Humboldt State University

College of Natural Resources & Sciences

FALL 2009

National Geographic Spotlights Tall Trees Professor

Professor Stephen Sillett has accomplished much in his career. He's pioneered techniques that have made him a tree-climbing legend; he has been named the first professor to hold HSU's Kenneth L. Fisher Chair in Redwood Forest Ecology and his work has even inspired Richard Preston's best-selling book, "The Wild Trees: A Story of Passion and Daring."

Now Sillett's research into California's redwoods is highlighted in the October National Geographic cover story.

For six months Sillett worked with National Geographic photographer Nick Nichols and writer Michael Fay, capturing images, video and stories that Sillett calls "mind-blowing." The resulting work is featured in both the magazine and an accompanying hour-long documentary, "EXPLORER: Redwood Giants", which aired on National Geographic Channel in late September.

For Sillett, the magazine story marks the end of his year-long sabbatical and a return to the classroom. In the field, he says he's done cataloging the world's tallest trees—they've all been found. Instead, Sillett and his team are turning their focus to affects of climate change on these highly adapted trees.

The research involves identifying several research plots in all the major parks and reserves for coast redwoods and giant sequoias, and determining how redwoods might look after rising temperatures and dwindling water resources take their toll.

For scientists, the data Sillett hopes to collect is useful in not only understanding how these ancient giants have survived for millennia, but also how society might deal with a changing climate.

You can learn more about Sillett and his work at **http://www.humboldt.edu/redwoods**.

By Jared Petroske

HSU Offers Resource Scholarships

The Department of Forestry and Wildland Resources received $144,000 from the U.S. Department of Agriculture to fund $4,500 annual scholarships for new multicultural students starting in Fall 2009.

The initiative stems from HSU's link with the U.S. Forest Service Region Five's Northern California Consortium, an environmental education, outreach and recruitment program sponsored by the Forest Service to establish networks in Hispanic and other diverse communities. It is aimed at educating under-served rural locales about natural resources. Federal employment projections for diverse students are good in the fields of soils, range and forestry.

The new scholarships will finance up to 12 transfer students majoring in forestry, Rangeland Resources Science or Wildland Soils. Scholarships could assist six freshmen to 12 transfers or any combination in between, totaling funding for 24 student years at HSU.

In Memory

Former Associate Dean for marine sciences at Humboldt State, Scott Quackenbush died in Alabama in October 2008 following a brief illness.

HSU in Quest for Renewable Energy

Humboldt State University's Schatz Energy Research Center will partner with the Redwood Coast Energy Authority and Pacific Gas & Electric Company in a $200,000 project financed by the California Energy Commission to conduct engineering and economic studies in support of homegrown renewable energy in Humboldt County.

The objective is a strategic plan to enable the county to develop its renewable energy resources to equal 75 percent to 100 percent of its electricity demand, as well as a considerable fraction of its heating and transportation needs.

Scheduled to start July 1 and wrap up July 31, 2010, the initiative will span the full range of renewable energy resources as well as energy efficiency and demand management alternatives and storage and conversion technologies.

"This is a wonderful opportunity for Humboldt County to lead the way to the renewable energy future our world needs," said Peter Lehman, Director of HSU's Schatz Center. "We're very pleased to be working with the Redwood Coast Energy Authority, PG&E;and the people of Humboldt County to start down this road."

HSU's Indian Natural Resource, Science and Engineering Program assists American Indian, Alaskan Native, Native Hawaiian students who are interested and dedicated to the ideals of serving Indigenous People through the sciences.

HSU Welcomes New Faculty

Dr. Mahesh Rao joined theForestry and Wildland Resources Department as an associate professor. He comes to HSU from Oklahoma State University. His specialty areas are geographic information systems, remote sensing, natural resource management and conservation, and agriculture.

Math professor Dr. Bradley Ballinger came to HSU as an associate professor with a specialty in math education, including a k-12 teaching credential. He earned his Ph.D. at UC Davis.

Fulbright Scholar

Richard Engel, Senior Research Engineer at Humboldt State University's Schatz Energy Research Center and an HSU alumnus ('88), has been awarded a Fulbright Scholar grant to lecture and develop curriculum at Universidad Don Bosco in El Salvador during the 2009-2010 academic year.

Engel will help the university create a degree program in renewable energy and energy efficiency. Located in San Salvador, El Salvador's capital, Universidad Don Bosco averages between 3,000 and 4,000 students.

Renewable energy will be incorporated in the university's environmental science undergraduate program and in the development of a master's program in renewable energy technology. Engel, scheduled to start work in El Salvador in January 2010, will prepare and teach a semester-long course (approximately 100 lecture and laboratory hours) on renewable energy and energy efficiency for students majoring in engineering or in environmental science.

Botany Program Thrives at HSU

Humboldt State's botany program is home to an expansive 11,500 square foot collection greenhouse containing approximately 1,800 plant specimens, a 2,500 square foot research greenhouse and the largest vascular plant herbarium in the California State University system with nearly 100,000 specimens. It's these unique teaching and research facilities, coupled with dedicated professors who are experts in their fields, which have allowed Humboldt State to become the largest undergraduate botany program in the United States. With 91 students choosing the major, HSU's program is home to more future botanists than any other campus including the University of California, Berkeley, the country's next largest program, with 60 plus students.

"We have a very broad selection of botanical courses from which a student may choose from; our breadth is exceptional," says Professor Casey Lu, chair of the Department of Biological Sciences, which houses the botany major.

"We also have a really strong and in-depth lab component in the majority of our courses and that's something we've tried to retain."

Professor Frank Shaughnessy explains that the entry-level botany courses help students build a strong science foundation, gaining an in-depth understanding of the various organisms they will study during their academic careers. Hands-on learning, both in the lab and in the field, is a major component of the program and yet another reason it has been so successful.

"With our greenhouse, forest walks, trips to coastal intertidal areas, alpine zones—I'd say we have more field time than other botany programs simply because we can," Shaughnessy says. "We have a spectacular natural setting and it would be ridiculous to not take advantage of it and that's one of the things that makes us unique.

HSU Natural Resources and Sciences Dean Howard will retire in December. He will work part-time as the HSU Marine Lab Director.

Amoussou Joins National Science Foundation

Professor of Computer Science Guy-Alain Amoussou has taken a position with the National Science Foundation, Arlington, Va., to liaise with faculty from HSU and College of the Redwoods about NSF funding prospects for undergraduate education and research.

Amoussou is a new program director with NSF's Federal Cyber Service: Scholarship for Service Program, within the Division of Undergraduate Education (DUE), which fosters excellence in undergraduate science, technology, engineering and mathematics (STEM) education for all students.

Amoussou's division supports curriculum development, workforce and teacher preparation and undergraduate research, fostering links with DUE's existing programs. They are intended to strengthen STEM education at two- and four-year colleges and universities with better curricula, instruction, laboratories, infrastructure, assessment, student and faculty diversity and collaborations.

Amoussou is assigned to three programs, Advanced Technological Education (ATE), Course, Curriculum, and Laboratory Improvement (CCLI) and Federal Cyber Service: Scholarship for Service (SFS).

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HSU's Wildlife Conclave took 2nd place at the 2009 National Quiz Bowl in Monterey, CA, in September.

After a tough competition against 14 teams, Texas A&M beat the six-time first place champions from HSU.

HSU attracts $892K for Biology Mentoring

HSU will enroll its first group of under represented students next summer under a five-year, $892,000 National Science Foundation grant to mentor undergraduate research in the biological sciences.

Of the nearly $900,000 total, $318,000 will be awarded the first two years. Preference will be given to students entering their sophomore or junior years, particularly Native American and Latino/Latina students.

The official name of the HSU initiative is the Undergraduate Research Mentoring in the Biological Sciences (URM) Program, aimed at increasing the number of students from underrepresented groups who graduate in the biologically-related sciences. It is also designed to expedite the transition into graduate studies.

The URM Program of the National Science Foundation (NSF), which funds HSU's counterpart, was established to broaden the participation of historically underrepresented groups in science and engineering. The NSF defines the underrepresented in those disciplines as African Americans, Alaska Natives, Native Americans, Hispanic Americans, Native Pacific Islanders and persons with disabilities.

Biological Sciences Professor Bruce O'Gara said, "One of the great things about this program is that the students will be involved in an intense, long-term mentoring and research relationship with an individual HSU faculty member. This experience will give them a competitive advantage when they apply to graduate school. Another thing I'm very happy about is that we can pay the students a stipend that will put a substantial dent in the financial burden of paying for a college education."

This program provides $24,000 scholarships to help undergraduates finish their degrees and conduct collaborative research with a faculty mentor. The research and training opportunities in this program will provide a springboard for students to launch their careers as biologists.

HSU Foresters Make Impact at Forest Engineers Conference

Students and faculty from the Forestry and Wildland Resources Department at Humboldt State traveled to the 32nd annual meeting of the Council on Forest Engineering (COFE), which took place in June in Lake Tahoe.

COFE is an international organization based in Corvallis, Ore. The organization aims to foster the development of forest engineering in industry, government, and university teaching to promote best management practices. Five oral presentations with proceeding papers were presented by HSU graduate students Hunter Harrill and Brian Vitorelo, research associate Dr. Fei Pan and faculty member Dr. Han-Sup Han in forest operations. Subjects ranged from small log sort yards to biomass harvesting to mastication and fuel reduction, which unveiled their recent research efforts.

The meeting also included a special dinner with awards ceremony in which Hunter Harrill was awarded the 2009 Student Communication Award, for presenting the best student written paper titled *Application of Hook-lift Trucks in Centralized Slash Grinding Operations*.

The Operator Award recognizes a forest professional who has made significant contributions to technological innovations in forest operations. The recipient of the award is generally nominated and selected from the region where the COFE meeting is held. This year it was given to Mike Anderson. Anderson graduated with a forestry degree in 1976 from Humboldt State University, and has served as President of Associated California Loggers and California Forestry Association. Currently Anderson is the President of Mendocino County Farm Bureau and has a seat on their state wide Forestry Committee.

Hunter Harrill accepts his award.