

Highlights of the AEESP Board of Directors Spring 2015 Meeting and 2015 Election Results

Submitted by PETER VIKESLAND,
AEESP VICE-PRESIDENT

The AEESP Board of Directors met at the University of South Florida on February 2 & 3. Brian Schorr of the AEESP Business Office joined the Board at this meeting. The following briefly summarizes the meeting highlights:

The Board discussed a request to endow the Dentel Global Outreach Award. After a brief discussion the Board unanimously approved the motion to provide up to \$10,000 in matching funds in 2015 for contributions to the Award endowment. Matching in subsequent years will be decided by future Board votes.

The Board also discussed the activities of numerous AEESP committees (Thanks as always to our dedicated volunteers!). Of immediate interest to the AEESP membership were the plans of the Conference Planning committee led by Jaehong Kim of Yale University. Jaehong and his colleagues have developed a promising agenda for this meeting and the Board encourages everyone to attend.

Much of the remainder of the meeting was focused on financial planning and further formalizing the relationship between AEESP and the AEESP Foundation Board.



Tampa Bay Desalination Plant Tour, February 2, 2015



AEESP 2014-2015 Board of Directors, Tampa Florida

The next meeting of the AEESP Board of Directors will be held in June at Yale University following the conclusion of the 2015 AEESP Research and Education Conference. At that meeting, the Board will be joined by three new members: Greg Lowry (Carnegie Mellon), Jeanine Plummer (Worcester Polytechnic Institute) and Maya Trotz (U. South Florida). Greg, Jeanine, and Maya were elected to the board in the Spring 2015 election. Thanks to each of them and the other Board of Directors candidates for their willingness to support AEESP!

AEESP Distinguished Lecture Tour 2014-2015

by BRUCE LOGAN

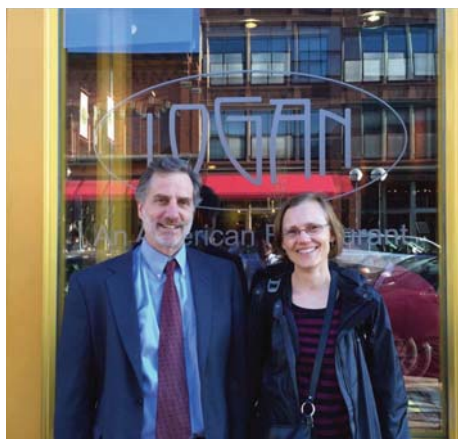
It was my great honor and pleasure to visit so many different universities during this past year as a part of the AEESP Distinguished Lecturer Tour. I visited 13 universities in the US, and (for the first time by an AEESP Lecturer, I believe) 2 universities outside the US: Nankai University, in China (close to Beijing); and KAUST, in Saudi Arabia. Back in the mid 90's when I was on the AEESP board, two important changes were made to our bylaws: we included the "S" in our name, to reflect the relatively large number of science-trained people in our organization; and we opened membership to those living outside North America. Today we have AEESP members all over the world, and it was therefore my special honor to travel and meet our fellow AEESP-ers living outside the US, as a part of this lecture series. This tour gave me opportunities to meet students from many different environmental engineering programs, and to informally poll these students and faculty at each location, over a relatively short period of time, on a few specific topics. I wanted to share a few of the things I

learned during my discussions with these faculty and students.

Paths not pipelines. We have incredibly diverse students in environmental engineering, likely more so than in any other engineering field. You probably can see that in your own program, but traveling around to all the different universities I could see that this was true almost everywhere. We are encouraged to "keep students in the pipeline" of STEM in middle and high school, and then engineering or other STEM fields in college, so that they are on track to enter their chosen fields. Some go this direct route, but not all follow a single path into or out of engineering. A large number of our students obtain degrees in different, and sometimes non-engineering, fields as diverse as liberal arts or aligned science fields, and only later take the path leading to an engineering degree. There are students that graduated with an engineering degree and worked for a few years, but found their "chosen" field or job not sufficiently challenging (boring?), uninspiring, or just not the right match to their skills and desires. Some had great jobs in the peace core or in the military, and then decided the time was right for the next phase of their career. All these people came back to the university with greater maturity and a passion for their work compared to when they graduated. I could see that these people were leaders, and that they inspired others around them. I was truly fascinated by hearing all the different paths by which students come to pursue their degrees.

Just how tough is the funding situation these days, and how is it affecting young (non-tenured) faculty? If there was one thing that everyone agreed on, it was that getting funding was getting really hard. That was no surprise. So the real question was whether challenging times were affecting young faculty in tenure tracks. Surprise: the answer was usually "No". I could see that these tenure track faculty were working hard, but I saw lots of evidence they were being mentored and getting good advice from colleagues, and good support from the university. Many departments give their new faculty light teaching loads for the first few years, and provide great startup packages that include funding for a couple of students, materials, and equipment they need for their lab. As new faculty were usually selected for their current and cutting edge research areas and abilities, they were finding success in getting funding agencies to support their work. Still, I heard from all the assistant professors that they felt it was particularly challenging, even though

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Bruce Logan with Lut Raskin in front of Logan in Michigan.

they were finding ways to be successful. In a few cases, they were very concerned and time was running out. All these young faculty felt stressed about the tenure deadlines, but I suspect that has always been true and not unique to current funding challenges.

One full professor summed up a challenge in getting funding with the statement: "I just don't know where to send a proposal to anymore". Many federal agencies that used to fund research no longer have programs to do that, or they have reduced them to the point that no "new" people can get in. Program managers used to hear a talk or find your work interesting, and they were approachable and open to new directions of funding, oftentimes based on just a short proposal. Now there seem to be few such opportunities and all funding is through highly advertised and competitive projects. Who funds truly innovative work? NSF does, but many faculty said that they considered NSF a lottery even among great proposals, and the limited funding (if you were to get it) was a challenge for supporting even one student as the amount per year on a project hasn't really changed in decades. With tuition increasing at a rate above inflation, student salaries going up each year, and the cost of research supplies and travel also increasing, it is tough to fund even a single student on an NSF grant... and don't even think there is room for a month of summer or academic year salary! Is this NSF's fault? No, they are constrained by funding and trying to do what they can. Their choice is to either keep funding levels flat, or to raise the amount per grant, and give out fewer grants. Most people prefer the "more grants" option (higher success rates). Many of the people I talked with did have NSF

funding, and several young faculty had NSF Career grants, and so they were happy and feeling quite fortunate. But perhaps my sample size was limited as I visited only programs that could find funding to support the AEESP lecture series?

A few lucky programs that have large, multi-investigator grants that span 5 years at a time, and these people seemed the most content, as they had project that offered stable funding. These large projects were typically from the NIH or EPA, with some from state agencies, and one from the NSF. We would all love to get an NSF STC or ERC, but those are extremely difficult to get and they require enormous effort and great leadership. Still, it is nice to see our environmental engineering programs sustained by such projects in a few cases, as much of these funds could have gone outside our field.

Is funding truly more difficult to get? While everyone said yes, and my survey was definitely not statistically valid, there are other indicators. Most universities aren't advertising it but many of them are for the first time experiencing a decline in extramural funding, and the signs are that funding could continue to decrease. A decrease in actual dollars, coupled with inflation, will translate eventually to fewer graduate students at a university, and make it more difficult to maintain our infrastructure, which for many of us means our laboratory equipment. Universities that are fortunate to have sufficient internal funds to use for maintaining their equipment and infrastructure, and funding for large startup packages, will have an advantage compared to universities with smaller endowments. Certainly funding for endowed chairs, particularly positions with discretionary funds, can enhance the viability of a program and help attract or keep the very best faculty.

What are the environmental topics of most interest? Many people are finding success in research on emerging chemicals in the environment, and tracking the fate of these in engineered and environmental systems. A couple of universities had long-term funding in air pollutants, although many environmental programs did not include air in their programs. It seemed that projects related to remediation of groundwater pollutants were much decreased compared to past years, and that water treatment projects were quite applied.

Research Challenges and Opportunities for the Future. We certainly have funding challenges,

but really the good news is that these environmental engineering programs are still thriving. There are great minds and talented faculty that continue to come into our field and make it vital and strong. There are still many important and emerging research areas that can sustain our programs. Society needs the things that environmental engineers provide: strategies to improve our life and well-being, and solutions to help protect the environment... among many others! Bill Cooper at NSF and I are chairing a workshop at the AEESP conference in June 2015 to discuss Grand Challenges in Environmental Engineering as a way of continuing the dialog on what the exciting topics are in our field. This won't be a one-time discussion, as Bill has plans to continue the conversation, so opportunities to participate won't end there. Still, I hope to see you there, or at another venue in the near future to hear your thoughts on these emerging research opportunities.

Thanks to all of you that hosted my visit. I'll end with a few short memorable notes/awards:

Best path story: Chapel Hill, several students including one US student that spent time in Poland.

Coolest cars from the airport: Tie between UC Boulder (Porsche) and UT Austin (Electric BMW).

Best restaurant: Michigan wins this one, if only because of the restaurant name (Logan!)

Largest number of different universities attending: U Conn (Yale, U Mass, Worcester Poly Tech)

Most challenging travel: Clarkson (Surprise! It was international, via Canada, with a snow-storm)

Most presentations: Tie between USC and Nankai (2 talks each; did you know you could ask for that?)

University with the Best Dean of the College (that I met): Drexel (Joe Hughes)

Most impressive infrastructure and facilities: KAUST

BRUCE LOGAN
2014-2015 AEESP Distinguished Lecturer