

**Oregon State University
Marine Studies Initiative**

**Outreach, Engagement, and Partnerships Working Group
Final Report**

April 15, 2015

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Executive Summary

The Outreach, Engagement, and Partnership (OEP) Marine Studies Initiative Committee was charged with developing “engagement” concepts and recommended actions that if implemented would result in significant benefits to MSI and the state of Oregon. The committee was composed of a diverse set of representatives from within and outside Oregon State University (OSU). The Committee used the MSI vision and mission and a set of guiding principles to drive the committee’s work. These principles were consistent with a “value proposition” based on developing mutually reinforcing benefits to OSU, MSI, and its partners, integrating OSU, Land Grant, Sea Grant and partner missions, aligning incentives, promoting coast wide needs and connectivity, and being innovative and forward looking.

The OEP committee searched for partnership opportunities by conducting more than twenty conversations with groups external to OSU representing educators, students, researchers, industry, communities, community colleges, and other higher educational institutions. The group looked at a wide range of strategies for facilitating educational and partnership strategies and considered a range of geographic scales with particular emphasis on the Oregon coast, but also including the broader state, region, nation, and globe. Arising from these conversations were some core concepts: for example, that the MSI should not be designed, implemented, or promoted as primarily an OSU initiative—but rather a “State of Oregon” initiative. The committee recognized that in some cases this would require tearing down existing institutional barriers and creating engagement strategies that blur the line between institutions, organizations, programs, educators, and students. The committee also recognized many of these initiatives will require significant resources and dedication by a broad range of University outreach, research, and educational organizations. In some cases, it will require that higher levels of the University work with other Oregon educational institutions to align incentives, and resolve administrative and financial barriers that could impede MSI success.

The Committee developed a diverse set of ideas and concepts for creating and supporting partnerships and established four working groups to refine the most important concepts. The groups generated 18 concept papers within general partnership areas (industry, universities, communities, and community colleges), recognizing that there would be overlap among the OEP concepts groups across the groups, as well as with the other MSI committees. Each concept included basic ideas, goals, partners (core, associated), benefits (to MSI and partners), audience, required resources, timing and implementation, and connection with other MSI committee mandates. The 18 concepts generally fell into two categories: the first category were “integrative themes” around which partnerships could be established; the second category focused more on “process” by which partnerships could be established or enhanced. In shorthand, these two categories are the “what” and the “how” of outreach, engagement, and partnerships. An example of the first category is the emphasis on a marine technology center in which marine technology innovation and workforce could be cultivated. This center could be supported by internships and curriculum development (the “how”).

Concepts discussed and developed by the OEP group include:

- Creating centers focused around
 - Marine Technology
 - Tourism
 - Fishing/Aquaculture/Seafood Industries
 - Other “Centers of Excellence”
- Connecting universities in a variety of ways including
 - Establishing joint graduate course
 - Expanding undergraduate opportunities
 - Visiting scientist/scholar programs
- Connecting with community colleges
 - Dual enrollment and degree articulation
 - Open Campus
- Establishing internships and apprenticeships
 - Can be embedded within the Centers
 - Can with industry, non-profits, state agencies, etc.
- Supporting community-based presence on the coast
 - Business collaborative-supporting the needs of new or existing local businesses
 - Local “nodes” of university expertise and engagement
 - Supporting K-12 education

A few recurring themes arose from the concepts. The first is that these are initial attempts to define opportunities for the MSI to be expansive in its scope and realize the promise of a truly coast-wide initiative. While the team reached out to select partners and individuals during its discussions, these conversations were not exhaustive and additional effort to connect with partners needs to be undertaken as these concepts are further developed. Second, each concept attempts to identify what already exists, recognizing that these opportunities should build on current successes and existing infrastructure and networks. Detailed resource assessments of existing assets and additional needs should be determined as these concepts are more fully developed.

These concepts represent foundations for discussion. These ideas could be scaled up in terms of scope as well as geographic extent. For example, providing opportunities for graduate and undergraduate students can transcend OSU/UO/PSU and connect to the other public, technical and regional universities (e.g., OHSU, OIT). Initiatives involving K-12 education could connect statewide through the regional STEM hub network, linking the coast to eastern Oregon. Establishing Centers of Excellence could connect national and international collaborators under the umbrella of a unifying topic. Many of these concepts could also link to national and international programs and institutions.

Additional opportunities for outreach and partnerships could be investigated, including examining connections with private education institutions, looking more closely at potential partnerships in the Valley and Eastern Oregon, and promoting external engagement in other elements of the MSI. Exact metrics will be closely tied to program goals, which need to be determined more explicitly.

Introduction

The Outreach, Extension, and Partnership Marine Studies Initiative Committee (OEP) was charged with developing visions, concepts, and recommended actions through MSI's engagement and partnership strategies that would generate significant value and benefits to the state of Oregon. The committee was composed of a diverse set of representatives (see section below for committee makeup) from both within and outside Oregon State University (OSU) that are experienced in engaging stakeholders, building partnerships, and managing cross institutional relationships — both within the state and along the coast. From the first meeting, the committee demonstrated a commitment to build on Oregon State's University's reputation as a successful Land Grant and Sea Grant College so that the MSI would not be seen or experienced as only an OSU initiative—but rather a “State of Oregon” initiative committed to tearing down institutional barriers, and creating authentic engagement that that would blur the line between institutions, organizations, programs, educators, and students. The Committee recognized early on that this will require real leadership from OSU and the partner institutions and organizations.

The Committee used the MSI vision and mission and a set of guiding principles to drive the committee's work. These principles are summarized in the next section but are consistent with a value proposition based on driving mutually reinforcing benefits to OSU, MSI, and its partners, seamlessly integrating OSU and Land Grant/Sea Grant and partner missions, aligning incentives, promoting coast wide needs and connectivity, and being innovative and forward looking.

Consistent with our charge, the committee: 1) searched for opportunities by engaging various groups on the OSU campus as well as non OSU groups off campus representing educators, students, researchers, industry, communities, community colleges, and other higher educational institutions; 2) looked at strategies for facilitating educational and partnership strategies; and, 3) considered a range of geographic scales including the coast, statewide, regional, national, and international. The Committee developed a diverse set of ideas and concepts for creating and supporting partnerships with industry, community, and educational institutions. These concepts included basic ideas, goals, partners (core, associated), benefits (to MSI and partners), audience, required resources, timing and implementation, and connection with other MSI committee mandates. Rather than flesh out fully developed programs, the concepts provide a foundation for working with the other MSI committees to develop ideas supporting comprehensive and interdisciplinary MSI programs that integrate outreach, research, and education programs.

Metrics

Exact metrics will be closely tied to program goals, which need to be determined more explicitly. Examples could include:

- Number of articulation agreements established with community colleges
- Number of graduate students supported by cross-university curricula
- Number of local businesses supported by MSI-established business collaborative
- Number of external researchers engaged in Center of Excellence

Process

Membership

The OEP group consisted of a diverse group of individuals from OSU and from external organizations. This membership was deliberately constructed to be inclusive of external potential partners and stakeholders, as well as those individuals with reach into groups, communities, or industries that may be interested in engaging with the MSI.

Specifically, the membership consisted of:

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Format

The team met virtually five times. The first few meetings focused on brainstorming of ideas for potential partnerships and groups and individuals to connect with, as well as develop a set of guiding principles (below) by which to determine and assess potential concepts. The team also reported on interactions and engagement with other external group or individuals (list of key contacts is provided in Appendices). The group was then parsed into sub-working groups to focus on developing concepts that had been raised during the brainstorming sessions or discussed with potential partners. These groups were tasked with developing concepts oriented around specific partnerships groups: industry, universities, communities, and community colleges. The groups were provided with a template to guide the development of each concept (see template provided in appendix). The co-chairs were not prescriptive in defining in advance the concepts to be developed by the working groups; instead, the working groups were asked to pull information from the brainstorming sessions, feedback from outreach sessions, and their own expertise. The groups then convened to discuss the status and potential overlap or connection among the different concepts outlined.

Guiding Principles

The co-chairs developed a draft of guiding principles, which were refined by discussion with the OEP team. These guiding principles were intended to help select among and shape the concepts being considered by the team. These guiding principles are as follows:

- Alignment with MSI vision and mission
 - Vision-*“OSU will lead the development of inclusive strategies for successful stewardship and use of our ocean and planet for today and for the future, relying on strong and open partnerships among a diverse set of stakeholders”*
 - Mission-*“create an environment where students, faculty, citizens of Oregon and beyond, and governmental and industry partners can create a healthy future for our oceans and the planet. It is a program where 1) transdisciplinary teaching and research; (2) collaboration; (3) experiential learning; (4) problem solving; and (5) research experiences are the norm and where a better future is not just envisioned, but is created.”*
- Mutual benefit to MSI and partners and is not duplicative in nature
- Innovative approach (allowing new ideas from elsewhere)
- Promotes coast-wide connectivity where appropriate
- Integrates research, engagement, education/training
- Responsive to coastal needs

- Builds on existing strengths, resources, and capacity
- Forward looking: addressing current - and especially future - needs and opportunities

Outreach, Engagement, and Partnerships - Concepts

Introduction

The sub-working groups were tasked with developing 3-5 concepts within each of their partnership areas (industry, universities, communities, and community colleges). The team as a whole recognized that there may be considerable overlap between the groups, for example, an opportunity to partner with local industry identified by the industry working group may also be highlighted by the communities working group. Review of the concepts and discussions among the team confirmed that many of the concepts overlapped or were incorporated into other concepts.

Connectivity

The working groups generated 18 concept papers. These concepts could be generally described in two categories: the first category focused on a topic around which partnerships could be established; the second category focused more on a process by which partnerships could be established or enhanced. In shorthand, these two categories are the “what” and the “how” of outreach, engagement, and partnerships. An example of the first category is the emphasis on a marine technology center in which marine technology innovation and workforce could be cultivated. This center could be supported by internships and curriculum development (the “how”). Other examples of the second category include the development of coastal nodes of expertise, cross-institution centers of excellence across universities, or articulation agreements between universities and community colleges. The table of connections in the appendix highlights areas where there are clear connections among the concepts.

Recurring Themes

A few recurring themes arose from the concepts. The first is that these are initial attempts to define opportunities for the MSI to be expansive in its scope and realize the promise of a truly coast-wide initiative. While the team reached out to select partners and individuals during its discussions, these conversations were not exhaustive and additional effort at connecting with partners needs to be undertaken as these concepts are further developed.

Second, each concept attempted to identify what already existed, recognizing that these opportunities should build on current successes and existing infrastructure and networks. The team acknowledges that this is an initial attempt and that detailed resource assessments should be determined. With this in mind, one message that was repeated during conversations with potential partners was the need for resources not just to initiate projects but to sustain them as well.

Broadening the Reach

The team recognizes that not all potential partnerships have been captured in the discussions and write-ups to date. Notably absent are opportunities at the national and international level. However, several of the ideas put forward can be scaled up to connect at those levels. For example, Centers of Excellence oriented around a specific topic could be established with universities beyond Oregon. Also, internships and connections with industry can be established broadly and are not limited to opportunities within the state.

The concepts outlined are foundations for discussion. Several could be dramatically expanded up, not only on a geographic scale. For example, providing opportunities for graduate and undergraduate students can transcend OSU/UO/PSU and connect to the other public, technical and regional universities (e.g., OHSU, OIT). Initiatives involving K-12 education could connect statewide through the regional STEM hub network, linking the coast to eastern Oregon. The visiting scholars program could be expanded to move beyond facilitating individual opportunities to creating schools or forums for scholars to engage.

In addition to scaling up some of the existing concepts, there are additional opportunities to connect with future partners. The OEP team had members from two of Oregon's other public institutions of higher learning - Portland State University and University of Oregon. However, these connections can be enhanced by reaching out to not only the other public institutions (noted above), but also Oregon's private institutions. This conversation could best be approached at the leadership level, with outreach by the OSU provost or president.

Other opportunities for intra-Oregon connectivity including expanding the internal geographic range to reach the Valley and Eastern Oregon audiences. The OEP team included in its activities connectivity with watershed associations, which have broad geographic reach across the state, as well as with Oregon's community colleges. Additional effort would need to be made to ensure that partnerships with these entities are mutually beneficial.

Finally, the OEP group suggests that the other elements of the MSI would benefit from external input. The MSI is capitalizing on existing strengths within OSU and using those strengths to leverage additional capacity and opportunity through partnerships. The research and learning models group, as two examples, could more broadly connect with other universities and institutions to increase the perspective and opportunity within those domains.

Concepts

Industry

Industry-Outreach, Engagement, and Partnerships Working Group (Dave Hansen, Kaety Jacobsen, Gil Sylvia, Jack Barth)

Marine Technology

- *What is the concept? (1-2 paragraphs including any geographic range)*

Create an MSI Ocean Technology Center. Develop curriculum and partners across multiple OSU colleges, and partnerships with the marine technology sector in Oregon, along the West coast and internationally. Such partnerships would recognize the strong investment by OSU in marine technology and ocean observing as well as the growing marine tech private sector in Oregon. The program goals would include 1) train OSU undergraduates and community college students for careers in marine technology, 2) provide internships for OSU students to work in the marine technology sector, 3) help the marine tech industry meet their workforce needs, 4) support a “Blue (Technology) Economy” in Oregon and West Coast communities, 5) co-develop intellectual ideas and property through use of creative partnerships, contracts, incubators, clinics, and accelerators, and, 6) foster creative and private sector use of ocean observing data. Participating business sectors could include maritime shipping and navigation, ocean sensors, underwater robotics, wave energy, cable management and repair, information systems/software developers, fishing/seafood technology companies, etc. Develop strong internship programs and experiential learning. The Center would also link to coastal marine STEM programs.

- *Who is the audience (those who would benefit from the partnership)?*

The primary audiences are OSU and community college undergraduates, and private sector businesses.

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

OSU technology oriented programs and faculty, community colleges, private industry, Oregon Marine Technology Society, YBOOI (Yaquina Bay Ocean Observing Initiative).

- *Who are the Associated Partners (supportive but not integral)?*

Other Oregon universities, NOAA.

- *Do these partnerships exist already?*

Given the diversity of the sector, a variety of partnerships have formed (e.g., YBOOI) but most are ad hoc and relatively informal.

- *What is the benefit to the MSI?*

Build on the recognition of OSU as an international leader in marine technology research to build out education and economic development programs. Develop

technology savvy undergraduate/graduate students. Create new ideas and intellectual concepts.

- *What is the benefit to the core and associated partners?*

Well educated undergraduates with strong STEM skills and job opportunities upon graduation. Well trained workforce to meet needs of marine tech private partners. New research ideas and funding support for MSI faculty. Support to develop patents and new intellectual property. Development of new Ideas that can support and drive private sector development.

- *What, if any, resources are required to support this effort?*

Will require significant resources to start including planning meetings, possible new faculty, and funding. Laboratory space in a new MSI building in Newport for technology development. Access to the sea for developing and testing equipment. Potentially great fund raising opportunity for technology/research grants and industry based funding and development.

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

Will take minimum of 2-5 years or more to fully complete.

Tourism Industry

- *What is the concept? (1-2 paragraphs including any geographic range)*

To work with the tourism industry to develop science-based materials, educational programs, and projects that support the goals of science literacy, science based-education, and an increase in the quality and quantity of science-based and nature-based tourism. Outreach and tourism experiential education curriculum and internships for undergraduates and community college students would be developed to support the outreach educational programs. Given the diversity of the marine tourism industry on the Oregon coast and in the Pacific Northwest as well as potential partners at OSU and other Oregon Universities and Community Colleges, the range of ideas and programs could be significant. Discussions among internal MSI partners would develop initial concepts, with follow up meetings with potential industry/educational firms and organizations to explore the most promising curriculum, program, and project ideas. The geographic range would include the entire Oregon coast and possibly the entire West coast

- *Who is the audience (those who would benefit from the partnership)?*

There are two core audiences: The first is local tourist-based businesses, chambers of commerce, and marine/coastal tourists. The second would be OSU undergraduate and graduate students and students at Community colleges and other educational institutions. .

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

Partners would include key players at OSU (ex., College of Business) members of the tourism industry, and other educational institutions including Community Colleges.

- *Who are the Associated Partners (supportive but not integral)?*

Other entities could include Oregon Coast Aquarium, Oregon Museum of Science, other museums, NGO's, hospitality, culinary, and art institutes, etc.

- *Do these partnerships exist already? If there is a relationship with an industry-who has it and what form does it take (formal, etc.).*

There is no formal relationship between the broad tourism industry and OSU although individual tourism firms may have relationships with OSU faculty and departments. There is also ongoing work at HMSC in the Visitor Center that includes partnerships with various external organizations (fishing, wave energy, etc.). The diversity and lack of coordinating/organizational and umbrella organizations makes working with the coastal industry potentially challenging.

- *What is the benefit to the MSI?*

Increased OSU exposure with the partners and with tourists, development of new curriculum to support marine science-based education with OSU undergrads, potential to improve the dissemination of research-based information, and development of a new industry group to support MSI and OSU.

- *What is the benefit to the core and associated partners?*

Educational and experiential opportunities for OSU students. Workforce development for the education-and science based tourism industry. Potential research and extension projects to support industry development and tourism education.

- *What, if any, resources are required to support this effort? Think about different kinds of resources (funding, people, etc.) and provide any ideas about where these resources might come from?*

New curriculum and classes may require significant initial resources including hiring new faculty. There could be significant time requirements to coordinate/partner with industry given the lack of industry organizations. Less resources would be needed to support individual faculty/student projects. New resources may include industry support and targeted grants.

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort? There might be different parts of the relationship that have different timeframes*

The most ambitious elements of the project may take five years or more to fully develop. Individual projects including internships could be initiated in a shorter period of time. For example, development of displays/exhibits to be used in specific locations can occur within six months.

Fishing, Aquaculture, Seafood Industries, and Related Science and Management Agencies

- *What is the concept? (1-2 paragraphs including any geographic range)*

Create an internationally recognized Fisheries, Seafood, and Maritime Center. Develop formal and integrated educational and research programs with the commercial fishing, aquaculture, broader seafood industry (processing, retail, food service, support services, maritime training), and management and science agencies. While a major focus would be the Oregon coast, the Center should be regional, national, and international in geographic scope. Create a formal undergraduate curriculum focused on seafood as an integrated food system. Include comprehensive curriculum, experiential courses and structured internships, and collaborative research experiences that supports an integrated and technologically sophisticated ecosystem/food system approach in fisheries and aquaculture education/research/outreach. With respect to internships, OSU has previously developed a successful fisheries internship program that could be used as a model for development (see Appendix). Create both formal (credited) and informal (non credited) courses for fishermen and at-sea workers (mariners). These courses could also serve undergraduate students seeking internships or employment at sea. Partner with industry from Alaska through California as well as other education institutions (community colleges and other higher ed) and selected NGO's nationally and internationally. Conduct workshops with industry and agencies to design curriculum, experiential courses, and internships to meet industry and agency research, training, and workforce needs. Take inventory of existing maritime training courses available both formally and informally with other programs from Alaska to California (MERTS, Alaska Sea Grant, etc.). Conduct a seafood industry needs assessment looking at what kinds of learning opportunities industry needs. Develop collaborative fisheries/seafood research programs with industry and agency partners.

- *Who is the audience (those who would benefit from the partnership)?*

Students from OSU, community colleges, other higher educational institutes as well as industry and agencies (crew, skippers, processors, agency managers/scientists, food service) that may include training in such diverse areas as biological sampling, engine repair, sea safety, able bodied seamanship, tonnage licensing, aquaculture production, stock assessment, etc.).

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

MSI, fishing, aquaculture, seafood industry, existing parties that do maritime training (MERTS, etc) and science/management agencies are the core partners

- *Who are the Associated Partners (supportive but not integral)?*

Community Colleges, other higher educational institutes, NGO's in the state, region, nationally, internationally.

- *Do these partnerships exist already?*

Informally, and occasionally formal (e.g., COMES), but not as a larger institution level or as a comprehensive program.

- *What is the benefit to the MSI?*

Global recognition/leadership in comprehensive research and education in "seafood systems" – including policy and management, law, business, harvesting and production technologies, ecology, conservation, marketing, technology, information management,

etc. Would include applied courses with practical training support for industry/agency participants with a “network” of educational institutions. Support training for undergraduates and graduate students will provide at-sea experience and prepare students for at-sea work.

- *What is the benefit to the core and associated partners?*

Comprehensive and practical training for undergraduate and community college students, industry, and resource managers/scientists. Attract students nationally to a unique seafood and fisheries program. Support industry workforce needs as well as practical and professional training. Opportunities to create not only a better seafood workforce, but a safer one.

- *What, if any, resources are required to support this effort?*

Will require significant resources to start including planning meetings, needs assessment, possible new faculty, maritime instructors, and funding. Potentially great fund raising opportunity for industry/NGO/Foundation investment.

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

Will take minimum of 2-5 years or more to fully complete.

Universities

Universities-Outreach, Engagement, and Partnerships Working Group (Jan Hodder, Burke Hales, Mark Systema, Itchung Cheung, Jess Porquez)

Joint graduate courses

Partner: Universities OSU/PSU/VO

- *What is the concept? (1-2 paragraphs including any geographic range)*

Development of joint activities between OSU, VO /OIMB, OIT and PSU that support graduate student training and provide marine science center lab and resource access for institutions without a marine lab e.g. (PSU, OIT). This could have a strong focus on Oregon but could also be expanded to national and international grad students.

a. Graduate level courses – content, process and skill oriented

Joint courses that involve graduate students at VO, OSU, OIT and PSU

Examples:

1. Using strengths at OIMB, PSU and OSU in marine science: Coastal physical oceanography and near shore processes /larval biology connections. Deep-sea biology. Visual imaging. Benthic/pelagic coupling. Nearshore biological oceanography. Harmful Algal Blooms. Hydroacoustics. Invasive species biology and management. Priority pollutants in nearshore environments

For example: Most physical oceanographers have a poor understanding of marine biology and especially the coupling of biology with hydrodynamics. The reverse is true for marine biologists. Both groups of graduate students would benefit greatly from an interdisciplinary education.

One model: MARINE (Monterey Area Research Institutions' Network for Education) <http://www.centerforoceansolutions.org/marine> MARINE provides professional development opportunities to prepare future ocean leaders for interdisciplinary real world problem-solving.

2. Communicating science and science teaching pedagogy (connections to the GK-12 idea from the communities group)

3. Science process skills – research techniques, ethics, new technology, crowd sourcing data/citizen science, etc.

4. Ocean observation – physical oceanography, hydroacoustics, modeling

- *Who is the audience (those who would benefit from the partnership)?*

Graduate students at the three institutions

Could be opened up to other institutions' graduate students and could have a national and international component.

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

Graduate faculty at the three institutions and potentially visiting faculty

- *Who are the Associated Partners (supportive but not integral)?*

Administrators at the three institutions who could make this happen and deal with the logistics - tuition/course numbers/grading etc.

National Association of Marine Laboratories - potential to involve national and international graduate students

- *Do these partnerships exist already?*

No

- *What is the benefit to the MSI?*

Increased opportunities and improved training of grad students

Increased faculty interaction between institutions and sharing of expertise

Potential to obtain funding for certain topics

Potential for increased interdisciplinary research amongst the institutions

Potential for national and international recognition for graduate training

- *What is the benefit to the core and associated partners?*

More graduate level courses for graduate programs.

Better trained graduate students

- *What, if any, resources are required to support this effort?*

Could be done at a low level with current videoconferencing capabilities, but improvements at each campus would probably be necessary. – Could include final student meeting/symposium etc.

Residential facilities are available at each campus for face-to-face courses

Support for Oregon graduate students to enroll in courses if held in summer (if credits needed to be offered)

Funding for national/international student attendance

Faculty expenses

Course supplies, equipment and logistic expenses

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

Not time constrained

Expand opportunities for undergraduates at OSU/UO/PSU

Partner: Universities OSU/PSU/UO/OIMB

- *What is the concept? (1-2 paragraphs including any geographic range)*

a. Development of mechanisms for undergraduates to easily take marine related courses at OSU/UO /PSU for requirements of their marine related majors.

b. Development of mechanisms for “tracks” within degrees, that allow for specialization/customization of interest. For example, UO/PSU students who are interested in

fisheries would have logical way of spending a term(s) at OSU whereas OSU/PSU students who are interested in organismal marine biology would spend time at OIMB.

c. Develop undergraduate certificate or emphasis to show student mastery of a specialist subject e.g. big data programming, marine instrumentation, microscopy, bioacoustics. Ensure transcript visibility for these. (This would be a similar concept to the community college certificate in specialized areas (e.g. Mt Hood-fish management and aquaculture; OCC aquarium science)

d. Promote research by undergraduates interested in marine topics

e. Provide marine lab and resource access for institutions without a marine lab for undergraduate use.

(Should connect with learning center group's ideas to coordinate)

- *Who is the audience (those who would benefit from the partnership)?*

Undergraduate students at the three institutions and potentially national and international students who would be drawn to the institutions to take part in these opportunities.

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

Faculty who have teaching responsibilities at the three institutions.
Directors of undergraduate research at each institution.

- *Who are the Associated Partners (supportive but not integral)?*

Administrators at the three institutions who could make this happen and deal with the logistics - registrars/tuition/course numbers/grading etc.

- *Do these partnerships exist already?*

No

- *What is the benefit to the MSI?*

Increased opportunities for undergraduate students – students could develop unique combinations of classes to customize their education to match their interests
The ability to develop an interdisciplinary undergrad education in the marine sciences/studies by building on existing strengths that provide a mutual benefit for each institution but are not duplicative, and thus allow the MSI resources to support the development of complementary rather than competitive directions.

- *What is the benefit to the core and associated partners?*

Better trained undergraduate students.
Higher potential for employment after graduation
Increased marine literacy
Enhanced recruitment of undergrads

- *What, if any, resources are required to support this effort?*

Logistic details for how to facilitate this
Residential facilities are available at each campus.
Administrators and advisors who would coordinate these opportunities.

Potential need for student support

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

Not time constrained – long term efforts.

University connections to community colleges

Partner: Universities OSU/PSU/UO and Oregon coastal community colleges

- *What is the concept? (1-2 paragraphs including any geographic range)*

Provide a mechanism for Oregon community college students interested in a four-year degree focusing on some aspect of marine studies to prepare and complete a degree in Oregon. Either provide for seamless transition to complete a degree at OSU, UO or PSU, or for place-bound students, complete the degree close to their home by combining on-line courses, and/or by attending Hatfield (OCC students) and/or for those interested in marine biology by attending OIMB (SWOCC students). Support the lower division courses at the coastal community colleges by providing instructional opportunities – either face-to-face or virtual - that focus and support preparation for these degrees. For example providing lower division requirements that have a marine emphasis, not just in science. Develop new articulation agreements. Provide for “Coastal Nodes” for the MSI.

- *Who is the audience (those who would benefit from the partnership)?*

Community college students interested in a marine topics degree.
Coastal communities that would benefit from having more students as part of their communities.

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

Community college and University faculty and administrators.
Community college students seeking STEM courses.
Transfer student support offices

- *Who are the Associated Partners (supportive but not integral)?*

Open campus office?

- *Do these partnerships exist already?*

Limited – OSU has some agreements with community colleges for some degrees. UO has an articulation agreement for their marine biology degree with SOCC. PSU has articulation agreements with PCC and MHCC.

- *What is the benefit to the MSI?*

A wider presence on the Oregon coast.
Placement of MSI resources at coastal nodes – Brookings – SOCC, Coos Bay - SOCC, Florence – Lane CC, Newport - OCC, Astoria-Clatsop - CC, Tillamook - CC

Less need for an emphasis on lower division support for students at OSU and more potential for upper division courses.

Better prepared students for transfer to four-year programs, especially those with a marine focus.

- *What is the benefit to the core and associated partners?*

Builds capacity in marine studies at Oregon coastal community colleges.

Increases ability of coastal community colleges to recruit students from elsewhere thus supporting coastal communities.

Provides freshman and sophomore courses that focus on marine topics, creating interest and greater likelihood of student retention, particularly in STEM subjects.

- *What, if any, resources are required to support this effort?*

Faculty line(s) to support lower division courses

Potential placement of personnel at “coastal nodes”

Administrative structure within the community colleges

Potential development of new learning outcomes and curriculum for marine topics degrees and articulation agreements

Professional development for community college advisors

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

Not time constrained but would need considerable administrative work at several institutions.

Cross-institution centers of excellence

Partner: Universities OSU/PSU/UO

- *What is the concept? (1-2 paragraphs including any geographic range)*

The concept of centers for excellence refers to an entity that provides leadership, increased potential for success, use of cutting-edge practices, and support for a focused area of research. A cross- institution center could connect marine topics research strengths of faculty at each institution, and potentially at institutions outside of Oregon, and build synergistic relationships that would lead to increased research capacity.

- *Who is the audience (those who would benefit from the partnership)?*

Each University

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

Marine topics faculty, support personnel for logistics of the effort.

- *Who are the Associated Partners (supportive but not integral)?*

University administrators

- *Do these partnerships exist already?*

Informal collaborations exist between individual faculty at each university. PSU and OSU faculty have discussed joint work on coastal hydrodynamic modeling, hydroacoustics, and invasive species research.

- *What is the benefit to the MSI?*

Allow the MSI resources to support the development of complementary rather than competitive directions.

Increased grant funding potential.

Increased recognition of Oregon as a center for excellence in marine research.

- *What is the benefit to the core and associated partners?*

These nascent collaborations could be nurtured and developed by MSI to develop powerful Centers of Excellence that would increase competitiveness for federal research grants.

Increased collaboration potential between institutions

Same as benefit to MSI above

- *What, if any, resources are required to support this effort?*

Administrative mechanisms for supporting development and continued existence of center(s).

Efficient communication is required for effective research collaborations. MSI could facilitate communication between faculty at multiple universities by hosting webinars and periodic symposia.

Funding to ensure center viability

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

Not time-constrained.

Marine internships for undergraduates and graduate students - local to global

Partner: Universities OSU/PSU/UO, and associated community colleges.

Infinite others who would provide internships

- *What is the concept? (1-2 paragraphs including any geographic range)*

Create a formal mechanism where any undergraduate or graduate student in Oregon could apply and, if needed, gain credit for a marine studies internship.

Local – global range

- *Who is the audience (those who would benefit from the partnership)?*

Two and four year undergraduates and graduate students state wide

Internship providers

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

A person at each university/community college - Faculty and/or Program Director/Coordinator
Internship providers

- *Who are the Associated Partners (supportive but not integral)?*

Offices of Undergraduate Research at each institution

- *Do these partnerships exist already?*

To a small extent –

OSU – Current internships - Science research and Animal Husbandry areas with all state/federal agencies at HMSC (EPA, USDA ARS, NOAA, USGS, USFW, ODFW), BLM at YHONA, and CCs (ex: Oregon Coast Community College's Aquarium Science Program, Portland CC's Biology and Management of Zoo Animals).

OIMB – has current internships for UO majors with ODFW, USFWS, South Slough National Estuarine Research Reserve, Coos Watershed Association. Provides intern opportunities for Southwestern Oregon Community College students

PSU - has initiated a Professional Science Masters degree in Environmental Science that requires an internship as a component of the degree program

- *What is the benefit to the MSI?*

Attract students.

Expand MSI reach to a wide audience of participants and intern organizations.

Provide Oregon students with real world, resume- expanding experience in marine topics.

- *What is the benefit to the core and associated partners?*

Expand opportunities for students.

Provide partners with work that might not otherwise be accomplished

Student retention in the marine studies fields.

- *What, if any, resources are required to support this effort?*

Dedicated staff to make partnerships happen, develop an internship pool and administer the program.

Potential need for funding for interns; partners expressed concerns for equity issues for students with limited resources

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

If staff were available this could be spun up pretty quickly.

Visiting scientist/scholar program

Partners: Universities, research agencies/labs, on a national and international scale

- *What is the concept?*

Bring dynamic marine scientists and other marine studies disciplinarians to the MSI to enhance student learning opportunities, support the center of excellence idea, and

provide specialized workshops. There could be a component of broader impacts associated with this which would provide outreach and education opportunities for the community.

One model: Currently HMSC uses the Lavern Weber visiting scientist program to bring national and international scholars to Hatfield to collaborate scientists. The program averages 1-2 visiting scientist(s) every other year. Primarily due to lack of outreach and applicants, HMSC has not quite met the goal of enrolling at least one visiting scholar per year. At present the program is funded by the Lavern Weber Endowment Fund, which awards up to \$8000 for accepted applicants, along with matching funding from the partnered HMSC PI or other agencies. There should be outreach opportunities included in the structural outline of the program (think about weekly HMSC seminars, but also workshops, etc.). Along with his/her research, the visiting scholar may engage with the HMSC and greater coastal community with through seminars, teaching, trainings, and interactive activities/talks. While this provides a solid platform for a great visiting scholar program, the MSI provides an opportunity to make regular visiting scholars integral to the Marine Studies Campus through a visiting scholar/scientist/sabbatical and/or regional/international short courses.

Another model: HMSC also uses the HMSC Marine and Coastal Research Forum to provide unique opportunities for HMSC faculty to host collaborations among diverse groups of scientists and launch competitive, novel research programs. HMSC faculty are encouraged to convene a working group tasked with synthesizing across disciplinary boundaries to address fundamental issues of marine and coastal science, including but not limited to ecology, climate, or geology. Past forums include: Copepod Research (2011), Offshore Aquaculture in the PNW (2008) and Ecological Effects of Wave Energy Development in the PNW (2007). While this these provides two a solid platforms for for fostering a great visiting scholar program faculty research collaborations, the MSI provides an opportunity to make these an integral component regular visiting scholars integral to the Marine Studies Campus Initiative through an instituted annual visiting scholars/scientists/sabbatical and/or research forum.

Outcomes of this type of the working group could include a review manuscript or grant proposal, and forums could serve to link HMSC and its programs to faculty in Corvallis and those from other institutions in the region.

Another model: HMSC and OIMB has collaborated with PICES to organize workshops/short courses that draw researchers from all over the country.

These short immersion courses present a platform to host world-class researchers and scholars and to further incorporate innovate research, continuing education and professional collaboration/relationships into the MSI.

Another model is the Sitka Sound Scientist in Residence Program:

<http://www.sitkascience.org/research/sirf/>

The MSI provides a mechanism to make these types of visiting scholar programs an integral part of the academic community and provides opportunity for enhancement of student and faculty learning.

- *Who is the audience (those who would benefit from the partnership)?*

HMSC and other institutions' faculties, students, researchers at surrounding agencies, community members/public (seminars, etc.)

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*
 - HMSC labs and PIs interested in pursuing visiting scholar and new faculty and college interests.
 - Persons interested in visiting and corresponding universities. (A model for steady, simple outreach would be necessary)
 - HMSC Marine and Coastal Research Forum (expand on this model to include all colleges and disciplines)

- *Who are the Associated Partners (supportive but not integral)?*

University Office of Research

Lavern Weber Visiting scientist program (expand on this model to include scholars from various disciplines)

- *Do these partnerships exist already?*

Examples noted above serve as possible starting ideas. There is room for expansion using the Lavern Weber program model, and an opportunity to establish a strong visiting scholar program early on in the MSI. Integral to the program as it is adapted by the MSI is the concerted effort for continuous and wide-ranging outreach. This may require a significant amount of administrative/program support.

OIMB graduate students have initiated a winter term course which pays a small stipend to a UO or OSU faculty member to spend two days at OIMB teaching something in their specialty - examples have included physical oceanography, biostats.

- *What is the benefit to the MSI?*

Benefits individual labs and researchers, undergraduate and graduate students and faculty as well as the HMSC and coastal communities. Recognition as a center for excellence and potential grants/funding.

- *What is the benefit to the core and associated partners?*
 - Strengthened academic and professional relationships
 - Fresh ideas/research from visiting scholars (and vice versa)
 - Collaboration and potential publications

- *What are the potential negative impacts to MSI and partners? (and how might these be addressed/minimized?)*

It might be difficult to maintain outreach for this project. Assuming the implementation of the MSI might also mean expansion of the program/curriculum office and support, outreach could be allocated to support staff depending on the project load.

- *How and where does this connect with the other MSI OEP working groups?*

This overlaps with the research group, and to a lesser extent, the community outreach sub-group of OEP.

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

Because there is already a visiting scholar program in place at HMSC, development of infrastructure should not take too long, and there are no immediate time constraints. That being said, possibly significant time and planning is necessary.

Communities

Communities-Outreach, Education, and Partnerships Group: Iria Gimenez, Scott Reed, Jon Souder, Shelby Walker, Jamie Doyle

MSI Business Collaborative

Concept: The intent behind the MSI business collaborative is to provide a resource to coastal innovators to create and/or grow local businesses and to help address problems. The business collaborative would build on the outreach and engagement model that already exists (e.g., OSG, OSU extension), and provide a node of resources for local businesses to tap into university expertise on a variety of issues, including economic (can I build my business here), legal (how will the Territorial Sea Plan affect my offshore plans), natural (how can I mitigate for climate change impacts) and social science (how can we build our workforce in the community). In addition to connecting local businesses to university expertise, it could provide connectivity to business incubators and accelerators without duplicating those groups. Business incubators (e.g., [OTRADI](#)) and accelerators (e.g., [RAIN](#)) are appropriate for start-up companies, but may not be suitable for those companies that are already established or that are addressing issues outside of business development.

The Oregon Regional Solutions Teams have identified supporting local businesses as key priorities:

- North Coast: Sustain and grow NW Oregon businesses in areas such as marine based industry, tourism, small manufacturing, forest products, agriculture and aviation; Encourage innovation, business incubation and the manufacturing of new product technologies; Assist business start-ups and entrepreneurs.
- South Coast: Business Retention, Expansion, and Creation-Workforce training, Regulatory streamlining, technical assistance; Build on Recreation Economy; Access to Natural Resources, Support of Natural Resource Economy

Partners: Integral to the success of the business collaborative is the individuals and groups that will provide the connectivity between business needs and university expertise. These include extension staff, who currently serve as connectors or bridges between diverse groups, industry partnership programs, such as OSU's Industry Partnering Program, and the faculty and business owners themselves. Key partners available to support this effort include groups such as the [Oregon Office of Small Business](#), business incubators and accelerators, [Oregon Small Business Development](#)

[Network](#) (affiliated with 17 community colleges), [Business Oregon](#), [Regional Solutions Teams](#), and others. Many of these partnerships and connections exist already; the business collaborative would build on established extension and university networks.

Range and Scope: One option for the business collaborative is providing a base or hub, potentially based in Newport, with extension personnel associated with the business collaborative based in the local communities. The hub would be the central conduit of information, with connections to OSU, and possibly UO, PSU, and other universities.

Benefits and Risks: This collaborative would connect businesses with real-time issues with researchers who could apply their work to address community needs. Applying theory and research results would provide faculty the opportunity to test hypotheses, provide service to coastal communities and promote economic development in their region.

Some challenges include the need to establish the portfolio of resources available in the collaborative, building or enhancing trusted connections with local businesses, lack of accessibility or awareness on the part of local businesses, and potential lack of interest or availability on the part of the faculty.

A key mitigating factor to reducing the risks factor here will be people—those who make the connections between the local communities and the university faculty. A foundation of trust is key and individuals who have strong networks within the communities and the universities are critical. In addition to expanding the network of extension faculty associated with the business collaborative, resources may be required for discrete investments to address specific challenges.

Connectivity within the MSI: Within the OEP Working Group, the connections to the Industry and University working groups are evident. This business collaborative would engage and support new or existing businesses in the coastal region and engage university faculty in addressing real-time issues challenging the economic growth of the region. Within the broader MSI, the concept of the business collaborative would need to be closely linked to the planned research efforts.

Coastal MSI Centers/Nodes

Concept: The Marine Studies Initiative (MSI) should consider physical coastal locations outside of Newport that would be a part of MSI. The goal is a coordinated MSI geographic distribution along the coast that has a physical presence and serves as a programming hub for MSI activities. These sites would both work to connect coastal Oregonians with the best available information on marine science and policy, as well as facilitate MSI researchers and students accessing the entire Oregon Coast. The sites could host groups working on MSI efforts and be used by a variety of OSU and partner groups: visiting faculty, OSU Extension, partners (e.g., watershed councils), and MSI

classes. These sites/nodes could be a part of programming, such as a physical presence and support as part of establishing an e-learning social network to communicate virtually with community leaders and others.

The sites would include office space, classroom/community education space, lab/visiting scientist space, and identify area housing. ***The key to the success of these sites would be having their use strategically built into MSI programming, curriculum, research, etc.***

Sites would need to be developed in conjunction with community programming and curriculum, so that they best meet local needs. Sites would be housed opportunistically where there are either existing OSU facilities (e.g., Port Orford, Astoria) or with partners willing to create or modify their space for this (e.g., places that already have a marine or science specific space like OIMB or locations that would be potential partners in a new space like SOCC or TCC, which are both building new science buildings and might be able to add some MSI-related pieces into them).

Range and Scope

The geographic range is coast-wide focused outside of Newport. The Core partners will vary depending up on the location. Some proposed locations for MSI nodes along the coast, spread-out by approximately one hour drive between each, shows potential partners. These sites may all vary in their overall structure based upon existing partnerships and the community, but would all meet the same goals, such as having the ability to host classes (community education or MSI students) and visiting researchers.

Astoria (possible partners: OSU Extension Office, Clatsop Community College)

Cannon Beach (possible partners: TBD)

Tillamook (possible partners: Tillamook Estuary Partnership, Tillamook Community College, OSU Extension, WEBS)

Neskowin (possible partners: TBD)

NEWPORT

Florence (possible partners: TBD)

Coos Bay (possible partners: UO/OIMB , Southwestern Community College, South Slough NERR, Coos Watershed Association, Port of Coos Bay)

Port Orford (possible partners: OSU field station, Port Orford Ocean Resources Team)

Brookings (possible partners: Southwestern Oregon Community College, Port of Brookings)

Benefits

Having nodes along the coast benefits MSI by providing the needed classroom space and field/lab sites to truly make MSI state-wide and beyond Newport. This leads to students who have a richer and more authentic experience while they study, and communities that are more aware of MSI/OSU.

Partners would benefit from additional activities and education in their community. They would benefit from being a part of MSI curriculum, and helping to provide MSI students with experiences that are grounded in reality/real-world needs. An internship program

might have a place for a student to reside or at least check-in, and partners would benefit from having additional help/resources.

Challenges

MSI will need to be careful to define what it can promise, so as to not set false expectations. If classes and researchers do not use field nodes very often, this could lead to partnerships that are not fulfilled. For this reason, node programming and curriculum resources would need to be built into MSI.

Some of the challenges to implementing MSI nodes include:

- Developing nodes that meet local needs, leverage local existing spaces and partners, but are also consistent enough to encourage use by MSI for classes, research, community education, internships, etc. The goals for the collective network will need to be clearly defined, as well as built into the curriculum for this to happen most smoothly.
- There will be costs with developing or modifying sites, as well as operations and programming costs for the sites. These costs need to be built into the operations budget for MSI, if only the infrastructure is accounted for, there is a great chance that they will not be used.
- MSI will need to make using these sites a priority and integrated into their programming, research, etc. If no faculty/researchers, graduate students, or classes use the nodes, this will do more harm than good in the local communities.
- The assumption that local partners will be interested, willing, and have the capacity to partner with OSU/MSI on coast-wide sites will need to be vetted. If partners do not see a benefit to them (at any stage) there is a much greater chance that this format of coast-wide MSI will not be successful. Partners will need to be brought into the goal-setting for these nodes, and possibly stay engaged as advisors on curriculum committees, etc.

Connections with MSI

The idea of MSI nodes has great overlap with the community colleges and universities working groups.

Timing:

These will take time to develop the partners and the plans for the joint spaces. In some cases where there are existing sites and partners, the time may be shorter, but in other cases, where partners and potential locations need to be identified, it may be much longer.

K-12 Education

Concept: The Marine Studies Initiative (MSI) should develop a coast-wide partnership that engages K-12 students and teachers with researchers and graduate students at Oregon universities, particularly OSU. Accordingly, the MSI should also support the

programs and infrastructure already in place that provide links to K-12 education and STEM knowledge, particularly focused on marine literacy.

The connection with K-12 education can be approached from different angles:

1. Creation of graduate students- teacher partnerships. These collaborations would follow the model of GK-12, an extinct NSF fellowship program that placed graduate students with teachers to develop content and learning units, to improve communication and teaching strategies, and to foster STEM engagement in pre-college students.
2. Development of a coordinated network of community educators engaged with faculty and graduate students. This network will participate in tailored workshops and trainings for researchers, educators and students and in the creation of e-learning platforms and resources through the use of local focus and communication groups and citizen science projects.
3. Development of volunteering and internship opportunities for pre-college students to be engaged in active research and science communication.

The geographic range of this effort should involve all school districts within the state, but there needs to be a clear emphasis on coastal communities. One possibility is to designate a hub, maybe within the MSI facilities in Newport, to act as a centralized base to coordinate the programs and host workshops. Another possibility is to ask the Office of Precollege Programs to act as coordinating office, in this case located in Corvallis. However, any successful initiative to engage with K-12 educators, students and communities will require dedicated personnel within the schools and communities.

Partners and Existing Programs: The K-12 education initiatives should involve all school districts, particularly coastal ones. The potential partnerships can be divided in direct partnerships (i.e. collaborations between K-12 students or educators and MSI) and indirect partnerships (i.e. collaborations with an external, non K-12 partner to develop activities targeted at K-12 students).

Examples of existent and potential direct partnerships include:

- New programs based on the GK-12 model developed at OIMB with a particular emphasis on marine education.
- The SMILE and GEAR-UP programs, which included high school teacher workshops and underrepresented students from rural communities.
- STEM Hub-based programs, like the successful MSP developed in Lincoln County

Examples of existing and potential indirect partnership include:

- Outreach partnerships with OMSI and Oregon Coast Aquarium
- The program 4-H- Ocean Ambassadors
- Oregon Youth Conservation Corps
- OSU and OSG Extension

Benefits / Challenges: Fostering a strong program of engagement and outreach for K-12 education will benefit the MSI in a number of ways. First, extensive and engaging

outreach programs will help connect OSU with local communities and serve as a powerful communication tool between them, as contents should be designed and created taking into consideration the needs and interests of different communities. Second, these programs will serve to engage and retain pre-college students into STEM fields, and to increase “marine literacy” within their communities. Third, it will provide the opportunity for researchers, faculty and students to improve their communication, teaching and outreach skills.

The challenges of these collaboration include lack of interest from faculty/graduate students, lack of financial support to carry the outreach activities and not correct leverage of existing programs, collaborations and partnerships.

Resources: A careful and detailed resource assessment needs to be performed. However, the foreseeable required resources include financial support to faculty, graduate students and coordinators involved in the development of outreach programs and programmatic funds (e.g. travel funds, education and outreach materials...), and organizational support to establish and coordinate programs. There are a variety of valid formulas for funding including fellowships, assistantships, and part-time/full-time contracts. For some low-involvement initiatives some students will even consider volunteering.

Connectivity: There are strong links to the Community Colleges (CC) and Universities OEP working groups, as some of the initiatives to engage with K-12 education (e.g. internships, mentoring scientific projects, workshops and guest-lectures, citizen science) could be adapted to CC, and some of the programs could be developed in conjunction with other universities within Oregon. Also, as most of these initiatives are based on content development based on research, there is a strong link to the Research MSI working group.

Timing: These initiatives could be started at any time, and the ones that build on already existing partnerships (e.g. STEM Hubs) and require a more informal development based on volunteer opportunities the developing time would probably be short. However, the development of other programs (e.g. GK-12 based programs) would require a significant time investment- funding gathering, hiring of coordinators, etc...

Visiting Scholars

Concept: The Marine Studies Initiative (MSI) would derive benefit from adapting ideas and innovations developed elsewhere. Numerous other state academic and other institutions have marine-oriented programs and faculty with applicability to Oregon’s opportunities. Through strategic recruitment of faculty members elsewhere who are eligible for a supported sabbatical, MSI funds are levered by only being required to compensate for the unmet fraction of a visiting scholar’s salary.

A designed effort to attract visiting scholars would consist of 1) identifying areas of unmet, community-based needs, intellectual and/or experiential skills, 2) developing necessary financial and other resources, 3) soliciting interest through a peer network and other means, and 4) supporting individuals or teams who devote time to the desired project through time in residence or virtually.

Benefits

The benefits from such a program would accrue to the OSU MSI, participating communities (of place, interest or practice), and to the visiting scholars' institution or community through exchange of relevant knowledge and shared work on a common priority. The program leverages limited MSI resources by bringing to us skill sets not resident in our faculty and staff while cultivating peer relationships with others and continuing potential as collaborators. Visiting scholars could originate from universities, agencies, non-governmental organizations or communities.

Challenges

While a visiting scholars program could be opportunistic, realizing the full value will require a systematic approach and dedication of staff time, availability of space and collegial support.

Timing

This effort could be launched at any time, while the most logical timing might be to coincide with the beginning of fiscal or academic years.

Internships

Concept: *Identify coast-wide placements and program formats for MSI students for internships.*

Internships are increasingly recognized as critical to student retention in academic programs, as a critical first step in career and professional development, and as a way for universities to give back to their communities by providing and guiding these typically young people as they assist local organizations in meeting their needs. In order to be successful for community organizations, internships need to be well designed and structured; have realistic expectations for the institution, organization and participant; good participant and organization recruitment and evaluation; and be sustainable so that they can be a reliable source of continuing support.

While internships are often beneficial to all parties, to be successful and equitable there are three considerations that need to be incorporated into design and execution. First, to be equitable, internships need to be available to all students without regard for their

financial situation: this means that stipends are provided that cover expenses (credits, transportation, and even clothes), as well as some substitution for earnings from jobs that students might otherwise have to pay for their living expenses. Secondly, a similar situation exists for their hosts: while interns can be expected to provide some services to the organization, to be successful they require supervision, equipment, and well-developed tasks; equitability requires that resources are available to hosting organizations to assist in this burden. Finally, there must be clear benefits both to the student and the hosting organizations as a result of the internship; the sponsoring institution is the best party to insure that these mutual benefits are received and recognized.

Audience and Partnerships:

Successful internships can begin with high school-aged students working in the field, either as crews (such as the Oregon Youth Conservation Corps), or as individual placements with University labs, agencies, and local organizations. One individual placement model is the Hutton Junior Fisheries Biology program of the American Fisheries Society that assigns students with organizational mentors. For undergraduates, at both community colleges and upper division colleges, many academic programs require an internship as part of their majors. The level of institutional support for these internships varies depending upon the Department and its focus (i.e., are these seen just as summer jobs for students, or do they have more requirements in terms of the interns' project). Most thesis-based graduate programs have their students working directly with advisors; non-thesis programs (such as Marine Resource Management) require projects where students typically work with local agencies and organizations.

A Core Partner will be the Internship Coordinators in the academic departments (or institutions such as community colleges) who are responsible for recruiting host organizations, matching students with hosts, and insuring that institutional requirements are met. In most (if not all) cases, these Core Partners are already in place. Assuming there are mutual benefits, a wide range of potential local partners exists. There are 23 locally-organized watershed councils on the Oregon coast, 9 of which are grouped into one of three "umbrella" councils to increase their capacity; each coastal county also has a Soil and Water Conservation District (SWCD) that might also have opportunities. In addition, there are a number of coastal environmental, conservation, and other organizations that could host interns (i.e., the Port Orford Ocean Resource Council, Sitka Center for the Arts, etc.). There is a vast range of current relationships among groups on the Oregon coast, OSU departments, and other entities such as Sea Grant Extension. A more formalized institutional arrangement among these groups might be beneficial to the MSI program.

Resources Needed:

There are three places where resources will be needed if the internship program is to be successful:

(1) OSU departments must have adequate staff to administer the program, and ideally support for faculty to encourage them to act as mentors between students and host organizations;

(2) Students need support to cover the costs of tuition (internship credits if required), travel to and living expenses at their host site, and support to make up for lost wages during the time of the placement; and

(3) Host organizations need support for staff who are supervising the interns, purchase of required equipment and supplies,

Our experience with focused internships is that they require about \$5,000/intern to cover these expenses. It is possible to do this for less, for instance if the internships are more commonly seen just as jobs, and the students are just replacements for temporary or seasonal workers who would otherwise be hired. However, if the approach is designed for an experience that is both rewarding to the student as well as beneficial to the host organization, adequate resources have to be available. If there are 500 MSI students, and half of these would do an internship every year, then on the order of \$1,250,000 per year would be required to support a high-quality program.

Risk Assessment:

While there are currently successful internship programs within the OSU system, the scale and diversity of potential positions envisaged in this concept requires a level of support (financial, institutional, organizational) that presently doesn't exist. There is a risk from initiating an inadequately-resourced program that induces lots of host organizations to participate, has student internships as an MSI degree requirement, and little in the way of solid recruitment, marketing, and evaluation mechanisms.

Connections to other MSI Working Groups:

- If internships are anticipated as a part of the MSI degree program, then this Concept should be coordinated with the Curriculum Working Group.
- Internships are often required (or encouraged) as part of Community College lower division programs. Brigitte's OEP Working Group should be engaged for coordination with the Community Colleges.

Community Colleges

Community Colleges Group: Jeff Sherman, Birgitte Ryslinge, Pat Corcoran, and Kristen Wilkin

Dual Enrollment/Degree Partnership and Degree Articulations

- *What is the concept?*

Degree Partnership (formerly known as dual enrollment) allows students to be jointly enrolled with the University and the community college partner. The concept is that

programs offered through MSI will have articulated pathways from applicable community college programs.

Degree articulations elevate the concept of degree partnership by ensuring that courses taken at community colleges are directly articulated and transferrable to programs at MSI. This process takes coordination between OSU department heads (or designated head advisors)

- *Who is the audience (those who would benefit from the partnership)?*

Students in community college programs will be the primary beneficiary of degree partnerships and degree articulations. Costs are dramatically decreased when students take the exact courses needed for transfer, and when all of those credits are accepted into the University program.

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

OSU's Degree Partnership Program, Department Heads, Chief Education Officers with the applicable community college programs, specifically Oregon Coastal Community Colleges (CCC, OCCC, TBCC, SWOCC). The communication between these groups is critical to ensuring the information and articulations stay current and relevant as programs/instructors/administrators change.

- *Who are the Associated Partners (supportive but not integral)?*

Open Campus and the University Division of Outreach and Engagement can help convene groups from communities and campuses to articulate degrees, programs, and courses. Additional Oregon colleges interested in articulating with MSI.

- *Do these partnerships exist already?*

Degree Partnership exists at most community colleges throughout the state, and degree articulations exist in many Colleges on a program-by-program basis.

- *What is the benefit to the MSI?*

The benefit to MSI is a pipeline of students have a clear path to programs and degrees. Students will be able to use financial aid at MSI at the same time they are using financial aid with the community college.

- *What is the benefit to the core and associated partners?*

- Students will see lower tuition costs when strategically starting in the community college.
- Ability for students to work with advisors at both institutions at the same time
- One single application
- Increased flexibility in scheduling
- Ability of students to live on the University campus while enrolled in the community college.
- Transcripts are automatically shared every term between institutions.

- *What, if any, resources are required to support this effort?*

There will be a significant investment in time for coordination of the degree programs and articulation.

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

In the development of curricula, efforts to articulate with applicable community colleges could begin. On a more perennial cycle degree programs could be articulated in conjunction with DPP and community college partners.

Open Campus

- *What is the concept?*

Create a Newport-based Coast-wide Education Coordinator position to be the direct link between community college students, MSI students, coastal faculty, communities, K-12 education, and economic development- to coordinate educational opportunities. Educational programming will range from college readiness (high school nights, Juntos program, etc.), credit courses, and non-credit opportunities- such as short courses, industry training and/or apprenticeship. The Coordinator would be housed in Oregon Coast Community College, and connect multiple times per week with MSI faculty and students.

This Education Coordinator will also be responsible for a community education council to help prioritize needs and issues in the community, based around education.

With two coastal community colleges currently housing four Open Campus Education Coordinators, there will be an instant linkage and connection to those students and programs in Tillamook, Coos Bay, and Gold Beach.

- *Who is the audience (those who would benefit from the partnership)?*

Students will benefit by being able to move more easily through the educational pipeline. These students might be in the K-12 educational system, community college, or Universities, but there will be a dedicated individual to help coordinate college readiness and degree completion.

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

The main partners for this position will be MSI, Oregon Coast Community College (OCCC), OSU Extension and the Open Campus program at OSU.

- *Who are the Associated Partners (supportive but not integral)?*

Other community colleges throughout the coast and state, specifically Clatsop Community College, Tillamook Bay Community College, and Southwestern Oregon Community College. Additional partners may include: Oregon Universities, economic development offices, School Districts, Small Business Development Centers, and the business community.

- *Do these partnerships exist already?*

Currently these partnerships and programs exist across the state and in three coastal sites, but currently there is not an existing Open Campus Education Coordinator position in Newport.

- *What is the benefit to the MSI?*

The biggest benefit to MSI will be a pipeline of college-ready learners from community colleges along the coast and state. There will also be recognition for having a dedicated individual developing relationships with educational partners and community members.

- *What is the benefit to the core and associated partners?*

The greatest impact, internally and externally, is probably the connection to the Governor's "40-40-20" goal. This law shifts the focus from just one institution to the entire educational pipeline collaborating for the benefit of learners. All institutions will be collaborating on this effort.

- *What, if any, resources are required to support this effort?*

This will require an investment in a position, co-funded by partners and the University Division of Outreach and Engagement. In-kind investment of space and support from OCCC, will also help create a co-funded position.

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

A person could be prioritized and hired by the FY17 budget, but community education councils could begin forming in 2015.

Industry Education and Apprenticeships

- *What is the concept?*

Integrate higher education into the restoration and resilience industries at the Mouth of the Columbia River. This blends ecosystem restoration and coastal hazard resilience, but they are both components of sustainable community and economic development.

- *Who is the audience (those who would benefit from the partnership)?*

Potential students, students, and career professionals from north coast seeking jobs in ecological habitat restoration, and hazard resilience. Faculty desiring a controllable research environment over long timeframes.

- *Who are the Core Partners (partners without whom the concept wouldn't exist)?*

Clatsop Community College MERTS program, Oregon State University Clatsop County Extension Service, Columbia River Estuary Task Force, Lower Columbia Solutions Group.

- *Who are the Associated Partners (supportive but not integral)?*

North Coast Land Conservancy, Point Adams Research Station, HMSC, Whiskey Creek Shellfish, Coastal Natural Hazards Policy Working Group.

- *Do these partnerships exist already?*

“Relationships” exist with OSU Clatsop County Extension faculty and each of these partners, and there has been “collaborative” work done in pursuit of mutual goals. There has not been a “partnership” defined (in my mind) as having a shared budget.

- *What is the benefit to the MSI?*

The benefit to MSI is fostering a rich local system of applied research and education that nurtures scientific inquiry, marketable skills, and applied efforts to expand the emerging industry of habitat restoration and hazard resilience. Students from OSU will have opportunities for place-based research and field experiences, Local CCC students will have exposure to higher education and OSU faculty while taking classes at CCC.

- *What is the benefit to the core and associated partners?*

OSU partners benefit by having maritime facilities co-located with institutional partners in research, education, and applied restoration in the most dynamic marine environment in Oregon, the Mouth of the Columbia River.

- *What, if any, resources are required to support this effort?*

The MSI will be successful in attracting committed partners by offering new dollars at the outset. Obvious areas of mutual collaboration that can be done with existing partners resources already exist to the extent possible. There is little reason for potential partners to be attracted to MSI if it doesn't have new resources to support the proposed new programs. Additional money from partners or external grants, etc., will very likely follow, but the first dollar needs to be ours (IMO). If not, the risk is MSI being viewed by key partners as a new and aggressive competitor for scarce public resources. It's not innovative to facilitate partnerships. It's innovative to fund them.

- *What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?*

Variable. This could be a short-term “pilot project” or it could be (or evolve to be) an ongoing “program” based on interest and funding.

Appendices

Contacts

Individual/Contact	Organization	Focus Area
Lisa DeBruyckere	Oregon Marine Reserves Partnership Coordinator	Community/Agency
Denise Lofman	Columbia River Estuary Taskforce	Community
Curtis Roegner	NOAA/NMFS	Agency
Kristin Wilkin	MERTS and Clatsop Community College	Community College
Steve Greenwood	Lower Columbia Solutions Group	Community
Sam Steidel	Haystack Rock Awareness Program	Community
Betsy Ellerbroek	Columbia River Maritime Museum	Community
Antonia Baptista	Center for Coastal Margin Observation and Prediction	University (OHSU)
Andrew Bornstein	Bornstein Seafoods	Industry
	Southwestern Oregon Community College	Community College
Jan Hodder	OIMB/UO	University
Michele Longo Eder	OSU Trustee/Commercial Fishing	Community/Industry/University
Charlie Plybon, Ryan Cruse	Surfrider Foundation	Community
Sharla Robinson	Confederated Tribes of Siletz	Community

John Lavrakas	Advanced Research Organization	Industry
Caren Braby	Oregon Department of Fish and Wildlife	Agency
Heather Mann	Mid Water Trawlers	Industry
Rick Anderson	Pacific Seafoods	Industry
Merrick Burden	Marine Conservation Alliance	Industry
Terry Thompson	Board, Coastal Oregon Marine Experiment Station	Local Government University/Community
Jennifer Bloeser	Point 97	Industry
Jim Norton	Ecotrust	Community (Non-profit)

Summary of Discussion with External Stakeholders

Discussion with Lisa DeBruyckere
Oregon Marine Reserves Partnership coordinator
November 20, 2014

The bulk of the conversation oriented around the marine reserves topic. She recommended emphasis on partnership/collaborations with citizen science groups and community teams with a focus on the marine reserves. She also noted a good potential connection with the community colleges in this domain.

One area that she recommended further exploring was connections with landowners, who are key stakeholders that may not be explicitly targeted.

Clatsop County MSI Contacts and Conversations

Columbia River Estuary Study Task Force Contact: Denise Lofman, Director. Likes the idea, open to further conversation.

<http://columbiaestuary.org/>

<http://columbiaestuary.org/partnerships/crest-partners>

Point Adams Research Station, Northwest Fisheries Science Center Contact: Curtis Roegner. 503-861-1818 x 12. Likes the idea, open to further conversation.

<http://www.nwfsc.noaa.gov/about/facilities/pointadams.cfm>

Marine and Environmental Research and Training Station (MERTS) Contact: Kristin Wilkin Dean, Workforce Development. (MSI OEP member) Kristin has been away, but we are playing phone tag and will catch up.

<https://www.clatsopcc.edu/about-ccc/campuses/merts>

Lower Columbia Solutions Group Contact: Steve Greenwood, Consensus Policy Center. I spoke to a contract staffer and they were generally supportive. Also OSU INR is involved.

<http://oregonstate.edu/inr/mouth-columbia-river-regional-sediment-management-plan>

Haystack Rock Awareness Program Contact: Sam Steidel, Mayor. Likes the idea, open to further conversation.

<http://www.ci.cannon-beach.or.us/~Natural/HRAP/hrap-program.html>

<http://www.cannon-beach.net/hrap/>

Columbia River Maritime Museum Contact: Betsey Ellerbroek. Betsey has retired and they are hiring a new educational director this month. I will contact. CRMM is a potential education/outreach partner.

<http://www.crm.org/>

Center for Coastal Margin Observation & Prediction (CMOP). Contact: Portland Antonio Baptista. Astoria contact Michael Wilkin. Oregon Health & Science University. wilkin@stccmop.org 503-338-6574. I did not talk to Michael, but he is a potential research partner.

http://www.stccmop.org/about_cmop

http://www.stccmop.org/about_cmop/partners

Bornstein Seafoods Contact: Andrew Bornstein 503-325-6164. I did not call Andrew, but they may be an industry partner.

<http://www.bornstein.com/location-astoria/>

Notes from meeting with Southwestern Oregon Community College

Southwestern Oregon Community College has the capacity to participate in the MSI at several levels. SOCC is the largest community college on the Oregon coast and the ninth largest in the state with a 3300 student FTE. There is a branch campus in Curry County. The SOCC main campus has student housing and dining facilities, and they are building a new health and sciences building. They have the capacity to do new things, and within the next year, their health and sciences building plans will be finalized. Currently many SOCC students are place bound and are interested in degrees that they can be completed in the area, although because of their residential facilities they could host more students from outside of Coos County. With more capacity for diverse degrees and certificates in marine science/marine studies/ marine technology it would be possible to recruit students.

Possible current directions that could be built upon by MSI actions:

Marine Technology

There is currently a certificate program in welding and fabrication and a fire science program.

There is interest in developing more of this and marine welding, marine electronics, sensors, marine mechanic would fit this area. With offshore energy (wind, wave) a possibility, this might be a good fit.

Marine science/studies

They have a transfer agreement with the UO for the UO marine biology degree that can be further built-upon. e.g., a student might do lower level classes at SOCC and upper lever at OIMB, HMSC, or an OIMB/HMSC combo. There is also an interest in natural resource degrees that could have a marine emphasis and they have a natural resources program that can be expanded. One possibility is more upper division courses.

Internships

SOCC does this well already and as Coos Bay/North Bend is the largest population center on the coast, there are potentially lots of opportunities for internships. Coos Watershed Association and OIMB currently support SOCC's internship program.

Other SOCC attributes:

- SOCC offers a free first year's tuition for any incoming student with a GPA of 3.75 and above.
- Has relationships via the university center with other universities, and with OSU via open campus
- The model of SOCC-OHSU nursing program is good. When a student enrolls, they are automatically admitted to OHSU. They can choose to get the full degree with an added year online—models like this will be helpful for understanding from which institution a degree comes. (This took ~5 years for SOCC and OHSU to work out).

What additional capacity is needed at SOCC will depend upon what direction this might go.

Need to be thinking about how to “best serve the students”. This could mean increased place-based classes, or doing a better marketing job of attracting students who are more mobile and would be a target for specific marine studies programs.

Possibilities include:

Lower level introductory courses with a marine focus, and ways to get students hooked early on

Upper level science, so that students can stay local if needed

Possibilities for the MSI

A dedicated southern Oregon faculty member that supports SOCC in some way to increase marine studies offerings.

Marine technology program support

<http://www.occa17.com/assets/documents/FactsFigures/2011-12/2011-2012%20total%20fte.pdf>

**DRAFT Summary of meeting with OIMB Faculty and Jessica Miller
November 26, 2014**

We discussed the MSI vision, mission, and guiding principles for the OEP and research working groups. An overarching theme that emerged was the need to articulate synergistic relationships that would help the MSI develop its coast-wide rationale for growth. We used the analogy of what part of the machine can OIMB add that would make the whole machine work more effectively.

OIMB's benefit to the MSI is to build on OIMB's existing strengths (as defined below) that provide a mutual benefit but are not duplicative, and thus allow the MSI resources to support the development of complementary rather than competitive directions.

OIMB strengths related to the MSI:

- Residential and visiting faculty strength in organismal biology, particularly related to many facets of larval biology, nearshore ocean processes, and the deep-sea.
- A long standing, well developed experiential learning program of undergraduate teaching and undergraduate research in marine biology (see attached pdf of recent article in the UO CAS magazine that provides information on OIMB undergraduate programs), which is particularly strong in organismal biology.
- OIMB's location on the southern Oregon coast, and the connection to the largest community college on the coast - Southwestern Oregon Community College.

Ideas discussed for MSI/OIMB integration

1. Undergraduate programs

- Development of mechanisms for undergraduates to easily use courses at OSU/UO /PSU for requirements of their major.
- Development of mechanisms for "tracks" within degrees, for example, UO students who are interested in fisheries would have logical way of spending a term(s) at OSU whereas OSU students who are interested in organismal marine biology would spend time at OIMB.
- The MSI could make stronger connections and provide support to community colleges for student guidance/courses/ opportunities in marine studies to facilitate participation and transfer into appropriate marine studies programs at OSU/UO/PSU. OIMB currently has an articulation between Southwestern Oregon Community College and the UO for the UO marine biology degree.
- Facilitation of internships for all Oregon undergrads interested in marine studies. Currently OIMB works with ODFW, USFWS, and the South Slough National Estuarine Research Reserve to provide intern opportunities for their students and hosts interns from Southwestern Oregon Community College. Once completed the OIMB Marine Life Center will provide additional opportunities for internships.

2. Graduate programs

Development of joint activities between OSU, UO and PSU that support graduate student training

- Graduate level courses – both content, process and skill oriented

Joint courses that involve graduate students at UO/OSU and PSU

One model: MARINE (Monterey Area Research Institutions' Network for Education)

<http://www.centerforoceansolutions.org/marine> MARINE provides professional development opportunities to prepare future ocean leaders for interdisciplinary real world problem-solving.

- Graduate research traineeships

One model - The NSF Research Traineeship (NRT) program is designed to encourage the development of bold, new, potentially transformative, and scalable models for STEM graduate training that ensure that graduate students develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. An example would be to connect enhance integration of existing expertise and programs in larval biology, oceanography and fisheries across campuses

Relevant Action Items

- Provide information about the MSI to UO upper administrators during their Dec 5 visit to OIMB.

Michele Longo-Eder, NOAA Fisheries Advisory Council, OSU Board of Trustees

Engage students with the commercial fishing community

- Commercially important species
- small business management
- regulatory processes
- boat building
- fish processing
- social structures

Marine law and management

Literature of the Seas/Writing seminars

Coastal arts: i.e. Painting, Sculpture, Internships with Orchestra

Welding/Electrical/Plumbing/Highly skilled trades--right now, I only know of Angel Job

Corps as preparing their grads as actual apprentices. How can OSU broaden availability of these programs?

Charlie Plybon, Surfrider Foundation

Chapters are volunteer run with 5-7 board members--responsibilities:

- Organize chapter programs
- Fundraise for chapter's initiatives

- Engage in locally-identified campaigns/work on statewide policy initiatives

Chapter leaders are often young/first experience serving in a role of this capacity.

See the MSI partnership as an opportunity for recruitment at the executive level of the chapter as well as for program leaders and core volunteers.

Primary programs in Newport Chapter (always in need of greater capacity and engagement)

- Blue Water Task Force Program (1 of 7 programs/labs in Oregon)
- Routine water quality monitoring
- Often the cornerstone of many water quality solution initiatives
- Solving pollution through source-ID
- Collaborates with municipal and agency staff for pollution solutions
- Most BWTF programs rely on collaboration and partnership and have programs for engaging students and interns and volunteers
- Beach Cleanup Program
- Has evolved from simple beach cleanups to more targeted work with NOAA on Shoreline Monitoring protocols
- Responds to rapid cleanup needs in partnership with OPRD
- Collects and summarizes a lot of data to help inform marine debris management
- Many opportunities here to engage student work, collaboration, etc.

Sharla Robinson, Healthy Traditions Program Manager, Confederated Tribes of Siletz Indians

(We were not able to meet before I left the country, so ideas were shared via email)

Ideally, there would be a partnership between the MSI and the Confederated Tribes of Siletz Indians (CTSI) that would enhance a “pipeline” for greater involvement with students (K-12 and beyond) and community members of the CTSI.

- Greater communication and encouragement/involvement with internships and volunteer positions
- Transportation issues: Does the MSI hope to augment the local bus system with a campus shuttle system, similar to main campus/universities? Will this coordinate with the local bus system to ensure that CTSI community members have access to the marine campus?

(Correspondence has been fragmented, but I plan to meet with Sharla once the Thanksgiving holiday has passed/I am back in Newport).

Interviews with Internal (OSU) and External Stakeholders on MSI

Internal
Michael Harte-CEOAS Professor

- MSI needs major focus on the “other 80% of the world” for both partners and projects
- Given MSI and OSU strengths in fisheries and seafood, create an internationally recognized *Fisheries and Seafood Program* with key partners including foundations, NGO’s, and industry. Focus on such areas as sustainability, traceability, and food safety. Develop study certification schemes as well as four year and graduate programs
- Develop international marine resources programs in partnerships with major foundations on *tenure rights, food and seafood security, and poverty alleviation*
- Develop comprehensive marine technology programs. Partner with state and regional/national marine tech companies and organizations – go after Foundation support
- Partner with NGO’s and Foundations including Ted Waitte Foundation, Rockefeller, WWF, EDF, RARE

External

John Lavrakas-CEO, Advanced Research Organization (John wrote his own MSI vision-see attachment)

- MSI should develop programs in marine biology, marine engineering, marine renewable energy, as well as courses and programs in writing, art, and music tied to the ocean.
- MSI should develop technical trade programs in partnership with community colleges in engine repair, welding, HVAC, vessel maintenance, etc.
- OSU and MSI should become nationally recognized as a leader in ocean based experiential learning. Students come to OSU from all across the nation to be part of this program.
- MSI creates a “business accelerator” that provides a space for creativity and business development with expert guidance, fostering numerous innovations in marine fields
- Besides students interacting with area business as interns, they also perform clinics (teams of professors and students working on industry projects) for pay.
- MSI supports development of the *Newport Ocean Technology Center* to provide a collaborative space for business, students, and professors to meet and discuss innovative ideas and challenges.

Caren Braby-Marine Program Leader, ODF&W

- Would strongly support internships and fellows with ODF&W and other agencies through a well designed internship program with MSI
- Need MOU and other administrative tools to smooth operations and business relationships between agencies and OSU—especially since OSU is no longer a state agency.
- Need to carefully craft creative programs between ODF&W and MSI partners to leverage funds and increase dollars to support a wider range of collaborative research and educational programs
- Need to create marine programs that allow students to take non-redundant courses across all the state colleges and universities

- The MSI process seems rushed and on too short a timetable—will need to be intelligently adaptive as the program develops

Heather Mann-Executive Director, Mid Water Trawlers (this conversation was interrupted and should be completed in future sessions with industry)

- OSU and MSI is well positioned to develop a four year degree (and support two year community college degrees) to support the “business side” of fisheries and seafood. Such a program would include business courses, public speaking, stock assessment, marine law, marine technology, writing courses, etc.
- Fishing and seafood industry prepared to support internships with MSI if designed to meet the needs of the industry and the student.

Rick Anderson and Riley Henricks, Executive Recruiters, Pacific Seafood (meeting with selected OSU and OEP faculty)

- Pacific Seafoods, one of the largest U.S. seafood companies (5,000 employees) has major need for high level professionals in diverse fields to replace senior level retirement plus accommodate growth.
- Needs include accounting, marketing sales, engineering, aquaculture, processing, distribution, IT, and supply side logistics.
- Very interested in partnering with Oregon State University as part of the MSI to develop internships and curriculum to support education and training
- Will be working on internship programs with OSU over the next few months
Areas of interest include

Merrick Burden-Executive Director, Marine Conservation Alliance

- The Marine Conservation Alliance is a commercial fishing industry organization working to improve management and conservation of West Coast and Alaskan fisheries. They support and conduct a variety of research on bycatch reduction and habitat impacts. Merrick is a former OSU grad (MRM program).
- Extremely interested in supporting the MSI. Would like to see more applied fishery research and education to support the more practical needs of industry in Alaska as well as the West coast.
- Important to have a third “Center” besides NMFS and University of California/San Diego that is supported with Foundation/NGO dollars.
- Willing to come down, advise and help in any way he could.

Terry Thompson (Chair) and COMES Board

- The COMES Board discussed the MSI initiative at the December Board meeting. They were provided the MSI supporting materials before the meeting.
- They were extremely supportive of the concept and believe that if done properly can produce significant benefits for Oregon and Pacific Northwest citizens.
- They expect to have an opportunity to participate through COMES and other venues in the process.
- They were concerned that the supporting material did not highlight enough education in fisheries, seafood, and marine technology and were concerned

about a “one sided” curriculum favoring marine ecology and natural sciences over utilization and practical training.

- They strongly recommended that the MSI concept be developed so it is primarily seen as a “State of Oregon Initiative” working with many coastal and state partners and not an insular “Oregon State University” initiative.

Oregon Community College Presidents Meeting

- SWOCC stressed the fact that they have an existing articulation agreement with OIMB and that the MSI should not duplicate existing efforts.
- Tillamook CC noted the good connection with Open Campus and suggested building on existing relationships
- Questions revolved around workforce needs and the close connection to the 40:40:20 state initiative

Jennifer Bloeser, Point 97 and Jim Norton, Ecotrust

- Ecotrust-looking at the marine/freshwater interface. Much past work has been on marine.
- Areas of interest
 - marine technology-blue cluster
 - tourist industry-new tourism director in Tillamook-looking outside academic and business world
 - aquaculture-blue/green infrastructure, climate change mitigation, taking fresh looks at sustainable aquaculture
 - enabling infrastructure-local and regional producers-food from the sea-opening of purchaser markets
 - marine education

Watershed Councils Perspectives

Marine Studies Institute – Watershed Councils and Non-profit Conservation Group Perspectives

There are 23 locally-organized watershed councils on the Oregon coast, 9 of which are grouped into one of three “umbrella” councils to increase their capacity. There are other groups on the coast that collaborate and coordinate with these councils. Two of these groups also responded to our request for information that was passed along by their watershed council.

Group	Q1. What are your current collaborations/partnerships with O.S.U., including those with Sea Grant Extension?	Q2. What do you see as opportunities for expanding these relationships?	Q3. What resources would you need to accomplish this?	Q4. Do you see any negative effects from O.S.U. creating a new campus in Newport? Positive effects?
Partners for the Umpqua River (Eric Riley)	We have a very informal indirect relationship with OSU. We have partnered with Jason Dunham and several of his graduate students on research in the Umpqua Basin. We have welcomed his research efforts in the basin and are continuously interested in partnering in his aquatic research endeavors. He is actually coming to present at our next Board Meeting.	I would like to see more research done in the estuary, mainstem tributaries and with lamprey.	I am not sure what resources we would need to accomplish this other than funding and students.	I think having a campus would be beneficial to bring more focus to marine resources on the Oregon Coast. I cannot see any negatives to this venture.
Port Orford Ocean Resources Team (Leesa Cobb)	Partnering on the new Port Orford research building and I am attending an OR Sea Grant Coast Community Resilience workshop next week in Corvallis.	Lots of opportunity to work together on marine research and education projects. OSU brings terrific capacity to any partnership.	Would be great to further understand where the opportunities to partner are with the University. We have focused on marine fisheries in the past.	Positive major impact to the Newport economy. Negative that's a big leap in population and use of resources in a short time. We're super excited about the opportunity the Newport campus will bring to the entire coast via students spreading out to do their research projects.

Mid-coast Watershed Councils (Wayne Hoffman)	We have a close relationship with the Genetics program at HMSC.	Providing opportunities for internships for upper division undergraduates.	<No response>	Locally, very positive effects: more research done on coastal ecology, issues.
Siuslaw Watershed Council (Liz Volmer-Buhl)	Periodically have OSU interns. Sea Grant Extension = occasional presenters for General Meetings or Youth Camps; resources for various issues.	It would be great to have more access to presenters and resources as we develop projects.	More availability of OSU Sea Grant Extension staff.	Unknown.
Wild Rivers Coast Alliance	See attached letter.			
Lower Nehalem Watershed Council (Alix Lee)	The council itself does not currently have any collaborations or partnerships with OSU that I am aware of.	I see the opportunity to employ interns in the future or utilize research students for project effectiveness monitoring, project development, program development, etc. There are many opportunities that the Lower Nehalem Watershed Council, and other councils along the coast, are unable to take full advantage of because of limited capacity. If we were able to partner with OSU on certain programs, like water quality monitoring in the Nehalem, we could build upon our capacity.	Funding is one of our most limiting factors. However, in-kind match and volunteer time are a great way to leverage funding and expand the value of what we currently have. Support and guidance for developing curriculum and projects would be helpful. So would training programs and oversight.	A lot of focus is being centered on the marine environment and restoration. I can see many positive effects from OSU expanding their programs and outreach. While not a negative effect, I do see the logistics of organizing partnerships being a difficulty because of the limited capacity of many organizations on the coast. I think OSU will need to take a strong leadership role if this program is to succeed. We foresee a lot of focused funding being directed at coastal areas in the future and it will take a large effort of strong partnerships to ensure that funding is utilized

				effectively.
Nestucca, Neskowin & Sand Lake Watersheds Council (Alex Siffords)	Sea Grant as both a citizen of Neskowin using Pat Corcoran, but the Council brought in Pat and Guillermo Giannico to talk tidegates with a landowner. OSU Extension in Tillamook a resource for all things ag.	A bit, especially in supplemental K-12 education.	Some modest cash for transport expenses, then new MS student teachers and time.	No, great idea, bring 'em on. Should be a popular campus.

From WRCA

1. What are your current collaborations/partnerships with OSU, including those with Sea Grant Extension?

OSU Extension is involved in a variety of roles in a number of regional collaborative efforts.

- A. Wild Rivers Healthy Forest Collaborative: A regional stakeholder driven process that is being coordinated by OSU Extension agent, Frank Burris. This collaborative is seeking ways to accomplish restoration and economic development driving projects on US Forest Service lands.
- B. Wild Rivers Coast Regional Tourism: A regional collaboration that was initiated through Travel Oregon’s Rural Tourism Studio. The RTS program seeks to develop tourism products and impact economic development through tourism in the region. The collaborative structure that has emerged includes a regional steering committee and three action teams. Co-leads on two of the action teams are Curry County OSU Extension agents Frank Burris and Michelle Carrillo.
- C. Wealthworks tri-county food systems (Coos/Curry/Douglas): The Wealthworks regional food system project is being led by a tri-county collaborative group that includes an OSU extension agency from Curry County, Michelle Carrillo. This project seeks to identify and convert regional opportunities to create economic development and wealth creation within the identified value chain of protein (fish, meats).
- D. Gorse Action Group: A regional approach to identifying economic development opportunities on Gorse infested lands in Coos/Curry/Douglas counties. Participation by OSU Extension Agents Frank Burris and Tristan Huff of Coos County.
- E. Assisting the cranberry industry is a regional economic development priority of WRCA which is currently coordinating with Cassie Bouska, OSU Extension in Coos County on an approach to the concept of branding the region’s cranberries.
- F. Port Orford Ocean Resource Team and RedFish Rocks Community Team are working in coordination with OSU on a research station in Port Orford as well as existing research projects within the RedFish Rocks Marine Reserve.

G. OSU Sea Grant has provided two Scholars to Wild Rivers Coast Alliance who helped further the above initiatives.

2. What do you see as opportunities for expanding these relationships?

OSU Extension is diligently working on initiatives that bring together the region and create economic development opportunities. OSU's participation and leadership has been and continues to be critical to the success of these regional programs. Regional capacity to address opportunities is greatly lacking and OSU's role and involvement is critical. Wild Rivers Coast Alliance is currently building an office and convening space on the Bandon Dunes Golf Resort campus. This facility provides an opportunity to partner with OSU extension and Sea Grant to provide the work space needed to interns, researchers, and staff who are working regional initiatives.

3. What resources would you need to accomplish this?

The region is collaborating on a number of initiatives that are focused on community and economic development. OSU extension and Sea Grant are currently serving in a crucial regional coordinating and capacity role. Expansion of this role would allow for continued focus on developing community programs and projects that will assist the community and further economic development opportunities in the region.

4. Do you see any negative effects from OSU creating a new campus in Newport? Positive effects?

Bringing coastal and marine based issues to the forefront for OSU Extension and Sea Grant is important to Wild Rivers Coast Alliance. There is potential for an ecotourism trail starting in Newport to the Redwoods with variety of coastal opportunities including a number of points on the South Coast of Oregon. There are also additional research opportunities in Port Orford at the new facility in coordination with REdFish Rocks Marine Reserve. WRCA would like to continue to build relationships with OSU that will further the above opportunity areas on the **South Coast of Oregon**.

The OSU Fishing and Seafood Industry Internship Program: A Valuable but Short-Lived Partnership and Experiential Education Program

In January 2004, Ginny Goblirsch, retiring Sea Grant agent, proposed developing a for-credit internship program between OSU, the Oregon fishing and seafood industry, and federal and state agencies. The goal was to help students develop a greater understanding of the seafood sector and gain valuable real world experiences and training. OSU partners included Oregon Sea Grant, Coastal Oregon Marine Experiment Station, Marine Resource Management Program, and the Fish and Wildlife Department. Meetings with industry and agencies were held to design the core components of the program which included for-credit modules and participation by both undergraduate and graduate programs students. Key elements of the program included:

- Student numbers/application process: Several students from each program would be accepted into the internship program. Numbers would be limited for pilot program, but expanded over time. Students were asked to prepare and short letter of application and interviewed if necessary depending on the module and credits.
- Internship: The program was run as an Internship opportunity for FW undergraduate and graduate students, and for MRM graduate students (MRM 510), with a series of modules with different credit hour options. One credit hour = approximately 30 contact/work hours
- Format/Credits: Students could do one or more modules, but modules 1 and 2 were required for participation in any subsequent modules. Could include up to 6 hours of internship credit.
- Student Participation Requirements: Students kept a journal and, for more in-depth experiences, prepared a written summary of their work or research/analysis depending on the module and credit load.
- Student Financing: Students paid appropriate tuition and fees, dormitory expenses at HMSC (as needed if in residence). Students participating in larger-credit program over the course of a full term could receive a stipend to cover living expenses. If students worked on board a vessel or in another business as a crew member or employee, they would be paid a salary.
- Sponsor Support: As needed, fishermen and other businesses were compensated for their education—related expenses. For fishing boat costs, this included a small initial fee for participation, plus up to \$50/day for insurance, food costs, etc. In other cases industry/agencies paid full costs plus an internship salary

There were seven original proposed modules:

- **Module 1: Marine Safety and Survival Training for Commercial Fishermen** (Required for participation in subsequent modules)
- **Module 2: At-Sea Commercial Fishing Experience** Fisheries include salmon, crab, tuna, whiting, groundfish, halibut, sablefish, shrimp, and others.
- **Module 3: At-Sea Fisheries Research and Monitoring Experience.** – Experience in fisheries research with NOAA Fisheries and/or ODFW.
- **Module 4: At-Sea Nature-Based Tourism Experience.** –Experience as a naturalist/business assistant for Marine Discovery Tours (Newport).
- **Module 5: Fisheries Management Experience.** –Experience in nearshore fisheries management and research with ODFW or NOAA Fisheries mentor.
- **Module 6: Seafood Processing Experience.** –Experience in a seafood processing facility in Newport; overall operations, scheduling, line work, management, marketing.
- **Module 7: Industry Support Facility Experience.** –Experience in an industry support facility, e.g., Englund Marine Supply, Foulweather Trawl.

With funding from the College of Agriculture, Sea Grant, and various OSU departments, the program began in spring term of 2004 and lasted until Spring term 2008. Approximately 60 students participated in the program. The most popular modules were Modules 1 and 2 although almost every module had at least one student participate. Based on surveys with students and industry the program was highly successful in achieving its overall goals.

The program was ultimately terminated due to administrative issues and high coordination costs. Key problems included:

- The individual who conceived and implemented the program retired from OSU before the program was firmly established.
- Salaries for the lead coordinator were inadequate given the effort to run the program.
- Costs were particularly high for Module 2 given the challenge of working with fishing vessels that have erratic and unusual schedules.
- There was confusion regarding who would house (or had committed to house) the program. The program cut across at least four OSU units and three large Colleges/Institutions. There was no consistent commitment from a unit/academic home willing/able to house the program.
- Growing concern over liability and responsibilities for student safety. There was no clear guidance for insurance and liability. Although there were a number of problems with administering the program, the safety/liability issue resulted in the decision to shut down the program until liability/safety could be resolved.

In summary, the program was successful in terms of learning outcomes, but failed due to administrative and financial issues. The program is an excellent partnership model for establishing similar programs within the MSI—especially given the emphasis on experiential education and internships. However, the experience demonstrates the need for adequate financial support, coordination, and long term commitment to success.

Template of concept papers

Please review and apply the guiding principles as you develop these concepts

1-2 pages each, 2-5 Concepts total

- Partner: (Industry, Communities, Universities, Community Colleges)
- What is the concept? (1-2 paragraphs including any geographic range)
- Who is the audience (those who would benefit from the partnership)?
- Who are the Core Partners (partners without whom the concept wouldn't exist)?
- Who are the Associated Partners (supportive but not integral)?
- Do these partnerships exist already?
- What is the benefit to the MSI?
- What is the benefit to the core and associated partners?
- What are the potential negative impacts to MSI and partners? (and how might these be addressed/minimized?)
- What, if any, resources are required to support this effort? (and what are the limitations—not just financial— on this happening)?
- How and where does this connect with the other MSI OEP working groups?
- What is the timing of this effort-how long to develop, how long to execute, is this a time-constrained effort?

Red text-added after additional discussion, not all groups addressed these in their write-ups

Table of Connections

	Marine Technology	Coastal, Aquaculture, Seafood, Fisheries and Related Science and Management Agencies Tourism Laboratory	Joint graduate courses	Expand opportunities for undergraduates at OSU/UO/PSU	University connections to community colleges	Cross-institution centers of excellence	Marine internships for undergraduates and graduate students - local to global	Visiting scientist/scholar program	MSI Business Collaborative	Coastal/MSI Centers/Nodes	K-12 Education	Visiting Scholars	Internships	Dual Enrollment/Degree Articulations	Open Campus	Industry Education and Apprenticeships
Marine Technology			x	x	x	x	x	x	x					x		x
Tourism Industry			x	x	x	x	x	x	x					x		x
Fishing, Aquaculture, Seafood Industries, and Related Science and Management Agencies																
Joint graduate courses			x	x	x	x	x		x					x		x
Expand opportunities for undergraduates at OSU/UO/PSU																
University connections to community colleges																
Cross-institution centers of excellence	x	x	x											x	x	
Marine internships for undergraduates and graduate students - local to global	x	x	x													x
Visiting scientist/scholar program														x		
MSI Business Collaborative																x
Coastal/MSI Centers/Nodes	x	x	x						x	x	x			x		
K-12 Education																
Visiting Scholars																
Internships																
Dual Enrollment/Degree Articulations																
Open Campus																
Industry Education and Apprenticeships	x	x	x													