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News highlights...

2007 AEESP Conference

The 2007 AEESP Conference—Interactions at the Interface—is fast approaching! Details about the conference are provided on page 2. Please note that the abstract deadline for the conference is January 31, 2007. Check out the AEESP Conference Web site at www.cpe.vt.edu/aeesp.

2006 AEESP Awards

The 2006 AEESP Awards were handed out at WEFTEC.06 (see page 5), and the announcement for 2007 AEESP Award nominations begins on page 6. Please note that the nomination deadline is March 15, 2007.

Check out AEESP online at:

 AEESP.org

President's Letter



Phil Singer

Dear AEESP Members,

This is my first editorial as President of AEESP. I have been a member of this organization for the past 36 years, and have witnessed its growth and evolution from the American Association

of Professors of Sanitary Engineering (AAPSE), to the Association of Environmental Engineering Professors (AEEP), to its present formulation as the Association of Environmental Engineering and Science Professors (AEESP). The organization has a rich tradition, an interesting history, and an important mission, and I am pleased to be its 39th President.

Despite the fact that environmental (sanitary) engineering evolved as a field of engineering specialization more than 100 years ago with the public health contributions made by the likes of Allan Hazen, William Sedgewick, and George Fuller, we continue to define and re-define ourselves as new societal and environmental challenges emerge. AEESP is a diverse organization whose mission is to assist its members in the development and dissemination of knowledge in environmental engineering and science and to strengthen and advance the environmental field. Two of its primary goals are to provide networking opportunities that foster a supportive environment for the professional development of its members and to develop and implement long-range plans concerning education in environmental engineering, science, and related fields.

Toward that end, AEESP draws its members from a wide array of disciplines. Our members have undergraduate degrees in civil, chemical, mechanical, and environmental engineering, biology, chemistry, geology, mathematics, and physics, among others, yet we all have a common focus and a common objective, i.e., teaching, research, and service toward protection of the environment.

As a member of the AEESP Board of Directors for the past 3+ years, I have gotten to meet many new environmental engineering and science colleagues, and to observe the commitment that many of you have to our discipline, and to the protection of public health and our environment. It is a pleasure to work with you and to serve you.

Before closing, I want to encourage you to participate in our upcoming environmental engineering conference to be held at Virginia Tech in late July, 2007. These regularly scheduled biennial conferences are a relatively new undertaking for AEESP, having replaced the former education and research conferences that were held at less regular intervals and which rotated between education and research themes. The new biennial conferences integrate education and research and represent an excellent networking opportunity for professional development through the sharing of new research findings and educational encounters. Having attended the inaugural and very successful AEESP conference in 2005 at Clarkson University, I can tell you that these are high quality, rewarding, and enriching experiences. I hope to see you in Blacksburg in July.

Best wishes for a happy and healthy new year.

Phil Singer
President, AEESP

Newsletter submissions

Submissions may be sent electronically to:

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marchand@unr.edu
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AEESP Newsletter online

www.aeesp.org/publications/newsletter

This newsletter is printed on 30% post-consumer recycled paper.



2007 AEESP Conference Interactions at the Interface July 28-August 1

The 2007 AEESP conference will be held on Virginia Tech's campus in Blacksburg, Virginia. Several details of the Conference are, of course, still to be determined, but many arrangements have been made and are summarized below. Please refer to the conference Web site, <http://www.cpe.vt.edu/aeesp/>, for updates as they become available.

The title of our conference, Interactions at the Interface, in part stems from the direction of recent environmental research that recognizes and emphasizes the extremes, from the nanoscale to ecosystem level, via initiatives such as CLEANER and NEON. Environmental engineering educational efforts span scales from the individual (e.g., tailoring learning environments to better accommodate individual learning modes) to consideration of international scale, including sustainability and green engineering concepts that bridge nations, economic systems, and policy. Our existing and international membership thrives at and within these extremes.

The proposed conference schedule has a day for fun, a day for workshops, and two days of conferencing. The conference consists of four plenary sessions, four sets of concurrent sessions, and poster sessions. The plenary sessions will be held at the beginning of the morning and afternoon sessions on each of two days. Each plenary will consist of two speakers for one of the following four topics:

- 1) Large-Scale Phenomena, Science and Engineering
- 2) Large-Scale Phenomena, People
- 3) Small-Scale Phenomena, Science and Engineering
- 4) Small-Scale Phenomena, People

Overall Schedule

Friday, July 27

Vans to/from airport (afternoon)

Saturday, July 28

Vans to/from airport

Optional activities:

- 1) Blue Ridge Parkway trip—Chateau Morisette tour, wine tasting and dinner
- 2) VT golf outing—best ball tournament and dinner
- 3) Mountain Lake—lecture, hike and dinner

Sunday, July 29

Vans to/from airport

8:30 a.m.-5:30 p.m.: Four workshops (see description below), lunch in dining hall

6:00-8:00 p.m.: Reception at University Club, heavy hors d'oeuvres

Monday, July 30

The VT Inn

7:30-8:30 a.m.: Continental Breakfast

8:30-8:45 a.m.: Plenary—Welcome

8:45-9:15 a.m.: Plenary—Guest 1 presentation

9:15-9:45 a.m.: Plenary—Guest 2 presentation

9:45-10:00 a.m.: Networking break, move to concurrent sessions

10:00 a.m.-noon: 2 concurrent tracks (educational sessions)

Session 1: 10:00-10:20 a.m.

Session 2: 10:20-10:40 a.m.

Networking break: 10:40-10:55 a.m.

Session 3: 10:55-11:15 a.m.

Session 4: 11:15-11:35 a.m.

11:35-noon: Introduction to posters in each track

Noon-1:30 p.m.: Lunch at the VT Inn

1:30-2:00 p.m.: Plenary—Guest 3 presentation

2:00-2:30 p.m.: Plenary—Guest 4 presentation

2:30-2:45 p.m.: Networking break, move to concurrent sessions

2:45-4:40 p.m.: 2 concurrent tracks (research sessions)

Session 5: 2:45-3:05 p.m.

Session 6: 3:05-3:25 p.m.

Networking break: 3:25-3:40 p.m.

Session 7: 3:40-4:00 p.m.

Session 8: 4:00-4:20 p.m.

4:20-4:40 p.m.: Introduction to posters in each track

5:30-7:00 p.m.: Posters

Dinner on own

Tuesday, July 31

The VT Inn

7:30-8:30 a.m.: Continental Breakfast

8:30-9:00 a.m.: Plenary-Guest 5 presentation

9:00-9:30 a.m.: Plenary-Guest 6 presentation

9:30-9:45 a.m.: Networking break

9:45 a.m.-noon: 2 concurrent tracks (research sessions)

Session 9: 9:45-10:05

Session 10: 10:05-10:25

Session 11: 10:25-10:45

Networking break: 10:45-11:00

Session 12: 11:00-11:20

Session 13: 11:20-11:40

11:40-noon: Introduction to posters in each track

Noon-1:30 p.m.: Lunch at the VT Inn

1:30-2:00 p.m.: Plenary-Guest 7 presentation

2:00-2:30 p.m.: Plenary-Guest 8 presentation

2:30-2:45 p.m.: Networking break

2:45-4:40 p.m.: 2 concurrent tracks (educational and research sessions)

Session 14: 2:45-3:05 p.m.

Session 15: 3:05-3:25 p.m.

Networking break: 3:25-3:40 p.m.

Session 16: 3:40-4:00 p.m.

Session 17: 4:00-4:20 p.m.

4:20-4:40 p.m.: Introduction to posters in each track

5:30-7:00 p.m.: Posters

6:30-7:00 p.m.: Reception at the VT Inn

7:00-9:00 p.m.: Banquet at the VT Inn, guest speaker, awards

Wednesday, August 1

The VT Inn

6:30-9:00 a.m.: Buffet breakfast and vans depart to airport

AEESP Workshops and Sessions

Workshops with lead people (titles not finalized):

1. "NSF CAREER Workshop" (see detailed description below), Gregory Boardman

2. "Professional Pipeline," Charles Bott and Nancy Love

3. "Government Affairs," Allen Davis

4. "Global Sustainable Development-Achieving the Millennium Development Goals," Angela Bielefeldt

Sessions with lead people (as of November 28):

1. "NSF's CLEANER planning grantees," William Ball and Nicholas Clesceri; one session with invited presenters and possibly one from submitted abstracts.

2. "Point-of-Use Water Treatment Technologies for Developing Global Communities," David Sabatini and James Smith; one session with invited presenters and possibly one from submitted abstracts.

NSF CAREER Workshop Sunday, July 29, 2007

1:30-1:50 p.m.: Introductions by Dr. Gregory Boardman, Conference Chair, and Dr. Patrick Brezonik, NSF Program Director of Environmental Engineering/Environmental Technology Programs

1:50-2:20 p.m.: "Making a Difference Bridging Theory and Practice," Dr. Philip Singer, Professor of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill

2:20-2:35 p.m.: Break

2:35-3:05 p.m.: "Research, Education and Diversity," Dr. Beville Watford, NSF Program Director of Scholarships in Science, Technology, Engineering and Mathematics, and Director of Virginia Tech's Center for Enhancement of Engineering Diversity (CEED)

3:05-3:35 p.m.: "Life after the CAREER Award," Dr. Pedro Alvarez, Professor of Civil and Environmental Engineering, Rice University

3:35-4:20 p.m.: Panel 1-"Developing the CAREER Proposal," Peter Vikesland, Virginia Tech-facilitator

Des Lawler, University of Texas (Austin); Lutgarde Raskin, University of Michigan; Francis de los Reyes, North Carolina State University

4:20-4:30 p.m.: Break

4:30-5:15 p.m.: Panel 2-"CAREER Awardees," Linsey Marr, Virginia Tech-facilitator; Derick Brown, Lehigh University; Dan Giammar, Washington University (St. Louis); Amy Pruden, Colorado State University

5:15-5:30 p.m.: Wrap-up by Dr. Pat Brezonik

Plenary Presentations

Large-Scale, Science and Engineering

Plenary 1. Alexander Zehnder, Professor and President of the Swiss Federal Institute of Technology (ETH) - Board, Zurich, "Transdisciplinary Research - the Formidable Challenge for Environmental Science and Engineering"

Plenary 2. Cliff Davidson, Professor, Carnegie Mellon University, "Changing the Discipline of Engineering: the challenge of Sustainability"

Large-Scale, People

Plenary 3. Debbie Niemeier, Professor, University of California, Davis, "Urban Sustainability, Poverty, Climate Change and Engineering Technology"

Plenary 4. Susan Watson, Research Scientist and Adjunct Professor, Aquatic Ecosystem Management Research Division, Environment Canada, Burlington, "Ecological Issues and the Human/Ecosystem Interface"

Small-Scale, Science and Engineering

Plenary 5. Menachem Elimelech, Roberto Goizueta Professor, Yale University, "Nanoparticles and Biomacromolecules in Natural and Engineered Aquatic Environments"

Plenary 6. George Ekama, Professor and Department Head, University of Cape Town, "Applying Stoichiometry to WWTPs - Estimating Greenhouse Gas Emissions from WWTPs"

Small-Scale, People

Plenary 7. Eberhard Morgenroth, Assistant

Professor, University of Illinois at Urbana-Champaign, "Environmental Engineering and Science Education - an International Perspective"

Plenary 8. Amy Zander, Professor and Associate Dean for Academic Programs, Clarkson University, "Environmental Engineering and Science Education - a National Perspective"

Important Dates

- Abstracts due for review (submitted electronically to conference Web site): January 31, 2007
- Authors notified about acceptance of abstract: March 5, 2007
- Final program announced: March, 2007
- Application deadline for NSF workshop award: May 15, 2007
- Recipients of NSF awards for CAREER workshop will be notified: June 15, 2007
- Registrations and room reservations due: June 25, 2007

Conference Fees

AEESP Members: \$295; AEESP Members-late (after June 25, 2007): \$395; Non-members: \$425; Non-members-late (after June 25, 2007): \$525; Students: \$65; Students-late (after June 25, 2007): \$125; Exhibitors: \$1,250.

Saturday Fun Tours (sign up for one):

1. Blue Ridge Parkway - tour, winery and dinner: \$75.
2. Golfing - best ball tournament and box meal: \$75.
3. Mountain Lake - hike, lecture and dinner: \$75.

Sunday Workshops (can sign up for 2):

1. Professional Pipeline (morning): \$25.
2. NSF CAREER Workshop (afternoon): \$25.
3. Government Affairs (morning): \$25.
4. Sustainability Workshop (afternoon): \$25.

Lodging Arrangements

Blocks of rooms are being reserved at The Inn at Virginia Tech and Skelton Conference Center, local hotels, and dormitories on-campus.

Plea for Sponsors

In an effort to reduce the cost for participants (particularly for students), attract exceptional plenary speakers from around the world, and offer more special food functions, we have developed a budget that requires that we identify conference sponsors. Sponsors of the conference will, of course, be recognized through written and oral announcements. Please contact Dr. Greg Boardman, the conference chair, in the event that you or someone you know would be interested in serving as a sponsor. Greg can be reached at 540-231-1376 or by e-mail (gboard@vt.edu).

Program Committee

Gregory Boardman, Conference Chair, Professor of Civil and Environmental Engineering (CEE), Virginia Tech, Blacksburg, VA, USA

Charles Bott, Assistant Professor of CEE, Virginia Military Institute, Lexington, VA, USA (and Adjunct Professor of CEE, Virginia Tech)

Andrea Dietrich, Professor of CEE, Virginia Tech, Blacksburg, VA, USA

Marc Edwards, Charles Lunsford Professor of CEE, Virginia Tech, Blacksburg, VA, USA

George Ekama, Professor and Head, Department of Civil Engineering, University of Cape Town, Cape, South Africa

John Little, Professor of CEE, Virginia Tech, Blacksburg, VA, USA

Nancy Love, Professor of CEE, Virginia Tech, Blacksburg, VA, USA

Peter Vikesland, Assistant Professor of CEE, Virginia Tech, Blacksburg, VA, USA

Susan Watson, Research Scientist and Adjunct Professor, Aquatic Ecosystem Management Research Division, Environment Canada, Burlington, Canada

Alexander Zehnder, Professor and President, Swiss Federal Institute of Technology (ETH) - Board, Zurich, Switzerland

Yinping Zhang, Professor of Building Science, Tsinghua University, Beijing, China

Newsletter policies

AEESP welcomes AEESP members to submit items such as letters to the editor, letters to the president, news, ads, and announcements to the Newsletter. The decision to publish is subject to the discretion of the Editor and the AEESP Board of Directors. All submissions for the AEESP Newsletter should be sent electronically as an attached file to the Newsletter editor, Eric Marchand.

Submissions deadline

The AEESP Newsletter is published three times a year in January, April, and September. The deadline for Newsletter submissions is one month prior to the publication date (e.g., the deadline for the January Newsletter is December 1). Please keep in mind when submitting items with deadline dates that members receive issues four to six weeks after the submissions deadline.

Advertising policy

Any advertisement, including faculty, post-doc, or student ads, or other types of announcements submitted by an AEESP member, will be free for the first 250 words (approximately 1/4 page) and then charged at \$1 per word for additional content, if formatted to fit in a column. Non-members will be charged at the per word rate for any size column-formatted ad. Full page formatted advertisements will be charged at \$500 for members and \$1,000 for non-members. All formatted full page ads will be accompanied by a free Web ad. Programs will be limited to one full page of ads/announcements per issue.

Photo submissions

Photo submissions to the AEESP Newsletter are encouraged. Please submit your photos electronically in JPG format at the highest dimension for downsizing to print resolution (preferably less than 750 KB). Also, please include captions with names, locations, and dates.



Pedro Alvarez (left) receiving the Distinguished Service Award from James Mihelcic (right).



Thanh Helen Nguyen (student, front left) and William Ball (advisor, far right) receive a CH2M Hill/AEESP Outstanding Doctoral Thesis Award from James Mihelcic (back row left) and Pedro Alvarez (2nd from left, back row).



Dominic Frigon (student, 2nd from right) and Lutgarde Raskin (advisor, far right) receive a CH2M Hill/AEESP Outstanding Doctoral Thesis Award from James Mihelcic (left) and Pedro Alvarez (2nd from left).

2006 AEESP Award winners

On October 23rd at the AEESP Annual Meet and Greet, several of our members and their students were recognized during our annual awards ceremony. The event took place during WEFTEC.06 at the Hyatt Regency in Dallas. Carollo Engineers provided financial support for the Meet and Greet. As usual there were many excellent nominations for of all the awards and the Awards Committee had another difficult job to perform. This year the committee was chaired by Dr. Nancy Love (Virginia Tech). The AEESP Past President, Dr. Pedro Alvarez (Rice University), and the AEESP President-Elect, Dr. James Mihelcic (Michigan Technological University), assisted in handing out the awards.

Distinguished Service Award

Pedro Alvarez – In appreciation for outstanding service as president and board member of AEESP.

CH2M Hill/AEESP Outstanding Doctoral Thesis Awards

Thanh Helen Nguyen

“Sorption of Nonionic Organic Chemicals to Soil/Sediment Organic Matter and Black Carbon”

Advisor: William Ball, Johns Hopkins University

Dominic Frigon, University of Illinois, Urbana-Champaign

“Mechanism Explaining Seasonal Biological Foaming in Activated Sludge Wastewater Treatment Systems: Foam-Causing Bacteria Specialize in Consuming Lipids.”

Advisor: Lutgarde Raskin, University of Michigan (current)

MWH/AEESP Outstanding Master's Thesis Awards

First Place: Berat Z. Haznedaroglu

“Fatty Acid Methyl Ester Profiling of Indicator Organisms for Microbial Source Tracking”

Advisor: Metin Duran, Villanova University



Berat Haznedaroglu (student, 2nd from right) and Metin Duran (advisor, right) receive first place for the MWH/AEESP Outstanding Master's Thesis Award from Pedro Alvarez (left), James Mihelcic (2nd from left), and MWH Senior Vice President Rudy Tekippe (center).



Ilisa Tawney (student, 2nd from right) and Jennifer Becker (advisor, right) receive second place for the MWH/AEESP Outstanding Master's Thesis Award from Pedro Alvarez (left), James Mihelcic (2nd from left), and MWH Senior Vice President Rudy Tekippe (center).



Menachem Elimelech (2nd from left) receives the Malcolm Pirnie/AEESP Frontier of Research Award from Pedro Alvarez (left), James Mihelcic (right), and Doug Owen from Malcolm Pirnie, Inc. (2nd from right).

Second Place: Ilisa Tawney

“Evaluating the Impact of Wetland Plant and Rhizosphere Microorganisms on the Fate of a Model Chlorinated Solvent in a Wetland Plant Bioreactor.”

Advisor: Jennifer G. Becker, University of Maryland

Malcolm Pirnie/AEESP Frontier of Research Award

For advancing the environmental engineering and science field through recognized research leadership and pioneering efforts in a new and innovative research area: Menachem Elimelech, Yale University.

AEESP Outstanding Publication Award

In recognition of the author (or authors) of a landmark environmental engineering paper that has withstood the test of time and significantly influenced the practice of environmental engineering:

“Long-Term Sorption of Halogenated Organic Chemicals by Aquifer Material. 2. Intraparticle Diffusion” (1991) *Environ. Sci. Technol.*, 25(7); 1237-1249.

William P. Ball and Paul V. Roberts

AEESP Outstanding Educator Awards

The McGraw-Hill “Outstanding Teaching in Environmental Engineering and Science” Award: David Hand, Michigan Technological University.

The John Wiley & Sons “Outstanding Contribution to Environmental Engineering and Science Education” Award: Cliff Davidson, Carnegie Mellon University.

2006 AEESP Founder’s Award

For sustained and outstanding contributions to environmental engineering education and practice: John F. Andrews, Professor Emeritus, Rice University.

The Frederick George Pohland Medal

In recognition of sustained and outstanding efforts to bridge environmental engineering research and practice: C. Herb Ward, Rice University.



David Hand (right) receives the AEESP/Wiley Award “Outstanding Contribution to Environmental Engineering and Science Education” from James Mihelcic (left) and Pedro Alvarez (center).



William Ball (right) receives the AEESP Outstanding Publication Award from James Mihelcic (left) and Pedro Alvarez (center). (Inge, the wife of recently deceased co-author Paul Roberts, was unable to attend).



John Andrews (at podium) receives the AEESP Founder’s Award from Pedro Alvarez (left), James Mihelcic (right).

2007 AEESP Award Nominations

The AEESP Foundation is a new home for the numerous awards that our community presents for outstanding contributions to environmental engineering education and research. Nominations for these awards are now being accepted.

Award descriptions and nomination instructions are presented below. Instructions may also be found on the AEESP Web page, which also provides lists of prior award winners. The Frederick George Pohland Medal and the AEESP Founders’ Award will be presented at the AEESP conference at Virginia Tech (July 2007). The presentation of other awards will be made by their corporate sponsors at the Meet-and-Greet reception of the 2007 WEFTEC conference in San Diego (October 13-17, 2007).

All nominations are due March 15, 2007, and should be sent (except Ph.D. and M.S. theses awards*) to the chair of the awards committee: Professor Nancy G. Love, Department of Civil and Environmental Engineering, Virginia Polytechnic Institute and State University, 418 Durham Hall (0246), Blacksburg, VA 24061; e-mail: nlove@vt.edu; Tel: (540) 231-3980 [*Mailing addresses for Ph.D. and M.S. theses nominations are provided separately below.].

AEESP Founders’ Award

This award is given annually to recognize an environmental engineering or science professor who has made “sustained and outstanding contributions to environmental engineering education and practice.”

Supporting documentation is required at the time of nomination. Nomination packages should include a full curriculum vitae for the nominee, a cover letter from the nominator, and at least two but no more than five additional letters of recommendation. Past nominations will be carried over and considered for three years; nominators are free to modify or enhance their nomination packages.

AEESP Outstanding Publication Award

This award is given annually to recognize the author(s) of a “landmark environmental engineering and science paper that has withstood the test of time and significantly influenced the practice of environmental engineering and science.” At least one of the authors must be living and previous winners are ineligible for a period of three years.

Nominations must be made by individuals who are not authors or co-authors of the paper. Nominating letters (2-page maximum) should give the full citation of the paper, the reasons why the paper is considered a landmark, and a description of the influence the paper has had on environmental engineering and science. Nomination packages should also include at least two but no more than five additional letters of support. Past nominations will be carried over and considered for three years; nominators are free to modify or enhance their nomination packages.

Malcolm Pirnie/AEESP Frontier in Research Award

This award is given annually to recognize an environmental engineering or science professor who has advanced the environmental engineering and science field through recognized research leadership and pioneering efforts in a new and innovative research area. The selected recipient will receive a plaque and a cash prize of \$4,000. Malcolm Pirnie, Inc. also provides \$1,000 in travel allowance to be used by the recipient to attend the awards ceremony.

Nominators must send a supporting statement plus selected literature citations that clearly detail the nominee’s contribution to the new and innovative research achievement for which the nominee is being honored. Supporting documentation is required at the time of nomination. Nomination packages should include a full curriculum vitae for the nominee, a cover letter from the nominator, and at least two but no more than five additional letters of recommendation describing the

pioneering efforts and innovative nature of the nominee’s work. Past nominations will be carried over and considered for three years; nominators are free to modify or enhance their nomination packages.

AEESP thanks Malcolm Pirnie, Inc., for their generosity in sponsoring this award.

CH2M Hill/AEESP Outstanding Doctoral Dissertation Awards

These awards annually recognize two outstanding doctoral dissertations that contribute to the advancement of environmental science and engineering. The awards will each consist of a plaque and a cash prize of \$1,500 for the student, and a plaque and a cash prize of \$500 for the faculty advisor. CH2M Hill, Inc. also provides \$750 as travel allowance to recipients who attend the awards ceremony. A selection committee of three AEESP members will read and judge each dissertation on the basis of 100 points allocated as follows: scientific and technical merit of the research (30 pts), originality of the research (30 pts), contribution to advancement of environmental engineering (30 pts), and clarity of presentation (10 pts).

Faculty advisors are encouraged to nominate a dissertation completed under their supervision by sending three copies of the dissertation to the chair of the doctoral thesis review panel:

Stefan Grimberg
Department of Civil and Environmental Engineering
Clarkson University
208 Rowley Laboratories
Potsdam, NY 13699-5710
e-mail: grimberg@clarkson.edu; Tel: (315) 268-6490.

Nominations should include a simple letter of transmittal stating: (1) the address, e-mail, and phone number for the student and advisor, (2) an indication as to when the dissertation was completed, and (3) a concise statement defining the student’s intellectual contribution to the work. The latter statement is especially important if multiple authors contributed to the work under consideration. The cop-

ies will not be returned. Faculty advisors are urged to limit themselves to a single entry; self nominations by students will not be accepted.

AEESP thanks CH2M Hill, Inc., for their generosity in sponsoring this award.

Montgomery Watson Harza Consulting Engineers/AEESP Master’s Thesis Awards

This award annually recognizes the first and second most outstanding M.S. theses that contribute to the advancement of environmental science and engineering. Each award consists of a plaque and a cash prize for both the student and the faculty advisor. The prize for the first place award consists of a plaque and \$1,500 for the student and a plaque for the faculty advisor. The second place award consists of a plaque and cash prize of \$500 for the student and a plaque for the faculty advisor. Montgomery Watson Harza also provides \$750 as travel allowance to all recipients who attend the awards ceremony. A selection committee of three AEESP members will read and judge each thesis. Each thesis will be evaluated based on 100 points allocated to the following major categories: scientific and technical merit (30 pts), originality of research (30 pts), contribution to the advancement of environmental engineering (30 pts), and clarity of presentation (10 pts).

Faculty advisors wishing to nominate a student for this competition should send three copies of the thesis to the chair of the master’s thesis review panel:

Dion D. Dionysiou
Department of Civil and Environmental Engineering
University of Cincinnati
765 Baldwin Hall, Mail Stop #0071
Cincinnati, OH 45221-0071
e-mail: Dionysios.d.dionysiou@uc.edu;
Tel: (513) 556-0724

The submission should be accompanied by a simple letter of transmittal stating (1) the address, e-mail, and phone number for the student and advisor, (2) an indication as to when the thesis was

completed, and (3) a concise statement defining the student's intellectual contribution to the work. The latter statement is especially important if multiple authors contributed to the work under consideration. The copies will not be returned. Faculty advisors are urged to limit themselves to a single entry; self nominations by students will not be accepted.

AEESP thanks Montgomery Watson Harza for their generosity in sponsoring this award.

AEESP Outstanding Educator Awards

Two Outstanding Educator Awards are given, one for "Outstanding Teaching in Environmental Engineering and Science" and one for "Outstanding Contribution to Environmental Engineering and Science Education." These awards are given annually to recognize environmental engineering or science professors who are making outstanding contributions to the teaching of environmental engineering, both at the individual's home institution and beyond. A cash award of \$500 is supported in each category. Previous winners are ineligible for the same category.

The award for "Outstanding Teaching in Environmental Engineering and Science" is given annually to "honor a faculty member who has made substantive contributions directly through classroom-oriented teaching, as enhanced through the development of new pedagogic techniques." Although open to nomination at any rank, the award is intended primarily to recognize a demonstrated commitment to teaching early in a person's career. Preference is usually given to nominees who are at the assistant or associate level and have demonstrated success with the application of innovative teaching techniques, especially to undergraduate classes. The award is sponsored by McGraw-Hill.

The award for "Outstanding Contribution to Environmental Engineering and Science Education" is given annually to "recognize and honor the development of innovative teaching methods, including the application of these methods in

the classroom and the dissemination of methods to the academic community." Preference is usually given to nominees who have both (1) developed and applied innovative and improved teaching techniques and (2) disseminated these contributions to the educational community through appropriate and widely accessible means. This award is open to nomination at any rank. The award is sponsored by John Wiley & Sons, Inc.

Nomination packages should include brief curriculum vitae (10-page maximum), a cover letter from the nominator, and at least two but no more than five additional letters of support. Supplemental supporting documents are welcome but not essential.

The Frederick George Pohland Medal

This award honors an individual who has made sustained and outstanding efforts to bridge environmental engineering research and practice. Only members of AEESP and/or AAEE are eligible to receive this award. The award will consist of a medal, a cash award, and travel costs of up to \$1,000 for travel to the award ceremony.

Nominations must be made by members of AEESP and/or AAEE. Supporting documentation is required at the time of nomination. Nomination packages should include a full curriculum vitae for the nominee, a cover letter from the nominator, and at least two but not more than five additional letters of recommendation. Past nominations will be carried over and considered for three years; nominators are free to modify or enhance their nomination packages.

AAEE and AEESP thank the Pohland family and other donors to the Fred Pohland Memorial Fund for their generosity in establishing this award.

Kelvin Gregory joins Carnegie Mellon University



Kelvin Gregory has recently joined the faculty of the Department of Civil and Environmental Engineering at Carnegie Mellon University as an assistant professor. Professor Gregory completed his Ph.D. in

2002 at the University of Iowa and held a post-doctoral position at University of Massachusetts prior to joining Carnegie Mellon. He works in the area of environmental microbiology and specializes in microbial energy generation and environmental restoration.

Water quality professionals team up to receive top water quality award

Howard Weinberg, Steven Cook, and Phil Singer received the prestigious Harrison Prescott Eddy Medal from the Water Environment Federation (WEF), a not-for-profit technical and educational organization of water quality professionals. The award was presented during ceremonies at WEFTEC.06 - the Federation's 79th annual technical exhibition and conference.

Weinberg, Cook, and Singer were selected for their article "Insights to False Positive Total Cyanide Measurements in Wastewater Plant Effluents" featured in *Water Environment Research*. The article described how interferences in wastewater could produce false positive results for cyanide and could cause some publicly-owned treatment works to exceed their cyanide limits. The authors set out to understand the scenarios that may contribute to higher levels of cyanide in the wastewater using newly-introduced analysis. They identified scenarios that lead to the formation of cyanide in wastewater and those that lead to false bias during sample processing and handling. The

authors' work has directly contributed to improved sample analysis of wastewater for cyanide.

The Harrison Prescott Eddy Medal honors research that makes a vital contribution to the existing knowledge of fundamental wastewater treatment principles or processes, as comprehensively described and published in a WEF periodical. "This award not only recognizes the excellence and contribution of noted individuals but of a whole community of public health and environmental professionals," said WEF Executive Director Bill Bertera.

Paul Bishop receives IWA Distinguished Award



Dr. Paul Bishop, University of Cincinnati Associate Vice President for Research and College of Engineering Associate Dean for Graduate Studies and Research, received the Distinguished Service Award from the International Water Association (IWA) at the IWA Biennial Conference in September, 2006, in Beijing, PRC. The IWA Outstanding Service Award is given once every two years for consistent and outstanding service to the Association. IWA is comprised of leading water professionals in science, research, technology, and practice. There are 10,000 individual and 400 corporate members, spread across 130 countries.

Dr. Bishop, former president of AEESP, is the chair of the USA National Council of IWA and represents the U.S. on the IWA Governing Board. He is also a member of the IWA Strategic Council. Both the IWA Governing Board and the Strategic Council met in Beijing during the IWA Biennial Conference.

Following the conference, Dr. Bishop, who is also Herman Schneider Professor

of Environmental Engineering, traveled to Hong Kong to present lectures at the Croucher Foundation Advanced Study Institute on Leading Edge Strategies and Technologies for Sustainable Urban Water Management. His lectures were on "In-Situ Environmental Monitoring."

Tzahi Cath joins Colorado School of Mines



Dr. Tzahi Cath has joined the Colorado School of Mines (CSM) faculty as an assistant professor of environmental science and engineering. Dr. Cath will be a welcome addition to the faculty

adding his expertise in membrane processes for water treatment, wastewater reclamation, and desalination with a current focus on the understanding and application of membrane contactor processes (e.g., forward osmosis and membrane distillation) and pressure-driven membrane processes (e.g., reverse osmosis (RO), nanofiltration (NF), ultrafiltration, and microfiltration). Recent and ongoing research projects include evaluation of NF and RO for purification of reclaimed water, dual-stage NF for seawater desalination, forward osmosis for treatment of brines and waste streams (brackish water, liquids from anaerobic digesters, advanced life support systems), and membrane bioreactors for wastewater reclamation.

Dr. Cath will serve as the associate director of CSM's recently established Research Center for Advanced Water Systems (RCAWS). The center provides researchers with access to SCADA-controlled pressure and current driven membrane testing skids at various scales, membrane bioreactors, as well as soil-column systems simulating soil-aquifer treatment and riverbank filtration, which are housed in a 2,500 ft² high-bay laboratory. An associated water quality labora-

tory provides state-of-the-art analytical equipment including TOC, IC, ICP, HPLC, and GC-MS systems.

2006 Paul L. Busch Award



The Water Environment Research Foundation (WERF) Endowment for Innovation in Applied Water Quality Research presented the 2006 Paul L. Busch Award to Paul Westerhoff,

Ph.D., for his research investigating the fate of commercial nanomaterials in drinking water and wastewater treatment plants and their potential human toxicity. Westerhoff is an environmental engineering professor at Arizona State University. The Paul L. Busch award carries with it a \$100,000 research grant that will aid Westerhoff and his team at Arizona State University as they attempt to provide fundamental knowledge of nanomaterial interactions that will facilitate their control in wastewater treatment plants. It is hoped that this research will improve operation of existing plant processes (e.g., membranes, filters, sedimentation basins, and UV irradiation) and catalyze research opportunities on the beneficial use of nanotechnology in diagnostic tools or treatment processes. In addition to the Paul L. Busch Award, Westerhoff has received numerous honors, including the Quentin Mees Research Award from the Arizona Water and Pollution Control Association (AWPCA) and the Walter L. Huber Civil Engineering Research Prize from the American Society of Civil Engineers.

Julie Zimmerman joins Yale University



Julie B. Zimmerman has joined the Environmental Engineering Program at Yale University as an assistant professor in January, 2007. Julie received her B.S.

(1997) in Civil/Environmental Engineering from the University of Virginia, M.S. (1999) in Environmental Engineering and Water Resources from the University of Michigan, and a joint Ph.D. (2003) from the College of Engineering (Environmental Engineering) and the School of Natural Resources and Environment at the University of Michigan. Prior to coming to Yale, Julie was an assistant professor in the Civil Engineering Department at the University of Virginia. She also served as a program director in the Office of Research and Development of the U.S. Environmental Protection Agency. Julie is co-author of the "12 Principles of Green Engineering," initiated EPA's P3 (People, Prosperity, and Planet) Award: A National Student Design Competition for Sustainability, and serves on the steering committee for the U.S. Partnership for the UN Decade for Education for Sustainable Development. Her research and teaching interests include green engineering, green chemistry, pollution prevention, and sustainability.

AEESP Member News

News items about AEESP members may be submitted for publication in the 'Member News' section by sending them to: Eric Marchand, AEESP Newsletter Editor, marchand@unr.edu.

Report from the 5th Annual ASEE Global Colloquium on Engineering Education

Submitted by James R. Mihelcic

The 5th Annual ASEE Global Colloquium on Engineering Education took place October 9-12 in Rio de Janeiro, Brazil. The title of this year's colloquium was "Engineering Education in the Americas and Beyond." AEESP members at the Colloquium who made presentations included myself and Alok Bhandari. Sharon Jones, Angela Bielefeldt, and Scott Summers were not present but co-authored papers that are available in the conference proceedings.

Most attendees at the Colloquium were individuals representing electrical, manufacturing, and computer engineering. A few attendees provided a vision of educating global engineers in more a social-cultural and environmental context; however, in the reporter session there was no mention of the environment or society. There was also talk of the need to attract more students into engineering and one solution was to introduce technology (e.g., computers, robots) at an earlier age into pre-college education; however, there was little discussion about how to make engineering more socially relevant to young people. It was clear to me that our profession can provide leadership to our colleagues in other engineering disciplines.

Interestingly, out of the nearly 175,000 American students that studied abroad in 2003, only 3% were engineering students, which is only 1% of the American students enrolled in engineering programs. Over the last twenty years the number and proportion of engineering students studying abroad has increased, but very slowly. Most international engineering programs have focused on enabling the engineering student to maintain technological expertise, to function in multi-cultural business, and to compete globally. In those programs, students study or intern in industrialized nations, learning about global markets and internationally

competitive engineering firms (Fuchs and Mihelcic, *Engineering Education for International Sustainability: Curriculum Design Under the Sustainable Futures Model*, Conference Proceedings, 5th Annual ASEE Global Colloquium on Engineering Education, 2006).

Valerie Fuchs, a Michigan Tech doctoral student, noted in her conference paper that while this perspective ensures that American engineers may continue to compete in this period of globalization, a broader view of engineering education for ecological stewardship and ethical reasons provides a context for engineering students to become leaders in global sustainability. This view is the same as that of many AEESP members and their students now engaged in service, service learning, and research in the developing world.

International engineering programs can thus be divided into two types. One group (represented primarily at the Colloquium) focuses on the engineer as a technical problem solver, an industry-oriented engineer who needs to be globally competitive. The other group focuses on the engineer as the public-service agent, a development-oriented engineer who needs to have an understanding of technology, the environment, diverse cultures, economies, and geographies.

In this context, the environmental engineering profession can clearly be a global leader in helping to achieve the Millennium Development Goals (MDGs). The MDGs provide a global vision of development in which health and education are equal pillars of importance. The eight MDGs represent commitments to reduce poverty and hunger, and to tackle ill health, gender inequality, lack of access to clean water, and environmental degradation. For each goal, one or more targets have been set, most for 2015, using 1990 as a benchmark. Three out of eight goals, eight of the 16 targets, and 18 of the 48 indicators relate directly to health (World Health Organization).

To meet interest by the environmental engineering community in this issue, the

Environmental Engineering Division of ASEE has organized sessions that have a developing world focus at the 2007 ASEE Annual Conference & Exposition (June 24-27, 2007 - Honolulu, Hawaii). AEESP's 2007 Education and Research Conference (July 27-August 1, 2007 - Blacksburg, VA) will have a workshop and research session devoted to this topic as well. I hope to see you at both of these events.

Letter to the editor

Overly accumulated research with inadequate outlet

For nearly three decades beginning in the 1960s, an extensive amount of research was carried out on "anaerobic biological processes." Many current and emeritus members of AEESP were in the forefront of the research. From both energy efficiency and sludge production viewpoints, the anaerobic process clearly offered key advantages over its aerobic counterpart. For developing countries, this process looked particularly attractive due to co-production of methane gas with value as fuel. It seemed that aerobic processes would gradually give way to anaerobic ones. That transition has not occurred. Although inconclusive, the inertia of the utility industry to embrace new technologies has long been held responsible for the unfulfilled promise. Many other similar examples abound in our field where seemingly attractive new processes/materials are failing to make strides into the market place in spite of economic advantages and environmental gains. Federally sponsored SBIR (small business innovative research) programs are appropriate only for high-risk, highly focused research with niche applications.

One may readily note that the new environmental technologies moving into the market place are driven by either changed regulations (e.g., disinfection byproducts control, mercury removal from flue gas, arsenic reduction in drinking water) or legal verdicts (e.g., PCB removal or containment from river bot-

oms) and legislative mandates (superfund clean-up). Sustainability, efficiency and economics rarely produce marketable new environmental technologies or products.

In the past AEESP took proactive steps to raise/maintain federal research dollars in environmental engineering and science. Our membership has grown significantly and so has the financial solvency. Most of our research outcomes are by and large confined within the bounds of peer-reviewed journals and doctoral dissertations. Can AEESP explore and initiate the possibility of providing a platform or other means to facilitate the passage of the accumulated body of new knowledge into the real world wherever possible?

Arup K. SenGupta
Professor, Lehigh University
Bethlehem, PA

Just what is this thing we all got?

by P. Aarne Vesilind, Bucknell University



Roger Minear, then at the University of Illinois and a former president of AEESP, and I were once asked to visit with a university to determine if they should establish a new Ph.D. program

in engineering. The university is a very fine teaching school that provides excellent education for thousands of students at an affordable price, but some of the faculty members were getting restless and wanted to establish a Ph.D. program so they could hire graduate students to do research. The state education people were justly concerned that this would not be in the best interests of the students, and asked Roger and myself to visit with the school.

When we arrived at the campus we were presented with what the school was planning to use as a Ph.D. curricu-

lum. The program consisted of required courses in all, or mostly all, of the departments of engineering within the engineering school, and a dissertation. An environmental engineering Ph.D. student, for example, would be required to take two courses in electrical engineering, two in chemical engineering, and so on. It became painfully obvious to Roger and me that this curriculum was a classical definition of a camel – a horse designed by a committee. Every department had a piece of the action, and thus everyone around the table was pleased to have this program go forward.

Roger and I started to discuss with them the very core of the issue – what exactly is a Ph.D.? – and it soon became obvious that they did not have any sense of what this degree was supposed to represent. To them it was just an extension of the master's degree. More of the same, just piled higher and deeper.

I am not sure many of us who have a diploma on the wall with "Ph.D." on it have any better understanding of how this degree came to be and what it is supposed to represent. But if you want to know something about this degree, read a fascinating book, *Academic Charisma and the Origins of the Research University*, by William Clark (Chicago University Press, 2006). This book is a gold mine for trivial and not so trivial information on the development of universities in Europe, and hence in the United States. Unfortunately, the book is infused with annoying street signs that the author insists on splattering on almost every page. He insists on telling the reader what the reader has already read, and what the reader is about to read. "As we saw in Chapter 1, the academic regalia has a colorful history, and Chapter 2 covered the headgear, while in Chapter 4 you will see how the hoods are ...," etc. Perhaps the author is concerned that his organization is so bad that the reader would get lost without the directions?

But never mind. If you can tolerate this blemish, the book is worth reading. I don't want to tell you everything you

will find, but here are some interesting tidbits:

- Academic degrees were unknown to other civilizations. Only the medieval Europeans could have conceived such a degree with its bizarre rituals and symbols.
- In medieval universities, the lecturer sat on a *cathedra*, or chair. The idea of “chaired professorships” comes from this. The academic lecture in those days consisted of a professor sitting in an elevated chair and reading his (or other) learned texts. The picture shows one such classroom. Note the student who is either asleep or retching. Only a few of the students are paying attention, and even fewer are taking notes.
- The bureaucrats who ran the medieval German universities recognized that professors are vain, and in place of giving them proper salaries, they organized various ceremonies and gave them honorific titles and colorful robes. Our regalia hark back to those times, in the mid 1600s.
- The journal, or periodical, became popular in the seventeenth century as “never-ending books,” a way for professors to continue to contribute learned material long after they had obtained their degree. Each journal was in those days the work of a single author.
- The medieval university had a lecture catalog from which students could choose classes, but there were also privately taught classes that existed based on student demand. If the students did not like these classes, they did not pay for them and the professors were without this added income. The idea of the student as a consumer was born.
- There was little of what we would today recognize as “research” in the medieval university. Instead, the *disputation* became the way of sharing information and challenging ideas. This event was something like a Ph.D. oral exam and public debate, and includes the disputant, an opponent, and a presider, in addition to a participa-

tory audience. The purpose of the disputation was to demonstrate that one can stand up to challenge and criticism; the topic was not important and often was trivial.

- During the disputation, the presider was usually the mentor to the disputant, and records show that although the presider was supposed to remain aloof and neutral, he often intervened in support of his protégé – a problem with Ph.D. exams that continues to this day.
- There is a description of the ideal medieval university lecture hall. The specifications include the types of seats to be used, the availability of light and ventilation, the prohibition against bringing dogs to class, and the color of the walls. They are supposed to be pale green! Is this where we got our “first grade green” that is still found in elementary schools?
- Under Roman law, an athlete became a hero of the empire if he was able to withstand three trials. Using this example, medieval professors argued that anyone who achieves doctoral rank should have all the privileges of a crowned athlete. The three trials, which we still have today in our Ph.D. programs, are the master’s degree defense, the preliminary oral with the faculty, and the final Ph.D. dissertation defense.
- Until the middle of the eighteenth century, before one could be admitted to a final Ph.D. oral examination, one had to swear to legitimacy of birth as well as to agree to not seek revenge on the professors if the examination did not go well.
- The topics of the Ph.D. theses during the eighteenth and into the nineteenth

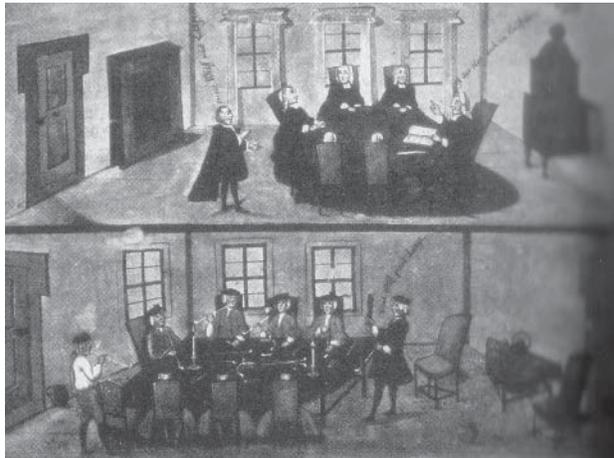


centuries were laughable by today’s standards. Since the disciplinary areas for dissertations were limited, the most popular topic became the university itself. One thesis, for example, was entitled: *On the Reason Why Not Few Scholars Bring Nothing to Light*, or another one: *On the Wicked Wives of Scholars*.

- Wicked wives notwithstanding, women were seldom admitted to academia. There were exceptions, however. The first known doctoral examination of a woman took place in 1787 in Göttingen, Germany. Dorothea Schlösser took the degree of doctor of philosophy (although no such degree existed officially yet.)
- Before the nineteenth century, corporal punishment was common in public schools, but not in universities. In 1780, the Austrian school directors mandated the end to such punishment, saying “All physical punishments are to be abolished at lysea, and only humiliation is to be incurred as a consequence of punishable action.” Public grades were born.
- During the sixteenth century it became common for disputants who wanted advanced degrees to pre-print their remarks, and these eventually became what we now know as dissertations. The professor (the presider at the disputation) often added some of his own

work and the entire treatise was then printed and circulated prior to the public disputation.

- By the mid eighteenth century, the disputation as a means of being tested for an advanced degree was giving way to the examination, not so different from the ones we know today. The figure above shows



one such examination taking place at the University of Jena, around 1740. What is funny about this drawing is that in the top picture, the student, standing to the far left, is obviously being examined, and he is saying “Down with Wolff: Long live Lange” which apparently was the orthodoxy that the examining professors wanted to hear and Lange must have been their boy. But in the lower picture, which shows the celebration after the examination, the student is saying “Long live Wolff: Down with Lange.” [Christian Wolff apparently had some unorthodox views on theology and in 1723 was banned from German universities. Especially problematical was his praise for Chinese culture, which of course was non-Christian. He thus became a *cause célèbre* with the Enlightenment.]

- After the Renaissance there was a decline in the wealth of most German universities, and public monies became available to poor students to help them attend. These students, being poor, ate together in a single dining hall, and the institutions became known as *convictoriums*, that is, those who eat together. Thus the difference between convicts and college students is modest at best.
- Officially, the only Ph.D. degrees awarded in the mid nineteenth century in European universities were

in medicine, law, and theology. In all other fields the highest degree was supposed to be the master’s degree. But this did not stop many universities from awarding the Ph.D., often in many disguises, to academics in other fields.

- The first truly organized Ph.D. program was developed at the University of Berlin in the mid-nineteenth century. Berlin had become the main Prussian university after Napoleon closed the others. Having the advantage of no tradition, the faculty instituted Ph.D. degree programs in many fields and initiated the three-tiered examination (the Roman trial of athletic heroes).
- The first Ph.D. in the United States was awarded at Yale University in 1861.
- Sometime during the beginning of the nineteenth century, the distinction between the master’s degree and the Ph.D. eventually became clear. Here is one description that could easily apply to today’s American university: “The master’s degree is awarded to whoever can skillfully renew and well order what has been learnt, and thus promises to be a useful link in the transmission of knowledge between generations. The doctor’s degree is awarded to whoever shows originality and creativity in the treatment of academic knowledge.”

I wish I had had this definition available

to me when Roger and I were challenged to show why the Ph.D. program proposed by this university was not legitimate. I have always felt that the Ph.D. is not so much a degree as it is a state of mind, and our strict requirements for the degree guarantee that all recipients will have this state of mind – to infuse our field with creativity and originality. I believe that knowing some of the history and significance of this degree can only enhance the pride each of us has in having achieved it.

News submissions deadline

The submissions deadline for the April 2007 AEESP Newsletter is **March 2, 2007**. Send news items to: **Eric Marchand**
AEESP Newsletter Editor
marchand@unr.edu

AEESP membership application

The AEESP membership application is available online at:
http://www.aeesp.org/organization/AEESP_member_app.pdf

Employment Opportunities

University of Oklahoma

The Center for Restoration of Ecosystems and Watersheds (CREW) in the School of Civil Engineering and Environmental Science (CEES) invites applications for M.S. and Ph.D. research assistants in the areas of ecological engineering science and watershed remediation/restoration for projects focused on metal-contaminated lands and waters in the abandoned Tri-State Lead-Zinc Mining District of OK, KS, and MO. Prior expertise in environmental field work and laboratory analysis is preferred. Projects will examine 1) mine drainage passive treatment system function including wetlands biogeochemistry, ecology, hydrology and soil science, and 2) contaminant fate and transport including mine pool/surface water interactions, land reclamation efficacy, and stream restoration.

Assistantships include 12-month stipends of up to \$24,000 plus a tuition waiver. Positions are immediately available. Applicants must meet admission requirements of the University of Oklahoma and CEES. Contact: Keith Strevett at (405) 325-4237, or e-mail: strevett@ou.edu. Women, minorities (especially Native Americans), and persons with disabilities are strongly encouraged to apply. The University of Oklahoma is an EEO/AA employer.

Clarkson University

THE WALLACE H. COULTER SCHOOL OF ENGINEERING--DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING, Faculty Position. The Department of Civil and Environmental Engineering at Clarkson University invites applications to fill a full-time, tenure-track position in environmental engineering. The position rank is open and preference will be given to candidates who possess an outstanding record of accomplishment. Junior candidates with superior potential are strongly encouraged to apply. All candidates would be expected to pursue a vigorous, nationally visible, externally funded research program and maintain a strong commitment to teaching

at all levels. A Ph.D. in environmental engineering or a closely related field is required of all applicants.

The successful candidate will have an interest in collaborative research that complements existing expertise among the environmental engineering faculty and aligns with one or more of Clarkson's interdisciplinary research centers. A wide range of collaborative research opportunities exist within the Center for the Environment, which facilitates interdisciplinary research and education, and the Center for Advanced Material Processes for research on materials processing technologies with industrial applications. Persons are especially sought with expertise in innovative water or wastewater treatment technologies, applications employing biomolecular tools, environmental systems analysis, or engineering and policy for sustainability.

The Department of Civil and Environmental Engineering, with 16 faculty, and the Clarkson Center for the Environment, with over 40 faculty affiliates, provide research, education and outreach opportunities for faculty and their graduate students. The range of research expertise among these faculty has resulted in Clarkson being ranked 24th in the country in environmental engineering and health graduate programs in 2006. Research income for the Center for the Environment exceeded \$2.5 million in the 2005 academic year. Separate bachelor's degrees are offered in civil engineering and environmental engineering. Master's and doctoral degrees are offered in civil and environmental engineering, and in environmental science and engineering.

Interested individuals should submit curriculum vitae, statements of research and teaching interests, and a list of at least three references in one PDF file to stoddard@clarkson.edu or by mail to: Pam Stoddard, Assistant to the Director/Center for the Environment, Clarkson University, PO Box 5715, Potsdam, NY 13699-5715. Applications received by December 15, 2006 will receive

highest consideration. Contact Professor Thomas Holsen with questions about the position (holsen@clarkson.edu). For more information about the CEE Department, see www.clarkson.edu/cee. For more information about the interdisciplinary research centers, see <http://www.clarkson.edu/dor/centers/>. POS# 53-06. Clarkson University is an Equal Opportunity Affirmative Action Employer.

Clemson University

ASSISTANT/ASSOCIATE PROFESSOR. The School of the Environment at Clemson University is seeking applications for a tenure-track position at the assistant or associate professor level in the nuclear environmental engineering and science focus area. Applicants must have an earned Ph.D. (or equivalent) in environmental radiochemistry, environmental health physics, radioecology, or a closely related field.

The successful candidate is expected to teach courses in the nuclear environmental engineering and science specialty area. Development of new courses will also be encouraged. The candidate will advise M.S. and Ph.D. students, is expected to develop a high-quality, well-funded sponsored research program, and be active within their respective professional society. Excellent opportunities exist for collaboration with colleagues in the School of the Environment and numerous other academic units on campus that focus on environmental issues.

Additional information on the position is available at www.ces.clemson.edu/ees/Employment.htm. Review of candidates will begin December 15, 2006, and will continue until the position is filled; however, full consideration will be given to applications received by February 15, 2007. Send C.V., a statement of teaching and research interests, transcripts, representative peer-reviewed publications, and a list of at least three references with contact information to: Dr. Timothy A. DeVol, School of the Environment, Environmental Engineering and Science, Clemson University, 342 Computer Court,

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Anderson, SC 29625.

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ASSISTANT PROFESSOR. The School of the Environment at Clemson University is seeking applications for a tenure-track position at the assistant professor level. Applicants must have teaching and/or research experience in the general area of environmental fluid flow and reactive transport that occurs primarily above the ground surface. Example areas of expertise include the following: atmospheric/watershed interactions and transport; ecohydrology, reactive surface water flow and transport; carbon cycling and sequestration, and global circulation modeling. An earned Ph.D. in environmental or civil engineering, earth and atmospheric science, or a related area is required. The successful candidate will be expected to develop/teach courses at the graduate and undergraduate level, and develop a funded research program. Registration or the ability to become registered as a Professional Engineer is desirable. Excellent opportunities exist to collaborate with other faculty in subsurface transport and remediation, risk assessment, hydrogeophysics, geochemistry, aquatic ecology, toxicology, environmental policy, geostatistics, and related fields. Additional information on the position is available at www.ces.clemson.edu/ees/Employment.htm. Review of applications will begin December 15, 2006, and will continue until the position is filled; however, full consideration will be given to applications received by February 15, 2007. Send a resume, a statement of teaching and research interests, graduate transcripts, copies of representative publications, and a list of at least three references to: Dr. Ronald W. Falta, School of the Environment, Brackett Hall, Room 340C, Clemson University, Clemson, SC 29634-0919.

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University of Houston

University of Houston, Department of Civil and Environmental Engineering is seeking to fill a tenure track faculty position either in environmental engineering or structural engineering commencing in fall 2007. The environmental engineering appointment will preferably be at the assistant professor level; however, higher-level appointments will also be considered. Candidates should have a Ph.D. in environmental engineering or science (or in a related field) and should demonstrate the ability to develop a nationally recognized research program in environmental microbiology and biotechnology. Responsibilities of this position include (1) teaching undergraduate and graduate courses, (2) interacting with a multi-disciplinary group of faculty in the department, college, and university, (3) performing service to the profession of environmental engineering and science, and (4) publishing in leading scholarly journals.

We prefer candidates with experience in developing and implementing molecular methods to better understand microbial processes and interactions in natural or technological systems. The environmental engineering program currently has five full-time faculty who actively perform research in subsurface transport and remediation, hydrology, advanced water purification technologies, and air pollution. Additional information regarding the Environmental Engineering Program may be found at: www.egr.uh.edu/CIVE.

For full consideration, applicants should send a curriculum vitae, a statement of research and teaching interests, and the names and addresses of four references to Dr. C. Vipulanandan, Chairman and Professor, Department of Civil and Environmental Engineering, University of Houston, N107 Engineering Building

1, 4800 Calhoun Road, Houston, Texas 77204-4003. E-mail inquiries and PDF files may be sent to Professor Dennis Clifford (daclifford@uh.edu) or Professor Shankar Chellam (chellam@uh.edu). Review of applications will begin immediately and continue until the position is filled.

The University of Houston is a public university with 27,000 undergraduate and 8,000 graduate students located in a 200 acre park-like setting a few minutes from downtown Houston. The department has 13 full-time faculty members, 240 undergraduate, and 120 graduate students. University of Houston is an Equal Opportunity/Affirmative Action employer. Minorities, women, veterans, and persons with disabilities are encouraged to apply.

The Johns Hopkins University

TWO FACULTY POSITIONS IN ENVIRONMENTAL ENGINEERING: Physicochemical Processes and Environmental Systems/Policy.

The Department of Geography and Environmental Engineering at Johns Hopkins University invites applications for two tenure-track positions beginning in fall 2007. We seek applicants in two areas: 1) Physicochemical processes, where candidates are sought with strong scientific foundations interested in finding sustainable engineering solutions to pressing local, national, and global problems, especially those involving water; and 2) Systems analysis/operations research/mathematics with application to environmental engineering, science, and policy, where we seek candidates with expertise in optimization, scientific computation, simulation, control, decision analysis, or statistics. The department is concerned with understanding the nature, dynamics and sustainability of ecosystems, engineered systems, and societies, and the design of strategies and technologies to address critical environmental problems. Information about the department can be found at: <http://www.engineering.jhu.edu/~dogee/>. The department is multidisciplinary and

Employment Opportunities

encourages collaborative research.

Candidates for the physicochemical processes position should have a doctorate degree in environmental engineering or closely related field. Candidates for the systems/policy position should have a doctorate in engineering, operations research, applied mathematics, quantitative policy analysis, or other appropriate discipline. The successful candidates must demonstrate potential to establish externally funded research programs, to build and lead teams of graduate students in Ph.D. research, and have a strong commitment to undergraduate and graduate teaching. Preference is given to applicants at the assistant professor level although exceptional candidates at higher ranks will be considered. Send a letter of interest, curriculum vitae, a one or two-page summary of research and teaching interests, relevant papers and publications, and names of five references in a single PDF file to dogee@jhu.edu. The review of applications will begin on February 1, 2007. Applications will be accepted until the position is filled. For additional information, contact Professors Edward Bouwer (bouwer@jhu.edu) (physicochemical processes position) and Ben Hobbs (bhobbs@jhu.edu) (systems/policy position). The Whiting School of Engineering is committed to building a diverse educational environment; women and minorities are strongly encouraged to apply. The Johns Hopkins University is an EEO/AA employer.

University of Colorado

FACULTY POSITION IN MECHANICAL ENGINEERING. The Department of Mechanical Engineering at the University of Colorado at Boulder invites applications for a full-time, tenure-track, assistant professor position, beginning fall 2007. We seek an outstanding candidate with experimental expertise in the field of air quality engineering. Preference will be given to candidates who will complement and enhance growing departmental research and academic programs in this area.

The successful candidate will be expected to participate in building collaborations with campus-based centers and institutes as well as federal laboratories including NCAR and NOAA. The position requires a strong commitment to scholarship, the development of an externally funded research program, and teaching at the undergraduate and graduate levels in mechanical engineering. Candidates must have an earned doctorate in mechanical, chemical, or environmental engineering or a closely related field with a strong background in research in their area of specialization. Exceptionally well-qualified candidates with outstanding credentials may be considered for appointment at a higher level.

Applicants should send by e-mail a single PDF-format file that contains a curriculum vita, statements of research and teaching interests (two-page limit for each), and the names, addresses, and telephone numbers of at least three references. Applications should be addressed to Professor Alan R. Greenberg, Search Committee Chair at meseach@colorado.edu.

Review of applications will begin as they are received, and will continue until the position is filled. Additional information regarding the Mechanical Engineering Department including our research and academic programs can be found at <http://me-www.colorado.edu/>. The University of Colorado is committed to diversity and equality in education and employment.

University of Hawaii

POSTDOCS (2 POSITIONS), WATER RESOURCES RESEARCH CENTER, University of Hawaii at Manoa. Areas: 1) Contaminant transport process, 2) Watershed hydrology. Two post-doctoral positions (each one-year long) are available to commence after January 2007, at the Water Resources Research Center, University of Hawaii at Manoa. The first is in the area of contaminant transport processes (both modeling and field/lab work) with special focus on colloid facilitated transport in tropical soils and biogeochemical

modeling. The second is in the area of watershed modeling with emphasis on watershed assessment, protection, and overall management. Selected candidates are expected to develop innovative research proposals for extramural funding. Applicants should have received a doctoral degree in a relevant discipline no earlier than 2004 and no later than the starting date. The annual stipend is \$40,000 plus \$5,000 research support. Applicants should send a letter of application, a current curriculum vitae, and a two-to-four page statement of proposed research activity. Three letters of recommendation should be sent directly by referees familiar with the candidate's qualifications, accomplishments, and research potential. Application address: Recruitment Committee, Water Resources Research Center, University of Hawaii at Manoa, 2540 Dole Street, Room 283, Honolulu, Hawaii 96822. For inquiry, contact Professor Chittaranjan Ray, (808) 956-7847, cray@hawaii.edu. Closing date: open until filled.

Pennsylvania State University

The Department of Civil and Environmental Engineering invites applications for a tenure-track faculty position at the assistant or associate professor level in water resources engineering. Candidates with an emphasis in the area of ecohydraulics are particularly sought. The candidate should be advancing work in one or more of the following areas: river hydraulics, ecological processes, watershed management, fluvial geomorphology, water quality, geospatial methods, sustainability, and land use/land cover change impact assessment. The successful candidate will be expected to contribute to teaching within the department, and to develop a nationally and internationally recognized research portfolio. The successful candidate will join a faculty with research interests including predictions in ungauged basins, river restoration, coastal hydrodynamics, hydrologic observatories, groundwater-surface interactions, hydroinformatics,

and stochastic hydrology. Excellent opportunities are available for interdisciplinary research within the CEE Department, and throughout the University Park campus.

Applicants should have a Ph.D. in civil engineering or a closely related field at the time of appointment. Applicants should send (1) a resume, (2) the names and addresses of three references, and (3) statements of teaching and research interests in Microsoft Word or PDF formats to the Search Committee Chair at: watersearch@enr.psu.edu. Applications will be considered until the position is filled and review of applications will begin immediately. In order to receive full consideration for this position, applications should be submitted by February 1, 2007.

Women and minorities are encouraged to apply. Penn State is committed to affirmative action, equal opportunity, and the diversity of its workforce.

San Diego State University

FACULTY POSITION IN ENVIRONMENTAL ENGINEERING. The San Diego State University, Department of Civil and Environmental Engineering invites applications for a tenure-track position at the rank of assistant professor in the area of environmental engineering to commence fall semester of 2007.

The individual is expected to develop an excellent research program and to contribute fully as a scholar through teaching of undergraduate and graduate courses and through service to the profession. The research interest should relate to water and wastewater engineering. The applicant should have a Ph.D. degree in environmental engineering or a related engineering field. Professional registration or the ability to become registered is preferred.

The Department of Civil and Environmental Engineering offers B.S. and M.S. degrees in environmental engineering, and the College of Engineering offers a Ph.D. degree jointly with University of California at San Diego. The B.S.

degree in environmental engineering is ABET accredited. The department has a successful research record in the areas of water and wastewater treatment technologies, solid and hazardous waste management, soil-water interactions, environmental hydrology/hydraulics, and GIS applications. The department houses excellent research and teaching laboratories. More information on the program and research interests of existing faculty can be found at: <http://www.engineering.sdsu.edu/civil/>.

Signed applications with curriculum vita, a statement of research and teaching interests, and the names of at least three references, should be sent to: Dr. Mirat D. Gurol, Department of Civil and Environmental Engineering, San Diego State University, San Diego, CA 92182-1324. You may contact Dr. Gurol at mguro1@mail.sdsu.edu with questions.

Washington University

The Department of Energy, Environmental, and Chemical Engineering at Washington University (www.eec.wustl.edu) seeks applicants for up to five positions.

I) Environmental Engineering Science (1 position): This search is open to all areas of aquatic science and technology. Preference will be given to individuals with expertise in environmental organic chemistry, physical-chemical processes in natural and engineered aquatic systems, environmental biotechnology, and environmental nanotechnology. Applicants are encouraged to apply for all ranks based on experience; an endowed professorial position is also available for qualified applicants.

II) Bio-energy and Environmentally Benign Energy Production (up to 3 positions): An ambitious program to employ systems-level research approaches to investigate alternate forms of energy production has been initiated. This program will allow productive interactions between members of the School of Engineering and Applied Sciences (SEAS), the College of Arts and Sciences, and the School of Medicine. Preference will

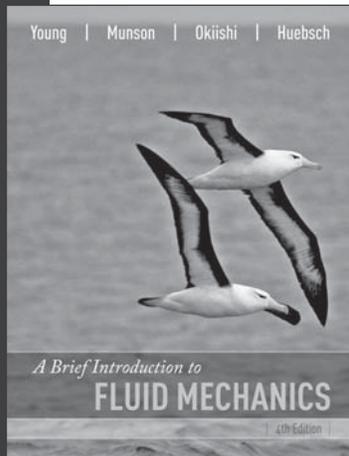
be given to individuals with expertise in systems biology, bio-transformation, metabolic engineering, environmentally benign energy production, and nano-biotechnology. Applicants are encouraged to apply for all ranks; endowed professorial positions are available for qualified applicants.

III) Advanced Materials (1 position): The School of Engineering and Applied Sciences and the Center for Materials Innovation (CMI) invite applications and nominations for the McKelvey chair in interdisciplinary materials research. Outstanding candidates are sought whose interests and internationally recognized accomplishments fall within a very broad range of materials disciplines which include but are not limited to nanoscopic materials, bio-materials, inorganic and organic semiconducting materials, opto-electronic materials, energy-related materials, smart materials, environmental materials, magnetic and ferroelectric materials. The successful candidate will have a primary appointment in one of the departments of the SEAS, with collateral membership in the CMI.

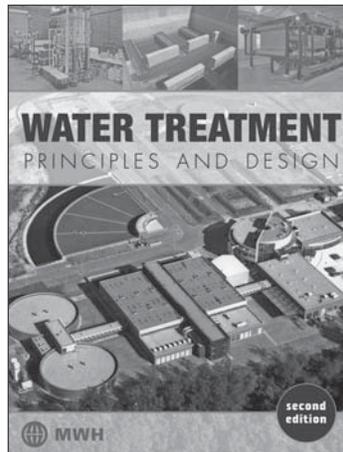
Interested applicants should provide a detailed curriculum vitae, statements of research and teaching interests, transcripts (for candidates who are currently pursuing or have recently earned a doctoral degree), and a list of three references (with telephone numbers and e-mail addresses). Application materials must be submitted electronically by email as a single file in editable (e.g., not password protected) PDF format to the address for the particular position (environmentalfaculty@seas.wustl.edu, energyfaculty@seas.wustl.edu, or materialsfaculty@seas.wustl.edu). Review of applications will begin immediately, but applications will be received until the positions are filled.

Washington University in St. Louis is an Equal Opportunity and Affirmative Action Employer. Applications from women and under-represented minority groups are strongly encouraged.

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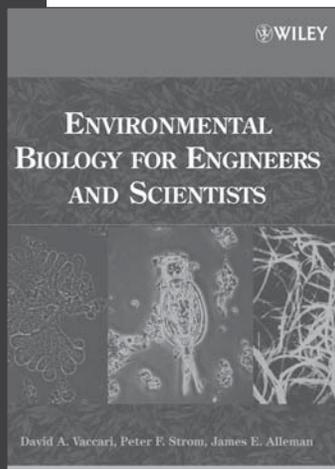


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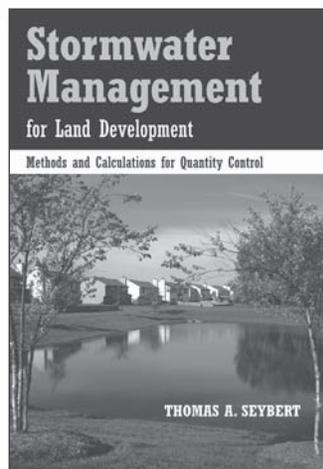


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