

## **CIVIL ENGINEERING AND ENGINEERING ALUMNI INDUSTRIAL COUNCIL MEETING MINUTES**

**October 10, 2014** – 12:00 p.m. – 4:45, Vine Annex, Room 102

**Members Attending:** Kathy Chavez, Alan Forrest, Chuck Gajda, James Glock, Tadd Johnson, Therese Lane, Kevin Lansey, George Maseeh, Travis McCarthy, Matthew McDole, Tom McGovern, Ann Moynihan, Nathan Palmer, Dean Papajohn, Adam Sedgeman, Spencer Tucker, Robin West, Benny Young and Dave Zaleski.

**Members Who Sent Regrets:** Chris Albright, Alejandro Angel, Seth Chalmers, Mo Ehsani, Eric Froberg, Joe Gervasio, Dave Gildersleeve, Scott Larson, Bill Nelson, Ed Nowatzki, Stan Turney, Mark Woodson.

**Absent:** Gary Barras, Jerry Cannon, Michelle Dodroe, Lee Farris, Kevin Josker, Thomas McLean, Farhad Moghimi, and Claudia Perchinelli.

**Others Attending:** Katerina Aifantis, James Beier attended for Seth Chalmers, Haley Koesters, Tribikram Kundu, Jordan Ollanik, Cody Pederson, Andisheh Ranjbari, Brandie Righetti, Luis Valdez, and Yao-Jan Wu.

### **Welcome and Introductions**

Nathan Palmer called the meeting to order at 12:00 P.M. and all attendees introduced themselves.

### **Society of Civil Engineering Student Group**

Luis Valdez, Haley Koesters and Jordan Ollanik gave the report. Career night was held October 7<sup>th</sup> in the Civil Engineering Courtyard. The evening was successful with 27 companies attending and 105 students. Monte Carlo night which is another fund raising event for the club will be on Nov. 11 from 7:00 to 10 p.m. at the El Con Club and Grill.

The PSWC (Pacific South West Conference) 2015 will be at the University of Arizona April 9<sup>th</sup>-11<sup>th</sup>. This conference is attended by 18 universities from AZ, Southern California, Nevada, and Hawaii. They expect over 1,000 attendees. The students will hold a career fair during this time and it coincides with Spring Fling. The advisor's social will be held at Gentle Ben's Rooftop April 9<sup>th</sup>. The concrete canoe competition will be at Sahuarita Lake on April 10<sup>th</sup>, and the Award Banquet on April 11<sup>th</sup> will be at Pima Air and Space Museum. Please see the CEEM website for a detailed schedule.

Volunteers and judges are still needed as well as sponsors and companies to attend the career fair. Please contact Alexis Grainger at [alexisgrainger@email.arizona.edu](mailto:alexisgrainger@email.arizona.edu) or Haley Koesters at [haleykoesters@email.arizona.edu](mailto:haleykoesters@email.arizona.edu) if you can help.

### **International Transportation Engineers (ITE)**

Grad student Andisheh Ranjbari, the President of ITE, was the spokesperson for this update. Dr. Wu is the faculty adviser. The club is currently small with 3 graduate students and 2 undergraduate students so they are trying to attract a larger undergraduate membership this year. They are looking for an Industry

Mentor who would attend their meeting once a month and advise students on what is new in the industry, what skills are important to have to embark on this career, etc. ITE and SCE are looking ways they can collaborate. They have a field trip planned in the spring and will hold a traffic bowl.

### **Engineers Without Borders (EWB)**

Cody Pederson, the President of EWB, was the spokesperson for this update. They are currently continuing the project in Bolivia that began in 2012 to build communal solar showers and family owned latrines. The rural village with a population of 300 that they are concentrating their efforts on is high on the slopes of the Andes is very primitive and a 4 hour drive from civilization. UNICEF has helped to establish a water spring for the village. The EWB group has built a communal shower and hopes to get latrines built perhaps next summer. Logistics of the maintenance and cleaning of the facilities have been a challenge with the villagers reluctant to take full ownership. Local NGOs facilitate agreements. EWB builds to international standards which are generally higher than the local standards.

### **Dr. Katerina Aifantis Research Report**

Dr. Lansey introduced one of the new members of the faculty, Dr. Katerina Aifantis. Dr. Aifantis was 19 when she graduated from Michigan Tech being the youngest to do so. She then received her Master of Philosophy in Engineering from the University of Cambridge and Doctorate of Philosophy in Natural Sciences and mathematics from the University of Groningen, Netherlands again being the youngest to graduate from their institutions as well. She had postdoc positions in Harvard, University of Thessaloniki and Ecole des Mines de Paris. We are lucky to have her on our faculty.

In Dr. Aifantis' talk "Using Mechanics for Fabricating Next Generation Li-Ion Batteries" she explained the need to improve the life and safety of the Li-ion batteries. The life of the batteries is at most 6 months and they can explode. These batteries are branching out to be used in medical devices but need to be kept external because of the issues with the current generation of batteries.

Dr. Aifantis is researching how the life of the batteries can be extended and why they fail by looking at the configurations at the micron level to get the best materials mechanically and electronically to produce the desired result. Temperature sensitivities need to be added into the equations.

China is conducting the majority of this type of research and Dr. Aifantis is collaborating with them.

### **Review of the Minutes**

The minutes from the April 4, 2014 had been sent to the group by email however no hard copied were provided at the meeting. Tom McGovern mentioned that he was in both the "attended" and "sent regrets group" but other than that the minutes looked fine. A motion was made to approve the modified minutes. The motion was approved by Chuck Gajda and seconded by Tom McGovern.

### **Treasurer's Report**

Ann Moynihan reported that there is \$37,383 in donations to the department since July 1<sup>st</sup>. \$18,250 is for scholarships, \$200 for homecoming, \$3,740 is department discretionary, and \$4,693 is Mohr's Circle, \$2,500 in department endowments, and \$8,000 for the Construction Courses.

## **Homecoming Report**

Ann reported that the Homecoming food for the BBQ up to \$2,000 is being sponsored by QuakeWrap again this year. A big thank you is sent to Mo Ehsani. Homecoming costs are estimated to be approximately \$5,700 and we currently have pledges of \$4,500 so most of the funds have been raised. Special thanks to the Nathan and Karen Palmer and Spencer and Ena Tucker. Each family donated \$1,000 for homecoming. Structural Grace has also pledged \$1,000. The department would like to have a little extra in case the football team continues to do well and we have higher than estimated attendance/expenses. The AZ Banjo Blasters will play again this year.

The Centennial Speaker will be the Sr. V.P. from WSP Cantor Seinuk, Yoram Elion to talk about the design and construction of One World Trade Center. He will speak Friday, November 7<sup>th</sup> at 1:00 in the Education 211 lecture hall. All are invited to attend. Several of the department classes will be attending so please RSVP on the department's website to make sure there is enough seating. Thank you to Kathy Chavez for leading the Centennial Search Committee.

## **Construction Committee Report**

This report was given by Dean Papajohn and Kevin Lansey mostly during the Department Head's address. Construction Engineering Management (CE 381) is being offered again this fall. The second class, Construction Project Planning, is to start in spring 2015. CE 381 is not a prerequisite. Industry is supporting these courses. Our donors are Ashton, the Henry George Mackintosh Foundation, Granite, KE&G, and Sundt. Some were one time donations and others are continued pledges. The Oversight Committee consists of: Bill Vail – Ashton, Travis McCarthy, Mike Hoover and Kurt Wadlington – Sundt, Todd Keller and Jeramy Bohne – Granite, Chris Albright and Adam Sedgeman – KE&G, Mike DiNapoli – Jacobs, Sal Boenzi – Psomas, Bob Wortman, Maher Salah – URS, Dean Papajohn, Dave Zaleski, Ana Olivares – Pima County, and Todd Emery and Rod Lane – ADOT. The goal is to have 4 courses and have a professor of practice on campus to teach them. More donors are needed to continue current classes and to increase the number of topics offered. Speak with Dean if more information is wanted of course content.

## **Awards Committee Report**

Kevin Lansey reported that Dr. Jennifer Duan won the Delbert Lewis Distinguished Professor award. This three year award is an endowment in which the interest gained on it is given to a young faculty member in the department selected by a committee. It is intended to help with their research and academic needs.

## **Young Alumni Report**

This report was given by Tadd Johnson and Spencer Tucker. This group has been spending most of its efforts helping the SCE club prepare for conference. Companies have pledged but not yet paid so it is difficult to know where they stand. The club must pay for travel for National level judges. Mark Woodson the President of ASCE will come to speak at the conference. They are having trouble with getting the UA Parking and Transportation to work with them. Austin Urton has volunteered to do the mystery event. They need volunteers and sponsors for things like water for the participants.

The first mailer about the conference is to go out the week of October 10<sup>th</sup> to all schools, bridge & canoe captains with the competition rules. The plan is for the judges and coordinators to meet by March.

Dr. Lansey mentioned that this is a strong group of SCE officers this year and if anyone is looking for employees, this would be a good group to choose from.

### **Election of New Officers**

Nathan Palmer was asked to serve another two years and he agreed. Ballots were distributed to the 15 voting members in attendance. Chuck Gajda ran for Vice-Chair and Ann Moynihan ran for Secretary/Treasurer. There were spaces for write in candidates. Therese Lane was then given the ballots for tabulation.

### **Department Head Report**

Kevin Lansey gave his state of the Department address.

There are 126 undergraduate students which is on its way up from the low of 100 in 2013. The Communications course CE 301 is a good indicator of graduation rates for the department. There are 56 graduate students, 10 faculty, and 4 staff (3 in the office, 1 shop). The College of Engineering is staying steady with 600 freshmen again in 2014. The average SAT score is 1245 (math/verbal). Many have not yet chosen a major. The 2013 freshman retention rate was 89.1%.

New Mexico State is the closest place to get a 4 year degree in surveying. An AA degree is offered for surveying in Phoenix. ASU doesn't require surveying for their degree but the UA does.

Our structures lab has been designated an ICC approved testing lab. There is a contract currently to test materials and are hoping for future work now that this designation has been made.

Dr. Hongki Jo is acquiring a shake table and sensors for his Smart Structure Lab. He is testing sensors for structural health. Dr. Duan and Dr. Jo are working together to look at bridge scour.

Dr. Wu and Dr. Chiu are working with big data, dynamic traffic assignment and demand management in the Transportation Lab. Dr. Wu is working with ADOT & others to improve transportation. The next regional transportation meeting is to come here. Dr. Chiu is working testing Metropia in NY, LA, Austin plus one major sport's team. NY picked the app as the top company and wants them to move to NY.

Dr. Duan in hydraulics and water resources is working on sediment transport and bridge scour, eco-hydrology and water supply systems planning, design and operation. Perhaps she can have the flume operating for homecoming.

Dr. Kundu in engineering mechanics is working on non-destructive testing, scale effects, and nano/micro-modeling.

Dr. Zhang in geo-environmental has the wind tunnel and is working on innovative geopolymer materials, rock mechanics and deep pile foundations.

The technical electives for CEEM are: environmental engineering, geotechnical engineering, structural engineering, water resource engineering and hydrology, and transportation engineering. Construction engineering management cuts across and expands upon existing offerings.

The building inspection report has greatly improved. Most of the infractions now are things we need money to solve such as new sinks.

ABET wants a leadership component to the CEEM curriculum. We are going to offer 3 seminars this semester that will start in November. There will be no credit given this semester and will be open to 20 people. SCE students will be given the first opportunity to enroll. Industry has also expressed the importance of leadership.

The University is planning to move ahead with the RCM gen X model for the budget so work is going forward to add an architectural engineering degree to the CEEM program. We are working with the Architecture College on campus. They may send their student to our construction courses and said they would support our program.

Distance Ed is important in the UA Never Settle plan. The goal is to increase the UA's online presence. 2+1+1 junior level classes for CE are currently online but there hasn't been much interest from students in them. One has graduated so far that has taken this method. Tanya Hodges in Yuma has been a strong advocate of our program.

The University has \$2 million for new faculty hires. The plan is to hire in clusters. We have proposed to hire faculty for the research focus of resilient cities and infrastructures particularly -Resilient AZ – Critical Infrastructures. There is a land use model in Portland. Possible partners are Civil, Chemical, Systems, CAPLA, SBS, CALS- I-Plant, companion cluster proposals, external (CAP, SRP, ADWR, BuRec, City of Tucson, Pima County, Agribusiness AZ, (TEP-tentative, APS-TVB). DPMA model would be good model to look at. Law and perhaps medical should be looked at. Economy, environment and social wellbeing all a part of the Resilient AZ structure. It is important to understand acute vulnerabilities (geohazards, flooding, haboobs, public perception of energy and water supply alternatives, and economic changes) as well as chronic vulnerabilities (climate variability and change, population growth, and air quality).

Departmental support includes our Friends of the Department group who helps with the fund-raising and other tasks as requested by the department head. Our Alumni Industrial Council is a huge support. The AZSCE section /Tucson Branch/ YMF and 35 scholarships worth \$119K were given to 38 students. The total departmental donations for FY2014 were \$148,423.

We currently have 14 Mohr's Circle members who have pledged to donate \$1,000 or more each year. They are: Arcadis, AzSCE So. AZ Branch, CH2M Hill, Dao's Investment Inc., Joseph Gervasio, Kevin and Diana Lansey, Tom McGovern, Ed and Pat Nowatzki, Chase Parker, QuakeWrap Inc., Structural Grace, Sundt Construction Co., The Ashton Company, Woodson Eng. & Surveying.

With this RCM budget model to keep the department solvent we must increase enrollment. There are several limiting factors such as faculty/staff capacity, lab capacity, industry demand for graduates, and program quality vs. class sizes. To increase the undergraduates we want to increase enrollment/quality, add the architectural engineering degree, and continue to add to construction engineering management,

distance education (2+1+1) and get funding for a professor of practice. Kevin asked the group what firms to contact to see if there is a need for more architectural engineers in the Southwest and what skills they would like to see in the graduates. Discussion ensued.

To increase the graduate students to our program we are working on getting scholarships for in and out of state students, online ME/MS degree programs, ME/MS on-campus (AMP. Local engineers), getting more local transportation funding, diversify research support, and increase development activities. It was suggested Kevin look at the University of Phoenix for online courses so we don't need to reinvent the wheel.

How can we be a better partner? How can we benefit constituents? How can we improve relationships? How can we collaborate with industry partners? How can we motivate alums to be more involved in AIC or specific activities?

New Civil View newsletter will be out soon.

### **Architectural Engineering breakout session**

Contact chief building authority for Pima County. Add Kurt Wadlington in this. There are 3 schools west of the Rockies teaching this. Kevin should talk to the Centennial Speaker about this as well as large architectural firms & committees. Contact the UA Dean of Architecture to get names.

### **Fundraising Discussion**

For the construction management course – the department should get foundational donors to make it self-sustaining. An endowment is needed – contact Beavers and utility companies. The 2<sup>nd</sup> construction course should be required for all students. Black & Veatch may be interested. Need to prioritize needs and communicate that. Contact AGG. Could use humor.

### **Summary of Action Items**

Therese Lane is going to contact parking and transportation on behalf of the SCE student chapter to make sure they contacted the students to plan parking for the PSWC conference.

Therese is also going to have the top 5 needs of the department and how people can donate at homecoming.

Kevin is to contact the Dean of the Architecture to get a list of firms to survey.

Kevin to contact Beavers, utility companies and Black & Veatch to talk about an endowment for a professor of practice for the construction engineering management courses.

Kevin to contact chief building authority for Pima County.

Kevin to talk to the Centennial Speaker about the Architecture Engineering Degree.

ITE requested a Mentor

SCE requested sponsors, volunteers and judges.

**Announcement of New Officers**

The vote was unanimous. Chuck Gajda was voted in for another term of Vice-Chair and Ann Moynihan was voted in for another term for Secretary/Treasurer.

**Next AIC Meeting:**

Next meeting date is April 17, 2014 in the Silver and Sage room of Old Main. The meeting will begin at noon with a light lunch beginning at 11:30 a.m.

**Meeting Adjourned:** The meeting was adjourned at 4:45 p.m.