Academy of Electrical and Computer Engineering (AECE)
Minutes of Annual Business Meeting
Thursday, April 11, 2024

Members Attending:

Michael Basler	Ken Owens
Sharon Beermann-Curtin	Jim Paunicka
Edward Bradley	Christopher Philipp
Thomas Dalton	David Saunders
Daniel Dziedzic	George Schindler
Alan Erickson	Donald Shaw
Kelvin Erickson	Ward Silver
James Fonda	David Sizemore
Timothy Hagan	John Skain
Warren Kohm	Donald Ulrich
Leonard Laskowski	Thomas Van Doren
Dennis Leitterman	Roger Volk
Clay Melugin	Steve Watkins
Mark Nealon	Ron Willoughby

The annual meeting of the Academy of Electrical and Computer Engineering was held Thursday, April 11, 2024, and called to order at 8:00 a.m. The meeting was held in the Comfort Suites Conference Center. President Mark Nealon chaired the meeting.

Dr. Jonathan Kimball, Department Chair, welcomed the Academy members. Participant introductions were made.

Dr. Minsu Choi reported on behalf of the Scholarship Committee. He is the newly appointed scholarship coordinator following the retirement of Dr. Kurt Kosbar at the end of 2023. Dr. Choi reported that there was a total of $117,760 awarded to students in the 2023/2024 academic year from the Academy. Awards were made from five different Academy accounts and assisted 32 different students. The recipients were: Jojo Afful, Ezekiel Allen, Jacob Bennett, Nathan Bohannon, Justin Braden, Jacob Byers, Malachi Costley, Benjamin Cuebas, Michael Davis, Victor Dedert, Carmen Gassaway, Michael Hardesty, Joseph Havelka, Nick Hepburn, Tyler Kilper, Justin Konieczny, Katherine McNevin, Mark Mitchell, Jacob Morris, Jorge Noriegapereira, Charles Nguyen Le, Tyler Schellhammer, Seth Sievers, Patrick Smith, Joey Stecher, Erik Swanson, Steven Thompson, Jackson Unger, Nathaniel Van Devender, Maya Vancardo, and Carson Williams.

Dr. Jonathan Kimball then provided an update of the department. He reported that there had been two new staff, and one faculty hire recently, one staff left, and one faculty member (Dr, Kurt Kosbar) retired. Current enrollment numbers are down slightly, but the numbers for incoming freshman enrollment in Fall 2024 are up.

He reported that the department had developed a strategic plan in February 2023 and explained how it aligned with the campus strategic plan. He explained how there were some new degrees being developed (BS Semiconductor Engineering and BS Automation Engineering), and how the Grad Track Pathways program would now include MS non-thesis students as part of it. He also talked about investing in teaching labs for enhanced experiential learning.

Teaching labs now have a faculty "owner" who supervises GTA, make improvements to the experiments, ensures alignment with the lectures and industry practices, and is responsible for pursuing major upgrades, i.e. new equipment.

He reported on a few recent updates that had been made to labs and spoke of the short-term needs for the teaching labs. Currently there are numerous oscilloscopes that need to be replaced, most of which were last upgraded about 15 years ago. The total cost to upgrade them would be around $42K. The MSU labs have roughly $10K in miscellaneous replacements needed.

Looking ahead, the Embedded Systems Lab is looking into oscilloscope application modules to support USB and other protocols. The current option is impractical at over $76K, so they are seeking other alternatives. The Control Systems Lab needs hardware upgrades for new experiments and software compatibility. They've found multiple options, but all are greater than $200K so they are seeking sponsorship for the upgrade.

Dr. Kimball explained that the typical lifespan of equipment is about ten years. The department is trying to budget about $30K annually to maintain capabilities. The full replacement of everything today would cost approximately $270K.

Members then heard a presentation from Dr. Lijun Jiang, Kummer Endowed Professor. Dr. Jiang received his BS in Electrical Engineering from Beijing University of Aeronautics and Astronautics, MS in Electrical Engineering from Tsinghua University, and PhD in Electrical and Computer Engineering from University of Illinois at Urbana-Champaign. He held positions at Teradyne Inc., IBM T.J. Watson Research Center and Hewlitt Packard. He has held academic positions at University of Illinois at Urbana-Champaign and Chinese University of Hong Kong. His research and teaching interests are focused in the electromagnetic compatibility area.

Dr. David Borrok, Dean of the College of Engineering and Computing (CEC), then addressed the membership with a brief college and program update. He provided a few stats for CEC.
- 4,241 Undergraduates, 358 MS, and 400 PhD students
- 170 ranked faculty members
- 9 departments
- 16 undergraduate programs (all with MS and PhD equivalents)

He reported that U.S. News ranked Missouri S&T as the state's top public engineering school. A student's return on investment plays a large role in that ranking. More S&T engineering students take the FE exam than any other school in the nation, they also receive an average of 6.5 job offers by the time they graduate. The average starting salary of graduates is $76,784 (2022-2023).

There are two new degree programs that will debut in Fall 2024, a BS in Biomedical Engineering and Doctorate in Bioengineering. A BS in Semiconductor Engineering and MS in Artificial Intelligence +X are in the proposal phase.

Dr. Borrok reported that CEC had joined the Kern Entrepreneurial Engineering Network (KEEN) in Fall 2023, making them one of 60+ universities and colleges in the network. The network will promote curiosity, connections, and value creation in the classroom.

CEC is also rolling out a new student leadership program, Leadership and Innovation for Futures in Engineering (LIFE). The first cohort of students are being identified this semester and will participate in carious activities, projects and retreats each year. Every program in the college will be represented plus Engineering Management for a total of 24 students. The application is focused on freshman with students beginning the program their sophomore year. There will be a crowdfunding campaign to raise $5K for the program. Every dollar contributed up to $2,500 will be matched 1:1 by Dan and Katie Lumma.

After a short break, Dr. Kelvin Erickson provided updates to the undergraduate programs. Effective Fall 2024 catalog year the EE program Math sequence will change to be Calc I-Calc II-Diff Eq-Calc III. Devices will also be replaced with Linear Systems. He explained the change and what topics were/will be covered in each course. He then informed the membership of the internal program review the department has scheduled for FS 24. The purpose of the review is to identify opportunities and key challenges facing the department and will include all degree and certificate programs.

The Mars Rover Design Team then presented a short presentation to the group. In 2023 the team placed 6th in the world. They feel the competition taught them a lot and has provided them with avenues of improvement for the future.

Jason Northern, Development Officer, provided a University Advancement update. He reported that Philanthropy Week is April 8-13. The Arrival District is nearing the finish line on a $99M, 100-acre vision, and is now more than 80% funded. He provided updates on the Miner Alumni Association leadership changes and provided an Academy Endowment Report. The report compared the different academies. The Academy of Electrical & Computer Engineering lead the pack with five endowed scholarship and equipment funds; a total endowed scholarship corpus balance of $506,734, and $20,270 annually awarded in endowed scholarships.

After lunch the group heard coil gun presentations from the top four Senior Design teams.

Mark Nealon called the business meeting to order by welcoming the new inductees that were present; David Hilt, Holly Langston, Ken Laudel, Dan Lumma, and Patrick Stokes.

The minutes submitted by Sarah Sullivan for the 2023 business meeting were reviewed. Don Shaw requested that his name be corrected from "Thomas" to "Don" on page three of the minutes, Section III-A. Dennis Leitterman made a motion to approve the amended minutes. Leonard Laskowski seconded the motion. Motion carried.

James Paunicka reported on the HKN Panel Discussion that was held with the students the evening before. He was impressed with the questions the students had and was appreciative of the HKN leaders for their assistance in coordinating the event. The alumni panel consisted of Tom Dalton, Alan Erickson, Mark Nealon, Dave Sizemore and himself.

Tom Dallton presented the financials. He reported there had been a $100K increase in one of the endowments (RAJ57) due to the generous donation of the Swearingen family. It was noted that scholarship award payments were made in March 2024, so the expenses were not showing in the ending balances (as of February 2024), but an adjusted balance for each account was notated on the reports.

Ken Owens then presented the report for the Membership Committee. He recognized the members of the committee and noted that Sharon Beerman-Curtin and Alan Erickson had rotated off and that Cameron Coursey and Zhiping Yang had replaced them as members of the committee. The new inductees were recognized and the nomination process timeline for 2025 was given. To keep everything on schedule, the committee will review nominees and the eligibility by 7/14/24, then forward to the board for certification and ballot prep, ballots should be returned by members by 10/18/24.

He then presented a list of items that had been implemented because of the white paper discussion. They included:
- Calendar invite included in business meeting email announcement
- Shortened business meeting
- Lobbyist presentations
- Scholarship Recipient/Design Team talks will continue
- Tour of Innovation Lab
- Keynote speaker at banquet
- Critique of day's events
- Chair to request guidance and input

John Skain presented on behalf of the Nominations Committee. There are two members whose terms expire in 2024, Kelvin Erickson and Kevin McEnery. Kelvin Erickson volunteered to run again. Mike Basler also agreed to be considered for the second seat. The floor was open for additional nominations. None were presented. Alan Erickson made a motion to accept the slate officers as presented. Ken Owens seconded the motion. Motion passed.

Tom Dalton then presented the proposed budget for 2024/2025. It was noted that accounts for the Kummer Inspiration Scholarship were not set up prior to the end of the reporting period (February 2024), so the requested $50K transfer on the 2023/2024 budget had not yet been processed. Tim Hagan made a motion to amend the amount to $15K for the 2024/2025 transfer and then to transfer the funds for both years ($65K) when the funds become available. Dennis Leitterman seconded the motion. Motin passed.

Roger Volk then made a motion to provide $11,388 to the department for the upgrade of 14 oscilloscopes in the Circuits and Electronics labs as mentioned in Dr. Kimball's presentation. Ken Owens seconded the motion. Motion passed.

Mark Nealon asked the membership their thoughts on participating in the new LIFE program. Discussion followed with the suggestion that if they did participate someone should report back on the success of the program. George Schindler made a motion to participate in the program and pay the $1,000 for expenses associated with the session. Dennis Leitterman seconded the motion. Motion passed with one vote against.

Dennis Leitterman made a motion to add a $1,000 discretionary fund line for the department to use for small expenses. Leonard Laskowski seconded the motion. Motion passed.

Don Shaw motioned to accept the amended budget. Don Shaw seconded. Motion passed.

Dr. Jonathan Kimball reported that a future meeting date had not yet been set but would be provided as soon as possible.

James Paunicka motioned to adjourn the business meeting. George Schindler seconded the motion. Motion passed.

After a short break, the membership heard a presentation from HKN – Gamma Theta Chapter. They reported on the events they had held this year to date for the department and the members.

Nick Hepburn, scholarship recipient, then made a short presentation to the group. Nick is currently pursuing a bachelor's degree in electrical engineering with plans to graduate in May 2024. After graduation he will join SpaceX in Brownsville, TX as an Electrical System Engineer. While here he was the student officer and president of IEE-HKN and a member of the Missouri S&T Satellite Design Team. He's completed internships with Tesla, Burns & McDonnell and Watlow Electric.

Dr. Jonathan Kimball led the group in a lightning round review of the meeting.

Positives included: Presentations from Dean and Chair; financials presented; learning about student challenges; Student Design Team presentations; gun competition presentation; leadership; conversation on budget; staying on time; white paper ideas applied; candor/energy of day; approval of adjusted budget.

Negatives included: Presenters not repeating questions; long discussion over $1K; hearing presenters; more detail on scholarship selection process; too many slides in some presentations.

Opportunities for improvement included: Need new microphone clip, explore more opportunities for department (like LIFE program).

Alan Erickson made a motion to adjourn the meeting at 3:35 p.m. Ken Owens seconded the motion. Motion carried.

Minutes submitted by Thomas Dalton   October 1, 2024

The next AECE Meeting and Banquet of the Academy of Electrical and Computer Engineering will be _Thursday, April 10, 2025_. Mark your calendars and plan to attend.