EEES NEWS

Student News Summer, 2008

Kathryn M. Hajdu, who is a junior Geology major with a concentration in *Hydrogeology*, won a university award for her Creative Inquiry e-portfolio. She was a member of the Creative Inquiry project, "Analysis of Water Sustainability Issues in Jagatpura, India." **Jennifer Oblinger** (MS Hydrogeology) served as the grad student advisor and **Dr. Stephen Moysey** served as the faculty mentor. (Link to the abstract is: http://cujo.clemson.edu/manuscript.php?manuscript_ID=182)

Jen Oblinger *(MS in Hydrogeology under the direction of* ***Dr. Stephen Moysey****) was awarded a $500 NGWREF Farvolden scholarship for her talk "Assessing the Impact of Water Harvesting on Water Resources in Rural India" presented at the 2008 National Ground Water Association Ground Water Summit in Memphis.*

Mihika Baruah (MS '08) joined CH2MHill in the Atlanta office as a Water and Process Engineer in the Industrial Systems Business Group in August. Mihika's thesis, "Laboratory Evaluation of Polyeyelic aromatic hudrocarbon Biodegration at a Former Tar Plant Site." was completed under the direction of **Dr. David Freedman.**

Ashley Eaddy *(MS '08) accepted a job offer with Santee Cooper as an Environmental Process Engineer at their Cross Generating Station in Pineville, SC. She will be in charge of monitoring all pollution control technologies at the plant and be responsible for troubleshooting any issues with performance of the equipment. Ashley will also be responsible for improving the pollution control processes to increase recovery of higher-quality waste byproducts. Other responsibilities will be to maintain chemical inventories, develop a database for process monitoring and troubleshooting protocols, and reporting on process efficiencies. Ashley completed her thesis, "Development and Evaluation of an Enrichment Culture for Bioaugmentation of the P-Area Chlorinated Ethene Plume at the Savannah River National Laboratory", under the direction of* ***Dr. David Freedman****.*

Jessica High, second year MS student won the A. Ray Abernathy Fellowship Jessica is advised by **Dr. David Freedman. Byung Joon Lee**, a third year Ph.D. student won the Linvil G. Rich Fellowship. His advisor is **Dr. Mark Schlautman**.

Viet Dang (PhD Environmental Engineering & Science program) and **Dr. Cindy Lee** hosted a visit to Rich Lab by a delegation from Vietnam on April 25. Dr. Quynh Thi Nuygen, Vice Director of the Institute of Tropical Biology, Vietnamese Academy of Science and Technology and Mrs. Luu Nam Phuong of the Department of International Cooperation, Ministry of Science and Technology, toured Rich Lab as part of their visit to Clemson University. **Hung Vu** (MS Environmental Toxicology program) also met with the delegation during the tour).

Pictured (L-R) are Mrs. Phouong, Dr. Nuygen, Hung Vu, and **Viet Dang**

Jim Chamberlain *(PhD student) received a Next Generation PhD Fellowship from Public Service Activities (PSA).*

Saumya Sarkar *(MS student) received an Ivanhoe Foundation Fellowship.*

Students from EES 486/686 Pollution Prevention and Industrial Ecology wrote a successful proposal for $10,000 to the EPA People, Planet, and Prosperity program to address the solid waste management problem of waste tires on the island of Dominica. ***Dr. Shelie Miller*** *served as principal investigator for the team of students consisting of* ***Jim Chamberlain*** *(PhD, EEES), Roger Flynn (PhD, Policy Studies) and Laurie Robbins, (MS, Construction Management). The team received Honorable Mention at the 2008 EPA People, Prosperity, and Planet National Sustainable Design Expo held in Washington D.C. on Earth Day. Receiving EPA award:* ***Sam Sarkar*** *(EE&ES), Christa Jordan (Landscape Architecture), Nikki Dodd (Sociology), Catherine Cotrupi (Sociology), Laura LaFlamme (Sociology),* ***Shelie Miller*** *(EE&ES)*

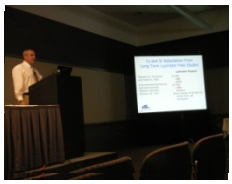
An interdisciplinary group of students and faculty embarked on the Landscapes for Learning-Dominica project, which seeks to create recycled material landscapes as learning tools for elementary schools in the developing world. A group of seven students and three faculty initiated research and education activities in the community of Grand Fond, Dominica. Students from the **Department of Environmental Engineering and Earth Sciences** conducted a waste tire audit and material flow analysis of tires on Dominica, while Sociology and Landscape Architecture students began the process of transforming the school grounds to use as a learning landscape demonstration site.

On May 3rd, nine people - 7 students and 2 professional engineers – traveled to El Salvador for their first ever official EWB-USA site assessment trip! Accompanied by their faithful guides, Anabella and Antonio, the group traveled a long and dusty road to Isla Mendez, the largest village in one of the poorest regions of the country, the Bajo Lempa region along the Pacific coast. Divided into pairs, the group stayed in the homes of five different host families where they shared their simple meals, thinly-clad beds, compost latrines, bucket showers, and vociferous farm animals during their seven-day stay. Site assessment activities included several meetings with the leadership of La Coordinadora (LC), the installation of a wind anemometer in San Nicolas Lempa, assessment of electrical loads in the LC's offices, analysis of water quality from several sites, and percolation tests and surveying on the parcel of land designated for community buildings and rural tourism structures. The group also experienced and assisted in other initiatives of the peasant cooperative, including the cashew processing plant run by women, the planting of mangrove trees in Jiquilisco Bay, the Radio Mangle radio station, and the "fruit trees for schools" project. In keeping with the long-term mission of EWB-USA, they established very important relationships with professors at two local universities, the on-site manager for Living Water International, the EWB-USA liaison in San Salvador (Kelley Burns), the directors of a modern high school – the Instituto – near Isla Mendez, and a native Salvadoran engineering student studying at Mercer University. Engineering design in the coming year will focus on the continuation of clean water from San Marcos Lempa down to the peninsula, the design and construction of pumped storage at Las Mesitas including the potential use of a playground pump, the design of a solar power backup for the office equipment, and the assessment of wind resources in the region. The group returned on Sunday, May 11 – weary, but satisfied that much information had been collected and long-term collaborations had begun for this exciting project.

EWB-USA Clemson in El Salvador: *first row:* David Christopher, David Boles, **Jim Chamberlain;** *second row:* Eddie Williams, Lindsey Daniels, Evan Ponton, **Jessica High,** Jose Aviles, Ross Wagenseil; *back row:* Anabella Mejia, Maria Koon

Jia Hu presented a talk on “Formation of Halonitromethanes during Drinking Water Treatment.” At the Annual National Meeting of American Water Works Association in Atlanta, GA (June 8-12, 2008) (Co-authors: **Jesse Addison, Hocheol Song and Tanju Karanfil.) Jesse Addison** gave a presentation at the same meeting on “Formation of Halonitromethanes in Wastewater Treatment Plant Effluents,” (Co-authors**: Jia Hu, Hocheol Song and Tanju Karanfil.**) In addition **Laura Reid** had a poster presentation on “Nutrient Flushes in Stormwater Runoff from Developing Catchments in an Upper Piedmont Watershed,”(Co-Authors: **Sule Kaplan, Meric Selbes,** John Smink**, Mark Schlautman**, Steve Klaine, John Hayes and **Tanju Karanfil.**)

Shannon Thompson and Aurelie Soreefan presented at the 53rd annual HPS meeting (July 13-17, 2008, Pittsburgh, PA.



Amy Ratliff (Hixon) was awarded the Roscoe Hall Scholarship from the Savannah River Chapter of the Health Physics Society. Besides the honor of being selected as the 2008 Clemson University recipient of this award, Amy received a check for $1000 for herself and $250 for the Clemson University Student Branch of the Health Physics Society.

Huifeng Shan gave a platform presentation, "Treatment of high concentrations of chloroform by bioaugmentation", at the Sixth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, California, May 2008.

Viet Dang and **Dr. Cindy Lee** hosted 12 in-coming engineering students to an introduction to environmental engineering at Rich Lab on July 14. They learned about the role environmental engineers’ play in remediation of groundwater contaminated with non-aqueous phase liquids (NAPLs) through a demonstration and about the use of gas chromatographs in the analysis of Lake Hartwell sediments contaminated with polychlorinated biphenyls (PCBs). Serita Acker, director of Women in Science and Engineering, developed the WISE Experience to introduce young women to the challenges they can take on as engineers.

Byung Joon Lee attended the XVII Computational Methods in Water Resources (CMWR) International Conference in San Francisco, CA on July 6-10, 2008. He gave a presentation entitled "Simulation of Turbulent Sedimentation in Flocculent-Aided, Storm-Water Retention Basins: Formulation and Computational Challenges." Co-authors on the presentation were **Fred J. Molz III**, Abdul A. Khan**, Mark A. Schlautman**, Deniz Savas and Dennis Stevenson.

On May 12, **2008 Dr. Richard Warner** and **Mr. Scott Brame** of the Department of Environmental Engineering and Earth Sciences boarded a plane with 15 Clemson University students to fly to Salt Lake City and from there embark on a 9-day journey across central and southern Utah. The students, many of whom were not geology majors, were enrolled in a new course, GEOL 370 – Western US Field Study. The purpose of the class was to experience first-hand the spectacular geology of the Colorado Plateau. During the 9 days in Utah the class drove, camped and hiked across the Colorado Plateau, visiting four national parks (Arches; Canyonlands; Capitol Reef; Bryce Canyon) plus Natural Bridges and Grand Staircase-Escalante National Monuments and several state parks, including Escalante Petrified Forest State Park. The students were able to see a wide variety of geologic features – arches, natural bridges, canyons (including some spectacularly narrow slot canyons), hoodoos (pillar-like formations showcased at Bryce Canyon),

cliffs and mesas, monoclines (single-limb folds that are the signature of the Colorado Plateau) and faults, laccoliths (mushroom-shaped igneous intrusions), and many others. They learned about the different sedimentary strata that make up the Colorado Plateau - sandstones (many with superb cross-bedding), shales, salt formations, etc. - plus the geologic history they reveal and how the different rock types control the surface topography. Based on the success of this inaugural trip, we anticipate offering GEOL 370 every other year during Maymester; in 2010 we plan to travel mostly in northern Arizona with visits to Grand Canyon, Zion and Petrified Forest National Parks, Monument Valley, Meteor Crater and Sunset Crater, among other localities.

We have 20 new students and 2 returning (from MS into PhD)

WELCOME!!

Kelly Allen
Alex Beebe
Jordan Copeland
Kelly Grogan
Mike Hickey
Amy Ratliff Hixon
Patrick Hoey
Ashley Horton
Joel Kohn
John Kroon
Michael Lilley
Zuolin Liu
Dan Matz
Todd Miller
William Nading
Chris Patterson
Hari Peethambaram
Pol Pumkaew
Tony Reid
Francisco Rodrigues
Han Wang
Trevor Zimmerman

Faculty News

Dr. Jim Castle has been elected to a two-year term as Editor-in-Chief of the peer-reviewed journal "Environmental Geosciences".

Dr. Tanju Karanfil's research group made three presentations at the Annual National Meeting of American Water Works Association in Atlanta, GA (June 8-12, 2008). Also, current and former students of **Dr. Karanfil** came together at the meeting.

Dr. Cindy Lee attended the invitation-only EPA/NSF WATERS Network Project Workshop in Cincinnati, OH, April 30-May 1, 2008. The purpose of the workshop was to develop collaborative partnerships between academic researchers and Environmental Protection Agency researchers in support of the WATERS Network, a major infrastructure initiative of the National Science Foundation. Dr. Lee served as a program director for the Environmental Sustainability program in the Directorate of Engineering at NSF in 2006-07.

Dr. Cindy Lee has been selected as an editor of Environmental Toxicology and Chemistry for Environmental Chemistry. The journal is one of the official journals of the Society of Environmental Toxicology and Chemistry (SETAC).

Steven Johnson, administrator of the US Environmental Protection Agency has appointed **Dr. Cindy Lee** to a three year term on the Environmental Engineering Committee of the Science Advisory Board of the EPA.

Larry Murdoch gave an invited talk entitled "Building a community modeling platform for hydrology" on Monday May 19 at the MODFLOW 2008 Conference. He convened a special session on community hydrologic modeling and presented a paper at the Computational Methods in Water Resources Conference July 9 in San Francisco. He also convened a special session on hydrologic modeling at the 1st CUAHSI National Colloquium, July 15.

Dr. John Coates has a birthday coming up on September 20th and he would like everyone to remember "generosity begins in the Department!!"

Several of our faculty have received grants.

CONGRATULATIONS TO:

Dr. James Castle and Dr. John Rodgers of the Department of Forestry and Natural Resources were awarded $689,532 by the Department of Energy to investigate an "Innovative Water Management Technology to Reduce the Environmental Impacts of Produced Water."

Drs. DeVol, **Powell** and **Fjeld** received a grant from the U.S. Nuclear Regulatory Commission in the amount of $398,932 to boost nuclear education and expand the workforce for nuclear energy.

El Paso Corporation awarded **Dr. David Freedman** $26,600.grant to conduct a Laboratory evaluation of biostimulation and bioaugmentation for enhanced anaerobic bioremediation of chlorinated ethenes at the Statesville site.

Dr. Cindy Lee received $356,350 from National Science Foundation (NSF). The grant is to study the use of chiral tracers to determine cycling of PPO's in stream ecosystems.

Dr. Shelie Miller received $9,846 from the South Carolina Renewable Energy grant program (SC USDA) to assist in planning activities for the Clemson switchgrass program (co-PI: Jim Frederick). The South Carolina Renewable Energy grant program also funded a grant for $143,523 for a project "Examining the Potential Productivity and Site-Specific Management Needs of Switchgrass on the Coastal Plain" for which Dr. Miller serves as a co-PI (PI: Jim Frederick, Co-PIs: **Shelie Miller**, Francis Raey-Jones).

Clemson University Service Alliance ATREC Program funded the research project, "Landscapes for Learning on Dominica" with $7500. **Dr. Shelie Miller** serves as co-PI on the project. (PI: Brenda Vander Mey, Co-PIs: Shelie Miller, Hanna Bornholdt)

The American Chemical society has awarded **Dr. Stephen Moysey** $50,000 for the use of electrical measurement to investigate multiphase how channeling during reservoir products.

Dr. Larry Murdoch received $48,167 from the National Science Foundation (NSF) for Proof of concept of a hydrologic multiphysics model.

An $8,000 grant from SC Space Grant Consortium was received by **Dr. John Wagner** to plot testing of NEW SE MAPS study sites in SC.

Alumni News

Dr. Susan Morgan (PhD '95) has been promoted to full professor at Southern Illinois University Edwardsville. Dr. Morgan joined the Civil Engineering Department at SIU-E after completing her dissertation research with **Dr. Cindy Lee.**

Daniel "Dan" Earl Taylor (MS, '80) 59, of 303 Stone Ridge Rd., Greer, died Sunday August 3, 2008 at St. Francis Hospital.

Dr. Nancy Love (Ph.D. '94) has recently been appointed as Chair of the Department of Civil and Environmental Engineering's (CEE) at the University of Michigan. **Les Grady** served as Nancy's advisor.

John Sivey (MS '05) was awarded an EPA STAR Fellowship for the 2008-09 academic year. John is pursuing his PhD in Environmental Engineering at Johns Hopkins in Baltimore. John received his MS degree under the direction of **Dr. Cindy Lee.**