Oregon State University: Solving Global Problems

OSU is Oregon’s leading research university, recognized nationally in the top tier of U.S. institutions for the depth and breadth of its research and graduate programs. Its contributions on issues such as alternative energy development, disease prevention and management, sustainable food systems, climate change and more both push the boundaries of science and inform the work of researchers at other world-leading institutions.

The BRR curriculum works well for students interested in simultaneously obtaining a BA in International Studies and/or completing University Honors College requirements.

Congratulations to the 2009 Graduates!

Nichole Sullivan - Honors BS in BRR, Sustainable Ecosystems and Water Resources Options with Oceanography Minor. Thesis: Two advances in practical alternative energy: thermostolerant hydrogenase concentration and methane hydrate grain size proxies. Mentors: Dr. Roger Ely, Biol & Ecol Engineering, Dr. Anne Trehu, College of Oceanic & Atmospheric Sciences. Nichole works for OSU Sun Grant helping to establish the Western Algal Biofuel Institute including website development, educational outreach and building networks. She additionally works with her husband Joseph for Alyrica http://alyrica.net/main and their newly established business, Xi Labs, developing new research-related products.

Jeehye Lee - BS in BRR, Water Resources and Toxicology options, and BA in International Studies. Mentors: Dr. Claudia Hase, Biomedical Sciences, Dr. Martin Schuster, Microbiology. Thesis: Laboratory studies on growth conditions of Vibrio parahaemolyticus in Pacific Oysters (Crassostrea gigas) with international considerations to shellfish-associated illnesses in South Korea. Jee works for the USDA Forest Service as a biological sciences technician implementing management practices for invasive species and surveying for rare native plants in beautiful Gold Beach, Oregon. She has been selected as a Gilman Alumni Representative! Her profile can be found under Alumni Representatives on the Gilman site. Scholarship support assisted Jeehye during her studies in S. Korea, and provides awards for U.S. undergraduate students eligible for Federal Pell Grant funding at four-year universities to participate in study abroad programs worldwide.

Michael Sandoval - BS in BRR, Toxicology Option, and BS, Biology. Mentors: Dr. Zhengrong Cui, Dr. Mark Christensen, College of Pharmacy. Thesis: Superior Anti-tumor Activity from a Gemcitabine Prodrug Incorporated into Nanoparticles. “The BRR program made everything possible. Without the possibility of adding this major onto my curriculum, I would have never been able to find a mentor and work in their lab. The BRR program helped ignite a new interest in science and the opportunity to pursue a graduate degree in pharmaceutical sciences.”

Jessica Puccetti - Honors BS in BRR, Animal Reproduction and Development Option. Mentors: Dr. Susan Tornquist, Dr. Christopher Cebara, College of Veterinary Medicine. Thesis: Use of artemisinin to treat Mycoplasma haemolamae infection in llamas. Jessica works at a veterinary clinic while she prepares to apply to Veterinary School for fall 2010.

Margaret Corvi - BS in BRR, Toxicology Option, Chemistry and Toxicology minors. Mentors: Dr. Kim Anderson, Dr. Robert Tanguay, Environmental and Molecular Toxicology. Seminar Title: Integration of Embryonic Zebrafish and Passive Sampling Device Extracts to Explore Toxicity. She is working as a faculty research assistant in the Environmental and Molecular Toxicology Dept. at OSU.

Tammy Winfield - BS in BRR, Sustainable Ecosystems and Pest Biology and Management Options. Mentors: Dr. John Lambrinos, Dr. Gail Langellotto, Horticulture Dept. Thesis: Quantifying the value of native plants for improving pollination and biological control in agroecosystems. She begins graduate school this fall at OSU in entomology.

Please visit the BRR Scholars Archive for electronic theses postings: http://ir.library.oregonstate.edu/jspui/handle/1957/456

BRR: THE RESEARCH MAJOR

BioResource Research (BRR) is a research-based interdisciplinary undergraduate science major http://agsci.oregonstate.edu/brr/. The centerpiece of BRR is a comprehensive mentored research experience. The BRR degree provides students with a challenging science curriculum, focused course work in one of 12 bioresource options, professional development, and a research/mentorship opportunity unmatched in any other OSU undergraduate degree program.

BRR is POWERED by Orange!

The Gilman Scholarship Online Spring and Summer 2010 Application is now open! www.iie.org/gilman.

Jeehye Lee models her new Forest Service fashions.
Upcoming Senior Seminars

**Jay Malmo** (Toxicology Option, Chemistry minor) Seminar Title: *Investigation of Microbial Extracts From Unique Ecosystems*. Mentors: Dr. Jane Ishmael, Dr. Kerry McPhail, College of Pharmacy.

**Lalee Lo** (Food Quality Option, Chemistry minor). Seminar title: *The Intensity of Tumor Necrosis Factor Alpha and Interferon Gamma Expression in Pseudocapillaria tomentosa Infected Zebra Fish*. Mentors: Dr. Jan Marie Spitsbergen, Microbiology, Dr. Susan Tornquist, Biomedical Sciences.

**Dawn Merrill** (Food Quality Option, Chemistry and Food Science minors). Mentors: Dr. Kim Anderson, Environmental and Molecular Toxicology, and Dr. Mike Penner, Food Science and Technology. Seminar title: *Development of a colorimetric field test kit for the determination of pyruvic acid as a measure of pungency in onions.*

**Rebecca Bathke** (Toxicology Option, Chemistry and Toxicology minors). Mentors: Dr. Patrick Chappell, Biomedical Science; Dr. Jadwiga Giebultowicz, Zoology. Seminar Title: *Disruption of Circadian Clock Regulation in the Brain by Perfluorinated Compounds*

Publications


**Caitlin Thireault**, with mentor Jeff Chang and members of his research group: *Recombineering and stable integration of the Pseudomonas syringae pv. syringae 61 hrp/hrc cluster into the genome of the soil bacterium Pseudomonas fluorescens P10-1*. Plant J. 2009 Aug 13.

Presentations

**Margaret Corvi** and Dr. Kim Anderson attended PNW Society of Environmental Toxicology and Chemistry meeting in Port Townsend, Washington to present: *An Examination of Mixture Toxicity of Pesticides Using Embryonic Zebrafish and Passive Sampling Device Extracts.*

**Becky Bathke** and Dr. Pat Chappell attended the Endocrine Society’s 91st Annual Meeting, Washington DC presenting: *Effects of Estrogen on Temporal Gene Expression Patterns of Gonadotropin-Releasing Hormone (GnRH) in Immortalized GT1-7 Cells Using a Secretable Luciferase Reporter*. This work was also presented at Society of Neuroscience, Oregon Chapter meeting in Portland.

Each received a professional development award from the Summers Endowment to assist with travel and expenses to attend.

**Melissa McKenny** will attend the Annual Entomological Society of America meeting in Indianapolis, Indiana in December 2009.

Student Stories

**Touching history!**

**Vananh Nguyen** attended Barack Obama’s inauguration - invited as a nominee for the International Scholar Laureate Program and as a member of the National Society of Collegiate Scholars, she participated in the University residential Inaugural Conference with students from across the country and from around the world.

Awards

**Awards**: Grace Wu Memorial Award—Vananh Nguyen was honored with the Grace Wu Memorial Award. The Grace Wu Award is given to one student every year who has made outstanding contributions to the campus and community while showing unbiased leadership traits exemplified by the late Grace Wu, Class of 1956.

**Wanda Crannell**, BRR advisor, and **Vananh at the All-University Student Recognition Awards Dessert Reception**

Martin Luther King, Jr. 27th annual Peace breakfast - Honored with the Frances Dancy Hooks award for building bridges across cultures and promoting diversity, Vananh was unable to attend as she was in Washington DC attending the presidential inauguration Jan’09.
Laura Magaña

A Letter Changed Her World

By Lee Sherman

When the Gates Foundation letter arrived, Laura Magaña was facing a challenge tougher than any of her advanced-placement classes: managing five lively pre-teens at the 4-H Latino Olympic Summer Camp in Salem.

As a camp counselor, the Crescent Valley High School honor student was supervising middle-school girls. After each hectic day, she looked forward to winding down at evening campfire. One night, an unexpected visitor appeared. It was Laura's mom, a mysterious letter tucked inside her purse. In the fire's golden light, a dazed Laura stood while the assistant camp director read the letter aloud. The 100-plus campers and counselors held their collective breath.

Laura had been chosen as a Gates Millennium Scholar. The award — given to outstanding minority students — would send her to college for up to 10 years, from her bachelor's degree through her Ph.D., all expenses paid. Her strong academics (3.92 GPA) and leadership had been amply rewarded.

Inspired by Example

That moment was thrilling not only for Laura, but also for the Latino youths who witnessed it — living proof that college was within reach. The young campers were eager to hear her story and learn her strategies for landing scholarships. Laura took the stage. "They bombarded me with questions," she says.

On a post-camp survey, several parents mentioned "the girl who received a full-ride scholarship" as highly motivating to their children. That was three years ago. The story has since become legendary in 4-H circles, spurring many kids to apply to summer camp and let their dreams soar.

"The main focus of the summer camps is making kids aware of career options and educational opportunities," says Laura's father, Associate Professor Mario A. Magaña, who brings Latino professionals — engineers, educators, lawyers, researchers — to speak to the campers. "We hear over and over that kids didn't have much interest in higher education before going to camp. But afterwards, they share all their new dreams with us."

Cultural identity is further enhanced by lessons in Mexican history and heroes, taught by Mexican teachers, as well as traditional dancing and singing passed down from the indigenous peoples of Latin America.

"Kids who grow up in the U.S. get disconnected from their culture," says Magaña. "Most Latino kids lack this identity piece. They don't know who they are. Are they Mexican, Chicano, Latino or American?"

Painful Experience

For Laura, 4-H camp instilled pride in her heritage and a stronger voice against prejudice. In high school, when a classmate declared that she would never attend a certain California college because of "all the Mexicans," Laura seethed inwardly but didn't speak out. But a year later while sleeping in a dorm at OSU, she was awakened by some guys making disparaging remarks about Mexicans in the hallway outside her room. She charged out in her pajamas to confront them. "Excuse me? What did you say?" They backed off. "Hey, no offense, we were just messing around." The experience was painful. Laura called her parents at 2 a.m., distraught and crying.

"As a father," says Magaña, "it makes you feel really bad. These guys are ignorant, thoughtless and naïve. They have no idea how it feels to be a minority in a different country. I'm proud of her for standing up to them."

Laura is now a junior at OSU, majoring in BioResource Research in the College of Agricultural Sciences and minoring in ethnic studies. During an internship at the University of Washington's Department of Health Services last summer, she identified occupational hazards for domestic workers. The project crystallized her career goals - to work with Hispanic communities in the public health arena.


Awards/Scholarships:

International Food Technologist $2000 Scholarship awarded to Dawn Merrill, serving as member and chair for executive Committee of the Oregon Section of IFT, Recruitment and member database activities - Meeting September 2009.

Melissa McKenney – ESA (Entomology Society of America) Plant-Insect Ecosystem (PIE) Undergraduate Award. Her record in entomology-related activities is commendable, and she was selected from a very competitive pool of applicants.

AnnaRose Adams received one of two National Society of Consulting Soil Scientists Scholarships $1000 dollars for the year and invitation to the Soil Science Society of America ASA-CSSA-SSSA International Annual meeting in Pittsburgh on Nov 4th, 2009 and receive award and announcement in CSA News.

RE Berry Entomology Undergraduate Research Award— Joanna Fisher, who works with Dr. Denny Bruck, USDA Agricultural Research Service.

Oregon Seed Trade Association provided scholarship support for Tammy Winfield, Joanna Fisher, and Melissa McKenny. For info. contact Peggy Mullett, Crop and Soil Sciences Dept.

Congrats CAS Scholarship Recipients:


CAS Ag. Honors: Martine Torres, Roslyn Albee, Ashley Bowser.
More Awards/Scholarships:

USDA Multicultural Scholars Program (MSP): Ashley Seeley, Emily Escobedo, Tiffany Harper, Omar Miranda-Garcia, Martine Torres, Danielle Naylor.

BRR MSP Associates and Mentors: AnnaRose Adams, Dominique Sabedra, Eva Arndt, and Vananh Nguyen for their service as mentors and officers in OSU MANRRS (Minorities in Agriculture, Natural Resources and Related Sciences) Chapter, 2009 National Chapter of the Year, 24th National Conference, Indianapolis, Indiana.


Research Grants and Internships

Melissa McKenney was awarded a Howard Hughes Medical Institute (HHMI) Summer Undergraduate Research Fellowship (mentor Sujaya Rao, Crop and Soil Sciences). She provided a research seminar at the HHMI symposium in September. The HHMI program provides paid summer research opportunities for students who have finished their freshman, sophomore, or junior years. Kevin Ahern at 541-737-2305 or ahernk@onid.orst.edu.

Erika Snow received an Undergraduate Research, Innovation, Scholarship and Creativity (URISC) Grant (Faculty Project Advisor: John Mata, Dept. of Biomedical Sciences): M. Tuberculosis Selective Adenosine Kinase Nucleoside Polymers for Inhalation Therapy. These awards provide funding for supplies (all year) or summer salaries. Current Solicitation: Applications accepted for Winter and/or Spring term(s) PROPOSAL DEADLINE: Monday, November 2, 2009.

The following students received Subsurface Biosphere Initiative summer research fellowships. The SBI provides paid summer research internships to stimulate undergraduates’ interest in research and in the subsurface biosphere. http://sbi.oregonstate.edu/education/interns.htm

Eva Arndt. Mentors Drs. Jeff Jenkins and Lew Semprini Tracking urban pesticide use and storm water discharge: The Role of the Subsurface Biosphere in Contaminant Remediation and Evaluation of Potential Interaction with Groundwater: Gresham Storm Water Discharge

Tori Grimwood. Mentors Drs. Kate Field and Jeff Shaman Tracking and identifying microbial contaminants Patterns of Occurrence and Prevalence for Avian Fecal Markers detected by GFB, GFC, and GFD

Betsy Leondar (above at poster symposium) Mentors Drs. Dave Myrold and Mary Santelmann. Soil process in restored wetlands.

Eva Arndt also received ER Jackman Internship support for her project with the City of Gresham’s wastewater treatment plant. http://agsci.oregonstate.edu/students/undergrad/current/internship-support

AnnaRose Adams was awarded a National Science Foundation Research Experience for Undergraduates (NSF REU) of $5000 to work with Dr. Cynthia Twohy on Influence of Anthropogenic Aerosols on Marine Stratocumulus in the Southeast Pacific.

Welcome New Students:

Roslyn Albee, Ashley Bowser, Daniel Bratton, Karl Chapin, Elise Cowley, Robbie Eberhart-Garah, Emily Escobedo, Mathilde Giffard, Tiffany Harper, Ben Kero, William Krett, Andy Larkin, Kim Melendez-Rivera, Omar Miranda-Garcia, Danielle Naylor, Elizabeth Nelson, Allison Rice, Patrick Rutledge, Lance Search de Lopez, Ashley Seeley, Martine Torres and Rory VanGarde. We are happy you are here!

Thanks to faculty for sharing their research programs in the BRR 100, Great Experiments course presentations: We couldn’t do without you!

Fall 2008:
Jennifer Field, Environmental and Molecular Toxicology
Manoj Pastey, Biomedical Sciences
Denny Bruck, Horticulture/USDA Agricultural Research Service
Jeff Chang and graduate student Jeff Kimbrel, Botany and Plant Pathology

Upcoming Faculty presentations for Fall 2009:
Indra Arup, College of Pharmacy
Ganti Murthy, Biological and Ecological Engineering
Nancy Kirkvliet, Environmental and Molecular Toxicology
Lisbeth Goddik, Food Science and Technology
Brenda McComb, Forest Ecosystem and Society
Leadership:

At the National MANRRS training conference in Indianapolis, Indiana, Laura Magana was elected Region VI Undergraduate Vice President. Laura also presented a research project and won a national third place in the education and social sciences division. She spent a week spring term in leadership training in Washington, DC.

Erika Snow is an Ambassador for Agriculture, Forestry and Natural Resources. The Ambassadors’ mission is: “To provide information, promote diversity, and create personal relationships with Oregon State University affiliates. Sharing an inspiring perspective of our university for future students and presenting opportunities to ease the transition into higher education.” The Ambassador Team engages in professional activities that promote the College of Agricultural Sciences, the College of Forestry, and the student’s individual departments. Ambassadors also receive a $1,500 scholarship and upper division agriculture or forestry credit.

Ihadira Lopez de Search and AnnaRose Adams are officers and founding members for the newly established OSU student organization Student Alliance for Environmental Justice (SAEJ) http://blogs.oregonstate.edu/saej/

Spring Term Dean’s List:

Robbie Eberhart-Garah, Chris Hedstrom, Caitlin Thireault, Erika Snow, Joanna Fisher, Melissa McKenney, AnnaRose Adams, and Katherine Peed…Congrats!

Travel

(Spain, Japan, Nicaragua, India and Texas?):

Anneke Tucker spent spring term in Spain on a study abroad. Fall term, as part of the National Student Exchange program, she is attending Texas A & M University to investigate future graduate study opportunities.

Vananh Nguyen and Gregory Petrossian traveled abroad this summer (Vananh) and fall (Greg) working in health clinics and participating in medical internships. Vananh worked for the City of Akita in Japan. Gregory is an intern in India learning non-western health clinic practices.

Rory VanGarde spent two weeks in Nicaragua delivering vitamins and medicine to native peoples in remote areas.

Study Abroad Fair: Thursday, October 8, 10am-2pm in the MU Ballroom

Information Sessions, 4pm in Snell 444 (unless otherwise noted).

Study Abroad Scholarships: Thursday, October 8, 3pm http://oregonstate.edu/international/studyabroad/

2009 Celebrating Undergraduate Excellence all-University event, held May 7, 2009.

Eight out of 16 participants from the College of Agricultural Sciences were BRR students, with both award winners BRR students! Congratulations to award winners Melissa and Michael (pictured below), and to all the terrific BRR students sharing their research. You can view both award winning posters on the link below.

http://agsci.oregonstate.edu/students/success-stories/09ue-awards

Rebecca Bathke: Effects of Estrogen on Temporal Gene Expression Patterns of Gonadotropin-Releasing Hormone (GnRH) in Immortalized GT1-7 Cells Using a Secretable Luciferase Reporter.

Margaret Corvi: An examination of pesticide mixture toxicity using embryonic zebrafish and passive sampling device extracts.

Jay Malmo: Investigation of Microbial Extracts from Unique Ecosystems.

*Melissa McKenney: Pollination by Native Bees and Honey Bees in Cranberry.

Alumni News:

Andy Colburn (BS BRR Toxicology ’08 – Nursing UNLV) writes: “The class I was asked to teach on seminar presentations went great! My boss was impressed, which can be hard to do, all thanks to your slides and the classes you made me take.” “I have been accepted to nursing school! I’ll start this August and will be done in August 2010. Thanks so much for your support through the years; I couldn't have done it without you.”

Dawn Merrill: Development of a colorimetric test kit for the determination of pyruvic acid as an indicator of pungency in onions.

Jessica Puccetti: Use of Artemisinin to Treat Mycoplasma haemolamae in Llamas.

*Michael Sandoval: Gemcitabine prodrug incorporated into nanoparticles has superior anti-tumor activity.

Tammy Winfield: Quantifying the value of native plants for increasing pollination and pest control.
Josh Owens (BS BRR-Biosystems Modeling '02) and wife, Cory, welcome baby Gabe. Joshua will finish his master's degree at OSU in Water Resource Engineering in fall 2009.

Kendall (Dutcher) Jensen, (BS BRR-Toxicology '07) tied the knot with Derek Jensen and completed her MS degree in Science Education at OSU in 2009! She began work in Portland at Roosevelt High School teaching in their math and sciences academy.

Julie Ream Christianson – Teacher. (BS BRR-Sustainable Ecosystems, minor in Natural Resource and Environmental Law and Policy) Julie moved to Seattle in 2006. She discovered through her University Honors College and BRR thesis that she enjoyed teaching others about her invasive wetland plants research far more than the research itself. Julie grew up on Air Force Bases around the U.S. and Asia and feels blessed to finally be able to settle in the beautiful Northwest. When Julie is not teaching, she enjoys hiking, backpacking, reading, discussing policies, walking her beloved Black Lab, snowboarding, and ballroom dancing, particularly swing dancing.

Jacob Huber (BS BRR-Toxicology '07) finished his MSc in Amsterdam last year and then moved to Switzerland, where he worked for a while and finally decided to enter a PhD program. He was accepted into the MIT Portugal program (Sustainable Energy Systems/Energy Planning). After a short visit to his family’s farm in Oregon, he headed back to Europe in September to learn another language and work on his PhD through this wonderful program!

Becky Cooper (BS BRR-Biotechnology '01) has emigrated to Christchurch, New Zealand with her husband, and plans to enter graduate school at Lincoln University. She has continued to add to her research work with her most recent publication:

Araki, H., B. Cooper and M.S. Blouin. 2009. Carry-over effect of captive breeding reduces reproductive fitness of wild-born descendants in the wild.


Laura Barth, HBS BRR-Animal Reproduction and Development '03, received her DVM during the 123rd Commencement Exercise of the School of Veterinary Medicine at University of Pennsylvania. UPenn has graduated over 6500 veterinarians.

We love to hear from our graduates! So please keep in touch! Send your updates to BRR@oregonstate.edu

For more news and information, visit the BRR website:

http://agsci.oregonstate.edu/brr/