MEMORANDUM

TO: Randolph G. Moore
Chair, Board of Regents

VIA: David Lassner
President
University of Hawai‘i System

VIA: Donald Straney
Chancellor
University of Hawai‘i at Hilo

FROM: Matthew Platz
Vice Chancellor for Academic Affairs
University of Hawai‘i at Hilo

SUBJECT: REQUEST APPROVAL TO CHANGE FROM PROVISIONAL TO ESTABLISHED STATUS, BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE, COLLEGE OF ARTS AND SCIENCES, UNIVERSITY OF HAWAI‘I AT HILLO

SPECIFIC ACTION REQUESTED:

It is requested that the University of Hawai‘i Board of Regents approve as “established” the “provisional” Bachelor of Science in Environmental Science degree program within the College of Arts and Sciences, University of Hawai‘i at Hilo (UH Hilo).

RECOMMENDED EFFECTIVE DATE:

Upon approval.

ADDITIONAL COSTS:

No additional costs are associated with this request.
BACKGROUND:

Board of Regents Policy 5-1 b (3) states that “The Board shall determine whether the program is to be awarded established status or terminated.”

In 2005 the University of Hawai‘i at Hilo received provisional approval for both the BA in Environmental Studies (ENVS BA) and the BS in Environmental Sciences (ENSC BS) programs. These programs were designed to meet the increased student demand (locally and nationally) for undergraduate programs focused upon human/environment interactions.

Both degrees programs were implemented in 2006, becoming additions to the Department of Geography’s long-running (40+ years) and well-regarded BA degree in Geography. These degree programs also provided a STEM (Science, Technology, Engineering, and Mathematics) pathway major for students in the College of Arts and Sciences (CAS).

The mission of the interdisciplinary Environmental Studies/Science degree program was to promote a multidisciplinary analysis of a broad range of environmental issues, including policy, management, and physical science analytical perspectives designed to enhance students' awareness of the complexity and seriousness of local, regional and global environmental problems. Environmental Studies/Science overlapped many academic fields, such as Biology, Geology, Chemistry, Marine Science, Anthropology, Agriculture, Political Science, Economics, and Sociology. The interdisciplinary program depended entirely upon the faculty in the GES department for its administration, with the department chair overseeing the departmental administration of the three-degree programs.

In the fall of 2014, UH Hilo decided to continue with the BS in Environmental Science and to change the BA in Environmental Studies to a track within the combined BA in Geography and Environmental Studies. These measures were taken to strengthen BA enrollment and graduation rates. There will be a stop-out of the BA in Environmental Studies degree program in January 2016.

Significance/Contribution of this degree:

UH Hilo offers the only BS in Environmental Science (ENSC BS) degree program in the UH System. Graduates of the ENSC BS program are qualified for immediate employment in numerous Federal and State agencies, such as the USDA Forest Service, USDA Agricultural Research Services, USGS Biological Resource Division, US Fish & Wildlife Service, US National Park Service, Hawai‘i Department of Land and Natural Resources, Nature Conservancy, and National Oceanographic and Atmospheric
Agency. Graduates are also qualified as teachers and researchers within schools and universities. Employment prospects for individuals with formal training in the environmental science field are strong in Hawai’i and in many other areas of the United States. Graduates of the program will also be able to seek further education primarily by enrolling in Masters or Ph.D. programs. We believe that the ENSC BS prepares students for the rigors of graduate school.

Demand projections:

The provisional ENSC BS program began admitting students in the fall semester of 2006. The program has demonstrated consistent growth—from 5 students in the 2006-2007 academic year to 51 students in the 2013-2014 academic year. See Chart 1: ENSC BS Enrollment During Provisional Years below.

![Chart 1: ENSC BS Enrollment During Provisional Years](chart1)

It is projected that student demand for the ENSC BS will continue and slowly increase over the next five academic years. (See Chart 2: ENSC Projected Enrollment on the following page.) The projected increase is based upon two strategic modifications to the ENSC BS program. The modifications are (1) adjusting the upper-level course credit-hour requirements and (2) expanding students’ choices of required course offerings within the Department.
The Department has adjusted the upper-level course credit-hour requirements (from 45 to 39) to accommodate the breadth and depth of lower-level course offerings in the major. The credit-hour adjustment also allows the ENSC BS program to be consistent with other STEM degree programs, such as Biology and Chemistry.

The Department has added more courses and revised course requirements to provide ENSC BS students with broader and more flexible course enrollment options. These changes also provide the Department with greater control over scheduling the courses students need to graduate. Further, these changes enable the Department to engage faculty as efficiently as possible by teaching fewer courses with larger enrollments.

**Accreditation Impact:**

The BS in Environmental Science program is not separately accredited.

**Examples of similar models from peer institutions:**

Comparable peer institutions with Environmental Science BS degrees are the University of Wisconsin-Parkside, SUNY Purchase, and Cal-State Monterey Bay.

**Statement from Campus Administration of the Program’s Strategic Value within the UH Priorities:**

The Bachelor of Science in Environmental Science degree program offered within the College of Arts and Sciences at the University of Hawai‘i at Hilo is distinguished, robust, and efficiently delivered. It epitomizes the mission of UH Hilo to provide a “place-based” experience that leads directly to employment opportunities on Hawai‘i Island and
around the state. Further, it prepares students for admission and success in outstanding graduate programs.

**Impact of new program/program change request on campus budget allocations and mission priority:**

This change from provisional to established status will have no impact on campus budget allocations and mission priority.

**ACTION RECOMMENDED:**

It is recommended that the University of Hawai‘i Board of Regents approve as “established” the “provisional” Bachelor of Science in Environmental Science degree program within the College of Arts and Sciences, University of Hawai‘i at Hilo (UH Hilo).

Attachment: Bachelor of Science in Environmental Science: A Self-Study in Support of Change from Provisional to Established Status

CC: Cynthia Quinn, Executive Administrator and Secretary of the Board of Regents
Bachelor of Science in Environmental Science
College of Arts and Sciences
University of Hawai’i at Hilo

A SELF-STUDY IN SUPPORT OF CHANGE FROM PROVISIONAL TO
ESTABLISHED STATUS

February 9, 2015

Prepared by Kathryn Besio, Chair
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University of Hawai‘i at Hilo

A SELF-STUDY IN SUPPORT OF CHANGE FROM PROVISIONAL TO ESTABLISHED STATUS

1. IS THE PROGRAM ORGANIZED TO MEET ITS OBJECTIVES?

Program Description

In 2005 the University of Hawai‘i at Hilo received provisional approval for both the BA in Environmental Studies (ENVS BA) and the BS in Environmental Sciences (ENSC BS) programs. These programs were designed to meet the increased student demand (locally and nationally) for undergraduate programs focused upon human/environment interactions.

Both degrees programs were implemented in 2006, becoming additions to the Department of Geography’s long-running (40+ years) and well-regarded BA degree in Geography. These degree programs also provided an additional STEM pathway major for students in the College of Arts and Sciences (CAS). In this document we will refer to the programs as the Department of Geography and Environmental Studies (GES), a name change that will be implemented for academic year 2015/2016.

Figure 1. Increase in Geography and Environmental Studies Majors, 2006-2014

![Graph showing increase in Geography and Environmental Studies Majors, 2006-2014]

The mission of the interdisciplinary Environmental Studies/Science degree program is to promote a multidisciplinary analysis of a broad range of environmental issues, including policy, management, and physical science analytical perspectives designed to enhance students' awareness of the complexity and seriousness of local, regional and global environmental problems. Environmental Studies/Science overlapped many academic fields, such as Biology, Geology,
Chemistry, Marine Science, Anthropology, Agriculture, Political Science, Economics, and Sociology. The interdisciplinary program depended entirely upon the faculty in the Department of Geography and Environmental Sciences for its administration, with the department chair overseeing the departmental administration of the degree programs.

Since adding the degrees, GES has increased the number of student majors it serves from approximately 40 (2006) to 112 (2014). (See Figure 1. Department of Geography and Environmental Sciences Increase in Student Majors.) GES has decreased its operating budget and number of faculty, thus making it an efficient program in the College of Arts and Sciences, now the third largest department in the Social Sciences Division.

Figure 2. Diagram of Degrees and Tracks in Department of Geography and Environmental Studies

In fall 2014 UH Hilo determined that GES should continue with the BS in Environmental Science only, folding the Environmental Studies BA into a two-track major that will be called “Geography and Environmental Studies.” (See Figure 2. Diagram of Degrees and Tracks in Department of Geography and Environmental Studies.) A stop-out of the BA in Environmental Studies degree program is in progress and will become effective in January 2016. GES feels that it can administer the two BA and BS degrees more efficiently than three degrees, making students’ educational experiences cohesive while increasing graduation numbers and rates in the process. Therefore, the purpose of this report is to request that the “provisional” BS in Environmental Science be approved as an “established” degree program.
The BS in Environmental Science (ENSC BS) is a 120 semester-hour degree program. UH Hilo offers the only BS in Environmental Science in the UH system. Faculty in GES teach the majority of the courses in the ENSC BS, as well as advise all program students.

The BA in Geography and Environmental Studies and the BS in Environmental Science degrees will continue to share a significant common core of coursework. The ENSC BS offers a distinctive focus on natural sciences to human-environment interactions with its emphasis on specific environmental processes. Importantly, the ENSC BS degree capitalizes on UH Hilo’s diverse natural and cultural setting to promote knowledge and understanding vital for sustainability and compatibility of both natural and anthropogenic environmental systems. The ENSC BS degree uses the biological, physical and cultural complexity on the island of Hawai‘i as a focus for field investigation and the study of diverse environmental problems and remediation, with much of the coursework field-based.

The need for new understanding and applied approaches to environmental management has never been greater, particularly in the remote and circumscribed island context of Hawai‘i. Potential scientists and practitioners within the field of Environmental Science require analytical and field-based knowledge and research skills in their sub-disciplines. They also need an integrative perspective of a broadly educated scholar-practitioner who is equipped to understand interactions between natural systems and human influences. This field of study combines basic knowledge from the ecological sciences and other disciplines to drive environmental problem solving. We believe that the ENSC BS provides just such an education for future environmental managers and scientists. Students with GES degrees are finding jobs in Hawai‘i’s conservation and management community. The program’s objectives align with UH Hilo’s mission to provide an education that engages students in classroom and applied learning experiences.

Program Objectives

- To educate students to become professionals in environmental and conservation fields.
- To equip students with the skills to express themselves within both the scientific and larger society.
- To expose students to methods and techniques used by natural and social sciences to identify, analyze, and interpret environmental issues.
- To foster interdisciplinary approaches to environmental problem solving.

Student Learning Outcomes

- Perform social/natural science research in a range of interdisciplinary fields related to the majors.
- Develop management skills for natural resource and protected area conservation.
- Use advanced technological equipment in laboratory and field settings, such as geospatial analysis.
- Perform quantitative and qualitative analysis to interpret environmental and social data.
- Present scientific results in oral and written formats.
- Interpret and critique professional scientific literature.

Assessment of Student Learning Outcomes

Assessment of student progress and outcomes in the ENSC BS occurs in a number of stages. Appendix E provides a curriculum map and the course requirements for the major. Initially, students take the introductory ENSC 100 course. This course provides an overview to help students "self-select" for either the BA or BS path.
Core courses are designed to ensure that students possess a background of skills and knowledge essential to continue in the program. With successful completion of the interdisciplinary core, students then progress on to required upper-division courses, including Natural Resources (GEOG 326) Environmental Field Methods (GEOG/ENSC 395), Environmental Impact Assessment (GEOG/ENSC 441), and other related electives in their junior/senior years. These upper-level courses reinforce learning from core courses and provide for mastery of material.

The penultimate assessment of the quality of a student’s work is done in the final year capstone course—Senior Seminar (GEOG/ENSC 495). In GEOG/ENSC 495, students review and synthesize their knowledge of key environmental issues through conducting individual research projects in a writing-intensive course format.

A majority of the required courses for the degrees have a Geography alpha (GEOG). There are few courses having a distinct ENSC alpha, and none that have an ENVS alpha. We point this out here because the lack of degree-specific alphas attached is reflected in the SSH data (see Appendix C). We are currently working with the UH Hilo Registrar to create a degree alpha for Geography and Environmental Studies (the Department), thus eliminating the need to cross-list courses that are taken within the same department. This will help us track students through our courses better and make it easier to account for important data such as Student Semester Hours.

In upper-division courses, students engage in small-class activities, lab, and fieldwork groups (with 15-25 or fewer students), primarily with faculty who are able to provide detailed feedback to the students on their progress. These courses are in keeping with UH Hilo’s objectives to provide hands-on learning and research opportunities for undergraduates. GES faculty engage undergraduate students in both student- and faculty-led research projects.

Table 1 shows sample enrollments for required courses offered by GES for AY 2012-13. (See Appendix F for complete data and Appendix E for the list of courses.) Because of the integrated nature of GES courses, we provide data for the three majors. It is difficult to picture the majors discretely, and hope that this provides readers with an understanding of the holistic nature of GES.

Many of the courses that GES offers have low student caps because of the lab-based, applied, and field-based curriculum. The average class size is above 20 students in required courses. Over the eight years that the ENSC BS degree has been operational, the Department has had as many as six tenure-track faculty and has relied on temporary lecturers for instructional needs. (See Appendix F.) Due to grant releases, as well as sabbatical and administrative leave, FTE faculty loads vary. GES also had two significant retirements. However, as of AY 2012, GES has been operating with four-tenure track faculty, a temporary Instructor and lecturers, making GES an efficient unit, given student enrollment across three degrees. GES courses offer instruction to our own majors but also to MS students in Tropical Conservation Biology and Environmental Science (TCBES) students at the 400 and 600 level. In the majority of the classes taught by GES, we have been serving students in three degrees areas. This will change when there will be two-degree paths and one alpha for all GES courses.

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1 The lack of degree-specific alphas is due to Banner requirements and the UH Hilo Registrar’s request that courses done in one department, i.e., Geography and Environmental Sciences, have a single alpha. Because the GES was the initial “home” department for the ENSC/ENVS courses, we have been asked to neither create courses with the ENSC alpha nor to cross-list courses with the existing alpha of ENSC. Historically, Geography was renamed Geography and Environmental Sciences but the GEOG alpha remains the primary one used for courses in the three degrees. This is why the SSH data for ENSC and ENVS degrees are low. We are looking into creating a new alpha that will better reflect unique majors and make accounting less complex.
Table 1. Selected Courses by Alpha and Student Enrollment: Environmental Studies BA (ENVS), Environmental Science BS (ENSC), Geography BA (GEOG), and Tropical Conservation Biology MS (CBES).

<table>
<thead>
<tr>
<th>Course Alpha</th>
<th>Enrolled</th>
<th>ENVS (BA)</th>
<th>ENSC (BS)</th>
<th>GEOG (BA)</th>
<th>CBES (MS)</th>
<th>Other</th>
</tr>
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<tbody>
<tr>
<td>GEOG 201</td>
<td>24</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>GEOG/AG WI 312</td>
<td>18</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>GEOG 319</td>
<td>28</td>
<td>4</td>
<td>14</td>
<td>7</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 326</td>
<td>26</td>
<td>10</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 340</td>
<td>24</td>
<td>3</td>
<td>8</td>
<td>3</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>GEOG/ENSC 385</td>
<td>15</td>
<td>3</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 436</td>
<td>14</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>GEOG/ENSC 400</td>
<td>7</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>GEO/ENSC 441</td>
<td>23</td>
<td>4</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>GEOG 480 &amp; CBES 680</td>
<td>35</td>
<td>3</td>
<td>11</td>
<td>5</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>GEOG 481 &amp; CBES 670</td>
<td>10</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>GEOG/ENSC 495 WI</td>
<td>26</td>
<td>6</td>
<td>11</td>
<td>8</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 470</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

Prospects for GES Graduates

We contend that the ultimate measure of student learning and success is manifest in students' post-graduation achievements in employment or graduate education, and as noted above, our graduates are doing well. (See Table 2.) We obtained excellent student outcomes after the launch of the environmental programs. The most compelling reasons for maintaining the BS degree in environmental science is that students find employment within the field and have more options for employment and graduate studies. (See Table 2.) Based upon a survey of GES graduates, 66% (n=27) of those who found employment or went on to graduate school have the BS degree. Additionally, in our conversations with our colleagues at Hawai'i Community College, the BS in Environmental Science is desired by students completing the AS in Natural Sciences since the BS provides a natural pathway for AS graduates. Colleagues at Hawai'i Community College are strongly in favor of UH Hilo offering the BS in Environmental Science.

Baccalaureate recipients are qualified for immediate employment in numerous Federal and State agencies, such as the USDA Forest Service, USDA Agricultural Research Services, USGS Biological Resource Division, US Fish & Wildlife Service, US National Park Service, Hawai'i Department of Land and Natural Resources, Nature Conservancy, National Oceanographic and Atmospheric Agency and as teachers and researchers with schools and universities. Employment prospects for individuals with formal training in environmental science are good in Hawai'i and in many other areas of the United States. (A list of graduates with established employment and or advancement in education is presented in Table 2.) Graduates of the program will also be able to seek further education primarily by enrolling in Masters or Ph.D. programs. We believe that the ENSC BS prepares students for the rigors of graduate school.
2. IS THE PROGRAM MEETING ITS LEARNING OBJECTIVES FOR STUDENTS?

The GES faculty is confident that the program has adopted the appropriate educational model and pedagogical approach, combining both classroom and field learning experiences that focus on real-world environmental issues. This is based upon the growth and popularity of the Environmental Science major and its increasing number of graduates (Figure 3), as well as the success rate of program graduates finding employment in the field or acceptance in graduate level degree programs.

Figure 4. Environmental Science Graduates by Academic Year, 2006-2014
ADEQUACY OF RESOURCES AND PROGRAM EFFICIENCY

Program Metrics

Total direct and incremental cost for the three degrees is $379,979 (See Appendix B.) and for the ENSC BS is $27,907. The majority of courses taught by GES faculty have the GEOG alpha, and Cost-Revenue data for the whole department is provided to enable comparison to the ENSC BS. The Instructional cost with fringe/SSH is $191 for all three degrees and $102 for the ENSC BS. The higher average to comparable programs at UH Hilo for which we have data (e.g., the Social Science average, Appendix B), can be explained by the high cost of lecturers (2010-2013) and a faculty sabbatical leave in 2011, but also because the SSH is based upon only the required courses for the ENSC BS major. The high lecturer costs for the three years, along with high salary and fringe costs (2008-12), are not predictive of future costs. Year 4 (2013-14) costs are a better predictor of costs over the next five years, which will lower the SSH costs. However, in spite of high instructional costs, the programs are profitable with a net revenue of $326,649 (See Appendix B.) and $73,910.

The provisional ENSC BS program admitted the first cohort of students in the fall semester of 2006 and produced its first graduates in fall 2008. The program has had immediate growth but continues to grow at approximately 5% per year. Projections are that the number of majors in the ENSC BS will grow to 65 students in the next five years. As of May 2013, 41 students have graduated with the ENSC BS. GES is working to strengthen the percentage of graduates relative to the number of majors across all three degrees and began the process of revising degree requirements towards that end in fall 2013.

GES believes that one reason for low graduation rates has been because of the negative impact of high upper-division credit hours upon community college and other transfer students. This was an oversight when the degrees were implemented, which we have now corrected. Transfer students from Hawai‘i Community College and elsewhere that entered UH Hilo as an ENSC major, learned that they could not complete their degrees in an additional two years (post-associate degree) because of the core course demands in lower-division course work combined with the 45 undergraduate degree (UD) credit hour requirement. They often spent the first year after transfer completing lower-division coursework, with many of these students unprepared for the rigor of the courses they needed to complete. We found that many of these students switched their degrees, e.g., from Environmental Science to Geography or out of GES altogether. We were not only losing students but also those that remained as majors were taking much longer than students in other majors in Social Sciences to complete their degrees.

GES has lowered the UD credit hour requirement (from 45 to 29) to reflect the breadth of lower-division courses in the major and to be consistent with other degrees, such as Biology and Chemistry, that have similar lower-division heavy core requirements, and that require fewer than 45 UD credit hours (See the 2015 UH Hilo Catalog). In addition to lowering the number of UD credit hours, we have revised course requirements across all three degree programs (ENVS, ENSC and GEOG) to add more courses, some from other majors such as Geology. The programs have effectively broadened students’ choices of course offerings, building in flexibility. We hope this benefits students who are trying to satisfy major requirements in a timely manner, allowing GES to use our existing faculty as efficiently as possible (See Table 1 and Appendix F.) by teaching fewer courses with larger enrollments.

We anticipate that these two modifications, the lower UD credit hours and increased course flexibility, will lead to higher and faster graduation rates. In summary, GES proactively addressed the number of graduating students by seeking solutions to slow graduation rates. However, in addition to the above program changes, we believe that two degrees, that is, the two-track BA in
Geography and Environmental Studies and a BS in Environmental Science, will serve students as well or better than having three distinct degrees. GES will have more control over servicing students with the courses they need, tracking student across the degrees, and providing more departmental oversight. This will strengthen the Department, thereby benefitting students.

We also note that GES has accommodated program growth in a time of fiscal cutbacks, with a loss of faculty positions and a significant reduction (>$50%) in the GES operating budget during this period, resulting from general university-wide austerity measures. The GES 2010 external review indicated that our programs were running at full-throttle to accommodate rapid growth in majors and graduates. In the external reviewers report, he states:

From a teaching standpoint, the six FTE GES faculty usually operate as 4-4.5 FTE due to successful grant and contract awards. While their industry is laudable, it leaves some upper-division courses without instructors, or at least stretches out the rotation. It also prevents meeting the lone (and probably insatiable) student request for additional field instruction. Because the benefits of this grant and contract work to the UHH (faculty, students, and the institution) were strongly evident, the department and administration should explore either adding another tenure track line, or more fully incorporating the two long-term lecture faculty into the department. (See Appendix A.)

The department has been able to absorb and accommodate the rapid growth by:
1) Increasing class size (e.g. the Geo-spatial lab has been expanded from 20 to 25 seats)
2) Restructuring and cross-listing Geography and ENSC and ENVS courses for greater efficiency
3) Utilizing courses in other departments for the interdisciplinary components of the ENSC and ENVS major requirements (Math, Chemistry, Biology, etc.)
4) Utilizing outside lecturers every year to offer specialized upper-division courses (e.g., EIS) or replace regular faculty in introductory courses, so they can offer newly required upper division required courses

BS Environmental Studies/Science Core Program Faculty:
The primary role of the faculty in the Environmental Studies/Science program is teaching, advising, and mentoring undergraduate students in classroom and assisted field project research, while preparing students for further graduate-level education or employment opportunities. There are currently four Tenure Track faculty in GES, although at the inception of the Environmental Studies and Environmental Science degrees, there were six. (See Appendix F.) GES faculty members teach courses in Geography, Environmental Studies, and Environmental Science, many of which are cross-listed courses with other departments, contributing courses to Physics, Geology, Biology, Women's Studies, Anthropology, and the CAFNRM. All GES faculty members are involved with the Interdisciplinary Tropical Conservation Biology & Environmental Science graduate Master of Science program. Current tenure track faculty include, Dr. K. Besio (Chair and Associate Professor), Dr. J. Price (Associate Professor), Dr. J. Davis (Assistant Professor), and Dr. R. Perroy (Assistant Professor). For more information about each of these faculty members, please see Appendix G.

Due to family needs, Dr. Davis is teaching remotely for AY 2014-15 and, as of this report date, a tenure-track faculty member. However, he has signed an MOU with the Dean of the College of Arts and Sciences that he will be resigning in August 2015. While we have four tenure track faculty on record, effectively we have three faculty members on campus for advising and other important leadership duties.
5. EVIDENCE OF PROGRAM QUALITY

Evidence of the programs’ success is demonstrated by the achievements of our recent ENSC/ENVS graduates. In 2012 we conducted a post-graduation survey of 43 graduates. We were able to determine the current status of 27 of the 43 individuals. (Some of graduates were international students with whom we have lost contact, while others did not respond to our request.) Table 2 indicates employment or post-graduate student status for the graduates responding as of 2012. We are particularly proud of the fact that almost half of recent responding graduates (48%) are currently employed—most within the State of Hawai‘i—in fields related to their degree training. It is particularly significant that our graduates find work in Hawai‘i, showing the importance of this major to local employers and agencies. In fact, 37% have either recently completed graduate degrees or are currently undertaking further post-baccalaureate education (master’s degrees, doctoral degrees, or teacher education certification). It is also important to note that graduates with the BS degree have been more successful at finding employment and getting into graduate programs than graduates with the BA degrees. This evidences the need to retain the distinct BS degree. Overall, we believe these numbers speak to program quality and success, as well as desirability by the Hawai‘i environmental community for students trained in these majors.

| Graduate 1 | ENSC (BS), 2008 | MSc graduate 2010, Office of Mauna Kea Management |
| Graduate 2 | ENSC (BS), 2008 | PhD Candidate, University of Utah |
| Graduate 3 | ENSC (BS), 2009 | MSc student, Tropical Conservation Biology |
| Graduate 4 | ENSC (BS), 2009 | MSc student, Tropical Conservation Biology |
| Graduate 5 | ENSC (BS), 2010 | Post-graduate student, Teacher Education Program, UHH |
| Graduate 6 | ENSC (BS), 2010 | Employed, Environmental Management, Pohakuloa Training Area |
| Graduate 7 | ENSC (BS), 2010 | Employed, GIS specialist, National Tropical Botanical Garden (Kaua‘i) |
| Graduate 8 | ENSC (BS), 2011 | Graduate student, Brown University |
| Graduate 9 | ENSC (BS), 2011 | Employed, Consultant, Native Alaskan Fisheries and Wildlife Surveys |
| Graduate 10 | ENSC (BS), 2011 | MSc graduate student, University of Idaho |
| Graduate 11 | ENSC (BS), 2011 | Employed, Protected Area Manager, National Tropical Botanical Garden (Kaua‘i) |
| Graduate 12 | ENSC (BS), 2012 | Employed, Educational outreach, NOAA Papahanaumokuakea |
| Graduate 13 | ENSC (BS), 2012 | Employed, Humu‘ula Land Management Assistant, DOH |
| Graduate 14 | ENSC (BS), 2012 | MSc student, Tropical Conservation Biology |
| Graduate 15 | ENSC (BS), 2012 | Employed, Environmental Specialist, Office of Mauna Kea Management |
| Graduate 16 | ENSC (BS), 2012 | Employed, Program Assistant, Kealohia STEM Program, UH-Hilo |
| Graduate 17 | ENSC (BS), 2012 | MA Student, Geography UH Mānoa |
| Graduate 18 | ENSC (BS), 2012 | UH-Hilo, Graduate School Preparation |
| Graduate 19 | ENVS (BA), 2008 | MSc student TCBES |
| Graduate 20 | ENVS (BA), 2010 | Coffee Farmer, Kona |
| Graduate 21 | ENVS (BA), 2010 | MSc Tropical Conservation Biology |
| Graduate 22 | ENVS (BA), 2010 | Employed, EPSCOR GIS Technician, UHH |
| Graduate 23 | ENVS (BA), 2011 | Employed, United Nations Environment Programme, Washington DC |
| Graduate 24 | ENVS (BA), 2011 | Employed, Field Ecologist, US Fish and Wildlife Service |
| Graduate 25 | ENVS (BA), 2011 | Employed, Construction Trades, Hilo |
| Graduate 26 | ENVS (BA), 2012 | Employed, Community Garden Education Program, Hilo Boys and Girls Club |
| Graduate 27 | ENVS (BA), 2012 | Employed, Denali Air Flightseeing Tours, Alaska |
6. ARE PROGRAM OUTCOMES COMPATIBLE WITH THE OBJECTIVES?

As can be seen from the employment outcomes and the continuing post-graduate education of our recent graduates, GES is successfully achieving its primary objective of educating and training undergraduates in Environmental Science/Studies for both direct local employment in these fields and/or providing the academic preparedness for further graduate training.
List of Appendices

1. Appendix A: Program Review Geography and Environmental Studies, December 2010
2. Appendix B: Cost and Revenue Templates
3. Appendix C: Quantitative Data
4. Appendix D: Other Personnel Costs and Unique Program Costs
5. Appendix E: Curriculum Map & Course Listings Environmental Science and Studies
6. Appendix F: Distribution of Semester Hours, Geography and Environmental Studies & Courses Taught
7. Appendix G: Geography and Environmental Studies Departmental Faculty
Appendix A: Program Review Geography and Environmental Studies, December 2010
Program Review Geography
College of Arts and Sciences
University of Hawai‘i – Hilo

Stephen F. Cunha, Professor of Geography
Humboldt State University, Arcata, California

December 2010

Background

The Department of Geography and Environmental Studies (GES) at the University of Hawai‘i – Hilo (UHH) currently offers three baccalaureate degrees: a BA in Geography, a BA in Environmental Studies, and a BS in Environmental Science. The department also offers a minor in Geography; undergraduate certificate programs in Land-Use Planning, Environmental Studies, and Pacific Island Studies (cooperative with Anthropology); and cross-lists courses in support of the Women’s Studies Program.

Geography faculties are also variously involved with graduate programs in Tropical Conservation Biology and Environmental Science. The current staff includes six fulltime tenure track faculty and at least two lecturers.

Summary

This department is superb mix of highly motivated, collegial, dedicated, and intense faculty who to the person share a passion for geography and the task of preparing students for life beyond UHH. Their collective age profile and professional records suggest the present upward trajectory will continue well into the future, especially if they meet the challenges outlined below. The department teaching facilities include a GIS/Cartography lab, and appear adequate. Moreover, they enjoy the respect and support of UHH administrators. At the risk of dishing hyperbole, the loyalty and appreciation of their student major cohort borders on maniacal. By every academy metric this is a very healthy and productive department.

Key Issues

1. The suite of multiple baccalaureate degrees, minors, certificates, and involvement in other Undergrad and grad programs, is approaching if not already slightly exceeding the collective limits of faculty time and expertise. They should not expand further. The potential for replacing two senior colleagues provides opportunity to reevaluate and perhaps redefine their offerings in light of the rapidly growing Environmental Studies and Environmental Science majors. Whatever their expertise, new hires should be able to incorporate a least some undergraduate course content into the GIS/Cartography Lab. This will integrate spatial technology across the GES curriculum.

2. The time for program evaluation is now... as in before requesting replacement positions for the two senior members who both claim retirement is imminent. The replacement requests should clearly identify a future core focus—one that is data driven and accounts for student needs, reasonable financial support, faculty expertise, and the prodigious Big Island biophysical and cultural attributes that enable UHH to offer
such rich field-based learning. Devoting an off-campus retreat to this issue (preferably when classes are not in session) is strongly recommended.

3. Once issue #2 above is resolved, successfully replacing senior faculty is likely the most crucial hinge factor that will determine the future stability and productivity of the department. In this capacity the retiring members who have been so responsible for the current success of this unit, need to adopt an "advise and consent" role. Let the past be just that, while allowing continuing members to lead in determining their future. Such thinking cuts both ways—the newer faculty must step up and be full players in shaping an environment they may well spend their entire careers building. The planned rotation to a new chair in January 2012 is another important move.

4. Refurbishing and staffing the GIS/Cartography Lab is elemental to the success of their programs. The current lab manager operates on soft money. Without this funding the support role falls on a single professor, severely compromising their productivity. The lack of a qualified lab manager imparts misery and frustration that cascades to every faculty and student in the program. It's that important. The faculty might also consider reconfiguring the almost refurbished lab, where computers line the walls leaving the center open for a large seminar table, with the teaching/presenting station remaining in front. This non-traditional arrangement favors instruction and is gaining acceptance around the country.

5. Consider creating a GIS/Cartography Institute to formally accept outside work. While the details vary between institutions, this initiative should promote teaching by allowing students to practice bidding for jobs, interacting with internal and external clients, completing contracts, and developing portfolios—all within the umbrella of a "Lab Practicum" course taught by a lead instructor. The institute should be a legal conduit to handle fiduciary and student-hire matters. It can develop into a successful teaching enterprise for top students, create an entire new realm of student expertise that benefits the entire major cohort, and can help offset future lab upgrades, student conference travel, and the like.

6. From a teaching standpoint, the six FTE GES faculty usually operate as 4-4.5 FTE due to successful grant and contract awards. While their industry is laudable, it leaves some upper division courses without instructors, or at least stretches the rotation. It also prevents meeting the lone (and probably insatiable) student request for additional field instruction. Because the benefits of this grant and contract work to the UHH (faculty, students, and the institution) were strongly evident, the department and administration should explore either adding another tenure track line, or more fully incorporating the two long-term lecture faculty into the department. Both certainly appeared willing and very qualified to teach many of the non-techniques upper division courses.

Other Issues

1. The department must replace an aging van. This serious issue cropped up many times from different faculty and students.

2. The faculty is quickly running shy of research space, which is also student research space as they often assist to the great benefit of all.

3. The department appears to need space for a physical geography lab, along with some student or staff to help manage it. I was not able to fully investigate this issue during my visit.
4. Because some students are not interested in or inherently capable with spatial technologies, the department should discuss expanding techniques to include proficiency in foreign language, statistics, field techniques, data management, and others.

5. The department should explore teaching large (100+ student) sections. With the right instructor and assistance from student graders, these GE offerings are an excellent way to harvest new majors, expose faculty thinking to a wider audience, involve students in instruction (tutoring and grading), and balance teaching loads with other faculty demands.

Conclusion

GES is a very strong program with a bright future. While a few key challenges loom, reasonable administrative support will ensure that this highly skilled and motivated department will thrive well into the future.
Appendix B: Cost and Revenue Template
### Academic Program Cost and Revenues Template

#### Provisional to Established

<table>
<thead>
<tr>
<th>Program</th>
<th>U.S. Environmental Science</th>
</tr>
</thead>
</table>

#### Enter Academic Year (e.g., 2011-2012)

- **Enrollment & SSH**
  - A. Headcount Enrollment (Fall)
  - I. Annual SSH - Subject(s)
  - New initiatives (not further specified)

#### Direct and Incremental Program Costs Without fringe

- **C. Instructional Cost Without Fringe**
  - C1. Number (FTE) of FT Faculty/lecturers
  - C2. Number (FTE) of PT Faculty/lecturers
  - C3. Number (FTE) of PT Personnel

- **D. Other Personnel Costs**
- **E. Unique Program Costs**
  - E1. Student Outreach/Travel

#### Total Direct and Incremental Costs

<table>
<thead>
<tr>
<th>Revenues</th>
<th>G. Tuition &amp; Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Other</td>
<td></td>
</tr>
<tr>
<td>I. Total Revenue</td>
<td></td>
</tr>
</tbody>
</table>

#### J. Net Revenue (Cost)

<table>
<thead>
<tr>
<th>Program Cost per SSH with Fringe</th>
<th>K. Instructional Cost per SSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1. Total Salary FT Faculty/lecturers</td>
<td></td>
</tr>
<tr>
<td>K2. Total Salary PT Faculty/lecturers</td>
<td></td>
</tr>
<tr>
<td>K3. Total Salary PT Personnel</td>
<td></td>
</tr>
</tbody>
</table>

#### Summary

| Total Revenue: $19,370,000 | Net Revenue: $8,870,000 |

---

*Note: The table contains financial data and calculations for an academic program within the U.S. Environmental Science field, detailing costs, revenues, and net revenue.*
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
</tr>
</thead>
</table>
| A. Headcount Enrolment | Headcount enrolment of majors each Fall semester. Located at url: [http://www.hawaii.edu/mai/maps.php?site=category=Enrolment](http://www.hawaii.edu/mai/maps.php?site=category=Enrolment) Campus data may be used when majors are a subset of enrollment reported in IIP reports.
| B. Annual SSH Course Registration Report located at [http://www.hawaii.edu/mai/maps.php?site=courseRegistrationReport](http://www.hawaii.edu/mai/maps.php?site=courseRegistrationReport) Add the SSH for the Fall and Spring reports to obtain the annual SSH.
| C. Institutional Cost without fringe of Full Time Faculty and Lecturers (automated calculation) Gross salary costs of all faculty and instructional costs in the program. *Formula for column H = (IF(OR(D32=0, D33=-1), D14+D15)).* (D32*D33)**
| D. Other Personnel Cost: Salary cost (part or full time) for personnel supporting the program (AFT, dental lab support, advisor, etc.) This includes personnel providing necessary support for the program who may not be directly employed by the program and may include part-time FTE. Add negotiated collective bargaining increases and 4% per year for inflation thereafter.
| E. Unique Program Cost: Costs specific to the program, including non-personal. For provisional years, this would be actual cost. For established years, this would be projected costs using inflation and add 4% per year for inflation thereafter.
| F. Total Fixed and Incremental Cost: C + D + E. *Formula for column D = (IF(OR(12<>0), D14<>0), D17-OR(12<>0),SUM(D12:D15)).* (D17)**
| G. Tuition: Annual SSH X resident tuition revenue. *Formula for column D = (IF(D10>0, D10/32)).* (D32)**
| H. Other: Other sources of revenue including grants, program fees, etc. This should not include in-kind contributions unless the services or goods contributed are recorded in the financial records of the campus and included in Direct and Incremental Costs in the template.
| I. Total Revenue: G + H. *Formula for column D = (IF(D11<>0, D11, D13)).* (D13)**
| J. Net Cost: I - F. This is the net incremental cost of the program to the campus. A negative number here represents net revenue. (i.e., revenue in excess of cost) If there is a net cost, please explain how this cost will be funded. *Formula for column F = (IF(AND(12<>0), 12<>0), D19).* (D19)**
| K. Instructional Costs with Fringe: (C3 + K4)/7B. *Formula for column D = (IF(D13<>0, D13/D5)).* (D13/D5)**
| L. Support Cost: SSH. This campus non-instructional expenditures + systemwide support - organized research (SSH only) as provided by University Expenditure Report [http://www.hawaii.edu/mai/maps.php?site=expenditurestudy](http://www.hawaii.edu/mai/maps.php?site=expenditurestudy) *Formula for column D = (IF(OR(12<>0, D32<>0), D32<>0), D32).* (D32)**

**Note:**
For example, from the 2010-11 University Expenditure Report ([http://www.hawaii.edu/mai/maps.php?site=expenditurestudy](http://www.hawaii.edu/mai/maps.php?site=expenditurestudy)), the support expenditure/shell per campus is...

<table>
<thead>
<tr>
<th>Campus</th>
<th>Support Expenditure (shell)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UH Manoa</td>
<td>$425,000</td>
</tr>
<tr>
<td>UH Hilo</td>
<td>$457,000</td>
</tr>
<tr>
<td>UH-West</td>
<td>$675,000</td>
</tr>
<tr>
<td>Hawaii CC</td>
<td>$625,000</td>
</tr>
<tr>
<td>Kapiolani CC</td>
<td>$650,000</td>
</tr>
<tr>
<td>Kauai CC</td>
<td>$625,000</td>
</tr>
<tr>
<td>LCC</td>
<td>$575,000</td>
</tr>
<tr>
<td>Mānele CC</td>
<td>$550,000</td>
</tr>
<tr>
<td>Waimea CC</td>
<td>$525,000</td>
</tr>
<tr>
<td>Windward CC</td>
<td>$500,000</td>
</tr>
</tbody>
</table>

For total program costs (SSH + L), *Formula for column D = (IF(OR(32<>0, 33<>0), 32<>0), 32).* (32)**
Appendix C: Quantitative Data
Appendix C: Quantitative Data
University of Hawai'i at Hilo
B.S. in Environmental Science

<table>
<thead>
<tr>
<th>Year</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>2012-13</th>
<th>2013-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Student Count Information (by Fall Semesters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Number of Majors</td>
<td>41</td>
<td>51</td>
<td>58</td>
<td>58</td>
<td>51</td>
</tr>
<tr>
<td>b. Number of Minors</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>c. Number of Graduate Students</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2. Course Information (by Fall Semesters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student Semester Hours (SSH) Generated</td>
<td>396</td>
<td>267</td>
<td>285</td>
<td>213</td>
<td>192</td>
</tr>
<tr>
<td>b. Full Time Equivalents (FTE)</td>
<td>26</td>
<td>18</td>
<td>19</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>c. Percent of FTE of own Majors</td>
<td>14.4%</td>
<td>13.5%</td>
<td>12.6%</td>
<td>21.1%</td>
<td>23.4%</td>
</tr>
<tr>
<td>d. Percent of FTE of Majors within College</td>
<td>65.9%</td>
<td>68.5%</td>
<td>76.8%</td>
<td>52.1%</td>
<td>65.9%</td>
</tr>
<tr>
<td>e. Percent of FTE All Others</td>
<td>19.7%</td>
<td>19.0%</td>
<td>10.5%</td>
<td>1.8%</td>
<td>10.9%</td>
</tr>
<tr>
<td>f. Percent of FTE of Writing Intensive (WI) Courses</td>
<td>6.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>g. Percent of FTE General Education (GE) Courses</td>
<td>72.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>97.2%</td>
<td>98.4%</td>
</tr>
<tr>
<td>3. Course Delivery (by Fall Semesters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Average class size - Brick and Mortar</td>
<td>33</td>
<td>45</td>
<td>32</td>
<td>69</td>
<td>32</td>
</tr>
<tr>
<td>b. Average class size - Distance Learning</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c. Number of FTE Tenure/Tenure-Track Faculty</td>
<td>1.00</td>
<td>0.50</td>
<td>0.75</td>
<td>0.25</td>
<td>0.50</td>
</tr>
<tr>
<td>d. Number of FTE Adjunct Faculty</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>e. % SH Taught by Tenure/Tenure-Track Faculty</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>f. % SH Taught by Adjunct Faculty</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>g. FTE student-faculty ratio</td>
<td>26</td>
<td>36</td>
<td>55</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>4. Graduation and Placement (by Fiscal Year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Number of graduates/degrees earned</td>
<td>4</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>Data Not Available</td>
</tr>
<tr>
<td>b. Percent of Majors Graduating</td>
<td>9.8%</td>
<td>13.7%</td>
<td>17.2%</td>
<td>17.2%</td>
<td></td>
</tr>
<tr>
<td>c. Number of Native Hawaiian graduates</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>d. Number of Certificates awarded</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>5. Cost of Delivery (by Fiscal Year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Budgetary Allocations</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>b. Cost per SSH</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

Notes:
1/ by Fall Semesters, unless otherwise stated.
2/ Number of Majors = Number of 1st Declared Majors of the selected program. These figures do not count 2nd, 3rd, or 4th declared major.
3/ Number of Minors = Number of 1st Declared Minors of the selected program. These figures do not count 2nd, 3rd, or 4th declared minor.
4/ Undergraduate FTE Calculation = SSH/15. Graduate FTE Calculation = SSH/12.
5/ GE Course Listing from C. Travis "approved gen ed and courses approved to meet integrative requirements nov 2013".
6/ Excludes classes numbered .99 (individual instruction).
7/ Average class size calculation = Number of Registrations/Number of Classes.
8/ Average class size calculation = Number of Registrations/Number of Classes.
9/ HR Dataset defines Tenure/Tenure-Track Faculty as Instructor Grades: I, II, III, IV, V and/or otherwise specified.
10/ Adjunct Faculty defined as Instructor Grades: I, II, III, IV, V and/or otherwise specified.
11/ Fiscal Year includes Fall and Spring.
12/ FTE Student-Faculty Ratio Calculation = Full Time Equivalent (FTE) / Total FTE Tenure/Tenure-Track Faculty & Adjunct Faculty
13/ Percent of Majors Graduating Calculation = Number of graduates or degrees earned / Number of Majors.
14/ Budgetary Allocation provided by D. Cramer on 2014-05-20. Budget Allocations is not available by Program Level for the College of Arts and Sciences. Presented here is an approximation of the salaries paid for the Fiscal Year. This total includes faculty members with paid leave. This total does not include fringe benefits paid and/or overlaid costs and/or faculty paybacks.
15/ Cost per SSH Calculation = Budgetary Allocation / SSH Generated.

Sources: C. Travis "approved gen ed and courses approved to meet integrative requirements nov 2013", HR Dataset: "Faculty-Lecturer Listing 2005-2013", IRO_BASE (Courses), IRO_DEGREE (IROS), IRO_REGS (Courses), IRO_SOCAD (Courses), IRO_SOCALL (Courses).

DB File: 197, Program Review-B.S. in Environmental Science

21
### Appendix C: Quantitative Data

**University of Hawai‘i at Hilo**  
**B.A. in Environmental Studies**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Number of Majors</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td>b. Number of Minors</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>c. Number of Graduate Students</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

| 2. Course Information (by Fall Semesters) |  
|------------------------------------------------|----------------|----------------|----------------|----------------|----------------|
| a. Student Semester Hours (SSH) Generated | 0 | 0 | 0 | 0 | 0 |
| b. Full Time Equivalent (FTE) | 0 | 0 | 0 | 0 | 0 |
| c. Percent of FTE of own Majors | 0 | 0 | 0 | 0 | 0 |
| d. Percent of FTE of Majors within College | 0 | 0 | 0 | 0 | 0 |
| e. Percent of FTE All Others | 0 | 0 | 0 | 0 | 0 |
| f. Percent of FTE of Writing Intensive (WI) Courses | 0 | 0 | 0 | 0 | 0 |
| g. Percent of FTE General Education (GE) Courses | 0 | 0 | 0 | 0 | 0 |

| 3. Course Delivery (by Fall Semesters) |  
|------------------------------------------------|----------------|----------------|----------------|----------------|----------------|
| a. Average class size - Block and Mortar | 0 | 0 | 0 | 0 | 0 |
| b. Average class size - Distance Learning | 0 | 0 | 0 | 0 | 0 |
| c. Number of FTE Tenure/Tenure-Track Faculty | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d. Number of FTE Adjunct Faculty | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| e. % SH Taught by Tenure/Tenure-Track Faculty | 0 | 0 | 0 | 0 | 0 |
| f. % SH Taught by Adjunct Faculty | 0 | 0 | 0 | 0 | 0 |
| g. FTE student-faculty ratio | 0 | 0 | 0 | 0 | 0 |

| 4. Graduation and Placement (by Fiscal Year) |  
|------------------------------------------------|----------------|----------------|----------------|----------------|----------------|
| a. Number of graduates/degrees earned | 4 | 7 | 2 | 4 |  
| b. Percent of Majors Graduating | 13.3% | 23.3% | 11.4% | 6.7% |  
| c. Number of Native Hawaiian graduates | 1 | 0 | 0 | 0 |  
| d. Number of Certificates awarded (Environmental Studies) | 0 | 0 | 1 | 0 |  

| 5. Cost of Delivery (by Fiscal Year) |  
|------------------------------------------------|----------------|----------------|----------------|----------------|----------------|
| a. Budgetary Allocations | $0 | $0 | $0 | $0 | $0 |
| b. Cost per SSH | 0 | 0 | 0 | 0 | 0 |

**Notes:**
1/ by Fall Semesters, unless otherwise stated  
2/ Number of Majors = Number of 1st Declared Majors of the selected program. These figures do not count 2nd, 3rd, or 4th declared major.  
3/ Number of Minors = Number of 1st Declared Minors of the selected program. These figures do not count 2nd, 3rd, or 4th declared minor.  
4/ Undergraduate FTE Calculation = SSH/15. Graduate FTE Calculation = SSH/12.  
5/ GE Course Listing from C. Travis approved gen ed and courses approved to meet integrative requirements nov 2015  
6/ Excludes classes numbered 699 (individual instruction)  
7/ Average Class Size Calculation = Number of Registrations/Number of Classes  
8/ Average Class Size Calculation = Number of Registrations/Number of Classes  
9/ HR Dataset defines Tenure/Tenure-Track Faculty as Instructor Grades: B3, B4, B5, and/or otherwise specified.  
10/ Adjunct Faculty defined as Instructor Grades: L1, L2, L3, and/or otherwise specified.  
11/ Faculty FTE Calculation = SH Taught/12  
12/ FTE Student-Faculty Ratio Calculation = Full Time Equivalent (FTE)/Total FTE Tenure/Tenure-Track Faculty & Adjunct Faculty  
13/ Percent of Majors Graduating = Number of graduates or degrees earned/Number of Majors  
14/ Based on data as of Fall 2015.  
15/ Budgetary Allocations provided by: D.Cruze on 2014-02-20. Budgetary Allocations to cost available by Program Level for the College of Arts and Sciences. Presented here is an approximation of the salaries paid for the Fiscal Year. This total includes faculty members with paid leave.  
16/ This total does not include fringe benefits paid and/or over time costs and/or faculty payback.  
17/ Cost per SSH Calculation = Budgetary Allocations/SSH Generated  

**Sources:**  
C. Travis approved gen ed and courses approved to meet integrative requirements: Nov 2013; HR Dataset: "Faculty-Lecturer Listing 2005- 2013"; IRO_BASE (Census); IRO_DEGREE (EOS); IRO_REGSS (Census); IRO_SOCAD (Census); IRO_SOCALL (Census)
Appendix C: Quantitative Data

University of Hawai‘i at Hilo
B.A. in Geography

1. Student Count Information (by Fall Semesters) 1
   a. Number of Majors 2
      Yr 1 2009-10 40
      Yr 2 2010-11 37
      Yr 3 2011-12 27
      Yr 4 2012-13 21
      Yr 5 2013-14 18
   b. Number of Minors 3
      Yr 1 2009-10 8
      Yr 2 2010-11 4
      Yr 3 2011-12 1
      Yr 4 2012-13 5
      Yr 5 2013-14 4
   c. Number of Graduate Students
      N/A

2. Course Information (by Fall Semesters) 1
   a. Student Semester Hours (SSH) Generated
      Yr 1 2009-10 1,395
      Yr 2 2010-11 1,423
      Yr 3 2011-12 1,245
      Yr 4 2012-13 1,168
      Yr 5 2013-14 1,203
   b. Full Time Equivalent (FTE) 4
      Yr 1 2009-10 93
      Yr 2 2010-11 95
      Yr 3 2011-12 93
      Yr 4 2012-13 78
      Yr 5 2013-14 80
   c. Percent of FTE of own Majors
      Yr 1 2009-10 17.4%
      Yr 2 2010-11 20.9%
      Yr 3 2011-12 12.0%
      Yr 4 2012-13 10.3%
      Yr 5 2013-14 10.0%
   d. Percent of FTE of Majors within College
      Yr 1 2009-10 69.5%
      Yr 2 2010-11 65.6%
      Yr 3 2011-12 72.5%
      Yr 4 2012-13 72.3%
      Yr 5 2013-14 78.1%
   e. Percent of FTE All Others
      Yr 1 2009-10 14.2%
      Yr 2 2010-11 13.3%
      Yr 3 2011-12 15.7%
      Yr 4 2012-13 17.5%
      Yr 5 2013-14 14.2%
   f. Percent of FTE Writing Intensive (WI) Courses
      Yr 1 2009-10 9.2%
      Yr 2 2010-11 11.8%
      Yr 3 2011-12 4.3%
      Yr 4 2012-13 8.7%
      Yr 5 2013-14 4.7%
   g. Percent of FTE General Education (GE) Courses 5
      Yr 1 2009-10 79.6%
      Yr 2 2010-11 63.3%
      Yr 3 2011-12 60.0%
      Yr 4 2012-13 61.9%
      Yr 5 2013-14 74.8%

3. Course Delivery (by Fall Semesters) 6
   a. Average class size - Block and Semester
      Yr 1 2009-10 29
      Yr 2 2010-11 25
      Yr 3 2011-12 26
      Yr 4 2012-13 25
      Yr 5 2013-14 25
   b. Average class size - Distance Learning 7
      Yr 1 2009-10 26
      Yr 2 2010-11 24
      Yr 3 2011-12 25
      Yr 4 2012-13 26
      Yr 5 2013-14 0
   c. Number of FTE Tenure/Tenure-Track Faculty 8
      Yr 1 2009-10 2.25
      Yr 2 2010-11 2.32
      Yr 3 2011-12 2.32
      Yr 4 2012-13 2.25
      Yr 5 2013-14 1.75
   d. Number of FTE Adjunct Faculty 9
      Yr 1 2009-10 1.75
      Yr 2 2010-11 1.50
      Yr 3 2011-12 1.00
      Yr 4 2012-13 1.50
      Yr 5 2013-14 2.25
   e. % SH Taught by Tenure/Tenure-Track Faculty
      Yr 1 2009-10 56.3%
      Yr 2 2010-11 68.4%
      Yr 3 2011-12 76.5%
      Yr 4 2012-13 60.0%
      Yr 5 2013-14 43.8%
   f. % SH Taught by Adjunct Faculty
      Yr 1 2009-10 43.8%
      Yr 2 2010-11 31.6%
      Yr 3 2011-12 23.5%
      Yr 4 2012-13 40.0%
      Yr 5 2013-14 56.3%
   g. FTE student-faculty ratio 10
      Yr 1 2009-10 23
      Yr 2 2010-11 25
      Yr 3 2011-12 29
      Yr 4 2012-13 22
      Yr 5 2013-14 20

4. Graduation and Placement (by Fiscal Year)
   a. Number of graduates/degrees earned
      Yr 1 2009-10 8
      Yr 2 2010-11 15
      Yr 3 2011-12 16
      Yr 4 2012-13 5
      Yr 5 2013-14 Data Not Available
   b. Percent of Majors Graduating 11
      Yr 1 2009-10 20.0%
      Yr 2 2010-11 40.5%
      Yr 3 2011-12 59.3%
      Yr 4 2012-13 23.0%
      Yr 5 2013-14 Not Available
   c. Number of Native Hawaiian graduates
      Yr 1 2009-10 1
      Yr 2 2010-11 1
      Yr 3 2011-12 4
      Yr 4 2012-13 1
      Yr 5 2013-14 Available
   d. Number of Certificates awarded
      Yr 1 2009-10 6
      Yr 2 2010-11 7
      Yr 3 2011-12 4
      Yr 4 2012-13 4
      Yr 5 2013-14 0

5. Cost of Delivery (by Fiscal Year)
   a. Budgetary Allocations 12
      Yr 1 2009-10 $458,448
      Yr 2 2010-11 $504,195
      Yr 3 2011-12 $334,143
      Yr 4 2012-13 $263,645
      Yr 5 2013-14 $363,122
   b. Cost per SSH 13
      Yr 1 2009-10 $174.13
      Yr 2 2010-11 $203.96
      Yr 3 2011-12 $235.36
      Yr 4 2012-13 $186.39
      Yr 5 2013-14 $160.53

Notes:
1/ by Fall Semesters, unless otherwise stated
2/ Number of Majors = Number of 1st Declared Majors of the selected program. These figures do not count 2nd, 3rd, or 4th declared major.
3/ Number of Minors = Number of 1st Declared Minors of the selected program. These figures do not count 2nd, 3rd, or 4th declared minor.
4/ Undergraduate FTE Calculations = SSH/1.5. Graduate FTE Calculations = SSH/12.
5/ GE Course Listing from C. Travis “approved gen ed and courses approved to meet integrative requirements now 2013”
6/ Excludes classes numbered 99 (individual instruction)
7/ Average Class Size Calculation = Number of Registrations/Number of Classes
8/ Average Class Size Calculation = Number of Registrations/Number of Classes.
9/ FTE Calculation for Tenure/Tenure-Track Faculty = Instructor Grade 3's, 4's, 5's and/or otherwise specified.
10/ FTE Calculation for Adjunct Faculty = Number of graduates or degrees earned/Number of Majors
11/ Faculty Graduation Rate Calculation = Full Time Equivalent (FTE) / Total FTE Tenure/Tenure-Track Faculty & Adjunct Faculty
12/ Bachelor’s degree attainment rate: number of graduates/100 (individual instructions)
13/ Bachelor’s degree attainment rate: number of graduates/100 (individual instructions)

Sources: C. Travis “approved gen ed and courses approved to meet integrative requirements now 2013”.
H.R. Dataset; “Faculty-Lecture Listing 2005-2013”.
H.R. BASE (Comen); H.R. DEGREE (EDS), H.R. REGS (Comen); H.R. SOCAD (Comen); H.R. SOCALL (Comen)
### Semester Hours (SH) Attempted by Environmental Science, Environmental Studies, and Geography Majors

**University of Hawaii at Hilo**  
**Fall 2007 to Fall 2013**  
**at Census**

<table>
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<th># of 1st Declared Majors</th>
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<th>Fall 2009</th>
<th>Fall 2010</th>
<th>Fall 2011</th>
<th>Fall 2012</th>
<th>Fall 2013</th>
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<td>30</td>
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<td>32</td>
<td>30</td>
<td>40</td>
<td>37</td>
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<td>18</td>
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<td><strong>Grand Total</strong></td>
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<td><strong>111</strong></td>
<td><strong>118</strong></td>
<td><strong>115</strong></td>
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<th># of SH Attempted</th>
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<th>Fall 2009</th>
<th>Fall 2010</th>
<th>Fall 2011</th>
<th>Fall 2012</th>
<th>Fall 2013</th>
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<td>570</td>
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<td>480</td>
<td>526</td>
<td>514</td>
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<td><strong>Grand Total</strong></td>
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<td><strong>1,517</strong></td>
<td><strong>1,630</strong></td>
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<th>Fall 2012</th>
<th>Fall 2013</th>
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<td>14</td>
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<tr>
<td><strong>Grand Total</strong></td>
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<td><strong>98</strong></td>
<td><strong>101</strong></td>
<td><strong>109</strong></td>
<td><strong>98</strong></td>
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Source: IRD_BASIS_UH (Census)  
Prepared by UH Hilo Office of Institutional Research  
Unit Measures: 2014-07-6 to  
DB File: IRD_UH1020380 Generated by ENVS-BNSC-GEOG Majors
Appendix D: Other Personnel Costs and Unique Program Costs
From the Cost and Revenue Templates (see Appendix B), sub-sections D: Other Personnel Costs and E: Unique Program Costs, pertaining to Direct and Incremental Program Costs (Without Fringe), these costs have been calculated as follows.

D. Other Personnel Costs

1. Two lecturers per year hired to teach required ENSC/ENVS courses (e.g., EIS course; or replace/release other current faculty to teach required program courses). Lecturer Fee Schedule: Rate per credit hour of instruction or equivalence: Located at url: http://www.uhpa.org/uhpa-bor-contract/article-xxi. Multiply each “Step C” value by 6 credits per year for the year in question.

E. Unique Program Costs

1. Geospatial laboratory costs\(^a\) \(\$850 \times 15 = \$12,750\)

2. Field trip vehicle costs\(^b\) \(\$3,600\)

Total \(\$16,350\)

Apportion of geo-spatial costs lab costs for 15 students/yr.

a: students at $850 per year
b: Rental of 4 wheel drive
   Repair and maintenance
   Gas
Appendix E: Curriculum Map & Course Listings Environmental Science and Studies
## Curriculum Map

### Intended Student Learning Outcomes ES Degree

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Perform social/natural science research</th>
<th>Develop management skills for natural resource and protected area conservation</th>
<th>Use advanced technological equipment in laboratory and field settings</th>
<th>Perform quantitative and/or qualitative analysis to interpret environmental and social data</th>
<th>Present scientific results in oral and written formats</th>
<th>Interpret and critique professional scientific literature</th>
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<td>I, R</td>
<td>I, R</td>
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<tr>
<td>CHEM 124</td>
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<td>I</td>
<td>I</td>
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<td>I, R</td>
<td>I, R</td>
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<td>ENG 287 or ENG 225</td>
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<td>I, R</td>
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<tr>
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<tr>
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<td>MATH 205/206*</td>
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</tbody>
</table>

I = Introduced, R = Reinforced, M = Mastery, A = Assessment evidence collected

* BS Requirement
ENSC BS Courses
Core Courses
BIOL 175 Biology I (3) or BIOL 176 Biology II (3)
BIOL 281 General Ecology (3)
CHEM 124 General Chemistry I with Lab (4)
CHEM 125 General Chemistry II with Lab (4)
ENG 287 Rhetoric (3) or ENG 225 (3)
ENSC 100 Introduction to Environmental Science (3) or GEOG 101 Geography and the Natural Environment (3)
GEOG/ENSC 385 Field Methods: Environmental Science (3)
GEOG/ENSC 495 Senior Seminar: Environmental Science (3)
MATH 205–206 Calculus I and II (8)
Quantitative Methods: Choose one course from the three-credits courses listed below: (3)
BIOL 280 Biostatistics
GEOG 201 Geographic Information
GEOG 280 Introduction to Geostatistics
MARE 250 Statistical Applications in Marine Science
MATH 121 Introduction to Statistics and Probability
Human and the Environment: Choose two course from the three-credit courses listed below: (6)
ANTH 315 Ecological Anthropology
ECON 380 Natural Resource and Environmental Economics
GEOG 312 Food and Societies
GEOG/ENSC 326 Natural Resources
GEOG 340 Intro to Land Use Planning
GEOG/ENSC 436 Environmental Politics in the Pacific
GEOG 440 Community Planning
PHIL 412 Philosophy of Nature
POLS 335 Environmental Politics and Policy
Environmental Science: Choose one concentration listed below, 3 courses from either: (9–11)
Biological Concentration
BIOL/GEOG 309 Biogeography
BIOL 375 Biology of Microorganisms
BIOL 381 Conservation Biology
BIOL 481–481L Theory and Methods of Ecology and Evolution with Research Methods Lab
ENSC 457 Vegetation of the Hawaiian Islands
GEOG 409 Landscape Ecology
SOIL 304 Tropical Soils
Physical Science Concentration
CHEM 141 Survey of Organic Chemistry
CHEM 241-241L Organic Chemistry I with Lab (4-credit courses)
CHEM 360 Environmental Chemistry
GEOG 300 Climatology
GEOG 301 Global Warming/Climate Change
GEOG 319 Natural Hazards
GEOL 300 Advanced Environmental Earth Science
GEOL 342 Earth Surface Processes
GEOL 360 Surface Water
GEOL 460 Groundwater
MARE 282 Global Change
SOIL 304 Tropical Soils

**Advanced Environmental Techniques: Choose two courses: (6–7)**

ANTH 481 Archaeometry
FOR 202 Forestry and Natural Resources
GEOG 441 Environmental Impact Assessment
GEOG 470 Remote Sensing and Air Photo Interpretation
GEOG 480 GIS and Visualization
GEOG 481 Advanced Geo-Spatial Techniques
GEOL 445 GIS for Geology
GEOL 450 Geological Remote Sensing
GEOG 382 Qualitative Research Methods in Geography
GEOG 488 Advanced Geostatistics

**Total in Group 2: 60–64 Semester Credits**

Highlighted Courses are those cross-listed as GEOG or GEOG/ENSC alpha
Appendix F: Distribution of Semester Hours, Geography and Environmental Studies & Courses Taught
<table>
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<th>Major Division</th>
<th>Grand Total</th>
<th>Bot Prop Cons &amp; Enviro Sci</th>
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<th>Environmental Studies</th>
<th>Geography</th>
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<td>55.0%</td>
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<td>35.0%</td>
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<tr>
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<td>58.9%</td>
<td>7</td>
<td>36.8%</td>
</tr>
<tr>
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<td>7</td>
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<tr>
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<td>10.1%</td>
<td>11</td>
<td>55.0%</td>
<td>7</td>
<td>35.0%</td>
</tr>
</tbody>
</table>

| Utopia Division | Fall 2009 | 8 | 3.7% | 4 | 50.0% | 4 | 12.5% |
|                | Fall 2010 | 8 | 3.7% | 4 | 50.0% | 4 | 12.5% |
|                | ENSC 441 | 23 | 1.1% | 1 | 4.3% | 2 | 8.7% | 7 | 30.4% | 12 | 52.2% |
|                | Spring 2012 | 23 | 1.1% | 1 | 4.3% | 2 | 8.7% | 7 | 30.4% | 12 | 52.2% |
|                | ENSC 457 | 20 | 1.1% | 11 | 55.0% | 3 | 15.0% | 1 | 5.0% | 5 | 25.0% |
|                | Spring 2013 | 20 | 1.1% | 11 | 55.0% | 3 | 15.0% | 1 | 5.0% | 5 | 25.0% |
|                | ENSC 468 | 0 | 1.1% | 5 | 55.6% | 4 | 44.4% |
|                | Spring 2010 | 0 | 1.1% | 5 | 55.6% | 4 | 44.4% |
|                | GEOG 300 | 122 | 1.1% | 16 | 13.1% | 11 | 9.0% | 57 | 46.7% | 38 | 31.1% |
|                | Fall 2005 | 18 | 1.1% | 10 | 55.6% | 4 | 22.2% |
|                | Spring 2007 | 21 | 1.1% | 11 | 52.4% | 9 | 42.9% |
|                | Spring 2008 | 27 | 1.1% | 8 | 29.6% | 12 | 44.4% |
|                | Spring 2009 | 32 | 1.1% | 10 | 50.0% | 5 | 16.7% |
|                | Spring 2011 | 24 | 1.1% | 12 | 50.0% | 4 | 16.7% |
|                | GEOG 312 | 157 | 1.1% | 3 | 1.9% | 3 | 1.9% | 63 | 40.1% | 88 | 55.1% |
|                | Fall 2005 | 20 | 1.1% | 17 | 85.0% | 3 | 15.0% |
|                | Fall 2006 | 19 | 1.1% | 7 | 36.8% | 12 | 63.2% |
|                | Fall 2007 | 21 | 1.1% | 8 | 38.1% | 13 | 61.9% |
|                | Fall 2008 | 26 | 1.1% | 2 | 7.7% | 1 | 3.8% | 7 | 26.9% | 16 | 61.5% |
|                | Fall 2009 | 25 | 1.1% | 14 | 56.0% | 11 | 44.0% |
|                | Fall 2012 | 18 | 1.1% | 4 | 22.2% | 13 | 72.2% |
|                | Fall 2013 | 23 | 1.1% | 6 | 26.1% | 15 | 65.2% |

Sources: IRD.REGS and IRD.BAZE (Census)
Prepared by UIH Info Office of Institutional Research; Last Modified: 2014-06-11 to
DB File: 273_K.BestSel Selected GEOG-ENSC Courses by Major - 2
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<tr>
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<td>31</td>
<td>10 8.3%</td>
<td>16 13.3%</td>
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<td>44 36.7%</td>
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<td>Spring 2006</td>
<td>24</td>
<td>8 6.7%</td>
<td>16 13.3%</td>
<td>14 11.7%</td>
<td>44 36.7%</td>
<td>18</td>
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<tr>
<td>Fall 2010</td>
<td>23</td>
<td>10 8.3%</td>
<td>16 13.3%</td>
<td>14 11.7%</td>
<td>44 36.7%</td>
<td>18</td>
</tr>
<tr>
<td>Fall 2012</td>
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<td>14 11.7%</td>
<td>16 13.3%</td>
<td>14 11.7%</td>
<td>44 36.7%</td>
<td>18</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>23</td>
<td>10 8.3%</td>
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<td></td>
<td>12</td>
<td>92.3%</td>
<td></td>
<td>1</td>
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Appendix G: Geography and Environmental Studies Departmental Faculty

1. Kathryn Besio (Chair, 2012 to present)
2. Jonathan Price
3. Jeffrey Davis
4. Ryan Perroy
5. James Juvik (no CV attached, Emeritus January 1, 2013)
KATHRYN JEAN BESIO
Curriculum Vitae

16 Luana Way
Hilo, HI 96720
Ph. 808.969.7179
Cell 808.936.1859

Geography & Environmental Studies
Department
University of Hawai‘i at Hilo
200 W. Kawili St.
Hilo, HI 96720
Ph. 808.936.1859
Fax 808.974.7737
besio@hawaii.edu

Current Position
Present Associate Professor and Department Chair, Geography and Environmental Studies,
University of Hawai‘i at Hilo
2009 Associate Professor, Geography and Environmental Studies, University of Hawai‘i at Hilo
(Tenured, 2010)
2005 Assistant Professor, Geography and Environmental Studies, University of Hawai‘i at Hilo

Education
2001 PhD Geography, University of Hawai‘i at Manoa,
Dissertation: Spatial Stories of Researchers and Travelers in a Balti Village, Pakistan: Jangli
Geographies of Gender and Transculturation

1996 MA Geography, University of Hawai‘i at Manoa,
Thesis: Mountain Heirs: Western Imaginings of Sherpa Children in the Khumbu, Nepal

1987 BA University of California, San Diego
Major: Visual Arts; Minors: Sociology & English Literature
Graduate cum Laude

Grants
2006 University of Hawai‘i at Hilo Seed Research Grant, “Pedagogy in Transcultural Spaces of the
Pacific” ($9775)

2003 University of Waikato Faculty of Arts and Social Sciences Academic Research Visitor’s Grant,
David Butz (NZ$4320)

2002 University of Waikato, Faculty of Arts and Social Sciences “Bringing out the beast in us: animal
tourism in New Zealand” (with Lynda Johnston and Robyn Longhurst) (NZ $6217)

1999 Arts and Sciences Advisory Council Award, University of Hawai‘i at Manoa (US $1000)

1998 National Science Foundation, Doctoral Improvement Grant, “Spaces of Erasure” (with Brian
Murton) (US $9919)
1997 Social Science Research Council Pre-Dissertation Fellowship (US $10,000)

1997 Arts and Sciences Advisory Council Award, University of Hawai‘i at Manoa (US $1000)

Grants Submitted

Scholarly Activities
Publications

Peer Reviewed Journal Articles

2013, Besio, Kathryn and Sarah Marusek Losing It in Hawai‘i: Weight Watchers and the paradoxical nature of weight gain and loss. Gender, Place and Culture


2006 Chutes and Ladders: Gender and Spatiality in a Balti Village, Pakistan. Special issue on Gender & Sexuality, ACME 5: 258-278.

2006 Besio, K and P Moss Introduction to Special Issue on Gender and Sexuality: Sexed, unsexy and gendered spaces of inversions and reversals. ACME 5: 112-126.

2005 Telling Stories to Hear Autoethnography: researching women’s lives in northern Pakistan. Gender, Place & Culture 12: 317-331


Peer Reviewed Book Chapters
2010 “The politics and ethics of geographic research” invited submission, in the Handbook of Social Geography, Susan Smith, Sallie Marston, Rachel Pain, and John Paul Jones III (Eds.), Sage Publications: 560-573.


Book Reviews


Invited Encyclopedia Entries


Papers in Progress
Too Many Mangos and Local Food on Hawai‘i Island for submission to special issue on Hawai‘i’s Foodscapes Food, Culture and Society.

Presentations at Conferences and Other Scholarly Venues

2012 Too Many Mangos and Local Food on Hawai‘i Island. Foodways: Diasporic Diners, Transnational Tables and Culinary Connections Conference, Centre for Diaspora and Transnational Studies, University of Toronto, Canada, October 4-7, 2012.


2011 What does your garden grow? Everyday practices of food and identity in Hilo, Hawai‘i. University of Auckland, Auckland, NZ, April 1, 2011

2011 Local Eaters, Eating Locally: Local foods and Hawai‘i Regional Cuisine, University of Waikato Staff-Student Seminar Series, Hamilton, NZ, March 28, 2011

2010 “Eating Hawai‘i: Local Foods and Hawai‘i Regional Cuisine” at University of Hawai‘i at Manoa, Geography Department Colloquium Series, September 23, 2010.


2008 Alter(ed)Native Nationalisms: Spaces of Resistance and Accommodation on a Hawai‘i University Campus, Association of American Geographers Annual Meeting, April 18, 2008, Boston, MA


2005 “Constructing Knowledge, Destabilizing Authority and Commending Bodies” Association for American Geographers Meeting, Denver CO, April 8, 2005.


1999 “Placing Each Other in Baltistan: A Geography of Knowing,” Annual Conference on South Asia, Madison, WI, October 16, 1999.

1999 “Power Play: Himalayan Children and Geographies of Authority,” Association of American Geographers Meeting, Honolulu, HI March 27, 1999


**Academic Panels Organized**


2005 *More Sex! More Gender!* (with Robyn Longhurst, University of Waikato) Association of American Geographers, Denver, CO April 8, 2005


1999 *Knowing the “other,”* Annual Conference on South Asia, Madison, WI, October 16, 1999.
1996 *Contemporary Tourist Destinations: Conflicting Imagery of Spaces and Places in Asia and the Pacific*, Association for Asian Studies, Honolulu, HI, April 12, 1996.

**Invited Reviewer for Scholarly Journals**

- *Australian Geographer*
- *ACME*
- *Annals of Tourism Research*
- *Applied Geography*
- *Area*
- *Canadian Geographer*
- *Contemporary Issues in Tourism*
- *Cultural Geographies*
- *Gender, Place and Culture*
- *Environment and Planning D: Society and Space*
- *Historical Geography*
- *Human Ecology*
- *Law Text Culture*
- *New Zealand Geographer*
- *Northwestern Science*
- *The Open Journal of Geography*
- *Political Geography*
- *The Professional Geographer*
- *Tourist Studies*
- *Journal of Cultural Geography*
- *Other Scholarly Contributions*
- *Guest Editor, ACME*

**Previous Appointments**

2001-4 *Lecturer, University of Waikato, Hamilton, NZ*

_Courses Taught:_ Gender, Place and Culture, Tourism Environments, Contemporary Cultural Geographies, Tourism in Society, Geographies of Tourism Planning and Development, Social Construction of Tourism and Tourists, Introduction to Tourism Studies and Critical Urban Geographies

*Graduate Supervision*

2 MA students, 5 Honours Students

2000 *Instructor, Outreach College, University of Hawai‘i at Manoa*_

*Geography of World Regions*

1994-2000 *Teaching Assistant, University of Hawai‘i at Manoa*_

Geography and the Natural Environment; Geography & Contemporary Societies; Geography of World Regions; Geography of Hawai‘i

1999 *Reader and Examiner, Manoa Writing Project, University of Hawai‘i at Manoa May and August*

1995 *Instructor, College of Continuing Education, University of Hawai‘i at Manoa*_

Geography and the Natural Environment Lab

1995 *Instructor, Summer Session, University of Hawai‘i at Manoa*_

Geography and the Natural Environment Lab

1993 *Student Research Assistant, Dept. of South Asian Studies, University of Hawai‘i at Manoa*

**University Service**

2012 MA Committee member for Tom Belfield and Krista Jaspers, Department of Geography, UH Manoa

2012 PhD Committee member for Jenn Bernstein, UH Manoa

2012 Chair, Geography and Environmental Studies

2012 Academic Policy Committee Chair, College of Arts and Sciences

2010 Social Sciences Division Personnel Committee

2010 Search Committee Chair, UHH Dept. of Geography and Environmental Studies

2009-10 University of Hawai‘i at Hilo, Director, Women’s Studies

2008-09 University of Hawai‘i at Hilo Student Assembly, Faculty Advisor
2008-09 University of Hawai‘i at Hilo Shared Governance Review Taskforce
2008-10 Keaholoo/LSAMP Mentor, University of Hawai‘i at Hilo
2008- 10 Food Service Advisory Council, University of Hawai‘i at Hilo
2007- 09 Graduate Council, University of Hawai‘i at Hilo
2005-2010 Steering Committee, Women’s Studies, University of Hawai‘i at Hilo
2006 - 2007 Health and Safety Committee, University of Hawai‘i at Hilo
2006 (spring) Acting Chair, Geography Department, University of Hawai‘i at Hilo
2004 Faculty of Arts & Social Sciences Planning Group, University of Waikato
2002 Cultural Studies Working Group, University of Waikato

Professional Development
Uluakea Faculty, Teaching from a Hawaiian World View, Kipuka Native Hawaiian Student Center,
University of Hawai‘i, 2007-present
Uluakea Workshop, Teaching from a Hawaiian World View, 2007, Kipuka Native Hawaiian Student
Center, University of Hawai‘i at Hilo, May 17-23, 2007
MacPac Group, 2007-2008 – Online and course development, using Podcasts and other online
resources.
University of Waikato, Teaching and Learning Development Unit Workshops
2002 Supervision & Lecturers at Work
2001 Using Technology, Leading Discussions, Designing Assessment Tasks Principles of
Assessment

Professional Memberships
Association of American Geographers (since 1996)

Community Service
2011 – Regional Geography: South Asia, E.B. DeSilva Elementary School
2009 – What do geographers do? E.B. DeSilva Elementary School,
2008 – Rice is Nice, Guest Lecture, Smithsonian Foodways Exhibit, HCC, HI, December 11, 2008
2008 – More than Madrassas: Pakistan and Ecotourism UHH and HCC International Education Week,
November 17, 2008
2008 – Panelist, Hands-on and Creative Teaching, UHH New Faculty Orientation, August 21, 2008
2007 – UHH Hunger Banquet, Guest Speaker
2007 – YWCA Preschool, Guest Speaker on geography
2007 – Volunteer, University of Hawai‘i at Hilo, Women’s Center
2003-2004 Trustee, Hamilton Multicultural Services Trust, Hamilton, NZ
1998-99 Guest Speaker, Hawai‘i Geographic Alliance, “Village Children in Northern Pakistan,” 45
classrooms in the Hawai‘i State School System
1999 Appearance on EARTH, Tele-School produced by Department of Education, State of Hawai‘i, 2
January.
1999 Website Development, Hawai‘i Geographic Alliance, “Village Children in Northern Pakistan.”
Consulting
2010-11 Flow of Fish Research Project, Kohala Center, Waimea HI
2009 North Kohala Community Food Survey, Kohala Center, Waimea, HI
1999 Reviewer and Consultant, Women Explorers of the Mountains, Capstone Press, MN.
1997 & 1998 Invited Consultant to IUCN-Pakistan project "Maintaining Biodiversity in Pakistan with Rural Community Development."
1998 Co-Facilitator, IUCN Consultative Workshop for Communities Surrounding the Central Karakoram National Park.
CURRICULUM VITAE
JONATHAN PAUL PRICE

Department of Geography and Environmental Studies
University of Hawai‘i at Hilo
200 W. Kawili St.
Hilo, HI 96720-4091
phone: (808) 974-7547
email: jpprice@hawaii.edu

ACADEMIC DEGREES
Ph.D. in Geography
University of California at Davis
September 2002

B.S. in Geography, minor in Botany
University of California at Davis
June 1994

PROFESSIONAL EXPERIENCE
2007-present Assistant Professor of Geography and Environmental Studies, University of Hawai‘i at Hilo

2004-2007 Researcher, USGS Hawai‘i Cooperative Studies Unit, University of Hawai‘i at Hilo.

2006 Instructor, University of Hawai‘i, Hilo: Earth Systems and Environment

2002-2004 Post-Doctoral Fellowship, Department of Botany National Museum of Natural History, Smithsonian Institution, Washington, DC

2001 Instructor, University of California, Davis: Plant Geography


1994-1995 GIS Coordinator for biological survey of Great Valley Grasslands State Park, CA, Department of Environmental Studies, UC Davis.

1993-1997 Collections Mapper/GIS Database Manager, Davis Arboretum, University of California, Davis, CA.

1992-1993 Research Assistant, Department of Zoology University of California, Davis, CA.

1992 Research Assistant, Haleakalā National Park, HI.

1990-1991 Fumigator, Maui Fumigation, Waiehu, HI.
RESEARCH PUBLICATIONS


**PRESENTATIONS AT PROFESSIONAL MEETINGS**

2011 Hawai‘i Conservation Conference, Honolulu, HI.

2011 Evolution on Pacific Islands Conference, Honolulu, HI.

2011 International Biogeography Society, Heraklion, Greece.

2010 Hawai‘i Conservation Conference, Honolulu, HI.
2009  International Biogeography Society, Merida, Mexico.
2008  Hawai‘i Conservation Conference, Honolulu, HI.
2007  International Biogeography Society, Puerto Cruz, Canary Islands, Spain.
2007  Hawai‘i Conservation Conference, Honolulu, HI.
2006  Hawai‘i Conservation Conference, Honolulu, HI.
2006  Society for Conservation Biology, Annual Meeting, San Jose, CA.
2005  Ecological Society of America, Annual Meeting, Montreal, Canada.
2006  Hawai‘i Conservation Conference, Honolulu, HI.
2004  Evolution, Annual Meeting, Fort Collins, CO.
2003  International Biogeography Society, Inaugural Meeting, Mesquite, NV.
2002  Hawai‘i Conservation Conference, Honolulu, HI.
2001  Society for Conservation Biology, Annual Meeting, Hilo, HI.
2000  Hawai‘i Conservation Conference, Honolulu, HI.
2000  Ecological Society of America, Annual Meeting, Snowbird, UT.
1999  Ecological Society of America, Annual Meeting, Spokane, WA.
1999  Association of American Geographers, Annual Meeting, Honolulu, HI.

GRANTS AND AWARDS

2010  Contract with U.H. Mānoa for collaboration on the Rainfall Atlas of Hawai‘i. $6,667
2006 Fish and Wildlife Service grant for research on invasive plant species at Hakalau National Wildlife Refuge. $50,000

2006 Fish and Wildlife Service grant for research on habitat suitability for Alalā (Hawaiian Crow) captive release. $46,000

2005 The Nature Conservancy grant for research on invasive species on Haleakala Ranch, Maui. $35,000

2002 Smithsonian Post-Doctoral Fellowship for proposed research. $32,000

1999 National Science Foundation. Dissertation Improvement Grant. $9,250

TEACHING

COURSES TAUGHT

Environmental Science 100 (Introduction to Environmental Science)

Geography 101 (Earth Systems and Environment)

Geography 201 (Geographic Information and Analysis)

Geography 326 (Natural Resources)

Geography 409 (Principles of Landscape Ecology)

Environmental Science 457 (Vegetation of the Hawaiian Islands)

Conservation Biology and Environmental Studies 609 (Theory and Application of Landscape Ecology)

Conservation Biology and Environmental Studies 633 (Biodiversity)

Conservation Biology and Environmental Studies 645 (Social Science Applications to Natural Resources Management)

MENTORING

Graduate Student Mentor and Committee Chair (TCBES)
Anya Tagawa, Cindy Dupuis, Melissa Tavares

Graduate Student Committee Member (TCBES)

Undergraduate Student Mentor (Kealohao-STEM program)
Barbara Rowe*

Undergraduate Student Mentor (NApire program)
Adele Nez, Kyla Winthers-Barcelona

COMMUNITY SERVICE

2010-present  Executive Committee Member, Big Island Invasive Species Committee

2010-present  Laupahoehoe Advisory Council for the Hawai'i Tropical Experimental Forest

2010-present  Board of Directors, Friends of Hakalau Forest

September 2010  Teacher Workshop on Hawaiian Watersheds, for Imi Pono o Ka 'Aina the education and outreach program the Three Mountain Alliance Watershed Partnership (public-private partnership for watershed protection)

2008-2010  Board of Directors, Hawai'i Organic Farmer's Association
Curriculum Vitae

Sasha Davis, Ph.D.
Assistant Professor of Geography and Environmental Science
University of Hawaii - Hilo

262 Kanakaʻole Hall
University of Hawaii-Hilo
200 W. Kawili St
Hilo, HI 96720

Office Phone: (808) 933-0420
Email: Sasha.davis@hawaii.edu

Education

Degrees Received:

Ph.D. Pennsylvania State University, State College, Pennsylvania

August 2000 to August 2003
Degree in Geography.

M.A. Northern Arizona University, Flagstaff, Arizona.

Degree in Rural Geography.

B.S. Northern Arizona University, Flagstaff, Arizona.

Degree in Geography, minor in Ecology and completion of Pre-Med curriculum.

Other Education:

Aug. 96--May 97: University of Hawaii at Manoa, Honolulu, Hawaii.
Graduate study in Geography.

Aug. 95--May 96: University of Arizona, Tucson, Arizona.
Post-Bachelors study in Geomorphology, Biogeography and Medical Anthropology.

Jul. 89--Aug 89: Akadem Gorodok, Novosibirsk, Russia.
Exchange student studying Environmental Science.

**Teaching Experience**

**Assistant Professor:**

*2010 to Present: Department of Geography and Environmental Science, University of Hawaii-Hilo*

Classes taught:

- Environmental Politics in the Pacific
- Introduction to Environmental Science
- Geography of Development
- Geography of Oceania
- Geography of World Cultural Regions
- Tourism Geographies

*2003 to 2007: Department of Geography, University of Vermont.*

Classes taught:

- Political Ecology
- Geotechniques: GIS and Remote Sensing
- Geography of Third World Development
- World Regional Geography
- Service/learning field course in Puerto Rico - “From demilitarization to redevelopement”
- Geography of the Pacific

**Instructor:**

*Spring 2003: Department of Geography, University of Hawaii at Manoa.*

Instructor for graduate seminar in Geography of the Pacific with the theme of “Creating Pacific places from the inside and out.”

Co-Instructor for undergraduate class in Geography of the Pacific.

*Spring 2001—May 2002: Geography Department / Schreyer Honors College, Pennsylvania State University.*
Instructor for travel abroad service/learning honors course to Southern India titled "Experiences in International Service Learning: Making a Difference in a Globalizing World." (Geog 297H).

Publications

Articles Published in Peer Reviewed Journals:


Published Commentaries, Journal Introductions and Book Reviews:


Review of Walt Disney and the Quest for Community. By Steve Mannheim in Regional Studies 38 (1) 2004.


Davis, Jeffrey Sasha. 2001. “Commentary: Tourism Research and Social Theory: Expanding the Focus.” Tourism Geographies 3 (2): 129-138. (peer reviewed)

Maps:


Presentations

September 2012. Militarization, Resistance and Transcending Hegemony in the Pacific. Invited public lecture at Geography Department of the University of Hawaii – Manoa. Honolulu, HI.


April 2011 “Redefining security in the islands of empire” Annual Meetings of the Association of American Geographers. Seattle, WA.


April 2008 “Geographies of projecting and rejecting imperial power” Annual Meetings of the Association of American Geographers. Boston, MA.


Nov. 2006 “Islands of the Empire: modern colonialism and the places of global power projection” invited public lecture at Clark University. Worcester, MA.


May 2006, invited lecture on Militarism and Gender for women’s studies / geography class at Dartmouth College. Hanover, NH.

March 2006, “‘Fish and Wildlife is another name for the Navy:’ Military destruction, environmental preservation and social justice.” Annual Meetings of the Association of American Geographers. Chicago, IL.


Dec 2002, “‘We all wonder why the Bikinians aren’t here. It’s such a beautiful place’: Tourism, nuclear contamination, and re-creating place on Bikini Atoll” Geography Department Colloquium, Pennsylvania State University, University Park, PA.


Panels:


Awards, fellowships and honors

2012, $6,900 Seed Money Grant from the University of Hawaii-Hilo for research in the summer of 2013 in Fukushima, Japan

2010, $7,200 Seed Money Grant from the University of Hawaii-Hilo for research in the summer of 2011 in Guam, Northern Mariana Islands and Okinawa.

2007, $15,000 Faculty Research Support Award from University of Vermont, College of Arts and Sciences for research in the summer of 2007 in Guam, Northern Mariana Islands, Japan, Marshall Islands and Hawaii.

2007, $1,475 award for bringing speakers from Vieques, Puerto Rico to speak at UVM. Award is from University of Vermont Office of International Education.
2006, $954 from University of Vermont Service/Learning Office to prepare service component of study abroad class in Vieques, Puerto Rico.

2006, Funded participant in NYU Faculty Resource Network seminar “America’s Paradise”: Re-Imagining Hawai’i hosted by Chaminade University, Honolulu, HI.

2005, $510 award for research in Vieques, Puerto Rico from University of Vermont Office of International Education.

2004, $1655 award for research in Vieques, Puerto Rico from University of Vermont College of Arts and Sciences Dean’s Fund.

2004, $300 award for travel to International Conference of Critical Geography in Mexico City from University of Vermont College of Arts and Sciences Dean’s Fund.

2004, Finalist for Nystrom Award (award from the AAG for a paper from a dissertation)

2002, Muan/Wilson Award for outstanding graduate student in the College of Earth and Mineral Sciences, Pennsylvania State University.

2001, Socialist Geography Specialty Group of the AAG student paper competition winner.

2001, Ruby Miller Grant for travel to Marshall Islands for research, Penn State University.

**Service**

**Institutional service at University of Vermont**

College of Arts and Sciences Global Studies Planning Committee Fall 2006 to 2007.

College of Arts and Sciences Curriculum Committee 2004-2005 and Fall 2006 to 2007.

Member of United Academics Delegate’s Assembly May 2005 to 2007.

Department union representative Fall 2004 to 2007.

Department Internship Coordinator Fall 2004 to 2007.

**Institutional service at University of Hawaii**

Faculty sponsor for lakwe Marshallese Student Club 2010- present

Member of University Sustainability Committee 2011 to present
Service to Discipline


Co-Chair of Qualitative Methods Specialty Group of the Association of American Geographers 2007 to 2009.


Panel session organizer for panels on “militarism and geography” and “the militarization of humanitarian aid” for 2007 meeting of AAG.

Paper session co-organizer on “critical explorations of militarism” 2006 meeting of AAG.

Coordinator of Qualitative Methods Specialty Group of the AAG student research proposal contests in 2006 and 2007.

Board member for Qualitative Methods Specialty Group of the Association of American Geographers 2005 to present.


Consulting

Summer 2009: mapping and research consultant for summer environmental studies seminar through Ka Makani Wa'a'ulu o' Waianae and American Friends Service Committee at Leeward Community College - Waianae Campus (Hawaii).

Fall 2008: Professional Consultant to the Chittenden South School District (Vermont). I was responsible for visioning and planning a restructuring of the K-12 curriculum towards a more globally-oriented program of study. I researched existing best practices at schools around the world, collaborated with local teachers and administrators, and produced a written and oral report for the school board.
ryanperroy@gmail.com 200 W. Kawili St.
+1 808.932.7259 office  Hilo, HI 96720
+1 805.617.6695 cell

Ryan L. Perroy
Curriculum Vitae

Education
University of California, Santa Barbara
Quantifying land degradation and vegetation recovery on southwestern Santa Cruz Island, CA
Committee: Oliver Chadwick (chair), Dar Roberts, Dan Muhs, Bodo Bookhagen

Thesis: Characterizing Post-Grazing Land Cover Change Trajectories on Santa Cruz Island, CA, with Multitemporal Landsat Data and Spectral Mixture Analysis
Committee: Oliver Chadwick (chair), Dar Roberts, Chris Still

College of William and Mary, Williamsburg, Virginia
Senior Thesis: Raman spectroscopy of graphite, Advisor: Bill Cooke

Appointments
Assistant Professor, Dept. of Geography & Environmental Science, UH-Hilo, 8/2013—Present:
Research areas include: Unmanned aerial systems; Applications of airborne and terrestrial lidar; high-resolution mapping of heavy-metal contamination; hillslope geomorphology and gully formation; feedbacks between land use and invasive vegetation species.

Assistant Professor, Department of Geography & Earth Science, UW-La Crosse, 8/2009 – 7/2013:
Research areas include: Applications of airborne and terrestrial lidar; high-resolution mapping of heavy-metal contamination; hillslope geomorphology and gully formation in Mediterranean climates; feedbacks between land use and invasive vegetation species; and industrial-scale vermicomposting.

Ph.D. candidate, Department of Geography, UC Santa Barbara, 4/2006 – 7/2009: Examined past and ongoing changes in landcover and geomorphology on Santa Cruz Island, CA. Specific outcomes included a better understanding of hillslope processes under different management regimes, quantification of sediment movement through a combination of field, remote sensing and cosmogenic radionuclide measurements, and insights into the controlling factors for land degradation and recovery processes.


Research Assistant, UC Santa Barbara, 5/2003 – 8/2004: Conducted field research around California and Nevada studying soils, geomorphology, soil erosion, and vegetation recovery. Collected and
processed ground spectra for atmospheric correction of satellite imagery. Junior Engineer, Planetary Systems Corp., Silver Spring, MD, 1/2001 – 7/2002: Responsible for satellite mechanism qualification testing, electronic circuit design and LabVIEW programming. Tasks included modifying existing separation reliability test fixtures and determining appropriate separation system configuration necessary to produce desired spin-off rates for successful Starshine-3 mission.


Teaching Experience

Instructor of Record, UHH, Hilo

Introductory GIS & Visualization, Geography/Environmental Science 480/670, Spring 2014

- Developed lecture and laboratory materials. Emphasis on fundamentals of GIS and Cartography and spatial data visualization.

Advanced Geo-Spatial Techniques, Geography/Environmental Science 481/681, Fall 2013, 2014

- Developed and Graduate level GIS course (12 students).
- Developed lecture and laboratory materials. Emphasis on advanced data analysis techniques for describing, modeling, analyzing, and visualizing spatial data.

Remote Sensing/Air Photo, Geography/Environmental Science 470/640, Fall 2013, 2014

- Introduction to the science, methods, and applications of remote sensing. Topics covered include imagery interpretation, geo-processing and classification methods.
- Developed all lab and lecture materials and exercises.

Global Warming & Climate Change, Geography/Environmental Science 494b, Spring 2014

- Writing intensive course on global warming and climate change (10 students).
- Developed lecture and laboratory materials. Emphasis on energy balance and the greenhouse gas effect, past climates, modeling, impacts and mitigation.

Instructor of Record, UW, La Crosse

Earth Environments, Environmental Science 101, Fall & Spring 2009 - 2013

- Developed introductory physical geography course (90 students).
- Developed lecture and laboratory materials (including iClicker exercises), organized and led local field trips. Emphasis on quantitative problem solving and the scientific method.

Geographic Field Methods, Geography/Environmental Science 390, Fall 2009 - 2011

- Field Methods with a strong GIS and writing emphasis. Topics covered include surveying via total station and differential GPS, soil profile description, vegetation surveys, portable XRF and spectroradiometer data collection, and technical report and proposal writing.
- Developed all lab and lecture materials and exercises, organized and led local field trips.

Geomorphology Seminar, Geography/Environmental Science 375, Fall & Spring 2010, '11, '12

- Weekly student-led discussion group of seminal and current articles in geomorphology.
Global Warming & Climate Change, Environmental Science 211, Summer 2012

Intensive on-line summer school class on the basic concepts and processes of global warming and climate change.

Developed all on-line exercises, discussion topics, writing assignments, and tests.


Quantitative geomorphology course with field and computer (ArcMap, Excel, and MATLAB) exercises.

Developed all lecture and laboratory materials, organized and led local field trips.

Lidar Data Analysis, Geography/Environmental Science 495/595, Fall 2011, Spring 2013

Lidar theory, practice, applications, and data processing. Hands-on training with tripod lidar scanning system and QT Modeler and Cyclone lidar data software.

Soil Morphology and Genesis, Geography/Environmental Science 426/526, Spring 2011, 2013

Upper division/Graduate soils course examining the origins, evolution, and uses of soil

Developed all lecture and laboratory materials, organized and led local field trips.

Spatial Data Analysis, Geography 488/588, Fall 2012

Upper division/Graduate geostatistics course on describing, modeling, and analyzing spatial data

Developed all lecture and computer (Excel, ArcMap, and MATLAB) labs and exercises.

Instructor of Record, UC Santa Barbara

Land Surface Processes, Geography 3A, Summer 2007, 2006

Introductory physical geography course.

Developed most lecture and laboratory materials, organized and led local field trips.

Biogeochemistry of Soil, Geography/Environmental Studies 114A, Fall 2006

Upper division soils course with wet lab section.

Developed all lecture material, organized and led local field trips.

Visiting Instructor, U.S. Fulbright Fellow, Albania

Introduction to Remote Sensing Workshop, April 28 and June 15, 2005

Developed curriculum and material for one-day workshops on basic remote sensing principles, physics, and applications for Albanian students and scientists at the Geological Survey of Albania and A. Xhuvani University, Elbasan, Albania

Teaching Assistant, UC Santa Barbara

Biogeochemistry of Soil, Geography/Environmental Studies 114A, Fall 2002


Oceans and Atmosphere, Geography 3A, Spring 2002

Writing Tutor, Northern Virginia Community College Writing Center, Loudoun, Virginia

Undergraduate Writing Tutor, Spring 2001

Tutored undergraduate and English as a Second Language (ESL) students in basic writing and grammar skills; assisted with academic coursework, job applications, and resumes.

Indicates undergraduate student collaborator.
**Publications (in preparation)**


**Publications**


**Conference and Invited Presentations**

- Perroy, R. (2014) 4-day workshop on using portable XRF for assessing heavy metal contamination in agricultural soils, EU-IPA Project: *Agricultural Land Pollution Survey (ALPS)* in Kosovo, January 8-11, Pristina, Kosovo. *Invited*
April 19-25, Monterey, CA.


Perroy, R., and Gaugush, Z. (2013) Large-scale food waste vermicomposting in La Crosse, WI. *Sierra Club, Coulee Region Group*, February 26, La Crosse, WI. *Invited*


Perroy, R., Bookhagen, B., Chadwick, O., and Howarth, J. (2011) Holocene landscape change, anthropogenic land-use change and arroyo formation on southwestern Santa Cruz Island, California. *Poster session, American Geophysical Union Fall Meeting*, December 5-9, San Francisco, CA.


Perroy, R. (2010) Using LiDAR and Portable X-Ray Fluorescence to Quantify Land Degradation in
Mediterranean Regions. *U.S. Geological Survey Upper Midwest Environmental Sciences Center Invited Seminar*, November 30, La Crosse, WI. *Invited*


- Perroy, R. (2009) Mapping re-vegetation patterns with aerial imagery time-series data, Guest speaker, GEOG149, University of California, Santa Barbara, May 26, Santa Barbara, CA.


- Perroy, R. (2008) Soil science for field archaeology, Guest speaker, ANTH181, University of California, Santa Barbara, May 24, Santa Barbara, CA. *Invited*


- Perroy, R. (2005) Ndotjet në Metalurgji Toka, Elbasani, April 11, Agricultural University of Tirana, Tirana, Albania. *Invited*

**Fellowships and Grants**

2012 – 2013 UW-La Crosse Undergraduate Research Grant (faculty advisor, 2 awards) $ 800
2012 UW-La Crosse Internal Equipment Grant (PI) “Ground-based laser scanning system for teaching and research” $95,979
2012 UW-La Crosse River Studies Center (PI) “Mapping the distribution of lead contamination in the soils of Isle Royale National Park” $ 1,200
2012 UW-La Crosse River Studies Center (Co-PI) “Mapping the distribution of lead contamination in the La Crosse River Marsh” $ 3,400
2012 The National Great Rivers Research and Education Center (Co-PI), "Lead transfer from shot contaminated soils in the La Crosse River Marsh, Upper Miss. River" $5,997
2012 UW-La Crosse International Development Fund $ 3,350
2012 UW-La Crosse Internal Equipment Grant (PI) “Handheld X-ray fluorescence system for teaching and research” $22,600
2012-2014 EPA Urban Waters Small Grants (Co-PI), “Monitoring and Assessment of Legacy Lead Contamination in the La Crosse River Marsh” $64,979
2011 – 2012 UW-La Crosse Faculty Research Grant (Co-PI) "Mapping the Vertical Distribution of Lead in the La Crosse River Marsh Sediment Using X-ray Fluorescence" $13,329 2011 UW-La Crosse Green Fund Award (PI) "Industrial pulper for University of Wisconsin-La Crosse vermiconposting program" $19,200
2010 – 2011 UW-La Crosse Undergraduate Research Grant (faculty advisor, 3 awards) $ 4,500
2010 – 2011 UW-Solid Waste Research Program Student Grant (faculty advisor) $ 7,360
2010 – 2011 UW-La Crosse Faculty Research Grant (PI) "High-resolution mapping of heavy-metal soil pollution in Elbasan, Albania using portable X-ray fluorescence" $ 9,783
2010 – 2011 UW-La Crosse International Development Fund $ 3,350
2010 UW-La Crosse Green Fund Award (PI) "Establishing a vermiconposting program at University of Wisconsin-La Crosse" $18,944
2010 – 2010 Innov-X Research Grant Award for a Handheld XRF with integrated GPS (PI) $30,000
2006 – 2009 Environmental Protection Agency, Science to Achieve Results (STAR) Graduate Fellowship, 3 years of full graduate support
2004 – 2005 U.S. Student Fulbright Fellow, Elbasan, Albania
2004 – 2004 American Council of Learned Societies, East European Studies Language Training Grant, intensive training in Albanian $2,000

**Awards**


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6/2004 Ta Liang Memorial Scholarship Award, American Society for Photogrammetry and Remote Sensing award to facilitate research-related travel by outstanding graduate students in remote sensing

**Computer Skills**

ArcGIS ENVI GPS Pathfinder Office LabVIEW Leica Cyclone MATLAB Microstation QT Modeler RiScan Pro

**Field/Laboratory Techniques**

- Topographic surveying with airborne and terrestrial LiDAR systems, total stations, differential GPS receivers, and mobile GIS software
- Portable X-Ray Fluorescence field mapping and laboratory X-Ray Fluorescence analysis
- Soil profile classification and description
- Collection of field spectra for terrestrial targets using spectroradiometers
- Be cosmogenic radionuclide sample preparation

**Academic and Professional Service**

- **Member**, UHH Sustainability Committee (2013-Present)
- **Outside Member**, Search, Screening and Selection Committee, UH-Hilo Department of Marine Science (2013-2014)
- **Founder and Director**, UW-La Crosse vermicomposting program, a collaborative large-scale food waste diversion program in partnership with Hillview Urban Agricultural Center and Western Technical College (2010 - 2013)
- **Chair**, Diversity Committee, UW-La Crosse Dept. of Geography & Earth Science (2012-2013)
- **Secretary**, Scholarship and Awards Committee, UW-La Crosse (2012 - 2013); **Member** (2010-Present)
- **Member**, La Crosse River Marsh Coalition, a community group that educates the public about local wetland resources and seeks to protect them from development (2009 - Present)
- **Member**, Aldo Leopold Day Planning Committee (2012-Present)
- **Member**, Sabbatical Committee, UW-La Crosse (2011 - 2012)
- **Member**, Search & Screen Committee, UW-La Crosse Dept. of Geography & Earth Science (2009 - 2012)
- **Volunteer Tutor/Peer Advisor**, California Student Opportunity and Access Program, academic support program for high school students underrepresented in higher education (2003 - 2004)
- **Geography Department Representative**, UC Santa Barbara Graduate Student Assn. (2002 - 2004)

**Peer Reviewer**

National Science Foundation

**Professional Associations**

AAAS Science and Human Rights Coalition (2010 - Present)
American Society for Photogrammetry and Remote Sensing (2003 - Present)
American Geophysical Union (2008 - Present)
Association of American Geographers (2004 - Present)
Geological Society of America (2008 - Present)
Soil Science Society of America (2008 - Present)
UW-La Crosse River Studies Center (2010 - Present)
Union of Concerned Scientists (2012 - Present)

Languages
Albanian, Intermediate French, Intermediate