



Newsletter of the Friends of Hatfield Marine Science Center

## Forums aim to boost public understanding of marine issues and role of the HMSC

With over 300 personnel at the Hatfield Marine Science Center engaged in a wide range of research, educational and natural resource management activities, each highlighting a different approach to the common goal of improving understanding and stewardship of marine and coastal ecosystems, the job of sharing this knowledge with the public also requires a multi-faceted approach.

Informational displays, exhibits, and activities in the Visitor Center are a principal means of education and outreach to the public, highlighting many of the ongoing research activities led by OSU and state and federal agency researchers based at HMSC. A wealth of information can also be communicated through web pages, newsletters, annual reports, other printed publications and videos.

One tool that has proven particularly useful in responding to heightened levels of public interest on issues that suddenly become hot



OSU oceanographers and managers of the ship operations facility at HMSC answered questions about ocean observation systems during a recent public forum.

topics, is the old fashioned public forum. The HMSC is well positioned to utilize this method of information sharing, which has the advantage of offering people the opportunity to hear directly from those engaged in research and marine resource management, to ask questions and hopefully leave with a better understanding of what are often complex issues.

Whether structured as a self-contained event or as a single "open session" during a larger professional conference on a topic of interest, the public forum serves a valuable function.

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When word got around that HMSC would be hosting a workshop on the ecological impacts of wave energy in October of 2007, organizers were flooded with inquiries from people wishing to attend. Participation in the scientific workshop was, by design, limited to invitees with

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## HMSC in the community

### Andra Bobbitt and Tom Hurst recognized for contributions to community

At the HMSC's annual end-of-year holiday gathering, two researchers were honored with "Spirit of the Community" awards, presented by HMSC director George Boehlert, in recognition of their leadership and service contributions to the Newport community.

Andra Bobbitt, a senior researcher in the Cooperative Institute for Marine Resources Studies, is part of a team at HMSC funded by the National Oceanic and Atmospheric Administration (NOAA) to study the effects of submarine volcanic and hydrothermal activity on the ocean environment. But it was her dedication over the past few years as a parent volunteer at Yaquina View Elementary School promoting activities that bring the excitement of science into the classroom that earned her the community spirit award.



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### Scholarships and other support available for 2008-09 academic year

The Hatfield Marine Science Center is pleased to announce opportunities for a variety of scholarships to assist students in research and other scholarly endeavors that are linked to HMSC. Over \$95,000 is expected to be awarded this year, with amounts ranging from \$200 to \$10,000 for each award.

Funded entirely through private donations to the HMSC for the purposes of supporting research and education in the marine sciences, the awards will provide financial assistance for up to 20 students during the 2008-2009 academic year.

Some scholarships encourage research in a certain field or address a particular need. Others, such as the Cecil and Martha MacGregor Scholarship, are earmarked

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## Notes from the Director

A lot has happened at the HMSC since the last Friends' newsletter. Our Master Plan, which provides a path for development at the HMSC over the next 15 years, was completed and approved by Oregon State University. Copies are available on our website and also in the Guin Library and the Newport library. HMSC, along with the Oregon Coast Aquarium, the Oregon Institute of Marine Biology, and Oregon Coast Community College, has been designated a "Center for Ocean Science Education Excellence" through a competitive award from the National Science Foundation. This "COSEE" joins a national network, and will focus on partnerships among marine labs, community colleges, and informal science institutions.



I write this just having returned from the Ocean Science Meeting in Orlando, Florida. Besides the usual excitement of new scientific reports, we were thrilled to have 5 of the HMSC undergraduate research interns from last summer at the meeting and presenting their scientific results. Two of them won awards for their presentations. This is excellent evidence of the strength of our program and the dedication of the mentors who advise these students. We are selecting the new group of students who will come to the program this summer, and based on their applications, it will be another top-notch group.

HMSC is continuing to serve as a great source of marine science information to the public. In addition to the excellent programs at the HMSC Visitor Center, like the just-completed Sea Turtle Saturday, we have developed two new series. "Science on Tap" will be a periodic partnership with Rogue Ales to present scientific talks in the relaxed atmosphere of a brew pub. And our new series, "HMSC Forum on Marine and Coastal Issues" just kicked off with a forum on ocean observation. Keep an eye out for future offerings of these events with topics like pinniped-fishery interactions and offshore aquaculture. As usual, we look forward to seeing you at these events.



## Scholarships *(continued from previous page)*

specifically to cover housing expenses for those wishing to live at the HMSC for part of the summer in order to take courses.

New this year is the Captain Fred Anderson Memorial Award, which provides up to three \$500 scholarships to support educational expenses for high school graduates from Lincoln County, Oregon. Eligibility is restricted to individuals that are from fishing families.

Most of the awards have an application deadline of April 14, 2008 with the exception of the Markham First Year Award (March 17), the Anderson Memorial Award (May 15) and the two housing awards (May 30). Information and applications for all of the awards can be found on the web at: <http://hmsc.oregonstate.edu/awards.html>

## Community service contributions

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Bobbitt, who uses Geographic Information Systems (GIS) technology in her work at the Center to create colorful maps from oceanographic data collected during deep-sea expeditions to monitor volcanic activity on the ocean floor, was honored for helping organize activities such as the school's annual science fair and "geography week", which bring others from the Hatfield Center in to the school to participate in science-themed learning activities. Bobbitt was also instrumental in launching Science Education and Art by the Sea (SEAS) in 2007, a 10-week half-day summer school program held at Yaquina View last summer for children in first through fifth grades.

"Andra brings a tireless dedication to kids and learning plus she brings a unique wealth of knowledge and understanding of geography and oceanography," says Yaquina View Elementary School Principal Kurt Smith. "Teachers describe her as an invaluable resource and a wonderful person to work with."

Thomas Hurst, a NOAA fisheries biologist with the Alaska Fisheries Science Center, was also honored with a "Spirit of the Community" award, in recognition of his contributions to the arts community in Lincoln County. Hurst has served as president of the Newport Symphony Orchestra since 2005, overseeing the national search and selection process for a new artistic director and conductor that brought acclaimed maestro Adam Flatt from Denver to Newport last year.

Hurst initiated a new education outreach program with Lincoln County Schools in 2007, bringing Flatt and symphony musicians into elementary and middle schools to work with students in band classes on musicianship skills and techniques.

"It was difficult choosing the winners of the award this year because HMSC staff are so highly involved in community activities," said Boehlert. "Andra and Tom, however, stand out as excellent examples of community support."



### When beach grasses compete, who wins?

Phoebe Zarnetske, a Ph.D. candidate in Zoology at OSU, has been tending to her beach grass plantings adjacent to the HMSC housing complex for about a year now. She periodically stops by to measure and compare the growth rates of three different varieties of beach grass planted in some 40 large bags of sand, which she set up as an experiment to determine how the grasses compete with each other.

The species being tested in Zarnetske's experiment are the Pacific Northwest native American dune grass, *Elymus mollis*, and two non-native invasive species: *Ammophila arenaria* (European beach grass) and the closely related *A. breviligulata* (American beach grass, native to the North American East Coast and Great Lakes). The latter two species, known for their sand-binding abilities, have been introduced around the world for purposes of dune stabilization.

While the invasive beach grasses have been responsible for severe alteration of the shape of Pacific coastal dunes, the interactions of these species with each other and their ultimate impacts on dune morphology are still not fully understood.

European beach grass is credited with creating the extensive foredune system of large protective sand hills found in front of almost every sandy beach in Oregon, offering some protection of roads, property and towns from coastal storms. But the non-native American beach grass now appears to be out-competing its European cousin and lowering dune heights by as much as half in the process.

One of Zarnetske's faculty advisors, OSU assistant professor of zoology Eric



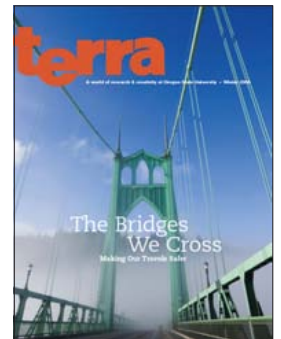
Phoebe Zarnetske received a 2007 Mamie Markham Research Award in support of her dune grass experiments at HMSC and at the O.H. Hinsdale Wave Research Laboratory in Corvallis.

Seabloom, discovered the extent of the American beach grass *A. breviligulata* in the Pacific Northwest and says it is now dominant from Ocean Shores, Washington, to Pacific City, Oregon. There is evidence that it is expanding its range southward along the Oregon Coast, raising concerns about the coastal protection function that dunes have provided for the better part of a century.

Seabloom and OSU associate professor of zoology Sally Hacker have received funding from Oregon Sea Grant to study the impacts and interactions of these invasive grasses on the Oregon coast.

While some effects are seen as positive, in fortifying dunes that provide protection for man-made structures, European beach grass has also been blamed for reducing habitat for endangered native plant species and shorebirds such as the federally threatened Western snowy plover. As beach sand was captured by the grasses forming steep foredunes, nesting habitat behind the dunes was gradually taken over by wetlands and scrub forests.

Whether the more recent invasion of American beach grass eventually reverses that dynamic remains to be seen.



Research by Hacker, Seabloom and Zarnetske was profiled in the Winter 2008 issue of *Terra*, the OSU research magazine.

### Giving parasites a good name

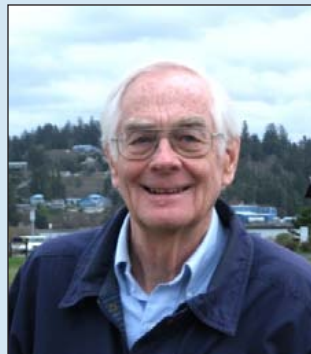
In the most recent issue of the *Journal of Parasitology* (Volume 93), OSU alumnus Gene Burrenson, currently a professor at the Virginia Institute of Marine Science, describes a species of marine fish parasite he discovered in Petrale, Slender and English sole in samples collected off Newport between January 1971 and August 1973.

Burrenson was a graduate student of Bob Olson's at the HMSC during that period, and decided to name the parasite after him -- *Trypanoplasma bobolsoni*. Lest anyone think that was something less than a compliment, Burrenson ensured that the published journal article included an explanation of the origin:

**Etymology:** Named in honor of Dr. Robert E. Olson, Hatfield Marine Science Center, Oregon State University, Newport, Oregon, mentor and friend, for his many contributions to the study of parasites of Oregon marine fishes and for his support during this research.

Source: HEMOFLAGELLATES OF OREGON MARINE FISHES WITH THE DESCRIPTION OF NEW SPECIES OF TRYPANOSOMA AND TRYPANOPLASMA  
Eugene M. Burrenson

*Journal of Parasitology* 93(6) :1442-1451 2007



OSU Dept. of Fisheries and Wildlife Emeritus Professor Bob Olson (above) and namesake (below)

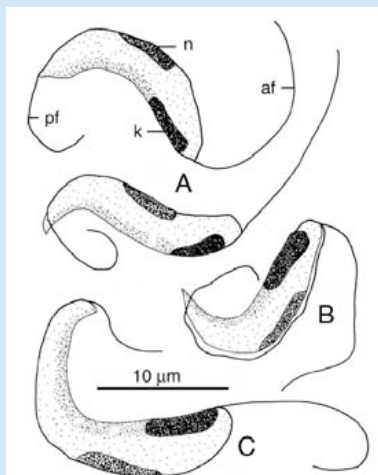


FIGURE 6. *Trypanoplasma bobolsoni* n. sp. (A, B) Individuals from *Eopsetta jordani*, (C) Individual from *Lyopsetta exilis*. af, anterior flagellum; k, kinetoplast; n, nucleus; pf, posterior flagellum.

# HMSC Academic Program News

HMSC's Academic Program Coordinator Itchung Cheung reports on the various new courses and educational experiences that have been made available to undergraduate and graduate students during this 2007-08 academic year.

## Fall Term Report:

We had 75 college students enrolled in courses at HMSC this past Fall term, including 59 undergraduate and graduate students in the OSU Fisheries and Wildlife classes and 16 Oregon Coast Community College students participating in the Aquarium Science program.

Among the Fall term offerings were a course in *Group Problem Solving and Ecology and Management of Marine Fishes*, taught by Selina Heppell, and a course on *Early Life History of Fishes* taught by Jessica Miller.

Team-taught courses included *Coastal Ecology and Resource Management*, led by Chris Langdon and other Fisheries and Wildlife faculty, and a Stock Assessment seminar led by Vladlena Gertseva. The *Coastal Genetics and Conservation* (FW 590) course, taught by Michael Banks, provided graduate students with hands-on application of molecular population genetics in coastal fishery management and conservation, using DNA extraction, PCR and other analysis techniques.

A new special topics course on *Whales and Whaling* (FW499/599), taught by Marine Mammal Institute associate director Scott Baker, presented the history of whaling as an informative model for understanding the biological and political



complexities of exploiting or conserving marine species. While many may view it as a relic of the past, whaling remains a strong imperative for some national interests and the focus of ongoing international negotiations, which Baker has observed and participated in over the past two decades.



Students in the CERM class met with Dr. David Noakes, Director of the Oregon Hatchery Research Center in the Alsea River basin, and learned about the role of fish hatcheries in sustaining salmon and steelhead populations.

Students in Baker's class learned about the evolutionary origins of whales, early commercial whaling in the eastern North Atlantic and global expansion of the industry to the point of near extinction of baleen whales and some larger toothed whales towards the end of the 20th century. The course covered whale taxonomy and diversity, life history parameters, population dynamic models and recovery, while also providing students with an understanding of current management issues, including the role of International Whaling Commission and the ethics of 'scientific whaling'.

## Winter Term Report:

Nineteen OSU undergraduates spent a mid February weekend at the HMSC, enticed by a new course called *Introduction to Marine Life in the Sea* (BI/FW 111), where they studied marine organisms and habitats while learning about the interdisciplinary nature of marine science. Geared towards 1st and 2nd year undergraduates, non-science and potential science majors, the inquiry-based course with an experiential field/lab emphasis gave students an overview of marine-related disciplines at OSU and a taste of what a full-term course "in residence" at HMSC would be like.

This was the first of several weekend courses being planned at HMSC throughout the year; the next one will be offered during the spring term, with a focus on marine mammals.

Students enjoyed great weather while sampling marine life from the docks on Newport's bayfront.

## Summer Session Courses Offer Something for Everyone:

The HMSC Summer Program in Marine and Environmental Studies offers half a dozen courses on a variety of topics, taught by internationally recognized experts in ecology, animal behavior, marine mammal biology, and education. Courses range from one to three weeks in length and are open to anyone interested in increasing their understanding of marine and coastal ecosystems, while taking advantage of the unique hands-on lab and field learning opportunities available at the Hatfield Center.

An interview with HMSC Academic Program Coordinator, Itchung Chung, highlights some features of the program:



*Q: Who can take courses this summer at the coast?*

A: These courses are designed to work for a wide variety of people. We've had part-time/full-time students from community colleges, undergraduate and graduate students, teachers, marine resource management and other industry professionals, and lifelong learners from all over the place come to take our classes. People can enroll for a single course or a set of courses, depending on their interests and time.

*Q: What is new for the 2008 Summer Session at HMSC?*

A: Two new courses we're offering this summer are Coastal Eco and Adventure Tourism and Aquaculture and Aquarium Science. Our Aquatic Biological Invasions course is offered every other summer and by popular demand we are offering

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## Summer Session *(continued from previous page)*

it concurrently with the Understanding Free Choice Learning for Education and Outreach course.

*Q: What do you see as the advantages of taking courses at HMSC this summer?*

A: HMSC is a world-class research and teaching facility and the summer provides an ideal time to take advantage of field ex-

periences and to learn from top researchers, while living for a few weeks or more at the Oregon Coast. Our instructors love their research field and love to teach. Students enjoy the hands-on learning in small class size settings and the field experience, where they get to study marine life in the natural habitat of a rocky shore, muddy estuary, tranquil bay or a sandy beach.

*Q: What would you tell a student who was interested in Summer Session at HMSC?*

A: HMSC is a wonderfully interactive community of students, educators and researchers. Take a look at our diverse course offerings and be a part of our community. We have on-site housing and some housing scholarships may be available.

## News from Oregon Sea Grant and HMSC Visitor Center



### Dynamic new graphic images greet visitors to HMSC

The HMSC is undergoing a small face-lift. The front entrance of the Visitor Center will soon be transformed and visitors will be enticed by a giant octopus - this is before they even get inside the building where they are greeted by the real-life Pacific Giant Octopus. There will also be some new signage around the Center, including banners, lawn signs highlighting fun facts that can be discovered inside the Visitor Center, a new presentation for the octopus tank and much more.

This initiative was fully funded by OSU's Office of University Advancement. Many thanks!

### Continuing education

All of the Sea Grant Education staff recently participated in a five-week professional development training series generously offered by Sea Grant Learning Specialist, Shawn Rowe and Education Coordinator, Heidi Schmook. The class is called 'Communicating Ocean Sciences to Informal Audiences' (COSIA) and was developed by faculty at the Lawrence Hall of Science out of UC Berkeley. Educators from the Oregon Coast Aquarium were also invited to join in the training, making

### Visitor Center staff welcomes back a familiar face

Rebecca (Becca) Schiewe is no stranger to the HMSC. Having first worked in the Visitor Center as an intern in the summer of 2003, she returned after finishing college to work with the US Fish and Wildlife Service Oregon Coast Complex based at HMSC. In the fall of 2007, Becca joined the Visitor Center staff as a museum assistant, and has recently stepped up to full-time status as the interim volunteer coordinator, filling in the position that Kath Fuller left at the end of February.

Becca cites her summer internship in the Visitor Center as a defining experience because it was where she discovered a passion for natural resource interpretation. Graduating from OSU in 2004 with a degree in Fisheries and Wildlife Biology and a specialty option in Wildlife Conservation Management, she found the chance to explore that passion through an AmeriCorps position offered by the USFWS.

As a Coastal Wildlife Education Specialist, Becca delivered the Shorebird Sister Schools Program to 4th and 5th graders. The program is focused on shorebird ecology and includes five lessons plus a field trip to a local estuary, which provided a great opportunity to explore the coast.

In her current position, Becca interacts with a much wider age range, and finds that the diversity of people is one of her favorite things about working in the Visitor Center.

"There is an endless supply of interesting people to share with and learn from," she says. "I am constantly learning something new every day!"



When asked what her favorite exhibit is, she concedes it's the same one that so many others also love to watch — the giant Pacific octopus. Becca says she is fascinated by the animal's physiology and behavior, and admits that she has become somewhat "attached" to the current resident cephalopod.

"I'll miss Jimmie when she leaves us March 11th, but I look forward to getting to know our latest octopus, Hodges!"

Born and raised in the Portland area, where her parents and two older brothers still live, Becca says she has always loved the Oregon coast. She enjoys painting wildlife/nature scenes, singing, birding, hiking, jogging, reading, and says she intends to continue working with natural resources in an educational capacity.

"I would also like to return to school again to pursue a graduate degree," she says, "though I'm not quite ready to take the plunge."

**Training** *continued from previous page*  
this the largest COSIA class ever taught at OSU. It is also one of the most diverse groups of participants.



## Whale Watch Week returns March 22-30

Early spring is a good time to catch a glimpse of gray whales off the central Oregon coast as they pass on their northward migration from calving grounds in the warm waters around the Baja California peninsula to feeding grounds in the Bering and Chuckchi seas. Although the whales can be spotted weeks before and after the Oregon Department of Parks and Recreation's officially designated "Whale Watch Week", late March is usually the peak of the migration along this part of the coast.

The HMSC Visitor Center is open every day during Whale Watch Week (March 22 -30).

## Oregon Public Broadcasting is coming to Hatfield



On the evening of April 17th, there will be a sneak preview of the new OPB special "The Silent Invasion." This will kick-off of a year-long campaign by OPB, OSU and Sea Grant to highlight the ever-growing problem of invasive species. Everyone's invited, so save the date and stay tuned for more information.

# The Silent Invasion

## Sea Turtle Saturday spotlights ancient ocean swimmers

Sea turtles are icons of our oceans and have been important to people for thousands of years. Currently, most sea turtle populations are a fraction of their historical abundance, due to overharvest, loss of nesting habitat, marine pollution, and accidental drowning in fishing gear. Yet, today we have numerous examples of successful conservation efforts that have prevented the extinction of many populations.

On Saturday, March 15, the HMSC Visitor Center hosted an informative and fun day of family learning about these animals and their future. Many families with children participated in the day's activities, which included auditorium presentations highlighting how scientists, coastal residents, and turtle lovers everywhere are uniting to bring turtles back from the brink of extinction.



A sea turtle drawing contest for children was one of the activities organized for Sea Turtle Saturday.

Guest speakers included Dr. Larry McKenna, founder of the Save Our Leatherbacks Operation (SOLO), who presented a summary of his organization's conservation activities in Papua Barat, Indonesia. Two beaches on the remote western portion of this island serve as a nesting area for Leatherback sea turtles that forage off the Oregon coast for 3 to 4 months a year.

Brad Nahill of Ocean Conservancy offered his perspective on



the role of "conservation tourism" in places like Costa Rica, Trinidad, and Baja Mexico, where targeted efforts can provide economic incentives for local communities to protect sea turtles threatened by poaching and disturbance of nesting areas.

Dr. Selina Heppell, of the OSU Dept. of Fisheries and Wildlife, delivered an informative presentation in which she highlighted some of the defining characteristics of the seven different species of sea turtle that exist around the world (six of which can be found in US coastal waters), and discussed the challenges of conservation efforts in the face of multiple threats. Heppell's research and involvement in this area has contributed to the protection of many species, including Leatherback turtles in the Caribbean and the Kemp's Ridley sea turtles in the Gulf of Mexico, which were on the verge of extinction a decade ago.

Following the lectures, Marine Public Education Specialist Bill Hanshumaker led a dissection and necropsy of a loggerhead sea turtle that had washed up on an Oregon beach last year and was donated by the US Fish and Wildlife Service to HMSC for public education purposes. Data collected about the 4-foot-plus loggerhead specimen during the necropsy is hoped to help determine cause of death. Tissue and bone samples will also be analyzed to determine the turtle's age.





### Science on Tap

Over seventy people showed for Oregon State University geologist Bill Chadwick's lecture on undersea volcanoes, held last month at the Rogue Ales brewery in Newport, prompting the speaker to wonder whether it was his presentation topic or the novel location that had attracted the Friday evening crowd. Judging from the attention level and engagement of the audience through the end of the lecture, science was the main draw, though the availability of beer and food were a nice complement.

Sponsored by the Friends of HMSC and promoted as a family-friendly event, Science on Tap was launched as an alternative format lecture series where audiences might feel more comfortable asking questions and engaging in conversation with scientists about their research in the relaxed atmosphere of a brewpub or restaurant.

Chadwick presented research that he and colleagues from the OSU-NOAA Cooperative Institute for Marine Resources Studies have conducted during expeditions to a chain of active volcanoes that extend north of Guam in the western Pacific for over 600 miles, part of the "Submarine Ring of Fire". Known as the Mariana volcanic arc, the chain is much like the Cascade Range in the northwest, except most of the volcanoes are underwater and have been completely unexplored until recently.

In 2006, dives with a remotely operated vehicle discovered extraordinary ecosystems, including sites with active eruptions, molten sulfur lakes, and liquid carbon dioxide. Despite the extreme environments, unique biological communities seem to thrive at these underwater volcanoes. Chadwick presented dramatic video illustrating these remarkable environments, generating plenty of "oohs" and "ahs" from the audience.

The notion of hosting a scientific talk in a brewpub is not original, admits HMSC Program Manager Ken Hall, explaining



that it was inspired by the "Café Scientifique" movement that started in England a decade ago as a public forum for learning about and debating science issues. More recently, the trend has taken off in the United States with "Science Cafes" popping up in places like Portland and other cities where universities and museums are seeking innovative ways to connect people to science.

Boston-based public broadcasting station WGBH, producer of the popular NOVA series on television, has even created a web site to promote the science café concept, with resources for organizers, presenters and a directory of events happening all over the country. It can be found at [www.sciencecafes.org](http://www.sciencecafes.org).

The success of the inaugural Science on Tap lecture has already generated requests for this type of event to be repeated. Among the topics being considered for a future presentation is Pacific salmon biology and habitat.

### HMSC Forums

*(continued from front page)*

particular areas of expertise, who were expected to address specific questions and produce recommendations on research priorities.

For various practical reasons, the workshop could not have achieved its objectives as an entirely open event. However, accommodations to allow the public to attend the morning presentations in the Hennings Auditorium during the first day of the workshop proved workable. In addition, arrangements were made to have those presentations videotaped for eventual broadcast on local cable television in Lincoln County.

Planning for future scientific conferences and workshops at HMSC to incorporate a session that allows public participation and utilizes new media capabilities for greater dissemination is underway.

Branded as the "HMSC Forum on Marine and Coastal Issues", the model was most recently employed at a March 13th event featuring researchers from OSU's College of Oceanic and Atmospheric Sciences who presented information on ocean observing technologies and instrumentation and plans for their deployment off the Pacific Northwest coast.

Attendees learned about the importance of ocean observation systems as a funded priority in the National Science Foundation's research agenda for the coming decades, and as a potential impetus for economic development in Newport as the hub for services in support of oceanic data gathering activities.

Co-sponsored by the Port of Newport and the Yaquina Bay Economic Foundation, the forum was videotaped by students in the Toledo High School video production class, under the direction of



teacher Peter Vince, for later broadcast on the Lincoln County School District's educational access cable television channel operated by Charter Communications.

Among the topics being discussed for upcoming public forums in conjunction with larger conferences at HMSC are pinnipeds and fisheries (interactions) in Oregon and the future of offshore aquaculture.



## Hatfield Marine Science Center

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[www.hmsc.oregonstate.edu/friends](http://www.hmsc.oregonstate.edu/friends)

### Sustainability committee hosts community forum on carbon reduction strategies

Over 50 people attended a public forum at HMSC on the evening of January 31 on the topic of global warming, with a focus on actions that individuals, households, and communities can take to reduce greenhouse gas emissions.

Sponsored by the HMSC Sustainability Committee and the local chapter of the Surfrider Foundation, the forum was part of a national teach-in on global warming solutions called "Focus the Nation", with hundreds of educational events being held on college campuses across the country that week.

At the HMSC seminar earlier in the day, Dr. Laurence Padman of Earth and Space Research in Corvallis presented a summary of climate change theory and terminology, sharing results of the fourth Intergovernmental Panel on Climate Change (IPCC) findings relating to sea level rise. He also reviewed new data from Greenland and Antarctica identifying how polar ice is responding more rapidly to changing conditions than previously thought.

The objective of the forum, organizers say, was to help people understand that decisions about resources and energy use at the individual, household, and community level do affect the amount of carbon dioxide emitted into the atmo-



Lincoln City Mayor Lori Hollingsworth spoke about initiatives launched by her city's sustainability committee

sphere, and hence the rate of global warming.

Presentations and informational displays highlighted practical solutions to "reducing your carbon footprint" by increasing home energy efficiency, keeping tires properly inflated, using alternative transportation, and other strategies.

Invited speakers included Robert van Creveld of Edgewater Northwest and Chris Chandler diTorrice of Central Lincoln PUD, who offered energy saving tips and incentives for installing compact fluorescent lighting and small-scale renewable energy systems at home. Recently retired OSU Microbiology professor Paul Reno presented information about the benefits and increasing viability of biodiesel as a fuel source for cars.

For more information about HMSC Sustainability Committee sponsored activities and events, please contact committee chair Ken Hall (email: [ken.hall@oregonstate.edu](mailto:ken.hall@oregonstate.edu)).