



## ***Message from the Director***

As I was reading the drafts of the articles and updates in the COMES newsletter I was struck by two things – the new focus on many things “marine” at Oregon State University, and the continued success of faculty, staff, and students in working toward the COMES mission.

During the recent Newport Conference for the Yaquina Bay Ocean Observing Initiative (YBOOI), we learned that more than a billion dollars in research and education assets are now located on the Oregon Coast. These assets – including research vessels, underwater cabled arrays and observatories, buoys and gliders, energy test facilities, collaborative fishing vessels, campuses, docks, buildings, and facilities – make marine research and education the third largest “industry” sector in Lincoln County today.

In spite of budget problems we are facing, the opportunities for innovative marine research creating economic opportunities for Oregonians and the nation have never been greater. As further proof, we learned that OSU was recently awarded a \$250 million dollar grant from the National Science Foundation to develop the nation’s next class of “regional” research vessels. If all goes well the first vessel in the series will be launched and delivered to OSU within the next seven years.

Adding to this rapid growth was the announcement by OSU’s President Ray of the University’s plan to add up to 500 undergraduate students at HMSC, in collaboration with the Oregon Coast Community College. The incoming HMSC Director, Bob Cowen, will be working to “bridge the marine science opportunities across the University” and lead the expansion of the HMSC campus. COMES faculty can be expected to work closely with him, leading and supporting this growth. My hope is that we become a leader in innovative and “experiential” education – including student participation in collaborative marine and fisheries research that helps them develop practical skills as well as greater understanding of marine science and management.

While reading through the draft I was also reminded that while our faculty are highly successful, that success could not be achieved without the great staff that helps run our facilities, laboratories, and programs, yet remain hidden to most. In future newsletters we’ll highlight some of these individuals and the roles they play in supporting COMES programs and objectives.

We also need to acknowledge the role COMES plays in mentoring future leaders in science and management. By living in coastal fishing communities and working on interdisciplinary and collaborative projects, these students develop a unique understanding of and appreciation for the application of marine science in solving real world policy and management problems. Many of these students go on to assume key roles in science and management in the region and around the world. In future newsletters, we’ll highlight some of these former students and their work in the fisheries and marine science fields.

## **OSU/CAS Group Tour, 2013**

E.R. Jackman Friends and Alumni group held their Spring Tour in Newport on May 10/11. The event, which included a reception in the Visitors Center Friday night, tapped several COMES faculty members for Saturday presentations.

Gil Sylvia, Director, provided a welcome and introduction to COMES, followed by Jessica Miller, who spoke on *Salmon, the Columbia, and Tsunami Impacts on the Oregon Coast*. After a local lunch, Bruce Mate spoke on Whale Tagging Research and Chris Langdon followed with an overview of the Molluscan Broodstock Program and a tour of the MBP wetlabs and greenhouses.

CAS Dean Dan Arp joined the group for the Saturday events. Associate Dean Stella Coakley, who arrived on Friday, held a well-attended Q&A session on Friday for COMES and MMI faculty, staff and students.

E.R. Jackman Friends and Alumni is a partnership between OSU's College of Agricultural Sciences and its Alumni Association. Its goal is to support Oregon agriculture and strengthen the college, its alumni, students, faculty and friends.

For more information, the website is at

<http://www.osualum.com/s/359/index.aspx?sid=359&gid=1&pgid=1612>

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## **Recent student defenses in Newport**

Stephen Meck, March 21st, major professor Markus Horning:

Range-use estimation and detection probability for juvenile Steller sea lions (*Eumetopias jubatus*) in the Prince William Sound/Kenai Fjords region of Alaska.

Andrew Claiborne, March 12, major professor Jessica Miller:

A comparison of early marine residence in hatchery and natural-origin Chinook salmon (*Oncorhynchus tshawytscha*)

Amelia Whitcomb, November 19, co-majors Michael Bank/Kathleen O'Malley:

Mate choice of wild spawning coho salmon (*Oncorhynchus kisutch*) in the Umpqua River, Oregon

Jose Marin Jarrin, October 5, major professor Jessica Miller:

Sandy beach surf zones: what is their role in the early life history of Chinook salmon

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## **Invasive Species Updates**

Jessica Miller, John Chapman, and Gayle Hansen were awarded the Oregon Invasive Species Council's Ten Fingers in the Dike Award, for their work on the tsunami debris. This award is presented to those who have gone above and beyond the call of duty to keep new invaders out of Oregon.

OSU has established the Japanese Tsunami Marine Debris and Invasive Species Action Coordination Team, for which Jessica Miller serves as lead for biological and ecological research. For more information, <http://oregonstate.edu/leadership/japanese-tsunami-marine-debris-and-invasive-species-act>

## ***Update from the Fisheries Ecology Lab***

Andrew Claiborne (MS-March 2013) and James Losee (MS-May 2012) are both working for the Washington Department of Fish and Wildlife as Fishery Biologists and are based in Olympia.

Ruth DiMaria (MS-July 2011) is working at the Smithsonian Environmental Research Center with the Marine Invasions Laboratory in Maryland, as a Biological Technician.

Jose Marin Jarrin (Ph.D.-October 2012) has a research post-doc at Central Michigan University with Dr. Kevin Pangle.

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## ***Update from Amelia Whitcomb***

*(Amelia is a recent graduate, formerly with the Marine Fisheries Genetics Lab)*

May 2013—Following my graduation and a brief hiatus, I have been working at Hatfield for the last two and half months. During that time, I've been working on a manuscript from my thesis work, which I am just getting ready to submit. I have also been working with the OSU Scholars Archive, a digital archive repository, to archive the coho pedigree dataset that I have been working with for my masters. This will enable open access to the dataset, associated metadata, and relevant publications and reports.

I have also just accepted a permanent Scientific Technician Three position in the Fish Program, Science Division at Washington Department of Fish and Wildlife in Olympia, Washington. Starting in June, I will be participating in the technical activities and operations of the Genetics Laboratory on a variety of critical projects aimed at improving sustainable management of fish and wildlife resources. I'm really excited about this opportunity and grateful for the skills and knowledge I gained at Hatfield that allowed me to qualify for this position.

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## ***Update on the Living Marine Resource Cooperative Science Center***

The Living Marine Resource Cooperative Science Center (LMRCSC), founded in 2001 and based at the University of Maryland Eastern Shore, partners with several universities. Jessica Miller, head of the Marine and Anadromous Fisheries Ecology Lab, serves as OSU's Projector Director for LMRCSC, and in March hosted several of their researchers for a successful two-day conference.

LMRCSC has as its mission: "to conduct research congruent with the interests of the NOAA Fisheries and to prepare students for careers in research, management, and public policy that support the sustainable harvest and conservation of our nation's living marine resources." LMRCSC partners with several other universities as well.

Links to both LMRCSC and Jessica's Newport lab can be found at:

<http://marineresearch.oregonstate.edu/research>

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Gil Sylvia, Director	Christina DeWitt, Director
541 867-0230	503 325-4531
<a href="http://marineresearch.oregonstate.edu/">http://marineresearch.oregonstate.edu/</a>	<a href="http://osuseafoodlab.oregonstate.edu/">http://osuseafoodlab.oregonstate.edu/</a>

## **Miami marine science leader named Director of OSU's Hatfield Center**

03/18/2013 - Mark Floyd, OSU News & Research Communication, Source: Rick Spinrad

CORVALLIS, Ore. – One of the nation's leading marine science education and research facilities is getting a new director.

Robert K. Cowen, marine biologist and administrator from Miami, Fla., has been named director of Oregon State University's Hatfield Marine Science Center in Newport. He succeeds George Boehlert, who recently retired.

Janet Webster will continue serving as interim director of the center until Cowen begins his duties in late July.

Cowen holds the Robert C. Maytag Chair of Ichthyology at the University of Miami's Rosenstiel School of Marine and Atmospheric Science, where he has served on the faculty since 1998. He previously was on the faculty of State University of New York at Stony Brook and conducted research as a doctoral student at Scripps Institution of Oceanography in San Diego, Calif.

"Bob Cowen has marine science education and research experience on both coasts and is well-suited to lead the Hatfield Marine Science Center into the future," said Richard Spinrad, OSU's vice president for research. "That future could include the development of a cohesive marine science-based curriculum as well as continuing to expand the center's robust research and public outreach missions."

Cowen's studies range broadly, encompassing such issues as coastal fish ecology, fishery oceanography, larval transport and connectivity of marine organism populations. He has served on numerous national committees and panels, and is affiliated with the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO), a multi-institutional research effort led by OSU. He also has served as associate dean for research at the Rosenstiel School of Marine and Atmospheric Science.

"I am very enthusiastic about joining the Hatfield Marine Science Center and OSU – not only for their great reputation, but also for the huge potential for bridging marine science education and science activities across the university," Cowen said. "I look forward to working with all partners at Hatfield to further its education, science and public outreach missions."

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Janet Webster, Librarian, Guin Library, became interim Director of Hatfield Marine Science Center following George Boehlert's "final" retirement, and will continue in that capacity until Dr. Cowen arrives on July 29, 2013.

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### **Keep a good tweet going....**



Yi-Cheng got a nod from Sonny Ramaswamy, formerly Dean, OSU's College of Agricultural Science and Director, Agricultural Experiment Station, and now Director of the USDA's National Institute of Food and Agriculture (NIFA). Sonny picked up on Yi-Cheng's ongoing work on raw oysters.



Researcher Yi-Cheng Su pulls an oyster from a depuration tank at OSU's Seafood Laboratory in Astoria. (Photo by Lynn Ketchum.)

## ***Update on the Molluscan Broodstock Program***

West Coast oyster farming is over 100 years old and Pacific oysters have been farmed since about 1918. Despite this long history, very little breeding was conducted in the past to improve oyster performance and other desirable traits. Farmers were dependent on using wild animals for production. This situation changed in the mid-1980s when a cross-breeding program was initiated with funding from USDA's Western Regional Aquaculture Consortium (WRAC). In 1995, the Molluscan Broodstock Program (MBP) was funded as a "Special Project" (earmark) at that Hatfield Marine Science Center (HMSC) by USDA to improve yields of Pacific oysters through selection. Over the past 17 years, yields of MBP-selected oysters at grow-out sites have been improved by about 35%, mainly through improvements in survival.

Industry has amplified selected MBP top-performing families by producing large quantities of progeny ("pods") in commercial hatcheries that are then grown at a repository until they are mature. Over the last two years, mature broodstock oysters from these pods have been used in hatcheries to produce billions of larvae that are then sold to oyster growers as "seed". Reports from farmers indicate that the pod's offspring perform very well to harvest size.

Congress eliminated earmarks and federal funding for MBP ended in 2012. In 2013, a consortium of oyster farmers and hatchery-operators was formed to support a scaled-down continuation of the program. The breeding and testing of MBP families will take place at both HMSC and at commercial facilities with support from industry partners, Oregon State University, Washington State University and the USDA/ARS Shellfish Genetics program at HMSC.

In 2013, it is planned to rear MBP cohort 25 (5th generation of selection) at the hatchery of Taylor Shellfish Inc., WA, and another generation of the new Kumamoto broodstock introduced from Japan will be produced at HMSC. Industry partners have offered to provide field-testing sites on Washington and Oregon farms. The cooperative venture between industry, State and Federal agencies will help ensure continual improvement of oyster stocks as well as the future economic well-being of farmers.

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## ***Recent Graduates from Sea-REC***

The following students graduated from OSU Sea-REC in this report period:

Samanan "Sand" Poowakanjana completed his doctoral thesis under Dr. Park: "Rheological and spectroscopic characterization of surimi under various comminuting and heating conditions".

Dr. Poowakanjana is now employed at a Seafood company in Thailand.

Chern "Lin" Koh completed her master thesis under Dr. DeWitt: "Evaluation of DNA recovery methods for the detection of soy in foods using real-time PCR".

Ms. Koh now works for BioOregon as a QA/RD Specialist.

Jing Mou completed her master thesis under Dr. Su: "Survival of *Listeria monocytogenes*, *Salmonella* spp., and *Staphylococcus aureus* in raw yellowfin tuna during refrigerated and frozen storage."

Ms. Mou just accepted an internship at a small salmon processing plant in Kaltag Alaska to help them with the administration and monitoring of their QC program.

## **Update on the Surimi School**

The 13th Surimi Industry Forum and 21st OSU Surimi School were held in Astoria on May 7-10. Using a special theme “Sustainable Fish, Sustainable Surimi, and Sustainable Surimi Seafood”, it was another success with 117 attendees for the Forum and 61 for the School. There were also 27 sponsors from the US surimi and surimi seafood industry.

At the Forum we covered global market and production update, pollock and whiting fisheries, and commodity update in the morning. Currently, global surimi production exceeds 700,000 tons. The US surimi production (nearly 200,000 tons) from pollock and whiting continues to play a major role in the global market with its premium quality. In the afternoon, our industry’s efforts in recovering more meat from fish to improve surimi sustainability were presented. In addition, new product ideas were explored to make our surimi seafood industry more sustainable. Six technical experts from industry participated in a special panel “Accurate Quality Assessment of Surimi”.

During the afternoon break, various surimi seafood products from Japan, Europe, South Korea and USA were presented for tasting. Attendees were asked to vote for their top three choices. The number one choice was Chee-Chiku (cheese-embedded “broiled surimi tube”) from Japan. King and Prince Seafood’s Lobster Sensation ranked at #4 as the top US product submitted.

The lecture staff at the now 21st Surimi School encompasses many years of experience in industry, academia, or both. The majority of topics covered were based on the textbook (Surimi and Surimi Seafood, second edition, Park, 2005). The course is offered as lectures in the morning and hands-on lab sessions in the afternoon. Attendees also took an exam for a special certificate.

Detailed programs covered in May can be found at <http://surimischool.org/forum.html>

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## **Markham Awards Symposium – June 19th, HMSC**

Mamie L. Markham Endowment Award – intended to assist graduate or postdoctoral level researchers and research utilizing OSU’s Hatfield Marine Science Center.

Renee Bellinger (Michael Banks, Major Professor)

Erin Fedewa (Jessica Miller, Major Professor)

Matthew Gray (Chris Langdon, Major Professor)

Dustin Keys (Christina DeWitt, Major Professor)

Sophie Pierszalowski (Scott Baker, Major Professor)

Mamie L. Markham First Year Student Award – to provide financial assistance to an incoming, first year graduate student who plans to be resident at the HMSC after completing first academic year in Corvallis.

Matthew Berger (Gil Sylvia, Major Professor)

Fred and Joan Crebbin Memorial Fellowship – intended to provide support for marine science public education program interns, and to students whose major study emphasis is marine biology, particularly marine mammals.

G. Renee Albertson (Scott Baker, Major Professor)

Lillian Brucefield Reynolds Scholarship Fund – scholarship fund for graduate students engaged in study of marine science at Hatfield Marine Science Center.

Rebecca Hamner (Scott Baker, Major Professor)

William Q. Wick Marine Fisheries Award – intended to encourage graduate student research in the area of marine fisheries ecology with special area of interest in Pacific whiting or intended to fund graduate research in marine fisheries and ocean related research.

Erin Fedewa (Jessica Miller, Major Professor)

Marisa Litz (Jessica Miller, Major Professor)

## ***The Future in Open Access***

In years past, scientific journals were the preferred method for scientists to ensure appropriate distribution of, and gain credit for their research. Usually, however, they had to relinquish their copyright, often giving the journal sole rights for publication.

As the Internet has grown and digital material has become more available, authors have increasingly turned to open access to ensure wider distribution and maximum impact for their research.

Oregon State University became an early leader in this movement, both by encouraging faculty to retain their copyright, and by making this information more accessible. OSU's Guin Library continues this work by providing links to many information sources.

While many of the links within the Guin Library website pages (<http://guin.library.oregonstate.edu/>) are accessible only through a university computer, there are several that support open access on private computers. Among the links at the bottom of the Guin Library's home page, the most interesting and/or useful – providing access to research materials and historical documents – are noted, below.

### Scholars Archive@osu

OSU's Scholars Archive, established in 2005, provides open access for scholarly work produced within OSU, as well as for other materials that support OSU's land, sea, sun, and space grant missions. This site is best used for searches by a specific author. (For topics searches, Google or other search engines are currently a better tool.)

### Oregon Explorer

This site, a partnership between OSU Libraries and Press and the Oregon State University Institute for Natural Resources, is a state-wide collaboration providing access to documents in the public domain which are related to Oregon's natural resources. Content includes GIS capabilities, Oregon's natural resource plans, as well as restoration information for salmon and for wetlands, information on coastal erosion, rural communities, census data, FEMA Flood Insurance Maps, and the Oregon Hazards Reporter. There's a search function, as well as drop-down lists for location and topic.

### Oregon Digital: Unique Digital Collections from OSU and UO Libraries

This is a collaboration between OSU and UO "to support the teaching and research mission of the Oregon University System." The items within the collection are archival, oversized, and/or visually oriented, and include ODFW Habitat Maps, maps of Oregon estuaries, old navigation charts and high-way maps, and the Herbarium Specimens collection.

### OSU Special Collections & Archives Research Center

This site specializes in the history of OSU, history of science, natural resources, multiculturalism, and rare books. Included in the collections are personal papers, historic photographs, oral histories, and other OSU memorabilia, as well as videos and listing of events. Noteworthy collections include the Linus Pauling papers and the Gerald R. Williams photographs.

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NOTE: On February 22, 2013, the White House Office of Science and Technology Policy issued a policy memorandum directing federal agencies with more than \$100 million in annual R&D expenditures to develop a plan to support increased public access to the results of research funded by the Federal government.  
[http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp\\_public\\_access\\_memo\\_2013.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf)

## ***Update from Sea-REC***

Dr. Christina DeWitt has been a guiding light for a few (to be unnamed) OSU Safety Committees, since she's been ahead of the crowd in producing updated safety procedures for the lab. In giving the OSU Seafood Research & Education Center a new look, she'd also adopted a more appropriate acronym, Sea-REC, effective immediately.

Along with the required administrative tasks, Dr. DeWitt has been working on several research projects. She's involved in evaluating high pressure processing for improving the quality and safety of muscle food products. In response to new HACCP requirements placed on fishermen, she's working with the FDA and USDC on behalf of the Western Fishboat Owners Association and Oregon Albacore Commission to develop a simple, easy-to-use vessel record form that will allow for more efficient compliance and can be applied fleetwide.

She initiated a project to evaluate nano-scale ice for improving seafood quality, and is working with an international collaborative to develop a white paper on the state of seafood science and education. In the latter capacity, she gave testimony at a Sea Grant meeting in Washington, D.C. and has met with the head of the National Institute of Food and Agriculture in Washington, D.C.

On the seafood safety front, current projects initiated by Dr. Yi-Cheng Su are focused on discovering processes that reduce and/or eliminate *Vibrio parahaemolyticus* and Norovirus from oysters. In addition, Dr. Su has been working with National Fisheries Institute and tuna canners to evaluate the potential for Staphylococcal enterotoxin formation during processing.

Dr. Jae Park is conducting research that is focused on enhancing the sustainability and value of seafood products by discovering those processes that increase the shelf-life, quality and nutrition of surimi seafood products. Dr. Park's group is also involved in research to extract further value from Oregon seafood by investigating the potential of seafood protein recovered from underutilized species and/or processing inefficiencies to reduce the uptake of oil by fried products. He worked with the equipment manufacturer Laitram on steam cooking/setting of surimi. He also has initiated preliminary investigations to further utilize fish blood as an enzyme inhibitor for both surimi and fresh fish. The preliminary results were utilized to submit a collaborative grant involving all three faculty at Sea-REC. And, in addition to the Surimi Schools and Forum, The OSU Surimi Story and School was highlighted this past summer at the Smithsonian Folklife Festival held on the Mall in Washington, DC. Dr. Park, Angee Hunt, two students and industry volunteers represented OSU Sea-REC and spent two weekends over the Fourth of July holiday talking to visitors about Surimi.

Toward a more collaborative future, Dr. DeWitt travelled to Taiwan with Dr. Su to evaluate potential for collaborative research between OSU Sea-REC and National Kaohsiung Marine University, National Pingtung University of Science and Technology, and National Taiwan Ocean University. Sea-REC has also hosted and toured researchers from Chile and New Zealand for similar collaborative purposes, as well as a business group (Russia) toured by the Astoria/Warrenton Chamber of Commerce. And for educational purposes, the lab has also played host to both high school and grammar school students, and has participated in the Astoria/Warrenton Chamber of Commerce after hours Open House.

Teaching efforts are also underway by OSU Seafood faculty. Dr. Park taught, for the first time at OSU Sea-REC, a 3-credit graduate Surimi course and Dr. DeWitt will be teaching a 3-credit graduate Seafood Technology course Fall 2013. There is a move underway at the University to integrate all the Experiment Stations in undergraduate teaching efforts through experiential exposure/efforts through both classes and research scholar activities. We expect Sea-REC to be more involved with undergraduate students in the future as well.

For more information, visit the Sea-REC website, at <http://osuseafoodlab.oregonstate.edu/>