



# The College of Ocean and Fishery Sciences News

UNIVERSITY OF WASHINGTON

AUTUMN 2001

## REACHING OUT TO STUDENTS OF ALL AGES

Four high school students lean together to discuss the answer to the moderator's question. After a moment, the captain straightens and declares, "The answer is zooxanthella"! He's correct, and as the clock ticks, his team quickly places their fingers on the buzzers for the next question.

These students are among the many K-12 students who come to the College of Ocean and Fishery Sciences every year to participate in educational outreach programs that expose students of all ages to the excitement of science. These particular students are part of the Washington State Ocean Sciences Bowl (WSOSB), an academic competition held each spring for high school students across the state. The knowledge-bowl style competition tests students' knowledge of the scientific and technical disciplines used in studying the oceans, as well as the contributions of the oceans to national and international economics, history and culture. "These students work very hard to be prepared for this competition. I'm amazed at their knowledge and I know many of the spectators are too!" says Angie Thomson-Bulldis, regional coordinator for the WSOSB. Each

year, the winning team receives an all-expense paid trip to the national competition. In its fifth year, the WSOSB has been a great success and several of its alumni have returned to the University of Washington to pursue undergraduate studies in the ocean and aquatic sciences.

At the College, several other outreach programs bring students of all ages to the UW campus every year. Each fall, thousands of elementary school students come to the University as part of the Salmon in the Classroom program. At the UW Hatchery they follow the life stages of a salmon

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Students in the 2001 Ocean Sciences Bowl confer before giving their answer. Courtesy of K. Schmitt.

## 2001 COLLEGE GRADUATION CEREMONY

On June 9, 2001 the College of Ocean and Fishery Sciences held its Graduation Celebration for students throughout the college. As always, the event was a wonderful opportunity for students and



Enjoying the buffet at this year's Graduation Celebration. Courtesy of A. Whitney.

their families to gather together and celebrate their many achievements. As the graduation speaker, Dr. D. James Baker, former head of the National Oceanic and

Atmospheric Administration, encouraged students not to forget their scientific roots as they transition to life beyond the University.

Twenty-seven students received B.S. degrees, 53 were awarded M.S. degrees, and 17 doctoral degrees were conferred. Faculty awards were also announced, with E. Virginia Armbrust, Professor in the School of Oceanography, receiving the award for Distinguished Graduate Teaching. Lin Murdock, Student Services Coordinator of the School of Aquatic and Fishery Sciences, received the Distinguished Service award and Richard Keil, Associate Professor in the School of Oceanography, received the Distinguished Research award. Congratulations to our graduating students, faculty and staff for their wonderful accomplishments!

**School of Aquatic and Fishery Sciences**  
Director David Armstrong

**School of Oceanography**  
Director Bruce Frost

**School of Marine Affairs**  
Director Marc Hershman

**Applied Physics Laboratory**  
Director Robert Spindel

**Washington Sea Grant**  
Office of Marine Environmental and Resource Programs (OMERP)  
Director Louie Echols

## From the Dean...

As we begin the fall semester here at the University, the mood is more somber than in years past. The tragic events of this fall are in our hearts as we move forward in the new school year.

Here at the College, we recognize that our educational and scientific endeavours are still important in our changing times. We will continue acting in our role as leaders in the scientific community, now and in the future.

Arthur R. M. Nowell  
Dean



# GLIDING OUR WAY TO NEW DISCOVERIES

Long range autonomous underwater vehicles promise to play a vital role in understanding the three-dimensional processes in the world's oceans. Conventional propeller-driven autonomous underwater vehicles operate for only hours before they expend their batteries and are retrieved. School of Oceanography professor Charles Eriksen and his research group, along with a team of engineers led by Jim Osse and Russ Light of the Applied Physics Laboratory, have developed a new vehicle called the Seaglider, designed to monitor the ocean for months at a time. By traveling at only about half a knot, Seagliders use energy about as fast as a penlight flashlight, making it possible for them to travel as far as 6000 km, traversing an entire ocean on one set of batteries.

The key to long duration missions is efficiency. Seagliders use a hydrodynamically slippery shape coupled with a buoyancy control system,



Three Seagliders, seen from above, on the deck of a UW research vessel. Courtesy of J. Osse.

low power electronics, and a pressure hull that compresses nearly identically to seawater. To move, Seagliders adjust their volume to sink or rise and use wings to force them forward, controlling glide slope and steering by moving the main battery pack fore and aft or side to side.

Seagliders measure temperature, salinity, chlorophyll fluorescence, dissolved oxygen and optical backscattering off particles as they glide from the sea surface to as deep as 1 km and back. At the surface, Seagliders phone home using satellite telemetry to report data and receive updated operating instructions.

"Gliders promise to revolutionize how oceanographic data is collected simply by virtue of their economy. The annual cost of glider operation is about the same as the daily cost of operating an oceanographic vessel, so we think glider technology will allow much more extensive and intensive observations than we have ever been able to afford," says Eriksen.

## A LONG AWAITED VISIT FROM ALUMNI

The College of Ocean and Fishery Sciences has a legacy of alumni from all over the world through its programs in aquatic and fishery sciences, oceanography and marine affairs. On August 6, 2001 the College received a visit from Mr. Tae E. Wang, a graduate of the School of Fisheries class of 1952. Mr. Wang, very active in leadership of the UW Alumni Association of Korea, came along with about 20 other graduates as part of the first "Homecoming" event between the UW and the Korean Alumni Association. Among the many Homecoming activities, visits to home departments were arranged.

Professor David Fluharty was host to Mr. Wang on behalf of the College. During his tour of the Fisheries Center, Mr. Wang was amazed at the transformation of the south campus. When he came in 1949, Fisheries was in Quonset huts and cabins. He actually attended the dedication of the Fisheries Center building, now 50 years old.

As he toured the new buildings he was quite impressed at the way marine sciences have grown at the UW and marveled at the new facilities. The

high point of his visit came when digging around in the dark recesses of the Marine Sciences building; there he located two original pieces of equipment on which he learned how to develop special diets for fish.

Mr. Wang is now the Korea Representative of the Hyopsung Shipping Corporation to the Port of Los Angeles and has moved away from his work in the field of fisheries. He does, however, still transport fish as part of his business.

Dr. Chang Ik Zhang, a more recent graduate of the School of Aquatic and Fishery Sciences, was also to attend the Alumni celebration but was called to Paris for meetings. Dr. Zhang is spending his sabbatical in Seattle this year.



Tae E. Wang and Linda Maxson at Korean Homecoming Event. Courtesy of J. Hyun Ryu.

## COLLEGE OUTREACH CONTINUED...

from egg incubation to smolt rearing, and even have the chance to see hatchery personnel spawn returning adult salmon. Schools participating in the program have the opportunity to take salmon eggs back to rear in their classrooms until the fry are ready for release to a designated stream. This program, a statewide outreach program that partners the University of Washington, the School of Aquatic and Fishery Sciences and Seattle Public Utilities, has provided more than 100 tours to 57 public and private schools in a given year. The hatchery tours are coupled with suggested classroom activities to help students understand the importance of water quality and healthy habitat for Pacific salmon.

The College also has several programs designed to encourage under-represented high school students to come to the university and pursue studies in sciences. Since the approval of Initiative 200 in December 1998, minority student enrollment at the University of Washington has declined. The Sciences and Tribes Education Partnerships (STEP) program immerses tribal teens in environmental sciences research with the goal of interesting them in a college education. "STEP has exposed students to something new. It has really made a difference for them to see what choices are out there," says Ed Johnstone, head of the Quinault National Fisheries Committee, tribal councilman, and school board member. In the STEP program, students participate in a month-long summer institute that includes a week at the Pack Forest (part of the College of Forest Resources), a week at Big Beef Creek Field Station and two weeks at the University of Washington campus.

Other opportunities exist for minority students at the College, particularly through the Alliance for Learning and Vision for Underrepresented Americans or ALVA program. Run in partnership with the College of Engineering, entering African American, Hispanic and Native American freshmen students participate in a paid, high technology, 10-week summer internship experience to encourage their interest in pursuing studies in engineering, physical science or mathematics. This year, four of the ALVA students worked at the Applied Physics Laboratory on diverse projects in ocean sciences and technology.

Beyond the physical confines of the university, a unique outreach program in the School of Oceanography takes middle and high school science teachers on research expeditions in the Pacific Ocean. The Research and Education: Volcanoes, Exploration and Life project (named



**Elementary school students visit the hatchery raceway as part of the Salmon in the Classroom program. Courtesy of School of Aquatic and Fishery Sciences.**

REVEL) immerses teachers in the seagoing experience, enlisting them as part of the scientific crew in the study of underwater volcanoes. Since 1996, 47 teachers have embarked on REVEL voyages, all with the aim of getting children interested in science. Participating teachers not only receive materials and experience to bring back to their classrooms, but they also build on their own excitement for sciences and learning. "The participation of teachers in active research through the REVEL Project has a deep impact in the classrooms," says Veronique Robigou, REVEL facilitator with the School of Oceanography. "For the students, these teachers are science practitioners, not just instructors. For the teachers, the seagoing experience and the relationships they build with colleagues and scientists ignite them for life."



**Cindy Maldonado, REVELer 2000, prepares the sampling bottles for the next CTD (Conductivity, Temperature and Depth) run. Cindy is a high school science teacher in Longview, Washington. Courtesy of V. Robigou.**

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## CALENDAR

### Upcoming events at the College and UW!

School of Aquatic and Fishery Sciences  
Graduate Student Symposium  
*November 6 and 8, 2001*

School of Oceanography  
Oceans to Stars Lecture Series  
*December 2001—Dr. Peter Rhines*  
*January 2002—Dr. John Delaney*  
*for more information, see [www.cofs.washington.edu](http://www.cofs.washington.edu)*

Burke Museum Endurance Exhibit  
*through December 31, 2001*

2nd Annual Bevan Lecture Series on  
Sustainable Fisheries  
*Thursdays during winter quarter 2002*

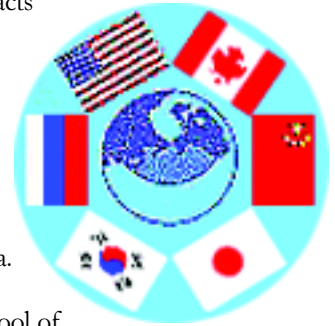
Washington State Ocean Sciences Bowl  
*February 23, 2002*

Send submissions to [cofsnews@u.washington.edu](mailto:cofsnews@u.washington.edu)

## PICES AT UW

No, we're not talking about the astrological sign. Here at the School of Marine Affairs, PICES means much more than a constellation. Established in 1992, the North Pacific Marine Science Organization, or PICES, was created to promote and coordinate marine research in the northern North Pacific and adjacent seas. Since its inception, PICES programs have included research on ocean environment, global weather and climate change, living resources and their ecosystems, and the impacts of human activities. At present, its members are Canada, People's Republic of China, Japan, Republic of Korea, Russian Federation, and the United States of America.

In celebration of its ten year anniversary, School of Marine Affairs Professor Emeritus Dr. Warren Wooster, the principal founder and the first chairman of PICES, gave the keynote lecture at the opening session the PICES conference, "PICES—The first decade and beyond." For more information on the PICES program, please visit their website at [www.pices.int](http://www.pices.int).



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