

Academy of Electrical and Computer Engineering (AECE)
Minutes of Special Business Meeting
Thursday, April 23, 2020

Members Attending Virtually:

Edward Bradley
Sharon Curtin
Richard Eimer
Michael Emanuel
Kelvin Erickson
Mark Fehlig
Martha Fowler
Timothy Hagan
Mark Hoffman
Leonard Laskowski
Dennis Leitterman
Kevin McEnery
David McNabb
Michael Matthew

Mark Nealon
Ken Owens
Jim Paunicka
Michael Perry
Walter Reed
George Schindler
Ward Silver
David Sizemore
John Skain
Roger Volk
Tom Voss
Steve Watkins
Ron Willoughby

A special business meeting of the Academy of Electrical and Computer Engineering was held virtually (due to COVID-19) on Thursday, April 23, 2020. The current plan is to host an on-campus regular business meeting during Fall 2020. The special meeting was called to order at 8:00 a.m. President Michael Emanuel chaired the meeting.

Dr. Daryl Beetner, Department Chair, welcomed the Academy members and opened the meeting with a brief campus and department update. He explained that classes were moved to remote delivery on Monday, March 16, 2020. Students, faculty and staff were asked to work from home although the campus remained “open” for critical activities. The transition was amazingly smooth considering the short period of time we had to prepare.

He reported that to date there had been only one confirmed case of COVID-19 in the Rolla area. Currently the summer session is being planned for remote delivery, but leaders are hopeful that we can be back on campus for fall 2020.

The financial impact of the crisis on the UM System is still unclear, but could be up to \$180M. We are currently preparing for 10%, 15% and 20% budget cuts.

Dr. Kurt Kosbar reported on behalf of the Scholarship Committee. He provided a quick look at how our scholarship accounts and travel award are currently set up. He reported that we currently award approximately four awards from endowed accounts each year. These awards require family income under \$40K/yr. and a GPA of 3.25 or higher. The award amount and renewal of the scholarship are not specified, but the committee has been making \$2k/yr awards with the option to renew.

The operating account has traditionally been used to award 10-15 scholarships annually. The requirements are at the discretion of the Academy and are easy to change at any time. Currently these awards from this account are for \$2k/yr and are renewable. They are primarily based on academic merit and need.

The operating account also provides one award annually in the amount of \$4,000/yr. This award is made to a freshman and is converted to a \$2k/yr. award after the first year. and provided some suggestions for the future. It is reported that the Academy has three endowed scholarships generating funds for three scholarships at a level of \$2,000 each. The operating account was used to provide funds for nine scholarships, with eight paying \$2,000 each and the other \$4,000. These scholarships are awarded to students who have a combined household income of less than \$40k (as reported on federal student aid form), are making normal progress toward their degree, have a strong GPA, and are an EE or CpE major. The recipients were: Tyler Andrews, Jessica Brinkley, Rachel Bruner, Nicholas Covert, Rachael Engle, Evan Hite, Joseph Kurosz, Tristan Lindeman, Joseph Piwowarczyk, Chelsea Shaffer, Jared Sinkey, and Jacqueline Walters. Jessica Brinkley received the \$4,000 scholarship awarded from the operating account designated for an incoming freshman.

Dr. Kosbar then reported on the travel awards provided by the Academy. He reported that \$4,000 in student travel was supported through Academy funds. These awards were made to student groups and design teams with the purpose of providing support for students to travel to a conference or design competition. Both undergraduate and graduate students were funded. Groups/teams could receive up to \$1,000 of support. The recipients were: Solar Car Team, Multirotor Robot Design Team, Formula Electric Car Team, IEEE Student Branch, and Mars Rover Design Team.

Jared Sinkey, scholarship recipient, then made a short presentation to the group. He is from O'Fallon, Missouri, where he graduated from Fort Zumwalt West High in 2018. Jared always knew he wanted to be an engineer, but just wasn't sure what kind. His brother attended S&T and he knew about the fantastic engineering program here. He began in the geological engineering program, since he had a great love of nature, but soon realized that electrical engineering was what he wanted to do.

Evan Hite, scholarship recipient, also presented to the membership. Evan grew up in Memphis, Missouri. He graduated from high school in 2007 as Salutatorian. After completing his B.S., Evan plans to pursue a PhD and research memory and machine communication, and one day hopes to teach.

The membership then heard a presentation from Dr. Jiangfan Zhang, Assistant Professor. Dr. Zhang received his B.S. from Huazhong University of Science and Technology in 2008, M.S. from Zhejiang University in 2011, and his Ph.D. from Lehigh University in 2016. He worked as a Postdoctoral Research Scientist for Columbia University from 2016 – 2018 before joining S&T. His research interest and teaching are in the areas of communications, signal processing and statistical learning.

Dr. Daryl Beetner then provided an update of the department. He reported that overall enrollment for the department was at 758 students (585 undergraduates and 173 graduates). Undergraduate enrollment has been climbing steadily. Graduate enrollment continues to decline, but Ph.D. enrollment is up. There are many possible reasons for the decline such as: reduced recruitment activities; increased ECE admission standards; and reduced number of international applications to the US all contribute to the decline in numbers. The number of off-campus students dropped slightly this year. The department hired one new faculty member in fall 2018 and will hire three more in fall 2019. The current outlook for new faculty next year is unclear, although the student-faculty ratio remains high.

Dr. Beetner reported on numerous student awards from the last year. They include:

- IEEE Region 5 Outstanding Large Student Branch
- IEEE-HKN Board of Governors – Katie Brinker
- Lifesaving Award from Missouri S&T Police Department – Kevin McPherson
- HKN Outstanding Chapter Award – for the 17th time!
- IEEE James C. Klouda Memorial Scholarship – Nicholas Erickson
- IEEE Electromagnetic Compatibility Society President’s Memorial Award – Shubhankar Marathe
- CEC Dean’s PhD Scholars – Abhishek Patnaik, Yansheng Wang

Faculty awards and honors included:

- Kelvin Erickson – Curator’s Teaching Professor
- Kelvin Erickson – Governor’s Award for Excellence in Education
- Jagannathan Sarangapani – IEEE Control Systems Society Transition to Practice Award
- Jagannathan Sarangapani – Fellow of the National Academy of Inventors
- Chulsoon Hwang – IEEE EMC Society Young Scientist Award
- Steve Watkins – Vice President for Educational Activities for the IEEE Education Society
- Amardeep Kaur – IEEE St. Louis Section Outstanding Advisor Award
- Amardeep Kaur – IEEE Region 5 Outstanding Engineering Educator Award

He also reported that Nidec donated \$100K to create the Nidec Power Lab, and Joan Woodard donated \$1M to create the Woodard Associate Professorship for Excellence.

Dr. Beetner reported on a few program changes, which included:

- B.S. EE and CpE program now require sophomore seminar and professional elective
- Graduates must fulfill a communications requirement
- Accelerated BS/MS

He explained some of his recent concerns for the department, which included the budget and the roadblocks to a 4/6 year graduation. The department is currently preparing for budget cuts, but hoping for the best. Reduced enrollment, uncertain state budget, and uncertainty in fall undergraduate enrollment all contribute to the reduction in budget.

Dr. Beetner reported that the Academy Lab Endowment allowed the department to purchase a solder reflow oven. We thank you for your continued support! He would like to use future funds to purchase a hot-air rework soldering station for surface mount and two microscopes for surface mount soldering. He also let the membership know that the Academy's website had been redone.

He then asked the membership for feedback on curriculum changes. Students have traditionally asked to learn C++ programming language. Computer Science would like to add a programming course in Python, but many other departments only require programming in Matlab.

Discussion followed and most agreed that C++ was an old language. They wanted people with experience in Python, R or Go. They felt if we only teach C++ that students should at least be briefly introduced to the other options.

Jason Northern, Development Officer, provided a University Advancement update. He reported the results of the LEAD Engagement Study and provided information for the new Miner Match Program. This program will take the annual scholarship donations and contributions to the "spendable" account in an endowment, for Missouri residents, and match them 1:1. These scholarships may be need based or merit based. The matching funds will be provided by S&T and the University of Missouri System. There will also be Next Generation Merit Scholarships and Promise and Opportunity Scholarships available.

George Schindler then addressed the membership regarding the Academy's ability to participate in this program. George recommended that they commit \$15K - \$30K per year. It was agreed that this would be further discussed during the business meeting. Pledges must be made by June 30th and contributions for that year must be paid before June 30th of the next year.

Members then heard a presentation from Dr. Rui Bo, Assistant Professor. Dr. Bo received his B.S. and M.S. from Southeast University in 2000 and 2003, respectively. He then went to work as a software engineer for ZTE, and later for Shenzhen Cermate Technologies as a software architect before beginning his Ph.D. in 2006. Upon completion he worked for Mid-Continent Independent System Operator as the Principal Engineer and Project Manager before coming to S&T. His research and teaching interests include: power system optimization in operation and planning; high performance computing; and electricity market simulation, evaluation and design.

The Phase Finders (Transmitter Locator) Senior Design team then presented to the group. The team's members include: Ian Ahner, Aaron Boots, Michael Dierker, Kyle Robertson and Zach Mulholland.

David McNabb called the business meeting to order by welcoming the new inductees that were present.

Roger Volk made a motion to approve the minutes from the April 2018 meeting. George Schindler seconded the motion. Motion carried.

Leonard Laskowski explained the Treasurer's reports. George Schindler made a motion to accept the financial reports as prepared. Dennis Leitterman seconded the motion. Motion carried.

John Skain gave a report for the Membership Committee. He reported that eight new members would be inducted into the Academy this year and reminded everyone to send in their nominations for next year.

David McNabb then presented the Nominations Committee report in Eric Aschinger's absence. Rich Eimer asked for a vote by acclamation to accept the slate of officers as presented. Charles Naslund seconded the motion. Motion carried.

Michael Emanuel gave an overview of the Chancellor's Academy Presidents Forum. Many ideas were brought forward from the various academies.

The membership then discussed the Miner Match Program. George Schindler made a motion that the AECE commit \$30K per year for the next five years to the program. James Fricke seconded the motion. The membership discussed the need to increase the participation in donations, possibly creating a fundraising drive or calling members. It was also recommended to get the word out on the match soon. The membership voted and the motion passed with all in favor.

Leonard Laskowski presented three proposed budgets for the 2019-2020 operating year. Discussion followed. Timothy Hagan made a motion to accept Proposed Miner Match Budget #3. Dennis Leitterman seconded the motion. Motion carried. George Schindler volunteered to personally donate the extra funds needed to purchase the hot-air station and microscopes.

David McNabb highlighted some of the things the group had accomplished in the last year. Items included:

- Added 8 new members to the Academy.
- Supported students through scholarships: travel funding; finals week snacks; and mentoring events.
- Supported the Department by continued funding of the Lab Endowment and provided input on combined BS/MS program and sophomore seminar.
- Purchased solder reflow oven with first payout from lab endowment.
- Promoted the University by attending the Academy President's Breakfast and funding travel for students to competitions and conferences.

Donald Shaw made a motion to create an Academy Excellence Award. This award would have no monetary amount attached to it, but should be available to those whom have made themselves distinctive in the department. He suggested up to three recipients each year. Ron Willoughby seconded the motion. Motion carried. It was decided that the board would discuss the guidelines and implementation of the award at their next meeting.

Donald Shaw also made a motion that up to three scholarships be made based on academics, rather than financial need. Motion was seconded by Ron Willoughby. Discussion followed. It

was suggested that Dr. Kosbar could look at a balance of needs and capabilities and that the award didn't have to be three every time. Motion passed.

David McNabb presented a motion to change the bylaws as proposed in the attachment. George Schindler seconded the motion. It was then discussed that this did not follow proper protocol according to the bylaws, as the information was not published in advance. It was decided that this would go to the board for discussion at the next board meeting and could be presented again to the membership at the next annual meeting.

Mr. McNabb reported that the next meeting of the AECE would take place on Thursday, April 23rd, 2020.

Then, Dr. Angela Lueking, Associate Dean for Research, gave a brief presentation.

Joseph Kurosz, scholarship recipient, also made a presentation to the membership. Joseph is from Imperial, MO. He became interested in electrical engineering after joining the Solar Car Team his freshman year. He plans to graduate next spring after he completes an internship with Garmin International over the summer.

Members of the Missouri S&T Formula SAE Team presented a quick overview of the vehicle specs and results of their recent races.

Alan Erickson made a motion to adjourn the meeting at 3:55 p.m. Tom Van Doren seconded the motion. Motion carried.

Minutes submitted by Leonard Laskowski

October 1, 2019

The next AECE Meeting and Banquet of the Academy of Electrical and Computer Engineering will be Thursday, April 23, 2020. Mark your calendars and plan to attend.