



The University of Hawai'i at Mānoa
Proposed University Affiliated Research Center (UARC)

Introduction:

The United States Navy, in the 1990s, reaffirmed its strategic relationship and commitment to four university laboratories by designating them as University Affiliated Research Centers (UARCs) to serve as centers of excellence for critical Navy and national defense science, technology and engineering. The four designated UARCs are: the Applied Physics Laboratory (APL) at Johns Hopkins University, the Applied Research Laboratory (ARL) at the Pennsylvania State University, the Applied Physics Laboratory at the University of Washington, and the Applied Research Laboratories at the University of Texas at Austin. All four laboratories have been conducting research and development for the Navy for the last sixty years in specific areas of core competencies. The University of Hawai'i at Mānoa, was recommended as the fifth UARC of the Navy in July of 2004. The impetus for the recommendation was the growth in the quality and quantity of research at the University of Hawai'i at Mānoa that was of interest to the Navy. In Fiscal Year 2004 the University of Hawai'i received \$54 million dollars in sponsored research from the Department of Defense.

Background and Technical Information:

The UARCs operate under sole-source, multi-task Naval Sea Systems (NAVSEA) delivery order contracts to perform work primarily for Navy task sponsors. The UARCs may also conduct research for the Department of Defense and other Government agencies under the NAVSEA umbrella, for programs conducted jointly with the Navy or which have Navy relevance.

A provision of the United States Competition in Contracting Act (CICA) of 1984, as codified in 10 U.S.C. 2304(c)(3)(B), authorizes noncompetitive contracts with educational institutions where necessary to establish or maintain essential engineering, research and development capabilities. As such, The Naval Sea Systems Command (NAVSEASYS COM) contracts with the UARCs were awarded pursuant to this CICA authority. The UARC essential capabilities maintained through the NAVSEASYS COM contracts are defined as core competencies. UHM has four core competencies (described below). These core competencies are consistent with the proposed UARC Core Statements approved by the Director of Defense Research and Engineering (DDR&E).

Generally speaking, the Navy-sponsored UARCs represent a sole-source mechanism that faculty can use to fund their research within the core competencies identified at UH-Mānoa. The expertise and competency of the university to perform such research has been predetermined with the initial technical proposal. As such, our faculty will not have to write specific proposals for funding. Instead, they will respond to research requests from the Navy or any other Department of Defense sponsor which are called "task orders". Faculty will have the choice to respond to any/all task orders at their discretion. The Navy-sponsored UARCs and participating faculty can also compete for research, science and technology work through broad agency announcement (BAA) advance notices, or similar announcements of opportunity as is currently the case for many of our faculty. In addition, the UARC designation does not preclude faculty participation from existing funding mechanisms (e.g., NIH, NSF, NOAA, private foundations, state agencies, etc.).

Proposed UARC Roles:

As a UARC, our faculty will have the opportunity to perform research projects related to exploratory development, advanced development, test and evaluation in a wide variety of areas (e.g. oceanography, atmospheric science, sensor development, etc.) For example, faculty can conduct basic and applied research leading to the development of radar technologies that detect unexploded ordinance to assist the Navy in their clean-up efforts. Alternatively, the UARC may fund continued research by our faculty on echolocation in order to gain insight on the potential linkage(s) between military and commercial vessel traffic and marine mammal groundings around the world. In addition, our faculty will be uniquely positioned to organize collaborative activities and promote other linkages between Navy/DOD, other UARCs, academia, and industry.

Core Competencies:

The technical program at UH-Mānoa will emphasize fundamental and applied research, engineering design and development, and technical support to the Navy in four areas. They are, (1) fundamental and applied oceanographic research, including: marine life, mammals, bathymetry, autonomous underwater vehicles, acoustic mapping and littoral topography, buried mine detection, advanced sonar and biosonar signal processing; (2) astronomical research and development of world-class state of the art optics and sensors; (3) advanced electro optical systems, detectors, arrays and instrumentation; and (4) fundamental research and applied engineering supporting improvements in the utilization of various regions of the electromagnetic spectrum, advancements in communications, networks and protocols, and signal processing.

Proposed Organization:

We envision that the University of Hawai‘i at Mānoa (UHM) proposed UARC, could be an Organized Research Unit reporting to the Vice Chancellor for Research and Graduate Education. The UARC will be managed by an Executive Director. If the proposed UARC is approved by the Board of Regents, the Chancellor’s Office will conduct a nationwide search for the Executive Director. The Executive Director will be assisted in long-range planning and vision of the proposed UARC by an Advisory Board that consists of other deans and directors, faculty, community stakeholders, and students. As stated previously, the proposed UARC will be conducting research in four functional areas of: (a) Ocean Science and Technology (OST); (b) Astronomy (AST); (c) Advanced Electro-Optics and Sensing (AEOS); (d) Sensors, Communications, and Information Technology (SENCIT). Each functional area will be headed by a Director who will oversee the research management of the respective area. Finally a Director of Business and Administration will oversee the UARC operations.

The proposed UARC will have no dedicated building or research facilities. We will lease a small administrative space at the Mānoa Innovation Center (MIC) that will house the core administrative personnel. The administrative space lease will be paid through the direct cost rate charged across every task order executed by the proposed UARC. The UARC will leverage the research facilities of the Mānoa campus for conducting unclassified research. Currently, we foresee no classified research task orders in the near future. If classified work were to be performed under this contract, we would work with the faculty involved to use any of the Department of Defense facilities in the State or the mainland that is equipped to do so, rather than establishing another facility. Equipment and maintenance of the research facilities used

for conducting research in these facilities is built into task orders. General purpose equipment and upgrade of these facilities will be built-in the fee fund of the UARC. The proposed UARC will provide the funds for the maintenance and upgrade of the research facilities relevant to the UARC projects.

There have been significant discussions and deliberations around the UH-Mānoa campus on classified research. As these discussions are concluded, and if there are changes in existing policies regarding classified research, the administration will work with the faculty and the Board of Regents to develop/formalize UARC-related policies. These policies will protect the rights of faculty members to make a choice as to the research they decide to pursue as well as the right to refuse participation in task orders. Such policies will also address the protection of student's work, the right of faculty members to publish, share information, and appropriate governance as to what types of research university faculty will engage. The administration strongly opposes the engagement of graduate and undergraduates in classified research as a requirement for obtaining their degrees. Likewise, any research efforts that are deemed to be classified after the work commences will be moved from the UH-Mānoa campus in an expeditious manner.

Financing and Operations:

The start-up investment in the proposed UARC could be as much as \$1.5 million from RTRF funds over the next three years. The office of the Vice President of Research has committed \$500,000 and the Office of the Chancellor has committed \$1 million toward these costs. This initial investment is in line with similar investments that the campus has made in the past towards the financing and establishment of research initiatives, programs and centers that benefit the research productivity and infrastructure at the University of Hawai'i at Mānoa. The proposed UARC is expected to be financially self-supported by conducting research in the four core areas within 3 to 5 years. Significantly, all of the other four Navy UARCs are self-supported research units within their campuses and we would follow the same approach to develop a self-sustaining unit.

Research personnel participating in the proposed UARC will be comprised of faculty members, professional staff, technical staff, students and administrative staff. Faculty and staff participating in the proposed UARC will engage in research in a manner analogous to other federal contracts and grants and will be subject to the same compliance requirements. Under the umbrella of the proposed UARC both graduate and undergraduate students will be allowed to work on unclassified research task orders. The proposed UARC will also use part of its fee funds towards graduate and undergraduate fellowship and mentorship programs.

Summary:

The proposed UARC represents a unique funding opportunity for the University of Hawai'i at Mānoa. It will allow us to further enhance our research profile in areas that we have demonstrated excellence and in doing so will broaden the base of support for the research enterprise.