

STATE OF HAWAII
UNIVERSITY OF HAWAII

UNIVERSITY OF HAWAII AT MANOA
SCHOOL OF OCEAN AND EARTH SCIENCE AND TECHNOLOGY

FUNCTIONAL STATEMENT
OFFICE OF THE DEAN

The Office of the Dean of the School of Ocean and Earth Science and Technology will provide the focus of leadership for the marine sciences and direction to foster an environment supportive of excellent research and graduate education. In addition, it will coordinate, focus and facilitate the ongoing activities of the individual organizational units, including curricular, personnel and budget affairs of the School and the ancillary support components such as budget management, staff supervision, community relations, grievance and litigation, and travel.

The Dean serves under the Vice President for Research and Graduate Education and will be the primary spokesperson for all activities of the School, and functions with authority as delegated by the President.

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FUNCTIONAL STATEMENT
SEA GRANT COLLEGE PROGRAM

1. Sea Grant College Program

The Sea Grant Director's Office has line responsibilities for the Sea Grant College Program, the Waikiki Aquarium, and the Marine Option Program.

The Director's Office manages the activities and programs of the University of Hawaii Sea Grant College Program (UHSGCP) which include 1) directing the development and submission of a biennial institutional proposal encompassing programs of research, education, and advisory services; 2) administering the projects and programs funded by Sea Grant and other cooperating agencies; and 3) coordinating the publication and dissemination of resulting information.

The Sea Grant College Program is dedicated to the national goal of promoting the understanding, development, utilization and conservation of ocean and coastal resources through university-based research, education and advisory (extension) services. The program is conducted within geographical boundaries extending from Hawaii to Guam and currently collaborates with 44 governmental organizations, and 89 academic institutions. Fifty-three industrial organizations participate in the program. In addition, the Sea Grant Director represents the University of Hawaii on a number of interagency research and advisory committees.

a. Marine Research

The Sea Grant College Program promotes and supports research of state and national priorities at the University of Hawaii. It provides research opportunities and funding to undergraduates and graduates pursuing degrees and experience in marine-related research. Major areas of research are marine resources development including aquaculture, fisheries, marine natural products and ocean minerals; tourism; public policy and law and marine technology.

The Sea Grant College Program provides for the development, coordination, and budget administration of thirty to sixty Sea Grant research projects at any one time. In addition, the program has recently taken over the fiscal responsibilities for the other units which fall under the Director's authority. The Sea Grant College also provides funds for program and project planning at the discretion of the Director.

Many of the new initiative research efforts seek proof-of-concept to qualify for multi-year funding. The Director's Office provides review procedures which prioritize proposed research and evaluate projects to ascertain appropriateness for Sea Grant support and quality of research proposals. The Sea Grant Advisory Council which participates in this process is composed of marine leaders and scientists from private industry and state and national agencies. The Director negotiates program matching funds (required 2 federal: 1 non-federal) for these projects and monitors their use throughout the year.

b. Marine Advisory Program

Marine Advisory Program, through workshops, mass media, person-to-person communication, and other means, promotes the wise use of Hawaii's marine resources and meets the informational needs of Hawaii's people. The current Marine Advisory Program focuses on technology and information transfer in aquaculture, fisheries and the use of marine and ocean resources by tourists and residents. A network of 16 professional staff, including extension specialists and agents, carry out these activities in Hawaii and throughout the region.

The Marine Advisory Coordinator's Office is responsible for 1) budget and program planning and reporting and 2) communicating with the Sea Grant Director and with the National Sea Grant Office on extension program directions.

c. Marine Education

The Sea Grant College Program assists in the development of a broad spectrum of marine education programs and projects including undergraduate and graduate marine curricula. The program has supported the Marine Option Program and the Blue-Water Marine Laboratory, a marine technician training program at Leeward Community College, a graduate research and training program in tropical marine studies at the Hawaii Institute of Marine Biology, and applied marine research preparatory courses. The present program focuses primarily on undergraduate and graduate education within the University of Hawaii system. However, the program continues to give assistance to the UH College of Education in upgrading high school marine curriculum materials, developed with UHSGCP assistance in previous years, and with teacher training in American areas of influence in Micronesia.

d. Publications

Responsibilities of this office include the management and coordination of publications produced by the Sea Grant College Program. The office 1) edits project proposals and produces the institutional proposal, 2) conducts planning conferences with authors on proposed research and education reports and publication following preliminary manuscript review, 3) institutes procedures for editorial review and publishing, 4) produces camera-ready copy and arranges for publication, 5) edits and distributes the Sea Grant Quarterly, a scientific newsletter with a circulation of 1,700, an extension newsletter with a monthly circulation of 2,500, and other advisory brochures and publications, and 6) institutes sales programs and reviews expenditures and income from sales. The office also prepares news releases for local and national dissemination.

2. Marine Option Program

The Marine Option Program Office offers students of all majors throughout the University system the opportunity to discover and develop their marine and marine-related interests and talents. The office is responsible for the development and management of a certificate-granting program of undergraduate community colleges for those students who elect to complete selected academic requirements and a practical project. The office also sponsors special activities including seminars, field trips, workshops, and other hands-on experiences designed to promote marine interests.

3. Waikiki Aquarium

a. Office of the Director

The Aquarium Director's Office provides guidance to and overall supervision of Aquarium programs, projects, and activities; acts as liaison and officio member of the Board of Directors and Friends of the Waikiki Aquarium and the Hawaiian Islands Aquarium Corporation; and maintains close working relationships with other aquariums, zoos and museums. The Director is responsible for all living marine organisms at the Aquarium, including their collection, care, maintenance, and feeding; for keeping accurate records on the acquisition, growth and disposition of Aquarium animals; for the design, construction and maintenance of live displays and support systems; and for field research and collection and shipment of specimens to the Aquarium and other cooperating institutions from local and remote areas.

b. Aquarium Support and Operations

Aquarium support and operations staff responsibilities include 1) designing and overseeing new systems for support of research on live marine organisms, including live exhibits, aquaculture, and marine mammal husbandry, 2) the general operations, safety conditions, appearance, and maintenance of the Aquarium facility, 3) preparation reports on Aquarium systems (including selected management information systems and data processing) for internal distribution and for publication, and 4) assisting and advising Aquarium staff on efficiency of data management systems, and their use and maintenance.

c. Education

The Education Staff at the Aquarium is responsible for 1) the design, planning, and implementation of all Aquarium education programs, including School System Support, General Public Education, travel tours, and private sector co-ventures, 2) administration, budgeting, and planning of Blue Water Marine Lab which provides University-developed marine laboratory services to high school and University students, and 3) for design and implementation curriculum development, production and publication of education materials including books, video, and audio-visual programs (e.g. Byword).

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FUNCTIONAL STATEMENT
HAWAII INSTITUTE OF GEOPHYSICS

Director

The Director establishes research objectives, unit policy, and directs research, administrative and support activities of the Hawaii Institute of Geophysics (HIG). The Institute serves as the research arm of the University in the earth and marine sciences concerned with volcanology, geology, solid earth geophysics, geochemistry, physical oceanography, deep-water marine biology, and planetary geosciences and as an adjunct to graduate instruction in those departments of instruction concerned with the above branches of earth and marine sciences.

The primary objectives of the Institute are to provide graduate instruction, research and public service through its eight research divisions: Marine Geochemistry, Marine Geology and Geophysics, Materials Science, Oceanic Biology, Physical Oceanography, Planetary Geosciences, Seismology and Solid Earth Geophysics, and Volcanology, Geochemistry and Petrology. The scope of HIG research operations is local, national, and international.

The principal functions of the Director's Office are as follows:

1. Provides liaison between HIG as an institute and the Vice-President for Research and Graduate Education, the University administration, the Director of the Research Corporation of the University of Hawaii (RCUH), and outside bodies with whom an official point of contact with HIG is desirable.
2. Approves all appointments, proposals, reports, travel, tenure, salaries, etc. involving HIG personnel.
3. With the aid of the HIG administrative staff, establishes each year an expenditure plan for that year, the budget requirement for the following year, and the upgrading each year of the projected 5-year program.
4. Chairs the HIG Advisory Council.
5. Handles all matters not specifically delegated to others on the HIG administrative staff or to special committees, and serves in an ex officio capacity on all HIG special committees (personnel, ship operations, space allocation, budget, etc.).

Associate Director

The Associate Director assists the Director in all functions of that office as required and appropriate and assumes the duties of the Director in his absence from the campus with full power of representation.

The principal functions of the Associate Director's Office in addition to the above are as follows:

1. Maintains an overview of the overall scientific program in the Institute and brings areas of program weakness to the attention of the Director and the HIG Council.
2. Serves as liaison between HIG and the affiliated departments of instruction.
3. Serves as an ex officio member along with the Director on all HIG special committees and the HIG Council.

Advisory Council

The principal advisory body to the Office of the Director is the HIG Advisory Council. Its particular concern is long-range scientific planning.

Assistant Director

The Assistant Director provides assistance to the Director for overall administrative, financial, operational and personnel management of the Institute. He reports directly to the Director while handling all normal day-to-day management problems of the Institute, serves as an ex officio non-voting member on the HIG Council, and acts as Director in the absence of both the Director and the Associate Director.

The principal functions of the Assistant Director's Office are as follows:

1. Acts as Personnel Officer, Safety Officer, EEO Officer and serves on the following committees:

- APT Personnel Committee
- Safety Committee
- Budget Committee
- University Ship Scheduling Committee

2. Provides administrative and fiscal oversight for:

- Fiscal Office
- University Marine Center
- Engineering Support Facility
- Publications Facility
- Library
- Research Computing Facility
- Analytical Support Facility

3. Provides fiscal and personnel management as well as liaison on all contracts and grants handled through RCUH.

4. Direct operational and fiscal management of University Ship Operations Facility.

FISCAL OFFICE

The HIG Fiscal Officer provides fiscal services, and along with the Assistant Director monitors the financial aspects of HIG operations including various contracts and grants as well as general (State) funds allocated to the various HIG divisions.

The principal functions of the Fiscal Officer are as follows:

1. Assists Principal Investigators in preparing budgets for proposals.
2. Advises and assists the Director in preparing the HIG budget.
3. Serves as an ex officio non-voting member of the HIG Council.
4. Serves on the HIG Budget Committee.
5. Acts as budgetary liaison contact between HIG, the University Business Office, and the Budget Officer of the Office of Research Administration.
6. Supervises expenditures on all grants and contracts handled through the Office of Research Administration.
7. Supervises the expenditures of general (State) funds allocated to HIG.

University Marine Center

The University Marine Center (UMC) which houses three ships and shore support facilities provides ship operational support to HIG and University research programs as required. The UMC is administered by a Marine Superintendent.

The principal functions of this center are as follows:

1. Provide ship operation, logistical, and maintenance services to maintain ship's schedules developed by the HIG Scientific Coordinator for Marine Operations.
2. Provide shipboard marine technician (electronic and deck) services in support of HIG and University marine geophysics and oceanography research programs.
3. In conjunction with the HIG Scientific Coordinator's Office, maintains liaison with U.S. and foreign port authorities, the U.S. Navy Hawaiian Sea Frontier and the U.S. Coast Guard.

Engineering Support Facility

The principal functions of this unit are:

1. To provide machine shop design and production services in support of HIG research contracts and grants in the fabrication and repair of precision scientific instruments.
2. To provide electronics design, production, and maintenance service in support of HIG research contracts and grants.
3. To provide electromechanical design and development services for HIG scientists having unique scientific instrumentation development requirements.

Publications Facility

The principal functions of this unit are as follows:

1. To provide editorial review of all technical manuscripts submitted by researchers and edit for clarity, continuity, coherence and grammatical construction.
2. To provide national and international distribution of and exchange of HIG publications with other research institutions.
3. To proofread galley and pages of materials from publishers of HIG papers.
4. To collect and organize material for the HIG annual report, which describes HIG research programs and accomplishments for each year.
5. To provide the following graphic design and production services to HIG scientists in the publication of research papers and reports: cartographic charts and graphics, single and multi-color; scientific illustrations; slide materials (visuals); calligraphy and layout.
6. To provide photographic services to researchers, staff and students for scientific publication, instruction, presentation, or display.

Library

The principal function of this unit is to provide specialized scientific and technical library services to HIG researchers and graduate assistants. In conjunction with instructional and research staff, periodicals and books necessary for teaching and research are acquired and maintained. The Library contains over 1600 linear feet of library material.

The purpose of this facility is to provide specialized computers for HIG researchers and other campus-wide researchers in need of these specialized facilities. Current computers in this facility are several VAX's, Harris 800 and Alliant FX8. They are connected to terminals in various offices and laboratory areas.

Analytical Support Facility

This facility provides central management of various chemical analytical activities that take place in the Institute. The equipment managed by this facility includes an induction coupled plasma spectrophotometer, atomic absorption spectrophotometer, scanning and transmission microscopes, an electron microprobe, an autoanalyzer and various other equipment as assigned.

Research Divisions

1. Marine Geochemistry -- studies the chemistry of the earth as determined from the marine environment, including the studies of chemical processes in modern marine systems and how they are involved in the formation of sedimentary rocks and the chemistry of submarine magmatic cycles and submarine mineral formation.
2. Marine Geology and Geophysics -- investigates the geology and tectonics of the earth beneath the sea and the geologic process that have shaped our earth in the past; provides evaluation of resources in marine environments; studies coastal and deep-sea environments and ancient analogues of the modern marine environment in marine and non-marine systems whether buried or exposed.
3. Materials Science -- focuses on employing new technologies of investigate and characterize the physical and structural properties of various earth materials (minerals, rocks, sediments, silicate glasses and melts, metals, and alloys) under simulated high-pressure and high-temperature conditions in Earth's deep interior.
4. Oceanic Biology -- includes the study of biological processes as they relate to oceanography involving the study of oceanic productivity and the influence of biology on marine geochemistry, particularly with regard to the role of macro and microorganisms in the cycling of carbon, essential nutrient and energy in the sea.
5. Physical Oceanography -- focuses on the study of the circulation of the ocean both observationally and theoretically including the interaction with the atmosphere and the sea floor.

6. Planetary Sciences -- studies the origin, evolution and present state of the solar system by studying the composition and geology of solid bodies in the solar system -- including the Earth, other planets, satellites, asteroids and comets -- and in applying this knowledge to develop and utilize terrestrial and near-Earth space resources.
7. Seismology and Solid Earth Geophysics -- includes the study of earthquakes throughout the Pacific, studies of elastic wave propagation through the Earth, and detailed studies of the structure of the Hawaiian Islands and the Pacific Ocean crust.
8. Volcanology, Geochemistry, and Petrology -- focuses on the study of the dynamics of volcanoes, geothermal energy exploration and development, identification of geologic hazards from eruptions, dating of the earth, and the study of the origin of the ocean basins and their volcanic islands.

The research activities of HIG are maintained on a discipline basis irrespective of department affiliations and whether the individuals are on the State payroll or supported out of grant and contract funds. The Division Chairmen are appointed by the Director of HIG on the basis of recommendations made by members of each disciplinary group. The division chairmen serve as members of the HIG Council, set the tone of the research program in each division, and serve on special HIG committees at the request of the Director.

Principal functions of the individual division chairmen are as follows:

1. Submit budgets and programs for their respective research divisions.
2. Administer HIG state funds allocated to each division.
3. Screen all proposals, reports and papers generated in a division before they are submitted to the Director for approval.
4. Serve as the first arbiter in resolving problems within a division.
5. Make recommendations to the HIG administrative staff regarding division matters and personnel.
6. Maintain active liaison with the HIG administrative staff, the other HIG research divisions, and along with the Associate Director, the affiliated departments of instruction.

Research Projects

Two major research projects administered by the Hawaii Institute of Geophysics are:

1. Joint Institute for Marine and Atmospheric Research (JIMAR)
-- jointly sponsored by the University of Hawaii and the National Oceanic and Atmospheric Administration, JIMAR pursues research involving both theoretical and observational studies on climate, equatorial oceanography, and tsunamis.
2. Hawaii Undersea Research Laboratory (HURL)
-- established by a cooperative agreement between the National Oceanic and Atmospheric Administration (NOAA) and the University of Hawaii, HURL primarily supports research projects that require data acquisition at depths greater than scuba limits and concentrates its research efforts using submersibles in these areas: fisheries; pollution; sea floor properties and processes; and ocean technology and services.

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FUNCTIONAL STATEMENT
HAWAII INSTITUTE OF MARINE BIOLOGY

Director

Directs research activities, curricula support and maintenance operations, and personnel in the Institute of Marine Biology (HIMB), which has facilities located on Coconut Island, Kaneohe, the Mariculture Research and Training Center, Hakipuu, and on the UHM campus. HIMB has an international reputation in the areas of coral reef biology, tropical aquaculture, behavior of marine animals, and management of tropical near-shore ecosystems. The director coordinates the research, teaching and service activities of the staff, and performs a myriad of tasks that relate to the University and State, national and international research programs. HIMB administers a satellite unit (Hawaii Cooperative Fisheries Unit) in Edmondson Hall on the Manoa Campus and it has a Cooperative Research Support Program with the Asian Institute of Technology in Thailand.

Coordination of Instructional Activities - Although the Hawaii Institute of Marine Biology does not itself give degrees, its overall goal is to support the educational process at the University. Ten faculty members and more than thirty graduate students from various Manoa departments use the HIMB as a research base without occupying assigned positions or being fiscally affiliated with the Institute.

The Institute carries on research in marine biological sciences, including applied areas such as aquaculture and fisheries resource management, and provides facilities for faculty members, graduate and undergraduate students, and visiting scientists. Furthermore, it affords instructional facilities for introductory and advanced courses throughout the University system on Oahu. From 1983 it has been the site of a graduate research and training summer program in selected topics. Though much of HIMB's activities are largely based on Coconut Island, and secondly at the MRTC, Hakipuu facility, it also maintains a small office in the Marine Science Building and has close interaction with facilities such as: Waikiki Aquarium, Pacific Biomedical Research Center, Look Laboratory, East-West Center, Bishop Museum, Oceanic Institute, Natural Energy Laboratory of Hawaii, and state and federal agencies with common interests.

Office Functions - Administrative support relative to the operation of the Hawaii Institute of Marine Biology which currently has a composite operational budget of approximately 2.3 million dollars annually and involves over 100 people and approximately \$1.5 million in research grants and contracts.

Chart V - The overall organization of the laboratory is shown relating the research program to the administrative/support elements.

Chart VA - Administrative/logistical and technical support for ongoing scientific activity within the Hawaii Institute of Marine Biology which includes, but is not limited to: fiscal management of state, federal funds, and private funds, clerical support, i.e., typing maintaining records and proposals, preparation of budgets and fiscal reports, reception, switchboard, duplicating, procurement (purchasing/disbursing), and mail handling. It also includes general maintenance of facility and equipment, i.e., laboratory buildings, docks, ponds, tanks, equipment and supplies, vehicles, boats, and coordination of scientific efforts. It is noted that HIMB is largely an independent off-campus facility on an off-shore island and is excluded from many of the services of the Facilities Management Department.

Changes in Functional Plan - HIMB will be expanding research in Coral Biology and Fisheries in the 1987-89 Biennium. We have received new positions in Coral Biology and Aquaculture and we recently had approval, but the position hasn't been released yet, for a fish physiologist/behavioral ecologist.

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FUNCTIONAL STATEMENT
HAWAII NATURAL ENERGY INSTITUTE

The Hawaii Natural Energy Institute is responsible for providing visibility, focus, and encouragement in bringing renewable energy activities and ocean resources technology into viable systems that will:

- (1) diminish Hawaii's total dependence on imported fossil fuels,
- (2) meet the State's increasing energy demands with little or no environmental degradation,
- (2) help the State utilize its ocean resources, and
- (3) contribute to the technology base for finding solutions to the national and global energy shortage.

HNEI interacts with and supports UH faculty and staff in renewable energy and ocean resources related activities. The objectives of HNEI are carried out through:

- Administering state, federal, and private funds allocated for renewable energy and ocean resources technology research.
- Maintaining cognizance over ocean resources and renewable energy related projects campus-wide and encouraging cooperative research among academic programs and research institutes.
- Maintaining liaison with government funding agencies, industry and private foundations with energy R&D interests.
- Providing representation on appropriate state and university committees.
- Interacting with state agencies to ensure compatibility of university efforts with state goals and objectives.
- Providing the university community and the public with pertinent information on ocean resources technology and renewable energy research matters.
- Encouraging the development of institutional courses and programs on renewable energy and ocean resources.
- Providing background data information on sources of material for educational program development.
- Sponsoring graduate programs to encourage top caliber students to participate in ocean resources and renewable energy research projects leading toward theses.
- Developing national and international cooperative agreements for collaborative research efforts.

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FUNCTIONAL STATEMENT
DEPARTMENT OF GEOLOGY AND GEOPHYSICS

Chair

The Department of Geology and Geophysics is organized on the basis of a Departmental Chairman, Standing Committees, and Ad Hoc Committees, as agreed by the faculty of the Department during the reestablishment of the Department in 1971.

The Departmental Chairman presides at Departmental Meetings. Departmental policy is decided at Departmental Meetings. The agenda for these meetings is established by the Chairman in consultation with the chairmen of the standing committees.

The Departmental Chairman is responsible to the Dean of the College of Natural Sciences for the functions listed in the Faculty Handbook, and to the faculty of the department for the functions listed in its Departmental Organization. The more important functions are listed below.

- Direct the activities, curricula, and personnel of the Department of Geology and Geophysics.
- Represent the Department when asked for comment or contribution ex-officio by the University Administration, or other bodies outside the Department.
- With the advice and consent of the Graduate Work Committee (standing), whose members are elected by and from the research program in the Department: recruit, evaluate, accept, confer with, and assign advisors of new graduate students; assign study space; evaluate yearly the progress of existing students; coordinate appointments to research assistantships, teaching assistantships, and fellowships for qualified and deserving graduate students; coordinate with Hawaii Institute of Geophysics, Water Resources Research Center, other university institutes, other departments, state and federal agencies, and private companies regarding joint projects, possible employment and equipment used by graduate students; award departmental computer funds to graduate students; organize the weekly departmental seminar.
- Conduct research and make its results public. Improve professional skills. Normally most faculty members of Department of Geology and Geophysics are jointly appointed with units of Organized Research at the University; currently in September 1975 all are jointly appointed. Research functions will be listed in more detail by those units.

- Provide service to the Department by acting on its standing and ad hoc committees; to the University through committee work and special assignments; to the State of Hawaii in the manner of the Geological Surveys of the other states or as otherwise requested; to the United States as requested; to local, national, and international professional organizations as requested; provide professional services on an overload fee basis as allowed by current regulations.

Graduate Teaching Assistants, in rank 1, have these departmental functions:

- Under supervision, assist in laboratory sections of undergraduate courses; assist instructors in preparation of teaching materials, audiovisual aids, and related tasks; assist in grading examinations and counselling students in classes.

APT Personnel

None.

Civil Service Personnel

Organize and supervise operations of the Departmental Office; type, mail, and file departmental correspondence; maintain security of files, reproduced examinations, and office supplies; prepare requisitions and maintain expenditure records; maintain student and faculty records; take and forward messages; dispose of routine requests and reports; assist Chairman or committee chairmen in assembling information to respond to unusual requests; supervise student help who assist in office; as time permits, type manuscripts, grant applications, and reports of departmental faculty; other duties as requested by departmental faculty.

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FUNCTIONAL STATEMENT
DEPARTMENT OF METEOROLOGY

Chair

Directs activities, curricula and personnel in the Department which offers B.S., M.S. and Ph.D. degrees emphasizing the meteorology of the tropics.

Coordinates instructional activities.

Prepares unit's budget requests.

Reviews and makes recommendations in regard to all personnel actions involving members of the Department.

Conducts research and exercises general editorial supervision over faculty research reports and papers.

Acts as administrative liaison with the College of Arts and Sciences.

Instructional Staff

Provides instruction; conducts sponsored and unsponsored research into tropical meteorology, emphasizing cloud physics, synoptic and numerical modeling, satellite meteorology, monsoon meteorology and the meteorology of the Hawaiian Islands as related to rainfall and alternate energy resources; undertakes community and consultant service pertaining to the weather and climate of Hawaii and the Pacific basin.

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FUNCTIONAL STATEMENT
DEPARTMENT OF OCEAN ENGINEERING

Administers a balanced program of instruction and research in ocean engineering. The academic program is a graduate program and leads to the degrees of M.S. and Ph.D., but the department has responsibility for the instruction of both graduate and undergraduate courses in the field. The instructional program also involves curriculum planning and advising of students in their research. The research program consists of carrying out research in accordance with the purpose for which the proposals were funded. The research effort blends with the instructional effort in that it provides students with support through research assistantships, and it provides students with research subjects for their theses. As part of their function, faculty members serve in committees at the College and University level and participate in other service activities.

J.K.K. Look Laboratory of Oceanographic Engineering is a research and instructional laboratory that provides research facilities and services to faculty, students, and staff involved in academic research, including extramural, intramural, and/or in-house studies relating to ocean engineering. Assists state and federal agencies in solving many ocean-related problems. Educates the graduate students in all aspects of physical and mathematical modeling techniques as applied to waterways, harbors, coastal engineering, and ship hydrodynamics through an ocean hydrodynamics laboratory course and on-the-job training. Educate the public on the awareness of marine science and ocean engineering by making the Look Laboratory facilities and researchers available to study-tour groups or individuals. Provide advisory services to a variety of organizations and/or general public in the field of ocean engineering.

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FUNCTIONAL STATEMENT
DEPARTMENT OF OCEANOGRAPHY

Chair

Directs and coordinates teaching and research activities, curricula, and personnel in the Department of Oceanography. The Department is a graduate department providing instruction in biological, physical, chemical, and geological oceanography leading to the M.S. and Ph.D. degrees. Six undergraduate service courses are offered, and have a total enrollment of approximately 2,000 each year. In addition to format instructional activities, department faculty are actively involved in research supported by extramural grants. Research at present is performed in the Oceanography Department, through the Hawaii Institute of Geophysics, the Hawaii Institute of Marine Biology, and the Hawaii Natural Energy Institute. The combined research support for all oceanography for 1986 is in excess of 4.5 million dollars. These research functions are essential to graduate and undergraduate education, and provide the facilities and opportunities for thesis and dissertation research. Research is also important to the economic development of the State of Hawaii in terms of resource evaluation and environmental protection.

The Chairman coordinates instructional activities; prepares departmental budget requests; reviews and makes recommendations in regard to all personnel actions involving members of the department; and serves as contact point for the department to other Marine Programs at the University.

Instructional Staff

Provide instruction, conduct research, and undertake community service pertaining to all branches of oceanography (physical, chemical, biological, and geological). These include formal instruction, symposia, advising, and thesis research direction.

The Department of Oceanography presently has 22 graduate faculty who advise students, serve on students' committees, and serve on appropriate college and university committees.

Civil Service Personnel

Responsible for overall operation of the department office, maintain student and faculty records and assist with preparation of instructional and research materials for faculty.

The Department of Oceanography presently has only one civil service person, a Secretary II, who provides secretarial services to the department chairman in addition to servicing the graduate faculty and

the department's graduate students. Some of the other responsibilities of the secretary include: consulting with the chairperson concerning administrative matters, typing personnel forms, supervising and coordinating the work of three student helpers, answering the telephone and answering the many queries posed by students and visitors to the office.