

# The ASEE Environmental Engineering Division Newsletter

Spring 2009

## A Message from the Division Chair

Dear Colleagues:

Angela Bielefeldt has put together a great program for us this year. There were 38 abstracts submitted with 28 papers accepted which will be presented in six technical sessions. Please join us for our division meeting on Tuesday, June 16th at 12:30 pm. We will be continuing our efforts to develop ways to increase the number of division papers and the overall interest in our division's technical sessions. Other initiatives include working more closely with AEESP, environmental BOK, and providing incentives for graduate students that are committed to teaching to attend and present at the annual conference. The division will be having our social/dinner on Tuesday at 6:30 pm. The dinner is an informal gathering that provides opportunities to talk and network with colleagues. In addition, we will be honoring our division award winners.

We will be making a small change this year with regards to the awards that we give out. For the past several years, we have been honoring the recipient of the ASEE – Environmental Engineering Division Best Paper Award from the previous year's conference. We will still be making that award this year. Moving forward, however, we will be honoring the recipient of this award at the conference where that paper is presented. The 2008 ASEE Environmental Engineering Division Award is Zhang, Zimmerman, Mihelcic, and Vanasupa for their paper entitled "Civil and Environmental Engineering Education Transformational Change: Tools and Strategies for Sustainability Integration and Assessment in Engineering Education."

Bielefeldt, Paterson, and Swan will receive the 2009 ASEE Environmental Engineering Division Best Paper Award for their paper entitled "Measuring the Impacts of Project-Based Service Learning." Please join us at 2:15 pm on Monday, June 15 (Session 1551) when they will be presenting this paper at the conference.

Thank you for the opportunity to serve you over these last few years. I have enjoyed working with everyone and look forward to continuing to build collaborative relationships as we seek to improve the education of students in environmental engineering.

Sincerely,

Kevin C. Bower  
Assistant Professor  
Department of Civil  
and Environmental  
Engineering  
The Citadel,  
The Military College  
of South Carolina,  
Charleston, SC.



**Be sure to check out the Division Web Site:**  
<http://users.rowan.edu/~jahan/asee/envwebpage.htm>

**New Section: Innovative Curriculum on Page 6. If you want to showcase your innovative curriculum please contact the newsletter editor.**

**Newsletter Editor:**  
**Dr. Kauser Jahan, P.E.**  
**Professor and Chair, Civil and Environmental Engineering,**  
**Rowan University**  
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## Division Social

Tuesday June 16, 2009

6:30-8:00 PM

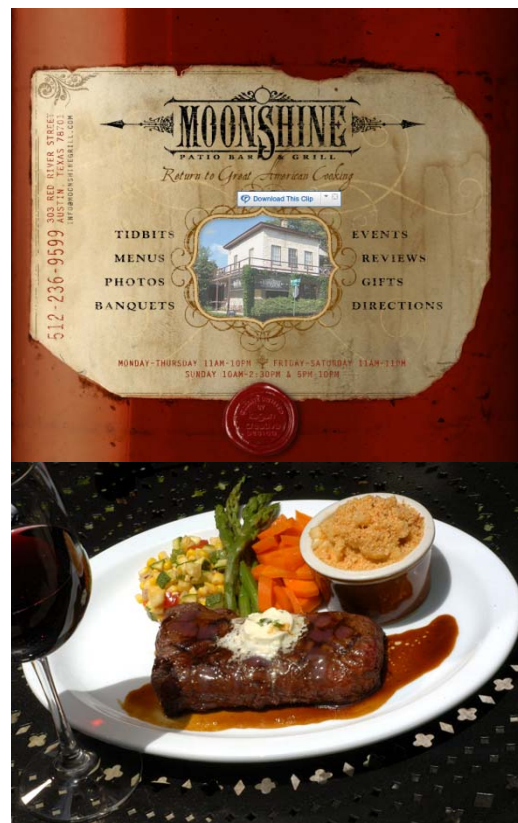
*The Environmental Engineering Division put together six exciting sessions portraying innovative teaching ideas.*

*This year our annual Business Meeting will be held on Tuesday June 16 from 12:30 to 2:00 PM. Members are strongly encouraged to attend to provide the Division with enriching feedback for improvements and input for the 2010 conference. Elections will also be held for the Treasurer position.*

This social event is open to all division members, prospective members, families and friends. The event provides a relaxed atmosphere to socialize and honor the Best Paper Award and the Early Career Grant recipients and the Outgoing Division Chair. The division honors the awardees with a plaque, certificate and a free invitation for the dinner.

We will have our Tuesday night social at Moonshine Grill.

<u>1451: Understanding Students: Recruiting, Retention, Enrichment</u>	Monday June 15	12:30 p.m.- 2:00 p.m.
<u>1551 Project Based Service Learning</u>	Monday June 15	2:15 p.m.- 4:00 p.m.
<u>2351 Sustainability in Engineering Curricula</u>	Tuesday June 16	10:30 a.m.- 12:00 p.m.
<u>2451 Business Meeting</u>	Tuesday June 16	12:30 p.m.- 2:00 p.m.
<u>2551 Service Learning Projects in Developing Countries</u>	Tuesday June 16	2:15 p.m.- 4:00 p.m.
<u>2651 Environmental Engineering Curricula</u>	Tuesday June 16	4:30 p.m.- 6:00 p.m.
<u>2751 Environmental Engineering Social/Dinner</u>	Tuesday June 16	6:30 p.m.- 8:00 p.m.
<u>3451 Environmental Engineering Curricula</u>	Wednesday June 17	12:30 p.m.- 2:00 p.m.



<http://www.moonshinegrill.com/>

Please RSVP to our Division 2009 Program Chair Angela Bielefeldt at [Angela.Bielefeldt@colorado.edu](mailto:Angela.Bielefeldt@colorado.edu)

## BEST PAPER AWARD RECIPIENTS

### 2009: Measuring the Impacts of Project-Based Service Learning (Will Be Presented at Session 1551)

#### Angela Bielefeldt, University of Colorado, Boulder

Angela Bielefeldt is an Associate professor of Civil and Environmental Engineering at the University of Colorado, Boulder. Currently she is working with other faculty to promote Engineering for Developing Communities. She received the Outstanding



Teaching Award from the Association of Environmental Engineering and Science Professors in 2004. She also received the Early Career Award from the American Society for Engineering Education for her work to incorporate service learning projects into the capstone design course in environmental engineering.

#### Kurt Paterson, Michigan Technological University

Kurt Patterson is an Assistant Professor in Civil and Environmental Engineering at the Michigan Technological University. Dr. Paterson's interests include cognitive sciences as applied to learning technical subjects, public health as affected by air quality, and life balance as directed towards personal success. Dr. Paterson's research foci include air pollution source apportionment, significant learning experience design, and information technologies.



#### Chris Swan, Tufts University

Chris Swan is an Associate Professor and Chair of the Civil and Environmental Engineering Department, at Tufts University. His current research interests include waste reuse, recycling, geotechnical and geo-environmental engineering, and civic engagement in engineering curriculum. He received a Doctor of Science (ScD) degree in Civil and Environmental Engineering from MIT in 1994. An initiator of introducing components of community-based service learning into department curriculum, Dr. Swan continues to champion the development and implementation of Education for Active Citizenship (E4AC) in engineering education.



The Environmental Engineering Division will present the 2010 Best Paper Award based on the submissions for next year's annual conference.

### 2008: Civil and Environmental Engineering Education Transformational Change: Tools and Strategies for Sustainability Integration and Assessment in Engineering Education

#### Dr. Qiong Zhang, Michigan Technological University

Dr. Zhang will join the Department of Civil and Environmental Engineering at the University of South Florida in July 2009. Dr. Zhang's education and research interests are focused on green engineering, water treatment, and environmental assessment for sustainability. Her research projects include developing embodied energy models, water treatment cost models and the software tools to optimize the design of water/air treatment systems, incorporating green engineering principles in the design and engineering curriculum, and assessing the fate of chemicals in the environment and their life cycle impact.



#### Julie Zimmerman, Yale University

Dr. Julie Beth Zimmerman is an Assistant Professor jointly appointed to the Department of Chemical Engineering, Environmental Engineering Program and the School of Forestry and Environment. Her research interests include green engineering, environmentally benign design and manufacturing, and the fate and impacts of anthropogenic compounds in the environment as well as appropriate water treatment technologies for the developing world. Dr. Zimmerman's research is aimed at designing and developing innovative science, technology, and policy to advance sustainability.



#### James Mihelcic, University of South Florida

Dr. James R. Mihelcic is a Professor of Civil & Environmental Engineering and State of Florida 21<sup>st</sup> Century World Class Scholar at the University of South Florida. Dr. Mihelcic has performed extensive research in biological processes applied to natural and engineered systems, green engineering and sustainability, and engineering of the developing world. He led development of several research and education sustainability initiatives including several textbooks.



#### Linda Vanasupa CalPoly San Luis Obispo

Linda Vanasupa is Professor and Chair of the Materials Engineering Department at the California Polytechnic State University in San Luis Obispo. She has broadened the department's curriculum by creating a laboratory for microelectronics processing and has also contributed in designing classroom and lab experiences that develop and strengthen the students' ability to draw on all of their cognitive resources.



## OFFICERS

### July 2008 - June 2009

**Division Chair:** Kevin Bower  
The Citadel, Charleston, South Carolina.  
[kevin.bower@citadel.edu](mailto:kevin.bower@citadel.edu)

**Program Chair:** Angela Bielefeldt  
University of Colorado, Boulder  
[Angela.Bielefeldt@colorado.edu](mailto:Angela.Bielefeldt@colorado.edu)

**Secretary:** Sharon A. Jones  
Lafayette University  
[jonessa@lafayette.edu](mailto:jonessa@lafayette.edu)

**Treasurer:** Kenneth P. Brannan  
The Citadel, Charleston, South Carolina.  
[ken.brannan@citadel.edu](mailto:ken.brannan@citadel.edu)

**Please note that the Treasurer position is open for 2009-2010. Please contact Dr. Kevin Bower at [kevin.bower@citadel.edu](mailto:kevin.bower@citadel.edu) if you are interested.**

**Elections will be held during the Division Business Meeting on June 16, 2009 from 12:30 to 2:00 PM.**

### Best Paper Award 2010

The author must be a current member of ASEE and of the Environmental Engineering Division. The paper must be submitted to the proceedings. **The author (not a graduate student or colleague) must present the paper.** For multiple authors, at least one paper author must be a division member, and the presentation at the conference must be made by a division member. In cases of multiple qualified authors, the prize will be split.

**Prize is dinner for winner + 1 guest and recognition at the Division dinner, a plaque, and an honorarium of \$200.**

### EARLY CAREER AWARD 2010

The Environmental Engineering Division of ASEE is pleased to announce the Early Career Grant. Recipients of this grant will receive an honorarium to cover a portion of the travel expenses, and will be guests at the Environmental Engineering Division Dinner.

### Eligibility Criteria

Applicant will be in a tenure-track position as of August 30, 2009. Applicant will be un-tenured as of August 30, 2009. Applicant teaches at any 2- or 4-year University that offers at least one environmental engineering course.

***The abstract must be submitted to the Environmental Engineering division.***

### Selection Criteria

A single recipient will be selected based on the paper submitted. A selection committee will judge the paper based on its ability to positively impact environmental engineering education.

### Application Process

To apply, simply ensure that the last line of the abstract contains the following sentence:

***"I am eligible for the Environmental Engineering Division Early Faculty Grant."***

If you have any questions, please feel free to contact the Environmental Engineering Division Program Chair for 2010 (Sharon A. Jones) at [jonessa@lafayette.edu](mailto:jonessa@lafayette.edu)

### Meritorious Service Award

Members of the ASEE Environmental Engineering Division who, in the opinion of the reviewing officers, have performed activities or provided services to the Division benefiting the Division and deserving of special recognition are eligible for this award. For example, a member who provides sustained active contributions of major tasks over many years might be eligible for this award. The current Division Chair and Program Chair are ineligible to receive this award. Nominations should document these contributions. A call for nominations will be published in electronic and/or other publications for the Division. Nominations may be submitted to the Division Chair by letter, fax, or email, with a deadline of March 1<sup>st</sup> of the year in which the award is to be presented. The division officers will receive nominations and select an award winner.

## **ASEE Annual Conference 2010 CALL FOR PAPERS**

The **ENVIRONMENTAL ENGINEERING DIVISION** of ASEE invites papers for the Annual Meeting to be held in **Louisville, Kentucky June 20-23, 2010**. The division will offer sessions that include papers on the following topics:

- Innovative pedagogical methods (problem-based learning; etc.) in teaching environmental engineering courses;
- Innovative uses of current and emerging technologies in teaching environmental engineering courses;
- Service-learning courses in environmental engineering;
- Extracurricular student projects/contests in environmental engineering e.g. EWB, WERC, Solar Scholars, etc.
- Development of new or hybrid courses in environmental engineering, e.g. Environmental Biology, Environmental Security, Environmental and Public Health;
- Incorporating environmental issues across the engineering curriculum;
- Environmental engineering courses for non engineers;
- Recruitment and diversity issues for environmental engineering;
- Undergraduate environmental engineering research experiences; and,
- Accreditation and assessment, e.g. BOK, graduate program accreditation, assessment, etc.
- Other suitable topics will be considered.

The Environmental Engineering Division **requires** that presenters publish their papers in the ASEE conference proceedings.

The Early Career Award, Best Paper, and Student Awards are selected based on the papers accepted for the conference. Please send an email to [jonessa@lafayette.edu](mailto:jonessa@lafayette.edu) if you are interested in the Early Career Award. Early career must be tenure-track, not tenured by August 2009, and the first author. Students can be undergraduate or graduate students, and should be the first author.

Please submit a 200-300 word abstract electronically through the ASEE Conferences web page, <http://www.asee.org/conferences>, as soon as the submission date is posted. Abstracts submitted not later than the closing dates announced by ASEE will be evaluated and ranked. Papers selected for presentation must be submitted in accordance with ASEE requirements.

**Be sure to indicate that your paper is for the Environmental Engineering Division and provide requested contact information.**

**Questions may be addressed to the Environmental Engineering Division Program Chair:**

**Sharon A. Jones, Ph.D., P.E.**  
**Professor**  
**Department of Civil and Environmental Engineering**  
**Lafayette College**  
**Easton, PA 18042**  
**email: [jonessa@lafayette.edu](mailto:jonessa@lafayette.edu)**  
**Phone: 610-330-5410**

# INNOVATIVE EDUCATION

## School's in Session



**Dr. Kauser Jahan** of the Civil and Environmental Engineering Program at Rowan University along with faculty from other engineering disciplines received funding from the NSF for a grant titled “Hands on an Aquarium”.

This grant allows faculty to partner with the New Jersey Academy for Aquatic Sciences (NJAAAS) and the Cumberland County College to develop curricula to expose engineering content to K-12 and pre college students/teachers.

The project promotes the use of a living system to promote science and engineering concepts.

An aquarium is an exquisite combination of interacting systems which can be analyzed using multidisciplinary engineering and scientific principles. Children typically have personal aquariums for their pet fishes and visit some large aquarium as part of a school field trip or as part of their family outing. Movies such as Disney-Pixar’s “Finding Nemo”, Epcot’s Living Seas also make tremendous impact on a young audience. While these activities apparently raise the knowledge base in terms of nature and the environment, children seldom make a connection to the engineering principles playing out in the maintenance of a natural, commercial or personal aquarium.



Engineering students are instrumenting a marine aquarium at the NJAAAS to provide real time water quality data and visual images online. Water quality parameters include pH, temperature, salinity and dissolved oxygen.

**Please send your contributions to highlight innovative environmental education in future newsletters to Dr. Kauser Jahan at [jahan@rowan.edu](mailto:jahan@rowan.edu).**