**Student News**

**Summer, 2009**

**Hari Shankar Peethambaram**, a current EE&S graduate student, was selected as a recipient of The Ivanhoe Foundation Fellowship ($5,000).

**Jesse Addison, Darryl Jones, Jia Hu** and **Dr. Tanju Karanfil** attended AWWA Annual Conference in San Diego in June. Jesse received the Best M.Sc. Thesis 2nd Place Award and Darryl received 2009 AWWA Lars Ph.D. Scholarship. Darryl also made a presentation entitled “The Formation and Speciation of Iodo-Trihalomethanes during Monochloramine and Chlorine/Ammonia Disinfection”. Jia represented South Carolina at the Poster Session with her poster “Formation and Speciation of Halonitromethanes: the Effects of pH, Bromide and Nitrite,” Jia was awarded 2nd Place for the Fresh Ideas Award of the Poster Session.

**Jim Chamberlain** presented a paper at the American Society of Engineering Education (ASEE) conference in Austin, Texas, on June 15. The title of his presentation was “Forming a Culture of Engineering: Undergraduate Research Projects in a Developing Country”.

**Arika Bridhikitti** presented the following platform papers:


**Arika** also gave a student poster entitled: “Observing the Long-Range Transport of Chinese Urban Aerosol to Southeast Asia Mainland”.
Presentations were given at the Methods and Applications of Radioanalytical Chemistry (MARC VIII) Conference in Kona, HI on Tuesday April 7, 2009. They include:

- Plutonium uptake velocity in Zea mays (corn) and implications for plant uptake in the root zone – Shannon Thompson, Dr. Fred Molz, Dr. Robert Fjeld, and Dan Kaplan.

- Proportional counting of tritium gas generated by polymer electrolyte membrane electrolysis - Aurelie Soreefan and Dr. Tim Devol.


“Plutonium Transport in Plants: Experimental Determination of Transport Velocity in Live Plants and Sorption to Plant Xylem,” Shannon Thompson, Dr. Robert Fjeld, Dr. Fred Molz, Dr. Dan Kaplan was presented at the Health Physics Society annual meeting Minneapolis, MN July 12-16, 2009

EEES student Todd Miller gave a presentation at the 238th American Chemical Society Meeting in Washington DC titled “Determination of Subsurface Transport Parameters of Neptunium in Southeastern U.S. Soils” which was coauthored with Amy Hixon and Dr. Brian Powell.

Ph.D. candidate Shannon Thompson and Dr. Fred Molz have been performing plutonium uptake experiments on corn grown at the Rich Laboratory. The experiments are showing that the plant water uptake system, which supplies water for transpiration and plant growth, can result in the rapid transfer of plutonium from the soil to the plant tops. When plants are cut or die naturally, such plutonium may be deposited on the soil surface. This is of potential concern, because small amounts of ingested or inhaled radioactive plutonium can be dangerous. Given the chemical nature of ionic plutonium, this rapid transfer was unexpected, and it may due to the corn mistaking plutonium for iron, a mineral necessary for plant growth. Many plants, particularly grasses, have evolved a specialized chemical transport system for obtaining iron from soil. Since iron is similar in a molecular sense to plutonium, plants may absorb plutonium by mistake when it is present in soil due to radioactive accidents or waste disposal.
Chris Patterson, left, and Catherine Ruprecht perform a test on the 18 Mile Creek in Pendleton Thursday, June 18, 2009. Sixteen students from across the country has come to participate in the Clemson University Hydrogeology Field Camp that lasts 5 weeks and provides hands-on activities for graduate and undergraduate students.

This summer Amy Hixon worked as a Student Scientist at the US Nuclear Regulatory Commission in Rockville, MD. Amy worked with the Environmental Review Branch to develop knowledge management resources and update existing guidance documents related to the National Environmental Policy Act. Amy is pursuing her Ph.D. with Dr. Brian Powell as her advisor.

On May 4th, ten Clemson engineering students traveled to El Salvador for their second Engineers Without Borders (EWB-USA) site assessment and work trip. Led by EEES grad student, Jim Chamberlain, the student group surveyed field elevations for a future water line, evaluated a home wood stove design, repaired a Hydram water pump, collected GPS points for a comprehensive agricultural map, analyzed water quality samples, and helped build foundations for block village houses. The group continues to help design a new water distribution system, with the help of Sam Sarkar, an EEES Masters student. Dr. Mark Schlautman is a co-advisor of the EWB-USA chapter and Jose Alfaro will be working with the group in the coming year on this and other international sustainability projects.

Viet Duc Dang and Anh vu were married on August 16 in Vietnam Congratulations!!!! Viet is getting his Ph.D. under the direction of Dr. Cindy Lee
Defense of the Tenacious Tiger Trophy

On October 31st 2009, teams of faculty, students, and alumni are invited to compete against each other in the Spinx Run Fest 5k and half-marathon in Greenville, SC. Teams must have a minimum of three members with at least one person running in each race (5k and half-marathon). Last year the competition was held at the Thunderroads Marathon Relay in Charlotte, NC and the faculty handed the students and alumni teams a decisive win. This year the competition will be fierce as the students and alumni attempt to take the Tenacious Tiger Trophy away from the faculty.

Since the spirit of the competition is not just about who can run the fastest, the following criteria will be used to determine the winning team:

1. Total number of participants on each team (highest number is awarded the most points)
2. Fastest average 5k time for each team (fastest time is awarded the most points)
3. Fastest average half-marathon time for each team (fastest time is awarded the most points)
4. Average team age (highest average age is awarded the most points)
5. Best dressed team (as voted by the fans)
6. Best fan support (as voted by the runners)
7. Most carbs consumed at the carb-loading dinner the night before the race
8. Other??

For more information please contact:
Faculty Team: Shelia Miller (millers@clemson.edu) or Brian Powell (bpowell@clemson.edu)
Alumni Team: Jim F. Chamberlain, jfchamb@clemson.edu
Student Team: Dan Matz (dmatz@clemson.edu) or Jose Alfaro (jalfaro@clemson.edu)

Participants from the 2008 competition at the Thunderroads Marathon Relay in Charlotte, NC. Pictured are (front row, from left) Dina Mauldin, Jim Chamberlain, Tara Matheny, (back row) Darryl Jones, Treavor Kendall (with Alden), Brian Powell, Shelia Miller, Dan Matz and Amy Hixon.
Department Event

The Environmental Engineering and Earth Sciences Welcome Back Picnic

Welcome new graduate students:

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<thead>
<tr>
<th>Student Name</th>
<th>Mentor Name</th>
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<tbody>
<tr>
<td>Christina Anderson</td>
<td>Andrea Kirchoff</td>
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<tr>
<td>Onur Apul</td>
<td>Derrick Kopp</td>
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<td>Miles Atkinson</td>
<td>Matthew Longshore</td>
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<td>James Cooper</td>
<td>Adam Mangel</td>
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<td>Michael Eckstein</td>
<td>Jerrod Moore</td>
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<td>Kirk Ellison</td>
<td>Michael Pardue</td>
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<td>Xiaojie “Jane” Gan</td>
<td>Christina Ritter</td>
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<td>Jean Glenn</td>
<td>Catherine Ruprecht</td>
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<td>Na Hao</td>
<td>Ben Sharp</td>
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<td>Anthony Johnston</td>
<td>Gavin Wiggins</td>
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<td>Kristen Jurinko</td>
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CONGRATULATIONS GRADUATES AND GOOD LUCK WITH YOUR FUTURE!!

May 2009
Stefanie Fountain
Hufieng Shan
Aurelie Soreefan
Pham Phung

August 2009
Darryl Jones
Olivia Orr
Saumya “Sam” Sarkar
Meric Selbes

THE DEPARTMENT OF ENVIRONMENTAL ENGINEERING AND EARTH SCIENCES

Faculty, Staff and Graduate Students- 2009-2010
THANKS to ANNE and KEN for organizing the renovation of 201 Brackett!

The hydrogeology graduate student office, Brackett 201, was renovated over the summer. Faculty, students, and staff worked to clean out the office. The walls were painted, the carpets were cleaned, and a professional work environment was created. Despite the budget constraints for the project, the EEES team pulled together for amazing results! Great job everyone!
Faculty News

Dr. Leslie Grady and Dr. Bill Hiatt (Ph.D., EE&S) were selected to receive 2009 Rudolf Industrial Waste Management Medal from Water Environment Federation for their publications in the Water Environment Research journal:


Dr. Tom Overcamp was presented with the Outstanding Associate Editor Award, Journal of the Air & Waste Management Association (2009).

Dr. Brian Powell organized a symposium titled “Recent Advances and Future Directions in Modern Nuclear Science: Graduate Student Research” at the 238th American Chemical Society Meeting in Washington DC.

Additional presentations by EEES students and faculty within other symposia at the ACS meeting were:

“Nuclear Environmental Engineering and Science at Clemson University” by Dr. Brian Powell, Dr. Tim DeVol, and Dr. Robert Fjeld. This presentation highlighted the multidisciplinary nature of the Nuclear Environmental Engineering and Science program within EEES.

“Plutonium transport in Savannah River Site (SRS) Soil: Apparent importance of biochemistry” by Dr. Deniz I. Demirkanli, Dr. Fred Molz III, Shannon Thompson, Dr. Robert Fjeld, Dr. Daniel I. Kaplan, and Dr. Brian Powell.

“Structural characterization of plutonium colloids associated with goethite and silica” by Dr. Brian Powell with collaborators from Lawrence Livermore National Laboratory Zurong Dai, Annie Kersting, and Mavrik Zavarin.

“Development of an On-line Radiation Detection and Measurements Laboratory Course” Dr. Tim DeVol, Dr. Brian Powell was funded by the U.S. Nuclear Regulatory Commission Education Grant.

Application of Classical and Bayesian Statistical Methods to On-Line Radiological Monitoring Data. Dr. Tim DeVol, and Gohres, AA.

“Comparing Predicted Cancer Risks Associated with Ingesting Naturally Occurring Radionuclides in Drinking Water Supplies to Actual County Cancer Rates,” Dr. Deborah Falta, Dr. Tim DeVol
and Dr. Robert Fjeld, presented at the Health Physics Society annual meeting Minneapolis, MN July 12-16, 2009.


Dr. Tanju Karanfil gave an invited lecture entitled “Formation and Control of Disinfection By-Products” at the SC AWWA Partnership for Safe Water Committee Workshop in Columbia, South Carolina, on May 20, 2009.

A major proposal ($1.2M/year for 5 years) led by Lawrence Livermore National Laboratory where our Dr. Brain Powell was a task leader was selected for funding under the Scientific Focus Area within the DOE Environmental Remediation Science Program (ERSP). This is a highly visible portion of the ERSP. Brian will lead the research ($125k/year for 5 years) on the subsurface transport of transuranic elements (Pu, Np, Am, Cm) with his students. The project will start in the Fall of 2009.

The EPA STAR proposal entitled “Understanding and Managing Risks Posed by Brines Containing Dissolved Carbon Dioxide” (~$900K) by Dr. Ron Falta, Dr. Larry Murdoch and Sally Benson (Stanford University) was selected for funding. This is a significant accomplishment due to very competitive nature of STAR grants as well as the CO2 area that we would like to be more closely involved. The project will kick off sometimes in the Fall.

Zenon Thomas John Moysey, son of Stephen and Nadia Moysey
Born 2:20 pm, Tuesday, August 04, 2009!
Zenon weighed 9.1 lbs., 21 oz. and is welcomed home by his big sister Anya.

Dr. Cindy Lee, her husband Riley, and daughter Lee covered 77 miles on the Greenbrier River Trail in wild, wonderful WV over three days in late July.
Alumni News

Richard Edwards has worked for Pfizer for 31 years, but has recently begun a 6 month Fellowship in Pfizer's Global Health Fellows program. Richard is supporting the Water Aid Uganda program as a Senior Wastewater Advisor doing a number of different things. Most notably, He is establishing a summary of best practices for the Water, Sanitation and Hygiene (WASH) projects that have already been completed. This is for future use.

Also, if you wanted more on the Pfizer program and what Richard is doing, Pfizer has some materials, including some work done by Pfizer writers. You can also find a journal written by Richard at the Pfizer web site: http://globalhealthfellows.pfizer.com using logon id and password as richard and edwards, respectively.

Michael P. Harris, one of our Geology Alumni (1972), and his wife were two of the US passengers in the catastrophic Air France accident that happened June 1, 2009. Our heartfelt sympathy goes out to their families.

Sylvia Navratil, the wife of Jim Navratil, EEES emeritus faculty, passed away on the 4th of July. Sylvia was a lovely woman, wife and mother and will be missed by all.

The next issue will be published in February 2010. Please send your submissions for your activities during fall to Jan Young (ej@clemson.edu) latest by January 15, 2010. (Please do not forget to take pictures).

THANK YOU!