

# EEES NEWS

Student News

Fall, 2010



**Laura Simpkins** and **Amy Hixon** attended the Pacificchem 2010, Honolulu Hawaii: The International Chemical Congress of Pacific Basin Societies in Honolulu, HI on December 14-20th. They gave the following presentations in the symposium "Actinides and the Environment: A Multidisciplinary Look at What We Know and What We Need to Know"



"Actinide sorption to pure mineral phases: Influence of radioactivity and temperature." **A. Hixon**; *M. Lilley*; *B. Powell*

"Effect of fulvic acid on the sorption of plutonium to minerals." **L. Simpkins**; *B. A. Powell*

**Johnathan Ebenhack** and **David Hisz** presented papers at the Fall AGU meeting in San Francisco. Johnathan's paper "Analysis of Ground Water Flow and Deformation in the Vicinity of DUSEL Homestake" summarizes the results of groundwater flow, transport and deformation modeling that he has done as part of an NSF-funded research project. Dave Hisz presented a paper "Characterization of Fractured Rock during Well Tests using Tilt-X, a Portable Tiltmeter and Extensometer for Multi-Component Deformation measurements" that describes field work and theoretical analyses he conducted with Johnathan as part of another NSF project. Those papers were presented in a special session on science at underground labs organized by **Dr. Larry Murdoch**. Johnathan and Dave also participated in workshops on "The state-of-the-art of fault mechanics and field experiments" and "Planning of experiments at DUSEL" at AGU, which were organized by Dr. Murdoch.

## CONGRATULATIONS!!

Ph.D. candidate **Peng Luo** was chosen to receive a 2010-11 Roy G. Post Foundation Graduate Student Scholarship in the amount of \$5,000.

He will be presented with the scholarship at the Waste Management 2011 (WM2011) Awards Luncheon at noon on Tuesday, March 1, 2011 in the Phoenix Convention Center. In addition to the scholarship award, the Foundation will reimburse costs of round-trip transportation to Phoenix, Arizona USA for WM2011; and will provide Peng with complimentary registration and lodging while attending WM2011.

The Lee Research Group was well represented at the 2011 North American Meeting of the Society of Environmental Toxicology and Chemistry (SETAC) in Portland, OR. **Diana Delach** presented a poster "Chiral Signatures of PCBs in Riparian Spiders" with co-authors David M. Walters (USGS) and **Cindy Lee**. **Andrea Hicks** presented a talk "Greenhouse Gas Emissions from Small Scale Conventional Wastewater Treatment: Is Tertiary Treatment Worth It?" with co-author Cindy Lee. Both Diana and Andrea won travel awards from SETAC.

Diana Delach won Society of Environmental Toxicology and Chemistry - American Chemical Society graduate student exchange award, which was announced at the SETAC North American Meeting. The award will support her travel to the fall American Chemical Society Meeting in Denver to make a presentation to the Division of Environmental Chemistry about her PhD research.

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**Holly Garrett** is working with Students for Environmental Action and they have been hard at work this year. The group just put together a newsletter and are hosting a film series throughout January and February (the dates/times/films are listed in a blue box in the newsletter) [www.clemsonsea.org/newsletter](http://www.clemsonsea.org/newsletter).

Also, on February 22nd, Clemson is hosting the fourth annual Environmental Teach-in. This year the focus will be "Solutions for the Next Decade". The event will feature an address by President Barker, a presentation by Dr. Imtiaz Haque, who will talk about CU-ICAR and the wind-turbine testing facility, as well as many other speakers, a film series and a Green Expo.

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**Daniel Lewis** received the Blue Ridge Foothills District Scholarship from the Blue Ridge Foothills District chapter of SCAWWA/WEASC. Daniel has won this award for three years in a row and will receive a \$750.00 check to use towards his education.

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**Amanda Padgett Stevenson** gave the presentation, "Lessons Learned from an Airborne Alpha Contamination Event Requiring Implementation of In-Vitro (Bioassay) Sampling." at the 2011 North American Information on Occupational Exposure (ISOE) ALARA Symposium and Electric Power Research Institute (EPRI) Radiation Protection Conference hosted in Ft Lauderdale, FL. She was one of two individuals recognized for "best presentation" out of approximately 35 presentations, which means she will have the opportunity to make her presentations again at either their European or Asian Symposiums later this year. Amanda is the Radiation Protection Staff Scientist at Duke Energy's Oconee Nuclear Station and is finishing her thesis in preparation for graduation this May.

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Six EEES students, **Johnathan Ebenhack, Zuolin Liu, Jim Chamberlain, Rong Yu, Richie Hall and Clay Freeman** (and two EEES dogs) went backpacking in the Ellicott Rock Wilderness Area, October 23-24. The group camped along the wild and scenic Chattooga River beneath a canopy of Fall color. No one was lost, hurt, or

attacked by a bear - so, all in all, it was a great success.



**Viet Duc Dang** and his wife, Vu are pleased to inform you of the birth of their daughter on Oct 10, 2010. She weighed 5 lbs 1 oz and is named Isabel. Both the baby and her mother are doing great.

**THANKS STUDENTS!**

**We started the Holidays with the decorating of the Remembrance Tree...**



...and then on with the Holiday Party...



Once again Anne and Ken worked their magic to transform the student work space in Brackett Hall. They worked for several days to get the area cleaned up and new cubicles installed in the study area on the third floor.



It looks like the Faculty/Staff team pulled out a win this year!!

But some **BIG** highlights:

- 1-**Ben** won his age group in the 5K! (ages 30-34, and he is on the top end of the bracket!)
- 2-**Jackie** won the Best Costume Award as Lady Gaga (aka Caution Girl)
- 3-Faculty team won 1st and 2nd place in the Half-Marathon (**Clark, Ladner**). Student team won 3rd (**Kopp**).
- 4-Student team won 1st and 3rd place in the 5K (**Sharp, Lauer**). Faculty team won 2nd place (**Lee Stevens**).
- 5-Alumni team is in a "re-building" year, but had a proud showing with **Dina** in the 5K and **Jim** in the Half.

### 2010 Tenacious Tiger Award

5K winners:  
 1<sup>st</sup>-Ben Sharp (students)  
 2<sup>nd</sup>-Lee Stevens (faculty)  
 3<sup>rd</sup>-Jackie Lauer (students)

Half-marathon winners:  
 1<sup>st</sup>-Bobby Clark (faculty)  
 2<sup>nd</sup>-David Ladner (faculty)  
 3<sup>rd</sup>-Derick Kopp (students)

This year's winners:  
Faculty / Staff team!

## EEES welcomes Dr. Alan Coulson!!



**Dr. Coulson** has been an instructor in the Department on Earth and Environmental Sciences at Furman University since receiving his Ph.D. in Geosciences from University of South Carolina in 2009. Dr. Coulson received his M.S. in Geosciences from Texas Tech University and his B.S. in Geology from Bowling Green State University.

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Emeritus Professor of Geology **John R. Wagner** received the South Carolina Science Council's highest award for a science educator on November 5, 2010 at the Council's annual convention held at the Myrtle Beach Convention Center. The 'Catalyst Award for Educational Excellence' is presented each year to a science educator who has made a significant difference in the way science is taught in the state of South Carolina. Wagner was honored for his work in several K-12 curriculum development projects for the earth and environmental sciences, in particular the SC MAPS and SE MAPS programs; and for his many years of providing exemplary professional development opportunities for teachers through graduate courses, workshops, and field experiences. The South Carolina Science Council is a chapter of the National Science Teachers Association and boasts over 2,000 members from South Carolina's K-12 and higher-education science teaching community.



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**Dr. Tanju Karanfil** and some of his research group members (**Meric Selbes, Xiaojie (Jane) Gan and Sule Kaplan**) attended The 2010 Water Quality and Technology Conference and Exposition on November 14-18, 2010. Dr. Karanfil made an invited presentation on "Halonitromethanes and their Precursors in Drinking Water and Wastewater Effluents."

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**Dr. Mark Schlautman** is currently being "featured" on the website [www.switzernetwork.org/](http://www.switzernetwork.org/) of the Robert & Patricia Switzer Foundation for his work with the Brake Pad Partnership and the recent law that was passed in California to reduce the amount of copper in automobile brake pads. Because manufacturers of friction materials tend to be large companies (national and international markets), the California law is expected to result in reduced copper use in brake pads across the entire United States and the world. Thus, less copper will end up in storm-water runoff and our aquatic ecosystems.

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**Dr. Larry Murdoch had a busy Fall semester:**

- ❖ He was elected as the Chair of the Board of Directors of CUAHSI a consortium of 126 universities with research programs in hydrology and water science. CUAHSI is an NSF-funded organization with programs in Informatics, Instrumentation, Synthesis, Observations, Modeling, and Education and Outreach for the water-science community.
  - ❖ He also finished a term serving on the DUSEL Experimental Design and Coordination (DEDC) committee. The DEDC committee was responsible for organizing and coordinating a suite of experiments in hydrology, rock mechanics, microbiology, and engineering in the deep subsurface. That suite of experiments will be included with physics experiments in a proposal to build a Deep Underground Science and Engineering Lab (DUSEL) at the Homestake mine in South Dakota. If funded, the DUSEL project will be a major (~1B) U.S. science facility in the coming decades.
  - ❖ He published a paper with Leonid Germanovich entitled "Injection of solids to lift coastal areas" in Proceedings A of the Royal Society of London. This paper describes an innovative approach to protecting coastal cities from flooding by raising their elevation, a concept that was first presented at a EEES departmental seminar two years ago.
  - ❖ Dr. Murdoch gave another invited presentation at the National Ground Water Association on-line conference on Fractured Rock Hydrology on 27 October. His talk was entitled "Hydromechanical well tests in fractured rock," and it was co-authored with Clemson grad students **David Hisz, Johnathan Ebenhack, Clay Freeman**, and former students **Trever Slack, Todd Schweisinger** and **Erik Svenson**.
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**Dr. Brian Powell** attended the Pacifichem 2010 conference and gave the invited presentation "Modeling plutonium interactions with complex molecules and interfaces" in the symposium "Actinides in the environment: A multi-disciplinary look at what we know and what we need to know." **Trevor Zimmerman** and **Laura Simpkins** were co-authors on the presentation.

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**Drs. Powell and Molz** have received an additional \$82k to expand their project "Iodine, Radium and Strontium Geochemistry in Wetland and Subsurface Sediments" during FY11. The project is sponsored by Savannah River Nuclear Solutions through SCUREF and focuses on understanding biogeochemical controls of radionuclide subsurface fate and transport. The additional funding will be to support further studies of iodine and neptunium geochemical behavior as well as begin a series of long-term field-lysimeter experiments at the Savannah River Site. The double-walled lysimeters and associated support equipment are being designed and constructed in EEES facilities. Ph.D. student **Hilary Palmer** will work on this project.

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"I have good news", says Emeritus Professor **James D. Navratil**, "we were awarded an EPA grant to demonstrate our ferrite/magnetite process on a pilot-plant scale to treat water from the Gregory Tunnel in Black Hawk. The tunnel water (very acidic and loaded with heavy metals) exits under Bullwhacker's casino into the north fork of Clear Creek. The work will be underway the next several months. If our studies turn out as we expect, the EPA will hopefully use our process in a planned treatment plant in Black Hawk and also consider it for treating the acid mine water in Creede."

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**Cynthia Dinwiddie**, received the honor of being named one of the 2010 "40 under 40" by San Antonio Business Journal. Cynthia received her M.S. in 1997 and her Ph.D. in 2001. She is currently the Principal Engineer/Hydrogeologist in the Department of Earth, Material, and Planetary Sciences Geosciences and Engineering Division Southwest Research Institute San Antonio, TX.

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## NEW JOBS FOR RECENT GRADUATES!!!

**Trevar Slack** defended his thesis entitled "Hydromechanical Interference Slug Tests in a Fractured Biotite Gneiss" and he currently works as a hydrogeologist with Bunnell-Lammons in Greenville.

**David Hisz** defended his thesis entitled "Predicting Long-Term Well Performance from Short-Term Hydraulic Tests in the Piedmont" and he has entered the PhD program in EEES where he is working on hydromechanical well tests with Larry Murdoch.

**Curtis Gebhard** defended his thesis entitled "Identification of Patterns and Controls of the Distribution of Groundwater Discharge to Streams" and he has accepted a job offer as a Project Geologist with HRP consultants in Greenville.

**Dinora Melendez-Monroy**, has accepted a position at Universidad de la Sierra in Montezuma, Sonora, Mexico. As a Professor in the Biology department she will be teaching Calculus to the second semester students and, Physics of the Biological Processes II, to the fourth semester students.

**Andrea Hicks** successfully defended her MS thesis, "Greenhouse Gas Emissions from Conventional Wastewater Treatment". Andrea has joined Region 5 of the US EPA to help assess progress of record of decisions for Superfund sites. She and her husband, Justin, are living in the Chicago area.



*The next issue will be published in [May 2011](#). Please send your submissions for your activities during Spring to Jan Young ([ej@clemsun.edu](mailto:ej@clemsun.edu)) latest by [May 1, 2011](#). (Please do not forget to take pictures).*

**THANK YOU!**