May 2006
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Upwelling

Newsletter of the Friends of Hatfield Marine Science Center www.hmsc.oregonstate.edu/friends

HMSC welcomes Annette von Jouanne on May 26

Friday evening presentation explores "The Promise of Wave Power"

One of the world's leading researchers in the quest to harness energy from ocean waves to generate electricity will deliver a public presentation at the Hatfield Marine Science Center on Friday, May 26th at 7 PM.

Dr. Annette von Jouanne, Professor of Electrical Engineering and Computer Science at Oregon State University, will explain how ocean wave power can be tapped to provide a reliable and clean source of affordable renewable energy. She will also discuss the developing opportunities for the State of Oregon to become a leader in wave power, and the implications for Oregon's coastal communities.

Professor von Jouanne's May 26 lecture is co-sponsored by the Economic Development Alliance of Lincoln County and the Yaquina Bay Economic Foundation, in cooperation with the Friends of HMSC.

Wave energy research and developments advanced by Dr. von Jouanne, Professor Alan Wallace, and their students in the College of Engineering at OSU have gained widespread attention from industry and policy makers increasingly interested in alternatives to the nation's current dependence on oil and other fossil fuels.

Making the case that waves have several advantages over other forms of renewable energy such as wind and solar, Dr, von Jouanne points out that even with seasonal variability, ocean waves are more available, more constant, and more predictable.

"Ocean wave energy enables more straightforward and reliable integration into the electric utility grid to provide reliable power," says von Jouanne. "Wave energy also offers much higher energy densities, enabling devices to extract more power from a smaller volume at consequent lower costs."

A multidisciplinary team of researchers at OSU formed a wave energy team in 2003 to investigate new "direct-drive," offshore, wave energy extraction approaches that would meet the goals of efficiency, survivability, reliability and maintainability. They focused on building devices that use magnetic fields for contact-less mechanical energy transmission, and power electronics for efficient electrical energy extraction.

The team came up with several prototype buoys, designed to be anchored one to three miles offshore in typical water depths of greater than 100 feet, where the buoys will experience gradual, repetitive ocean swells. Advanced designs of these prototypes are currently being developed to achieve higher efficiencies and power

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Annual Markham Awards Symposium set for June 14

Support from private donors for student scholarships and fellowships tops $100,000

The HMSC Awards Committee is pleased to announce the names of 14 students who have been selected to receive awards in support of graduate-level research and education activities for the 2006-07 academic year. The students are pursuing Master's and Ph.D. degrees from several different departments and colleges across OSU, and demonstrate the broad range of research interests at HMSC.

This year's awards total over $100,000 from donor driven funds at the Oregon State University Foundation, enabling students to benefit from the lab and field research opportunities at HMSC and the regular interaction with research scientists serving as advisors and mentors. The HMSC is grateful for the continued generous financial support of the private individual and family donors whose names are on these awards.

Please consider joining us at this year's Markham Symposium on June 14th (see back page for details).

Upwelling 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)

Student Profile: Abby McCarthy

Graduate students who have spent time at HMSC often mention the supportive community that exists among fellow students, post-docs, other researchers and staff as an enriching part of their experience. Indeed, students like Abigail McCarthy are responsible for helping create that sense of community through their involvement and support of activities beyond their own research or academic pursuits.

Abby is nearing completion of a Master of Science degree from the Department of Fisheries and Wildlife at OSU, with Professor Selina Heppell as her advisor and a research project focused on sea turtle ecology. She has delivered seminars on her research for the HMSC community, made presentations for the undergraduate summer interns at HMSC, and created informational displays for the public at SeaFest.

For the past year Abby has also served as President of the Hatfield Students Organization, or "HsO" as it is commonly known, helping ensure that students' interests are represented in HMSC programs and planning, and organizing HsO fundraising efforts like the annual holiday raffle.

Abby was originally attracted to HMSC by the Fisheries & Wildlife intensive fall term

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Notes from the Director

Last month, I traveled to Honolulu as one of two US representatives to the Governing Council meeting of PICES, the international North Pacific marine science organization (see photo – further information at www.pices.int). It made me think about the degree of international activities of HMSC, which are substantial. PICES meeting locations alternate among the six member nations – the last four meetings have been in Qingdao, China ('02), Seoul, South Korea ('03), Honolulu, Hawaii ('04), and Vladivostok, Russia ('05). Participation by HMSC scientists has included OSU graduate students, faculty and staff as well as agency scientists, particularly NOAA; these meetings create great opportunities for collaboration.

We are also developing cooperative agreements with foreign universities for faculty and student exchanges. In 2004 we signed an agreement with the Center for Marine Environmental Studies of Ehime University in Matsuyama, Japan. We have had several visits from their scientists, and last summer, one of their graduate students spent several months at HMSC while Todd Miller, a Fisheries and Wildlife Ph.D. student, spent several months in Matsuyama. As Todd completes his degree this quarter, he will spend at least 2 years at Ehime University doing postdoctoral research. Last month, two Korean scientists from Pukyong National University in Pusan, visited to examine sending Korean students to HMSC for coursework and internships; our links to Korea include past graduate students as well as a current visitor, Dr. Byung-Soo Park visiting David Sampson for a year.

Participants in the interim meeting of the PICES Science Board and Governing Council held in Honolulu, Hawaii, April 17-18, 2006.

As I write this, I am preparing for a mid-May trip to Qingdao, China to work on developing an agreement for student and faculty exchange and cooperative research with the Ocean University of China. HMSC already has a visitor trained at that institution, Dr. Hongsheng Bi, who is here on a postdoctoral associateship with Bill Peterson of NOAA.

These international activities are beneficial to HMSC's research and educational programs, as well as enriching our lives with better appreciation for other cultures and viewpoints.

HMSC convenes stakeholders to consider Yaquina Bay monitoring effort

With the goal of making Yaquina Bay one of the best understood estuaries on the Oregon Coast, a forum sponsored by OSU and the Port of Newport was held at HMSC on April 26 to begin exploring options for a long-term, integrated environmental monitoring study of the estuary.

The day-long meeting was attended by some 40 people, including representatives from state resource agencies, City and Port officials from Newport and Toledo, and members of the local community whose livelihoods are intimately connected to economic and recreational uses of the bay and its ecological health. Also in attendance were HMSC researchers who have studied certain physical and biological conditions of the estuary, who hope to see this data integrated with other assessments for a more complete picture of the bay's condition.

"The recent possibility of bringing a ship breaking enterprise to Yaquina Bay focused much greater public attention on the importance of the bay's environment, and was one of the motivating factors for convening this meeting." said Scott Heppell, Asst. Professor of Fisheries and Wildlife at OSU and coordinator of the forum. "It highlighted the need for better monitoring of water quality in the bay and a better understanding of seasonal and annual fluctuations in estuarine conditions."

Attendees heard presentations from researchers at the US Environmental Protection Agency lab at HMSC and others who have been involved in environmental sampling of Yaquina Bay over the years. Breakout groups explored specific topics associated with monitoring, ranging from physical and biological features to pollutants and introduced species. They also discussed how to transfer these data to users of the bay and the general public.

Steve Rumrill (right) of the South Slough National Estuarine Research Reserve discusses elements that should be considered in designing a monitoring system for Yaquina Bay.

Organizers of the forum hope to develop two key products. The first is a meta database that catalogs the known datasets pertaining to environmental characteristics of Yaquina Bay with links to the investigators associated with those datasets. The second is a strategy to conduct a holistic environmental sampling program of the estuary, integrating existing data with newly collected information.

"Long-term datasets, as unexciting as they are to collect, often prove to be the key to understanding spatial and temporal change as it relates to natural and human impacts," said HMSC Director George Boehlert. "With HMSC's researchers and facilities, and the many interested partners and stakeholders in Yaquina Bay, we have the potential to launch a monitoring program that will improve our understanding of this estuary now and in the future."

Wave energy

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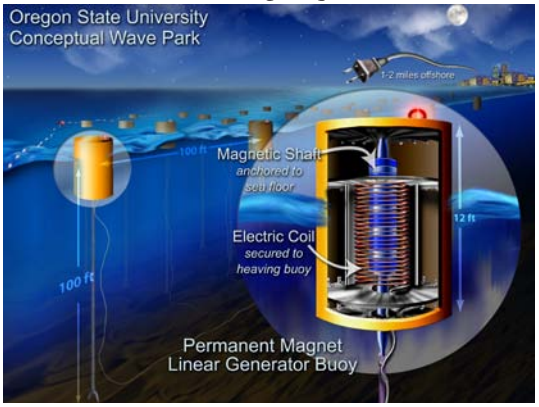
output performance.

OSU has been working closely with Oregon Department of Energy (ODOE) to promote Oregon as an optimal location for the nation's first commercial wave parks, though exactly where to locate them remains an open question.



Recognizing the need for cooperation and partnership and fishermen and crabbers who ply Oregon's coastal waters, the OSU wave energy team consulted commercial fishing industry experts and worked though the Port Liaison Project (PLP) to bring in additional technical expertise and input on wave park siting issues.

Also under development is a Wave Energy Park Environmental Monitoring Protocol, to consider potential impacts on sea birds and marine life from electromagnetic fields, the physical structure of the buoy field, and the construction, deployment, and servicing of undersea cables.

Proponents say the combination of key facilities and relevant expertise at OSU, with the O.H. Hinsdale Wave Lab and the Hatfield Marine Science Center providing opportunities for collaboration, put Oregon in a strong position to lead the advancement of ocean wave energy extraction.

The May 26 presentation by Dr. von Jouanne is free and open to the public. Doors open at 6:30 PM. After the lecture, Friends of HMSC are invited to a reception in the staff lounge.

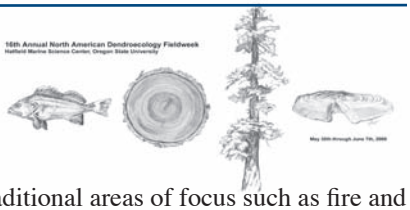
HMSC baby boom prompts look at day care needs

The HMSC family has been growing in leaps and bounds, with 13 new births in the past 12 months. Although the crisis in day care in Lincoln County is not new, this local baby boom really drives it home.

In Newport, there is no licensed day care for infants, leading to severe difficulties for new parents trying to juggle careers and family. In early May, a discussion group was convened at the HMSC to discuss day care options. The meeting included staff from nine separate employers within HMSC, from OSU extension, the Oregon Coast Aquarium, and Oregon Coast Community College. Nina Roll from the Family Connection and Betty Kamikawa of HMSC presented information on the current issues in day care, including efforts to create a community-wide day care center.

While this effort is proceeding, it may take a longer time. Short-term solutions are being explored in the meantime, and an email listserve has been set up on the topic. As things develop, there may be opportunities where the Friends of HMSC can help – and we'll keep you posted on progress.

Exploring links between oceans, forests, climate



Over 50 scientists from across the U.S. and as far away as Brazil and Japan will be at HMSC from May 30 to June 7 for the 2006 North American Dendroecology Fieldweek (NADEF). The annual fieldweek is an intensive, hands-on learning experience in which the traditional techniques of determining the age of trees through core sampling and analysis of tree rings is applied to a wide range of research topics relating to environmental change.

This is the first time in NADEF's history that the fieldweek has been held at a marine lab, and the first time that marine-terrestrial linkages have been highlighted as a research emphasis. In addition to traditional areas of focus such as fire and forest disturbance history and climate reconstruction, fieldweek participants will be offered a new topic of study this year: sclerochronology, the science of using the hard parts of marine organisms that form growth increments (coral, fish otoliths, clam shells, gastropods) to decipher past climate conditions.

"Our intent is for NADEF 2006 to help bridge the gap between aquatic and terrestrial sciences and initiate collaboration between these two disciplines," said HMSC faculty member Bryan Black, principal coordinator of the fieldweek.

Student Profile

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courses. She decided to stay and make Newport her home base, enjoying the coast life and becoming part of the research community at HMSC.

Abby's passion for turtles stems from time spent in Costa Rica and the Caribbean after college, working on turtle nesting projects. "From that experience," she says, "I developed an interest in what the turtles were doing when we didn't see them on the beach, and that led to my current study of pelagic habitat for loggerheads."

Abby McCarthy helps kids see how they "measure up" in size compared to sea turtle species during last year's SeaFest

In 2004, Abby was awarded the Reynolds Scholarship in support of her research on oceanographic and ecological factors affecting fisheries bycatch of loggerhead and leatherback turtles at sea. In the past year, her focus on the loggerheads' pelagic habitat has required learning a whole new set of technical skills related to statistical analysis and interpreting remotely sensed data.

"As much as I've enjoyed programming in Matlab," Abby says, "it would be great to get back to doing some field work sometime in the future."

That's not too surprising for someone who enjoys the outdoors as much as Abby does -- hiking, fishing, and surfing whenever she can, even in Oregon's cold coastal waters.

After completing her Master's degree, Abby says she would like to work for NOAA fisheries in the protected species division, and is also interested in PhD research on the way in which large pelagic animals interact with their environment.

Hatfield Marine Science Center
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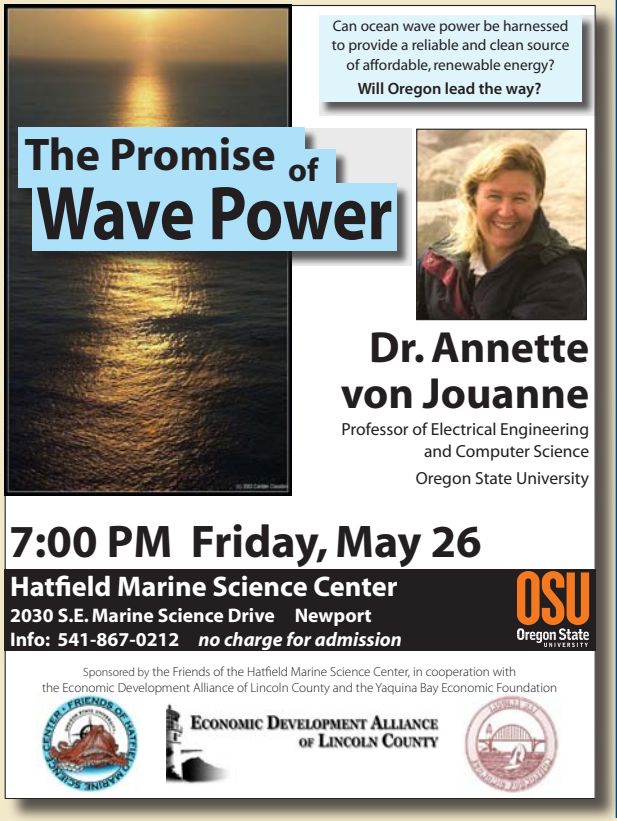
www.hmsc.oregonstate.edu/friends

Upcoming Events



Join us at the 2006 Markham Symposium

on **Wednesday, June 14th** starting at **9AM** in the Hennings Auditorium of the HMSC Visitor Center. There, you can learn about the accomplishments of past award winners and plans for the new awardees.

HMSC Scholarship and Fellowship Awards for 2006-07

Lylian Brucefield Reynolds Scholarship
Michael Liu (Fisheries & Wildlife) ~ Advisors: Selina Heppell / John Chapman

Holt Marine Education Fund Award
Heidi Schmoock (Environmental Science) ~ Advisor: Sean Rowe

Walter G. Jones Fisheries Development Award
Joodong Park (Food Science) ~ Advisor: Jae W. Park

Cecil and Martha MacGregor Scholarship
Jessica Bishop (Biology @ PSU) ~ Advisor: James Sumich

Markham First Year Student Award
Abby Nickels (Fisheries & Wildlife) ~ Advisor: Jessica Miller

Anja Robinson Fellowship
Sean Matson (Animal Science) ~ Advisor: Mark Camara

Bill Wick Marine Fisheries Award
Sureerat Phuvasate (Food Science) ~ Advisor: Yi-chen Su

Mamie Markham Research Awards
Rebecca Baldwin (Fisheries & Wildlife) - Advisor: Michael Banks
Karen Fischer (Fisheries & Wildlife) - Advisor: David Sampson
Mattias Johansson (Fisheries & Wildlife) - Advisor: Michael Banks
Margot Hessing-Lewis (Zoology) - Advisor: Sally Hacker
Michael Liu (Fisheries & Wildlife) - Advisors: Selina Heppell / John Chapman
Sean Matson (Animal Science) - Advisor: Mark Camara
Mark Nielsen (COAS) - Advisor: Clare Reimers
Todd Sandell (Microbiology - CIMRS) - Advisor: Jerri Lee Bartholomew

Planning for the return of SeaFest in 2007

Many people have been wondering why they haven't seen a date advertised for this year's SeaFest. That's because the event is officially on "hiatus" for 2006. In light of the significant time and energy demands on the core group of HMSC personnel involved in planning and coordination, a decision was made after the 2005 event to take a year off while considering ways for SeaFest to be sustained on an annual basis.

A conversation with community partners including the Oregon Coast Aquarium and the Port of Newport has been initiated to explore a greater level of shared ownership of the event, with recognition of the potential for SeaFest to grow into an even larger attraction for both the local community and visitors to the coast.

We welcome your input on planning for the return of SeaFest in 2007. Please email your suggestions to ken.hall@oregonstate.edu