



Newsletter of the Friends of Hatfield Marine Science Center

Partnership aims to bolster marine science education in schools

The Oregon Department of Education awarded a Title IIB Math and Science Partnership (MSP) Grant to the Oregon Coast Aquatic and Marine Science Partnership (OCAMP), a collaborative program comprised of eight academic, non-profit and government science institutions including the Hatfield Marine Science Center, Lincoln County School District, Oregon Coast Aquarium, and Oregon Sea Grant.

The MSP research grant will provide \$900,000 over three years to OCAMP to enhance the science teaching, learning and achievement of Lincoln County School District teachers and students, and to investigate what works in improving science teaching



Partnership representatives (left to right): Nancee Hunter, Oregon Sea Grant; Ruth McDonald, LCSD; Kerry Carlin-Morgan, OCA; George Boehlert and Itchung Cheung, HMSC; Roy Simpson, BLM; Sean Nolan, OCA; Tracy Crews, Oregon Sea Grant; Shawn Rowe, OSU; Other partners not pictured are Dr. Tawnya Peterson, OHSU CMOP; Dr. David Noakes, OSU; and Ryan Couture, ODFW.

and learning.

Other partners include the Departments of Science Education and Fisheries and Wildlife at OSU, Oregon Health and Science University's Center for Coastal Margin Observation and Prediction, the Oregon Hatchery Research Center, Oregon Department of Fish and Wildlife, and

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Graduate students' research symposium set for June 16

Students whose research is supported by HMSC awards and scholarships will present the results of their work over the past 1-2 years (or posters explaining their proposed research) at the 15th annual Markham Marine Science Research Symposium on June 16.

Over \$82,000 was awarded this year to students in 7 departments in 3 different colleges of OSU. One student from outside OSU was supported to use the unique facilities here. All of these funds originated from generous private donations to HMSC. Please join us in congratulating the awardees listed below.

Friends of HMSC are invited to join us in congratulating this year's award winners at the Symposium, where you can learn more about what projects are being pursued by these students, as well as hear progress reports on research by past awardees. The symposium

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Research Briefs

Undersea volcanoes captured in action

Less than three weeks after an international team of scientists returned from their expedition to an active undersea volcano near the Island of Guam, with video and still images documenting eruptions and a thriving biological community atop the rapidly growing cone, a



Hades eruptive vent at the summit of West Mata volcano (1174 meters)

second team sailing near the Samoan Islands was reporting red molten lava flowing from the undersea volcano known as West Mata – the first ever observation of such active lava extrusions on the ocean floor.

The first team, led by geologist Bill Chadwick of the OSU-NOAA Cooperative Institute for Marine Resources Studies, set sail on April 3 from Guam to the Mariana Arc chain of active volcanoes. Their destination was NW Rota-1, which they had visited in 2004 and 2006 and had been the only place on Earth where a deep submarine volcano had been directly observed while erupting.

Sailing aboard the R/V Thompson and deploying the "Jason-2" ROV (remotely operated vehicle) for dives down to the volcano, the team discovered that NW Rota-1 had built a new cone 40 meters high and 300 meters wide since their last visit.

"That's as tall as a 12-story building and as wide as a full city block," Chadwick said. "And as the cone has grown, we've seen a significant increase in the population of animals that live atop the volcano. We're trying to determine if there is a direct connection between the increase in the volcanic activity and the population increase."

"The animals in this unusual ecosystem include shrimp, crab, limpets and barnacles, some of which are new species," Chadwick added. "They are specially adapted to their environment and are thriving in harsh chemical conditions that would be toxic to normal marine life."

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Don't miss SeaFest Saturday, June 27th 10 am - 4 pm



HMSC's annual open house and celebration of the sea is almost here! See page 7 for info on this year's event.

Markham Symposium *continued from page one*

will be held in the Hennings Auditorium of the HMSC Visitor Center, from **9am to noon**, with the poster session and coffee break mid-way through. For more information, please call 541-867-0212. We hope to see you on the 16th.

2009 HMSC Scholarships, Fellowships and Awards

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.*

- **Noreene Ignelzi**, Science & Math Education (Advisor: Lynn Dierking) “Sociocultural aspects of place-based learning in a community of learning focused on its local marine habitat”

Curtis and Isabella Holt Education Fund - *intended to foster education in the marine sciences by providing financial support to undergraduate or graduate students pursuing marine science studies.*

- **Michele Mileham**, Marine Resource Management (Advisor: Shawn Rowe) “Educating Volunteers about Marine Protected Areas and How to Effectively Communicate Them to the Public”

Walter G. Jones Fisheries Development Memorial Award - *intended to encourage graduate work in subjects which contribute to fisheries development*

- **Samanan Poowakanjana**, Food Science & Technology (Advisor: J. Park) “Biochemical & gelation properties of Pacific mackerel.”

Lillian Brucefield Reynolds Scholarship Fund - *scholarship fund for graduate students engaged in study of marine science at HMSC.*

- **Londi Tomaro** (Advisor: Jessica Miller) - Growth and migratory behavior of juvenile spring Chinook salmon

William Q. Wick Marine Fisheries Award - *to encourage graduate student research in the area of marine fisheries ecology with special area of interest in Pacific whiting, or other fisheries-related ocean research.*

- **Jose Marin Jarrin**, Fisheries & Wildlife (Advisor: Jessica Miller) Otolith analysis from the summer sampling season

Mamie L. Markham Endowment Award - *intended to assist graduate or postdoctoral level researchers and research utilizing the OSU HMSC*

- **Renee Bellinger** (Advisor: Michael Banks) - “Elucidation of Magnetic Orientation Mechanisms Using High Throughput Sequencing and Transcriptome Profiling of Chinook Salmon”
- **Elena Fernandez** (Advisor: Thomas Hurst) - “The Effects of Ocean Acidification on Walleye Pollock (*Theragra chalcogramma*) Physiology: Growth, Stress, and Metabolism.”
- **Amanda Gladics** (Advisors: Rob Suryan, Michael Harte) - “Do Predator Diets Signal Changes in Forage Fish Populations? Implications for Food Web Dynamics and Ecosystem Indicators?”
- **Alison Iles** (Advisor: Bruce Menge) - “Understanding variability in species interaction strengths for marine ecosystem management”
- **Angela Sremba** (Advisor: Scott Baker) - “Genetic diversity and gene flow in blue whales (*Balaenoptera musculus musculus*) in the eastern tropical North Pacific”
- **Londi Tomaro** (Advisor: Jessica Miller) - To fund the study of growth and migratory behavior of juvenile spring Chinook salmon
- **Jamie Womble** (Advisor: Markus Horning) - “Identifying non-breeding season habitat utilization patterns of a declining harbor seal population from Glacier Bay National Park, a glacial fjord in southeastern Alaska”

Notes from the Director



Spring typically brings a burst of activity to the HMSC, with the OSU Marine Biology class in residence and visits from student groups from other area colleges and universities. This season also sees a dramatic increase in Visitor Center traffic, with dozens of K-12 school groups filling our class labs and venturing out to the mudflats for sampling and observation.

Managing that flow has been particularly challenging these past few months, with lab renovations in the education wing and other deferred maintenance projects underway. These were made possible by Go Oregon stimulus funds from the state legislature for “shovel ready” projects throughout the Oregon University System. We are grateful for the support, which has enabled us to address longstanding needs, including structural retrofits in our oldest buildings to enhance seismic safety, replacement of floating research docks and exterior building doors corroded by decades of salt air exposure, repair and re-surfacing of parking lots, and installation of a new purification system for seawater effluent from live animal aquaria before it is returned to the bay.

HMSC’s wave energy focus has been growing since the establishment of the Center discussed two newsletters ago. New research has been proposed on acoustics, marine mammals, seabirds, benthic ecology, and technology deployment. At the end of May, we hosted a wave energy forum for US Senator Jeff Merkley, and on June 16 we will host an evening OPB “Think Out Loud” show in the HMSC Auditorium. Finally, early next month Dr. Sarah Henkel will join the HMSC staff as a research assistant professor focused on benthic ecology and the effects of wave energy development on nearshore areas.

We hope to see you at in the coming weeks at the Markham Symposium and certainly at SeaFest, and wish you all a fun and productive summer.

Markham First-Year Student Award

- **Rebecca Hamner**, Fisheries & Wildlife (Advisor: Scott Baker) Population dynamics & conservation genetics of the Hector and the Mau dolphins

HMSC Academic Program News

Weekend course topics expand from marine habitats to marine mammals and now marine birds!

This spring, HMSC expanded its popular Weekend Experiential course (BI/FW 111) offerings to include a Marine Birds version of the course. This is an introductory course with an experiential field/laboratory emphasis designed for non-science and potential science majors. Students spend the weekend at HMSC (staying overnight in the bunk houses) for the “immersion learning” experience.

Students in the winter 2009 weekend experiential course “Introduction to Marine Life in the Sea” enjoyed beautiful weather during their visit to Seal Rock.



The goal of these classes is to introduce, inspire and educate undecided or non-science major students about marine organisms and major ocean habitats, while informing students about the interdisciplinary nature and value of marine science. The class combines formal lectures, labs and “hands on” field experiences to study marine organisms described in the course.

Due to the popularity of the course with first year undergraduate students as well as upperclassmen, this course has blossomed into three different courses planned for the next academic year... BI/FW 111 - Marine Mammals taught by Jim Sumich in the Fall; BI/FW 113 - Marine Habitats taught by Itchung Cheung in the Winter; and BI/FW 115 - Marine Birds taught by Rob Suryan in the Spring.

Promoting Research Investigations in the Marine Environment (PRIME)

COSEE Pacific Partnerships is once again offering internship opportunities to community college students interested in developing research and outreach skills through hands-on experience working with marine scientists and marine informal educators. The program runs from June 21 to August 14, 2009. HMSC will host two of the four students in the Oregon program this summer.

- Sea-oh McConville (Portland Community Col-

lege) will be conducting a laboratory and field study of the interactions between macroalgae and eelgrass in Oregon’s estuaries. Under the guidance of Dr. Sally Hacker, OSU Assoc. Professor of Zoology, and Ph.D. student Margot Hessing-Lewis, Sea-oh will assist in running mesocosm experiments at the HMSC and with fieldwork in Coos Bay during low tide weeks.

- Mark Burnap (Southwestern Oregon Community College) will be spending his summer here developing a plan for global climate change messaging at the Oregon Coast Aquarium that conveys to visitors what climate change means for the earth’s ecosystems. Supervisors: Dr. Kerry Carlin-Morgan, Director of Public Programs and Tina Smith, Interpretive Coordinator, Oregon Coast Aquarium.



HMSC well represented at OSU undergraduate research symposium

Presenting academic and creative work in a formal setting is a mark of true accomplishment in undergraduate studies. OSU’s first annual “Celebrating Undergraduate Excellence Symposium”, held last month in the Memorial Union on the main campus, highlighted the work of several students who spent time in residence at HMSC over the past two years.



Among the students presenting research posters at the inaugural event were: 2008 REU HMSC Interns Lanaya Fitzgerald (above, left) and Kiya Wilson (above, right), who both received awards for their posters. Also presenting were 2007 Marine Biology Student Jeremy Henderson and 2008 Marine Biology Student Megan Cook.

Congratulations to all of our young “alumni” for representing HMSC so well!

Graduate students moving on & up

HMSC congratulates graduate students defending theses on their way to earning Master’s and Ph.D. degrees from Oregon State University.

Recently completed: **Marc Johnson**, Fisheries Science (Ph.D.) “Patterns of natural selection and demography in Coastal Oregon coho salmon (*Oncorhynchus kisutch*) populations: evidence from neutral and olfactory receptor gene-linked markers”

Just announced: **Renee Gibb**, Fisheries Science (Master’s) will defend on Thursday June 11th, at 10 a.m. in the library seminar room: “Humpback whales (*Megaptera novaeangliae*) in the South Pacific breeding grounds: allocation from feeding areas and abundance of the French Polynesia breeding stock”

OSU Fisheries & Wildlife graduate student **David Stick** was honored by the National Shellfisheries Association with the Thurlow C. Nelson award for his presentation, “Analysis of genetic structure within and among remnant populations of the Olympia oyster, *Ostrea conchaphila*” at the 101st NSA meeting in Savannah, GA. As a recipient of this award, David will receive 5 years of free membership to the Association, which includes a subscription to the Journal of Shellfish Research. Congratulations, Dave!

HMSC Academic Program News

Summer 2009 course offerings

Responding to the demand for shorter, more flexible courses during the summer, the HMSC is offering a unique set of short courses in Marine and Environmental Studies, designed for students, teachers and professionals in ecology, conservation, fisheries biology and resource management. Choose from:

Biology and Conservation of Marine Mammals (FW 302/BI 302)

Topics include systematics and biogeography of marine mammals, reproduction, energetics and physiology of swimming and diving, vocal communication and echolocation, feeding and migratory behavior, and marine mammal/human interactions.

Instructor: Jim Sumich, Author of "Introduction to the Biology of Marine Life" textbook

4 credits **July 6 - 17**

Aquatic Biological Invasions (BI 421/FW 421/521 - new format)

This is a new 4-week hybrid course combining online course material and a required weekend field trip at the Hatfield Marine Science Center. The course covers the diversity, natural history, theory, evolution,

ecology, politics, economics, and conservation of biological invasions in aquatic environments with a weekend "hands-on, go there, see-it" experience, incorporating field visits to local sloughs, marshes, ponds and estuaries of the Oregon coast and field or lab research projects.

Instructor: John Chapman, Fisheries and Wildlife

4 credits **July 6 - 31 ONLINE**

July 24 - 25 – REQUIRED WEEKEND FIELD TRIP

Understanding Free Choice Learning for Education and Outreach (SED 431/SED 531) This course seeks answers to questions about what and how people learn in informal settings by reviewing research and practice in what has been called free-choice learning.

Instructor: Shawn Rowe, Department of Science and Education

3 credits **July 27 – August 7**

For more information, contact:

Itchung Cheung, Academic Program Coordinator

Tel. 541-867-0380 email: HMSCacademic@oregonstate.edu

or visit <http://hmsc.oregonstate.edu/summer.html>

Partnership offers high school students opportunity to help with field research

Late spring and summer are the busy field season for many researchers, with longer daylight hours and better weather affording more sampling opportunities. It is also a time of year when high school students are available to help, as members of the Lincoln County Summer Natural Resources Crew, organized

by the Community Services Consortium and Mid-Coast Watershed Council, in cooperation with HMSC researchers.

This summer, a work crew of 5 to 10 students ages 16 and older will be assisting Jose R. Marin Jarrin, an OSU Fisheries and Wildlife Ph.D. student based at the Hatfield Center, with his research. Jose, who is working with Dr. Jessica Miller, has completed three years of data collection in Oregon's surf zones and is providing new information on the role of these very nearshore areas in

the early life history of Chinook salmon.

The crew will help with sampling in the sandy beach surf-zones located adjacent to the Columbia River, Tillamook Bay, Alsea Bay and Coos Bay. Collection efforts will consist of towing two types of nets to sample the juvenile salmon and their potential prey, while measuring environmental variables such as beach profile, temperature, salinity, and sand grain size. At the end of the summer, the crew will give a presentation of their work at the weekly seminar series at HMSC.

HMSC/OIMB Scholar Exchange – "Ducks + Beavers = Platypus?"

On May 29th the Hatfield Student Organization (HsO) hosted graduate students from the University of Oregon's Institute for Marine Biology (OIMB) on an overnight visit to HMSC. This is the third year of exchanges between the two marine science stations, providing an opportunity



for the students to interact professionally and socially.

This year's exchange included a workshop on "communicating science to the public", led by Shawn Rowe, professor of Science and Math Education at OSU and a marine education

learning specialist with Oregon Sea Grant.

After the workshop and campus tour, the students engaged in an afternoon of games and friendly competition on the HMSC front lawn, followed by a taco feed organized by the HsO.



Bolstering marine science education

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Bureau of Land Management Yaquina Head Outstanding Natural Area.

"Partnerships between these groups have been developed over the last three and a half years, mostly through the vision of Superintendent Tom Rinearson, who dedicated resources to having an LCSD staff person work closely with these partners," says Ruth McDonald, OCAMP project director and LCSD community curriculum resource liaison. "It's

times to have this infusion of money to help us advance our goals."

Dr. Shawn Rowe of OSU's Science Education Department is the co-primary investigator responsible for the educational research aspect of the grant, while Dr. Edith Gummer of the Northwest Regional Education Lab will be evaluating the project. At the end of the three-year project, the data will be part of the U.S. Department of Education database on successful strategies for strengthening STEM (Science, Technology, Engineering and Math) education.

"This grant shows how successful partnerships in education and research can enhance education by improving access to science content and other resources for primary and secondary education in local communities," said HMSC's academic programs coordinator, Itchung Cheung, another collaborator in the partnership.

The MSP program will fund professional development for three years for 36 LCSD teachers through summer seminars, workshops and school year colloquia. Eighteen of

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Marine science education *continued from previous page*

these teachers will engage in a professional learning community (PLC) built on lesson study, action research, and mentored field experiences. Scientists and informal science educators will provide ongoing classroom, field and PLC support. Teachers will apply to participate in the program, which will begin

in August. Selected teachers will receive a stipend, funding for science materials, bus transportation and admission costs for field trips as well as college credit.

"This will be a fantastic opportunity for our teachers and, in turn, their students," McDonald says. "Through the seminars and

workshops the teachers will be working with some of the most prominent ocean and aquatic scientists in the nation."

ODE officials commented that the grant application process was extremely competitive this year, with many outstanding proposals submitted and carefully reviewed, but the OCAMP grant was the only one awarded.

Research Briefs

Scientists identify endangered right whales where they were presumed extinct

A team of researchers led by Dave Mellinger from the OSU-NOAA Cooperative Institute for Marine Resources Studies (CIMRS) detected the calls of endangered North Atlantic right whales in a former whaling ground the species had abandoned long ago.

No one saw the whales. They heard them.

Mellinger, a CIMRS senior researcher who specializes in bioacoustics, says right whales produce a variety of sounds, and careful analysis can differentiate those sounds from other whale calls.

"We don't know how many right whales there were in the area," he said, noting that right whale vocalizations "aren't individually distinctive." "But we did hear right whales at three widely spaced sites on the same day, so the absolute minimum is three."

Funded by NOAA's Office of Ocean Exploration and Research, the project began in 2007 by deploying five hydrophones off the Greenland coast.

Built by Haru Matsumoto at HMSC, the instruments were calibrated to record ambient sounds below 1,000 hertz - a range that encompasses the frequency of right whale calls - through a large section of the North Atlantic Ocean.

While a trio doesn't sound like much to crow about, three is a crowd for an endangered whale species with an entire population estimated at between 300 and 400. And discovering their presence in Cape Farewell Ground about 200 to 400 miles off the southeastern tip of Greenland is significant in and of itself, Mellinger noted.

Right whales were hunted to near extinction there before the adoption of protective measures. Hunting right whales became illegal in 1936, but only two have been sighted in the traditional whaling ground during the past 50 years.

And the whales' old haunt lies in an

area that could open to shipping if polar ice meltdown continues.

The researchers used recordings of North Atlantic and North Pacific right whales to identify their distinct vocalizations, including what are known as "up" calls. Between July and December 2007, they recorded 2,012 calls in the area off Greenland. The pattern of the whales' movements led to a troubling conclusion.

"Newly available shipping lanes through the Northwest Passage would greatly shorten the trip between Europe and East Asia, but

would likely cross the migratory route of any right whales that occupy the region," said Phillip Clapham, a right whale expert with NOAA's National Marine Mammal Laboratory, in a news release announcing the findings. "It's vital that we know about right whales in this area to effectively avoid the ship strikes on what could be a quite fragile population."

Right whales are somewhat slow, cumbersome creatures. Growing to as much as 55 feet long and weighing in at 70 tons, they often become victims of ship collisions when they move through heavily traveled Atlantic coastal waters while migrating northward. NOAA directed new speed limits in 2008 for commercial vessels along the Atlantic coast to help avoid collisions with the whales.

Evidence of more right whales traveling in the wrong place - a potential shipping lane - raised concern along with hope for the future of a whale species struggling to make a comeback.

Clapham joined CIMRS researchers Mellinger, Sharon Nieuwkerk, Karolin Klinck, Holger Klinck, Bob Dziak and Bryndis Brandsdottir of the University of Iceland on the project. The scientists presented their findings during a meeting of



Scientists including Matt Fowler, who works for both OSU and NOAA, deploy a hydrophone in the North Atlantic aboard the Icelandic Coast Guard cutter Aegir that will record sounds emitted by endangered whales and other species. (Photo courtesy of Dave Mellinger)

the Acoustical Society of America in Portland last week. The underwater recordings weren't retrieved until the hydrophones were removed in July 2008. It took months to sift through the tens of thousands of various whale calls, using sophisticated acoustical detection software to separate the right whale calls from others.

This marks the third time Mellinger's team has used hydrophones to locate endangered right whales.

In 2004, Mellinger and his colleagues described how they used hydrophones to identify right whales in the Gulf of Alaska, where only one confirmed sighting has occurred in 26 years. And in 2007, they identified the seasonal occurrence of right whales off Nova Scotia.

HMSC scientists first began hearing whale sounds several years ago while using the Sound Surveillance System (SOSUS) used by the Navy during the Cold War to monitor submarine activity in the northern Pacific Ocean. When the Cold War ebbed, civilian researchers performing environmental studies were given access.

OSU researcher Christopher Fox first received permission to use the hydrophones at his HMSC lab to listen for undersea earthquakes - a program Bob Dziak now directs. While listening for earthquakes, researchers began picking up other sounds. They included ships, marine landslides - and whales.

This article (edited for space) was written by Terry Dillman for the Newport News Times. The original appeared in the May 29 edition of the newspaper.



Bioacoustics researcher David Mellinger

Research Briefs

Shedding light on mystery of humpback whales' weak recovery

Scott Baker, Associate Director of the Cetacean Conservation Genetics lab at HMSC (part of OSU's Marine Mammal Institute), was quoted in the May 28 edition of *SCIENCE* magazine in an article explaining why humpback whale populations in Oceania have been so slow to recover in the decades since the International Whaling Commission's 1948 moratorium on commercial whaling.

As a postdoc at New Zealand's Victoria University in the early 1990's, Baker was curious why humpbacks were not being seen along their traditional migration route from Antarctic waters to the islands of Oceania, while other populations including



Australian humpbacks were apparently rebounding. The reason, it turns out, was illegal hunting carried out by the Soviet Union, which killed more than 25,000 whales in 1959-61 alone, and another 23,000 in subsequent years, while reporting only 2,710 to the

IWC. The shocking story of the Soviet deceit is told in a recently published paper and commentary in the June issue of *Marine Fisheries Review* by lead author Philip Clapham of NOAA's National Marine Mammal Laboratory in Seattle.

Clapham, Baker, and MMI Director Bruce Mate are currently attending IWC meetings in Madeira, Portugal, where the Commission is considering calls by Japan and other member nations for a relaxation of the moratorium on commercial whaling.

Undersea volcanoes

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Similar discoveries were made by scientists aboard the second cruise while exploring the NE Lau Spreading Center, where they found two active vent fields hosting foot long tubeworms, mussels, crabs, several species of small snails and shrimp, as well as vent-endemic fish. Interestingly, they did not find the same biological diversity at West Mata, where Tim Shank of Woods Hole Oceanographic Institute theorized that active creation of new seafloor and volcanic activity may be preventing such species from establishing themselves there.

Sailing on both cruises was Bob Embley of the Vents group at HMSC, who served as co-chief scientist on the second cruise, with collaborators from ten institutions including OSU, Portland State, and the University of Washington. That mission was a follow-up to a November 2008 cruise to this same area between the islands of Fiji, Tonga, and Samoa, where water column plume surveys showed evidence of on-going eruptions beneath the ocean.



"Brimstone" at NW Rota-1. Within the 'smoke', many gas bubbles of CO₂ can be seen. Typically after bubbles appear, activity would increase, actually shaking the ROV.

For both research teams, the return visits were highly rewarding, allowing the scientists to observe molten rock forming new earth while collecting biological specimens that may provide clues as to how living organisms adapt to harsh environments. Daily logs, photos, and maps from each of the cruises can be seen online at:

www.nwrota2009.blogspot.com and
www.laueruptions.blogspot.com

Aquarist's Notebook

Below are recent posts to the "VC Clipboard" by Paul Dubay, HMSC's Senior Aquarist, to keep our volunteers apprised of changes in the living exhibits in the Visitor Center. With every update, there is something new to learn...

4/26/09 The Undersea Gardens has donated a very small octopus to the HMSC. The aquarists have not decided on whether or not it is a giant or dwarf octopus. The Greater Portland Marine Aquarium Society has donated time, equipment, and suggestions for the HMSC Ornamental Fish Health Program [OFHP]. It is wonderful to have organizations willing to help each other when there is a need or goal.

6/3/09 The quarantine period is finished for our new rubescens octopus. The new octopus will be introduced to research #2 [the small tank behind PISCO, near the wolf eel aquarium].

News from Oregon Sea Grant

Summer day camps schedule announced

Marine education staff-led classes offered Monday thru Thursday, 9 am to 3 pm

Animal Adaptations (Ages: 7-9)

Dates: June 22-25 Cost: \$140.00

Explore marine organisms from plankton to whales and discover the amazing adaptations they have for surviving in their environment. Campers will investigate life in the estuary, on sandy beaches, and rocky shores through fieldtrips and hands-on activities.



From the River to the Sea (Ages: 7-9)

Dates: July 20-23 Cost: \$140.00

Explore a watershed as we travel from a small creek to the sea. Discover how it is all connected and how organisms depend on the various environments for survival. Campers will visit a local stream, the estuary, and a tidepool area to find out what the inhabitants have in common.

Bayfront Quest Camp (Ages: 10-12)

Dates: June 29-July 2 Cost: \$140.00

Investigate local fisheries as we go on a seafood Quest! Campers will explore the bayfront, interview fisheries experts, and even do some crabbing as they collect information. Participants will then use what they discover to create a clever, clue-directed hunt called a "Quest"

to share with the public. Campers will also receive an Oregon Coast Quests Book.

Dive into Fish (Ages: 13-15)

Dates: July 13-16 Cost: \$150.00

How do fish communicate? What techniques do scientists use to study fish? Learn the answers to these questions and more as we delve into the incredible world of fish! Campers will learn what fish need to survive

and how to set up and take care of an aquarium. We will investigate current fisheries research at Hatfield and visit the Oregon Hatchery Research Center. Campers will learn how and why researchers collect data and even do some sampling of their own!

Ocean Explorations (Ages: 13-17)

Dates: July 27-30 Cost: \$150.00

Explore the ocean environment from the surface to the deep in this hands-on camp. Campers will learn about technology and techniques used in ocean exploration and have the opportunity to design their own ROV (Remote Operated Vehicle) for observation and data collection. Several fieldtrips, including one to the OSU Wave Energy lab will occur.

Registration includes all program materials and fieldtrips. Lunches are not included. To register visit our website at <http://hmsc.oregonstate.edu> or email: Maureen.collson@oregonstate.edu

Inspiring future scientists

Career day at HMSC gives high school students a closer look at diversity of jobs in science

When Oregon Sea Grant's marine education coordinator Tracy Crews announced the title of this spring's career day program, *CSI: Careers in Science Investigation*, she thought the allusion to the hit television series name might grab the attention of her target audience of high school students. What she might not have predicted was how enthusiastically they would respond once they arrived.

Over 50 students participated in the day-long exploration of marine science topics at the HMSC, held on April 17th. The students were able to visit various labs, interact with researchers, and get an up-close look at the tools and techniques used by scientists in their daily work.

A big thank you goes out to all those researchers and volunteers who gave of their time and knowledge to our young visitors that day, including: **Alana Alexander, Markus Horning, and Jim Rice (MMI), Dennis Glaze, Bill Hanshumaker, and Ralph Breitenstein** (Sea Grant / Visitor Center), **Joe Haxel (CIMRS), Rob Suryan (HMSC), and Polly Rankin (ODFW).**



“Leadership through science” is theme of SeaFest 2009

Volunteers still needed to help out on big day

Don't miss the Hatfield Center's annual open house and marine festival, set for **Saturday, June 27** from 10 am to 4 pm. Going on its seventh year, SeaFest has earned its reputation as a family favorite event on the Oregon coast, attracting thousands of visitors with its unique blend of tours and demonstrations, intriguing displays and “do touch” science exhibits, activities for kids of all ages, great food, live music, and so much more.

Check out the full listing of events, exhibitors, food vendors and entertainment stage line-up on our website: www.hmsc.oregonstate.edu/seafest

SeaFest

To help out as a volunteer, please call Jeff Lichtman at 541-867-0219



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HMSC in the Community

Helping kids discover the “fun” in science

Twenty-three scientists, educators, and staff from the HMSC stepped up to help with this year's Science Fair at Yaquina View Elementary School in Newport. Volunteers representing EPA, NOAA, OSU, SeaGrant, and USDA served as mentors to guide the grade schoolers in putting together their projects and preparing their displays. Each mentor contributed at least 1-1/2 hr per week in the classrooms for about six weeks leading up to the fair, which took place on May 14-15.

For the third year in a row, science fair participation by students at the school (K thru 5th grade) has reached nearly 95% in individual, team or class-wide projects. Although the Science Fair is non-competitive, 16 project displays were selected by to be shown at the HMSC SeaFest in June.

Way to go!



Ted Dewitt of the EPA lab at HMSC (top photo, on left) coordinated mentors and volunteers for the science fair at Yaquina View Elementary, including the Marine Mammal Institute's Tomas Follet (pictured above, helping kids assemble a marble launcher) and CIMRS Post Doc Elizabeth Küsel (left).

Volunteer snapshot



HMSC director George Boehlert (left) and facilities manager Randy Walker, both volunteer firefighters for the Siletz Valley Rural Fire District, at the weekly drill and training.

Randy also serves as a board member for the Newport Farmer's Market and dedicates much of his spare time to running a sustainable farming operation in Siletz with his wife Sarah. They were recently profiled in a front page article in the Newport News Times.

OPB radio coming to HMSC

Oregon Public Broadcasting (OPB Radio) has been investigating renewable energy topics from wind to geothermal power in a special series called "The Switch".

On Tuesday, June 16th, the Portland-based public radio station will be in Newport to discuss the vision of harnessing energy from waves, tides and ocean currents with two OSU faculty members offering unique perspectives: HMSC Director George Boehlert and OSU Professor of Electrical Engineering Annette von Jouanne. Both are principals in the Northwest National Marine Renewable Energy Center based at OSU.

The public is invited to sit in on the discussion, which will air at 9 am the next day on Think Out Loud.

Think Out Loud

Think Out Loud in Newport!

Come participate in the discussion about wave energy.

Tuesday, June 16

6pm Doors open

7pm Show begins

Reception immediately following

Hatfield Marine Science Center

2030 SE Marine Science Drive
Newport, Oregon

The event is free of charge.
Seating is first come, first seated.

For more information,
opb.org/events



Hosts
Emily
Harris
& David
Miller

Friends of HMSC Membership Appeal



It's that time of year! Please consider making a contribution of \$25 or more to keep your membership active or become a new member of the *Friends of HMSC*. Your contribution extends the reach of Hatfield Center's research and education initiatives through special programs geared towards the general public, with the goal of increasing ocean literacy and inspiring new citizen stewards of the marine environment.

Members receive the Friends newsletter 3 times a year, a discount on purchases in the Visitor Center book store & gift shop, and invitations to attend special events at the HMSC.

Please make checks payable to **OSU Foundation**, with "Friends of HMSC" on the memo line, and mail to:

Friends of HMSC / OSU Foundation
850 SW 35th Street
Corvallis, OR 97333

If you wish to use a credit card for your contribution, you can call the OSU Foundation directly at 1-800-354-7281.

Typewriting is produced and distributed 3 times a year to the Friends of HMSC membership. Your feedback is welcomed.
- Ken Hall, Editor (email: ken.hall@oregonstate.edu)

Hatfield Marine Science Center
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