1. **School/College and Department/Unit:** Maui Community College (MauiCC), Science, Technology, Engineering, and Math (STEM) Department

2. **Chair/Convener of Planning Committee:** Ann Coopersmith

3. **Program Category:** X New ___Modified ___ Interdisciplinary

4a. **Degree or Certificate Proposed:** Bachelors in Applied Science in Ocean Studies (BAS-OS)

4b. **List similar degrees or certificates offered in UH System:**
   - University of Hawai`i at Hilo: BS, BA in Marine Science and BS in Forestry & Natural Resources Management: Aquaculture Specialization
   - University of Hawai`i at Manoa: BS in Marine Biology

5. **Planning**
   a. **Planning period:** Spring 2009 – Spring 2010
   
   b. **Activities to be undertaken during the planning phase:**
      - Spring 2009: Submit ATP for BAS-OS for approval to MauiCC Curriculum Committee (CC), Academic Senate (AS), and Vice Chancellor for Academic Affairs (VCAA); CCAO; and MauiCC Chancellor
      - Fall 2009
        - Submit grant proposal to RDP to hire one APT, two upper-division faculty members, and a STEM counselor
        - Develop upper-division curriculum with Dr. Judith Lemus, Hawai`i Institute of Marine Biology (HIMB)
        - Complete and evaluate needs assessment
        - Develop program proposal
      - Spring 2010
        - Submit program proposal to MauiCC CC, AS, VCAA, and Chancellor; CCAO; University of Hawai`i (UH) Administration and Board of Regents (BOR)
        - Program proposal approved by UH Administration and BOR
        - Submit request to WASC Senior to initiate accreditation of BAS-OS
        - Advertise, screen, and hire one APT, two upper-division faculty, and one STEM counselor
   
   c. **Submission date of program proposal:** Spring 2010
   
   d. **Workload/budget implications during planning period:** Curriculum development and preliminary hiring will be funded by a Rural Development Program (RDP) grant.

6. **Program Description**
   The Bachelor’s Degree in Ocean Studies (BAS-OS) Degree will offer a broad academic background in biological and physical ocean sciences and will feature directed field research experiences. The program will focus on knowledge and skills that address problems affecting the unique marine habitats and organisms of the Hawaiian archipelago with particular attention
to the sustainability of marine resources and ecosystems. Major emphasis will be on the use of current and emerging technologies as research tools.

Objectives: The BAS-OS baccalaureate degree will:
• provide a comprehensive background in ocean science literacy;
• introduce the newest technologies and skills used in marine field and laboratory research;
• raise the awareness of local and global marine environmental problems and issues incorporating inquiry, problem-based learning, and place-based learning;
• assist marine researchers working in the County of Maui by providing highly trained student interns for on-going projects;
• prepare students for careers in a variety of marine-related areas including research and project management; and
• provide opportunities for experiences in K-12 ocean science education and prepare students for articulation to teacher certification programs.

Relation to MauiCC and UH System Mission, Vision, and Strategic Plans: The proposed degree directly supports the College’s Mission, Vision, and Strategic Plan which are guided by the Native Hawaiian reverence for the ahupua`a, a practice of sustaining and sharing diverse but finite resources for the benefit of all. The mission statement is “Maui Community College is a learning-centered institution that provides affordable, high quality credit and non-credit educational opportunities to a diverse community of lifelong learners.” The College’s vision statement is “We envision a world-class college that meets current and emerging Maui County education and training needs through innovative, high quality programs offered in stimulating learning environments. Refer to Appendix A for a summary of the specific goals, objectives, and action strategies in the College’s 2003-2010 Strategic Plan that are directly related to this proposed degree.

In March 2008, the UH System Strategic Outcomes and Performance Measures were updated through 2015. This degree program will promote the goals of 1) assuring a solid return on its investment in higher education through research and training and 2) contributing to the development of a high-skilled, high-wage workforce through the establishment of new education and training programs in STEM degrees. Many of the goals of the 2002-2010 UH System strategic plan will be met through an emphasis on learning through place-based research, use of emerging learning technologies, and cooperation with other branches of the UH system. Refer to Appendix B for a list of the specific goals and objectives that will be achieved by this program.

Relation to DOE Career Pathway: The development of this degree directly supports the State Department of Education (DOE) Career Pathway in Natural Resources which serves to guide career exploration and planning activities, to focus teaching and learning, and to link education with relevant real-world experiential activities.

Program Requirements: Counseling and recruitment will begin once the program is approved. Upper-division courses should begin in fall 2011. For a summary of program requirements, refer to Appendix C which includes 1) program admission requirements, 2) program degree requirements, 3) recommended course sequence, and 4) a summary of how the program admission requirements satisfy some of the requirements for the MauiCC AA Degree in Liberal Arts.
**Input to Program:** Students may enter the BAS-OS program from a number of different pathways. In addition to those students focused on earning an AA Degree in Liberal Arts, there may be other MauiCC students interested in this program who are enrolled in General Education courses without a degree plan. Many local people who are employed in the marine-related workforce have expressed an interest in a baccalaureate degree for promotion, while others are interested in available positions that require a baccalaureate degree as a minimum qualification. This program should also attract transfer students from within the UH System as well as from out-of-state and possibly from other countries.

**Output from Program:** Appendix D lists links to many marine-related jobs available from August 2008 to March 2009 with governmental agencies, non-profit organizations, research institutes, and non-formal education institutions in the county, state, and Pacific Island Nations. A recent search of the well-known conservation job postings at Hawai‘i Ecosystems at Risk (HEAR) lists several positions available for graduates with this type of credential, for example, 1) Outreach Project Coordinator with the National Ocean Service at Papahanaumokuakea Marine National Monument (PMNM) and 2) Coral Reef/Marine Debris Field Technician with the School of Ocean and Earth Science and Technology (SOEST) and the Joint Institute for Marine and Atmospheric Research (JIMAR).

Appendix E provides an overview of agencies, non-profits, and some businesses where former and current students of MauiCC have found employment in Maui County. Many of these are the direct result of success research assistant positions, service-learning experiences, and internships.

In 2008 the Hawaii Science & Technology Council (HIScitech) published a report on the future of high technology industries in Hawaii. Table 1, includes data from this report focusing on marine-related industries. Ocean science is among those industries with a higher than average projected annual growth rate through 2017 as the graduates of this program will be entering the job market.

**Table 1: Selected Technology Industry Job Projections for Hawaii**


<table>
<thead>
<tr>
<th>Industries</th>
<th>Annual Growth Rate 2002-07</th>
<th>Number Employed 2007</th>
<th>Projected Annual Growth Rate 2007-17</th>
<th>Number of New Jobs 2007-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Technology Industries</td>
<td>2.9%</td>
<td>31,106</td>
<td>1.9%</td>
<td>5,910</td>
</tr>
<tr>
<td>Private Sector</td>
<td>3.3%</td>
<td>23,985</td>
<td>0.9%</td>
<td>717</td>
</tr>
<tr>
<td>Public Sector</td>
<td>1.8%</td>
<td>7,121</td>
<td>0.7%</td>
<td>841</td>
</tr>
<tr>
<td>Agriculture biotechnology including aquaculture</td>
<td>6.4%</td>
<td>4,833</td>
<td>3.2%</td>
<td>1,546</td>
</tr>
<tr>
<td>Bio/life sciences, except agricultural biotechnology</td>
<td>2.3%</td>
<td>7,970</td>
<td>0.9%</td>
<td>717</td>
</tr>
<tr>
<td>Engineering and professional and technical services</td>
<td>3.8%</td>
<td>12,019</td>
<td>0.7%</td>
<td>841</td>
</tr>
<tr>
<td>Environmental</td>
<td>4.0%</td>
<td>8,593</td>
<td>1.7%</td>
<td>1,460</td>
</tr>
<tr>
<td>Ocean sciences</td>
<td>5.2%</td>
<td>5,288</td>
<td>2.6%</td>
<td>1,374</td>
</tr>
<tr>
<td>Renewable energy</td>
<td>8.4%</td>
<td>3,587</td>
<td>2.8%</td>
<td>1,004</td>
</tr>
</tbody>
</table>

One of the upper-division courses planned for this program is “Communicating Ocean Sciences” which includes hands-on, inquiry-based teaching experiences in local schools. As a
result of these experiences, some graduates of the BAS-OS Program may choose to teach and could easily continue on to one of the credential programs offered by the UH College of Education located at the MauiCC University Center. With this BAS degree and the educational experiences with younger students, they will be qualified to take the subject area tests for admission to the post-baccalaureate teacher certification program in secondary science education. Data in Table 2 indicates that secondary education has a projected growth rate of 11.8% in Maui County for the 10-year period ending in 2014.

Table 2: Education Industry Job Projections for Hawaii and Maui County

<table>
<thead>
<tr>
<th>Source: HireNetHawaii (<a href="http://www.hirenethawaii.com/">http://www.hirenethawaii.com/</a>)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
</tr>
<tr>
<td>Employed</td>
</tr>
<tr>
<td>Education Industry Subsectors in the State of Hawaii</td>
</tr>
<tr>
<td>High Demand Jobs in Maui County</td>
</tr>
<tr>
<td>Secondary School Teachers, Except Special &amp; Vocational Ed</td>
</tr>
<tr>
<td>Elementary School Teachers, Except Special Ed</td>
</tr>
</tbody>
</table>

Appendix F includes a table that lists current employment data and projected growth rates for selected scientific, educational, and marine-related occupations in Hawaii. Many of these relate directly to training in the BAS-OS Program, while others jobs might provide practical experiences and employment for students while in the program and could lead to supervisory or management positions.

Other graduates might be more research-oriented and may plan to transfer to post-baccalaureate graduate degree programs at any number of research institutions such as HIMB, JIAMR, and SOEST at UH-Manoa.

**Assessment:** A variety of student assessment strategies will be used. A six-credit senior experimental research project will be carried out and summarized in a written scientific research report and a formal oral presentation. All students in the degree program will be required to maintain portfolios of their upper-division course work, project and internship reports, field notes, data analyses and summaries, research papers, selected readings, directed studies materials, service-learning journals, web pages and other media presentations, instructors’ and supervisors’ evaluations, and other pertinent materials.

7. **Program Justification**

The tide is turning in the State of Hawai`i in the area of conservation, protection, and management of the unique and highly threatened natural resources. The college needs to be prepared to supply a well-educated and experienced workforce to meet the new demands.

**Internal:** Each year at MauiCC there is a minimum of 150 students enrolled in marine courses with at least 20 of these students placed in research assistantships, internships, and service-learning positions. Often these students express a desire to continue working in these areas as careers. Unfortunately, many of them are not able to afford to leave their homes and families on Maui to pursue advanced degrees and consequently are unable to accept positions in their area of
interest and experience. Once this new degree is available, our graduates will form a homegrown corps of researchers, managers, directors, educators, and policy planners.

Several years ago, MauiCC was fortunate to have had a cadre of students obtain their BS degrees in Marine Science from UH-Hilo. Students continually ask when this opportunity will be available again. Unfortunately, the UH-Hilo faculty made it clear that this was a one-time experience and will not be offered to MauiCC students again.

Refer to #8. c. for information on role of the new MauiCC Science Building in this program.

External: At the most recent Hawai‘i Conservation Biology Conference on Oahu, MauiCC Marine Option Program (MOP) Coordinator, Donna Brown, was approached by Dr. Paul Jokiel, who is the leading coral reef ecology researcher at HIMB, to discuss the critical need for additional research interns and assistants for on-going scientific marine research projects in Maui County. One of the most important coral reef habitat protection projects is survey of the herbivorous fishes on nearshore reefs — which needs continual on-site data collection. In a recent visit to MauiCC, HIMB Director, Dr. Jo-Ann Leong, made a commitment to allow MauiCC to provide research assistants to support the institute researchers working in Maui County. MauiCC also has a memorandum of agreement with the Pacific Region of the National Marine Sanctuaries (NMS) to place our students in research assistantships. In addition to placement in Hawai‘i there is a possibility of NMS internships in American Samoa and at the national office in Washington DC. Refer to Appendix G for a copy of the agreement.

Other groups of MauiCC students assist researcher, Dr. Celia Smith, UH-M Department of Botany, and her graduate researchers with field projects on invasive algae. Another of our MauiCC students is conducting a study for the National Marine Fisheries entitled “Fish Catch, By-Catch, and Protected Species Interaction with Recreational and Commercial Fisheries on the Main Hawaiian Islands”. Students regularly assist with the following on-going research and restoration projects, and all of these could support upper-division research projects

- underwater baseline studies for the Kaho‘olawe Island Reserve Commission,
- Turtle Standing Network and other research with the National Marine Fisheries,
- invasive species surveys for the Kealia Pond National Wildlife Refuge,
- coral reef technicians with the Division of Aquatic Resources,
- beach erosion research and replenishment projects, and
- Waihe‘e limu restoration project with the Maui Coastal Land Trust.

There are exciting new directions in the use and design of marine technologies, such as the use of underwater robotic devices to collect data. Local DOE schools have been very active in robotics and quite successful at national competitions. Other local research projects that the students and the community express interest in include: underwater acoustics and effects on marine organisms; commercial and recreational fisheries stock replenishment and sustainability; whale and other marine mammal communication, migration, and behavioral studies; energy from a variety of physical ocean sources such as waves, tides, and ocean thermal variations; aquaculture and use of algae as a source of carbon-based fuel; the causes of the degradation of marine habitats, particularly coral reefs and beaches, and possible solutions; studies of threatened and endangered species, such as marine turtles and Hawaiian monk seals; use and restoration of Hawaiian fishponds; traditional fishing practices and environmental knowledge; and aquaculture of marine ornamental aquarium fish, edible fish, lobsters, shrimp, oysters, opihi (limpets), and limu (algae).
8. Description of resources required
   a. **Faculty:** *Existing:* Two FTE faculty members teach lower-division courses in Biology, Chemistry, Ecology, Marine Biology, and Physics and there is a temporary part-time instructor who teaches Oceanography and is the Marine Option Program Coordinator. *New:* Two FTE faculty members will be hired to teach upper-division courses: one would specialize in physical oceanography and technology and the other in biology and ecology. Both instructors will supervise and evaluate directed research and internships, directed studies, and the senior research projects.

   b. **Library resources:** A thorough search will be carried out to determine if the library has access to the most commonly used scientific journals for articles in marine-related research. Subscriptions will be needed for any journals that are not available. Additional reference materials will be needed to support specific upper-division courses and directed studies.

   c. **Physical resources:** The State Legislature recently appropriated $25 million to build a new science building on the MauiCC campus. Included in this plan is a dedicated space for Marine Science Programs. The current microbiology laboratory will be available as community research facilities and may accommodate project partners. Additional supplies, computer hardware and software, and laboratory equipment will need to be purchased to assure that the new laboratories will have the most up-to-date technologies available.

   d. **Other resources required:** An Applied Professional Technician (APT) position (Band B - Instructional & Student Supervisor) will be needed to support the coordination of the field research project assistants, internships, the Marine Option Program. A counselor will be needed to work with the students enrolling in the STEM Department BAS programs and this cost will be shared among the four STEM baccalaureate degree programs being proposed.

9. Five-Year Business Plan. Provide a five-year projected budget for the program that includes:
   a. **Annual costs to implement the program:** Refer to Mini Cost Revenue Template

   b. **Projected enrollment and estimated tuition revenue:** Refer to Mini Cost Revenue Template

   c. **How will the program be funded?** Initially, funds will be provided from grants through the RDP to hire a curriculum consultant, two upper-division faculty, and one APT, and to purchase equipment for the marine laboratory in the new science building. Proposals will be submitted for NSF grants focused on undergraduate research programs and to NOAA for placed-based education programs. MauiCC will be an active member of the new NSF-funded Center for Ocean Science Educations Excellence – Hawai`i which will provide the UH-System with $2.5 million per year for a minimum of three years.

   d. **Does the current or proposed budget (Department/College/Campus) include funds or a request for funds for the proposed program?** Yes

   e. **Given a “flat budget” situation, how will the proposed program be funded?** Tuition revenues will support the program.
f. Mini Cost Revenue Template

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM COSTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty w/o fringe</td>
<td>$128,594</td>
<td>$133,738</td>
<td>$139,087</td>
<td>$144,650</td>
<td>$150,463</td>
</tr>
<tr>
<td>Other personnel costs w/o fringe</td>
<td>$61,667</td>
<td>$64,373</td>
<td>$68,520</td>
<td>$71,260</td>
<td>$74,111</td>
</tr>
<tr>
<td>Library</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>Equipment/Supplies</td>
<td>$50,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
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<tr>
<td>Other</td>
<td>$18,700</td>
<td>$15,700</td>
<td>$23,200</td>
<td>$10,000</td>
<td>$10,000</td>
</tr>
<tr>
<td>TOTAL Expenses</td>
<td>$133,594</td>
<td>$138,738</td>
<td>$144,087</td>
<td>$149,650</td>
<td>$155,463</td>
</tr>
<tr>
<td>REVENUES</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Projected Enrollment</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>No. of Courses</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
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<tr>
<td>No. of Credits</td>
<td>16</td>
<td>18</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>SSH</td>
<td>640</td>
<td>810</td>
<td>1050</td>
<td>1050</td>
<td>1050</td>
</tr>
<tr>
<td>Tuition Rate/Credit</td>
<td>$318</td>
<td>$318</td>
<td>$318</td>
<td>$318</td>
<td>$318</td>
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<tr>
<td>Total Revenue from Tuition</td>
<td>$203,520</td>
<td>$255,580</td>
<td>$333,900</td>
<td>$333,900</td>
<td>$333,900</td>
</tr>
<tr>
<td>Other Sources of Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL Revenues</td>
<td>$203,520</td>
<td>$255,580</td>
<td>$333,900</td>
<td>$333,900</td>
<td>$333,900</td>
</tr>
</tbody>
</table>

10. Impact on current courses or programs. The BAS Degree in Ocean Studies Program will have a positive impact on enrollment in science courses such as College Physics and Introductory Biology, which are lower-division prerequisites for admission.

11. If this program is multidisciplinary, provide evidence of commitment for support from the colleges, departments, programs, and/or individuals expected to participate. Even though the majority of the science courses will be offered through the STEM unit, additional upper-division General Education courses will be required, several of which are currently offered through the ABIT Program. Additional courses that relate to specifically to ocean studies are proposed in Communications and Hawaiian Studies.
Reviewed by:

**Campus Chief Academic Officer:**
Comments and Recommendations:

<table>
<thead>
<tr>
<th>Print Name</th>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>Suzette Robinson</td>
<td></td>
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**Council of Chief Academic Officers (Systemwide Consultation):**
Comments/Recommendations:

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**Chancellor:** ___ Approved ___ Disapproved

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<thead>
<tr>
<th>Print Name</th>
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</thead>
<tbody>
<tr>
<td>Clyde Sakamoto</td>
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</tr>
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Appendix A
Goals, objectives, and action strategies of the Maun Community College’s 2003-2010

Strategic Plan supported by the proposed BAS Degree in Ocean Studies

The following goals, objectives, and action strategies of the College’s 2003-2010 Strategic Plan are directly supported by the proposed BAS Degree in Ocean Studies.

Goal 1 - Educational Effectiveness and Student Success: Embrace a culture of excellence and performance as the hallmarks of effective student learning and success.

Objective 1: Achieve a shared institutional culture that makes student learning and success the responsibility of all.

Action Strategies
2. Provide instructional methods, technologies, materials, facilities, and academic support services that accommodate students of varied learning styles, backgrounds, interests, and abilities.
4. Engage students in active learning.

Goal 2 - A Learning, Applied Research, and Service Network: Engage in intellectual and educational activities that enable the county of Maui and the state of Hawai`i to flourish.

Objective 1: Support the county and state economy and workforce development.

Action Strategies
2. Expand training and workforce development programs.
10. Facilitate dialogue and discussion with business and community partners to better serve workforce needs.
11. Determine the need for emerging specializations in the workplace; create partnerships between college and community representatives to address new program initiatives.
14. Partner with the community to identify educational and training needs and to determine how the College can best meet those needs.

Objective 2: Provide access for students, faculty, and staff to a first-class information technology infrastructure, support, and services that sustain and enhance instruction, applied research, and administrative services.

Action Strategies
5. Become the primary provider of workforce development and technology training programs in Maui County.

Objective 3: Practice applied research for the discovery of knowledge.

Action Strategies
1. Promote applied research through collaboration across disciplines.
2. Develop, implement, and support new applied research programs.
Appendix B
SERVING THE STATE OF HAWAI‘I:
University of Hawai‘i System Strategic Outcomes and
(http://www.hawaii.edu/ovppp/uhplan/)

Specific strategies supported by the proposed BAS Degree in Ocean Studies

Economic Contribution
Contribute to the state’s economy and provide a solid return on its investment in higher education through research and training.

Contribute to the development of a high-skilled, high-wage workforce through the establishment of new education and training programs that lead to employment in emerging fields identified as innovative and knowledge-intensive opportunities.

Globally Competitive Workforce
To address critical workforce shortages and prepare students (undergraduate, graduate, and professional) for effective engagement and leadership in a globally environment

Increase by 3% per year degrees/certificates awarded in Science, Technology, Engineering, and Math (STEM).
Appendix B
UNIVERSITY OF HAWAII SYSTEM STRATEGIC PLAN:
Entering the University’s Second Century, 2002–2010

Specific strategies supported by the proposed BAS Degree in Ocean Studies

Goal 1: Educational Effectiveness and Student Success: Embrace a culture of excellence and performance as the hallmarks of effective learning and student success.

Objective 1: To achieve a shared institutional culture that makes student learning and success the responsibility of all.

Action Strategies:
* Design and implement an effective enrollment management plan to improve the entry, retention, and success of diverse student populations, especially Native Hawaiians and underrepresented ethnic groups. Ensure that students experience a transforming education by:
  o Engaging students in active learning.
  o Using technology to support learning.
* Enhance the involvement of undergraduate students in the creation and transfer of knowledge through:
  o Research-intensive courses.
  o Student research opportunities and related employment.
  o Service learning opportunities.
* Enhance the student experience by implementing:
  o Community service opportunities and career networks.
  o Learning communities that connect students to one another.

Objective 2: To achieve a shared institutional culture that treasures diversity and inclusion, honors collegiality, and continuously strives for exceptional performance.

Action Strategies
* Continue to give admission preference to qualified residents, increase and support the participation of underrepresented populations throughout the system, and actively recruit non-resident students.

Goal 2: A Learning, Research, and Service Network: Engage diverse elements of the UH system in intellectual capital formation that enables Hawaii to flourish.

Objective 1: To excel in basic and applied research for the discovery and dissemination of new knowledge.

Action Strategies
* Assume leadership in knowledge creation by building on existing research strengths, addressing critical gaps, and capitalizing on Hawaii’s natural advantages.
* Promote research through collaboration across disciplines, among campuses, and with international colleagues.
* Provide administrative leadership, support, and infrastructure to facilitate research and training across the system.
* Strengthen library resources and enhance the system-wide digital library service with additional electronic system-wide databases.

Objective 2: To support Hawaii’s economy, workforce development, and improved access and flow of education in Hawaii from preschool through a lifetime of learning by building partnerships within the University and with other public and private educational, governmental, and business institutions.
Action Strategies
* Foster and maintain a working partnership that focuses on public education (P–20),
teacher education, Hawaiian language and culture education, student preparation, and
lifelong learning, beginning with a State Department of Education/University of Hawaii
summit.
* Expand the UH research enterprise, including appropriate commercialization, provide
more technology employment, and facilitate technology education.
* Expand training and workforce development programs in coordination with state and
industry economic initiatives.
* Emphasize liberal arts education as the foundation for an educated
community and competent workforce.
* Recognize and support the application of UH research and scholarship in service to
Hawaii, the nation, and the world.
* Cooperate, as appropriate, with other higher education institutions in
Hawaii to provide high quality educational services to the state.
* Develop standards and criteria for awarding credit for learning outside of formal school
organizations.

Objective 3: To provide access for students, faculty, and staff to a first-class information
technology infrastructure, support, and services that sustain and enhance University instruction,
research, and administrative services within the University, throughout Hawaii, and beyond.

Action Strategies
* Maintain and continually fund basic technology infrastructure, training,
and support that improve the efficiency and effectiveness of the entire University
community.
* Mainstream institutional response to distance learning and ensure that all
professional development and support for technology-enhanced teaching, learning, and
student services are integrated to benefit campus-based instruction as well as distance
learning.
* Coordinate and facilitate high quality distance learning through a system-wide distance
learning council made up of representatives and leaders from the constituencies that
provide instruction and support; use grass-roots task forces to leverage the expertise and
experience within the system.
* Engage, develop, and support the University’s entire faculty and staff to create a
pervasive, technology-rich instructional environment that serves on-campus and off-
campus learners through intercampus sharing of experiences, application showcases, and
collaborative development activities that demonstrate how technology can improve
student-learning outcomes across the curriculum.

Objective 2: To strengthen the crucial role that the University of Hawaii system performs for the
indigenous people and general population of Hawaii by actively preserving and perpetuating
Hawaiian culture, language, and values.

Action Strategies
* Provide positive system-wide executive support in the development, implementation,
and improvement of programs and services for Native Hawaiians; solicit consultation
from Pukoa, the system-wide council of Native Hawaiian faculty, staff, and students.
* Promote the use of the Hawaiian language within the University system, as appropriate
and consistent with the Hawaii State Constitution.
* Encourage Native Hawaiians to practice their language, culture, and traditions throughout the University system and provide Hawaiian environments and facilities for such activities.

Goal 4: Investment in Faculty, Staff, Students, and Their Environment: Recognize and invest in human resources as the key to success and provide them with an inspiring work environment.

Objective 1: To create a University culture of excellence by recruiting, rewarding, and empowering top-performing faculty and staff and to foster a spirit of joint enterprise and appreciation for all University employees, including graduate assistants and student employees.

   Action Strategies
   * Establish competitive and equitable faculty workloads that encompass teaching, research, scholarship, and service to the University and community at large.
   * Ensure that the University’s teaching, research, and service enterprises are supported by adequate levels of high quality support staff and resources.
   * Create cross-campus teams, including students, to define excellence and enhance communication in the domain of faculty and staff performance.

Objective 2: To create positive, healthful, resource efficient, and sustainable physical environments on the campuses of the University that enhance the psychological well-being of the students, employees, and community members.

   Action Strategies
   * Partner with the communities surrounding UH campuses to extend campus life into those communities in ways that add vitality to both campus and community.
Appendix C

Admission Requirements for the
Bachelors in Applied Science Degree in Ocean Studies

1. A student may apply for admission to the BAS-OS program upon successful completion of one of the following admission requirements:
   a. Completion of an AA or AS degree from an accredited institution with a cumulative GPA of 2.5 or higher in all courses attempted, or
   b. completion of an AAS degree from an accredited institution that includes 45 or more transferable semester credits with a cumulative GPA of 2.5 or higher in all courses attempted, and

   Completion of the following course requirements with grade C or better:
   - Biology 171, 171L, 172, 172L
   - Chemistry 161, 161L, 162, 162L
   - English 210
   - Mathematics 140 or higher
   - Oceanography 210, 210L
   - Physics 151, 152
   - Zoology 200

2. A student may apply for admission as a provisional student in the BAS-OS program upon successful completion of the following admission requirements:
   a. Completion of 45 or more transferable credits from an accredited institution with a cumulative GPA of 2.5 or higher in all courses attempted and completion for the pre-BAS-OS course requirements outlined in 1.b. and
   b. Approval of the BAS-OS Committee.
Appendix C
Program Requirements for the
BAS Degree in Ocean Studies - total 60 credits

Required Courses
- Introduction to Ocean Studies (1)
- Marine Instrumentation (2)
- Directed Research & Internship (6)
- Senior Research Project (6)
- Invertebrate Zoology (3)
- Ichthyology (3)
- Marine Phycology (3)
- Marine Ecology (3)
- Chemical Oceanography (3)
- Physical Oceanography (3)
- Geological Oceanography (3)

Specialization in Natural Sciences (9)
- Conservation Biology & Resource Management (3)
- GIS/GPS in Marine Field Studies (3)
- Marine Biotechnology (3)
- Marine Mammals & Reptiles (3)
- Marine Microbiology (3)
- Marine Plankton (3)

General Education (15)
- English 310 (3)*
- Communications 459 (3)*
- Communications 301 Communicating Ocean Sciences or 302 Communicating Ocean Sciences for Informal Audiences (3)
- Philosophy 323 (3)*
- Humanities 400 (3)* or Hawaiian Studies 400-level (3) [Malama I Ke Kai – proposed course]

* = courses currently offered at MauiCC
Appendix C
Recommended Sequence for the BAS Degree in Ocean Studies
College Catalog Information

Upper division requirements for Bachelor of Applied Science (BAS) Degree in Ocean Studies: 60 credits
Biology 303(3), 304(3), 402(3), 424(3)  
Oceanography 301(1), 302(2), 351(3), 361(3), 393v(6), 401(3), 493v(6)  
Communications 301 or 302, and 459,  
English 310  
Philosophy 323  
Humanities 400(3) or Hawaiian Studies 401(3)  

Full-time students would take courses in this sequence

<table>
<thead>
<tr>
<th>Junior Year (Fall)</th>
<th>Credits</th>
<th>Junior Year (Spring)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCN 301 Introduction to Ocean Studies</td>
<td>1</td>
<td>OCN 393v Directed Research &amp; Internship</td>
<td>3</td>
</tr>
<tr>
<td>OCN 302 Marine Instrumentation</td>
<td>2</td>
<td>COM 301 Communicating Ocean Sciences</td>
<td>3</td>
</tr>
<tr>
<td>OCN 393v Directed Research &amp; Internship</td>
<td>3</td>
<td>or COM 302 Communicating Ocean Sciences for Informal Audiences</td>
<td>3</td>
</tr>
<tr>
<td>OCN 361 Chemical Oceanography</td>
<td>3</td>
<td>BIOL 304 Ichthyology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 303 Invertebrate Zoology</td>
<td>3</td>
<td>OCN 351 Physical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>ENG 310 Research and Writing</td>
<td>3</td>
<td>PHIL 323 Professional Ethics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year (Fall)</th>
<th>Credits</th>
<th>Senior Year (Spring)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCN 493v Senior Research Project</td>
<td>3</td>
<td>OCN 493v Senior Research Project</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 402 Marine Phycology</td>
<td>3</td>
<td>BIOL 324 Marine Ecology</td>
<td>3</td>
</tr>
<tr>
<td>OCN 401 Geological Oceanography</td>
<td>3</td>
<td>HUM 400 Changes &amp; Choices</td>
<td>3</td>
</tr>
<tr>
<td>Specialization electives</td>
<td>6</td>
<td>or HWST 401 Malama I Ke Kai</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>COM 459 Intercultural Communications II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specialization elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
Appendix C
Recommendations for courses to fulfill the MauiCC AA Degree in Liberal Arts
including all those required for admission to the Bachelors in Applied Sciences in Ocean Studies (BAS-OS) - total 71 credits

* Indicates courses required for admission to the BAS-OS Program
** = Prerequisites for courses required for admission to BOS-OS
NOTE: 11 additional credits are required beyond the minimum 60 credits for the AA degree

Category I: Foundations/Skills
Foundations I
- English Communication (3): English 100(3)**
- Global and Multicultural Perspectives (6): Choose two from courses listed
- Symbolic Reasoning (3): Mathematics 140 or higher (3)*
Foundations II
- Numeracy (3): Chemistry 161(3)*
- Oral Communication in English (3): Communications 210(3) recommended
- Computer/Information Processing and Retrieval: ICS 101(3)

Category II: Breadth of Understanding & Experience
Human Understanding (9)
- The Individual (3): Biology 151(3) recommended
- The Community (6): Economics 130(3) recommended
  Choose another from courses listed for Global Perspective
Human Expression (6): Hawaiian Studies 262 or 270 recommended
Environmental Awareness (7): Oceanography 201(3)*, Physics 151(4)*
  Oceanography 201 recommended for Global Perspective
Asian/Pacific Perspective (3): Hawaiian Studies 107(3) recommended

Category III: Focus/Specialization/Area of Interest
Area of Interest (6): Biology 171(3)*, 172(3)*;
Electives (8-11): Biology 171L(1)*, 172L(1); Chemistry 161L(1)*, 162/162L(4)*; English 210(3)*,
  Oceanography 201L(1)*; Physics 152(4)*; and Zoology 200(4)*

Other Graduation Requirements
Writing Intensive (6 credits in courses taken)
Science Lab: satisfied by all of the following Biology 171L*, 172L*; Chemistry 161L*,162L*;
  Physics 151*,152*; Oceanography 201L*, and Zoology 200*
Hawai`i Emphasis (1 course): Hawaiian Studies 262 or 270 recommended
Appendix C
Categories of the MauiCC AA Degree in Liberal Arts fulfilled by the required courses for the Bachelors in Applied Sciences in Ocean Studies (BAS-OS)

AI = Area of Interest
EA = Environmental Awareness
E = Elective
GP = Global Perspective
N = Numeracy
SL = Science Lab
SR = Symbolic Reasoning

Biology 171(3), 172(3) – EA; AI or E
Biology 171L(1), 172L(1) – EA; AI or E; SL
Chemistry 161(3), 162(3) – N; AI or E
Chemistry 161L(1) & 162L(1) – N; AI or E; SL
Mathematics 140(3) or higher – SR; N
Oceanography 210(3) – EA, EA GP; AI or E
Oceanography 210L(1) EA; AI or E; SL
Physics 151(4) – N; EA; AI or E; SL
Physics 152(4) – N; EA; AI or E; SL
Zoology 200(4) – EA; AI or E; SL

Recommendations for students who have taken many of the prerequisites and choose not to continue on to the BAS-OS Program

* Indicates courses required for admission to BAS-OS
** = Perquisites for courses required for admission to BOS-OS

Category I
Foundations I
   English Communication (3) – English 100 (3)**
   Symbolic Reasoning (3) – Mathematics 103(3)**, or 135(3)**, or 140(3)* or higher
Foundations II, Numeracy – Chemistry 161(3)*

Category II
Environmental Awareness – Oceanography 210(3)*, Physics 151(4)*
   Global Perspective – Oceanography 210(3)*

Category III
Area of Interest – Biology 171(3)* and 172(3)*
Electives – Biology 171L(1)*, 172L(1)*; Chemistry 161L(1)*; Oceanography 201L(1)*; Zoology 200(4)*
Science Laboratory – Biology 171*, 172*; Chemistry 161*; Physics 151*; Oceanography 201L(1)*; or Zoology 200*
Appendix D
Employment Opportunities, August 2008 – March 2009

Bishop Museum Human Resources
http://www.bishopmuseum.org/hr/employment.html

Hawai`i Ecosystems at Risk, Conservation job announcements
http://www.hear.org/announcements/jobs.htm

Job Hunt (selected jobs available in Hawaii)
http://www.job-hunt.org/

State of Hawai`i, Department of Human Resources
http://agency.governmentjobs.com/hawaii/default.cfm
Specific job listings
1. Natural Area Reserves Specialist II
   http://agency.governmentjobs.com/hawaii/default.cfm?action=viewjob
2. Aquaculture Development Program Manager
   http://agency.governmentjobs.com/hawaii/job_bulletin.cfm?JobID=109012

RCUH
JIMAR PIFSC Marine Ecosystems Research Specialist

RCUH & Government of American Samoa
Marine Protected Area Network Specialist
http://www.crag.as/

NOAA
Mortality Mitigation Position in Hawaiian Monk Seal Research Program

NOAA, & Pacific Risk Management `Ohana (PRiMO)
Coastal Hazards Assistant
www.tbgroupconsultants.com

The Nature Consevancy
Community Project Monitoring Coordinator

Trust for Public Lands, Jobs
Hawaii Native Lands Program Coordinator
http://www.tpl.org/tier2_cl.cfm?folder_id=17620:

University of Hawaii – Hawai`i Institute of Marine Biology
Marine Biology/Fisheries Paid Undergraduate Internship

Sea Grant
Hanauma Bay
Educational Assistant
Volunteer Coordinator
Sea Grant Marine Careers
http://www.marinecareers.net/links_jobsearch.php
Job Resources at Marine Technology Society
   http://www.mtsociety.org/careers/?fa=resources

US National Park Service
   Marine Biology Technician
   http://jobsearch.usajobs.gov/ftva.asp?seeker=1&JobID=76289596

American Samoa Coastal Management Program, Resource Division of the Department of Commerce
   The Environmental Planner

School of Ocean and Earth Science and Technology, University of Hawaii
   HiOOS Data System Administrator, www.rcuh.com (ID# 28585)

University of Hawai‘i – Waikiki Aquarium
   Director of Education
   http://workatu.hawaii.edu/zoom_job.php?10305 (position number 81077)

State of Hawai‘i, DLNR, Aquatic Resources Division
   Northwestern Hawaiian Islands Monument Research Coordinator, Position #99015C
   Northwestern Hawaiian Islands Monument Policy Specialist, Position #99016C
Appendix E
Local marine-related institutions, agencies, non-profit organizations, and businesses that utilize MauiCC research assistants, interns, and Service-Learning students

County of Maui,
  Department of Water Supply *
  Planning Department
Dolphin Quest
Haleakala Ranch *
Hawai`i Nature Center *
Hawai`i Source Education Outreach Program (aka Maui Digital Bus) *
Hawai`i Wildlife Fund
Hawaiian Islands Humpback Whale National Marine Sanctuary *
Ho`ike o Haleakala *
Lahaina Divers *
Maui Dive Shop *
Maui Invasive Species Committee (MISC) *
Maui Land & Pineapple Company *
Maui Nui Botanical Garden *
Maui Ocean Center *
National Marine Fisheries *
Pacific Disaster Center
Pacific Whale Foundation *
Papahanaumokuakea Marine National Monument
Reef Environmental Education Foundation (REEF)
Ritz-Carlton Ocean Ambassador Program *
Project S.E.A.-Link *
State of Hawai`i
  Department of Education, elementary, middle school, and high-school sciences *
  Department of Land & Natural Resources, Division of Conservation & Enforcement *
  Department of Land & Natural Resources, Division of Aquatic Resources *
  Department of Land & Natural Resources, Natural Area Reserve System *
The Nature Conservancy *
Trilogy *
US Fish & Wildlife Service
US National Wildlife Refuge at Kealia Pond *
US Parks Department, Haleakala National Park *
University of Hawai`i
  Department of Botany *
  Hawai`i Institute of Marine Biology
  Sea Grant Extension Service *

* Have hired former and current MauiCC students
### Appendix F

Industry Subsectors, Occupations, and Jobs in Hawaii

Current Status and Projections: Source O*NET (http://online.onetcenter.org)

<table>
<thead>
<tr>
<th>Industry Subsectors in Hawaii</th>
<th>2005 Jobs Available</th>
<th>Current Employers</th>
<th>Current Growth Rate</th>
<th>Projected Growth Rate</th>
<th>Projected Number</th>
<th>Percentage of Jobs in Hawaii</th>
<th>2002-12</th>
<th>2002-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration of Environmental Quality Programs</td>
<td>N/A</td>
<td>185</td>
<td>80</td>
<td>6.4%</td>
<td>slower</td>
<td>1,420</td>
<td>14.3%</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>12,710</td>
<td>267</td>
<td>1474</td>
<td>18.8%</td>
<td>faster</td>
<td>9,530</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Museums, Parks, Historical Sites</td>
<td>1,468</td>
<td>9</td>
<td>236</td>
<td>20.9%</td>
<td>faster</td>
<td>270</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>22,903</td>
<td>186</td>
<td>5,340</td>
<td>18.0%</td>
<td>faster</td>
<td>3,970</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Transportation</td>
<td>3,362</td>
<td>38</td>
<td>8</td>
<td>29.3%</td>
<td>much faster</td>
<td>1,940</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jobs Current Available</th>
<th>2006 Jobs Available</th>
<th>In Hawaii</th>
<th>Current In Demand</th>
<th>Projected Growth Rate</th>
<th>Projected Number</th>
<th>Percentage of Jobs Available In U.S.</th>
<th>2006-16</th>
<th>2006-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amusement &amp; Recreation Attendants</td>
<td>1,310</td>
<td>80</td>
<td>(9%) 24%</td>
<td>much faster</td>
<td>1,430</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological Technicians</td>
<td>720</td>
<td>30</td>
<td>x</td>
<td>16%</td>
<td>faster</td>
<td>780</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biologist</td>
<td>340</td>
<td></td>
<td>7-13%</td>
<td>average</td>
<td>340</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cartographers and Photogrammetrists</td>
<td>60</td>
<td>x</td>
<td>20%</td>
<td>faster</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemist</td>
<td>160</td>
<td>x</td>
<td>7-13%</td>
<td>average</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial Divers</td>
<td>50</td>
<td></td>
<td>14-20%</td>
<td>faster</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Conservation Scientist</td>
<td>120</td>
<td></td>
<td>13-17%</td>
<td>average</td>
<td>140</td>
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<td></td>
<td></td>
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<tr>
<td>Education Administrators (Elem, Sec)</td>
<td>1,210</td>
<td>40</td>
<td>7-13%</td>
<td>average</td>
<td>1,300</td>
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<tr>
<td>Elementary Teacher</td>
<td>6,770</td>
<td>240</td>
<td>x</td>
<td>(14%) 20%</td>
<td>faster</td>
<td>7,690</td>
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<tr>
<td>Environmental Compliance Inspectors</td>
<td>2,890</td>
<td></td>
<td>5%</td>
<td>slower</td>
<td>2,880</td>
<td></td>
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<tr>
<td>Environmental Engineers</td>
<td>230</td>
<td></td>
<td>(12%) 25%</td>
<td>much faster</td>
<td>250</td>
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<td></td>
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<tr>
<td>Environmental Science and Protection Technicians</td>
<td>150</td>
<td>x</td>
<td>(10%) 28%</td>
<td>much faster</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Scientists and Specialists</td>
<td>810</td>
<td>30</td>
<td>x</td>
<td>(9%) 21%</td>
<td>much faster</td>
<td>890</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish and Game Wardens</td>
<td>100</td>
<td></td>
<td>0%</td>
<td>little or no</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest and Conservation Workers</td>
<td>120</td>
<td></td>
<td>(19%) 6%</td>
<td>slower</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Forestry and Conservation Technicians</td>
<td>90</td>
<td></td>
<td>0%</td>
<td>little or no</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Geoscientists</td>
<td>270</td>
<td>10</td>
<td>x</td>
<td>(10%) 22%</td>
<td>much faster</td>
<td>290</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional Coordinators</td>
<td>670</td>
<td>20</td>
<td></td>
<td>(21%) 22%</td>
<td>much faster</td>
<td>810</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life/Physical Science Technicians</td>
<td>450</td>
<td>20</td>
<td></td>
<td>10%</td>
<td>average</td>
<td>460</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifeguards, Ski Patrol and Recreation Protection Workers</td>
<td>540</td>
<td></td>
<td></td>
<td>(8%) 19%</td>
<td>much faster</td>
<td>580</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microbiologists</td>
<td>80</td>
<td>x</td>
<td>7-13%</td>
<td>average</td>
<td>80</td>
<td></td>
<td></td>
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<tr>
<td>Middle School Teachers</td>
<td>2,740</td>
<td>90</td>
<td>(11%) 11%</td>
<td>average</td>
<td>3,050</td>
<td></td>
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<tr>
<td>Natural Sciences Managers</td>
<td>220</td>
<td>x</td>
<td>(5%) 11%</td>
<td>average</td>
<td>240</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nonfarm Animal Caretakers</td>
<td>240</td>
<td></td>
<td>(7%) 14%</td>
<td>faster</td>
<td>260</td>
<td></td>
<td></td>
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<tr>
<td>Physicists</td>
<td>80</td>
<td></td>
<td>7%</td>
<td>average</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Recreation Workers</td>
<td>1,700</td>
<td>40</td>
<td>(6%) 13%</td>
<td>average</td>
<td>1,810</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary School Teachers</td>
<td>7,210</td>
<td>260</td>
<td>(12%) 3-6%</td>
<td>slower</td>
<td>7,610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Enrichment Educators</td>
<td>2,530</td>
<td>80</td>
<td>(21%) 23%</td>
<td>much faster</td>
<td>3,060</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey Researchers</td>
<td>170</td>
<td></td>
<td>16%</td>
<td>faster</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surveying and Mapping Technicians</td>
<td>270</td>
<td></td>
<td>(9%) 19%</td>
<td>faster</td>
<td>290</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Assistants</td>
<td>4,510</td>
<td>110</td>
<td>x</td>
<td>(8%) 10%</td>
<td>average</td>
<td>4,890</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tour Guides and Escorts</td>
<td>2,410</td>
<td>110</td>
<td></td>
<td>(4%) 21%</td>
<td>much faster</td>
<td>2,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinarians</td>
<td>200</td>
<td>x</td>
<td>(20%) 35%</td>
<td>much faster</td>
<td>240</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinary Assistants and Laboratory Animal Caretakers</td>
<td>320</td>
<td>x</td>
<td>(25%) 20%</td>
<td>faster</td>
<td>410</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zoologists and Wildlife Biologists</td>
<td>210</td>
<td></td>
<td>7-13%</td>
<td>average</td>
<td>220</td>
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Appendix G
Memorandum of Agreement between the
U.S. Department of Commerce,
National Oceanic and Atmospheric Administration,
National Ocean Service,
Office of the National Marine Sanctuaries and
the University of Hawai‘i, Maui Community College
MEMORANDUM OF AGREEMENT

PURSUANT TO THE
NATIONAL MARINE SANCTUARIES ACT
16 U.S.C. 1442(e)

BETWEEN THE

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
OFFICE OF THE NATIONAL MARINE SANCTUARIES

AND THE

UNIVERSITY OF HAWAII
MAUI COMMUNITY COLLEGE

NOS Agreement Code: MOA-2009-010/7737
MCC Agreement Code:
I. PARTIES AND PURPOSE:

A. This Memorandum of Agreement (Agreement) is between the U.S. Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of National Marine Sanctuaries (ONMS), through the Pacific Islands Regional office (PIR), and the University of Hawaii, Maui Community College (MCC).

B. The Purposes of this Agreement are to: (1) identify the roles and responsibilities of the Parties for cooperative educational, research, and interpretive efforts illustrating the connections between science and education; (2) facilitate mechanisms to formulate education and research partnerships; and (3) examine new and innovative partnerships between our two diverse programs, including student internships, fellowship programs, sharing staff, volunteers, guest lectures, facilities, etc.

II. BACKGROUND

A. NOAA’s National Marine Sanctuary System (now the ONMS) was created by Congress in 1974 to protect and preserve underwater environments and maritime heritage artifacts of national and international significance. Both the largest and smallest protected areas (Papahanāumokuākea Marine National Monument and Fagatelle Bay National Marine Sanctuary) are located within the Pacific Islands Region (PIR), along with the only site focusing on a single species, Hawaiian Islands Humpback Whale National Marine Sanctuary.

B. To accomplish the PIR’s mission of resource protection, the PIR provides assistance to the existing ONMS sites. PIR staff are located on Kauai, Maui, and Oahu. The PIR administers and supports these offices and the visitor centers on Kauai, Oahu, Maui, the Big Island of Hawaii, and in American Samoa. The visitor centers create a sense of place for residents and visitors to learn not just about the ONMS, but the biogeographical flora and fauna of the host island.

C. The PIR seeks to develop and foster new and expanding partnerships with existing programs that have similar missions. To date, the PIR has created partnerships with such varied groups as the University of Hawaii at Manoa, Hawaii Institute of Marine Biology, Territory of American Samoa, Maui Ocean Center, Outrigger hotels, and the Girl Scouts of Hawaii.

D. MCC is one of seven community colleges and part of the ten-campus University of Hawai‘i System. MCC was established in 1966. MCC now serves the educational needs of residents of the three islands Maui County comprises: Moloka‘i, Lana‘i, and Maui. In 1966, the Board of Regents of the University of Hawai‘i authorized the MCC to confer the Associate in Arts and the Associate in
Science degrees.

E. The College encompasses 78 acres at the Kahului site. The student population numbered about 3,000 students in Fall 2004.

III. AUTHORITIES

A. The legal authority for the ONMS and MCC to enter into this Agreement is the National Marine Sanctuaries Act (NMSA), 16 U.S.C. 1442(e), which authorizes the Secretary of Commerce, whenever appropriate, to enter into an agreement with a State or other Federal agency to use the personnel, services or facilities of such agency on a reimbursable or non-reimbursable basis, to assist in carrying out the purposes and polices of the NMSA.

B. The programmatic authorities for the NMSP is the NMSA, 16 U.S.C. 1431 et seq., including:

1. Section 1431 (b)(7) stating as one of the Purposes and Policies of the NMSA, to develop and implement coordinated plans for the protection and management of marine areas of special national significance with appropriate Federal agencies, State and local governments, Native American tribes and organizations, international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas;

2. Section 1431 (b)(4) stating as another of the Purposes and Policies, the enhancement of public awareness, understanding, appreciation, and wise use of the marine environment;

3. Section 1440, directing the Secretary of Commerce to conduct research and education programs to carry out the policies of the NMSA, and to promote and coordinate the use of National Marine Sanctuaries for research and education. Section 1440 also states the Secretary may develop interpretative facilities near any national marine sanctuary.

4. Section 1442(c), authorizing the Secretary of Commerce to accept the donation of services for use in administering national marine sanctuaries.

IV. TERMS AND CONDITIONS:

A. The PIR will:

1. Recognize the unique capabilities and importance of MCC to provide community based education (research and other programs) on the island of
Maui, where the ONMS has a Visitor Center and office of the HIHWNMS, and throughout Maui County;

2. Assist in the development of an applied ocean science degree at MCC;

3. Seek to create and provide internship opportunities for students and teachers from MCC at the ONMS offices on Maui, the PIR, and other ONMS offices on the mainland, including the ONMS headquarters in Silver Spring, MD;

4. Provide training, education, volunteers, and research materials (and other information as needed) to MCC for assistance with their programs;

5. Assist in the development of joint education and outreach plans that benefit MCC;

6. Create joint outreach, education and other materials;

7. Provide access to ONMS facilities (buildings and boats, ship time, etc), as necessary and practical;

8. Provide guidance, suggested training materials, and other tools necessary for the successful performance of MCC students;

9. Provide a safe work environment and appropriate safety gear to MCC students and teachers should MCC employees need to utilize NOAA/PIR offices and/or boats in the field;

10. Make available, when practical, administrative, public marine areas, and facilities for activities that provide opportunities for outreach and education to mutual constituents for research and implementation of conservation, and for recovery actions for native species and habitats;

11. Provide assistance, when practical, for planning, implementation, and monitoring of work undertaken pursuant to this Agreement;

12. Train MCC staff and students about the PIR sites and programs, and other NOAA programs;

13. Promote MCC interpretive and educational programs as it relates to NOAA/ONMS marine programs;

14. Provide semi-annual interpretive training for MCC staff and students;
NOS Agreement Code: MOA-2009-010/7737  
MCC Agreement Code:  

15. Provide multimedia materials for interpretive use;  

16. Facilitate partnership opportunities with other NOAA offices in Hawaii (National Weather Service, National Marine Fisheries, etc), when appropriate.  

B. MCC will:  

1. Provide staff training and mentoring of PIR/ONMS staff and volunteers in interpretive techniques at PIR visitor centers;  

2. Promote PIR and MCC interpretive programs;  

3. Integrate PIR interpretive themes into MCC science programs, field trips, walks, and other interpretive programs;  

4. Develop a science-based curriculum using PIR/ONMS office locations on Maui;  

5. Facilitate partnership with other University of Hawaii programs, including but not limited to the University of Hawaii Institute of Marine Biology, University of Hawaii Sea Grant Program, etc.;  

6. Seek other opportunities to support ONMS conservation and educational needs of the students, teachers and general public;  

C. Both Parties will:  

1. Develop and share, as practical, educational and outreach capabilities, materials, and opportunities, when such efforts would benefit public education and interpretation about marine sanctuaries, marine protected areas, terrestrial, and atmospheric topics. Activities include, but are not limited to, developing joint educational materials and exhibits; sharing educational and/or outreach materials, staff, and expertise; and developing educational programs and workshops for common constituents;  

2. Coordinate pertinent outreach and public informational activities. Prior to release of any press release or other public statements about joint projects, the drafting Party will obtain approval from the other Party;  

3. Participate in annual and quarterly meetings that will focus on ways to continue to develop current partnerships;  

4. Create an annual report about the partnership;  

5.
5. Promote other Federal, State, and local scholarship and internship opportunities;

6. Track student development and feedback about success of partnership;

7. Develop joint statements of work for each upcoming fiscal year;

8. Seek ways to include other parts of NOAA, University of Hawaii, and State of Hawaii as part of this collaborative effort;

9. Support, whenever possible, research, education, conservation expertise, and the transfer of information and technology to enhance management of America’s national marine sanctuaries;

10. Assess project collaborations between the Parties, at least once a year;

11. Meet at a minimum twice yearly to review the progress of this Agreement and to develop annual statements of work (SOW) to define short and long term objectives and strategies for future implementation.

V. CONTACTS:

A. The points of contact for coordinating activities under this Agreement are:

ONMS                                               MCC
Allen Tom                                           Clyde Sakamoto
Regional Director                                   Chancellor
Pacific Islands Region                              University of Hawaii
726 South Kihei Road                                 310 Kaahumanu Avenue
Kihei, Hawaii 96753                                 Kahului, Hawaii 96732
808-879-2818 (office)                              808-984-3636 (office)
808-874-3815 (fax)                                  808-984-3546 (fax)
allen.tom@noaa.gov                                  clydes@hawaii.edu

B. The Parties agree that if there are any changes regarding the information in this section, the Party marking the change will notify the other Party in writing of such change within 30 days.

VI. DURATION OF AGREEMENT, AMENDMENTS, OR TERMINATION

A. This Agreement will become effective when signed by all Parties. The Agreement will remain in effect through September 30, 2012, unless either terminated by (1) mutual written consent, (2) 30 days advance written notice by either Party, or (3) completion of the terms and conditions of this Agreement.
B. This Agreement may be amended within its scope or extended prior to its expiration date through the written mutual consent of the Parties.

C. The Parties will review this Agreement at least once every two years to determine whether it should be revised or terminated.

VII. FINANCIAL ARRANGEMENT AND IMPLEMENTATION

A. This Agreement defines in general terms the basis on which the Parties will cooperate, and as such, does not constitute a financial obligation to serve as the basis for expenditures. Any activities involving reimbursement or transfer of funds between the Parties to this Agreement will be handled in accordance with applicable laws, regulations, and procedures. Such activities will be documented in a separate legal instrument.

B. Expenditures of funds, human resources, equipment, supplies, facilities, training, public information, and technical expertise will be provided by each Party to the extent that their participation is required and resources available.

C. This Agreement does not restrict the Parties from participating in similar activities or arrangements with other public or private agencies, organizations, or individuals.

D. This Agreement does not obligate the Parties to expend funds or to enter into any other agreements, contracts or other obligations.

E. Participation in the activities covered under this Agreement is subject to availability of appropriated funds.

VIII. RESOLUTION OF DISAGREEMENTS

Should disagreement arise on the interpretation of the provision of this Agreement, or Amendments and/or revisions thereto that cannot be resolved at the opening level, the area(s) of disagreement shall be stated in writing by each Party for consideration at least 30 days prior to forwarding to respective higher levels of management for appropriate resolution.
IX. APPROVALS

ACCEPTED AND APPROVED FOR THE
US DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

BY:  
Daniel J. Best
Director
Office of National Marine Sanctuaries

DATE: 12/17/08

ACCEPTED AND APPROVED FOR THE
UNIVERSITY OF HAWAII
MAUI COMMUNITY COLLEGE

BY:  
Clyde Sakamoto
Chancellor

DATE:  
DEC 31 2008