

Currents

December, 2008

Alumni Newsletter of the Oregon Institute of Marine Biology

<http://www.uoregon.edu/~oimb/>

New Microscopes and Microscopists at OIMB

Dr. **Svetlana Maslakova**, the newest member of the OIMB faculty, began her appointment during spring term. Svetlana (Sveta) Andreevna Maslakova was born in Moscow, Russia. She became interested in Embryology and Invertebrate Zoology in high school and won a second prize at the National Biological Olympiad at the Moscow State University in 1993. She graduated from MSU with highest honors, the "golden medal" in 1999 with an honor's thesis on ribbon worms (nemerteans) from the Russian arctic and a diploma thesis on systematics of pelagic nemerteans. She continued her nemertean studies with Dr. **Jon Norenburg** at the Smithsonian Institution's National Museum of Natural History, receiving her Ph.D. from George Washington University in 2005. While pursuing her Ph.D. in systematics, she traveled the world collecting and painting nemerteans and published several widely cited papers on systematics and development. She worked for a time as a research assistant for Dr. **Mikhail Matz** at the University of Florida's Whitney Laboratory studying GFP-like proteins in corals, then spent two years as a postdoc at the Friday Harbor Labs, where she studied morphological and molecular aspects of development and co-instructed the FHL Comparative Embryology course with her husband, Dr. George von Dassow. Sveta is now setting up her new lab at OIMB, with a focus on invertebrate diversity, morphology, systematics and evolution. She is currently teaching Marine Molecular Biology and will soon take over the Comparative Embryology course that has been taught by Craig Young for the past 7 years.



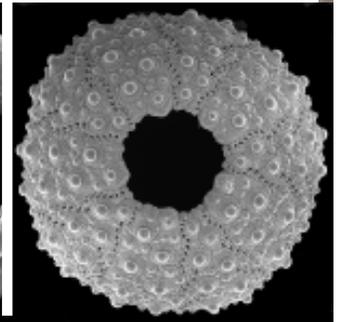
OIMB is also proud to claim Dr. **George Von Dassow** as a new member of our faculty. George, who carries the titles of Visiting Assistant Professor and Faculty Fellow, is married to Svetlana. A Seattle native, he was literally born, raised, and educated at the University of Washington. His Ph.D. dissertation in the zoology department was a pioneering study on the computational modeling of gene networks in development. After finishing his degree, George moved to the UW's Friday Harbor Labs to work on the



dynamics of the cytoskeleton during early development in marine invertebrates. His research there for the last eight years, first as a post-doc and then as a co-founder of the NSF-funded Center for Cell Dynamics, focused on the mechanism of cell division in sea urchin embryos. He and his colleagues there made several breakthrough discoveries on how a cell decides where to pinch itself in two. George is a world-

class microscopist and has produced some of the world's best visualizations of organization and dynamic behavior of the cytoskeleton in live cells. While at the Friday Harbor Labs he co-taught the Comparative Embryology course seven times (twice with his wife) and also taught two apprenticeship courses on computational cell biology. The laser confocal micrograph of a juvenile polychaete at the top of this page (note U.O. colors) is an example of George's impressive capabilities in microscopy.

One cold and snowy day last January, OIMB staff unloaded a brand new variable pressure scanning electron microscope funded in part by the Ocean Fund of Royal Caribbean Cruise Lines. It replaced an obsolete



analog Hitachi that was donated to a private high school in Portland where it will be used in science classrooms. The new Tescan microscope from the Czech Republic is fully digital and can image uncoated specimens in their natural state under low vacuum conditions. During winter term, graduate students enrolled in a seminar course in advanced microscopy where



they learned about the theory of light and electron microscopy and practiced on their own specimens (above). Later in the year, we purchased a new Olympus laser confocal microscope capable of visualizing three-dimensional fluorescent images of stained specimens. This microscope, part of the equipment setup for Svetlana's new laboratory, is being used by many students (e.g. **Laurel Hiebert**, left) and faculty for anatomical and developmental studies.

Large Squids to be featured in Charleston Marine Life Center

In recent years, Humboldt squids, normally found in deep water off South America and Mexico, have been seen increasingly often in Oregon waters. This 4-foot long specimen washed up recently in Bandon and was prepared for display by **Bob Franc**, who is donating the specimen to the new marine life center. A much larger (8 foot) squid, *Moroteuthis* sp., captured by local fishermen will also be included in the display.



High-Pressure Learning on the Deep-sea Floor

During May, all graduate students at OIMB participated in an oceanographic cruise and deep-sea biology course on a research ship in the Northern Bahamas. Led by co-P.I.'s **Craig Young, Richard Emlet** and **Michelle Wood** from U.O. and **Will Jaeckle** from Illinois Wesleyan University, the ship sailed from Florida to the Tongue of the Ocean for 12 days of research on the feeding biology and development of deep-sea larvae and the vertical distribution of cyanobacteria. Students participated in research and completed individual projects with deep-sea organisms as part of a 5-credit course taught by **Craig Young, Paul Tyler** (National Oceanography Center, U.K.) and 2 guest lecturers. Many of the lectures were delivered at



night on the deck of the drifting ship. All students made submersible dives and learned to use oceanographic sampling gear, collecting water and plankton samples from depths as great as 4000 m. The cruise was funded by the National Science Foundation and student travel funds were provided by Oregon Sea Grant. The deep-sea course also provided vicarious on-line adventures for elementary school students back in Oregon. Most of the graduate students on the cruise teach elementary school science through the NSF-funded GK-12 program. While at sea, these teacher-students maintained contact with their pupils through daily blogs uplinked from the ship by satellite. Daily cruise logs and a deep-sea portrait gallery may still be viewed on the "OIMB Kids" web site, <http://www.oimbkids.com/site/>. Young and Tyler have now offered the deep-sea biology course twice at OIMB (7 times overall, including once in Iceland) with the previous OIMB class being taught in 2003 at methane seeps in the Gulf of Mexico. Of the 15 students participating in the 2003 course, 8 have now authored or co-authored publications that began as course projects.

On the Whereabouts of Postdocs

Jonathan Geller, former postdoc of former acting director **Jim Carlton**, is a professor at the Moss Landing Marine Laboratory in California. **Dustin Marshall**, former postdoc in the Emllet lab, is now on the faculty at the University of Queensland, Australia. **Sandra Brooke**, former postdoc from the Young lab, is the director of coral conservation for Marine Conservation International in Bellevue, Washington.

Moving on...

Four graduate students successfully completed their advanced degrees during 2008:



Shawn Arellano (Ph.D., Young Lab) studied mechanisms controlling the distribution of deep-sea mussels at methane seeps in the Gulf of Mexico. Additionally, she developed methods for spawning bathymodiolin mussels and reared their embryos and larvae in the laboratory for the first time. In January, Shawn will begin a postdoctoral fellowship in the laboratory of Professor Pei-Yuan Qian at the Hong Kong University of Science and Technology.

Tracey Smart (Ph.D., Young and Emllet Labs) completed her dissertation on the biology of a common mudflat polychaete, *Owenia collaris*. Her work included a complete description of development in mitraria larvae, comparative studies of larval feeding efficiency, experiments on the control of reproductive timing, and field work on the factors influencing estuarine distribution. She has accepted a postdoctoral fellowship with the National Marine Fisheries Service in Seattle.



Sara Matthews (M.S., Emllet Lab) investigated the behavior of caprellid amphipods, which are common crustaceans living on local docks. She studied maternal care of juveniles, aggressive interactions among males in the presence and absence of females, and the potential role of the so-called poison tooth. Sarah plans to return to her native Ohio to seek employment.

Annie Pollard (M.S., Shanks and Hodder labs) described the near extirpation of the Saddle Rock colony of Leach's storm petrels by raccoons and river otters. One chapter investigated the applicability of call playback as a monitoring technique for this burrow-nesting seabird. Annie (right) often faced extreme challenges in reaching her study sites on an offshore island. She is now extracting and re-articulating the skeleton of a female killer whale (Orca) that beached itself in 2004. This skeleton will be on display in the new Charleston Marine Life Center. In May, Annie will begin working on seabirds in Alaska.



New COSEE Coordinator



OIMB welcomes **Coral Gehrke**, the new coordinator for the Pacific Partnerships COSEE program. Coral has a masters degree in Marine Resources Management from Oregon State University. She coordinates this NSF "Center for Ocean Science Education Excellence" (COSEE) program under the direction of P.I. Jan Hodder and collaborators at Oregon State U., Western Washington U., Humboldt State U., U. of Hawaii, and community colleges in several states.

In Memoriam

Betty Rogers, long-time cook in the OIMB dining hall passed away in October of this year. A memorial service was held in the OIMB Boat House Auditorium. Expressions of condolence and love have been received from a number of alumni who remember Betty. **Larry Dangott** (Ph.D. 1981) writes, "Betty Rogers certainly was a big part of the OIMB experience for me. In fact, I was just telling someone of the humongous and delicious cinnamon rolls she used to make. What a sweetheart she was. Her heart was as big as they come. She always had an open house, an open hearth and open arms for anyone and everyone. For all her years at OIMB, it must have been like she had a few hundred kids. "



Charleston Marine Life Center: Progress Report

The new marine life (visitors) center, is now in the engineering and design phase, with construction slated to begin in January. Generous contributions have been received from a number of alumni and from various organizations, including a \$90,000 grant from the Coquille Tribal Community Fund, a \$50,000 grant from the Royal Caribbean Ocean Fund, and a \$10,000 grant from the Pacific Power Foundation. The aquarium system for is being designed by the Aquarium Science Program at Oregon Coast Community College. We still need about \$25,000 for the construction phase. Donations of any size encouraged!

Elementary Education

OIMB's GK12 program is running strong in its 5th year. This NSF program currently supports 9 OIMB graduate students each year and brings inquiry based marine education to K-6th graders in communities from Bandon to Reedsport. More than 3000 elementary school students are engaged in classroom and field studies of coastal habitats. Students from Port Orford and Bandon are involved in studies of kelp growth (see photo) and Coos Bay students are testing hypotheses about controls of the boundaries between freshwater and marine plants. With the end of NSF funding only 1.5 years away, **Jan Hodder, Alan Shanks and Trish Mace** are working with the school districts on ways to sustain marine studies for students in coastal communities.



Mysterious Void

In July, a small hole opened up in the parking lot near the OIMB maintenance shop. Upon investigation, we found that the sinkhole was caused by a man-made structure of massive timbers held together with old-fashioned iron spikes. With help from University of Oregon archaeologists and several residents of Charleston, we now believe that the structure was part of a light rail system that was used to transport rock to the South Jetty construction project in the 1920's.

We thank these individuals and organizations for their kind and generous donations over the past year.

Kenneth Mantel
John Jenkinson Jr.
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Melva Gowan Hiatt '59 and Leslie Hiatt '66
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Lynne and Kenneth Hunter '68
Paul Lewandoski
Victoria and Peter Hollern
Teresa Gorden Matteson '78 and Curtis Matteson '78
Maribeth Stansifer '81
Kathleen Hemmer Anderson '81 and David Anderson '81

Help Support OIMB Students, Projects, Programs and the new Marine Life Center!

Gifts of any size are appreciated and needed. If you would be interested in discussing tax implications or other aspects of charitable giving, please call the director at 541-888-2581 ext. 299. He will put you in touch with a professional who can advise you.

To donate to one of the following funds, please provide the following information with your check made out to OIMB.

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*It's hard to keep track of OIMB folks these days, as they leave Charleston to disseminate their work to the rest of the world! This year, OIMB was represented by twelve graduate students and two faculty members (**Emlet, Shanks**) at the annual meeting of the Western Society of Naturalists in Vancouver, B.C. **Richard Emlet** and I (**Craig Young**) attended the Larval Biology Meetings in Lisbon, Portugal. **Nora Terwilliger** was an invited speaker at international physiology meetings in Kenya, Italy, Texas and Denmark. **Steve Rumrill** was part of the Oregon delegation to the North Pacific PICES (Pacific International Council for the Exploration of the Seas) meeting in Damian, China and **Svetlana Maslakova** and **George von Dassow** attended, by invitation, the First International Conference on Invertebrate Morphology in Copenhagen, Denmark. **Jan Hodder** attended the ASLO meeting in Orlando, the American Institute of Biological Sciences Undergraduate Summit in Washington D.C., and, in her capacity as president, the Organization of Biological Field Stations meeting in New York. She also visited a marine research station in Bonaire to investigate study abroad programs for our marine biology majors. Jan, **Coral Gehrke** and I participated in the Northwest Biology Teachers annual meeting, where I bragged about OIMB in my after-dinner talk. **Barb Butler**, president of the IAMSILIC organization of marine librarians, presided over the annual meeting in Fiji. Finally, I participated in a Census of Marine Life tubeworm workshop in Honolulu, UNOLS Deep Submergence Science Committee meetings in Woods Hole and San Francisco, and a meeting on ROV technology in Seattle. Several faculty also gave invited seminars at other institutions. These travels highlight our efforts to extend OIMB's influence beyond Charleston and Eugene, but we are also proud of our local contributions. Our marine education programs now impact students from kindergarden through graduate school and beyond. We are gratified that an ever-increasing number of visitors use our facilities for research and for meaningful public events. We work hard to serve both our local and extended communities and appreciate your support as we do so. Thanks, alumni and friends, for contributing your time and resources to the OIMB tradition and legacy.*

Craig Young, OIMB Director

Visiting Scientist Residence

The new Visiting Science Residence Building is now completed. Constructed largely by OIMB staff and funded by the National Science Foundation, the four-unit fully furnished apartment building is now available for visiting individuals and families.



Irish Ecology

Dr. **Cynthia Trowbridge** (Oregon State University), a regular OIMB visiting faculty member, has been working at Lough Hyne, Ireland for several years. For the past two summers, she has taken OIMB graduate students with her to serve as field assistants. Four students, **Katie Bennett**, **Maya Wolf**, **Stephanie Schroeder** and **Alix LaFerriere** have made the trip to date. Lough Hyne is a classic site for marine ecology, beginning with Prof Louis Renouf in 1923 and including the famous studies of Kitching and Ebling in the 1960's. Dr. Trowbridge and the OIMB students are assisting Drs. Colin Little and Penny Stirling continue a long-term data series on the species richness and diversity of Lough Hyne. The work includes snorkel and intertidal surveys in "The Rapids" (below left), a spectacular connection between the ocean and the Lough. This summer, Maya and Katie (below right) also explored much of Ireland's southwest coast.



OIMB Group Photos

Group photographs have traditionally been taken each term at OIMB. All 106 such photographs from our archives have now been digitized and are available online in the Scholar's Bank archive: <http://tinyurl.com/563ax3>. Please let us know if you can identify any of the unknown faces in Summer '05, '06 or '07. This project was completed by librarian Barb Butler with considerable help from **Jenna Kulluson** and **Gwyn Shanks**.

Honors and Awards

Ph.D. student **Maya Wolf** received a best student paper award at the American Society of Parasitologists Meeting in Arlington, Texas. Her presentation was on her dissertation topic, which deals with parasitic copepods living in nudibranchs. Professor **Alan Shanks** was honored by the journal *Limnology and Oceanography* as an outstanding reviewer.

Breakthroughs in the Culture of Deep-Sea Larvae

Students working in the Emlet and Young labs have successfully reared the larvae of several species of deep-sea animals this year. Following the Bahamas cruise in May, **Tracey Smart** and **Katie Bennett** maintained the larvae of two species of deep-sea cidaroid sea urchins (below) for more than 6 months, eventually observing metamorphosis and rearing the early juvenile stages. These are among the first larvae of any deep-sea animals reared through metamorphosis. Tracey and **Shawn Arellano** worked with colleagues in California (**Bob Vrijenhoek** and **Greg Rouse** labs) to rear the larvae of *Osedax*, whale-bone eating, gutless deep-sea worms with dwarf males, for the first time ever. Finally, Shawn successfully cultured the embryos and larvae of a deep-sea cold-seep mussel.

