A Proposal to Move from Provisional to Established Status

Bachelor of Applied Science
Sustainable Science Management
University of Hawaii Maui College

STEM Department
Spring 2017
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I. Introduction

The Sustainable Science Management BAS program at University of Hawaii Maui College is completing its sixth year of curriculum offering and is therefore eligible to move from provisional to established status. The following proposal provides information and evidence supporting this application in accordance with University of Hawai`i policy.

A. What is Sustainability Science?

Sustainability science is an emerging field of problem-driven, solution oriented, decision-making that has developed over the past two decades to tackle persistent problems arising from the complex and dynamic interactions between humans and natural systems. Unlike traditional conservation approaches where the intention is primarily to isolate and preserve the natural ecosystem regardless of human purposes, sustainability science seeks to integrate human health and well-being into the equation. Sustainability science is more defined by the problems it seeks to solve than the disciplines it involves (National Academy of Sciences Editorial Board, 2007).

The Sustainable Science Management program at University of Hawaii College (UHMC) was established in 2011-2012 to prepare students with the skills, knowledge and applied experiences necessary to meet 21st century challenges faced by government agencies, non-profit organizations, communities and businesses trying to balance increasing natural resource concerns with economic and social prosperity for current and future generations.

B. Relevance to Sustainability Initiatives in Hawai`i

Within the last decade, the State of Hawai`i has emphasized the importance of ensuring Hawai`i’s sustainable future as evidenced by the creation of the 2050 Sustainability Plan (2008), the Hawai`i Clean Energy Initiative (100% clean energy by 2045), Aloha + Challenge statewide commitment to sustainability (2014), The Watershed Initiative (double the level of protection for priority watersheds by 2021), and the recent pledge by Governor David Ige at the IUCN World Conservation Congress to double local food production in Hawai`i by 2030. The University of Hawaii Board of Regents concurrently implemented its own Sustainability Policy in January 2014, thereby committing to provide leadership for the state and global community on critical sustainability issues.

These initiatives and concerns, coupled with projected growth in the green job sector of the Hawai`i workforce (State of Hawaii Workforce Development Council 2016; The Economic Research Organization of the University of Hawaii, 2012 and 2015), underscore the need for education and awareness of sustainability issues, and the tools and skills needed to tackle these issues, within our higher education curriculum. Hawaii’s 2050 Sustainability Plan and the Department of Labor have both recognized the importance of training and education, deeming it one of the most critical success factors to ensuring a sustainable future for Hawai`i. The Sustainable Science Management (SSM) program at University of Hawaii Maui College is the first and only four-year degree focused on sustainability within the University of Hawai`i system to address these critical needs within our island communities.
II. Sustainable Science Management Program Objectives

A. Overview

The primary objective of the Sustainable Science Management (SSM) program is to provide students with preparation for careers in virtually any business or industry that seeks to identify, implement, and design methods to become more sustainable environmentally, economically, and socially, as well as the opportunity to earn a baccalaureate degree on Maui. This Bachelor’s Applied Science (BAS) degree program specifically prepares students with workforce training for the expanding sustainability industry, providing students with the knowledge and skills to preserve and protect vulnerable resources without sacrificing the health and growth of our economy. SSM students learn critical and solution oriented thinking skills applicable in almost any segment of the workforce. Moreover, the program is designed to provide students with the fundamental skills necessary to bridge disciplines and to facilitate sustainable solutions and operations for any organization or community.

While the opportunity to obtain a bachelor’s degree locally is a welcome addition for Maui students, the location of the SSM program on Maui is one of its principle educational assets; the relatively small yet growing and complex communities of Maui County provide a fantastic living laboratory for addressing sustainability issues that are transferable to all Hawaiian Islands. Moreover, the SSM program provides knowledge and skills that can be applied to any community seeking sustainability progress.

B. Program Organization

The Sustainable Science Management program is organized to provide the education, skill sets, and ultimately the expertise to address the plethora of issues now included in a sustainability context, including those noted above. This requires a balanced approach that lays a foundation of domain-based knowledge in conventional disciplines while providing critical thinking and systems analysis skills necessary to tackle the persistent, complex, adaptive issues facing societies now and in the future. This approach is consistent with the concepts of sustainability science and includes the following generalized elements:

1) Exposure to a broad lower division pathway that resembles a liberal arts curriculum with a science focus.
2) A constant thread of courses, beginning with SSM 101 and through SSM 422 that emphasizes the use of systems thinking and identifiable sustainability science skills.
3) Required upper division coursework in the most common sustainability related disciplines of energy, water, marine systems and policy. Work to include agriculture/food is under development.
4) Applied learning experiences through internship placements and culminating in a year-long applied focus on a capstone project.
5) Flexibility for students to pursue advanced coursework in areas of interest through upper division electives.

The program has successfully attracted local students who are now entering the Maui workforce, but has also drawn interest from off-island, including out-of-state students due to the opportunities to study sustainability in this island setting. To support this broad range of interests,
the program includes a recruitment element, academic counseling, community advisory committee, internship sponsors and a growing community base of support.

C. Program Learning Outcomes

With the help of the SSM advisory council (see Appendix C), we have designed program learning outcomes (PLOs) and individual courses that go beyond the traditional concept of the triple bottom line (people, planet, and profits). SSM coursework focuses on how to identify and address the relevant issues essential to the sustainable resolution of any problem. Courses emphasize the use of methods and technologies to determine the boundaries of an inquiry, followed by further inquiry into how the relevant conditions impact the sustainability of the system.

The following PLOs were approved in 2013 and demonstrate how the SSM curriculum prepares students for careers in sustainability:

1. Examine ways in which the features and functions of multiple systems are interconnected, and explain how one system can be optimized without degrading other systems or depleting natural resources.
2. Investigate, discover and summarize federal, state, local and industry codes, standards, laws, regulations, and guidelines.
3. Assess the feasibility of investing in sustainability measures using simple payback, return on investment, and life cycle costing techniques.
4. Describe the unique sustainability challenges faced by island communities.
5. Identify, outline and illustrate the fundamentals of existing and emerging technologies in energy production, distribution and management; water supply; wastewater treatment; and waste management; their applications, processes and requirements.
6. Appraise, evaluate, summarize, and explain the economic, social, cultural, political, and scientific features that make a system, process, practice, or business sustainable and that appropriately make up a sustainability profile.
7. Propose and justify creative solutions to sustainability challenges that are scientifically sound.
8. Demonstrate skills related to managing sustainability projects including defining scope, selecting achievable goals, evaluating ethical implications, working with diverse teams, making presentations, and preparing reports.
9. Apply academic learning to real-world demands and activities.

D. Program Structure and Requirements

i. SSM Major Pathway

The SSM degree was first offered in 2011-2012 as a 2 + 2 program, with students entering the program through one of two academic pathways:

- Completion of Business Careers Option IV pathway, earning an Associate in Applied Science degree (AAS);
- Completion of an Associate of Arts degree (AA) from an accredited university, and completion of 38 credits of pre-SSM course requirements.

Both pathways required a combination of at least three lower division SSM courses (SSM 101, 201, 202) with a combination of business, communication, English, math, and science courses,
with the AAS degree centered more on business and economic courses. Admission to the SSM program required a cumulative GPA of 2.5 or higher in both programs.

Based on student and employer feedback, admission to the SSM program was changed in 2014-2015 to better accommodate students seeking the SSM baccalaureate degree. In the revised program map, students could declare a major in SSM after completing four courses (ENG 100, MATH 103, ICS 101 or BUSN 150 and SSM 101), with a grade C or better. These changes resulted in a more streamlined and focused approach for SSM majors, led to the development of a four-year SSM program map, provided greater flexibility for non-UHMC students to transfer into the SSM program, and allowed more accurate administrative tracking of students pursuing this degree.

These changes specifically benefitted students by focusing lower division coursework on developing a strong and targeted interdisciplinary foundation in liberal arts and sciences more directly related to program objectives while preparing students for the upper division curricula focused on developing systems thinking and analytical skills.

In the Fall of 2015, UHMC and UH Kaua‘i Community College (UHKCC) signed an articulation agreement acknowledging that the curriculum of SSM 101, 201, and 275 are the same across the two campuses, allowing students at UHKCC to transfer into the SSM program with a passing grade of a C or better. With the UH system’s growing focus on sustainability, articulation agreements with other UH campuses are anticipated.

ii. Curriculum

The Sustainable Science Management program provides a variety of options to students seeking employment in the rapidly expanding field of sustainability. The SSM degree comprises a core curriculum in sustainability science, along with a science and liberal arts foundation. Coursework covers both natural and social sciences and important contemporary topics including agriculture, biodiversity, business and management, ecology, economics, energy, environmental law and policy, environmental health, marine ecosystems, the built environment, water resource management, water and wastewater, and waste management.

Students develop systems thinking and analytical skills that will empower graduates to apply learned principles to the changing and complex issues characteristic of sustainability practices. In addition to foundational coursework that emphasizes the interrelatedness of topics through systems thinking, dynamic modeling and sustainability indicators, students apply their academic experience through directed internships and a yearlong senior capstone.

Lower division coursework spans introductory sustainability courses introducing students to current sustainability issues and topics (SSM 101), basic energy production (SSM 275), sustainable building design (SSM 201), and sustainable island communities (SSM 202), while providing a foundation in business (BUS 150, ICS 101), economics (ECON 130), accounting (ACC 201) math (MATH 115, 135), English (ENG 100, 210 or 225), social sciences (PSY 100, HWST 107, COM 251, PSY 253), and natural sciences (CHEM 151 or 161/161L or GIS 150, ZOOL 200).

Required upper division coursework currently includes advanced communication (COM 459) and research writing courses (ENG 316), management (MGT 310), biology (BIOL 424), aquaculture (AQUA 362, 466), humanities (HUM 400), and 12 credits of upper division electives. We are currently expanding curriculum for upper division electives in order that students may rotate
through these courses in alternate years, providing diversified options for students with different interests. Current upper division electives include BIOL 331/331L (Biology of Marine Mammals), OCN 351 (Coastal Methods and Analysis), AQUA 466 (Fisheries Science), with two more upper division special topics courses being offered in FA 17: SSM 390v (Sustainable Oceans) and SSM 490v (Ecological Economics).

iii. Program Map

Full-time lower division students would take this sequence: 64-65 Credits

**First Semester (Fall)**
- SSM 101 Sustainability in a Changing World
- BUSN 151 or ICS 101
- CHEM 151 or CHEM 161/161L
- PSY 100 Survey of Psychology
- ENG 100 Composition I

**Second Semester (Spring)**
- SSM 275 Basic Energy Production
- CHEM 162 and 162L, or GIS 150
- ECON 130 or 131
- MATH 115 or OCN 250
- Foundations Global Elective

**Third Semester (Fall)**
- SSM 201, or OCN 201 and 201L
- BIOL 171 and 171L
- ACC 201 Financial Accounting
- HWST 107 or 207, or HIST 284
- MATH 135 Pre-Calculus

**Fourth Semester (Spring)**
- SSM 202 Sustainable Island Communities
- BLAW 200, or MATH 203 or 205
- COM 215/PSY 253
- ZOOL 200
- ENG 210

Full-time upper division students would take this sequence: 60 Credits

**Junior Year (Fall)**
- SSM 302 Environmental Health
- SSM 375 Renewable Energy Conv, or elective
- AQUA 362 Aquaculture and Mariculture
- MGT 310 Principles of Management
- ENG 316 Advanced Research Writing

**Junior Year (Spring)**
- SSM 301 Sustainable Assessments & Indicators
- SSM 392v Internship
- SSM 402 Water Resources Management
- PHIL 323 Professional Ethics
- Upper Division Program Elective

**Senior Year (Fall)**
- SSM 422 Sustainable Systems Thinking
- SSM 495 Capstone I
- HUM 400 Changes & Choices
- Upper Division Program Elective
- Upper Division Program Elective

**Senior Year (Spring)**
- SSM 401 Environmental Law, Policy & Justice
- SSM 403 Renewable Energy Integration, or elective
- SSM 496 Capstone II
- BIOL 424 Protected Species Management
- COM 459 Intercultural Communication II

III. Meeting Learning Objectives

Unlike more established areas of study, academic programs providing degrees in sustainability science are on the forefront as sustainability initiatives become more commonplace in communities, and the science itself is emerging and dynamic. Through affiliations with UH system assets, national organizations and professional collaborations, the SSM program at UHMC maintains close contact with other leading sustainability programs both to assess its direction and to adopt pedagogies that demonstrate sustainability. One of the most cited
distillations of Sustainability Higher Education (SHE) learning objectives was part of research published by faculty from the Global Institute of Sustainability at Arizona State University that emerged from international dialogue on Education for Sustainability (EfS).

Wiek et al. (2011) identified five key competencies necessary for students of sustainability to possess:

- **Systems-thinking competence**: the ability to collectively analyze complex systems across different domains (society, environment, economy, etc.) and across different scales (local to global), thereby considering cascading effects, inertia, feedback loops and other systemic features related to sustainability issues and sustainability problem-solving frameworks.
- **Interpersonal competence**: the ability to motivate, enable, and facilitate collaborative and participatory sustainability research and problem solving.
- **Strategic competence**: the ability to collectively design and implement interventions, transitions, and transformative governance strategies toward sustainability.
- **Anticipatory competence (futures-thinking)**: the ability to collectively analyze, evaluate, and craft rich “pictures” of the future related to sustainability issues and sustainability problem-solving frameworks.
- **Normative competence (values-thinking)**: the ability to collectively map, specify, apply, reconcile, and negotiate sustainability values, principles, goals, and targets.

While the establishment of the SSM program pre-dated the publication of these competencies, its path and curriculum provides a strong match to the ASU model.

**Table 1**: UHMC SSM coursework corresponds with the five sustainability competencies of the ASU Model.

<table>
<thead>
<tr>
<th>ASU Competency</th>
<th>UHMC SSM Coursework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems Thinking</td>
<td>SSM 101, 202, 301, 422</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>HWST 207, PSY 215, COM 459, PHIL 323, SSM 392v</td>
</tr>
<tr>
<td>Strategic</td>
<td>SSM 201, 202, 301, 302, 375, 392v, 401</td>
</tr>
<tr>
<td>Anticipatory</td>
<td>SSM 301, 422, 495, 496, MGT 322, SSM 392v, HUM 400</td>
</tr>
<tr>
<td>Normative</td>
<td>SSM 301, 392v, 402, BIOL 331, 424</td>
</tr>
</tbody>
</table>

One additional PLO highlighted in the SSM program and not as clearly stated in the ASU model is articulated above as SSM Program Learning Outcome #9: Apply academic learning to real world demands and activities.

**IV. Program Resources**

A. Academic Program Cost and Revenue

SSM program majors have been reported on since 2012. Table 2 (below) reports headcount enrollment taken from ARPD (2012 – 2015) and actual data from Banner (2016 and 2017). Annual SSH data is taken directly from ARPD, or reported at 2% (2019) to 4% (2018) increases for future years. Because the UHMC SSM program has both lower and upper division tuition rates and draws from both non-resident and resident populations, tuition rates per credit hour were adjusted to fit these parameters. While the ratio of upper to lower division is based on the actual number of upper and lower division student counts per semester, the resident versus non-resident increase is considered a conservative estimate. In this latter case, 10% was added to the
tuition rate to reflect that approximately 10% of SSM majors are non-residents who pay roughly twice the tuition of resident students.

Budget allocation is almost exclusively for salaries for faculty and lecturers. As the table below and the SSM Academic Program Cost and Revenues Template (see Appendix B) illustrates, the tuition revenue generated by the SSM program has exceeded the total direct and incremental costs since 2014-2015. Enrollments and SSH hours have continued to rise (see Figure 1) since its inception despite lower enrollments at UHMC and across the UH System over the past few years, and we have projected modest increases over the next two years (2 – 4%). It is also notable that the SSM program has lower program instructional costs per/SSH than the UH Hilo Natural Sciences degree program, which was selected as the comparative program on the template.

**Table 2:** Summary of Actual and Projected SSM Net Costs (2012 – 2017)

<table>
<thead>
<tr>
<th>Year</th>
<th>Major Head-Count</th>
<th>Graduates</th>
<th>SSH/Year</th>
<th>Tuition Rate p/Credit</th>
<th>Direct Costs</th>
<th>Total Revenue</th>
<th>Net Cost Revenue</th>
<th>Ins Cost/SSH</th>
<th>UH Hilo Ins Cost SSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 - 2013</td>
<td>2</td>
<td>0</td>
<td>447</td>
<td>$181</td>
<td>$116,073</td>
<td>$80,907</td>
<td>$35,166</td>
<td>$345</td>
<td>$341</td>
</tr>
<tr>
<td>2013 - 2014</td>
<td>9</td>
<td>1</td>
<td>408</td>
<td>$176</td>
<td>$102,626</td>
<td>$71,808</td>
<td>$30,818</td>
<td>$333</td>
<td>$341</td>
</tr>
<tr>
<td>2014 - 2015</td>
<td>49</td>
<td>0</td>
<td>725</td>
<td>$219</td>
<td>$64,497</td>
<td>$158,775</td>
<td>-$94,278</td>
<td>$115</td>
<td>$341</td>
</tr>
<tr>
<td>2015 - 2016</td>
<td>56</td>
<td>12</td>
<td>781</td>
<td>$243</td>
<td>$112,622</td>
<td>$189,783</td>
<td>-$77,161</td>
<td>$191</td>
<td>$341</td>
</tr>
<tr>
<td>2016 - 2017</td>
<td>62</td>
<td>10</td>
<td>812</td>
<td>$243</td>
<td>$117,127</td>
<td>$197,316</td>
<td>-$80,189</td>
<td>$191</td>
<td>$341</td>
</tr>
<tr>
<td>2017 - 2018</td>
<td>65</td>
<td>7-11</td>
<td>837</td>
<td>$243</td>
<td>$121,812</td>
<td>$203,391</td>
<td>-$81,579</td>
<td>$193</td>
<td>$341</td>
</tr>
<tr>
<td>2018 - 2019</td>
<td>67</td>
<td>8-12</td>
<td>854</td>
<td>$243</td>
<td>$126,684</td>
<td>$207,520</td>
<td>-$80,838</td>
<td>$197</td>
<td>$341</td>
</tr>
</tbody>
</table>

*Note: 2017-2018 and 2018-2019 are projections based on 2-4% growth rates, as noted above.*

**B. Faculty and Partner Resources**

The SSM program currently has two FTE faculty and one dedicated counselor for SSM students. Full-time SSM faculty and support-staff include:

- Timothy Botkin, SSM Program Coordinator (JD, MSc in Sustainability); *Systems Thinking, Sustainable Indicators, Policy, Island Communities, Energy*
- Meagan Jones, SSM Instructor (MA, PhD, Environmental Studies); *Ocean Systems, Biodiversity, Natural and Social Sciences, Protected Species, Island Communities*
- Eri Nokamura, SSM Counselor
Lecturers supplement faculty loads (range: 1 to 2 p/semester; see Appendix D) by teaching special interest and technical courses (e.g., Renewable Energy, Aquaculture). This provides an efficient way to broaden student knowledge by bringing in local expertise while simultaneously providing student exposure to contacts in the community for potential internships and future job opportunities.

SSM Resources include:

1. Sustainable Living Institute of Maui provides non-credit coursework in sustainability related areas and offers paid internships on an occasional basis.
2. The SSM program maintains an active and enthusiastic Advisory Committee (SSMAC). In addition to curriculum and workforce consultation, the SSMAC has sponsored two outreach events and helped secure ongoing scholarships for SSM students.
3. The Student Ohana for Sustainability (SOS) accepts all UHMC students but its leadership comes directly from SSM students. It engages in extracurricular projects both on and off campus including public outreach and awareness campaigns, local highway and beach cleanups, Earth Day coordination, and responsibility for the campus community garden.
4. UHMC library staff supports program requests and works with faculty and students on instructional resources. The library has established an SSM-specific research database for students to help support project and capstone work. maui.hawaii.libguides.com/ssm
5. The counseling department has assigned one counselor to provide guidance to SSM students and work with faculty. This has been an invaluable asset to the SSM program.
6. Students and faculty in the SSM program have worked closely with the UH System Sustainability Office (UHSO) on a reciprocal basis. SSM students and faculty have received several awards from the UHSO and have partnered on various sustainability initiatives (see section VI).
7. The Learning Center (TLC) provides tutoring and study space for students, and is open M-Th to 7pm, Fridays to 6pm, and Saturdays 11-5.
8. Classrooms include technology for faculty. The SSM program would benefit from having dedicated classroom for SSM classes. Currently, the STEM department works with us to find classroom space but we are not recognized as high priority.
9. The UHCC system has invested in an online program to track student success. The hope is that students requiring extra help will be identified early on.
10. Local organizations continue to play an active role in supporting the SSM program at UHMC. These include but are not limited to: County of Maui Offices of Environmental Management, Wastewater Department, Department of Water Supply; Maui Electric Company, Pacific Biodiesel, the Hawaiian Islands Humpback Whale National Marine Sanctuary, and the Maui County Council.

C. Other Resources

SSM program faculty are provided with office space in the Ka Lama building on the UHMC campus. Classes are conducted in both this building and the ‘Ike Le’a science building. These facilities are near the library and all other essential resources required of SSM students. Organizationally, the SSM program is located in the Science, Technology, Engineering and Math (STEM) Department.
V. Program Efficiency

A. UH Program Quantitative Indicators

The overall impression left by the Instructional Annual Report of Program Data (ARPD) Program Quantitative Indicators for 2016 and previous years may be somewhat misleading. While the actual formula determining Demand Indicators is not clear, one can expect that it is impacted by a use of less predictive ‘green’ job categories which indicate a much more limited demand for sustainability skills (see Section VII). As indicated in the graphs below, student numbers and semester hours have shown healthy increases despite the fact that these counts have been dropping at UHMC and other campuses within the UH System (see https://www.hawaii.edu/iro/).

**Figure 1:** Student Trends in the SSM Program (2013 – 2017)

Persistence rates for SSM are strong despite recent information on the ARPD website to the contrary. Because the SSM program nurtures a cohort atmosphere, faculty are in close contact with all students, which facilitates knowing the reasons students may leave the program. For the great majority, this is due to personal reasons (finances, relationships, move, etc.) and their leaving the program, even if temporarily, was considered a loss in the ARPD system. Additionally, a closer look at the Effectiveness Indicator shows that the data do not reflect the 12 graduates from 2015-16. This inaccuracy seems to be repeated and amplified in persistence numbers, where graduates should not count as losses. Comparing this to the Student Semester Hour (SSH) count supports the conclusion that persistence has remained at or above levels reported in prior years (i.e., above 80%). In fact, the most recent data shows that 92% of Fall 2016 SSM students returned for Spring 2017, indicating a 92% persistence rate. Additionally, seven new students joined the program in Spring 2017.

VI. Evidence of Program Quality

A. Internships and Capstone Lead to Employment Opportunities

Part of the SSM academic experience is designed to facilitate applied experiences in the workplace relevant to sustainable science management areas. Internships provide students with an opportunity to explore career interests in sustainable science management, to build professional networks, apply knowledge and skills learned in the classroom in a work setting while preparing students for the senior capstone project. Feedback from the community has been overwhelmingly positive about SSM student interns. Of the 15 SSM students that have completed internships (392v), eight (53%) resulted in further offers of involvement, including employment opportunities (6) and invitations to join non-profit boards (2).
Capstone (SSM 495, 496) is a year-long part of the fourth-year curriculum and is designed to help students transition successfully between an academic setting and employed independence in the real world. During this process, students identify and research a current sustainability issue within the State of Hawai‘i, hypothesize or plan a solution, and make use of tools acquired in program coursework such as stakeholder analysis, systems thinking, life cycle analysis, storage or energy modeling, or sustainability indicator development to assess the issue. Students are required to present their findings to an audience of peers and community members, which twice has led directly to an employment opportunity, and in another case led to the founding of a non-profit organization centered around food security issues in Maui County.

B. Program Recognition and Awards

Despite the program’s recent beginnings, faculty and students related to UHMC’s sustainability initiatives and programs have received numerous awards in recent years. Commendations from the statewide Hawaii Sustainability in Higher Education Summit include:

- UH System Student Leadership Award;
- UH System Sustainability Faculty Award (Timothy Botkin);
- Student Leadership (3) for 2013, 2015, 2016

From national Association for the Advancement of Sustainability Higher Education (AASHE):
- National Student Sustainability Leader for 2015

From Sierra Club, Maui Chapter:
- 2017 Malama Kahakai Award

Additionally, in 2014 Maui Electric Company established a scholarship endowment specifically for SSM students.

C. Indicators of Student Success

Indicators suggest that SSM students have an average 82% rate of successful coursework completion (equivalent C or Higher). One of our 2017 SSM graduates has already been admitted to the Masters in Sustainability Leadership at Arizona State University and 54% of graduates have obtained jobs in sustainability fields (see below).

VI. Program Outcomes

A. Student Demographics

The SSM program is the only four-year degree program in the UH System devoting specialized coursework in order to equip students with the advanced skills and capacities to address complex and changing issues in the realm of sustainability. The BAS SSM degree also fills a needed gap by providing an opportunity for students to earn a baccalaureate degree on Maui. To date, 13 students have graduated from the SSM program and 9 to 11 more are expected to graduate in May 2017, bringing the total to 21...
to 23 graduates in its first two graduating classes and first six years of the program’s existence.

In these respects the SSM program has relied mostly on Maui resident students, but experience has shown there is a great deal of interest and potential from off-island/out-of-state students. Indeed, off-island students make up a portion of the current SSM population, and future decisions will determine whether UHMC will decide to tap that potential.

The counseling department presently lists forty-two students with SSM declared as their major and another 9 students in pre-SSM (Business Career Options IV) totaling 51 students currently pursuing a SSM baccalaureate degree at UHMC. These numbers are likely conservative as they only include students that have contacted the counselor directly.

Of the SSM students that have declared SSM as their major at UHMC, (62%) are male and (38%) are female. Similar to the overall student body at UHMC, SSM majors are multiethnic and multi-generational. To date, SSM students have ranged in age from 19 to 58 years, with an average age of 33, representing diverse ethnic backgrounds including Hawaiian, Caucasian, Alaskan Native, Chinese, Filipino, Korean, and Japanese.

Students enter the program with diverse life and educational experiences but typically with a strong interest in environmental protection and conservation. Some have approached the program as a pathway to a ‘second career’ seeking a more fulfilling occupation and/or recognizing opportunity in the growing field of sustainability. The majority of students enter the program with career interests divided between scientific research (31%) and agriculture and natural resources (29%). The remaining career interests of SSM students are classified as unknown (26%), business (5%), government and public service (5%), law (2.4%) and engineering (2.4%). Over half of current SSM students (60%) are interested in earning a graduate degree (master’s or doctorate) or professional graduate degree (JD, MD, etc.) after graduation.

B. Employment of Graduates

Among the SSM graduates, 100% are employed and most (n=7, 54%) are working in sustainability careers on Maui, double the national average (27%) of students working in degree-related careers according to the ASU School of Sustainability. In addition, of the students expected to graduate in May 2017, five are already employed in sustainability related jobs or have been accepted into graduate school.

Despite these encouraging employment trends for SSM graduates, we realize the importance of strengthening our communication within the community of potential employers. Sharing the curriculum and training that our graduates are receiving and the diversified, broad and unique skillset that SSM graduates possess will help us continue to build a strong program. Toward this end, we are currently working with our Advisory Committee to better promote the program, communicate how sustainability outcomes and objectives can be applied in any work setting, and to strengthen coursework (e.g., ocean systems and perhaps agriculture as a partner with the UHWO Sustainable Community Food Systems program).

VII. Relationship to UH Maui College and UH System

A. Relationship to University Mission and Development Plans

By signing a UH Board of Regents Sustainability Policy in 2014 and by establishing the University of Hawaii Office of Sustainability (UHOS) in 2015, the University of Hawai‘i has
reaffirmed its commitment to provide the training and education necessary to build leaders equipped to help solve the complex and dynamic challenges our communities face. With the most comprehensive undergraduate sustainability curriculum and the only four-year degree option in the State, the SSM program at UHMC directly supports the commitment by the University of Hawai‘i to serve as a leader in the integration of sustainability in its teaching, research, operations and service (UH Strategic Directions 2015-2021, HPMS Action Strategy 4).

The SSM program also directly aligns the following strategic goals, objectives, and values identified within the UHMC 2015-2021 Strategic Plan:

1. UHMC’s mission statement to inspire students to develop knowledge and skills in pursuit of academic, career and personal goals in a supportive, educational environment that emphasizes community engagement, lifelong learning, sustainable living, Native Hawaiian culture, and global understanding.

2. UHMC’s vision statement to prepare students to respond to emerging challenges in their lives, communities, and the world through compassion, leadership, problem-solving and innovation.

3. UHMC’s core value of malama, which means: to take care of, tend, attend, care for, preserve, protect, beware, save, maintain: care, preservation, support, loyalty: custodian, caretaker, keeper.

4. UHMC strategic goal to encourage and maintain high quality learning across the institution by providing high quality degree options and courses that meet student, industry and stakeholder needs. The SSM program was established to meet the rapidly expanding field of sustainability and projected growth of green jobs in Hawai‘i. These jobs are projected to increase as a result of recent initiatives to support a sustainable future for Hawai‘i that moves toward creating sustainable tourism practices, a more diversified economy, a more resilient and protected environment, and 100% energy independence by 2045 (Hawaii WIOA Unified State Plan, 2016).

5. UHMC strategic goal to prepare students to meet current and emerging community and workforce needs and opportunities by engaging the SSM Advisory Committee (see Appendix B) to help prioritize academic goals (e.g., PLOs), improve curriculum and program offerings, create opportunities to address community projects (e.g., internship programs), and design and implement research to identify current and future needs of government agencies, NGOs, businesses (e.g., capstone).

6. The SSM program embodies the UHMC strategic goal to create a culture of sustainability at UHMC in its communities and environments by embedding sustainability practices and processes throughout the College (see section IV B).

B. Employment Trends and Opportunities

The field of sustainability remains somewhat new both in terms of designated career options and as sustainability practice permeates disciplines and reaches common knowledge and acceptance. Despite the term ‘sustainability’ being used consistently throughout the initiatives and objectives issued by the State of Hawai‘i and within the UH System, there is no clear road map for a sustainability career (US Bureau of Labor Statistics, Report 7, August 2012). Many professionals who lead sustainable projects don’t even have ‘sustainability’ in their title or job description.
Nevertheless, students with a sustainability degree have skills that apply to virtually any field or profession and are prepared for admission into graduate and professional schools. According to the career office of the ASU School of Sustainability, sustainability graduates can expect to find positions in industry, consultancy, education (teaching, research, administration), regulatory agencies, nonprofits, utilities, governmental agencies and nongovernmental organizations.

Additionally, corporations are increasingly investing in adopting sustainable practices in alignment with their business plan and mission and will need a workforce that can address these emerging needs. A recent survey (2014) by the McKinsey Global Institute examining sustainability’s strategic worth in the marketplace showed that 43% of executives now seek to align sustainability within their overall business goals – up from 30% in 2012. Moreover, the majority of Fortune 500 companies are increasingly making commitments to sustainability efforts in areas such as: energy-use reduction, resource conservation, recycling, pollution prevention, waste elimination, transportation efficiency, building rights, and human rights and community development.

While it is difficult to identify all of the various opportunities available to SSM graduates, the table below lists a sample of actual job titles that have stated an interest in sustainability expertise.

Table 3: A Sample of Job Titles that have an Interest in Sustainability Expertise

<table>
<thead>
<tr>
<th>Development Director</th>
<th>Account Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director of Sustainability</td>
<td>Sustainable Facilities Coordinator</td>
</tr>
<tr>
<td>Policy Coordinator</td>
<td>Editor</td>
</tr>
<tr>
<td>Sustainability Consultant</td>
<td>Environmental Education Instructor/Coordinator</td>
</tr>
<tr>
<td>Clean Technology Marketing Specialist</td>
<td>Risk Assessment Analyst</td>
</tr>
<tr>
<td>High School Teacher</td>
<td>Manager, Environmental Sustainability</td>
</tr>
<tr>
<td>Sustainability Coordinator</td>
<td>Energy Efficiency Specialist</td>
</tr>
<tr>
<td>Climate Change Specialist</td>
<td>Sustainable Project Analyst/Assistant</td>
</tr>
<tr>
<td>Water Resources Analyst</td>
<td>Sustainability Plan Developer</td>
</tr>
<tr>
<td>Renewable Energy Systems Specialist</td>
<td>Sustainability Graduate Research Assistant</td>
</tr>
</tbody>
</table>

Locally, continual growth in sustainability-related careers is also projected. The Department of Labor (Hawaii WIOA Unified State Plan, 2016) recently identified ten main economic drivers for Maui County and named sustainability science as one of the priority fields within STEM occupations. While the skills acquired by SSM graduates can be applied to any industry, six of the ten drivers are directly related to sustainability, including Agriculture, Construction and Housing, Energy, Science, Technology, Innovation, and the Visitor Industry. Energy was singled out to be a strong area of growth for Maui County given the State’s policy to reach 100% renewable energy by 2045 and Maui’s stated leadership in renewable energy adoption and demonstration projects. Waste management was also projected to be an area of significant growth, providing the biggest gains in long-term forecasts of jobs throughout the State, adding at least 500 jobs p/year.
In addition to existing jobs, opportunities for the creation of individual entrepreneurial, consulting, or advocacy roles will be another option for independent minded graduates. Indeed, two of our graduates from 2014 are already working together to create a 501c (3) organization dedicated to advancing food security on Maui, and another upcoming graduate has secured a consulting job with the Department of Water Supply.

For each of the above goals, advanced skills and leadership are required, and the SSM program is responding to these statewide and national demands. Professionals with sustainability skills will soon have a competitive advantage in the job market. Employers need professionals who can apply systems thinking, implement and manage sustainable business practices, help balance budgets to meet the triple bottom line, and promote sustainable strategies inside the organization and beyond.

C. Civic Engagement

Acknowledgement that sustainability is a prevalent goal throughout the State of Hawai`i and our education system is indicated by its prominence in the UHMC mission statement (see above), core values, strategic directions and learning outcomes, State and County initiatives, and the UH Board of Regents recent inclusion of a sustainability policy. The SSM program provides a clear path for students to develop critical skills in analysis, problem solving, decision-making, and implementation (i.e., integrating sustainability concepts into applied settings and projects), making them valuable for employers in virtually any field or profession seeking to integrate sustainable practices into their businesses.

Despite the close to unanimous identification of sustainability as a dominant value, particularly in the State of Hawaii, there exists only a nascent understanding of how this translates to changes in practices and priorities, and what approaches and skills are necessary to achieve progress. Consequently, the tasks of listening, educating, promoting, and helping to change the infrastructure that impedes sustainability progress remain critical. SSM students are acutely aware that the mere possession of skills is inadequate, and they willingly shoulder the responsibility of finding ways to pull their community contacts into a higher awareness as well.

This is not an onerous task, but part of the passion which drives SSM students to succeed. Working to update our civic infrastructure is a rewarding ambition. At the same time, graduates of the program understand that it is in their best career interest to project the logical conclusion that it is in the interest of every citizen and organization to aspire to efficiencies, which reduce degradation and impact to the limited resources of our islands. The strongest tool SSM students can use to this end is their commitment to an objective inquiry, based on the foundational skills of open stakeholder engagement, scientific and systems inquiry and re-examination of commonplace assumptions, all of which are at the core of the Sustainable Science Management program.
REFERENCES


APPENDICES
Appendix A:
WASC Substantive Change Action Report - SSM

WASC
Western Association of Schools and Colleges
Accrediting Commission for Senior Colleges and Universities

Substantive Change Action Report

Proposal Information:

<table>
<thead>
<tr>
<th>Proposal Review Date</th>
<th>July 25, 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>University of Hawaii Maui College</td>
</tr>
<tr>
<td>Type of Substantive Change</td>
<td>New Degree</td>
</tr>
<tr>
<td>Program Name / Location</td>
<td>Bachelor in Sustainable Science</td>
</tr>
<tr>
<td>ALO</td>
<td>Diane M. Meyer</td>
</tr>
<tr>
<td>WASC Staff Liaison</td>
<td>Brenda Baham Hill</td>
</tr>
<tr>
<td>Committee Reviewers</td>
<td>Andrew Allen, Karen Duma-Haley</td>
</tr>
</tbody>
</table>

Committee Action and Date (See Attached) | Additional Information (See Attached):

- [x] Interim Approval on 7/25/2011
- [x] Notification of Implementation
- [ ] Federal Site Visit Required
- [ ] International Visit Required
- [ ] Fast Track
- [ ] Non Compliance

Commission Approval and Date (For Institutional Tracking)²:

- [ ] Approved on ________________
  - Implementation of an approved change must occur within two years of Commission approval. If the change will be implemented more than two years after the approval date, contact your WASC Staff Liaison to determine if the change requires re-approval.
- [ ] Not Approved on ________________

² Commission approval of a new degree program signifies that the program is covered by the WASC accreditation of the institution as a whole. Approved by WASC should not be represented, in marketing materials or any other forms of communication, as program specific accreditation, such as the bestowed by specialized, professional, or programmatic accrediting organizations.

³ Record the date that the Commission took action on this Substantive Change proposal for your records.

Findings of the Committee:

Commendations:
1) The proposal for the BAS Sustainable Management was thorough, well-written and provided strong documentation, especially the internal UH program proposal. It clearly established the need for the program and its connections to the Maui community.

2) The curriculum was carefully designed to meet the need for the applied program and builds on current AA program capabilities.

3) The assessment system for the BAS is impressive with a particularly sophisticated curriculum map.

4) The panel appreciated the forth-coming and informative responses from UHMC representatives during the substantive change call.

Recommendations:
1) Future proposals should include a UHMC or UH teach out policy which address the criteria and processes for deciding to

Retain this document and attachments for your permanent records
Substantive Change Action Report

close-out a program, including appropriate faculty involvement.

2) The UHMC faculty is encouraged to continue its work to build a culture for the baccalaureate on its campus; this would include elements such as ensuring Ph.D. faculty develop appropriate applied research agendas and that there are sufficient faculty to support new baccalaureate programs.

3) Future substantive change proposals should provide three fully developed course syllabi and the capstone syllabus for a proposed new program.

4) UHMC is encouraged to include sample CVs for faculty teaching required courses beyond the major in the SC proposal, especially in cases where there are few new faculty assigned directly to the proposed new program.

WASC Liaison Signature:

[Signature]

Date: 8/1/2011
Additional Information (If Checked)

Notification of Implementation:
Under Standard One, it is the institution’s responsibility to notify WASC when a program begins by using the Program Implementation Form. Submission of this form is required to confirm the existence of the program and will trigger inclusion of the program on the Off-Campus Distance Education Report (OCDE) area of the WASC website for purposes of financial aid eligibility verification by the U.S. Department of Education. Failure to notify WASC of the program implementation date within 30 days of the start date will result in the suspension of the program’s approval, the need to suspend enrollments, and a potential loss of financial aid for students enrolled in the off-campus/distance education program. Repeated non-compliance with this requirement could also lead to a sanction of the entire institution under Standard One.

Federal Site Visit Required:
Federal law requires a new site be visited within six months of operation if 1) the institution has less than three off-campus locations; and 2) students at an international site are to qualify for U.S. federally funded financial aid under Title IV. If the institution certifies that students enrolled at the international site are not eligible for, and will not be seeking, federal financial aid, then the requirement of a site visit may be waived. In addition to the federally mandated visits, post implementation visits may be required by the Substantive Change Committee.

International Site Visit Required:
Department of Education regulations do not require a visit to international locations if the institution verifies that students at that site will not be seeking U.S. federally funded financial aid; however, the need to ensure the quality at these international sites has been a concern of the Substantive Change Committee. A site visit may be required for at least the first program in a new country within one year of implementation at the discretion of the Committee.

Non-Compliance:
It came to the Committee’s attention that students had been enrolled into the program and/or introductory courses were offered prior to receiving WASC approval for the program. Implementing programs (constituting substantive changes) or admitting students into a program that has not been approved is not only a serious violation of WASC substantive change policy and federal regulations; it is also a violation of Standard I (see Criterion for Review 1.9). Institutions have a fiduciary responsibility to WASC and to their students to receive requisite approvals before commencing programs. WASC has a legal responsibility to the U.S. Department of Education to assure the integrity of its accredited institutions and to assure that any site where programs are offered, with or without the availability of financial aid, have received the necessary prior approvals. If such a pattern continues in the future, a sanction could be imposed on the institution. Please be sure to obtain all necessary approvals before implementing programs or off-campus locations in the future.

Rev. 7/10
Committee Actions

Interim Approval:
All substantive change proposals must be ratified by the Commission. The Substantive Change Committee grants interim approval, with final approval taken in the form of ratification by the Commission. Interim approval by the Substantive Change Committee allows the institution to admit students, who would be eligible for financial aid, even as the Committee's decision awaits ratification by the Commission. The institution may advertise the program with the caveat that the program is contingent upon WASC approval, but classes may not begin until final Commission ratification is received.

Proceed to Site Visit:
A site visit is typically requested for structural change proposal reviews. The purpose of the site visit is to assess how the proposed change will be implemented, to answer questions identified by the panel and to determine the overall impact of the change on the institution. The findings of the visit will be sent to the institution for correction of errors and will be reviewed by the panel. If the panel finds the team report to be satisfactory, then it will be forwarded to the Structural Change Committee of the Commission for final review. The institution may advertise the program with the caveat that the program is contingent upon WASC approval, but classes may not begin classes until final Commission approval is received.

Refer to Commission—No Site Visit:
Certain types of Substantive Changes must be reviewed by the Structural Change Committee before proceeding to the Commission. Typically, a site visit is requested for structural change proposal reviews, but may be waived at the panel's discretion and forwarded directly to the Structural Change Committee for review. This action constitutes Interim Approval by the Substantive Change Committee and allows the institution to enroll students, who would be eligible for financial aid, even as the Committee's recommendation awaits ratification by the Commission. The institution may advertise the program with the caveat that the program is contingent upon WASC approval, but classes may not begin classes until final Commission approval is received.

Fast Track Authorization:
With Fast Track Authorization approval, the institution obtains the authority to submit Expedited Proposals that are reviewed by WASC staff only. These abbreviated proposals receive accelerated review for substantive changes within the scope of the approval, and exemption from the six-month, post-implementation site visit. At the end of the exemption period, a sampling of the sites implemented under the Fast Track Authorization is required to be visited, as per Department of Education regulations. Because Expedited Proposals are reviewed and approved by WASC staff, the institution does not need to schedule a review of the report. The institution must submit an application form and payment before for the review can begin. Once the Expedited Proposals has been found to be complete and within the context of the Fast Track authorization granted, the program or site may be implemented.
Dear ALO:

This email serves as official notice that the following proposal has been granted final approval by the WASC Accrediting Commission for Senior Colleges and Universities:

UNIVERSITY OF HAWAII MAUI COLLEGE
BACHELOR IN SUSTAINABLE SCIENCE
(NEW DEGREE PROGRAM)

DATE OF COMMISSION APPROVAL: AUGUST 17, 2011

Please print and retain this email for your records. You may also record your date and approval of Commission Approval on your Substantive Change Action Report, which was previously sent with notification of Interim Approval.

Attached is the Program Implementation Form. Please fill it out and return to the WASC office within 30 days of the program start date. Please note that the submission of this form is required to confirm the existence of the program and will trigger inclusion of the program on the Off-Campus/Distance Education area of the WASC website for purposes of financial aid eligibility verification by the U.S. Department of Education.

If you have any questions, please contact your WASC Staff Liaison:

Teri Cannon
t cannon@wascsenior.org

Kind Regards,

Jamie Wilkins
Accreditation Resources Coordinator

Western Association of Schools and Colleges
Senior College Commission
955 Atlantic Avenue, Suite 100
Alameda, CA 94501
Ph. (510) 748-9001 ext. 304
Fax: (510) 748-9797
www.wascsenior.org
Program Implementation Form

Directions: Institutions must submit information regarding ALL distance education programs and off-campus degree program delivery locations, whether or not subject to WASC approval, within 30 days after the program is implemented. The locations that must be reported include those within 25 miles of the main campus or WASC-approved regional centers. A separate form is required for EACH on-campus, distance education and off-campus program/site that has been implemented. Submission of this form is required to confirm the offering of the program or the opening of the site and will trigger inclusion of the program or site on the Off-Campus/Distance Education table found on the WASC website. Please be advised that the OCDE table is used for purposes of financial aid eligibility verification by the U.S. Department of Education.

GENERAL INFORMATION:

Institution: University of Hawaii Maui College

ALO Name: Diane Meyer

ALO Signature: [Signature]

Date: August 24, 2011

PROGRAM MODALITY:

☐ Distance Education (complete Section 1 only)

☐ Off-Campus Site (complete Section 2 only)

☐ New Degree Program – On Campus (complete Section 1 only)

☐ New Program at an existing Off-Campus Site (complete Section 2 only)

SECTION 1: New Distance Education Program or New Degree Program On Campus

Program Name: Sustainable Science Management

Actual Date Classes Began: 8/22/2011 (mm/dd/yyyy) Initial FTE as of Start Date: 7.08

SECTION 2: New Off-Campus Site or New Degree Program(s) at Existing Off-Campus Site

Site Name (if applicable): ____________________________

Physical Address: ____________________________

OPEID: ____________________________

City: __________________ ST: __________________ Zip: __________________ Country: __________________

Is this new site within 25 miles of the main campus or a WASC designated regional center? ☐ Yes ☐ No

If Yes, please provide the name of the supporting location: ____________________________

Effective Date of Change: __________________ (mm/dd/yyyy)

☐ No Substantive Change Approval Required
(Off-Campus Site within 25 miles of approved regional center or main campus)

Please list all new programs in operation at this site, including start date and FTE for each program. (Use additional sheets if necessary.)

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Actual Date Classes Began</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 2 continues on Page 2
Visit Requirements

Note: Federal Law requires a new site be visited within six months of implementation if the institution has fewer than three off-campus locations and the students at the site expect to qualify for U.S. federally funded financial aid under Title IV.

If applicable, please indicate in the spaces below at least four available dates (mm/dd/yyyy) within the next six months to schedule a one-day visit. (Please select dates when classes are in session.)

1. ___________________ 2. ___________________ 3. ___________________ 4. ___________________

International Sites (When applicable)

Note: WASC may require an international site visit to the first off-campus program in a country within one year of the start date. Please note that the Department of Education requires a visit to international locations where students will be seeking U.S. federally funded financial aid.

Will students be seeking U.S. Federal Financial Aid?
☐ Yes. Students will be seeking U.S. financial aid. ☐ No. Students will not be seeking U.S. financial aid.

If Yes, please indicate in the spaces below at least four available dates (mm/dd/yyyy) within the next year to schedule a one- to two-day visit. (Please select dates when classes are in session.)

1. ___________________ 2. ___________________ 3. ___________________ 4. ___________________

For Office Use Only: Visit Due Date (If Applicable) ____________
Appendix C

2016-2017 SSM Advisory Committee Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Agency/Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Bendon</td>
<td>Green Building Hawaii Consulting &amp; Training</td>
</tr>
<tr>
<td>Jennifer Chirico</td>
<td>Susty Pacific LLC</td>
</tr>
<tr>
<td>Simone Bosco</td>
<td>County of Maui, Planning Department</td>
</tr>
<tr>
<td>Rob Hoonan</td>
<td>Marriott Hotels</td>
</tr>
<tr>
<td>Kelly King</td>
<td>Maui County Council</td>
</tr>
<tr>
<td>Bob King</td>
<td>Pacific Biodiesel</td>
</tr>
<tr>
<td>Scott Meidell</td>
<td>Haleakala Ranch</td>
</tr>
<tr>
<td>Steve Parabicoli</td>
<td>Mana Water, Wastewater Consultant</td>
</tr>
<tr>
<td>Rob Parsons</td>
<td>County of Maui, Environmental Program</td>
</tr>
<tr>
<td>Jeannie Skog</td>
<td>Maui Economic Development Board</td>
</tr>
<tr>
<td>Jonathan Stenger</td>
<td>King Kamehameha Schools, SSM Graduate</td>
</tr>
<tr>
<td>Sharon Suzuki/David Tester</td>
<td>Maui Electric</td>
</tr>
<tr>
<td>Dave Taylor</td>
<td>County of Maui, Water Department</td>
</tr>
</tbody>
</table>
Appendix D

SSM Lecturers and Faculty

SSM CURRENT LECTURERS (ROTATING)

Jennifer Chirico, Ph.D.
Vin Conti, MA/PhD Candidate
Alex deRoode, MS
Gregg Kresge, PhD
Barry Solomon, PhD

SSM PAST LECTURERS

Ann Coopersmith, MA (2013-16)
Kristen Freeman, PhD (2012-13)
Michelle Gould, MS (2014-15)
Laura Mujica, PhD (2014)

PAST FACULTY

Joie Taylor, PhD
Ferdouz Cochran, PhD
Rebecca Mirsky, PhD