



THE UNIVERSITY OF ARIZONA

College of Engineering

DEPARTMENT HEAD PROFILE – ELECTRICAL & COMPUTER ENGINEERING



Prepared by

Young-Jun Son, PhD

Department Head, Systems and Industrial Engineering
son@sie.arizona.edu

Kathleen L. Melde, PhD

Associate Dean, Faculty Affairs and Inclusion, College of Engineering
melde@arizona.edu

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This document profiles the position of Department Head, Electrical and Computer Engineering, College of Engineering at the University of Arizona. It is intended to help qualified individuals assess their interest in the position.

The Opportunity

Position Summary

The Department of Electrical and Computer Engineering at the University of Arizona is seeking nominations and applications for a department head with excellent leadership skills and enthusiasm for world-class research, innovative teaching, and industry/government collaborations.

The department head, who reports to the College of Engineering dean, must be a visionary who can lead a diverse group of faculty, staff and students; oversee modern teaching and research laboratories and facilities; and, most importantly, spearhead the continuing transformation of ECE for the challenges of the 21st century.

Successful candidates are expected to have extensive research and teaching experience at a level sufficient to qualify for appointment as a tenured full professor. This position carries the possibility of an endowed professor title.

Invitation to Apply

Please see bit.ly/az-ecdept-head for the complete job posting.

Research, Education & Entrepreneurial Powerhouse

The ECE Department at the University of Arizona has a strong local, national and international reputation for undergraduate and graduate education and research. The department has 29 tenured or tenure track faculty, two career track faculty, and five adjunct faculty. The department has more than 400 undergraduate (sophomore-senior only), 72 on campus and 170 online for a total of 242 MS students, and 102 PhD students enrolled.



The University of Arizona is a top-tier research, land-grant, and recognized Hispanic-Serving Institution. With more than \$734 million in annual research expenditures, the university ranks in the top 4% of all U.S. universities in research and development expenditures, according to the National Science Foundation.

ECE houses highly ranked electrical and computer engineering programs that cover a broad spectrum of traditional, emerging, and interdisciplinary areas of interest. Among the department's research strengths are the following:

- Electromagnetics
- Information theory
- Optical communications
- Autonomic computing
- Artificial intelligence
- Cybersecurity
- Wireless communications and networking
- Biomedical technologies
- Signal and image processing
- Sensor networks
- Quantum information processing
- Reconfigurable computer architectures



Annual research expenditures for the department exceed \$5.5 million. Faculty members lead three NSF-sponsored research centers and play major roles in other research centers, including two NSF Engineering Research Centers. More than a third of the faculty members are fellows in their respective professional societies.

A distinguishing feature of the department is its entrepreneurial spirit. Faculty members have founded or cofounded 14 active startup companies. The department is housed in a modern building with total assignable square footage of 66,522, of which 37,729 square feet is research and laboratory space. Applicants are invited to visit ece.engineering.arizona.edu to learn more about the department.

Role of the Electrical and Computer Engineering Department Head

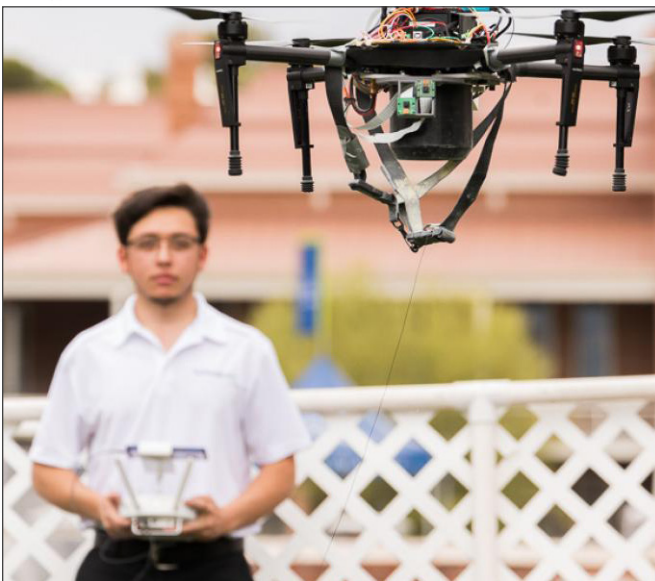
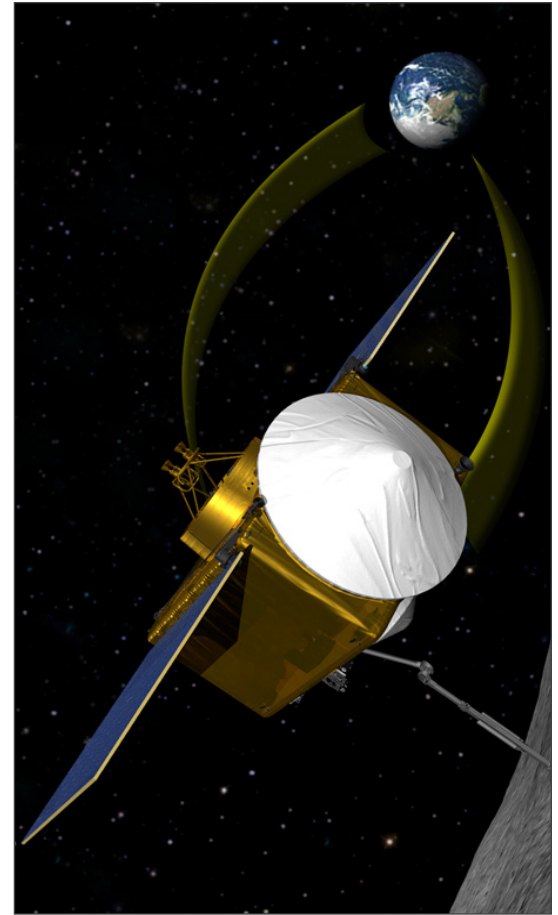
- Collaboratively develop and annually review a three-year department plan that supports the University of Arizona's strategic goals and aligns with related programs at the university and in the College of Engineering.
- Implement a plan keep stakeholders informed on progress and changes.
- Make equity-informed decisions on faculty recruitment, diversity, development, performance, retention and promotion.
- Lead the department in achieving student and faculty recruitment goals.
- Keep the department focused on educating electrical and computer engineering graduates that are equipped to be productive in a modern industrial setting.
- Identify and promote research opportunities and actively facilitate and participate in interdisciplinary research.
- Maintain existing and create new relationships with alumni and the electrical and computer engineering industry.
- Maintain an inclusive, positive workplace environment.
- Act entrepreneurially to manage and enhance the department's financial condition through increasing enrollment and initiating programs that capitalize on other revenue streams.
- Implement new initiatives and oversee current commitments with respect to bachelor's degrees, international microcampus programs, online graduate programs, and accelerated master's degree options.
- Strengthen existing ties and build new relationships with industry with respect to funded research, such as laboratory testing and participation on research teams.
- Oversee the department's operations, including budgets, resources, fiscal management and ABET accreditation.
- Foster a sense of community for students, alumni, staff and faculty.
- Assist the College of Engineering in fundraising activities.

Professional Qualifications and Personal Qualities

The successful candidate will have a distinguished record of achievement in scholarship, research and/or professional practice commensurate with an appointment at the rank of full professor with tenure. The candidate should also demonstrate effective managerial leadership; clear communication; and a commitment to shared governance, community engagement, and diversity, equity and inclusion. The successful candidate must demonstrate high ethical standards and is expected to operate in a transparent and collegial way. The candidate must be responsive in a timely manner to the needs of faculty, staff and students in the department.

Minimum Qualifications

- PhD in electrical and computer engineering, or related field
- Scholarly achievement, including a record of technical papers published in nationally recognized, peer-reviewed journals
- Strong communication skills
- Proven leadership skills with multidisciplinary teams
- Track record of collaboratively building a vision and the skills to follow through to make the vision a reality
- Capable of inspiring and recruiting great students as well as exceptional faculty and staff
- History of successful funding from industry and government
- Commitment to an inclusive departmental culture



Preferred Qualifications

- Administrative experience as head or associate head, center director, or equivalent leadership position
- Membership on boards of academic journals and/or professional associations
- Experience with online programs
- Experience working with industry, either through direct employment or cooperative research and development activities; skills necessary to perform as an effective communicator to internal and external constituents
- Commitment to a participatory decision-making process
- Demonstrated record of engagement with diversity issues, diverse students, women in engineering, and other diverse faculty, staff and student communities
- Experience in fundraising

“Such recognition by ASEE reinforces our strong commitment to diversity and inclusion and sends the message to our students and faculty members that we are serious about these endeavors.”

DAVID W. HAHN, Craig M. Berge Dean of the College of Engineering

Procedure for Candidacy

Submit applications online at talent.arizona.edu (citing posting **req6213**) Include the following:

- Cover letter
- Curriculum vitae
- Leadership statement, including commitment to diversity and inclusion
- Statement of teaching philosophy
- Statement of research interests
- Contact information for three professional references

Alternatively, candidate nominations and inquiries will be considered. Questions should be directed to the chair of the search committee, Young-Jun Son, head of UArizona Systems and Industrial Engineering (son@sie.arizona.edu) or Kathleen L. Melde, College of Engineering associate dean for faculty affairs and inclusion (melde@arizona.edu). The initial review of applications will commence in late September 2021.

University of Arizona College of Engineering

The University of Arizona College of Engineering offers 13 graduate degrees and 16 undergraduate degrees through 10 departments, including two in other colleges that jointly administer programs. The College of Engineering departments are:

- Aerospace and Mechanical Engineering
- Biosystems Engineering
- Biomedical Engineering
- Chemical and Environmental Engineering
- Civil and Architectural Engineering and Mechanics
- Electrical and Computer Engineering
- Materials Science and Engineering
- Mining and Geological Engineering
- Optical Sciences and Engineering
- Systems and Industrial Engineering

Among the College's research strengths are:

- hypersonic flight and space surveillance
- disease diagnostics, implants and wearable medical devices
- quantum communication and photonic sensing
- additive manufacturing
- mining and mineral resources
- intelligent traffic systems
- water reuse
- solar power and biofuels

U.S. News & World Report ranks the College as one of the top engineering schools in the nation.

Commitment to Diversity and Inclusion

The American Society for Engineering Education and its Engineering Deans Council recognized the University of Arizona with a Bronze Award in the inaugural ASEE Diversity Recognition Program. The College of Engineering was the first program in Arizona to receive this distinction. The honor is given to colleges that sign the ASEE Deans Diversity Pledge, build the infrastructure to support diverse populations, have at least one K-12 or community college pipeline activity, and commit to a diversity and inclusion plan with measurable goals.

Women engineering faculty and staff are represented prominently in University leadership. Liesl Folks is senior vice president for academic affairs and provost, Elizabeth Cantwell is senior vice president for research and innovation, and Jennifer Barton is director of the interdisciplinary BIO5 Institute. Within the College, Kathleen Melde leads faculty affairs and inclusion, Kriss Pope is the assistant dean of finance and administration, and Margie Puerta Edson is assistant dean of development and corporate relations.

The UArizona chapter of the ASEE Collaborative for Engineering Education Research and Outreach provides an interdisciplinary campus network for promoting engineering education and providing students with service, research and professional opportunities. The University is also home to student chapters of the National Society of Black Engineers, Society for Advancement of Hispanics/Chicanos and Native Americans in Science, Society of Asian Scientists and Engineers, Society of Hispanic Professional Engineers, and Society of Women Engineers.



UArizona Statement of Diversity

At the University of Arizona, we value our inclusive climate because we know that diversity in experiences and perspectives is vital to advancing innovation, encouraging critical thinking, solving complex problems, and creating an inclusive academic community. As a Hispanic-Serving Institution and a Native American/Alaska Native-Serving Institution, we translate these values into action by seeking individuals who have experience and expertise working with diverse students, colleagues and constituencies. Because we seek a workforce with a wide range of perspectives and experiences, we provide equal employment opportunities to applicants and employees without regard to race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity or genetic information. As an Employer of National Service, we also welcome alumni of AmeriCorps, Peace Corps, and other national service programs and others who will help us advance our Inclusive Excellence initiative aimed at creating a university that values student, staff and faculty engagement in addressing issues of diversity and inclusiveness.

Established Entrepreneurial Culture

The University of Arizona embraces the entrepreneurial spirit of its faculty, students and staff, as engineering is a major driver of invention and technological advancement. From experiential learning for students to industry sponsored research and strong commercialization support, the College has a long history of entrepreneurial success – including dozens of active startups and several major acquisitions.

Craig M. Berge Design Program, an Experiential Undergraduate Curriculum

Through a generous donation, the College launched the Craig M. Berge Engineering Design Program in 2019. From first-year competitions and maker fests to industry-sponsored capstone projects, this four-year program ties design, manufacturing and commercialization to all levels of the undergraduate curriculum. It immerses students in hands-on design, community projects and business instruction, major-specific design courses, and real-life projects. In the last couple of years, about 600 students and 100 companies have participated annually in the Craig M. Berge Design Day, which showcases senior projects.

Tech Launch Arizona

Inventors work with Tech Launch Arizona to secure their intellectual property, typically through patent applications, and identify the best paths to commercialization. Additionally, TLA puts on workshops and seminars while providing seed funding for product prototypes.

McGuire Center for Entrepreneurship

Resources such as the New Venture Program in the McGuire Center for Entrepreneurship at the Eller College of Management also assist students and faculty with moving products to market.



Accomplished, Visionary College Leadership

David W. Hahn, *Craig M. Berge Dean*

David Hahn, who earned a bachelor's degree in 1986 and a doctorate in 1992 from Louisiana State University, is an accomplished mechanical engineer specializing in thermal sciences and laser-based diagnostics, including renewable energy and biophotonics.

A champion of diversity in engineering, he has more than two decades of experience in higher education and with national agencies and laboratories. Hahn joined the College as dean in 2019 as it embarked on establishment of a four-year undergraduate design program with renewed commitment to strengthening experiential education and focusing on today's most pressing issues – food and water, energy, health care, and security.

He had a 20-year career at the University of Florida, where he served most recently as chair of mechanical and aerospace engineering. Under his leadership, the university built a 4,000-square-foot student design center, his department grew to the largest on campus in terms of student enrollment, and the female student population in mechanical and aerospace engineering increased to 50% above the national average.



Working at UArizona and Living in Tucson

University of Arizona employees appreciate its collegial and inclusive culture, commitment to diversity and shared decision making. Members of the University community enjoy competitive benefits, a nationally recognized work/life program, innovative leadership development initiatives, generous tuition reductions for dependents, and family friendly options, such as paid parental leave. For extensive information about the benefits of working at the University of Arizona, visit talent.arizona.edu.

The University is located in a tech corridor well represented in aerospace and defense, border technology, optics and photonics, solar and renewable energy, mining and bioscience. The city may be in a semi-arid region, which certainly lends to the UArizona College of Engineering's expertise in water conservation and energy sustainability. But the Sonoran Desert – one of the most diverse desert ecosystems in the world – is anything but typical. Mountain ranges towering upwards of 9,000 feet surround the city of a half million, and many students, faculty members and their families spend their free time hiking and biking the canyon floors and mountain trails. In town, a streetcar service connects the University to a bustling Fourth Avenue and downtown with endless choices for dining, family and cultural events, nightlife, concerts and theater.

See visitTucson.org to find out why and how Tucson is calling you!





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