACEP
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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 degree in Communications Sciences and Disorders; and, BS and a post-baccalaureate certificate in medical technology. Medical school faculty participate in undergraduate courses for majors in nursing, dental hygiene, biology, nutrition, and related fields. In addition, the medical school, in partnership with the Hawai'i Medical Association and the Hawai'i Consortium for Continuing Medical Education, sponsors continuing medical education for physicians in the state of Hawai'i.

The school provides instruction for six major categories of students:

1. Candidates for the MD degree who are admitted directly by JABSOM's own admissions committee;
2. Candidates for MS degrees in biomedical sciences (with concentrations in cell and molecular biology, clinical translational research, developmental and reproductive biology, and tropical medicine), or in communication sciences and disorders apply through the Graduate Division of UH Mānoa;
3. Candidates for PhD degrees in biomedical sciences with concentrations in cell and molecular biology, epidemiology, developmental and reproductive biology, and tropical medicine who apply through Graduate Division of UH Mānoa;
4. Candidates for undergraduate degrees in medical technology, who apply through the UH Mānoa Admissions Office; and
5. Candidates for the Doctor of Medicine Early Acceptance Program who are admitted by JABSOM's admissions committee.

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

The Kaka'ako Waterfront Complex

In 2005, the John A. Burns School of Medicine relocated to a new 9.898 acre site in Kaka'ako, on the water's edge, between Waikiki and downtown Honolulu. The school's previous location, the 43-year-old Biomedical Sciences building on the Mānoa campus, continues to be occupied by the Department of Medical Technology, and by various research units. The school complex functions as an economic engine for the state that will create quality employment opportunities, increase biomedical

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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.

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

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

Additionally, all civilian postgraduate medical education programs in Hawai'i hospitals are accredited as UH John A. Burns School of Medicine-sponsored residency programs by the ACGME. Approximately 250 physicians (employees of Hawai'i Residency Programs, Inc.) within 14 training programs serve as house staff members in these hospitals under the direction of medical school faculty from eight clinical departments. Oversight is provided by the Designated Institutional Official (DIO). Continuing Medical Education (CME) programs are accredited by the Hawai'i Consortium for Continuing Medical Education (HCCME), a liaison committee between the Hawai'i Medical Association and JABSOM, Medical Technology (MEDT) and Communication Sciences and Disorders (CSD) are accredited by National Accrediting Agency for Clinical Laboratory Sciences and American Speech-Language-Hearing Association respectively.

Affiliations

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

Degrees

Bachelor's Degrees: BS in medical technology

Master's Degrees: MS in biomedical sciences (cell and molecular biology, developmental and reproductive biology, and tropical medicine); MS in clinical and translational research; MS in communication sciences and disorders

Professional Degree: MD

Doctoral Degrees: PhD in biomedical sciences (cell and molecular biology, and tropical medicine); PhD in developmental and reproductive biology

Advising

Premedical advising is available through the Pre-Health/Pre-Law Advising Center, Sinclair Library 108.

Academic Policies

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

MD Program

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

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

Admission Requirements/Application Process

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

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

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

Applicants are required to apply through the American Medical Colleges Application Service (AMCAS). The service permits an applicant to file a single web-based application, which is forwarded to participating medical schools as 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. The deadline to transmit the application to AMCAS is **November 1** for regular admission (EST) or **August 1** (EST) for Early Decision and Doctor of Medicine Early Acceptance Program Students.

Applicants must also take the nationally administered Medical College Admissions Test (MCAT), which deals with knowledge of the biological and biochemical foundations of living systems; chemical and physical foundations of biological systems; psychological, social, and biological foundations of behavior; and critical analysis and reasoning skills. MCAT must be taken within three years of an applicant's anticipated matriculation to medical school. The latest MCAT's screened or re-screened in the admissions process is September of the year of application (May for Early Decision) and Doctor of Medicine Early Acceptance Program Students.

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

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

Honors and Awards

Alpha Omega Alpha is the honorary society for medical students.

Graduate Medical Education Programs

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

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

Graduate Programs

Refer to the department/program sections of the *Catalog* for more information on each graduate program. **Note:** Information on the clinical translational research program is listed under the Department of Complementary and Integrative 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/ed-programs/masters-phd/.

Biomedical Sciences

Cell and Molecular Biology

Mariana Gerschenson, PhD
Phone: (808) 692-1518
Email: gerschen@hawaii.edu
Marla Berry, PhD
Phone: (808) 692-1506
Email: mberry@hawaii.edu
Web: cmb.jabsom.hawaii.edu

Clinical Translational Research

Phone: (808) 692-0909
Email: mscr@hawaii.edu

Developmental and Reproductive Biology

Yusuke Marikawa, PhD
Phone: (808) 692-1411
Email: marikawa@hawaii.edu
Web: www3.jabsom.hawaii.edu/Grad_DRB/index.html

Tropical Medicine

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

Communication Sciences and Disorders

Henry Lew, MD, PhD, CCC-A
Phone: (808) 692-1582
Email: henrylew@hawaii.edu
Web: csd.jabsom.hawaii.edu

Undergraduate Programs

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

Special Programs

The Doctor of Medicine Early Acceptance Program (DMEAP)

The Doctor of Medicine Early Acceptance Program for Entering Hawai'i Resident Freshman is a joint program offered by The John A. Burns School of Medicine (JABSOM) and Undergraduate Programs at UH Mānoa, including: the Honors Program, Pre-Health/Pre-Law Advising Center, ACE Learning Communities, Student Housing Services, and the Office of Admissions.

The primary goal of the Doctor of Medicine Early Acceptance Program (DMEAP) at UH Mānoa is to commit access to JABSOM to outstanding high school graduates

throughout the State of Hawai'i who have demonstrated exceptional ability and commitment to pursuing a medical degree. DMEAP prepares students to become exemplary medical students through a quality undergraduate education.

Acceptance into DMEAP signifies a commitment by both JABSOM and the student. JABSOM commits to accepting the student upon entry to UH Mānoa and the student commits to attending JABSOM upon successful completion of their undergraduate degree and DMEAP requirements. Thus, admission to DMEAP precludes applying to other medical schools. A commitment to serve in Hawai'i upon completion of medical training is highly desirable.

Further program information and details may be found at manoa.hawaii.edu/admissions/undergrad/early_admissions/index.html.

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

The Hawai'i/Pacific Basin Area Health Education Center (AHEC) supports health professions training experiences in rural and under-served areas of Hawai'i and the U.S.-Affiliated Pacific Islands (Guam, American Samoa, Commonwealth of the Northern Mariana Islands, Republic of the Marshall Islands, Republic of Palau, and Federated States of Micronesia). Training experiences can be preceptorships, clerkships, electives, cultural immersion experiences, or interprofessional training experiences such as the Rural Health Training Initiative in collaboration with the VA. AHEC supports continuity of rural training for students wishing to perform training experiences in a particular rural or under-served area during multiple years of their training. AHEC staff perform and support health careers recruitment programs across the state, support use of video conferencing for health education purposes, and hold the Hawai'i Health Workforce Summit every September. Finally, AHEC is conducting a statewide physician workforce assessment and students can participate in studying aspects of the workforce, such as migration patterns and use of telehealth.

AHEC is funded by the U.S. Department of Health and Human Services, Health Resources and Services Administration. The federal mandate is to improve the diversity, distribution, and quality of the health professions workforce. The mission of Hawai'i/Pacific Basin AHEC is: To improve the health of the under-served through education. Activities focus on four primary areas: 1) Health education and recruitment to health professions for students across the region 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; and 4) Providing video connectivity for health education, communication, and other health care services to rural and under-served areas across the state through methodologies such as Project ECHO. Contact Dr. Kelley Withy for more information at withy@hawaii.rr.com, (808) 692-1060.

Overseas Programs

The school plays an extensive training role at locations outside Hawai'i and expects that its involvement in the Pacific and Asia regions will continue. In the scattered islands of Micronesia, the school has trained medical officers (MOs) and physician assistants to bring primary care to a widely dispersed population. The curricula were relevant to the clinical and

community health needs of the Pacific Basin. Graduates of the MO program received a Diploma in Community Health, Medicine, and Surgery. Training of other health professionals in the Pacific Basin area continues. On Okinawa, the school conducts a residency training program for graduates of Japanese medical schools. This program is financed by the Okinawa prefectural government. The school conducts a medical student exchange program with affiliated medical schools and hospitals in Korea, Thailand, the Philippines, Japan, Indonesia, Taiwan, Australia, and New Zealand.

Anatomy, Biochemistry, and Physiology

John A. Burns School of Medicine
651 Ilalo Street, BSB 110
Honolulu, HI 96813
Tel: (808) 692-1446
Web: jabsom.hawaii.edu/departments/abp/

Faculty

- *S. Lozanoff, PhD (Chair)—renal and craniofacial morphogenesis
- A. Abdelkarim, DDS—craniofacial development and imaging
- *V. B. Alarcon, PhD—mammalian developmental biology
- *R. Allsopp, PhD—telomerase biology
- *B. Fogelgren, PhD—cell and molecular biology of kidney diseases
- J. Higa, PhD—physiology
- S. Labrash, CFSP—plastination, willed body program, continuing education
- *Y. Marikawa, PhD—mammalian embryogenesis, cell differentiation, and body pattern formation
- *T. Matsui, MD, PhD—cardiovascular research
- *D. Merritt, PhD—aging and exercise physiology
- *S. Moisyadi, PhD—mammalian transgenesis
- *J. Urschitz, PhD—gene therapy, obesity, pregnancy
- *M. Ward, PhD—sperm physiology and genetics, assisted reproduction technology
- *W. S. Ward, PhD—DNA structure, embryogenesis, and sperm biology
- *Y. Yamazaki, DVM, PhD—oocyte development, primordial germ cell biology

Cooperating Graduate Faculty

- O. LeSaux, PhD—cell and molecular biology, genetics and development pathology
- M. Yoshizawa, PhD—evolutionary developmental biology, neurobiology and behavioral adaptation

Adjunct/Clinical Faculty

- H. Davis, PhD
- K. S. K. Fong, PhD
- R. Mann, PhD
- G. M. Mawe, PhD
- T. Nomura, MD, PhD
- K. Nonaka, DDS, PhD
- Y. Oba, PhD
- C. Stickley, PhD
- S. Tunali, PhD, MD
- C. F. T. Uyehara, PhD
- J. Wu, PhD
- S. Yang, MD

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

The Academic Program

The Department of Anatomy, Biochemistry, and Physiology supports the interdisciplinary nature of modern biomedical research and exposes undergraduate medical and graduate students to the type of academic research environment they will encounter in their professional career. The department was formed in acknowledgement 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 course work 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 Willard Body Program.

Students seeking health-related careers in areas such as dentistry, medicine, nursing, nutrition, physical therapy, public health, and kinesiology 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 or on the whole animal, qualified graduate students have the opportunity to work with faculty from other JABSOM departments and programs within the university system as well.

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

The 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 GRE 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 developmental and reproductive biology faculty are world-renowned for their research in the areas of

fertilization, reproductive endocrinology, and developmental biology. Department faculty established the Institute for Biogenesis Research and pioneered the successful "Honolulu Technique" cloning technology, which provides scientists with a new and valuable tool for researching the molecular processes involved in embryo formation, cell differentiation, aging, and disease. 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: cmb.jabsom.hawaii.edu

Faculty

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

Adjunct Faculty

- A. Fleig, PhD—electrophysiology (patch-clamp); calcium signaling in muscle cells; regulation of calcium signaling; cellular neuroimmunology
- K. Pellegrin, PhD—pharmacy, psychology, research training
- R. Penner, PhD—electrophysiology (patch-clamp); intra- and intercellular signal transduction; regulation of calcium signaling; cellular neuroimmunology
- 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

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

Faculty

*H. Lew, MD, PhD (Chair)—audiology
V. Chinen, MS—speech-language pathology
*S. Goo-Yoshino, MS—speech-language pathology
J. Hall, PhD—audiology
*J. Hiu, MS—speech-language pathology
*A. Lower, MS—speech-language pathology
K. Maemori, MS—speech-language pathology
*P. Mashima, PhD—speech-language pathology
*C. McManus, AUD—audiology
L. Taniguchi, AuD—audiology
*B. Ward, MS—speech-language pathology

Adjunct Faculty

C. Bell, MD, PhD—geriatric medicine
S. Birer, MS—speech-language pathology
S. Chen, MD, PhD—physical medicine and rehabilitation
S. Ching, AuD—audiology
A. Davis, PhD—speech-language pathology
C. Fiestas, PhD—speech-language pathology
L. Hsieh, PhD—speech-language pathology
*R. Ito, AuD—audiology
M. Kahili-Heede, MLIS—library & information science
H. Kaniho, MS—speech-language pathology
J. Kawahigashi-Oshiro, MS—speech-language pathology
K. Mays, MS—speech-language pathology
B. Schwartz, MS—speech-language pathology
C. Tanaka, PhD—audiology
G. Wallace, PhD—speech-language pathology
J. Yamashita, MS—speech-language pathology

Degrees Offered: MS in communication sciences and disorders

The Academic Program

The UH Department of Communication Sciences and Disorders (UH CSD) prepares students to work as speech-language pathologists, to prevent, diagnose, and treat speech, language, cognitive-communication, and swallowing disorders in children and adults.

The Certificate of Clinical Competency in Speech-Language Pathology (CCC-SLP) from the American Speech-Language-Hearing Association (ASHA) is required to practice as a speech-language pathologist (SLP). The UH CSD program is the only program in Hawai'i that is accredited by ASHA's Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA). The CAA establishes accreditation standards and facilitates continuous quality improvement of the programs it accredits. Graduates of CAA-accredited programs are educated in a core set of skills and knowledge required for entry into independent professional practice.

Students who earn an MS degree from UH CSD are eligible to apply for the ASHA CCC-SLP after successful completion of a post-graduate Clinical Fellowship. The UH CSD program is typically completed in 2 years across 6 semesters including summer sessions. Credit hours range from 77 credits (Plan B-Non Thesis) to 84 credits (Plan A-Thesis). The following are required for graduation:

- Complete required course work in the UH CSD Program of Study with a minimum grade point average (GPA) of 3.0 and a minimum passing grade of B- (80%) for all required courses and clinical practicum
- Earn a minimum of 400 clock hours in clinical practicum (25 hours of clinical observation, 375 hours in direct client/patient contact, at least 325 hours while engaged in graduate study)
- Demonstrate achievement of the UH CSD Program and Student Learning Outcomes (PSLO) to fulfill standards for Clinical Certification in Speech-Language Pathology (CCC-SLP) from ASHA
- Earn a passing score on the Praxis® Exam in Speech-Language Pathology
- Fulfill the research requirement (Plan A or Plan B).

The UH CSD department defines its mission using the C.A.R.E.S. Model to establish a center of excellence for:

- **Clinical** services for people challenged with speech-language, cognitive, swallowing, hearing and related disorders
- **Administrative** infrastructure for internal and external collaboration and support
- **Research** to support evidence-based practice
- **Education** to prepare highly qualified professionals in communication sciences and disorders
- **Service** to increase public awareness and promote participation at the university, state, national, and international levels.

Academic Advising

Academic advising for UH undergraduate students is available from the Pre-Health Pre-Law Advising Center (manoa.hawaii.edu/undergrad/PAC/). Students who are interested in pursuing a master's degree in CSD may contact the UH CSD department by email (uhmcscd@hawaii.edu) or telephone (808-692-1581). The UH CSD website (csd.jabsom.hawaii.edu) provides information on the program, faculty, and its admission requirements.

CSD Prerequisite Certification Program (PCP) and Undergraduate Courses

The UH CSD PCP offers eight online undergraduate courses for partial fulfillment of prerequisites required for graduate programs in SLP. Students can complete the online courses within one year through the UH Outreach College.

Clinical Practicum

Students complete initial clinical training at the University of Hawai'i Speech and Hearing Clinic (UHSHC) under the supervision of certified, licensed speech-language pathologists and audiologists. Students work directly with clients and provide speech, language, cognitive-communication, and hearing services to children and adults.

After successful completion of the internship at the UHSHC, students are placed in externships in a variety of settings, including schools, hospitals, rehabilitation facilities, nursing homes, and early intervention programs.

Research Project (Plan B) and Thesis (Plan A)

Students complete either an individualized directed research project (Plan B) or thesis (Plan A) with a research mentor or thesis advisor. Fulfillment of the research requirement provides students with the foundation to engage in evidence-based practice.

Praxis Examination

Students are required to pass the Praxis Examination in Speech-Language Pathology in order to graduate from the UH CSD program. The exam assesses knowledge and current practices in SLP, and is administered by the Educational Testing Service (ETS), www.asha.org/Certification/praxis/About-the-Speech-Language-Pathology-Praxis-Exam/.

Complementary and Integrative Medicine

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

Faculty

- *J. J. Chen, PhD (Interim Chair, Interim Graduate Program Chair)—biostatistics
- *H. J. Ahn, PhD—biostatistics
- *A. Brown, PhD—nutrition and disease
- *J. Davis, PhD—biostatistics
- *Y. Deng, PhD—bioinformatics
- *E. Lim, PhD—biostatistics
- *T. Shintani, JD, MD, MPH—integrative medicine
- *C. Siriwardhana, PhD—biostatistics

Adjunct/Clinical Faculty

- N. Apau, MD, MS—integrative medicine
- D. Cai, DMD, Lac—integrative medicine
- M. Carbone, MD—cancer biology
- E. C. Christenson, MD—integrative medicine
- E. Christenson, MD—integrative medicine
- T. Hoffman, MD—integrative medicine
- T. Huynh, MD—radiation oncology

- M. Long, MD—integrative medicine
- K. Lye, MD—integrative medicine
- A. Marshall, DAOM, PharmD, Lac—integrative medicine
- J. Panee, PhD—natural products
- R. Sloan, MD—physical medicine & rehab
- A. Tse, PhD, APRN—health disparities
- K. Withy, MD—family & integrative medicine
- S. Wu, PhD—integrative medicine
- I. Zunin, MD—integrative medicine

Degree Offered: MS in clinical and translational research

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 Integrative Medicine (CIM) (CAAM courses) 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 integrative therapies in Hawai'i and the Pacific region, especially dietary supplements; educating the next generation of physicians and other healthcare personnel about the potential risks and benefits of complementary and integrative 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 CIM therapies for the Hawaiian population.

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

Graduate Study

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

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

In addition to offering knowledge and skills needed

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

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

Family Medicine and Community Health

The Physician Center at Mililani
95-390 Kuahelani Avenue
Mililani, HI 96789
Tel: (808) 627-3232
Fax: (808) 627-3266
Web: jabsom.hawaii.edu/departments/fmch/

Faculty

A. L. Hixon, MD (Chair)—family medicine and community health
L. Aggarwal, MD—family medicine and community health
L. E. Buenconsejo-Lum, MD—family medicine and community health
S. A. Hankins, MD, MPH—family medicine and community health
I. Hwang, MD, MPH—family medicine and community health
D. F. Lee, MD—family medicine and community health
C. Masuda, PharmD—UH Hilo College of Pharmacy
R. Miyamoto, PsyD—behavioral science, clinical health psychology
A. W. Nichols, MD—family medicine, sports medicine
J. S. Omori, MD—family medicine and community health
N. A. Palafox, MD, MPH—family medicine and community health
K. Soin, MD, MPH—family medicine and community health
C. W. Tseng, MD, MPH—family medicine and community health
S. Yamada, MD, MPH—family medicine and community health

Degree Offered: MD

The Academic Program

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

Teaching goals for students, residents, and fellows are based on a philosophy of contextualized care that understands health and illness in relation to the individual, family, and community,

and responds not only to episodes of illness, but also attempts to understand and address the broader social determinants of health. Medical student instruction focuses on basic conceptual tools and clinical strategies in real world settings through community based preceptorships.

Geriatric Medicine

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

Faculty

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

Degree Offered: MD

The Academic Program

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

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

The Division of Palliative Medicine is part of the Department of Geriatric Medicine. Many of the department's faculty members have board certification in both Geriatric Medicine and Palliative Medicine.

The Department of Geriatric Medicine is involved in an extensive array of 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
Web: jabsom.hawaii.edu/departments/medtech/

Faculty

D. Y. Teshima, MPH (Chair)—medical technology
S. M. Gon, MPH—medical technology
J. S. Ha, PhD—clinical biochemistry
R. M. Yamaguchi, MPH—medical technology

Degree and Certificate Offered: BS in medical technology

The Academic Program

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

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

Admission Requirements

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

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

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

While at KCC, students are encouraged to select courses applicable to UH Mānoa General Education, major requirements 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, 5600 N. River Rd. Rosemont, IL 60018, phone (773) 714-8880, www.nacls.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); TRMD 431 (2)

Senior Year

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

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

For candidates who already have a Bachelor's degree

If you already have a bachelor's degree, and wish to obtain a second degree in Medical Technology but are not able to follow the MLT-MLS track, you may qualify for admission through the "Second Degree" route. Minimum qualifications:

- Completed a bachelor's degree from an accredited university or college
- Minimum 2.5 cumulative and math/science GPA
- Completed required courses (up to 2 may be taken while on probationary status): CHEM 161/L, 162/L, 272/L, 273, BIOL 171/L, 172, 275, MATH 140 (or higher), MICR 351/L, MEDT 151, 251 (includes phlebotomy training)
- Apply to be admitted through the "Second Degree" route

Upon admission, student will be classified as an undergraduate student in Medical Technology, and must complete the major and graduation requirements as described above plus MEDT 302, MICR 461L and MICR 463L.

Contact the Department academic advisor for more detailed information.

Post-baccalaureate Study

Certificate for Clinical Training

- †MEDT 591 (28)

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

Medicine

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

Faculty

E. K. Tam, MD (Chair)—pulmonary
J. Acoba, MD—hematology, medical oncology
E. F. Bello, MD—infectious disease
B. Berg, MD—pulmonary critical care
W. Boisvert, PhD—cardiovascular research
D. Bolger, MD—general internal medicine, hospitalist
T. Bowen, MPH—AIDS education

S. Brauer, MD—internal medicine
D. Chow, MD—general internal medicine, meds/peds
G. Devendra, MD—internal medicine, pulmonary disease, critical care medicine
S. Evans, MD—pulmonary disease, critical care
S. Gallacher, MD—critical care
E. Ganitano, MD—critical care
C. Goshima, MD—general internal medicine
R. Hong, MD—cardiology
F. Igno, MD—general internal medicine
R. Ikeda, MD—critical care
C. Izutsu—internal medicine, nephrology
E. Kajioka, MD—infectious disease
C. Kimura, MD—general internal medicine
M. Kiyokawa, MD—general internal medicine
M. Koenig, MD—neurology
S. K. Kuwada, MD—gastroenterology
K. Lian, MD—hospitalist
S. Loo, MD—hospitalist
J. S. Melish, MD—endocrinology
J. Miles, MD—neurology
J. Misailidis, MD—general internal medicine
K. Nakagawa, MD—neurology
B. Nakamoto, MD, PhD—neurology
R. Nakasone, MD—internal medicine, hematology, medical oncology
R. Ng, MD—nephrology
D. Peterson, DO—hospitalist
G. Rediger, MD—general internal medicine
T. Seto, MD—cardiology
R. Shimamoto, MD—general internal medicine
M. Shiraishi, MD—rheumatology
B. Shiramizu, MD—pediatrics, hematology, oncology
R. Shohet, MD—cardiology
D. Singh, MD—cardiology
C. Spies, MD—cardiology
D. Spinks, MD—internal medicine
V. Stenger, PhD—neuroscience, mr research
K. Sumida, MD—hematology
M. Tallquest, PhD—cardiovascular medicine
B. Uyeno, MD—general internal medicine, pediatrics
T. Watai—internal medicine
M. Yee, MD—neurology

Degree Offered: MD

The Academic Program

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

Education

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

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

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

Service

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

Native Hawaiian Health

John A. Burns School of Medicine
677 Ala Moana Blvd., Suite 1016B
Honolulu, HI 96813
Tel: (808) 692-1050
Web: dnhh.hawaii.edu

Faculty

- J. K. Kaholokula, PhD (Chair)—behavioral medicine and science, clinical health psychology
- N. K. Baumhofer, ScD, MPH, MS—social epidemiology, data analysis
- S. K. Brady, MD, MPH—internal medicine, biostatistics-epidemiology
- D. Carpenter, MD—internal medicine, clinical teaching, cultural competence
- S. Chock, PhD—post baccalaureate education, student retention
- M. Corley, PhD—biomedical science, epigenomics
- S. Fernandes, MD—pediatrics, student recruitment and retention
- C. Ha, PhD—biochemistry, post baccalaureate education
- C. Harris, MBA—business management, post baccalaureate education
- A. Hermosura, PhD—health disparities research, clinical health psychology
- C. Ing, DrPH—health disparities, transitional, and community-based participatory research
- N. Judd, PhD—emerita professor
- M. Kamaka, MD—family medicine, cultural competence
- S. Kaulukukui, MS—student development
- M. S. Lee, MD—family medicine, student recruitment and retention
- T. Mabellos, DrPH, MS—public health, physiology
- M. Mau, MD, MS—health disparities, Myron Pinky Thompson Endowed Chair
- A. Maunakea, PhD—biomedical science, epigenomics

W. K. Mesiona-Lee, MD—pediatrics, post baccalaureate education, student recruitment and retention
 R. Miyamoto, PsyD—behavioral science, clinical health psychology
 P. M. Tim Sing, MD—internal medicine, post baccalaureate education
 S. Tshako, MD—anatomy and reproductive biology, post baccalaureate education
 K. Voloch, MD—pediatrics, post baccalaureate education
 V. Wong, MD, MS—family medicine, faculty development
 K. Yamauchi, MPA—post baccalaureate education, student recruitment and retention

The Academic Program

The mission of the Department of Native Hawaiian Health is to be a center of excellence in education, research, and quality health care practices committed to the optimal health and wellness of Kānaka ‘Ōiwi, their families, and communities while embracing 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 Kū 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 PILI ‘Ohana Obesity study, the KaHOLO project, 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‘ōla Post-Baccalaureate Program and the Native Hawaiian Center of Excellence.

‘Imi Ho‘ōla Post-Baccalaureate Program

‘Imi Ho‘ōla (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‘ōla is not limited to persons of Hawaiian, Filipino, Samoan, Chamorro, and Micronesian descent, a large number of these students are from disadvantaged socioeconomic and/or educational backgrounds and demonstrate a commitment to serve areas of need in Hawai‘i and the U.S.-Affiliated Pacific. ‘Imi Ho‘ōla has expanded its outreach efforts and developed partnerships with local high schools, colleges, and community-based health organizations.

Native Hawaiian Center of Excellence (NHCOE)

NHCOE is funded through state, federal, and private funds and focuses on: (1) Enhancing the performance of Native Hawaiian medical students by offering support for USMLE board preparation and collaboration with JABSOM retention efforts; (2) Developing the research and teaching skills of JABSOM and Department of Native Hawaiian Health faculty through workshops, presentations, and faculty development activities; (3) Disseminating information resources for Native Hawaiian health, cultural competency, and curricula through conferences and workshops; (4) Offering an elective for first year medical students on introducing research and topics of Native Hawaiian health issues; (5) Promoting student training in rural areas by serving as a resource for students choosing

to do electives in rural Native Hawaiian communities; and (6) Developing a competitive applicant pool through active involvement in the establishment of collaborative efforts with colleges and high schools to develop programs aimed at increasing the numbers of Native Hawaiian medical students.

Obstetrics, Gynecology, and Women’s Health

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

Faculty

I. Zalud, MD (Chair)—obstetrics, maternal fetal medicine, gynecologic ultrasound
 K. Y. Terada, MD (Vice Chair)—gynecologic oncology
 M. C. Aaronoff, MD—obstetrics and gynecology
 T. C. Aeby, MD, MEd—obstetrics and gynecology
 M. L. Bartholomew, MD—obstetrics, maternal fetal medicine, gynecologic ultrasound
 J. M. Burlingame, MD—obstetrics, maternal fetal medicine
 M. E. Carney, MD—gynecologic oncology
 A. L. Chang, MD, MPH—obstetrics and gynecology
 J. L. Elia, DrPH—public health
 W. L. T. Fong, MD—obstetrics and gynecology
 M. A. Gaspar-Oishi, MD—obstetrics and gynecology
 M. K. Y. Hiraoka, MD, MS—obstetrics and gynecology
 T. T. F. Huang, PhD—reproductive endocrinology, gynecologic ultrasound
 B. E. K. Kaneshiro, MD, MPH—obstetrics and gynecology, family planning
 R. M. Kawelo, MD—obstetrics and gynecology
 B. Kessel, MD—obstetrics and gynecology, reproductive endocrinology and infertility
 R. J. Kim, MD—gynecologic oncology
 T. S. Kosasa, MD—obstetrics and gynecology, reproductive endocrinology and infertility
 R. T. McCartin, MD—obstetrics and gynecology
 S. M. Minaglia, MD, MBA—gynecology, urogynecology and pelvic pain
 I. A. Oyama, MD, MBA—gynecology, urogynecology and pelvic pain
 J. L. Salcedo, MD, MPH, MPP—obstetrics and gynecology, family planning
 M. C. Savala, MD—obstetrics and gynecology
 R. A. Soon, MD, MPH—obstetrics and gynecology, family planning
 S. K. Taylor, MD—obstetrics and gynecology, maternal fetal medicine
 D. R. Towner, MD—obstetrics, maternal fetal medicine, medical genetics
 T. E. Wright, MD, MS—obstetrics and gynecology
 G. C. Yokochi, MD—obstetrics and gynecology

Degree Offered: MD

The Academic Program

Instruction in obstetrics and gynecology (OBGN) is divided into five general areas: basic clerkship, student electives, residency training, fellowship training, and continuing medical education. The main objectives of the clerkship during the third year is to give students an overall perspective of the field, an in-depth knowledge of women’s health care and the ability to

perform those technical skills necessary for the care of women. The elective experiences are developed to allow interested students the opportunity to acquire detailed knowledge and experience in women's health care or within specific areas of care.

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

Pathology

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

Faculty

K. S. Thompson, MD (Interim Chair)—pediatric pathology, anatomic pathology, genetics
A. Powers, MD (Residency Program Director)—transfusion medicine, clinical pathology
D. Shimizu, MD (Assistant Residency Program Director)—GYN pathology, anatomic pathology
M. Bankowski, PhD—microbiology
D. Horio, MD—anatomic and clinical pathology
B. J. Kaya, MD—neuropathology, anatomic pathology
W. Kim, MD—clinical pathology
C. Lum, MD—dermatopathology, molecular pathology
J. H. Uyehara-Lock, MD—neuropathology, anatomic pathology

Degree Offered: MD

The Academic Program

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

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

seminars, and lectures.

Pediatrics

Kapi'olani Medical Center for Women and Children
1319 Punahou Street, Room 742
Honolulu, HI 96826
Tel: (808) 369-1200
Fax: (808) 369-1212

Faculty

K. T. Nakamura, MD (Chair)—neonatology
K. K. Abe, MD—pediatric neurology
B. Ackermann, MD—pediatrics
V. Balaraman, MD—neonatology
T. M. Bane-Terakubo, MD—pediatrics
R. B. Boychuk, MD—emergency medicine
M. O. J. Chang, MD—pediatrics
R. K. S. Chang, MD—critical care
S. S. P. Chen, MD—pediatrics
N. Ching, MD PhD—infectious disease
T. T. Coleman-Satterfield, MD—emergency medicine
J. R. Di Rocco, DO—pediatrics
P. J. Di Rocco, MD—emergency medicine
P. J. Eakin, MD—emergency medicine
A. K. Feng, MD—critical care
P. H. Francisco-Natanauan, 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
L. Grant, DO—pediatric neurology
J. J. Harrington, MD—critical care
C. Hirai, MD—neonatology
T. K. F. Hong, MD—emergency medicine
A. S. Inaba, MD—emergency medicine
L. K. Iwaishi, MD—developmental pediatrics
L. M. Iwamoto, MD—neonatology
S. Jain, MD—pediatrics
J. S. Jensen, MD—hematology/oncology
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
R. L. A. Lau, MD—pediatric nephrology
J. J. Lee-Jayaram, MD—emergency medicine
K. A. Len, MD—pediatrics
J. C. Lin, MD—pediatrics
M. Maxym, MD—pediatrics
D. Medeiros, MD—hematology/oncology
J. C. Meister, MD—pediatrics
M. E. Melish, MD—infectious disease
B. M. Mizuo, MD—pediatrics
J. E. Musgrave, MD—pediatric nephrology
L. Y. Nakagawa, MD—emergency medicine
K. Natarajan, MD—pediatrics
C. R. Neal, MD—neonatology
B. M. Nishikawa, MD—pediatrics
C. K. Okado, MD—pediatrics
J. K. Okamoto, MD—developmental/behavioral pediatrics
A. O'Kelly, MD—general psychiatry, child and adolescent psychiatry, pediatrics

M. M. Okihira, MD—pediatrics
 S. Patel, MD—pediatrics
 D. V. Reddy, MD—pediatric cardiology
 M. Sato, MD—emergency medicine
 W. P. Shea, MD—pediatrics
 W. K. T. Shim, MD—pediatric surgery
 B. T. Shiramizu, MD—hematology/oncology
 C. C. J. Sia, MD—pediatrics
 S. L. Sood, MD—neonatology
 L. Y. Tanaka, MD—critical care
 M. Uehara, MD—developmental/behavioral pediatrics
 R. K. Wada, MD—hematology/oncology
 T. Wang, MD—pediatrics
 R. Wilkinson, MD—pediatrics
 J. A. Wong, MD—pediatrics
 Y. C. Wu, MD—pediatrics
 K. P. Xoinis, MD—critical care
 K. S. Yamamoto, MD—pediatric rheumatology
 L. G. Yamamoto, MD—emergency medicine
 R. T. Yanagihara, MD—infectious disease

Degree Offered: MD

The Academic Program

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

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

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

Psychiatry

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

Faculty

A. Guerrero, MD (Chair)—general child and adolescent psychiatry and general pediatrics, consultation-liaison psychiatry
 D. Alicata, MD, PhD—general and child and adolescent psychiatry, neuroscience and neuroimaging
 J. Andrade, MD—general and child and adolescent psychiatry
 N. Andrade, MD—general psychiatry
 B. Carlton, MD—general and adolescent psychiatry, addiction psychiatry, general pediatrics
 S. Chock, MD—general psychiatry, child and adolescent psychiatry, forensic psychiatry
 D. Des Jarlais, MD—general psychiatry, addiction psychiatry, consultation-liaison psychiatry, and general internal medicine
 M. D. Eckert, MD—general psychiatry and child and adolescent psychiatry
 M. Fukuda, MSW, LCSW—healthcare planning and administration
 G. Gaverro, DO—general psychiatry
 A. Ghiasuddin, MD—general and child and adolescent psychiatry and general pediatrics
 D. Goebert, DrPH—public health and epidemiology, women's health, addictions
 N. Gray, MD, PhD—general psychiatry
 S. Haack, MD, MPH—general psychiatry, integrated care
 R. Hamamoto, MD—general psychiatry and child and adolescent psychiatry, general pediatrics
 W. Haning, MD—general and addiction psychiatry
 S. Helm, MD—community and cultural psychology
 E. Hishinuma, PhD—behavioral research and psychometrics-statistics, youth violence prevention
 R. Koli, MD—general child and adolescent psychiatry, women's health
 J. Lee, DO—general and geriatric psychiatry
 B. Lu, MD, PhD—general, geriatric, and consultation-liaison psychiatry
 G. Makini, MD—general psychiatry, child and adolescent psychiatry
 S. Munnely, MD—general psychiatry, child and adolescent psychiatry, addiction psychiatry
 A. O'Kelly, MD—general psychiatry, child and adolescent psychiatry, and general pediatrics
 C. Ona, MD—general psychiatry
 J. Onoye, PhD—neuroscience, women's health, youth violence prevention research
 T. Park, MD—general psychiatry, child and adolescent psychiatry
 J. Pearce, MD—general neurology and clinical neurophysiology
 B. Schultz, MD—general psychiatry
 J. Streltzer, MD—general and addictions psychiatry, pain medicine
 J. Sugimoto-Matsuda, DrPH—public health in translational research
 J. Takeshita, MD—general geriatric and consultation-liaison psychiatry
 S. Williams, MD—general and child and adolescent psychiatry, general pediatrics

Degree Offered: MD

The Academic Program

Psychiatry (PSTY) is a branch of medicine that derives its theoretical foundations from the neurosciences, as well as the psychological and social sciences. The investigation of the biological basis of mental illness is one of the most exciting

areas of medical research today and is revolutionizing our understanding of mind-body relationships.

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

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

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

K. M. Murayama, MD—general surgery, minimally invasive surgery
D. S. Alam, MD—otolaryngology
R. E. Atkinson, MD—orthopedic surgery, hand surgery
A. Bhatt, MD—emergency medicine
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—community and cultural psychology
C. M. T. Cryer, MD—general surgery
N. L. Furumoto, MD—general surgery
A. Garber, MD—orthopedic surgery
P. Halford, MD—general surgery
J. K. Harpstrite, MD—orthopedic surgery
E. M. Ignacio, MD—orthopedic surgery
J. M. Isa, MD—anesthesiology
D. M. Kan, MD—orthopedic surgery
J. A. Kendall, MD—radiology
C. Klem, MD—otolaryngology
D. G. Lattimer, MD—urology
J. Lederer, MD—radiation oncology
L. S. K. Lee, MD—orthopedic surgery
W. M. L. Limm, MD—general surgery, transplant surgery
C. S. F. Lorenzo, MD—general surgery, minimally invasive/robotic/ bariatric surgery
J. M. Marumoto, MD—orthopedic surgery
E. M. Masuda, MD—vascular surgery, general surgery
M. J. Meagher, MD—radiology
D. J. Mikami, MD—general surgery, minimally invasive surgery
K. Mitsunaga, MD—orthopedic surgery
M. Mitsunaga, MD—orthopedic surgery
C. E. Moreno-Cabral, MD—thoracic/cardiovascular surgery
S. Y. Morita, MD—general surgery
P. T. Morris, MD—general surgery, thoracic/cardiovascular surgery
P. Murray, MD—orthopedic surgery
S. D. Nishida, MD—general surgery
A. J. Oishi, MD—general surgery
M. Okado, MD—general surgery
F. D. Parsa, MD—plastic surgery
E. Saegusa-Beecroft—researcher
W. K. T. Shim, MD—pediatric surgery
D. I. Singer, MD—orthopedic surgery

S. K. Steinemann, MD—general surgery, surgical critical care, trauma surgery
G. A. Soares, MD—emergency medicine
C. J. Tadaki, MD—general surgery
D. M. Takanishi, Jr., MD—general surgery, surgical oncology, surgical critical care
L. L. Wong, MD—transplant surgery, general surgery
R. K. Woo, MD—pediatric surgery
S. L. Woodruff, MD—general surgery
F. L. Yost, MD—general surgery
M. Yu, MD—general surgery, surgical critical care, trauma surgery
F. Zhao, MD—general surgery, trauma surgery, surgical critical care

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: manoa.hawaii.edu/tropicalmedicine/

Faculty

*V. R. Nerurkar, PhD (Chair)—pathogenesis of infectious diseases, delineating cellular and molecular mechanisms underlying microbe-host interaction
*S. P. Chang, PhD—immunology, molecular biology, molecular approaches to vaccine development
*W. L. Gosnell, PhD—host parasite interactions, malaria, immunology
S. H. Gu, PhD—hantaviriology
V. Hinshaw, PhD—influenza virus epidemiology, pathogenicity, immunology and vaccines
*G. S. N. Hui, PhD—parasitology, immunology, cell biology
*P. H. Kaufusi, PhD—pathogenesis of West Nile virus
J. F. Kelley, PhD—pathogenesis of flaviviruses
*M. Kumar, PhD—virus host interaction
*A. Lehrer, PhD—molecular biology, virology, immunology
*F. Mercier, PhD—mechanisms controlling neural stem cell proliferation and differentiation in the adult brain
*F. D. Miller, PhD—epidemiology of infectious diseases
*L. Ndhlovu, MD, PhD—HIV immunology
*B. Shiramizu, MD—pathology of HIV-associated disorders
*K. J. Kallianpur Tata, PhD—brain imaging, neuroaids, HIV-associated neurocognitive disorder
*D. W. Taylor, PhD—immunology of malaria in pregnant women and newborns

- *S. Verma, PhD—molecular, biochemical aspects of viral diseases
 *P. Walpita, PhD—paramyxoviruses, virus-like particles, vaccines
 *W-K. Wang, DSc—pathogenesis of arboviral and zoonotic viruses
 *A. Yanagihara, PhD—biochemistry of cubozoan venom

Cooperating Graduate Faculty

- J. M. Berestecky, PhD—enteric bacteria
 J. J. Chen, PhD—biostatistics
 B. Hernandez, PhD—human papilloma virus, hepatitis virus, viral carcinogenesis, epidemiology
 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
 S. Prisc, PhD—molecular pathogenesis of mycobacterium tuberculosis
 C. Shikuma, MD—infectious diseases, AIDS
 E. K. Tam, MD—inflammation, immunologic mechanisms of pulmonary diseases, genetic and environmental determinants of asthma
 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

Adjunct Faculty

- V. E. Ansdell, MD—tropical and infectious diseases and clinical microbiology
 M. J. Bankowski, PhD—clinical and molecular microbiology and infectious disease
 S. N. Bennett, PhD—molecular evolution and epidemiology of emerging infectious diseases
 B. R. Ellis, PhD—arbovirus and virus-vector interrelationships
 A. Imrie, PhD—dengue immunology and epidemiology
 J. Kim, MD—HIV vaccine development
 A. T. Lehrer, PhD—viral vaccine development
 M. M. Lieberman, PhD—arbovirus and vaccinology

Affiliate Graduate Faculty

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

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

The Academic Program

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

based, clinical-based, or include a combination of all three. The field of tropical medicine requires knowledge of virology, bacteriology, parasitology, entomology, immunology, cell and molecular biology, epidemiology, ecology, behavioral science, and clinical medicine.

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

Graduate Study

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

Master's Degree

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

Requirements

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

Doctoral Degree

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

Requirements

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

Faculty

Department faculty conduct active research in the following areas:

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

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

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

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