ASU Charter:

ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.

ASU Design Aspirations:

Enable Student Success, Transform Society, Fuse Intellectual Disciplines, Value Entrepreneurship, Be Socially Embedded, Conduct Use-Inspired Research, Leverage Our Place, Engage Globally

I. Overview

Provide a written overview of the unit mission and strategic directions. Include a brief summary describing how the unit contributes to the ASU Charter and Design Aspirations, outlining strengths of the unit (e.g. faculty, program offerings, collaborative programs) and any programmatic challenges that might exist.

Table 1: Overview Data Summary of the Unit

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Undergraduate Headcount – Degree Seeking (Fall)</td>
<td>1,395</td>
<td>1,778</td>
<td>2,106</td>
<td>2,162</td>
<td>2,352</td>
<td>2,369</td>
<td>2,488</td>
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<td>Undergraduate Headcount – All</td>
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<td>1,778</td>
<td>2,106</td>
<td>2,162</td>
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<td>Master’s Headcount (Fall)</td>
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<tr>
<td># of Undergrad Degrees awarded</td>
<td>164</td>
<td>190</td>
<td>223</td>
<td>254</td>
<td>311</td>
<td>303</td>
<td>320</td>
</tr>
</tbody>
</table>
II. Mission and Strategic Directions

Describe the unit’s mission statement and vision/strategic directions. Include a discussion of the academic unit’s major strengths and areas of prominence in teaching, scholarship, and service in community, national, and international arenas.

The Ira A. Fulton Schools of Engineering are agile, dynamic and dedicated to continuous innovation, student success, faculty excellence, and cultivation of an environment that is diverse, equitable and inclusive. We offer the Fulton - Difference, encapsulated by these principles:
- We focus on student success in the classroom and beyond.
- We accelerate use-inspired research and entrepreneurial engagement.
- Our faculty are dedicated to transformational research and engineering education.
- We engage our stakeholders in industry and the community.
- We make global impacts.

Include your unit’s goals/aspirations related to the Charter elements of student, faculty and staff inclusion and success, public value research, and health of the communities you serve, as well as the Design Aspirations: Enable Student Success, Transform Society, Fuse Intellectual Disciplines, Value Entrepreneurship, Be Socially Embedded, Conduct Use-Inspired Research, Leverage Our Place, Engage Globally.

The Ira A. Fulton Schools of Engineering (FSE) at Arizona State University (ASU) is committed to cultivating a culture of diversity, equity and inclusion through the implementation of programs and initiatives that support a collaborative and inclusive environment. With this plan for 2020-2022, FSE outlines a set of strategic goals, objectives, and initiatives that build on our current accomplishments and enable further advances in making the school an accessible and welcoming leader in engineering education.

1. DIVERSITY, EQUITY AND INCLUSION (DEI) FSE uses the following definitions to frame this plan:

   1. **Diversity** can be defined as membership that represents a range of identities and of identifying features within a group or organization (e.g., a university). Diversity has frequently been discussed with respect to factors such as race, ethnicity, gender, culture, sexual orientation, religion, age, physical abilities, and socioeconomic status. However, diversity can also be
considered in terms of ideas and expertise (e.g., academic disciplines and methodologies). In engineering, underrepresented minorities (URMs) often include women, persons with disabilities and three racial and ethnic groups—Blacks, Hispanics, and American Indians or Alaska Natives (as defined by the National Science Foundation).

2. **Equity** argues that persons should have equal or equivalent opportunities to succeed and thrive regardless of their background or “starting place”—differences in personal or social circumstances should not be allowed to create permanent obstacles. Thus, a more equitable organization is one that (pro)actively works to identify, remove, or mitigate such circumstances and obstacles. Notably, equity is often misunderstood to mean “treat everyone the same.” However, equity does not imply equal treatment, but instead demands providing and personalizing resources, without bias, such that everyone has opportunities for equal outcomes.

3. **Inclusion** can be defined as the extent to which (a) members of an organization are invited to meaningfully participate in the mission, operation, and leadership of that organization, and (b) the contributions of those members are clearly acknowledged and valued. An organization is considered more inclusive when it not only comprises diverse members, but those members (and their ideas, needs, and perspectives) are welcomed and valued.

With this plan, FSE prioritizes DEI as key factors to our collective success in the 21st century.

2. **VISION**

Our vision is to embed inclusivity as a core tenet of FSE so that all faculty, staff, academic associates, and students achieve their full potential enabled by an environment that is diverse, equitable and inclusive. We aim to achieve global leadership in engineering education, aligned with an access mission, by recognizing diversity and inclusivity as a source of strength to our collective success.

3. **OUR NEED**

ASU represents students, faculty, and staff from all 50 states, three territories and over 135 countries, many of those enrolled in FSE. We are one of the largest colleges at ASU and one of the largest, most comprehensive engineering colleges in the United States. As of 2019, FSE is serving over 24,000 students. As such, we share the responsibility and vision to embed inclusivity as a core tenet of engineering education and practice, as well as the drive to incorporate it as a guiding principle in how FSE operates on a daily basis. All FSE students, staff, faculty, academic associates, and their colleagues should be supported in achieving their full potential, empowered by an environment that is diverse, inclusive, and equitable. Our responsibility further extends to global leadership. Our aim is to be a leader in inclusive, 21st century engineering education and practice, by recognizing and promoting diversity as a fundamental source of strength essential to our collective success.

4. **GOALS & INITIATIVES**

FSE prioritizes three overarching goals to frame this plan:

2020-2022 FSE Diversity, Equity, and Inclusion Plan 2

1. Create and maintain a student body and workforce across FSE that is diverse in multiple dimensions and inclusive for all.

2. Empower faculty, staff, students, and academic associates at FSE to embrace the core values and practice of diversity, equity and inclusion.
3. Be a global leader in diversity, equity, and inclusion in engineering.

Building on our accomplishments to date, we will continue designing and implementing activities that target the 10 strategic objectives outlined below. Accomplishing these objectives has the potential for the most immediate and impactful change to our culture.

- Commit to balancing the diversity of students at all levels to reflect population statistics for female and URMs in Arizona
- Improve student recruitment, persistence and success of target populations
- Increase coordination with industry to increase career-readiness of targeted populations and connect committed employers with these populations
- Foster a culture of inclusion among graduate and undergraduate students and provide an encouraging and supportive environment for all students, faculty, and staff
- Ensure all undergraduate students acquire the knowledge, experience, and cultural competencies necessary to succeed in a multicultural, globally connected world and contribute to the Fulton culture of inclusion
- Balance the diversity of faculty and staff hires, at all levels, with those who are committed to thriving in a DEI environment
- Provide training to students, faculty, and staff to improve DEI awareness
- Establish metrics for faculty and staff evaluations that assess DEI contributions
- Recognize and honor participation and accomplishments related to DEI
- Establish procedures for periodic assessment of diversity and inclusivity and for adjustment of DEI initiatives

Implementation of the strategic objectives dovetail with current FSE- and ASU- efforts (see Narrative) and will target students, faculty, and staff. Specific objectives, activities, and metrics aligned with the goals are articulated below.

5. 2020-2022 IMPLEMENTATION PLANS

As part of our 2020-2022 plans, we will update FSE community and lab spaces with a posted statement outlining FSE’s vision and commitment to DEI. DII@FSE, the staff and faculty task force focused on enhancing DEI, will work with the Dean to identify and recommend dedicated spaces (e.g. conference rooms, classrooms, study spaces, etc.) that foster inclusivity. We will post a “commitment to DEI” statement in these common spaces and include a written diversity and inclusion statement in written lab, office, and/or classroom expectations.

Programs and activities listed below directly correspond to the strategic objectives outlined above:

Objective 1. Commit to balancing the diversity of students at all levels to reflect population statistics for female and URMs in Arizona

Undergraduate Outreach and Recruitment

- Improve awareness among target populations of high school students about engineering and associated programs as a career choice through FSE’s K-12 outreach and recruitment programs and initiatives.
- Increase opportunities for undergraduates to explore engineering as a socially and personally relevant education pathway to facilitate entry into undergraduate engineering.

- Continue to provide high quality pathway experience programs and constant resources to educate prospective students on opportunities available through FSE. Successful current programming includes Earned Admissions, Engineering Projects in Community Service (EPICS) High School and Young Engineers Shape the World (YESW).

- Increase enrollments in K-12 Outreach programs (e.g., EPICS, First Lego League, YESW) with a focus on school districts that serve large numbers of URM students (i.e., Title I Schools).

- Initiate, develop, and nurture productive and quality partnerships with internal and external stakeholders to enhance diversity in engineering. As one example, we will explore establishment of a Minority in Engineering program (MEP) at ASU, building on successful practices of other MEP programs across the nation.

- Ensure that K-12 Outreach programs involve the families of prospective students and consider the importance of family support to overall student success.

- Develop effective yielding programming events for female applicants in partnership with professional and student organizations, such as Society of Women Engineers (SWE), Women in Science and Engineer (WISE), or Women in Computing that incorporate mentoring, lab visits, industry and faculty speakers, and social activities.

- Integrate recruitment activities into 100% of current EPICS and YESW high schools, and Virtual High Schools Visits, through collaboration with K-12 Outreach team.

**Graduate Recruitment**

- Participate in the Women in Engineering event at ASU hosted by FSE Recruitment.

- Increase participation in and representation at various conferences that focus on URMs (ex: Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), Society of Hispanic Professional Engineers (SHPE), SWE, National Society of Black Engineers (NSBE), etc.).

- Investigate the possibility of providing support through selective fee waivers, substituting the GRE requirement with other indicators that demonstrate performance, or other ways to amplify access for URM’s.

- Utilize the GEM fellowship program to increase prospective GEM fellows at FSE and create efficiency in the GEM fellows internal process.

- Offer paid 8-week summer research internships (SURI) for qualified U.S. citizens and permanent residents not currently enrolled at ASU in collaboration with industry and university partners (e.g. Historically Black Colleges and Universities, Minority Serving Institutions, Intel Corporation).

- Develop and offer Experiential Learning Grant Funding to graduate students to support participation in and presentations at conferences, track those who receive funding and publish accomplishments.
• Offer the SUMMER AT ASU program to partner schools to develop more partnerships, encourage faculty-to-faculty interactions, and create strong pipelines of students, especially females and URM students.

• Work collaboratively with all program chairs to evaluate and revise the award selection and notification process to remove barriers for URMs and females.

• Create a more equitable distribution of the awards across all schools and programs.

Objective 2. Improve student persistence and success of target populations

• Identify, institutionalize, and scale effective, evidence-based mechanisms that increase entry and persistence in engineering by working with different social institutions through an inclusive large network of actors.

• Implement a comprehensive learner record system to aid academic advisors in guiding students as they in navigating their involvement in extra and co-curricular activities offered within FSE.

• Foster academic success of students through creating learning communities that provide peer tutoring support in key subject areas including mathematics, physics, chemistry, and select engineering courses.

• Advance knowledge of engineers and engineering workplaces through courses and workshops that offer access to industry mentors and site visits.

• Develop students’ engineering identity through “future possible self” activities.

• Encourage and facilitate affiliation with a professional engineering society or FSE student organizations.

• Develop strong faculty mentoring and student peer mentoring initiatives.

• Increase diversity in participation at E2, a three-day immersive experience for first-year engineering students, among first generation students to support identity development with the engineering community, create a sense of camaraderie among students, and facilitate the practice of teamwork skills and a culture of teamwork.

• Incorporate learning activities into the E2 curriculum promote DEI.

Objective 3. Increase coordination with industry to improve career-readiness of targeted populations and connect committed employers with these populations

• Create awareness about the ASU Diversity Pledge that enjoins corporations with Fulton’s ASEE diversity pledge.

• Work with industry partners to expand industry-led engineering skills and knowledge workshop opportunities for targeted populations.

• Consult with industry partners on their recruitment plans to ensure consideration for diverse qualified students and help them customize engagements to maximize exposure to targeted audiences.

• Work with industry partners to connect their representatives with student organizations and to develop deeper and sustainable relationships that can help deliver diversity events, networking sessions, etiquette dinners, information sessions, and technical talks suited for target audiences.
Advise and mentor industry representative roles within student organizations to implement best practices and help improve existing industry engagements.

Objective 4. Foster a culture of inclusion among graduate and undergraduate students and provide an encouraging and supportive environment for all students, faculty and staff

1. Establish a college-level access point for information about available resources to address DEI issues.
2. Develop/modify websites and other media to improve ease of navigation and comprehensiveness of information that highlights resources, support services, and accomplishments.
3. Provide undergraduates with DEI training.
4. Identify opportunities to incorporate topics of diversity into existing courses (e.g. as related to ABET accreditation criteria).
5. Regularly evaluate communication and media to ensure publications represent an inclusive culture and include messaging from the Dean regarding vision for DEI.
6. Create opportunities for constituencies to gather to exchange ideas, appreciation, and spirit of community.
7. Implement mechanisms to make mentoring and counseling resources accessible to everyone.
8. Develop a funding plan to ensure ample financial support for DEI initiatives and support services.
9. Leverage the efforts of FSE student organizations focusing on improving diversity and inclusion in engineering and incentivize all Fulton student organizations to incorporate inclusivity measures into their strategic plans.
10. Include quick links on engineering and department web pages to social networks that offer support services to underrepresented groups.

Objective 5. Ensure all undergraduate students acquire the knowledge, experience, and cultural competencies necessary to succeed in a multicultural, globally connected world and contribute to the Fulton culture of inclusion

- Provide opportunities and incentives for students to participate in training such as Sun Devil Civility, a student-led, staff supported initiative that provides students, faculty and staff with the tools to build an inclusive campus culture rooted in civil dialogue and action.
- Disseminate and promote events and activities designed to foster a diverse and inclusive campus culture offered through the EOSS and other campus partners.
- Create opportunities for increased numbers of engineering students to develop intercultural competencies through participation in study abroad experiences as well as connecting to opportunities through FSE’s emerging global school initiatives such as TEDI-London.
- Increase participation in curricular and co-curricular programs such as Grand Challenges Scholars program, EPICS, and Entrepreneurship + Innovation, which promote competencies such as empathy, self-awareness, multi-disciplinarity through personal engagement, understanding different cultures through multicultural experiences, and finding engineering solutions that serve people and society reflecting social consciousness.
Objective 6. Balance the diversity of faculty and staff hires, at all levels, with those who are committed to thriving in a DEI environment

- Require an "Inclusion and Equity Statement" from faculty applicants, similar to “Research Statements” and “Teaching Statements.”
- Ask applicants to articulate the ways in which they will promote inclusive and equity cultures in their classrooms and labs, and how these values will shape their research, teaching, and/or service as faculty in FSE and ASU.
- Request staff position applicants to provide a diversity statement and explain their commitment to diversity and inclusion as it pertains to the job for which they are applying.
- Require staff hiring committees to reference this document during the interview process, giving the potential employee an opportunity to discuss how they would demonstrate their commitment in daily operations.
- Evaluate implementing an “Inclusion Resource Officer” role within FSE. This individual would complete additional training, have knowledge of FSE and campus resources, be responsible for acting as a first point of contact to report any issues or reports of noncompliance, and develop a process for handling these concerns.

Objective 7. Provide training to students, faculty, and staff to improve DEI awareness

- Schedule a variety of training opportunities for relevant/key topics. Select training courses will be required for faculty serving in particular roles. For example, members of committees that evaluate others (e.g., Promotion & Tenure), establish policies (e.g., curriculum committees), work in various labs (e.g. accessibility and accommodations for persons with disabilities) can be required to participate in training on bias and inclusivity.
- Require microaggressions and implicit bias training for all new faculty and staff; to include contextualized scenarios where parties interact, as is common in the workplace and to acknowledge interdependence of all groups.
- Refresh and update training material every two years as FSE culture and environment shifts in alignment with this Diversity Plan.
- Establish recertification requirements for faculty and staff to take a refresher course every two years.

Objective 8. Establish metrics for faculty and staff evaluations that assess DEI contributions

- Include section in faculty evaluations that acknowledges and encourages participation in (a) DEI training/workshops and (b) events (e.g., a film screen and discussion about relevant social issues). Tone of evaluations should be positive and encouraging (i.e., reward participation) rather than negative and critical (i.e., punishing lack of participation).
- Create a formal program that recognizes and incentivizes voluntary participation in existing DEI workshops and events. Recognition could occur at multiple levels such as awarding units with high participation additional discretionary funds to support DEI initiatives.
- Add an assessment component for demonstration of DEI into the annual staff evaluation tool.
- Recommend DEI be included as a component of scheduled quarterly conversations between supervisors and staff.

- Offer additional training opportunities for personnel with a demonstrated need to improve. Training would differ from the biannual training, instead focusing on contextualization of diversity and inclusion as integrated into daily routine and relevant to staff functions.

**Objective 9. Recognize and honor participation and accomplishments related to DEI**

- Create seed funding for incorporating DEI principles, problems, and goals into research projects. Many engineering endeavors strive for immediate connection to human needs and goals or "downstream" applications to human efforts. Seed funding could encourage researchers to think about these human connections in addition to the core "engineering problem."

- Create seed funding for entrepreneurial activities that seek to extend/disseminate the benefits of engineering innovations to under-served or under-resourced populations.

- Provide training that helps researchers articulate "broader impacts" that incorporate social good/justice (i.e., how will the research contribute to a more equitable world?).

- Recognize staff members who contribute to an inclusive and supportive culture for diversity.

- Create a separate and prestigious award for DEI to honor those who vanguard FSE's commitment to embed these values into the framework of FSE. Similar to other annual awards, monetized incentives will be attached to the recognition.

- Public recognition of the recipients at the annual awards program.

**Objective 10. Establish procedures for periodic assessment of diversity and inclusivity and for adjustment of DEI initiatives**

- Implement a data management plan.

- Capture and track metrics as outlined in Section 8.

- Implement an Inclusion Resource Officer role within FSE, as described in objective 6.

**6. SCHOOL-WIDE COMMITMENTS**

In the spring of 2019, FSE established the Diversity and Inclusion Initiative at FSE Task Force (DII@FSE), which brings together representatives from faculty and staff across each of the seven schools and Dean’s Office. DII@FSE meets regularly and is central to the efforts of formulating and codifying the faculty- and staff-facing DEI efforts (current and proposed), as outlined in this plan. The task force conducted a benchmarking study of internal resources and activities as well as external programs and best practices. The task force combined with FSE Academic and Student Affairs (ASA) and FSE leadership to develop this plan.

An important strategy for FSE is to not recreate initiatives that are already offered across ASU, and as such, we will continue to leverage established campus-wide resources such as:

- [Office of Diversity, Equity, and Inclusion (ODEI)](#)
- [Educational Outreach and Student Services (EOSS)](#)
- [Disability Resource Center (DRC)](#)
- [Office of Inclusion and Community Engagement](#) (within the Provost’s Office)
Committee for Campus Inclusion (CCI)

Enhanced university-wide benefits and policies: ASU is continually revising and refining university policies to best serve all members of our communities. Striving to be an employer of choice, ASU understands the importance of work-life balance and wants to support the development of every employee in all aspects of their lives: at work, at home and in the community. Recent policy enhancements as of July 2019 include: Increase paid parental leave benefit from six to 12 weeks for parents (including birth mothers, fathers, and adoptive parents); adoption and fertility subsidies; paid time off for volunteer service; and an emergency child and elder care program. FSE commits to supporting faculty and staff in the use of these benefits.

Implicit Bias and Inclusion Training

ODEI focuses on university employees and regularly hosts training regarding topics such as sexual harassment, accommodations for persons with disabilities, service animals, diversity in the workplace, microaggressions, and implicit bias. For faculty, FSE required the 2019-2020 college-level Promotion and Tenure committee members to attend a workshop on microaggressions and implicit bias. Building on this pilot implementation we will explore how to integrate similar and ongoing trainings within the personnel committees throughout the seven FSE schools. Staff may enroll in training on microaggressions and implicit bias delivered by ODEI periodically or upon unit request, but training is not mandatory. FSE plans to develop student-facing programming that covers implicit bias.

We understand, however, that this is not enough. FSE plans to enhance training opportunities to include workshops on relevant/key topics for faculty serving in particular roles. For example, members of committees that evaluate others (e.g., Promotion & Tenure), establish policies (e.g., curriculum committees), work in various labs (e.g. accessibility and accommodations for persons with disabilities) would benefit by participation in training on bias and inclusivity. We propose requiring microaggressions and implicit bias training for all new faculty and staff; to include contextualized scenarios where parties interact, as is common in the workplace and to acknowledge interdependence of all groups. We propose refreshing training every two years as FSE culture and environment shifts in alignment with this Diversity Plan. As such, staff would be required to recertify their training every two years.

7. ACCOUNTABILITY

The Dean of the college and the Vice Dean of Strategic Advancement will oversee the implementation of this plan. They will be supported by the ASA and the DII@FSE Task Force for implementation and monitoring of initiatives outlined in this plan. As we strive towards the objectives outlined herein, we will also implement a strategy for equitable implementation of DEI initiatives across students, faculty and staff.

8. METRICS & ASSESSMENT

We plan to implement a data management plan with an evaluation component for periodic assessment of our efforts towards enhanced diversity and inclusivity as part of our strategic goals (see objective 8 and 10). By capturing and tracking metrics on the measures outlined below, ASA and the DII@FSE Task Force will be able to make recommendations to the Dean as improvements are needed. Progress will be tracked using the following metrics. Numbers in parentheses correspond to strategic objectives outlined in Section 5.

• Climate survey data and follow up results: online surveys, exit surveys, event feedback, training feedback, etc. (1, 2, 3, 6, 7)
• Clarification of short-term and medium-term outcomes for engineering pathway programs (1, 2, 3, 4, 5)
• Improvement in the collection of demographic data across pathway and student-facing programs (1, 2, 4, 5, 7)
• Development of systems and strategies for tracking students along engineering pathways from high school and community college to ASU FSE
• Number of hiring committees convened with enhanced DEI focus (6)
• Number (or percentage) of faculty and staff hires that enhance diversity (6)
• Number of evaluation committees convened with enhanced DEI focus (6)
• Number (or percentage) of invited seminar speakers that are URM or female (1, 5, 7, 9)
• Calendar of DEI events conducted or promoted throughout the year – speakers, workshops, recognition and awards (4, 5, 7)
• Training courses offered (7)
• Awards issued or recognized (9)
• Number of DEI concerns reported (6, 10)

What is the status and relevance of your unit’s strategic plan?

III. Peer and Aspirational Peer Comparisons

Table 2: Summary of Comparisons of Your School/Department at ASU and Your Peer/Aspirational Peer Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Undergrad Headcount (Degr-Seek)</th>
<th>Graduate Headcount (Degr-Seek)</th>
<th>Tenure Track Faculty</th>
<th>Total Faculty (FTE)</th>
<th>Staff FTE</th>
<th>External Funding ($)</th>
<th>Other data</th>
<th>Rank (if available)</th>
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<td>900</td>
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<td>NA</td>
<td>$6M</td>
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<td>46</td>
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</table>
Discuss/analyze the unit’s ranking relative to peers/aspirational peers including metrics when available. (Please use data provided by the Office of Institutional Analysis and other disciplinary sources as well as your peer data listed above.)

The EE programs are ranked by US News and World Report. These rankings were created to drive magazine subscriptions and subsequently for web content subscriptions. As such they are inconsistently available to the public. Underserved groups appear less likely to avail themselves of the rankings. They are widely shared among academic programs as some measure of recognition. Our EE programs are relatively highly ranked at both the graduate and undergraduate levels.

The most recent graduate program ranking is 31. The number has been stable, ranging between 26 and 32 for the past two decades. This is a purely reputational survey of department chairs with no data or performance metrics included. The stability of this relatively strong ranking is helpful since it drives qualified graduate student applicants to our program. The very large inertia of the reputational ranking presents a significant challenge in moving the ranking to the next tier of schools. Our efforts to communicate our faculty accomplishments in research and industry engagement will continue as our most effective means to positively impact this ranking.

Our undergraduate ranking is 22. There is little historical data since undergraduate specialty programs have not been consistently ranked over time. Our “online program” ranking is a very strong 2. As we have a very widely recognized online BSE EE program we believe that this driving the ranking. Our efforts to communicate our student and alumni accomplishments will continue as our most effective means to positively impact these rankings.

Satisfactory Progress Policy (Undergraduate)

Academic standing

Ira A. Fulton Schools of Engineering good standing

Students are expected to select and successfully complete courses that lead to the timely completion of their degree programs. Students are said to be in good standing if they fulfill all the following:

- maintain acceptable GPAs
- enroll and complete critical tracking requirements
- complete courses each semester that are applicable to their degrees

University academic warning

An undergraduate student with a cumulative GPA of less than 2.00 at the end of their first semester (fall or spring) is considered to be in the status of University Academic Warning. If after one term with an academic warning a student still has not achieved the minimum GPA standard of 2.00, the student will be placed on probation for at least one additional term. If a student's minimum GPA first falls below the standard in a term that is not the student's first term at ASU, the student will be placed on probation. Failure to return to good academic standing after being placed on probation may result in disqualification.

A student with an academic warning is considered in conditional good standing and is permitted to enroll.
Whether a student's status is an academic warning or probation, the student must meet with an academic success specialist to discuss academic success strategies for the subsequent semester and develop a success plan for returning to university academic good standing. At the discretion of the student’s college or school, that plan may require successful completion of UNI 220 Academic Refresher/Mindset Connections.

**Ira A. Fulton Schools of Engineering probation**

There are many reasons why some students do not make satisfactory progress. These students are placed on Ira A. Fulton Schools of Engineering academic probation to ensure they get the extra attention and resources they need that will help them get back in good standing. Working with an academic advisor to plan a strategy for success is crucial. Students may be required to reduce their course loads (13 credit hours maximum), retake courses or even take courses outside of their programs.

To return to academic good standing in the Ira A. Fulton Schools of Engineering, students on probation need to earn a minimum semester GPA of 2.25 and earn a minimum cumulative ASU GPA of 2.00 at the end of the probation semester. If enrolled in only one course, a grade of "C+" (2.33) or better and a minimum cumulative ASU GPA of 2.00 is required to obtain academic good standing. Students who meet either the semester GPA requirement or the cumulative ASU GPA requirement at the end of their first probationary semester may be continued on probation. Courses completed during summer sessions are not used to reevaluate a student's probationary status.

**Conditions for Ira A. Fulton Schools of Engineering probation**

A student is placed on college or university probation when specific academic expectations are not met. Some conditions trigger an automatic placement on probation whereas others trigger an automatic review of the student's case to determine if probation is warranted. When a probation review is triggered, the final decision and any conditions of probation are determined at the program level.

Automatic probation is triggered by any of the following:

- two successive semesters with GPAs less than 2.00
- an ASU cumulative GPA less than 2.00

Automatic review (borderline) is triggered by any one of the following:

- a semester with a GPA less than or equal to 2.00
- a cumulative GPA in the major of less than 2.00

**Ira A. Fulton Schools of Engineering continuing probation**

A student on probation or continuing probation at the university level is placed on college-level continuing probation status when specific academic expectations are not met. When a continuing probation review is triggered, the final decision and any conditions of continuing probation are determined at the college level.

To return to academic good standing in the Ira A. Fulton Schools of Engineering, students on continuing probation need to earn a minimum semester GPA of 2.25 and earn a minimum cumulative ASU GPA of 2.00 at the end of the probation semester. If enrolled in only one course, a grade of "C+" (2.33) or better and a minimum cumulative ASU GPA of 2.00 is required to obtain academic good standing.

Automatic continuing probation is triggered by any of the following:
• a student on probation does not attain a semester GPA of 2.25 or greater and has a cumulative GPA of at least 2.00 at the end of the probation semester
• a student on probation or continuing probation obtain a semester GPA of 2.25 or greater and has a cumulative GPA less than 2.00

Ira A. Fulton Schools of Engineering ineligibility

Students who are on continuing probation and fail to meet the schools' retention standards become ineligible to continue working toward a degree within the Ira A. Fulton Schools of Engineering.

Ineligibility occurs if the continuing probationary student does any of the following:

• does not attain a semester GPA of 2.25 or greater and has a cumulative GPA of at least 2.00 at the end of the probationary semester
• has already been on probation for two consecutive semesters
• fails to complete any courses appropriate for the degree during each semester

Ineligible students are subject to the following limitations:

• Students who change colleges may not register for courses in the Ira A. Fulton Schools of Engineering unless the courses are required by their new majors.
• Students who register for courses in the Ira A. Fulton Schools of Engineering may be withdrawn from these courses any time during the semester they are registered.

Ineligible students are encouraged to consider these options:

• Students may be eligible to change their majors to other colleges if they are in university academic good standing and have acceptable cumulative GPAs; the acceptable GPA level depends on the number of hours of completed coursework. Students should contact their advisor to determine if this is an option for them.
• Students may take non-engineering courses during summer sessions.
• An ineligible student may apply for readmission to the college after one calendar year.
• Students may request a status review by contacting the Office of Academic and Student Affairs.

Ira A. Fulton Schools of Engineering disqualification

Students who are on probation or continuing probation and fail to meet the schools' retention standards become disqualified to continue working toward a degree within the Ira A. Fulton Schools of Engineering.

Disqualification occurs if the student on probation or continuing probation does not attain a semester GPA of 2.25 or greater and has a cumulative GPA less than a 2.00 at the end of the probation semester.

Disqualified students are subject to the following limitations:

• A disqualified student is not allowed to register in a fall or spring semester at the university. If the student has already registered for a future fall or spring semester, the registration is canceled.
• A student who has been disqualified may apply for readmission to the college after one calendar year.
• A disqualified student may not attend as a nondegree student.
• If a disqualified student elects to attend another university or two-year college, any credits earned there will not affect the ASU cumulative GPA. A course repeated elsewhere will not result in a replacement of a grade earned at ASU.
**Student responsibilities**

Students need to make many decisions as they complete their degrees. While the schools and the university have a number of resources available to help with decision-making (e.g., faculty, courses, advisors and tutors), students are expected to take responsibility for their decisions.

**Ira A. Fulton Schools of Engineering good standing**

Students are expected to select and successfully complete courses that lead to the timely completion of their degree programs. Students are said to be in good standing if they fulfill all the following:

- maintain acceptable GPAs
- enroll and complete critical tracking requirements
- complete courses each semester that are applicable to their degrees

**University academic warning**

An undergraduate student with a cumulative GPA of less than 2.00 at the end of their first semester (fall or spring) is considered to be in the status of University Academic Warning. If after one term with an academic warning a student still has not achieved the minimum GPA standard of 2.00, the student will be placed on probation for at least one additional term. If a student's minimum GPA first falls below the standard in a term that is not the student's first term at ASU, the student will be placed on probation. Failure to return to good academic standing after being placed on probation may result in disqualification.

A student with an academic warning is considered in conditional good standing and is permitted to enroll. Whether a student's status is an academic warning or probation, the student must meet with an academic success specialist to discuss academic success strategies for the subsequent semester and develop a success plan for returning to university academic good standing. At the discretion of the student’s college or school, that plan may require successful completion of UNI 220 Academic Refresher/Mindset Connections.

**Ira A. Fulton Schools of Engineering probation**

There are many reasons why some students do not make satisfactory progress. These students are placed on Ira A. Fulton Schools of Engineering academic probation to ensure they get the extra attention and resources they need that will help them get back in good standing. Working with an academic advisor to plan a strategy for success is crucial. Students may be required to reduce their course loads (13 credit hours maximum), retake courses or even take courses outside of their programs.

To return to academic good standing in the Ira A. Fulton Schools of Engineering, students on probation need to earn a minimum semester GPA of 2.25 and earn a minimum cumulative ASU GPA of 2.00 at the end of the probation semester. If enrolled in only one course, a grade of "C+" (2.33) or better and a minimum cumulative ASU GPA of 2.00 is required to obtain academic good standing. Students who meet either the semester GPA requirement or the cumulative ASU GPA requirement at the end of their first probationary semester may be continued on probation. Courses completed during summer sessions are not used to reevaluate a student's probationary status.

**Conditions for Ira A. Fulton Schools of Engineering probation**

A student is placed on college or university probation when specific academic expectations are not met. Some conditions trigger an automatic placement on probation whereas others trigger an automatic review
of the student's case to determine if probation is warranted. When a probation review is triggered, the final decision and any conditions of probation are determined at the program level.

Automatic probation is triggered by any of the following:

- two successive semesters with GPAs less than 2.00
- an ASU cumulative GPA less than 2.00

Automatic review (borderline) is triggered by any one of the following:

- a semester with a GPA less than or equal to 2.00
- a cumulative GPA in the major of less than 2.00

**Ira A. Fulton Schools of Engineering continuing probation**

A student on probation or continuing probation at the university level is placed on college-level continuing probation status when specific academic expectations are not met. When a continuing probation review is triggered, the final decision and any conditions of continuing probation are determined at the college level.

To return to academic good standing in the Ira A. Fulton Schools of Engineering, students on continuing probation need to earn a minimum semester GPA of 2.25 and earn a minimum cumulative ASU GPA of 2.00 at the end of the probation semester. If enrolled in only one course, a grade of "C+" (2.33) or better and a minimum cumulative ASU GPA of 2.00 is required to obtain academic good standing.

Automatic continuing probation is triggered by any of the following:

- a student on probation does not attain a semester GPA of 2.25 or greater and has a cumulative GPA of at least 2.00 at the end of the probation semester
- a student on probation or continuing probation obtain a semester GPA of 2.25 or greater and has a cumulative GPA less than 2.00

**Ira A. Fulton Schools of Engineering ineligibility**

Students who are on continuing probation and fail to meet the schools' retention standards become ineligible to continue working toward a degree within the Ira A. Fulton Schools of Engineering.

Ineligibility occurs if the continuing probationary student does any of the following:

- does not attain a semester GPA of 2.25 or greater and has a cumulative GPA of at least 2.00 at the end of the probationary semester
- has already been on probation for two consecutive semesters
- fails to complete any courses appropriate for the degree during each semester

Ineligible students are subject to the following limitations:

- Students who change colleges may not register for courses in the Ira A. Fulton Schools of Engineering unless the courses are required by their new majors.
- Students who register for courses in the Ira A. Fulton Schools of Engineering may be withdrawn from these courses any time during the semester they are registered.

Ineligible students are encouraged to consider these options:
• Students may be eligible to change their majors to other colleges if they are in university academic good standing and have acceptable cumulative GPAs; the acceptable GPA level depends on the number of hours of completed coursework. Students should contact their advisor to determine if this is an option for them.

• Students may take non-engineering courses during summer sessions.

• An ineligible student may apply for readmission to the college after one calendar year.

• Students may request a status review by contacting the Office of Academic and Student Affairs.

**Ira A. Fulton Schools of Engineering disqualification**

Students who are on probation or continuing probation and fail to meet the schools’ retention standards become disqualified to continue working toward a degree within the Ira A. Fulton Schools of Engineering.

Disqualification occurs if the student on probation or continuing probation does not attain a semester GPA of 2.25 or greater and has a cumulative GPA less than a 2.00 at the end of the probation semester.

Disqualified students are subject to the following limitations:

1. A disqualified student is not allowed to register in a fall or spring semester at the university. If the student has already registered for a future fall or spring semester, the registration is canceled.

2. A student who has been disqualified may apply for readmission to the college after one calendar year.

3. A disqualified student may not attend as a nondegree student.

4. If a disqualified student elects to attend another university or two-year college, any credits earned there will not affect the ASU cumulative GPA. A course repeated elsewhere will not result in a replacement of a grade earned at ASU.
**IV. Graduate Education**

Please include in the table below a listing of the titles of all graduate degrees offered by the unit as it appears in the Online Academic Catalog.

**Table 3A: Current Graduate Degree Programs Offered by Unit**

**Electrical Engineering MSE**: ESEEMSE  
**Electrical Engineering MS**: ESEEEMS  
**Electrical Engineering PhD**: ESEEPHD  
**Arts, Media and Engineering MS**: ESAMEMS  
**Arts Media and Engineering PhD**: ESAMEPHD  
**Computer Engineering (Electrical Engineering) MS**: ESCENEMS  
**Computer Engineering (Electrical Engineering) PhD**: ESCENEPHD  
**Robotics and Autonomous Systems (Electrical Engineering) MS**: ESRASEEMS  
**Nuclear Power Generation Graduate Certificate**: ESNPGGRCT  
**Sensor Signal & Information Processing Graduate Certificate**

<table>
<thead>
<tr>
<th>Plan Code</th>
<th>2014 Fall</th>
<th>2015 Fall</th>
<th>2016 Fall</th>
<th>2017 Fall</th>
<th>2018 Fall</th>
<th>2019 Fall</th>
<th>2020 Fall</th>
<th>2021 Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESNPGGRCT</td>
<td></td>
<td>2.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td>2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESCENEMS</td>
<td>58.0</td>
<td>43.0</td>
<td>61.0</td>
<td>108.0</td>
<td>150.0</td>
<td>130.0</td>
<td>92.0</td>
<td>102.0</td>
</tr>
<tr>
<td>ESEEEMS</td>
<td>85.0</td>
<td>67.0</td>
<td>70.0</td>
<td>62.0</td>
<td>59.0</td>
<td>50.0</td>
<td>40.0</td>
<td>30.0</td>
</tr>
<tr>
<td>ESEEEMSE</td>
<td>619.0</td>
<td>413.0</td>
<td>447.0</td>
<td>495.0</td>
<td>467.0</td>
<td>462.0</td>
<td>388.0</td>
<td>496.0</td>
</tr>
<tr>
<td>ESAMEMS</td>
<td>3.0</td>
<td>4.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESRASEEMS</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14.0</td>
<td>16.0</td>
</tr>
<tr>
<td>ESCENEPHD</td>
<td>4.0</td>
<td>6.0</td>
<td>4.0</td>
<td>15.0</td>
<td>28.0</td>
<td>31.0</td>
<td>35.0</td>
<td>44.0</td>
</tr>
<tr>
<td>ESEEPHD</td>
<td>310.0</td>
<td>326.0</td>
<td>297.0</td>
<td>289.0</td>
<td>276.0</td>
<td>287.0</td>
<td>263.0</td>
<td>265.0</td>
</tr>
<tr>
<td>ESAMEPHD</td>
<td>4.0</td>
<td>4.0</td>
<td>3.0</td>
<td>2.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 3B: Headcount of Students Concurrently Enrolled in Majors or Graduate Certificates in the Unit

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Enrollment (headcount)</td>
<td>1083</td>
<td>863</td>
<td>884</td>
<td>972</td>
<td>982</td>
<td>974</td>
<td>834</td>
</tr>
<tr>
<td>Degrees Awarded</td>
<td>408</td>
<td>325</td>
<td>245</td>
<td>346</td>
<td>330</td>
<td>327</td>
<td>337</td>
</tr>
</tbody>
</table>

Table 4: Graduate Student FTE and Other Graduate Curricular Offerings

Please expand as needed.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate student FTE</td>
<td>901</td>
<td>788</td>
<td>785</td>
<td>832</td>
<td>852</td>
<td>903</td>
<td>737</td>
</tr>
</tbody>
</table>

A brief description of each program including the core requirements, the concentrations offered, and the culminating experience requirements for the major must be provided.

**EE MSE DEGREE REQUIREMENTS**

The MSE is a professional degree requiring a minimum of 10 courses of at least 3 or 4 credits each (30 hours minimum) and a final comprehensive exam. There is no thesis.

Requirements include:

- A minimum of five EEE courses
- A maximum of four courses (combined) from the following groups: any two 400-level, EEE 591, EEE 590, and FSE 500-level
- A minimum of three EEE 500-level courses (not including EEE 591, EEE 590, and FSE 500)
- It is highly recommended to take two courses outside of your area of specialization
- A maximum of one Reading and Conference (EEE 590) or FSE 500-level course

A final comprehensive exam in the area of specialization completes the MSE requirements. The exam is given each semester at the end of the sixth full week of classes.

Comprehensive Examination The MSE requires a comprehensive examination. It is administered typically in the sixth full week of the fall and spring semesters and consists of a written exam in the major area of study. It covers material through the master’s degree level. The area committees make up the written exam. Only students with a GPA of 3.0 or better can take the exam. A grade of 60% or more is required to pass this exam. The student must sign up for the exam by the end of the second week of classes. The MSE Comprehensive exam signup will be emailed to eligible students. A description of the exam can be found in the Comprehensive Exam Guide. Any student failing the comprehensive exam may petition to
attempt it a second time the very next time (after the failure) it is offered. There is no guarantee that the petition will be accepted. A third opportunity to take the exam will not be permitted.

EE MS DEGREE REQUIREMENTS

The MS is a research degree requiring a minimum of 30 credits that is only offered in person on the Tempe campus. These credits must include a minimum of eight courses of at least 3 or 4 credits each (24 hours minimum) and six hours of EEE 599 (Thesis).

Requirements include:

- A minimum of four EEE courses
- A maximum of four courses (combined) from the following groups: any two 400-level, EEE 591, EEE 590, and FSE 500-level.
- A minimum of three EEE 500-level courses (not including EEE 591, EEE 590, and FSE 500.)
- It is highly recommended to take two courses outside of your area of specialization
- A maximum of one Reading and Conference (EEE 590) or FSE 500-level course.
- Six credits of EEE 599 (Thesis)

A final oral exam in defense of the thesis completes the MS degree requirements.

Advisory Committee

MS students select a faculty mentor who will serve as chair through direct contact with the faculty. The chair of the advisory committee must be a member of the electrical engineering program graduate faculty with endorse-to-chair approval. The MS thesis advisor will help the student select the other two members of the advisory committee. The advisory committee should be formed and approved by the Graduate Program Chair as early as possible, but certainly no later than the semester before graduation.

Research and Thesis

Because the MS is a research degree, it requires a thesis. A student presenting a thesis must register for six credits of thesis (EEE 599). Opportunities for participation in research are abundant in electrical engineering, so a student in a program that requires a thesis is expected to select a thesis advisor and become an active participant in a research program in the first year of study. A thesis usually requires a continuing effort over two or three semesters. Thesis credit (EEE 599) can be graded with options of C, D, E, or Z. A grade of Z indicates a course in progress and is at the discretion of the thesis advisor. Such a grade may later be changed to a Y grade or left on the permanent record. An oral examination in defense of the thesis will be conducted by the students advisory committee. The oral defense must be scheduled through Graduate College 10 business days in advance. The thesis must be submitted to Graduate College for format review at least 10 calendar days before the oral defense. No exceptions to this rule will be made. In addition, the thesis must be delivered to all committee members at least 10 calendar days before the oral defense. When the student completes the thesis, the academic advisor assigns a grade of Y to the thesis credits, which indicates successful completion of the thesis and passing the oral defense. If a student does not complete the thesis, the thesis mentor may assign a failing grade of E to the thesis credits.

ELECTRICAL ENGINEERING (ART, MEDIA AND ENGINEERING) MS

The concentration in arts, media and engineering has been established as collaboration between the electrical engineering program at ASU and the Herberger Institute for Design and the Arts. The AME program represents an ambitious interdisciplinary research community at ASU that is focused on the parallel development of media hardware, software, content and theory. AME research addresses the discontinuity that exists between media content and media technologies through a paradigm shift in
media and arts training. The objective is to produce a new kind of hybrid graduate student who draws creativity from the arts and methodology from engineering sciences. AME trains students to integrate principles of digital signal processing and multimedia computing with artistic ideas and objectives, with the goal of enabling new paradigms of human-machine experience that directly address societal needs and facilitate knowledge. More information can be found on the ECEE website.

The EE (AME) MS program requires that students complete eight courses and six thesis credits. The eight courses generally follow the EE MS degree requirements, with the exception that roughly 1/3rd of the coursework (2 or 3 courses) be from the AME department. Of the six thesis credits, four of the credits must be EEE 599 and 2 of the credits must be AME 599.

Electrical Engineering PhD

THE PHD DEGREE The doctoral programs in Electrical Engineering are organized by whether the student has a master’s degree. Direct PhD means that a student is generally going directly from a bachelor’s program into a doctoral program and does not have a master’s degree. There is only one application to the PhD program and students are required to list their educational history on the application. The differences in the degree requirements are listed below.

COURSE REQUIREMENTS In order to graduate, a grade point average of 3.5 or greater is required for all courses taken beyond the master’s degree. Students may elect to take more than 18 hours of PhD class work and may be required to do so by their advisors. It may be necessary to take more than 18 hours of class work to improve the GPA to 3.5 or above. Hours beyond the required 18 described above may be graduate level classes or omnibus classes. “Omnibus” refers to additional research credits or additional courses. Please speak with your chair for recommendations and with your assigned academic for additional information. Please see below for the course and credit requirements for Direct PhD students and Regular PhD students.

Direct PhD Course requirements

Direct PhD students are required to complete 84 semester hours of academic credit beyond the bachelor’s degree. The following table illustrates the PhD degree course requirements:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>NUMBER OF HOURS</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master’s in passing</td>
<td>30</td>
<td>10 classes following the MSE degree requirements</td>
</tr>
<tr>
<td>500 level or above</td>
<td>12</td>
<td>Four classes of 3 or 4 credits each. EEE 591 is not allowed. No more than one EEE 790 (Reading and Conference) is allowed.</td>
</tr>
<tr>
<td>Research or omnibus</td>
<td>18</td>
<td>500 level (and above) classes. EEE 591 is allowed.</td>
</tr>
<tr>
<td>Research</td>
<td>12</td>
<td>EEE 792 (Select your chair from the course listing)</td>
</tr>
<tr>
<td>Dissertation</td>
<td>12</td>
<td>EEE 799 (Select your chair from the course listing)</td>
</tr>
<tr>
<td>Total hours required</td>
<td>84</td>
<td></td>
</tr>
</tbody>
</table>

Master’s in Passing for Direct PhD students

Direct PhD students can apply for a master’s in passing (MIP). The master’s degree in passing will be the MS degree. The degree must be requested by the student through their academic advisor. The student must have completed 10 courses (following the EE MSE degree requirements) with at least a 3.0 GPA.
GPA and the PhD Qualifying exam. After completing 10 courses and the PhD Qualifying Exam (form and report are required to be submitted to the academic advisor), students should work with their academic advisor to have the proper form submitted to the Graduate College. Once that is approved, the student will need to complete the MS iPOS that lists the 10 classes completed and apply for graduation. Once the MIP is awarded, students are still active in the PhD program unless they withdraw from the program.

**Regular PhD Course Requirements** PhD students are required to complete 84 semester hours of academic credit beyond the bachelor’s degree. The following table illustrates the PhD degree course requirements:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>NUMBER OF HOURS</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master's degree</td>
<td>30</td>
<td>From any approved institution</td>
</tr>
<tr>
<td>500 level or above</td>
<td>18</td>
<td>At least six classes of 3 or 4 credits each. At least 9 credits of EEE classes. EEE 591 not allowed. No more than one EEE 790 (Reading and Conference)</td>
</tr>
<tr>
<td>Research or omnibus</td>
<td>12</td>
<td>500 level (and above) classes. EEE 591 is allowed</td>
</tr>
<tr>
<td>Research</td>
<td>12</td>
<td>EEE 792 (Select your chair from the course listing)</td>
</tr>
<tr>
<td>Dissertation</td>
<td>12</td>
<td>EEE 799 (Select your chair from the course listing)</td>
</tr>
<tr>
<td><strong>Total hours required</strong></td>
<td><strong>84</strong></td>
<td></td>
</tr>
</tbody>
</table>

**ELECTRICAL ENGINEERING (ART, MEDIA AND ENGINEERING) PHD**

The concentration in arts, media and engineering has been established as collaboration between the electrical engineering program at ASU and the Herberger Institute for Design and the Arts. The AME program represents an ambitious interdisciplinary research community at ASU that is focused on the parallel development of media hardware, software, content and theory. AME research addresses the discontinuity that exists between media content and media technologies through a paradigm shift in media and arts training. The objective is to produce a new kind of hybrid graduate student who draws creativity from the arts and methodology from engineering sciences. AME trains students to integrate principles of digital signal processing and multimedia computing with artistic ideas and objectives, with the goal of enabling new paradigms of human-machine experience that directly address societal needs and facilitate knowledge. More information can be found on the ECEE website.

The EE (AME) PhD program generally follows the EE PhD requirements with the exception that 2/3rd of the coursework, research, and dissertation credits be EEE and the remaining 1/3rd must be AME. For example, if a student must complete six courses, four of the courses must be EEE courses and the remaining two courses must be AME courses. The same pattern follows for research and dissertation credits.

**RESEARCH AND DISSERTATION CREDITS**

A student is expected to become an active participant in a research program during the first semester of study in the PhD program. Research leading to a dissertation is performed under the direction of the supervisory committee. The candidate must register for a total of at least 12 credits of research (EEE 792) and 12 credits of dissertation (EEE 799). Research (EEE 792) will be graded with options of C, D, E, Z, or Y. A grade of Y indicates satisfactory progress and is at the discretion of the dissertation advisor. Such grades may later be changed to a letter grade or left on the permanent record. The Y is the usual grade for research. The Z grade is typically used for dissertation credits until you complete your dissertation defense. When the dissertation is satisfactorily completed, a grade of Y is given for successful completion.
of the dissertation and for passing the oral dissertation defense. If a student does not complete the
dissertation, the dissertation advisor may assign a failing grade of E for EEE 799.

SUPERVISORY COMMITTEE

Sometime during the first semester in the PhD program the PhD student must form a graduate
supervisory committee. The chair of the committee will be the faculty member who directs the student’s
research program. The chair of the committee must be a member of the electrical engineering program
graduate faculty with endorse-to-chair approval. The Graduate Faculty list is maintained by Graduate
College. The supervisory committee will be composed of at least four members (the chair and the other
members). Only three members need attend the qualifying exam, but at least four must attend the PhD
comprehensive exam and the final dissertation oral. At least half of the committee members must be
tenure or tenure track faculty in ECEE.

QUALIFYING EXAMINATION

Every student who wishes to pursue the PhD in electrical engineering must pass a Qualifying
Examination. Because the PhD is primarily a research degree, the Qualifying Examination is designed to
test the candidate’s research skills and abilities. The exam consists of a written research paper and an
oral presentation of the research. When determining a topic, the student and their committee chair should
keep in mind that this milestone is to determine if a student is qualified to do doctoral level research and if
they would be successful in future research endeavors. The exam is administered by the student’s
graduate supervisory committee. PhD students who have a master’s degree should aim to complete the
qualifying exam by the end of their second semester in the program. Direct PhD students should aim to
complete the qualifying exam in the semester in which they are completing their 10th course. If a student
does not wish to take the exam according to the above schedule, but wishes to continue in the program,
must petition the School Graduate Committee for permission to take the exam at a later date. Petitions
must be received well in advance of the required exam date. There is no guarantee that the Graduate
Committee will approve such requests. If a student is completing their MS thesis at ASU and would like to
use their MS thesis defense as their qualifying exam, they may submit the required form with the
signatures and exam information. If the graduate supervisory committee advisor is not changed, this
exam will be supervised by the MS committee. These members may, or may not, be part of the doctoral
graduate supervisory committee. If the doctoral advisor is not part of this committee, the advisor should
be added to the committee. The exam is graded on a pass/fail basis. A passing grade indicates that the
committee believes that the student is capable of doctoral research. A failing grade indicates that the
committee believes that the student is incapable of conducting the level of research required for the PhD.
As a result, students who fail the exam will be removed from the program. The student must submit their
report to their committee 10 working days in advance. Once the exam is completed, the student must
submit the form (which can be found on our website) and a copy of their report to their assigned
academic advisor.

COMPREHENSIVE EXAMINATION AND ADMISSION TO CANDIDACY

A student must pass a comprehensive examination before being formally admitted to candidacy for the
PhD. The examination is administered by the student’s graduate supervisory committee after the student
has essentially completed coursework. The student must have an approved formal plan of study before
taking the exam. The exam is typically completed in the 6th semester of study at ASU. If the exam is not
completed by the end of the 6th semester, approval for registration must be obtained by your committee
chair and the Graduate Program Chair. The comprehensive examination will be given by the four
members of the supervisory committee and will consist of written and oral parts. The written part will be
composed of a background paper on the area of research, includes the current status of this area, a
summary of work the student has already done, and a thesis proposal. The oral part will be an
examination on the contents of the paper in general and thesis proposal. Following completion of the
exam, the completed “PhD Comprehensive Examination” form must be returned to the Graduate Program
Chair. The student will be granted candidacy by Graduate College immediately after passing the comprehensive exam.

DISSEMINATION DEFENSE

Upon completion of the dissertation, the student must successfully defend it by passing an oral examination. This defense may be conducted no earlier than one semester after the student’s admission to candidacy. Ideally, the exam should be conducted no earlier than six months after the student’s formal admission to candidacy. Students are responsible for communicating with their committee chair when determining if they are ready to hold their dissertation defense. If the committee chair determines the student’s work is sufficient, the student should send a copy of their dissertation to their committee members and work to find a date and time that works for the entire committee to attend the defense. Students are responsible for knowing the deadlines set by Graduate College when scheduling their defenses. Information can be found on the Graduate College website. Students must formally schedule their defense through the iPOS at least 10 business days prior to their defense date. When doing so, they should upload their dissertation for format review. No exceptions to this rule will be made. In addition, the thesis must be delivered to all committee members at least 10 calendar days before the oral defense. At least 50% of the committee, including the chair or one co-chair, must attend the defense. Members attending remotely must be reported at the time of scheduling your oral defense. A list of archival publications published by the student and related to the dissertation must be presented at the defense. The form for this is located at on the ECEE Forms website. The form must be signed by the PhD committee and submitted to the advising office to keep on file.
Computer Engineering (Electrical Engineering) MS

MS Degree Requirements

A minimum of 30 credit hours of coursework beyond the bachelor’s degree and deficiency courses are required to complete the MS degree. All Master's students are required to develop and submit an Interactive Plan of Study (iPOS) through your MyASU page during the first semester at ASU. The iPOS should be developed with the aid of the student's faculty advisor. The CEN Graduate Academic Advisor, acting on behalf of the Graduate Program Chair, will initially advise the student. Students pursuing the non-thesis option will list the Program Chair as their faculty advisor. Students pursuing the thesis option should seek out a faculty member in his or her area of study to serve as an advisor and committee chair.

Summary of Degree Requirements

Six hours of Core courses • CSE 551 – Foundations of Algorithms (3) • EEE 554 – Random Signal Theory (3)

All students are required to take the core courses, CSE 551 Foundations of Algorithms and EEE 554 Random Signal Theory in their first two semesters. Students in the Computer Systems Concentration (CEN-CS) are required to take CSE 551 in their first semester. Students in the Electrical Engineering Concentration (CEN-EE) are required to take EEE 554 in their first semester. These courses have a prerequisite of CSE 310 for CSE 551 and EEE 350 for EEE 554. If students are deficient in CSE 310 or EEE 350, they may choose to take these concurrently with the core courses, or they can petition to take these in their first semester before taking the core courses.

Twelve Credits of graduate-level CEN Area courses that fulfill the concentration requirement

The area courses in the graduate Computer Engineering program are partitioned into five (5) areas of study and listed in the table located on the CEN handbooks website. These courses will be referred to as Computer Engineering Area (CEN-Area) courses.

The five (5) areas of study are: 1) Autonomous Systems and Robotics (ASR) 2) Communication and Networks (CN) 3) Distributed, Dependable and Secure Systems (DDSS) 4) Multimedia and Signal Processing (MSP) 5) VLSI, Architecture, and Embedded Systems (VAES)

• 6 of the 12 credit hours should be courses covering two (2) of the five (5) CEN areas (CEN areas listed below).

• Concentration requirement
  o CEN-CS Concentration: 9 credits CSE or CEN and 3 credits EEE or CEN
  o CEN-EE Concentration: 9 credits EEE or CEN and 3 credits CSE or CEN

Elective Courses

Elective courses from an approved list of elective courses, CEN Area Courses, or any 500 level CSE/CEN/EEE course. 12 credits of electives for Non-Thesis Option. 6 credits of electives plus 6-credit CEN 599 - Thesis for Thesis Option.

• Up to 12 credits of approved combined courses (5xx/4xx) and 400 level courses can be taken and these count as electives. Of these 12 credits, 6 of them are allowed to be CSE 4XX. Please refer to the list of approved 5xx/4xx electives that can be found on the handbook's website.

1. If a 400-level course is combined with a 500-level course, CEN students will be required to enroll in the 500-level course.
2. Up to 3 credits of Reading & Conference (CEN 590)
3. All graduate-level CSE, EEE, or CEN courses can be taken as electives
4. Other graduate-level Math, Science, and Engineering courses can count as electives if they are on the approved list of electives. Please speak to your advisor if you would like to enroll in a course outside of the CSE or EEE departments.
5. Internship courses do not count toward the degree 30-credit requirement

Culminating Experience for MS Non-Thesis Students – Comprehensive Examination
Comprehensive Examination: A comprehensive examination is held once in fall and once in spring. A student must be in good academic standing and have a cumulative graduate grade-point-average (CUM GPA) 3.0 or higher, graduate grade-point-average (500 level courses GPA) 3.0 or higher, 3.0 overall iPOS courses, and completed at least 18 credit hours including the 2 core courses to take the Comprehensive Examination. The Comprehensive exam entails questions on the core courses and might include questions from the pre-requisites of these courses. Details of the comprehensive examination will be communicated to the students in the semester the exam is being administered.

Failing the comprehensive examination is considered final unless the supervisory committee and the head of the academic unit recommend, and the Dean of the Graduate College approves a reexamination. Only one re-examination is permitted. A petition with substantial justification for reexamination, endorsed by the head of the academic unit must be approved by the Dean for the Graduate College before students can take the examination a second time. If the petition is approved, a student is allowed to retake the examination immediately following the period in which the examination was failed. If the student's petition for re-examination is not approved or the student fails the re-examination, the CEN program will recommend to Graduate College to remove the student from the MS program.

Culminating Experience for MS Thesis Students – Written and Oral Defense

A thesis requires a research advisory committee comprised of at least three faculty members including the committee chair. The committee chair must be a CEN faculty member approved to chair a committee. The two additional members are chosen jointly by the committee chair and the student to facilitate the student's research. A least one additional member should be from the CEN faculty. Please refer to the Computer Engineering website for a list of CEN faculty and their research and to the Graduate College website for a list of faculty with the right to chair in Computer Engineering. The written thesis and a successful oral defense constitute their final examination. A majority pass vote by the student's committee is required to graduate.

Computer Engineering (Electrical Engineering) PhD

Doctoral degree requirements

Degree requirements for the PhD include a minimum of 84 semester hours beyond the bachelor’s degree. Students are allowed up to 30 credit hours from a previously awarded master’s degree to count towards the degree requirements for the doctoral program, if approved by the student’s supervisory committee and the Program Chair.

The PhD is comprised of several milestones, which all students are required to pass successfully before graduation.

- Filing an approved Plan of Study
- Completion of the core, area, and elective coursework along with research and dissertation credits.
- Passing the Qualifying Exam.
- Passing the Comprehensive Examination and obtain approval of the dissertation prospectus to advance to candidacy.
- Successful oral defense of an approved written dissertation.

Formulation of Plan of Study

In the first year of study at ASU, each student must formulate and submit an official plan of study (iPOS). The plan of study should satisfy the degree requirement as described in this handbook. Coursework completed that is not listed in the approved course list or has not had a prior approval may not count.
toward a student’s degree requirements if the coursework does not satisfy the degree requirements as described in this handbook. Students must list a faculty chair or co-chairs and obtain their approval before submission of the initial plan of study. All iPOSs must have the approval of the Program Chair and the Graduate College Associate Dean.

The plan of study may be amended as the student progresses through the program with the approval of the student’s faculty advisor and the CEN Program Chair.

Courses with grades of “D,” “E,” “W,” and “I” cannot be included on an iPOS and should be replaced with another course or complete the course with the grade is “I” within one year from the date the grade is posted. A check sheet can be found on the CEN website as a guide when creating the iPOS. The check sheet must be submitted to the advising office for approval along with the electronic submission of the iPOS.

Internship courses do not count toward the degree 84-credit requirement.

Core courses
There are 6 credit hours required core courses for the PhD in Computer Engineering

• CSE 551 – Foundations of Algorithms (3)
• EEE 554 – Random Signal Theory (3)

All students are required to take the core courses, CSE 551 Foundations of Algorithms and EEE 554 Random Signal Theory in their first two semesters. Students in the Computer Systems Concentration (CEN-CS) are required to take CSE 551 in their first semester. Students in the Electrical Engineering Concentration (CEN-EE) are required to take EEE 554 in their first semester. These courses have a prerequisite of CSE 310 for CSE 551 and EEE 350 for EEE 554. If students are deficient in CSE 310 or EEE 350, they may choose to take these prior to registering for the advanced graduate level courses. CSE 310 and EEE 350 will not count towards degree requirements. Students are encouraged to consult an academic advisor to ensure they meet the minimum pre-requisites.

CEN Area courses
Total credits hours for program area courses:

• minimum of 12 credit hours. (Approved transfer courses can count towards the area courses)
• No more than 12 credits of CEN 690

The five (5) area courses in the graduate Computer Engineering program are listed in the table located on the CEN handbooks website. These courses will be referred to as Computer Engineering Area (CEN-Area) courses.

• Concentration requirement is met by taking the correct prefix courses from the CEN Area course list for your degree concentration.
  o CEN-CS Concentration: 9 credits CSE or CEN and 3 credits EEE or CEN
  o CEN-EE Concentration: 9 credits EEE or CEN and 3 credits CSE or CEN

The five (5) areas of study are:

1) Autonomous Systems and Robotics (ASR)
2) Communication and Networks (CN)
3) Distributed, Dependable and Secure Systems (DDSS)
4) Multimedia and Signal Processing (MSP) 10
5) VLSI, Architecture, and Embedded Systems (VAES)

**Elective Courses**

0- 30 credits of electives selected from an approved list of elective courses or CEN Area Courses. The combined set of area courses and elective courses should be chosen to ensure the student has adequate preparation to pursue research in the chosen area of the thesis.

- No more than 6 hours of 400-level coursework can be included on the graduate student program of study.
- No more than 12 hours of combined courses (4XX/5XX) can be included on the graduate student program of study.
- No more than a total of 12 hours of a combination of 400-level and combined courses (4XX/5XX) can be included on the graduate student program of study.
  - All 400-level and combined (4XX/5XX) courses count towards elective credits.

**Reading and Conference (CEN 690 and CEN 790) – Maximum 18 credit hours.**

CEN 690 can be used as area coursework if needed and deemed appropriate by the student’s faculty and the Graduate Program Chair. CEN 790 can be used as elective credits. Combined students cannot register for more than 18 credit hours of Reading and Conference. Reading and conference can be taken once a semester for a maximum of 3 credits each. Students are required to submit the required form and override request.

The student must get written approval from the supervising faculty outlining the coverage of the content. The Independent Study form must be approved by the Program Chair and will be placed in the student’s file. After completion of the independent study, the student needs to submit a written report to the faculty supervising the independent study.

Once the report is approved by the supervising faculty, the report and the independent study grade form need to be submitted to the student’s assigned advising staff to be given to the CEN Program Chair for review and approval.

Once 18 credits of CEN 690/790 have been completed and show on the official transcripts, no further CEN 690/790 credits will be permitted.

Research credits (CEN 792) 24 credit hours of Research (CEN 792)

Dissertation credits (CEN 799) 12 credit hours of Dissertation (CEN 799)

**Supervisory Committee**

During the first semester in the PhD program, the student must select a faculty advisor who has the right to chair from the Computer Engineering Program Graduate Faculty. The list of faculty members is available at CEN Website and Graduate College. At least one semester before taking the Qualifying Examination, the student must form a graduate supervisory committee. The chair of the committee will be the PhD faculty advisor who directs the student’s research program. The role of the supervisory committee is to provide guidance and direction for the student’s educational and research plan. As such, the committee must have the necessary expertise to guide and evaluate research in the proposed dissertation area. A minimum of four committee members is required, including the committee chair or
two co-chairs. The committee chair or one of the co-chairs must be a Computer Engineering Graduate Faculty member with the right to chair. At least two members must be CEN Graduate Faculty members. The fourth member can be a CEN Graduate Faculty member or an outside member of the CEN Graduate Faculty. The supervisory committee must be approved by the CEN Program Chair and by Dean of Graduate College before taking the Qualifying Examination.

**Qualifying Exam**

Every student who wishes to pursue the PhD in Computer Engineering must pass a Qualifying Examination. Because the PhD is primarily a research degree, the Qualifying Examination is designed to test the candidate’s research skills and abilities. The exam consists of a written research paper and an oral presentation of the research paper to the graduate supervisory committee. The research topic will typically be chosen by the student in collaboration with the committee chair and the graduate supervisory committee. More specifically, the research paper will typically present a state-of-the-art survey of the student’s research topic area. The survey should give a comprehensive overview of the existing prior research in the topic area and identify the limitations of the existing approaches in the topic area. Ideally, the survey should present a coarse outline of avenues for addressing the identified limitations through original research that will later form the core of the PhD dissertation. A well-done survey can form the basis for the related work chapter of the PhD dissertation.

Students initiate their exam in collaboration with their supervisory committee. The supervisory committee, and the chair in particular, will guide the student regarding the content of the written and oral exam. The student will need to prepare a paper to the committee chair’s specifications and send it to the committee at least 2 weeks prior to the exam. The student needs to coordinate with the committee to find a date, time, and location that is acceptable for all parties. The student needs to work with their advising office to reserve a conference room. After the exam, the student must submit the form with the required signatures and a copy of the written portion of the exam to their advising office. This can be submitted in person or via email.

The student should take the exam before the end of the fourth semester in attendance at ASU as a PhD candidate. If a student does not wish to take the exam according to the above schedule but wishes to continue in the program, he/she must petition the Graduate Program Chair for permission to take the exam at a later date. Petitions must be received well in advance of the required exam date. There is no guarantee that the Graduate Committee will approve such requests. If the student does not have a supervisory committee, they still must petition to delay taking the exam. In this situation, the Graduate Program Committee will review the petition. If a petition to delay the qualifying exam is denied, this constitutes as failure of the exam and therefore will result in removal of the program.

Students completing a Master of Science degree in computer engineering at ASU can combine the MS oral defense with the qualifying exam. When a student plans on remaining within the same area after completing their MS degree at ASU, the qualifying examination may be taken simultaneously with the final oral defense of the MS thesis. Assuming that the graduate supervisory committee advisor is not changed, this exam will be supervised by the MS committee. These members may, or may not, be part of the doctoral graduate supervisory committee. If the doctoral advisor is not part of this committee, the advisor should be added to the committee. The graduate supervisory committee will be formed when the student’s official program of study is filed.

The result of the exam is a pass or fail. A passing result indicates that the committee believes that the student is capable of doctoral research. A failing result indicates that the committee believes that the
student is incapable of conducting the level of research required for the PhD. Therefore, students who fail the exam will be removed from the program. Only one exam is allowed. The student must submit their report to their committee 10 working days in advance. Once the exam is completed, the student must submit the form (which can be found on our website) and a copy of their report to their assigned academic advisor.

Comprehensive Exam and Dissertation Prospectus

The purpose of the doctoral comprehensive examination and dissertation prospectus is to address critical areas of the student’s research topic and to ensure the research design and methods aligns well with the intended subject. The comprehensive exam consists of two components: an oral and a written component. The exam is typically completed in the 3rd year or the 6th semester of study at ASU for PhD students with a previously awarded MS degree, and by the 4th year or the 9th semester of study at ASU for Direct PhD students. The Comprehensive Exam takes approximately six weeks. A student should plan in advance and must ensure that he/she is registered at all times in at least one credit graduate level course (e.g. 580, 792, 795, or 799). This includes if either part of the written or oral portion of the comprehensive exam will be held in summer.

Satisfactory Progress Policy (Graduate)

PROBATION, GPA REQUIREMENTS, AND SATISFACTORY ACADEMIC PROGRESS

Academic excellence is expected of graduate students. To be eligible for a graduate degree, a student must achieve a grade point average of 3.0 or better in all work taken for graduate credit, exclusive of deficiencies, and in all work specifically included on the plan of study. The required grade point average for master’s students is 3.0; however, doctoral students must maintain a grade point average of 3.5.

Three different grade point averages that are considered by Graduate College are

1. Cumulative GPA: GPA from all classes taken once admitted into a graduate program
2. Graduate GPA: GPA form all graduate level classes taken at ASU, regardless of when they were taken
3. iPOS GPA: GPA from all courses and credits listed on the student’s iPOS

A student who is not progressing satisfactorily toward a degree may be withdrawn from the program by Graduate College upon recommendation by the program. The policy of the Ira A. Fulton Schools of Engineering for academic probation and dismissal of graduate students follows below.

A PhD student may be recommended for dismissal from the graduate program who fails to make satisfactory progress toward the degree. Satisfactory progress means completing the PhD requirements in a timely manner. These requirements include the Qualifying Exam, Comprehensive Exam, course requirements, selection of a chair and supervisory committee, filing of a plan of study, and completing research as assigned by the supervisory committee chair. Additional requirements may be imposed by the supervisory committee.

For grading policies, please refer to the University Registrar Services Grading Policy website. The grade of “I” (Incomplete) can only be given by an instructor when a student is unable to complete a course because of illness or other conditions beyond the student’s control. The Request for Grade of Incomplete
form must be submitted to the ECEE graduate advising office and approved by the Graduate Program Chair before the incomplete grade is posted by the instructor.

**IRA A. FULTON SCHOOLS OF ENGINEERING (ENGINEERING) ACADEMIC STANDARDS**

Policy for Maintaining Satisfactory Academic Progress

A student who has been admitted to a graduate degree program in the Ira A. Fulton Schools of Engineering, with either regular or provisional admission status, must maintain a GPA of 3.00 or greater in all the following:

1. all work taken for graduate credit (courses numbered 500 or higher)
2. coursework in the student's approved plan of study
3. all postbaccalaureate course work taken at ASU (overall GPA)

A student will be placed on academic probation if one or more of the student's GPAs listed above is less than 3.00. Students will be notified by mail when placed on academic probation.

A student will earn academic good standing by obtaining a 3.00 or greater in the GPAs listed above by the time the next nine hours are completed. Coursework such as research and dissertation and any course that is graded with a "Z" (in progress) or "Y" (satisfactory) cannot be included in these nine hours.

A student may be recommended for dismissal from a graduate program if the student fails to increase all the GPAs listed above to 3.00 or greater by the time he or she completes at least nine credit hours as defined in the previous paragraph.

A student may appeal actions concerning dismissal by petitioning the program in which they are enrolled.

Academic units in the Ira A. Fulton Schools of Engineering can expand this policy statement to include additional policy governing the satisfactory academic progress of the students in their graduate programs.

**Policy for maintaining satisfactory academic progress**

A student who has been admitted to a graduate degree program in the Ira A. Fulton Schools of Engineering, with either regular or provisional admission status, must maintain a GPA of 3.00 or greater in all the following:

- all work taken for graduate credit (courses numbered 500 or higher)
- coursework in the student's approved plan of study
- all postbaccalaureate course work taken at ASU (overall GPA)

A student will be placed on academic probation if one or more of the student's GPAs listed above is less than 3.00. Students will be notified by mail when placed on academic probation.

A student will earn academic good standing by obtaining a 3.00 or greater in the GPAs listed above by the time the next nine hours are completed. Coursework such as research and dissertation and any course that is graded with a "Z" (in progress) or "Y" (satisfactory) cannot be included in these nine hours.

A student may be recommended for dismissal from a graduate program if the student fails to increase all the GPAs listed above to 3.00 or greater by the time he or she completes at least nine credit hours as defined in the previous paragraph.

A student may appeal actions concerning dismissal by petitioning the program in which they are enrolled.
Academic units in the Ira A. Fulton Schools of Engineering can expand this policy statement to include additional policy governing the satisfactory academic progress of the students in their graduate programs.

### Graduate Student Profiles

#### Table 5: Master’s Student Admissions and Profile

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<td>2269</td>
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<td>1781</td>
<td>1206</td>
<td>1254</td>
<td>1359</td>
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<tr>
<td>Number of Admissions</td>
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<td>517</td>
<td>687</td>
<td>916</td>
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<tr>
<td>Number of New Students Enrolled</td>
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<td>150</td>
<td>264</td>
<td>284</td>
<td>271</td>
<td>254</td>
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<tr>
<td>Selectivity</td>
<td>28.8%</td>
<td>22.8%</td>
<td>31.8%</td>
<td>51.4%</td>
<td>73.5%</td>
<td>68.7%</td>
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<tr>
<td>Yield</td>
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<td>29%</td>
<td>38.4%</td>
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<td>Average GRE</td>
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<tr>
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<td>578</td>
<td>666</td>
<td>676</td>
<td>656</td>
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<tr>
<td>% women</td>
<td>23.5%</td>
<td>23.5%</td>
<td>24%</td>
<td>24.8%</td>
<td>23.4%</td>
<td>22.4%</td>
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<tr>
<td>% Ethnicity</td>
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<td>American Indian</td>
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<td>0%</td>
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<td>0%</td>
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<tr>
<td>African American</td>
<td>.9%</td>
<td>1.9%</td>
<td>2.1%</td>
<td>1.5%</td>
<td>1.8%</td>
<td>2.0%</td>
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<td>Hispanic</td>
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<td>2 or More Races</td>
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<td>White</td>
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<td>18%</td>
<td>16.6%</td>
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<td>.3%</td>
<td>.3%</td>
<td>1%</td>
<td>1.7%</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>% Minority total</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>% International</td>
<td>82.9%</td>
<td>71.9%</td>
<td>71.6%</td>
<td>72.7%</td>
<td>70.4%</td>
<td>65.1%</td>
<td>51.3%</td>
<td></td>
</tr>
<tr>
<td>Degrees awarded</td>
<td>377</td>
<td>276</td>
<td>191</td>
<td>286</td>
<td>287</td>
<td>283</td>
<td>291</td>
<td></td>
</tr>
</tbody>
</table>
Master’s Student Analysis

Please refer to Guiding Questions for Graduate Student Analysis (Located at the end of this template) to address:

Background
Goal is to educate students for a career in electrical engineering.

Some masters students engage in research. Our research is use inspired.

Structure and requirement changes are regularly driven by faculty suggestions through the graduate program committee.

Recruitment and Admissions
We can support about 300 Masters students across our programs.

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Applications from China have declined in number significantly over the past 5 years. Continued strength in applications from India have enabled us to maintain robust student enrollment.

Program Structure
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All FSE faculty are encouraged to participate in the Teaching Community of Practice seminar series, which depending on circumstances is delivered either face-to-face or virtually. This seminar series explores topics such as assessment, game-based learning, inclusive pedagogy, etc., and draws upon the resources available through the FSE Learning and Teaching Hub. The Hub not only supports faculty who participate in the Teaching Community of Practice, but also provides pedagogical guidance and instructional feedback to FSE faculty in part through learning designers and collaborative programs, workshops, etc.
Professional Development
We support students who engage with our professional society, the IEEE. This includes on campus seminars, off campus events with the IEEE Phoenix section and internationally recognized conferences. Some of our students participate in the many entrepreneurial activities at ASU.

Student Success
Our graduates are in very high demand and nearly everyone has an employment opportunity at the time of graduation. Some of our international students would prefer a US placement but this is not always achieved.

Best Practices
Our professional student advising operation is world-class.

Table 6: Doctoral Student Admissions and Profile

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Applicants</td>
<td>339</td>
<td>287</td>
<td>322</td>
<td>304</td>
<td>307</td>
<td>268</td>
<td>241</td>
<td></td>
</tr>
<tr>
<td>Number of Admissions</td>
<td>133</td>
<td>91</td>
<td>124</td>
<td>146</td>
<td>135</td>
<td>127</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Number of New Students Enrolled</td>
<td>53</td>
<td>43</td>
<td>44</td>
<td>51</td>
<td>52</td>
<td>51</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Selectivity</td>
<td>39.2%</td>
<td>31.7%</td>
<td>38.5%</td>
<td>48%</td>
<td>44%</td>
<td>47.4%</td>
<td>38.6%</td>
<td></td>
</tr>
<tr>
<td>Yield</td>
<td>39.8%</td>
<td>47.3%</td>
<td>35.5%</td>
<td>34.9%</td>
<td>38.5%</td>
<td>40.2%</td>
<td>37.6%</td>
<td></td>
</tr>
<tr>
<td>Average GRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal</td>
<td>150</td>
<td>152</td>
<td>151</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Quantitative</td>
<td>165</td>
<td>166</td>
<td>165</td>
<td>162</td>
<td>162</td>
<td>161</td>
<td>161</td>
<td></td>
</tr>
<tr>
<td>Headcount (Fall)</td>
<td>318</td>
<td>336</td>
<td>304</td>
<td>306</td>
<td>305</td>
<td>318</td>
<td>298</td>
<td></td>
</tr>
<tr>
<td>% women</td>
<td>12.6%</td>
<td>12.2%</td>
<td>13.2%</td>
<td>14.1%</td>
<td>14.4%</td>
<td>13.8%</td>
<td>14.1%</td>
<td></td>
</tr>
<tr>
<td>% Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian</td>
<td>0.3%</td>
<td>0.6%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Asian American</td>
<td>1.9%</td>
<td>2.7%</td>
<td>3.3%</td>
<td>3.6%</td>
<td>2.6%</td>
<td>2.5%</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>African American</td>
<td>0.6%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.6%</td>
<td>1.0%</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>2.5%</td>
<td>1.8%</td>
<td>2.0%</td>
<td>3.3%</td>
<td>4.3%</td>
<td>3.8%</td>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 or More Races</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.3%</td>
<td>0.7%</td>
<td>0.6%</td>
<td>0.3%</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>White</td>
<td></td>
<td>16.0%</td>
<td>16.4%</td>
<td>14.1%</td>
<td>15.4%</td>
<td>15.1%</td>
<td>15.4%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td>3.1%</td>
<td>1.5%</td>
<td>2.3%</td>
<td>1.6%</td>
<td>1.0%</td>
<td>1.3%</td>
<td>0.7%</td>
</tr>
<tr>
<td>% Minority total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% International</td>
<td></td>
<td>75.5%</td>
<td>76.8%</td>
<td>77.3%</td>
<td>74.8%</td>
<td>75.4%</td>
<td>75.5%</td>
<td>76.8%</td>
</tr>
<tr>
<td>Degrees awarded</td>
<td></td>
<td>31</td>
<td>49</td>
<td>54</td>
<td>60</td>
<td>43</td>
<td>44</td>
<td>46</td>
</tr>
</tbody>
</table>

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APPENDIX A: STUDENT PLACEMENT INFORMATION –SAMPLE

<table>
<thead>
<tr>
<th>Provided by</th>
<th>The graduate</th>
<th>College</th>
<th>Initial Placement after Graduation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2020</td>
<td>Kiraneswar Muthuseenu</td>
<td>Dr. Hugh Barnaby</td>
<td>R&amp;D Device Reliability Engineer</td>
<td>Micron</td>
</tr>
<tr>
<td>Fall 2020</td>
<td>Mehmet Balaban</td>
<td>Dr. Michael Kozicki</td>
<td>Emerging Memory Process Integration Engineer</td>
<td>Micron</td>
</tr>
</tbody>
</table>
Graduate Student Satisfaction Survey

Table 7: Graduate Student Satisfaction Survey Quality:
Percent of graduating graduate students who responded ‘effectively’ or ‘very effectively’ or responded ‘strong’ or ‘very strong’ when asked about their training in the following areas.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation for further study in your field</td>
<td>87%</td>
<td>89%</td>
<td>89%</td>
<td>91%</td>
<td>92%</td>
<td>92%</td>
<td>TBD</td>
</tr>
<tr>
<td>Research skills and methods</td>
<td>70%</td>
<td>75%</td>
<td>70%</td>
<td>67%</td>
<td>72%</td>
<td>73%</td>
<td>TBD</td>
</tr>
<tr>
<td>Communication skills</td>
<td>54%</td>
<td>57%</td>
<td>54%</td>
<td>54%</td>
<td>62%</td>
<td>50%</td>
<td>TBD</td>
</tr>
<tr>
<td>Knowledge of computer applications in your field</td>
<td>78%</td>
<td>80%</td>
<td>69%</td>
<td>72%</td>
<td>81%</td>
<td>76%</td>
<td>TBD</td>
</tr>
<tr>
<td>Writing skills</td>
<td>63%</td>
<td>64%</td>
<td>62%</td>
<td>61%</td>
<td>64%</td>
<td>58%</td>
<td>TBD</td>
</tr>
<tr>
<td>Ethical standards in the field</td>
<td>73%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>81%</td>
<td>80%</td>
<td>TBD</td>
</tr>
<tr>
<td>Quantitative skills</td>
<td>77%</td>
<td>82%</td>
<td>77%</td>
<td>73%</td>
<td>79%</td>
<td>77%</td>
<td>TBD</td>
</tr>
</tbody>
</table>
Table 8: Graduate Student Satisfaction Survey Quality:

Percent of graduating graduate students who responded ‘satisfied’ or ‘very satisfied’ with each of the following aspects of your department or program?

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall academic experience in your major</td>
<td>86%</td>
<td>88%</td>
<td>91%</td>
<td>91%</td>
<td>94%</td>
<td>92%</td>
<td>TBD</td>
</tr>
<tr>
<td>Quality of instruction</td>
<td>81%</td>
<td>76%</td>
<td>80%</td>
<td>87%</td>
<td>94%</td>
<td>88%</td>
<td>TBD</td>
</tr>
<tr>
<td>Availability of required courses</td>
<td>84%</td>
<td>83%</td>
<td>91%</td>
<td>82%</td>
<td>92%</td>
<td>88%</td>
<td>TBD</td>
</tr>
<tr>
<td>Advising on career options within your field</td>
<td>67%</td>
<td>54%</td>
<td>67%</td>
<td>70%</td>
<td>75%</td>
<td>71%</td>
<td>TBD</td>
</tr>
<tr>
<td>Concern of faculty for individual students</td>
<td>74%</td>
<td>81%</td>
<td>82%</td>
<td>81%</td>
<td>85%</td>
<td>79%</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Graduate Student Satisfaction Survey Analysis: Identify areas where improvement is necessary and discuss strategic steps to improve student satisfaction in learning and academic experiences.

The student satisfaction exceeds 70% for everything except the communication and writing skills. We have addressed the latter of these via a one credit our technical writing class that focuses on how to write a journal paper or conference paper. For the more general communications skills we provide opportunities for student to present on campus at seminars. Prior to the pandemic we prioritized travel funds for students to present their work at conferences. We anticipate returning to that practice but will also leverage lessons learned during the explosion of virtual presentations in the last two years.

Strategic Graduate Directions

Please discuss future directions/strategic initiatives of your graduate program(s). List any degrees, concentrations, and/or certificates that you plan to launch in the next two years.

We have proposed graduate degrees and concentrations in data science.

V. Student Learning Outcomes Assessment (Undergraduate and Graduate)

In this section: Assessing Student Learning Outcomes UOEEE works with programs in a two-phase process to help programs prepare for self-study: evaluate past data and prepare for future assessment of student learning.

PART ONE: Analyzing Past Assessment Data

To help programs gather past data, the UOEEE assessment portal (https://uoeee.asu.edu/aportal) has developed a new feature that allows programs to access aggregated data as well as download past assessment reports. To help guide data
interpretations, programs are asked to respond to the five prompts provided below as part of their analysis. These prompts should help you establish how well students are achieving the established learning outcomes. This outcome is essential to the assessment process.

Please address each program learning outcomes (PLOs) using these reflective questions as a guide:

**Reflective Questions**
1. Please discuss the results of your quantitative and qualitative assessment data for each outcome and measure.
2. Are your students achieving at the levels of performance you had expected? How well did they meet your performance criteria?
3. What plans do you have in place for students who are not achieving the desired level of performance?
4. What actions have you taken or will you take based on your assessment data?
5. How will the results be shared with program faculty and students?

The assessment process for ECEE uses the data collected every semester as part of the two-loop ABET assessment and feedback process. This process involves the assessment of student outcomes in multiple areas of interest, including basic knowledge in Math, Sciences, and Engineering; ability to design experiments, collect and interpret data, ability to communicate effectively, work in teams, recognize ethical and professional responsibilities in a variety of contexts. There are multiple assessment points in critical courses (3xx Pathways and select 4xx technical electives) that cover the key areas of Electrical Engineering and, more importantly, provide directions for improvement. In a high-level description, the Student Outcomes are assessed by the students answering technical questions (for the more detailed aspects) and by instructors/teaching assistants evaluating student performance with rubric questionnaires (for the higher-level outcomes). This information is then aggregated and used to suggest feedback actions to improve the student performance according to the selected Student Outcomes. This entire process is driven by (1) a bi-annual review of the program objectives by the External Advisory Board (EAB) that evaluates the program using, among others, the student performance as professionals, as well as (2) yearly faculty meetings that (among others) discuss the past assessments and the implementation of the feedback actions. The results from these meetings provide a high-level direction for the need to modify the targets of the Student Outcomes.

The latest EAB meetings (2018, 2019) identified no deficiencies in the program.

The yearly assessment cycles show that most of the demand for feedback corrections is concentrated in the development of better Math and Engineering skills in the early courses (2xx, 3xx). This expected since Electrical Engineering (and, in particular, the areas related to Electromagnetics, Circuits, and Communications) are math-intensive while, at the same time, require engineering insight to analyze the problems in manner that is relevant to practical applications. The encouraging observation here is that the need for corrective actions decreases in the senior years, showing that the program succeeds in its educational objectives. This is also consistent with the results from the EAB meetings.

1. Discussion of Results.
For Outcome 1: “Ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics,” the last four semester assessments yielded scores 92%, 86%, 96%, 82%, with a target of 70%, set by the faculty.

For Outcome 2: “Ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors,” the last four semester assessments yielded scores 87%, 83%, 98%, 81%, with a target of 70%, set by the faculty.

For Outcome 3: “Ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions,” the last four semester assessments yielded scores 77%, 95%, 85%, 81%, with a target of 70%, set by the faculty.

For Outcome 4: “Ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts; ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives,” the last four semester assessments yielded scores 81%, 94%, 79%, 82%, with a target of 70%, set by the faculty.

2. Meeting the performance criteria
As shown above, at the senior level, the students achieve a high level of performance and meet the expectations.

3. Plans for students
The Outcome 1-4 evaluation concerns the class average rather than individual students and its objective is to identify areas of the program that may need improvement. Individual students are judged by their class grades. In case of a failing grade, students can discuss options with advisors and faculty in the area of interest.

4. Actions for improvement
Lab improvements to enhance the engineering skills of the students. Refinement of the assessment process to automate the collection of results. Refinement of specific courses (120, 202, 459, 460). Multimedia lecture Modules and On-line Course development to increase the flexibility of the education process.

5. Dissemination
The assessment results are discussed first in detail within the Undergraduate Committee, having representatives of all ECEE areas. They are then summarized and discussed with the faculty during faculty meetings.

- It is also recommended that programs utilize data from the various student report cards, First Destination (Formerly Recent Graduate) survey, and alumni surveys to address career placement outcomes, career preparation, and who is employing graduates over the period since the last review.

PART TWO: Preparing for the next cycle
A. Programs will begin to prepare for APR the year before their actual review. By the start of the academic year prior to the review, UOEEE will have reviewed each program’s assessment plan and provided feedback so the plan comes into compliance with the ABOR requirements. All programs are then asked to review the feedback and make the necessary adjustments to meet the current needs of their program as well as the current suggested criteria established by ABOR. Each assessment plan must be approved by UOEEE through the portal prior to submitting the final Academic Program Review to apr@asu.edu.

The assessment plan has been submitted to UOEEE and it is currently undergoing discussions and revisions for the final approval, which is expected in January 2022.

VI. Faculty

Table 9: Faculty Profile

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Table 10: Faculty Areas of Expertise

Please expand table as needed.

<p>| Faculty name | Title and Rank | Highest degree attained | List name of courses taught during the last academic year | Areas of scholarly work and research (please include titles and amount of funding for any funded research during the last two years) |</p>
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<th>Name</th>
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Faculty Analysis

1. What is the career stage distribution and diversity of the faculty in the unit? 
   There is a relatively healthy distribution across ranks and seniority. 45% full professors
20% associate professors and 35% assistant professors. 22% identify as female and hiring in
this group remains a high priority.

2. What is the quality of the intellectual life in the unit? Are there regular and frequent opportunities
   for speakers, graduate student presentations, etc.? What other examples might there be of the
   intellectual life of the department or school?
   The pandemic has limited the amount of face-to-face engagement. But we have had a
   vibrant virtual speakers series including many faculty candidates. A handful of these have been
   in-person.

3. Discuss faculty recruitment and retention. What significant faculty hires have occurred since the
   last program review? What significant faculty departures have occurred since the last program
   review? What is the faculty record in recruiting and retaining high achieving colleagues?
   Faculty hiring has been quite robust with 6 hires starting in 2021-22, 5 in 2019-20, 2 in
   2018-19, 2 in 2017-18 and 5 in 2016-17, 4 in 2015-16 and 5 in 2014-15, a total of 29 in the past 7
   years. There have been a modest number of departures including 3 deaths, 3 retirements, 2
   prior-to-tenure departures and 4 tenured departures, a total of 12 over the past 7 years.

4. What are the prospects for recruiting future faculty?
   The New Economy Initiative investments promises to sustain faculty hiring prospects for
   the next few years.

5. What are your goals for future?
   Goal is to maintain current rate of hiring and minimize departures.

6. How do these goals reflect the following:
   - faculty inclusion and success, -- we place a high priority on hiring those who
     identify as female as well as those who identify as a member of an under-
     represented minority group.
   - serving diverse students, --- we place a priority on faculty candidates who commit to
     specific outreach and recruitment of diverse students.
   - public value research? -- Our fields of research map well to public-value research.
     Our faculty candidates make public research presentations as part of the interview
     process.

7. What is your process for fairly assigning faculty workload, including teaching, committee work and
   mentoring? Are the process and workload assignments transparent to faculty? How does your
   unit recognize these contributions? Do underrepresented faculty take on a disproportionate
   amount of committee work and mentoring? Do workload assignments reflect relative
contributions – that is, do those who do high quality and high-volume research teach the same as others who are less research active?

The director of the school assigns workload with input from faculty peer groups. In practice the peer groups make recommendations and the director modulates these recommendations to meet the needs of the unit. Faculty can appeal decisions to the dean’s office. Faculty teaching assignments take into account the faculty members’ research activity. Committee assignments are most often made based on faculty who volunteer for these roles.

Evaluations begin with recommendations from the elected faculty peer committee. This includes scores for research, teaching and service. Those recommendations are combined with the director’s recommendation for the final evaluation. Faculty can appeal to the dean’s office.

8. What is the process for mentoring and supporting faculty? What efforts are made to assist assistant professors working toward promotion to tenure? What efforts are made to assist associate professors working toward promotion to full professor? How do those efforts and/or resources address the needs of underrepresented faculty?

Several coordinated initiatives and entities within the Fulton Schools of Engineering (FSE) support the career development of assistant and associate professors. A New Faculty Advisory Council (NFAC) has been active for more than 5 years to advise the dean about issues of relevance for newly hired faculty members and to organize peer-mentoring activities for the group. Within each academic unit, a few master mentors are chosen among the most successful faculty members to provide a personalized mentoring experience for junior and mid-career colleagues. At the college level, annual workshops are held to discuss best practices for teaching, research organization, project management, and laboratory safety. A new Engineering Learning and Teaching Hub has also been formed to provide additional guidance and training for faculty teaching in both full immersion and online modes. For research, we also provide CAREER proposal workshops and research team support.

Annual workshops are organized to describe the process of evaluation of the promotion and/or tenure applications. These are important for the optimization of the career path of the candidates, and to express the transparency of the evaluation process.

A college-level council is being introduced to address climate and culture in order to enhance diversity equity and inclusion, and expand access to the related resources across the schools. The council is being institutionalized in the college bylaws to help the FSE realize its vision to embed inclusivity as a core tenet of the college so that all faculty, staff, academic associates and students achieve their full potential enabled by an environment that is diverse, equitable and inclusive.

9. Are fixed term faculty members used and if so, are they deployed effectively in the department/school? What is the breakdown of their diversity, what is their career progression and how are they mentored?

We have 3 professors of practice, one who identifies as female. These are senior professionals who have retired from industry. We have one lecturer who is a recent PhD graduate from our program.

10. What efforts are made to ensure the ongoing professional development of non-tenure track faculty members?

We encourage professional development internally through various teaching initiatives at
the college and university levels. We also encourage participating at conferences and, when appropriate, provide travel and registration funds.

11. Do your faculty members and staff have a clear and fair process for discussing a grievance with another professor or department administrator? (Discriminatory practices, bullying, sexual harassment) Are faculty making use of it?

The process is clearly stated in the university’s internal regulation. Among others, two offices play a critical role in the implementation of a healthy workplace: the Office of Diversity, Equity and Inclusion supports and fosters a culture of inclusiveness. They promote and assist with equal opportunity and diversity initiatives. They also provide university leadership and hiring officials with clear and accessible employment data, timely and effective consultation, and high-impact training.

Additionally, the Office of University Rights and Responsibility has been established as an independent entity that reviews and investigates concerns and allegations regarding discrimination or harassment. FSE has a Vice Dean specific to Faculty Affairs that assists in guiding faculty with these types of grievances.

Scholarship

1. Discuss the depth and quality of faculty scholarship. Is the Department/School’s quality improving relative to the top-rated programs in the discipline?
   Our strong graduate program ranking is due, in large part, the high level of recognition of the scholarly accomplishments of our faculty.

2. What factors contribute to the department/school’s program reputation? How does the unit wish to be viewed by others?
   Recognition by faculty peers is the strongest component of our reputation. Faculty participation in important conferences and publishing in premier journals drive this reputation.

3. What is the standing of the department or school in the context of external rankings such as those from NRC or other appropriate sources?
   We are generally ranked in the top 10% of US programs.

4. How adaptable has the department/school been/not been to changes in the discipline or field of study?
   In many cases our faculty are driving many of the changes in their fields.

5. Do the scholarship and course offerings reflect the diversity of the student body and ASU's commitment to public value research? Do they reflect the changing demographics of the United States? How might the scholarship and offered courses affect research opportunities and student enrollment diversity?
   Our graduate programs are majority international enrolled. A majority of our faculty also have significant international background and experience. This is unlikely to change in the near term. We have made investments to increase our recruitment efforts in the US. A recent initiative at the college level is summer research internships at ASU for student from HBCU institutions.

6. Please discuss any new faculty hires that relate to any new curricular and strategic directions (e.g., new programs, research initiatives etc.)
We have hired strongly in Machine Learning, Quantum Information and Cyber-physical Systems in the past 3 years.

7. What is the success of the faculty in competitions for external awards, grants, and fellowships?
   Our faculty are strongly represented in these areas.

8. What is the success of the faculty in attracting high quality graduate students?
   At the Masters level we do very well. At the PhD level we face challenges. Please see the section on student recruitment for more details.

9. What is the success of undergraduate or master’s students in terms of their career or graduate school objectives? What is the placement rate for graduate students?
   Our students are in very high demand and almost all have employment opportunities prior to graduation. Please see the section on student success.
VII. Program Resources

- Describe sufficiency of resources related to technology, physical space, fiscal budgets, library, and human resources.

While we have a process to renovate and build research labs for new hires, the challenges with readiness of infrastructure have been significant at times. Faculty growth and research are negatively impacted when lab renovations are slow. Similarly, processes established for the procurement of software, while understandable in approach from the perspective of security, have resulted in lengthy delays in some cases in the actual acquisition of the software.

Teaching and office facilities are adequate. Our academic support staff is excellent and supports the students at all levels. Our staff often lend ideas and expertise to other academic units.

- Describe strategic efforts and accomplishments related to research funding and development activities.

Our research advancement staff aggressively identifies funding opportunities and works closely with faculty to submit responsive proposals. The school director participates in philanthropic fundraising with staff affiliated with the ASU Foundation.

Appendix A - Sample Programs of Study

1. Electrical Engineering BSE

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<th>Engineering Topics</th>
<th>Check if Contains Significant Design (✓)</th>
<th>Other</th>
<th>Last Two Terms the Course was Offered: Year and, Quarter</th>
<th>Maximum Section Enrollment for the Last Two Terms the Course was Offered²</th>
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List all courses in the program by term starting with the first term of the first year and ending with the last term of the final year.
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<td>ENG101 and 102 First Year Composition, OR</td>
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**Add rows as needed to show all courses in the curriculum.**

**TOTALS (in terms of semester credit hours)**

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Total must satisfy minimum credit hours:

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- **Required** courses are required of all students in the program, **elective** courses (often referred to as open or free electives) are optional for students, and **selected elective** courses are those for which students must take one or more courses from a specified group.
- For courses that include multiple elements (lecture, laboratory, recitation, etc.), indicate the maximum enrollment in each element. For selected elective courses, indicate the maximum enrollment for each option.
Pre-/co-requisite structure

The figure below shows the prerequisite structure of the program.

PLAN OF STUDY WORKSHEET

ELECTRICAL ENGINEERING MSE

(non-thesis)

This is a sample plan of study, which meets the degree requirements for the MSE program. Course selection is up to the individual and should be made based on academic and career goals. A complete list of all courses by specialization area may be found [here](#). The list of special topics courses offered every semester may be found [here](#). All students should review the [MSE Final Comprehensive Exam description for their area](#) to ensure adequate exam preparation. Students are also responsible for checking [course prerequisites](#) to be certain they are prepared for the courses they select.

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<td>EEE 537 Fundamentals of Optoelectronics</td>
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<td>EEE 530 Advanced Silicon Processing</td>
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<td>EEE 536 Semiconductor Characterization</td>
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<td>EEE 598 Nanophotonics</td>
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<td>Multidimension Signal Process</td>
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<td>EEE 598</td>
<td>Special Topics: Pers Snsr Mobile Health Apps</td>
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<td>EEE 598</td>
<td>Topic: RF Transmitters and Amplifiers</td>
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<td>EEE 581</td>
<td>Filtering Stochastic Processes</td>
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MSE Degree Requirements: At least five EEE courses, at most two 400-level courses, at least three EEE 500-level courses (not EEE 591 or 590), at least two courses outside area of specialization, at most one EEE 590 Reading and Conference or any FSE 500 level course. Total: 10 classes required, 30 credits minimum.

**PLAN OF STUDY WORKSHEET**

**ELECTRICAL ENGINEERING PhD**

This is a sample plan of study, which meets the degree requirements for the PHD program. Course selection is up to the individual and should be made based on academic and career goals. A complete list of all courses by specialization area may be found here. The list of special topics courses offered every semester may be found here. Students are also responsible for checking course prerequisites to be certain they are prepared for the courses they select.

**Proposed Doctoral Program**

18 hours of 500 (or above) level courses. Only one Reading and Conference allowed. At least 9 hours in EEE (does not include Reading and Conference).

12 hours research (EEE792) or coursework or omnibus.
Special notes-

- GPA must be 3.5 or greater. Research hours are not normally graded
- This example only shows 54 credits. If you have a Master’s degree awarded from a US regionally accredited institution or from an international accredited institution, you will be granted 30 credits towards your PHD program here at ASU. That means you only need to complete 54 credits at ASU.
- If you do not have a Master’s degree, you will need to complete an additional 30 credits of coursework. The courses that you take here at ASU depend on your area of specialization and what you and your faculty advisor agree upon. For more information on the areas of specialization, please refer to this webpage: [http://ece.ee.asu.edu/academics/doctoral-degrees/electrical-engineering-ph-d/](http://ece.ee.asu.edu/academics/doctoral-degrees/electrical-engineering-ph-d/)

## PLAN OF STUDY WORKSHEET

### COMPUTER ENGINEERING (ELECTRICAL ENGINEERING)

#### MS Degree (Non-thesis)

This is a sample plan of study, which meets the degree requirements for the Computer Engineering (Electrical Engineering) MS program. Course selection is up to the individual and should be made based on academic and career goals. Students are required to complete the following:

- Core courses: EEE 554 and CSE 551. EEE 554 must be completed in the first semester of study and CSE 551 must be completed in the first year of study.
- Area courses: Complete list of area courses can be found [here](#). Students must select three EEE/CEN area courses and one CSE/CEN area course. Of the four area courses, students need to cover at least two different areas (EX: three courses in the VAES area and one course in the ASR area is acceptable. Not all courses can be from one area).
- Elective courses: Three or four elective courses, depending on the credits needed to graduate and the student’s area of interest. Please note that only some 400 level or 591 courses are approved as electives. That list of courses can be found at the bottom of the approved area course list (linked above).

Non-thesis students are expected to complete the comprehensive exam based on the core courses.

Students are also responsible for checking [course prerequisites](#) to be certain they are prepared for the courses they select.

### Proposed Graduate Program

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<th>Semester/Year</th>
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This is a sample plan of study, which meets the degree requirements for the Computer Engineering (Electrical Engineering) MS program. Course selection is up to the individual and should be made based on academic and career goals. Students are required to complete the following:

- Core courses: EEE 554 and CSE 551. EEE 554 must be completed in the first semester of study and CSE 551 must be completed in the first year of study.
- Area courses: Complete list of area courses can be found here. Students must select three EEE/CEN area courses and one CSE/CEN area course. Of the four area courses, students need to cover at least two different areas (EX: three courses in the VAES area and one course in the ASR area is acceptable. Not all courses can be from one area).
- Elective courses: Two elective courses, depending on the credits needed to graduate and the student’s area of interest. Please note that only some 400 level or 591 courses are approved as electives. That list of courses can be found at the bottom of the approved area course list (linked above).
- Thesis credits: 6 credits CEN 599

Students are also responsible for checking course prerequisites to be certain they are prepared for the courses they select.

**Proposed Graduate Program**

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</table>
This is a sample plan of study, which meets the degree requirements for the Computer Engineering (Electrical Engineering) PhD program. Course selection is up to the individual and should be made based on academic and career goals. Students are required to complete the following:

- Core courses: EEE 554 and CSE 551. EEE 554 must be completed in the first semester of study and CSE 551 must be completed in the first year of study.
- Area courses: Complete list of area courses can be found here. Students must select three EEE/CEN area courses and one CSE/CEN area course. Of the four area courses, students need to cover at least two different areas (EX: three courses in the VAES area and one course in the ASR area is acceptable. Not all courses can be from one area).
- Elective courses: 2-4 elective courses as needed to meet degree requirements
- Research credits: 12-18 CEN 792 credits
- Dissertation credits: 12 CEN 799 credits

Degree requirements will vary if students have completed a master’s degree prior to joining this program. The requirements on this page are for those with a master’s degree.

All students are required to complete the qualifying exam, comprehensive exam, and dissertation defense in a timely manner as described in the handbook.

Students are also responsible for checking course prerequisites to be certain they are prepared for the courses they select.

### Proposed Graduate Program

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<td>Dissertation</td>
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This is a sample plan of study, which meets the degree requirements for the Robotics and Autonomous Systems (Electrical Engineering) MS program. Course selection is up to the individual and should be made based on academic and career goals. Students are required to complete the following:

- Core courses: MAE 501 and MAE 547. Students should complete MAE 501 prior to registering for MAE 547.
- Concentration core courses: EEE 582 and EEE 588
- Courses from other concentrations: Students must select two courses from the other RAS concentrations. The full list of concentration courses can be found in the handbook and on the website. (EX: Students could select to take CSE 511 and EGR 555 to fulfill this requirement but could not select EEE 508 or EEE 511).
- Elective courses: Three or four elective courses, depending on the credits needed to graduate and the student’s area of interest.

Non-thesis students are expected to complete the comprehensive exam based on the concentration core courses.

Students are also responsible for checking course prerequisites to be certain they are prepared for the courses they select.

### Proposed Graduate Program

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<td>EEE 480/591 Feedback Systems</td>
<td>4</td>
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<td>EEE 481/591 Computer Control Systems</td>
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<td>Fall/1</td>
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<td>MAE 547 Modeling and Control of Robots</td>
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<td>EEE 582 Linear System Theory</td>
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<td>Spring/1</td>
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<td>CSE 511 Data Processing at Scale</td>
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<td>Spring/1</td>
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<td>EEE 588 Design of Multivariable Control Systems</td>
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<td>EGR 555 Mechatronic Systems</td>
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<td>MAE 521 Structural Organization</td>
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This is a sample plan of study, which meets the degree requirements for the Robotics and Autonomous Systems (Electrical Engineering) MS program. Course selection is up to the individual and should be made based on academic and career goals. Students are required to complete the following:

- Core courses: MAE 501 and MAE 547. Students should complete MAE 501 prior to registering for MAE 547.
- Concentration core courses: EEE 582 and EEE 586
- Courses from other concentrations: Students must select two courses from the other RAS concentrations. The full list of concentration courses can be found in the handbook and on the website. (EX: Students could select to take CSE 511 and EGR 555 to fulfill this requirement but could not select EEE 508 or EEE 511).
- Elective courses: Two elective courses, depending on the credits needed to graduate and the student’s area of interest.
- Thesis credits: 6 EEE 599 credits

Students are also responsible for checking course prerequisites to be certain they are prepared for the courses they select.

### Proposed Graduate Program

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<td>10 EEE 599</td>
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</tbody>
</table>
This is a sample plan of study, which meets the degree requirements for the Arts, Media, and Engineering (Electrical Engineering) MS program. Course selection is up to the individual and should be made based on academic and career goals. Students are required to complete the following:

- 2/3rd of the coursework must be EEE prefix (five-six classes)
- 1/3rd of the coursework must be AME prefix (two-three classes)
- Thesis credits: 4 EEE 599 and 2 AME 599 credits

The AME-EE MS is only offered as a thesis program and does not have a non-thesis option.

Students are also responsible for checking course prerequisites to be certain they are prepared for the courses they select.

**Proposed Graduate Program**

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This is a sample plan of study, which meets the degree requirements for the Arts, Media, and Engineering (Electrical Engineering) PhD program. Course selection is up to the individual and should be made based on academic and career goals. Students are required to complete the following:

- 2/3^rd of the coursework must be EEE prefix (four classes)
- 1/3^rd of the coursework must be AME prefix (two classes)
- Research or coursework: 12 credits of EEE 792, EEE courses, or AME courses
- Research credits: 8 EEE 792 credits and 4 AME 792 credits
- Dissertation credits: 8 EEE 792 credits and 4 AME 792 credits

Degree requirements will vary if students have completed a master’s degree prior to joining this program. The requirements on this page are for those with a master’s degree.

All students are required to complete the qualifying exam, comprehensive exam, and dissertation defense in a timely manner as described in the handbook.

Students are also responsible for checking course prerequisites to be certain they are prepared for the courses they select.

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NAME: ABERLE, JAMES
ORCID: 0000-0002-0623-0697
POSITION TITLE & INSTITUTION: Associate Professor, Arizona State University

EDUCATION

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<tr>
<th>INSTITUTION</th>
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<th>MAJOR / AREA OF STUDY</th>
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<tr>
<td>Polytechnic Institute of New York</td>
<td>Brooklyn, NY</td>
<td>Electrical Engineering</td>
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<tr>
<td>University of Massachusetts</td>
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ACADEMIC EXPERIENCE

1995 - present  Associate Professor, Arizona State University, Tempe, AZ
1989 - 1995  Assistant Professor, Arizona State University, Tempe, AZ

NON-ACADEMIC EXPERIENCE

2002 – present Antenovation LLC, sole proprietor
2020 – present RS International LLC, limited partner

CERTIFICATIONS AND PROFESSIONAL REGISTRATIONS

Fundamentals of Engineering exam passed 1992

CURRENT MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

IEEE, Senior Member

SERVICE ACTIVITIES

School of ECEE Committee memberships: personnel committee, undergraduate curriculum committee
Professional service: reviewer for technical journals

SIGNIFICANT PUBLICATIONS

[Type here]


PROFESSIONAL DEVELOPMENT ACTIVITIES

Regular webinar attendance
AHMED ALKHATEEB

Education
Ph.D., ECEE, The University of Texas at Austin, 2016.

Academic experience
Arizona State University, Assistant Professor, 2018-present.

Non-academic experience
Facebook, Inc., Wireless Communications Researcher, 2016-2018

Current membership in professional organizations
IEEE

Honors and awards
- 2012 MCD Fellowship from The University of Texas at Austin
- The 2016 IEEE Signal Processing Society Young Author Best Paper Award
- The NSF CAREER Award 2021

Service activities (within and outside of the institution)
- Editor, IEEE Transactions on Communications
- Editor, IEEE Wireless Communication Letters
- Co-Chair, IEEE Globecom Workshop on Machine Learning for Communications, 2020
- Member, Search Committee on Quantum Information Processing, 2021

Most important publications and presentations from the past five years
DAVID R. ALLEE

EDUCATION
Post-Doc  Electrical Engineering  Cambridge University  1991
Ph.D.  Electrical Engineering  Stanford University  1990
M.S.  Electrical Engineering  Stanford University  1986
B.S.  Electrical Engineering  University of Cincinnati  1984

ACADEMIC EXPERIENCE
Arizona State University ECEE  Associate Director    2017-present
Arizona State University ECEE  Full Professor    2009-present
Arizona State University ECEE  Associate Professor  1997-2009
Arizona State University ECEE  Assistant Professor  1991-1997

NON-ACADEMIC EXPERIENCE
ASU Flexible Display Center  Director R&D  2004 to 2016
KnowledgeBridge Intl.  Consultant  2011 to present
Universal Display Corporation  Consultant  2014
Army Research Lab  Sabbatical  2013
Intellectual Ventures  Consultant  2009-2011
Motorola  Consultant  2003
Philips Semiconductors  Consultant  2001-2002
Intel  Sabbatical  2000
Scientific Monitoring  Consultant  1999
Intel  Consultant  1996-1997

CURRENT MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
IEEE
American Astronomical Society

HONORS AND AWARDS
National Academy of Inventors
Consistently Top 5% of Teachers Award
Best Teacher Award, College of Engineering, 2008
Young Faculty Teaching Excellence Award, College of Engineering, 1994/1995

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SERVICE ACTIVITIES

Chair of Flexible Electronics Conference at SPIE Defense, Security and Sensing 2013

Guest Editor for special issues of Journal of Display Technology and Sensors (online)

Military Sensing Symposium, Battlespace Acoustic, Seismic, Magnetic, and Electric-Field Sensing and Signatures, Program Committee, 2014-2019

Custom Integrated Circuits Conference, Technical Program Committee, 2001-2005, Educational Session Chair 2005 and Analog Sub-committee Chair 2005

Developed Several Online Undergraduate Circuits Courses

PUBLICATIONS IN LAST 5 YEARS


6. US patent 10,416,244, awarded 2019, Three-dimensional imaging utilizing low frequency magnetic fields, David R. Allee, Gregory P. Spell, Brett Larsen, Anthony M. Wilson, Owen C. Ma

7. US patent 10,180,504, awarded 2019, Adaptive Detection Sensor Array and Method of Providing and Using the Same, Joseph Smith, E. Forsythe, David Allee

8. US patent 10,147,360, awarded 2018, Rugged Display Device Architecture, Michael Hack, David Allee

9. US patent 9,910,171, awarded 2018, Thin Film Transistor Detection Systems and Related Methods, George Kunnen, David Allee

10. US patent 9,903,959, awarded 2018, Adaptive detection sensor array and method of providing and using the same, Joseph Smith, Eric Forsythe, and David Allee


RAJA AYYANAR

Professor

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EDUCATION:
Ph.D., Electrical Engineering, University of Minnesota, Minneapolis, 2000
M.S., Electrical Engineering, Indian Institute of Science, Bangalore, India, 1995
B.E., Electrical and Electronics Engineering, PSG College of Technology, India 1989

ACADEMIC EXPERIENCE:
Arizona State University, Tempe, Arizona
Professor, Electrical Computer and Energy Engineering, 2017 – present, full time
Associate Professor, Electrical Computer and Energy Engineering, 2006 –2017, full time
Assistant Professor, Electrical Engineering, 2000 – 2006, full time

NON-ACADEMIC EXPERIENCE:
Senior design engineer, Premier Instruments and Control Limited, Coimbatore, India, 1989-1992

PROFESSIONAL MEMBERSHIPS
IEEE Senior member

HONORS AND AWARDS
Fulton Faculty Exemplar Award, 2017-2018 (Fulton Schools of Engineering, ASU)
Outstanding Engineer of the Year, IEEE PES Phoenix Chapter, 2011
ONR Young Investigator Award, 2005

SERVICE ACTIVITIES
Associate Editor of IEEE Transactions on Power Electronics, 2008 – March 2021
Publicity Chair for IEEE Energy Conversion Congress and Expo (ECCE) 2011
Several proposal review panels for NSF and DOE

SELECTED PUBLICATIONS AND PRESENTATIONS IN THE LAST FIVE YEARS:


**RECENT PROFESSIONAL DEVELOPMENT:**
NSF-Sponsored ECE Department Heads and Faculty Online Workshop “Dissemination of Electric “Power” Courses/Laboratories Developed through ONR Funding” March 8, 2021
EPRI workshop on OpenDSS and distribution system modeling, SRP, Phoenix, 2014

**BERTAN BAKKALOGLU, PROFESSOR**

**Education**
Undergraduate Institution:
Bogazici University Department of Electrical Engineering, Istanbul, Turkey. BSEE, 1990.
Graduate Institution 1:
University of Houston Department of Electrical Engineering, Houston, TX, MSc, 1992.
Graduate Institution 2:
Oregon State University Department of Electrical and Computer Engineering, Corvallis, OR, PhD, 1996.

**Academic experience**
2008-present  Associate Director, Connection One NSF I/UCRC, Arizona State University
Aug 2012-Present Professor, Department of Electrical Engineering, Arizona State University
Aug 2004-2012 Associate Professor, Department of Electrical Engineering, Arizona State University

**Non-academic experience**
June 2002-Aug 2004  Design Manager and Senior Member of Technical Staff, Broadband Silicon Technology Center, Texas Instruments Inc. Dallas, TX
June 1998-June 2002  Chip Architect and Senior Member of Technical Staff, Wireless Analog Baseband, RF and Power Management Products, Texas Instruments Inc. Dallas, TX
Jan 1996-June 1998  Analog, Mixed Signal Designer and Member of Technical Staff, Wireless/Wireline Analog Baseband Products, Texas Instruments Inc. Dallas, TX

**Current membership in professional organizations**
IEEE Microwave Theory and Techniques Society

**Honors and awards**
[Type here]
IEEE Fellow, ON Semiconductor Professor, ECEE

8. Service activities (within and outside of the institution)

RFIC, MTT-S FINANCIALLY-OWNED CONFERENCES (EXCL. IMS), MEETINGS AND SYMPOSIA COMMITTEE, STANDING COMMITTEES CHAIR, RFIC EXCOM, MEETINGS AND SYMPOSIA COMMITTEE, STANDING COMMITTEES VICE-CHAIR, MTT-15 RF/MIXED-SIGNAL INTEGRATED CIRCUITS AND SIGNAL PROCESSING, TECHNICAL COMMITTEES

IEEE Transactions on Circuits and Systems, Associate Editor

Most important publications and presentations from the past five years –


Hugh J. Barnaby

Education

- Ph.D., Electrical Engineering, Vanderbilt University, 2002
- MSEE, Electrical Engineering, Vanderbilt University, 1999
- B.A., Mathematics and Philosophy, University of California, Berkeley, 1992

Academic Experience (All full time)

- Arizona State University, Professor (IceMOS Chair), March 2019 – present
- Arizona State University, Professor, August 2017 – March 2019
- Arizona State University, Associate Professor, August 2009 – August 2017
- Arizona State University, Assistant Professor, August 2004 – August 2009
- University of Arizona, Assistant Professor, January 2002 – August 2004

Non-academic Experience

Consultant, 2003-present

- Jet Propulsion Laboratory, Pasedena, CA
- NuFlare Technologies, Sunnyvale, CA,
- Air Force Research Laboratory – RVSE, Albuquerque, NM
- Maxim Integrated, Dallas, TX
- Medtronic Inc., Tempe, AZ
- Landauer Inc., Glenwood IL
- Ridgetop Group, Tucson, AZ
- National Semiconductor Corporation, Tucson, AZ

Current membership in professional organizations

- Institute of Electrical and Electronics Engineers, Fall 1996 Ongoing
- Solid State Circuit Society IEEE society, Fall 1996 Ongoing
- Nuclear and Plasma Physics Society IEEE society, Fall 1996 Ongoing
- Electron Device Society IEEE society, Fall 1996 Ongoing

Honors and awards

- Fellow IEEE, 2017-01-02Spring 2017 Ongoing

Service

- University Senate - Committee on Research and Creative Activities, Spring 2019-Ongoing
- Personnel Committee, Fall 2018-Ongoing
- ECEE Faculty Search Committee, Fall 2018 - Spring 2020
- Senate Online Task Force, Spring 2018-Fall 2019
- University Senate - Personnel Committee, Spring 2015-Fall 2019
- Personnel Committee Bylaws subtask, Spring 2015 Fall 2016
- ECEE Area Chairs Committee, Spring 2014 Fall 2019
- Faculty Senate, Spring 2014-Ongoing
- IEEE NSREC, Technical Program Committee 2014 - 2015
- IEEE NSREC, Technical Program Chairperson 2017-2018
- RADECS, Technical Program Committee 2012, 2013, 2018
- IEEE, NSREC, General Program Chairperson, 2017-2021
- IOP Semiconductor Science and Technology, Guest Editor
Publications:


Professional Development

Teach 3-4 course per year in Physical Electronics and Circuits (UGRAD and GRAD); Currently advise eight graduate students and fourteen undergraduate students. Manager of ASU SCALE Workforce development program in Radiation Effects.
MARIANA I. BERTONI

Education
Ph.D. Materials Science and Eng., Northwestern University, 2007
Diploma (ME) Chemical Eng., ITBA (Buenos Aires Institute of Technology), 2000
B.E. Chemical Eng., ITBA (Buenos Aires Institute of Technology), 1999

Academic Experience
ASU, Associate Professor, Fulton Energy and Materials Professor, 2021-Present, Full time
ASU, Associate Professor, Fulton Entrepreneurial Professor, 2020-Present, Full time
ASU, Associate Professor, 2019-Present, Full time
ASU, Assistant Professor, 2013-2019, Full time
ASU, Visiting Researcher, 2010-2012, Part time, Postdoctoral Fellow, 2008-2010, Full time

Non-Academic Experience
Crystal Sonic Inc., CTO and Founder, 2018-present
Integrated Photovoltaics Inc., Senior Materials Engineer, 2012
1366 Technologies Inc., Senior Photovoltaics Engineer, 2010-2012
Evonik Degussa GmbH, Marie Curie Fellow, impedance evaluation of zeolitic systems, 2007
ExxonMobil Corp, Business and Pricing Analyst, Argentina, 2000 - 2002
TotalFina ELF, Junior Process Engineer, Water purification for combined cycle, 1999 - 2000

Current membership in professional organizations
Institute of Electrical and Electronics Engineers, IEEE
Materials Research Society, MRS
Society of Women Engineers, SWE

Honors and awards
Fulton Energy and Materials Professorship, 2021-2026
IEEE Senior Member, Oct 2020
Top 10% most downloaded articles, J. Synchrotron Radiation 2020
Fulton Entrepreneurial Professor Fellowship, Jan 2020
Finalist American Made Solar Prize - Rd 1, (10/176), Sep. 2019
Distinguished Faculty Scholar, Palais Educational Foundation, 2018-2019
IEEE PVSC Napkin Award, for service to the technical program of WCPEC-7, Jun. 2018
Fulton Outstanding Assistant Professor Award, Arizona State University, 2016
Solar Revolution Project Fellowship, Massachusetts Institute of Technology, 2008
Edward C. Henry Award, The American Ceramic Society – 2007
Marie Skłodowska-Curie Fellowship, European Commission 2007

**Service activities (within and outside of the institution)**

Member Editorial Board, Solar Energy Materials and Solar Cells (If 6.019), Dec. 2020-Present

Member Editorial Board, Journal Physics D (If 3.169), Renewable and Sustainable Energy section, Dec. 2018-Dec 2020

Operations Chair, 48th IEEE PV Specialist Conference, Virtual, 2021

Conference Program Chair, 46th IEEE PV Specialist Conference, Chicago IL, 2019

International Committee, IEEE PV Specialist Conference (2013-present)

Organizer and Chair , 9th International Workshop on Science and Technology of Crystalline Si Solar Cells, Tempe AZ, Oct. 2016

**Publications**


JOHN S. BRUNHAVER
Assistant Professor

EDUCATION:

Ph.D., Electrical Engineering, Stanford University, 2015
M.S., Electrical Engineering, Stanford University, 2011
B.S., Electrical and Computer Engineering, Northeastern University, 2008

ACADEMIC EXPERIENCE:

Arizona State University, Tempe, Arizona
Assistant Professor, Electrical Computer and Energy Engineering, 2015 – , full time

NON-ACADEMIC EXPERIENCE:

NVIDIA, Santa Clara, California; Architecture Power Modeling Intern, 2012, full time
NVIDIA, Santa Clara, California; Graphics Research Intern, 2011, full time
Intel, Santa Clara, California; Computer Architecture Research Intern, 2010, full time
Intel, Hudson, Massachusetts; Computer Architecture Intern, 2008, full time
Intel, Hudson, Massachusetts; Computer Architecture Intern 2007, full time
Intel, Hudson, Massachusetts; Digital Implementation Intern 2006, full time
Intel, Hudson, Massachusetts; Analog Implementation Intern 2005, full time

PROFESSIONAL MEMBERSHIPS

IEEE
ACM

SELECTED PUBLICATIONS AND PRESENTATIONS IN THE LAST FIVE YEARS:


Clark, LT.; Medapuram, SB.; Kadiyala, DK.; Brunhaver, J., “Physically Unclonable Functions using Foundry SRAM Cells”, IEEE Transactions on Circuits and Systems I: Regular Papers, 2018

CAO, YU

Education
Ph.D., Electrical Engineering, University of California, Berkeley, 2002
M.A., Biophysics, University of California, Berkeley, 1999
B.S., Physics, Peking University, China, 1996

Academic experience
Arizona State University, School of Electrical, Computer and Energy Engineering, Professor, 2015 – present
Kyoto University, Graduate School of Informatics, Visiting Associate Professor, 2013-2014
Arizona State University, School of Electrical, Computer and Energy Engineering, Associate Professor, 2009 – 2015
Arizona State University, Dept of Electrical Engineering, Assistant Professor, 2004 – 2009

Current membership in professional organizations
Fellow, IEEE, Member, ACM

Honors and awards
Intel Outstanding Researcher Award, 2021
IEEE Fellow, “for development of predictive technology models for reliable circuit and system integration,” 2017
Best Paper Award, IEEE Computer Society Annual Symposium on VLSI, 2012
ACM SIGDA Outstanding New Faculty Award, 2009
Promotion and Tenure Faculty Exemplar, Arizona State University, 2009
Distinguished Lecturer of the IEEE Circuits and Systems Society (CAS), 2009
IBM Faculty Award, 2006, 2007
NSF Faculty Early Career Development (CAREER) Award, 2006
Best Paper Award, International Symposium on Quality Electronic Design, 2004
Beatrice Winner Award, International Solid-State Circuits Conference, 2000

Service activities (within and outside of the institution)
• Associate Editor, Integrated Circuits and VLSI, Frontiers in Electronics, 2021
• Organizing committee, Artificial Intelligence for Robust Engineering & Science (AIRES), 2021
• Co-organizer, Workshop on Accelerating Artificial Intelligence for Embedded Autonomy (AAIEA), 2020
• Associate Editor, Microelectronics Reliability, Elsevier, 2018
• Co-chair of Workshop on Hardware and Algorithms for Learning On-a-chip (HALO), 2017
• Associate Editor, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2012 – 2018

Important publications and presentations from the past five years

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CHAITALI CHAKRABARTI

Education: PhD: University of Maryland, College Park, December 1990
MS: University of Maryland, College Park, August 1986
BTech: Indian Institute of Technology, Kharagpur, India, May 1984

Academic experience:
August 2003-present: Professor, Electrical Engg, SECEE, ASU
August 1996-August 2003: Associate Professor, Dept of Electrical Engg, ASU
August 1990-August 1996: Assistant Professor, Dept of Electrical Engg, ASU

Membership: IEEE

Awards:
- IEEE Fellow (Class of 2012)
- 2018 Distinguished Alumni Award, Indian Institute of Technology, Kharagpur, India
- 2013 Distinguished Alumni Award, Dept of Electrical and Computer Engg, University of Maryland, College Park
- Fulton Exemplar Faculty Award 2014-2015, 2015-2016.

**Services**


**Publications**


GAUTAM DASARATHY

Education:
  b. M.S., Electrical & Computer Engineering, University of Wisconsin – Madison, 2010
  c. B.Tech., Electronics & Communications Engineering, VIT University, Vellore, India, 2008

Academic experience:
  a. Assistant Professor, School of Electrical, Computer, and Energy Engineering, Arizona State University. 2018 – present
  b. Post-Doctoral Fellow, Electrical and Computer Engineering, Rice University, 2016-2018

Non-academic experience:
  a. Research Intern, Mitsubishi Electric Research Labs (MERL), Cambridge, MA, USA. 2010

Current membership in professional organizations: Member of IEEE

Honors and awards:
  a. NSF Faculty Early Career Award (CAREER). 2021
     b. Ira A. Fulton Schools of Engineering Top 5% Teaching Award for outstanding contribution to the education of students. 2021, 2020

Service activities:
  a. Review Editor, Frontiers in Signal Processing. 2021-
  b. Virtual Conference Chair, International Conference on Artificial Intelligence and Statistics (AISTATS), 2021
  c. Senior Program Committee: International Joint Conference on AI (ICJAI) 2021; AAAI Conference on Artificial Intelligence (AAAI) 2018, 2021
  d. Faculty Hiring Committee, School of Electrical, Computer, and Energy Engineering, Arizona State University. 2021

Most important publications and presentations from the past five years:
  a. Ghoroghcian, N., Dasarathy, G., Draper, S., Graph Community Detection from Coarse Measurements: Recovery Conditions for the Coarsened Weighted Stochastic Block Model. International Conference on AI & Statistics (AISTATS), Apr. `21 (oral, top 3% of submissions)
  c. LeJeune, D., Dasarathy, G., Baraniuk, R., Thresholding Graph Bandits via GrAPL. International Conference on Artificial Intelligence and Statistics (AISTATS), Palermo, Italy, Jun. `20
  d. Li, W., Dasarathy, G., Berisha, V., Regularization via Structural Label Smoothing. International Conference on Artificial Intelligence and Statistics (AISTATS), Palermo, Italy, Jun. `20
i. Kandaswamy, K., Dasarathy, G., Oliva, J., Schneider, J., Poczos, B., Multi-Fidelity Bayesian Optimisation with Continuous Approximations. International Conference on Machine Learning (ICML), Sydney, Australia, Aug. ’17 (acceptance rate: 25.5%)


m. Dasarathy, G., Singh, A., Balcan, M. F., Park, J. H., Active Learning Algorithms for Graphical Model Selection. International Conference on Artificial Intelligence and Statistics (AISTATS), Cadiz, Spain, May’16 (Full Oral Presentation, Top 6%)


IVAN SANCHEZ ESQUEDA

Education:

University of Arizona Tucson, AZ Electrical Engineering B.Sc., 2004
Arizona State University Tempe, AZ Electrical Engineering M.Sc., 2006
Arizona State University Tempe, AZ Electrical Engineering Ph.D., 2011

Academic Experience:

2019–present Assistant Professor, Arizona State University, Tempe, AZ
2016–2019 Research Lead, University of Southern California, Los Angeles, CA
2012–2016 Research Scientist, University of Southern California, Los Angeles, CA
2011–2011 Post-Doctoral Researcher, Arizona State University, Tempe, AZ
2008–2011 Graduate Research Assistant, Arizona State University, Tempe, AZ
2004–2006 Graduate Research Assistant, Arizona State University, Tempe, AZ
2003–2004 Undergraduate Research Assistant, University of Arizona, Tucson, AZ

Non-academic experience:

2006–2008 Test Applications Engineer, Texas Instruments, Inc., Tucson, AZ

Membership in professional organizations:

2005–2021 IEEE Member

Honors and awards:

• 2018 Keston Research Award, University of Southern California Information Sciences Institute
• 2010 Graduate College Fellowship, Arizona State University
• 2009 Best Paper Award, Radiation Effects on Components and Systems (RADECS)
• 2004 Academic distinction award, University of Arizona
• 2003 Academic distinction award, University of Arizona
• 2002 Academic distinction award, University of Arizona

Service activities:

**Associate Editor:**


**Journal Article Reviewer:**

*Transactions on Nuclear Science (IEEE):* Since 2011.


**Conference committee member:**

*IEEE Nuclear and Space Radiation Effects Conference (NSREC):* Technical chair for session on radiation effects in devices and integrated circuits, 2015.

**Conference Abstract Reviewer:**


**Publications:**

Summary: >45 refereed articles, h-index = 19, total citations = 1074, selected publications:


DELIANG FAN

Education – degree, discipline, institution, year

• Ph.D. in Electrical and Computer Engineering
  Purdue University, West Lafayette, IN, USA, Aug. 2015
• Master of Science in Electrical and Computer Engineering
  Purdue University, West Lafayette, IN, USA, Dec. 2012
• Bachelor of Electronic Information Engineering
  Zhejiang University, Hangzhou, China, Jun. 2010

Academic experience

• Tenure-Track Assistant Professor at School of Electrical, Computer and Energy Engineering
  Arizona State University (ASU), Tempe, AZ, USA, Aug. 2019 - present
• Courtesy Professor at Department of Electrical and Computer Engineering
  University of Central Florida (UCF), Orlando, FL, USA, Aug. 2019-2021
• Tenure-Track Assistant Professor at Department of Electrical and Computer Engineering
  University of Central Florida (UCF), Orlando, FL, USA, Aug. 2015-Aug. 2019
• Research Assistant at Nanoelectronics Research Lab
  Purdue University, West Lafayette, IN, USA, Mar.2012-Aug. 2015

Current membership in professional organizations

• Member of Institute of Electrical and Electronics Engineers (IEEE)
• Member of Association for Computing Machinery (ACM)
• Member of ACM Special Interest Group in Design Automation (SIGDA)
• Member of IEEE Council on Electronic Design Automation (CEDA)

Honors and awards

• Best Paper Award in ACM Great Lakes Symposium on VLSI (GLSVLSI), Washington, D.C., USA, 2019
• Best Paper Award in IEEE Computer Society Annual Symposium on VLSI (ISVLSI), Hong Kong, China, 2018
• Best Paper Award in IEEE Computer Society Annual Symposium on VLSI (ISVLSI), Bochum, Germany, 2017
• Best Poster Award (1st place), Ph.D. Forum at Design Automation Conference, San Francisco, CA, USA, 2018
• Best Paper Nomination in Design Automation Conference (DAC), 2021
• Best Paper Candidate in Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, 2019
• Best Paper Candidate in International Symposium on Quality Electronic Design (ISQED), Santa Clara, CA, 2019
• Schloss Dagstuhl - NSF Award for Junior Researchers, 2019
• Outstanding Faculty Mentor Award Nomination of ASU Graduate College, 2020-21

Service activities (within and outside of the institution)

• Guest Editor for 3 peer-reviewed journals (3 special issues)
• 29 International/national conferences committees
11 International/national conferences sessions organized  
15 International/national conference sessions chaired  
Member of Editorial Board 2  
Peer Reviewer for 42 Journals  
Proposal Review Service for 6 Funding Agencies  
1 Engineering School-level Committees and 1 Unit-level Committees.

Briefly list the most important publications

- Invited Conference Papers: 19 (do not duplicate Abstract)  
- Refereed Conference Papers: 64 (do not duplicate Abstract)  
- Total Journal Publications (Published, In Press, and /or Accepted): 37  
- Shaahin Angizi, Zhezhi He, An Chen and Deliang Fan, “Hybrid Spin-CMOS Polymorphic Logic Gate with Application in In-Memory Computing,” *IEEE Transactions on Magnetics (TMAG)*, Volume: 56, Issue: 2, Feb. 2020  
- Fan Yao, Adnan Siraj Rakin and Deliang Fan, "DeepHammer: Depleting the Intelligence of Deep Neural Networks through Targeted Chain of Bit Flips," *In 29th USENIX Security Symposium (USENIX Security 20)*, August 12-14, 2020, Boston, MA, USA  
- Complete publication list in [https://dfan.engineering.asu.edu](https://dfan.engineering.asu.edu)

Briefly list the most recent professional development activities

- Mentored Personnel in US Academia (Tenure-track Positions): 1  
- PhD Students Graduated: 2  
- PhD Students Current: 4 (two passed PhD qualify exam)  
- M.S. Thesis Students Graduated: 1  
- Undergraduate Students: 4 (serving as senior design mentor)  
- High-School Students: 1 (summer research internship in my research lab)  
- Student Fellowships and Awards: 21 (details listed below)

ZHAOYANG FAN

Education:

- Ph.D. in Electrical Engineering, 2001  
  Department of Electrical and Computer Engineering  
  Northwestern University, Evanston, Illinois, USA  
- M.E. in Nuclear Engineering, 1994  
  Institute of Nuclear and New Energy Technology  
  Tsinghua University, Beijing, China  
- B.E. in Engineering Physics, 1991  
  Department of Engineering Physics  
  Tsinghua University, Beijing, China

Academic experience
• Arizona State University, School of Electrical, Computer and Energy Engineering, Tempe, Arizona, USA. Professor, 2020 – Present

• Texas Tech University, Department of Electrical and Computer Engineering, Lubbock, Texas. Professor, 2018 – 2020; Associate Professor, 2014 – 2018; Assistant Professor, 2008 – 2014; Adjunct Professor in Physics, 2015 – 2020.

• Kansas State University, Department of Physics, Manhattan, Kansas, USA. Postdoctoral Research Associate, 2001 – 2003

• Tsinghua University, Institute of Nuclear and New Energy Technology, Beijing, China. Research Scientist, 1994 – 1996

Non-academic experience

Membership
• National Academy of Inventors, Senior Member
• Institute of Electrical and Electronics Engineers (IEEE), Senior Member
• American Society of Physics, Member

Awards
• The President’s Innovation Award of Texas Tech University System, 2020.
• TechConnect Innovation Award, 2018
• Red Raider Inventor, Texas Tech University System, 2018
• Ed and Linda Whitacre Faculty Fellowship, 2017-2020
• Whitacre Engineering Research Award, 2016

Services
• Guest Editor of Electronics (2021)
• Editorial Board Member of Electronics (2019-)
• Guest Editor of Materials (2018)

Publications
• Guofeng Ren, Shiqi Li, Zhao-Xia Fan, Juliusz Warzywoda, Zhaoyang Fan, “Soybean-derived hierarchical porous carbon with large sulfur loading and sulfur content for high-performance lithium-sulfur batteries”,

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Recent professional development activities

- 239th ECS Digital Meeting, May 30-June 3, 2021
DOUG GARRITY

Education
BSEE, Electrical Engineering, Portland State University, 1986
MSEE, Electrical Engineering, University of Idaho, 1993
Ph.D., Electrical Engineering, Arizona State University, 2007

Academic experience
Arizona State University, faculty associate, part time teaching EEE527 and EEE627 – 2008 to present, part time

Non-academic experience
1986-1992 (full-time) – American Microsystems Inc. Analog/Mixed-Signal ASIC design
1992 to present (full-time) – Motorola/Freescale/NXP – Fellow of the Technical Staff, leading a team in the development of high-performance data converters for embedded applications ranging from electricity metering to cellular radios to automotive radar.

Certifications or professional registrations
Fellow IEEE

Current membership in professional organizations
Fellow IEEE

Honors and awards
Received ASU Ira A. Fulton Schools of Engineering 2019 Top Five Percent Faculty award. Received 2020 IEEE Phoenix Section Outstanding Engineering Educator Award. Named an IEEE Fellow in 2012. Named a Freescale Fellow (1 of 12 out of 21,000 employees). Named a Freescale Master Innovator. Named a Motorola Dan Noble Fellow (most prestigious recognition possible from Motorola) in 2003. Received the Motorola Distinguished Innovator Award. Named as a member of the Motorola Science Advisory Board Associates in 1999. Received the Semiconductor Research Corporation (SRC) Mahboob Khan Award as Mentor of the Year in 2001 and 2013. Received the Motorola Liaison Bravo Award for Outstanding Mentoring Contributions to University Research

Service activities (within and outside of the institution)
Served on IEEE SSCS Fellow Evaluation Committee for 6 years and as Chairman for 1 year. Served on IEEE CAS Kirchhoff Award Committee for 4 years and as Chairman for 1 year.

Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation

Patents in the last 5 years (I have 47 issued patents):

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Publications


Briefly list the most recent professional development activities

Served on IEEE SSCS Fellow Evaluation Committee for 6 years and as Chairman for 1 year. Served on IEEE CAS Kirchhoff Award Committee for 4 years and as Chairman for 1 year.
STEPHEN M. GOODNICK
Professor and Deputy Director of ASU Lightworks

EDUCATION:
Ph.D., Electrical Engineering, Colorado State University, 1983
M.S., Electrical Engineering, Colorado State University, 1979
B.S., Engineering Science, Trinity University, Texas, 1977

ACADEMIC EXPERIENCE:
Arizona State University, Tempe, Arizona
- David and Darleen Ferry Professor of Electrical Engineering, 2018 - , full time
- Professor, Electrical Computer and Energy Engineering, 1996 - 2018, full time
- Deputy Director, ASU Lightworks, 2011 - , part time
- Director of the Arizona Initiative for Renewable Energy, 2007-2010, part time
- Associate Vice President for Research, Arizona State University, 2006-2008, full time
- Director Arizona Institute of Nanoelectronics, 2006-present, part time
- Interim Deputy Dean, Ira A. Fulton School of Engineering, 2005-2006, full time
- Chair and Professor, Dept. of Electrical Engineering, 1996-2005, full time

Oregon State University, Corvallis, Oregon
- Professor, 1993-1996, full time
- Associate Director, NSF Center for the Design of Analog-Digital ICs, 1993-1994, part time
- Associate Professor, 1990-1993, full time
- Melchor Visiting Chair, University of Notre Dame, Fall 1991, full time
- Assistant Professor, Oregon State University, 1986-1990, full time

Technical University of Munich, Munich, Germany
- Hans Fischer Senior Fellow, Institute for Advanced Study, 2013- , part time
- Alexander von Humboldt Research Fellow, 1995, part time
- Alexander von Humboldt Research Fellow, 1986, full time

NON-ACADEMIC EXPERIENCE:
Visiting Professional, Solar Energy Research Institute, 5/85-8/85, full time
Visiting Professional, Sandia National Laboratories, Albuquerque, NM, 9/94-2/95, full time

PROFESSIONAL MEMBERSHIPS
- Institute of Electrical and Electronic Engineers, IEEE (m 1987; sm 1990; f 2004)
- American Physical Society (member, 1983-present)
- Materials Research Society
- Electrical and Computer Engineering Department Heads Association (1996-2006)
- American Association for the Advancement of Science (AAAS) (2001-present)

HONORS AND AWARDS
- Distinguished Educator Award from the IEEE Microwave Theory and Techniques Society, 2021
- IEEE-HKN Distinguished Service Award, 2018
- Hans Fischer Senior Fellow, Technical University of Munich Inst. for Advanced Study, 2013-2017
IEEE Region 6 Outstanding Educator Award, 2013
IEEE Phoenix Section Outstanding Faculty Award, February 9th, 2013
ASEE ECE Division Meritorious Service Award, 2012
R. M. Janowiak Outstanding Leadership and Service Award, ECEDHA, 2008.
Fellow, IEEE, 2004
IEEE Phoenix Section, Service Award, 2002
Colorado State University College of Engineering Achievement in Academia Award, 1998
College of Engineering Research Award, Oregon State University, 1996
Alexander von Humboldt Research Fellow, Federal Republic of Germany 1986
Eta Kappa Nu National Electrical Engineering Honor Society 1992

SERVICE ACTIVITIES

- Editor in Chief, Journal of Computational Electronics.
- Co-Chair (with Neal Armstrong, UA, and Thomas Acker, NAU), Arizona Student Energy Conference (AzSEC), Biosphere 2, Nov. 7-9, 2018.
- Vice-Chair, 2015 IEEE MTT-S International Microwave Symposium, Phoenix, AZ, May 18th-21st, 2015.
- President, ECE Department Heads Association (ECEDHA), 2003-2004
- IEEE MTT Liaison to the IEEE Nanotechnology Council, 2009-2010.
- General Chair, IEEE Si Nanoelectronics Workshop, Honolulu, June 2010.
- Program Chair, Ninth IEEE Conference on Nanotechnology, Genoa, Italy, August 2009
- Personnel Committee, ECEE
- Chair of the Devices, Modeling and Processing/Photonics/PVsearch committee, ECEE
- Faculty Advisor, Epsilon Beta Chapter, IEEE-Eta Kappa Nu, ECEE

SELECTED PUBLICATIONS AND PRESENTATIONS IN THE LAST FIVE YEARS:


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RECENT PROFESSIONAL DEVELOPMENT:

- IEEE International Microwave Symposium, Atlanta, GA, June 7-10, 2021
- SPIE Photonics West, San Francisco, CA, February 4-6, 2020
MICHAEL GORYLL

Education
PhD, Physics, RWTH Aachen, Germany, 2000
Diplom, Physics, RWTH Aachen, Germany, 1997

Academic Experience
Arizona State University, Associate Professor, Electrical Engineering, 2013-present, full time
Arizona State University, Assistant Professor, Electrical Engineering, 2007-2013, full time
Arizona State University, Post-doctoral Research Associate, Electrical Engineering, 2003-2005, full time

Non-Academic Experience
Research Centre Jülich, Germany, Post-doctoral Research Associate, Electrical Engineering, 2005-2007, full time
Research Centre Jülich, Germany, Post-doctoral Research Associate, Electrical Engineering, 2001-2003, full time

Current membership in professional organizations
Biophysical Society (BPS), Member
Institute for Electrical and Electronics Engineers (IEEE), Senior Member
Material Research Society (MRS), Member

Honors and Awards
Fulton Schools of Engineering, Best Teacher award, 2012
NSF CAREER award, 2011

Service activities
Ira A. Fulton Schools of Engineering, Academic Standards Committee, 2021-present
Ira A. Fulton Schools of Engineering, Academic Curriculum Committee, 2018-2020
Ira A. Fulton Schools of Engineering, FURI/MORE Review Committee, 2016-2020
School of Electrical, Computer and Energy Engineering, Undergraduate Program Chair, 2013-2016
School of Electrical, Computer and Energy Engineering, Undergraduate Curriculum Committee, 2013-present
School of Electrical, Computer and Energy Engineering, Undergraduate Scholarship Committee, 2013-present
Arizona State University, Student Organization Advisor for Sun Devil Satellite Lab, 2019-present
National Science Foundation, Reviewer for EECS and IIP directorates, 2008-present

Most important publications and presentations
"of Detection and Dynamic Range Optimization Through Physical Design Tuning", IEEE Transactions on Nuclear Science, 63, 2016, pp 2137-2144


**Most recent professional development activities**
Ira A. Fulton Schools of Engineering, KEEN Project Faculty/REML, 2019-present
OLIN L. HARTIN

2. Education – degree, discipline, institution, year

Ph.D. Electrical engineering, University of Texas at Austin, 1998

3. Academic experience – institution, rank, title (chair, coordinator, etc. if appropriate), when (ex. 2010 - 2014), full time or part time

ASU, Professor of Practice, 2015-current, full time

4. Non-academic experience – company or entity, title, brief description of position, when (ex. 2014 – 2019), full time or part time

Shell Oil US 1979-1992, Senior Staff Geophysicist, full time

University of Texas, Research Assistant, 1994-1998

MOT,Freescale,NXP, 1998-2015, Manager Device Physics and Simulation Group

5. Certifications or professional registrations

IEEE senior member

APS member

6. Current membership in professional organizations

Above

7. Honors and awards

Don’t keep track

8. Service activities (within and outside of the institution)

No list

9. Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation

Lecture assignment, doesn’t require research, research done mainly before joining ASU

10. Briefly list the most recent professional development activities

Not sure what this means?
GERALD THOMAS HEYDT

PhD Honoris Causa, Universitatea Politehnica din București, 2019
PhD, Purdue University 1970
MSEE, Purdue University 1965
BEEE, Cooper Union 1963

Academic experience:

Regents’ Professor Emeritus, Arizona State University 2019 - date
Regents Professor, Arizona State University, 2002 - 2019
Professor, Arizona State University, 1995 – 2002
Visiting Professor of Electrical Engineering, University of Nevada, Reno, 1994 - 1995
Professor, Purdue University, 1980 – 1995
Associate Professor, Purdue University 1975- 1980
Assistant Professor, Purdue University 1970- 1975

Non-academic experience:

Program Manager, National Science Foundation, 1990 - 1991

Certifications:

Registered Professional Engineer (Indiana)
Registered Professional Engineer (New Jersey)

Current membership in professional organizations:

Life Fellow, IEEE

Honors and awards

Standard Oil of Indiana Award for Excellence in Teaching, 1971.
Tau Beta Pi Award for Excellence in Teaching, 1971.
Eta Kappa Nu Award for Excellence in Teaching, 1971.
D. D. Ewing Award, Purdue University, 1978.
Listed in “American Men and Women of Science”
Edison Electric Institute, Power Engineering Educator of the Year, 1989.
Erskine Fellow Award, University of Canterbury, Christchurch, New Zealand, 1990.

Fellow of IEEE “For leadership in electric power engineering education and research on harmonic signals in
electric power systems” (1991).


National Academy of Engineering of the United States, 1997

IEEE 2010 Richard H. Kaufmann Award, “For contributions to electric power quality, and transmission and distribution engineering.”

ASU Founder’s Day Faculty Service Awardee, 2018.

Samples of recent publications:


KEITH E. HOLBERT

Education
Ph.D., Nuclear Engineering, University of Tennessee, 1989
M.S., Nuclear Engineering, University of Tennessee, 1986
B.S., Nuclear Engineering, University of Tennessee, 1984

Academic Experience
2008-Present  Director, Nuclear Power Generation program, Arizona State University
1997-2004  Associate Chair for Undergraduate Studies, Arizona State University
1995-Present  Associate Professor, Arizona State University, full-time
1989-1995  Assistant Professor, Arizona State University, full-time

Non-Academic Experience
2004-2005  Visiting Staff Member, Los Alamos National Laboratory, full-time
1996  Space Systems Technology Group, Motorola, full-time
Summer 1991  Battelle, Pacific Northwest Laboratory, full-time
1983-1987  Engineer, Analysis and Measurement Services Corporation, part/full-time

Registration/Licensing
•  Registered Professional Engineer (Nuclear), Arizona License #31191

Professional Memberships
•  IEEE Senior Member, 1996-present
•  American Nuclear Society (ANS) Member, 1981-present

Honors and awards
•  Top 5% Teaching Award, Fulton Schools of Engineering, 2021 and 2012
•  PLuS Alliance, Fellow, 2020-2021
•  ASEE Energy Conversion and Conservation Division, Second Best Paper, June 2016
•  IEEE Transactions on Education Best Paper award for 2010
•  Honorable Mention Paper Award, ASEE Continuous Improvement in Engineering Education Conference, March 2008
•  Outstanding Faculty Award, IEEE Phoenix Section, February 2007
•  Teaching Excellence Award from the ASU College of Engineering, 1996-1997
•  Tau Beta Pi member (Tennessee Alpha, '84)

Institutional and Professional Service Activities (recent)
•  Tau Beta Pi ASU Student Chapter Advisory Board, 1994-present
•  Conference Session Chair, 52nd North American Power Symposium, virtual, April 2021
Editorial Board, Journal of Nuclear Engineering, 2020-present
Associate Editor, Journal of Science and Technology of Nuclear Installations, 2011-present
Conference Session Chair, ASEE Rocky Mountain Section Conf., Sept. 30–Oct. 1, 2016
Radiation Protection Committee, member, 2013-present
University Undergraduate Standards Committee, 2017-2019

Principal Publications

Professional Development Activities (recent)
- Consultant to Sandia National Laboratories
- FEMA Radiological Accident Assessment Workshop, December 2020

YOON HWA

Education
Ph.D. Materials Science and Engineering, Seoul National University, South Korea, 2013
B.S. Materials Science and Engineering, Sungkyunkwan University, South Korea, 2007

Academic experience
Arizona State University, Tempe, Assistant Professor, 2020-Present, Full time.
University of California Berkeley, Specialist, 2019-2020, Full time.

Lawrence Berkeley National Laboratory, Postdoc, 2015-2018, Full time.

University of California Berkeley, Postdoc, 2014, Full time.

Current membership in professional organizations

Electrochemical Society

International Society of Electrochemistry

American Chemical Society

Material Research Society

Korean American Scientists and Engineers Association

Honors and awards

ISE Travel Award for Young Electrochemist (International Society of Electrochemistry, 2016)

Spot Award (Lawrence Berkeley National Laboratory, 2016)

Service activities (within and outside of the institution)

Solar Power Laboratory Core Facility Governance Board (2021-Present)

Advanced Electronic and Photonics Core Facility Governance Board (2021-Present)

Co-organized the symposium 'Z02 - 4DMS+SoRo: 4D Materials & Systems + Soft Robotics' at the ECS PRIME 2020


Most important publications and presentations from the past five years


**Y. Hwa**, High sulfur loading electrodes toward practical Li/S cells, American Chemical Society Spring Meeting, Apr. 2017, Oral Presentation

**MOHAMMADREZA F. IMANI**

**Education:**

PhD in Electrical Engineering from University of Michigan, Ann Arbor, USA (2013)

**Academic experience:**

- Assistant Professor, Arizona State University, (2020-present), full time
- Research Scientist, Duke University, (2018-2020), full time
- Postdoc Researcher, Duke University, (2014-2018), full time
- Postdoc Researcher, University of Michigan, (2013-2014), full time

**Non-academic experience**

- Metacept systems, Technical Advisor and Consultant, 2018-present, part time.

**Current membership in professional organizations**: IEEE (Member)

**Honors and awards** Duke University 2016 Postdoctoral Professional Development Award

**Service activities (within and outside of the institution)**

- Supervising 1 PhD student and mentoring two undergraduate students
- Science Judge, NCSEF Region 3B fair, NC School of Science and Mathematics, Feb. 2020.

**Briefly list the most important publications and presentations from the past five years**


SAYFE KIAEI

Director, Connection One NSF Center, Motorola Chair in RF and Analog

Tel: (480)727-7761 ; Email: sayfe@asu.edu

EDUCATION:
Northeastern University/WSU  Electrical Engineering  B.S., 1982
Washington State University  Electrical and Computer Engineering  M.S., 1984
Washington State University  Electrical and Computer Engineering  Ph.D., 1987

ACADEMIC EXPERIENCE:
2001 – Present  Professor of Electrical Engineering, Motorola Chair in Mixed-Signal Analog/Digital IC
2002-present   Director, NSF IUCRC Center Connection One
2009-2012   Associate Dean for Research, Ira. A. Fulton Schools of Engineering, ASU
1998 - 1999   Adjunct Professor, ECE Dept., The University of Texas, Austin,
1988 - 1997   Co-Director, CDADIC, NSF I/UCRC Center on Mixed-Signal IC’s.
1987 - 1995   Associate Professor, ECE Department, Oregon State University
1982 - 1987   Research & Teaching Assistant, Washington State University

NON-ACADEMIC EXPERIENCE:
1993 - 2001   IC Designer & Platform Manager, Senior Member of Technical Staff, Motorola.
1993 - 2001   Wireless Integration Technology Center, Austin, TX.
1985 - 1987   Member of Research Staff (Summer Intern position), Boeing Co.

PROFESSIONAL MEMBERSHIPS
IEEE Fellow, 2002-Present;
IEEE Fellow Committee Chair, CAS, 2008-2010; IEEE Fellow Committee member, 2007-2010;

HONORS AND AWARDS
• Global Standards Award, For contributions in the International Telecommunication Unit (ITU) for Asymmetric Digital Subscriber Line (ADSL) G.Lite Standards. Motorola Inc., 1999.
• 10X Cycle Reduction Award, for development of new IC design process from DSP algorithm to IC layout, Motorola Inc., 1995.
• Carter Best Teaching Award, College of Engineering Best Teacher Award, Oregon State University, 1992. For "outstanding and inspirational teaching in the College of Engineering". Award is selected by the confidential vote of all of the undergraduate students in the College of Engineering among over 125 professors in the College.
• Industrial University Fellowship (IUF) Award, National Science Foundation, 1993.
• Research Initiation Award, National Science Foundation, 1990-93.

SERVICE ACTIVITIES
IEEE Microwave Magazine, Guest Editor, 2011; IEEE System Journal, Associate Editor, 2010-2011;
Associate Editor, IEEE Transactions on VLSI, Jan 2001-2008; IEEE Comm. Magazine, IEEE Associate Editor, IEEE Transactions on Microwave Theory and Techniques
Associate Editor, IEEE Transactions on Circuits and Systems-II, 1993-1996; Editor
RFIC Executive Committee members, Steering Committee Member, 1996-2018.

SELECTED PUBLICATIONS AND PRESENTATIONS IN THE LAST FIVE YEARS:

5. Chengxi Liu ; Debashis Mandal ; Zhao Yao ; Ming Sun ; Jim Todsen ; Brian Johnson ; Sayfe Kiaei; Bertan Bakkaloglu, 50 V Isolation, 100 MHz, 50 mW Single-Chip Junction Isolated DC-DC Converter with Self-Tuned Maximum Power Transfer Frequency, IEEE Transactions on Circuits and Systems II, Sept 2018.

RECENT PROFESSIONAL DEVELOPMENT:
• RFIC Executive Committee members, 2000-present, Steering Committee Member, RFIC symposium, 1996-Present
• Technical Program Chair, IEEE International Sym. on Circuits and Systems, Phoenix, AZ, 2002;
• ISSCC Admin Council, Conferences Committee 2000-2005;
RICHARD R. KING

Education
Ph.D. Electrical Engineering Stanford University Stanford, CA 1990
M.S. Electrical Engineering Stanford University Stanford, CA 1987
B.S. Physics Stanford University Stanford, CA 1985

Academic experience
Arizona State University, Professor, 2015-present,
Full-time, School of Electrical, Computer and Energy Engineering.
Graduate Faculty: Department of Physics; School for Engineering of Matter, Transport, and Energy; School of Molecular Sciences.

Non-academic experience
• Spectrolab, Inc., Sylmar, CA, Boeing Division, Principal Scientist (final position), Technical Fellow, led research on high-efficiency multijunction solar cells, materials and characterization, 1997-2015, Full-time.
• Georgia Institute of Technology, Atlanta, GA, Research Engineer, research on high-lifetime silicon solar cell processes, 1990-1992, Full-time.
• Stanford University, Stanford, CA, Doctoral Researcher, research on doped silicon surface passivation and applications to solar cells, 1985-1990.

Honors and Awards
Elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE) – 2017
• William R. Cherry Award – 2010 for "Outstanding Contributions to Photovoltaic Science and Technology," awarded at the 35th IEEE Photovoltaic Specialists Conference
• Boeing Silver Phantom Award – 2007, 2008
• R&D 100 Award, Spectrolab Team Leader – 2007
• Boeing S&IS World-Class Engineering Award – 2007
• Elected Boeing Technical Fellow – 2006
• Inducted into NASA/Space Technology Hall of Fame – 2004
• Scientific American 50 Award, Spectrolab Team Leader – 2002
• R&D 100 Award, Spectrolab Team Leader – 2001
• B.S. degree with Distinction, Departmental Honors, Phi Beta Kappa, Stanford University – 1985

Selected publications, 2016-2021
• Chikhalkar, M. Goryll, W. Shafarman, and R. R. King, "Study of wavelength-resolved light-induced metastable
defects in (Ag,Cu)(In,Ga)Se₂ thin-films using capacitance based methods," 46th IEEE Photovoltaic
Specialists Conf., Chicago, IL, June 16-21, 2019.
• Maros, N. N. Faleev, M. I. Bertoni, C. B. Honsberg and R. R. King, "Carrier localization effects in GaAs₁₋ₓ
• R. M. France, F. Dimroth, T. J. Grassman, and R. R. King, "Metamorphic Epitaxy for Multijunction Solar
• M. A. Steiner, J. F. Geisz, J. S. Ward, I. García, D. J. Friedman, R. R. King, P. T. Chiu, R. M. France, A.
Duda, W. J. Olavarria, M. Young, S. R. Kurtz, “Optically enhanced photon recycling in mechanically stacked
• Maros, N. Faleev, S. H. Lee, J. S. Kim, C. B. Honsberg, R. R. King, "1-eV GaNAsSb for Multijunction Solar

Professional Development Activities
• Co-Founding Editor, IEEE Journal of Photovoltaics, 2010 - present. Archival scholarly journal devoted to
photovoltaics within the IEEE family of publications.
• Research Director, NSF-DOE Quantum Energy and Sustainable Solar Technologies (QESST) Engineering
Research Center, 2015 - present.
• Scientific Advisory Board, Photonics at Thermodynamic Limits (PTL) EFRC, Stanford University, Stanford, CA,
2018 - present.
• Conference Chair, 40th IEEE Photovoltaic Specialists Conf., Denver, CO, 2014.
• Led over 100 top scientists in the field to organize this international conference on the science and technology of
solar cells.
JENNIFER KITCHEN

Professional Preparation
University of Arizona  Tucson, AZ  Electrical Engineering  B.S.E.E.  2002
Arizona State University  Tempe, AZ  Electrical Engineering  M.S.  2005
Arizona State University  Tempe, AZ  Electrical Engineering  Ph.D.  2007

Appointments
Aug 2012 – Present  Assistant Professor, Arizona State University
2003 – 2006  RF Engineer, Freescale Semiconductor, Inc.
2002 – 2007  Graduate Research Assistant, Arizona State University

Products
Most Closely Related Products:


Other Significant Products:

[Type here]


(d) Synergistic Activities

- Member Participation: Active Member of 4 IEEE professional societies, including IEEE SSCS Phoenix Chapter Publicity Chair.
- Committees and Chair: Technical Program Committee Member and Session Chair in 7 IEEE conference committees, specifically serving as a Technical Program Committee Session Chair/Co-chair in Radio Frequency Integrated Circuits (RFIC) Symposium for the past four years.
- Established Courses: RF Transceiver Circuits Design: curriculum enabling RF system and circuits design. This course is the only circuit course at ASU allowing a student to fabricate integrated circuits on silicon. Students enrolled: 75. Transmitters and Amplifiers: special topics course focusing on RF power amplifier design for wireless transmitters. Students enrolled: 50.
MICHAEL N. KOZICKI
Professor

EDUCATION:
Ph.D., Electronics and Electrical Engineering, University of Edinburgh, 1985
B.Sc., Electronics and Electrical Engineering, University of Edinburgh, 1980

ACADEMIC EXPERIENCE:
Arizona State University, Tempe, Arizona

• Associate Professor, Electrical Engineering, 1991 – 1996, full time.
• Assistant Professor, Electrical Engineering, 1986 – 1991, full time.
• Laboratory Manager, Center for Solid State Electronics Research, 1985 – 1986, full time.

International

• Visiting Professor, Faculty of Science and Engineering, Univ. of Edinburgh, 2002 – 2020.
• Adjunct Professor, Gwangju Institute of Science and Technology, Korea, 2009 – 2012.

NON-ACADEMIC EXPERIENCE:


PROFESSIONAL REGISTRATION
Chartered Engineer, United Kingdom/EU, 1988 – 2019

PROFESSIONAL MEMBERSHIPS

• National Academy of Inventors (NAI).
• Eta Kappa Nu (HKN).

HONORS AND AWARDS IN THE LAST FIVE YEARS

• Fellow, National Academy of Inventors - FNAI.
• Fulton Entrepreneurial Professor from 2016 to 2018.
• Daniel Jankowski Legacy Award 2019.
• Joseph C. Palais Distinguished Faculty Scholar Award 2019-2020.

SERVICE ACTIVITIES IN THE LAST FIVE YEARS

• Charter member of the ASU Academic Council.
• Session Chair, International Conference on Memristive Materials, Devices & Systems (MEMRISYS), Dresden, Germany, July 8 – 11, 2019.
• Member of the Scientific Committee and Moderator, New Memory Paradigms: Memristive Phenomena and Neuromorphic Applications Faraday Discussion, Faraday Society, Royal Society of Chemistry, Aachen, Germany, October 15 - 17, 2018.
• Session chair, 14th International Conference on Modern Materials and Technologies CIMTEC 2018, Perugia, Italy, June 4 - 14, 2018.

[Type here]
• Technical Program Committee Member, The American Ceramic Society, GOMD 2017.

SELECTED PUBLICATIONS/PRESENTATIONS IN THE LAST FIVE YEARS:


RECENT PROFESSIONAL DEVELOPMENT:

Information Security, ASU, 2020; Workplace Behavior, ASU, 2020

NAIM LOGIC

Education

Ph.D. – Electrical Engineering – Arizona State University - 2004

Academic experience

– Adjunct Faculty – 2019 – now – part time

- Graduate Research Associate and Teaching Assistant – 2002-2004 – part time

Non-academic experience

Salt River Project – Senior Electrical Engineer –

- Responsibilities for energy management system software improvement. Focus on power system state estimation and related mathematical tools for the power industry, application of synchronized phasor measurements, and power system reliability –

- 2004 – 2016 – full time

Certifications or professional registrations

- Professional Engineer - Electrical - certification awarded by the Arizona State Board of Technical Registration - 10/2002

- Certified Power Quality Professional - certification awarded by the Association of Energy Engineers - 02/1999

- Arizona Community Colleges Teaching certification - 02/2002

Current membership in professional organizations

- IEEE (The Institute of Electrical and Electronics Engineers) - Power and Energy Society (PES)

Senior Member since 2000

- NASPI (North American Synchrophasor Initiative) – member since 2005
Honors and awards
- In 2011 as Phoenix Chapter Chairman, I got the IEEE PES Outstanding Chapter Award
- In 2013 I was nominated for Outstanding engineer of the year by IEEE PES Phoenix Chapter

Service activities (within and outside of the institution)
- Chairman of the Local Organizing Committee for the PSCE - Power Systems Conference and Exposition in Phoenix, AZ in 2011
- IEEE PES Region Chapter representative – 2012-2014
- IEEE PES Region representative – 2014-2019
- Chair of IEEE PES Industry-Focused Workshops Committee – 2020 - now

Most important publications and presentations from the past five years

Title, co-authors if any, where published and/or presented, date of publication or presentation

Recent professional development activities
- I initiated the Synchrophasor Team at SRP and performed a pioneering job in recognition of revolutionary synchrophasor technology and its implementation in the Smart Grid vision. This activity also initiated 15 research projects with ASU as a part of Joint Research Program. Majority of these projects resulted in masters and doctoral theses at ASU.
BASSAM MATAR

Education

MS in Electrical Engineering, Oklahoma State University, 1988

Academic experience – institution, rank, title (chair, coordinator, etc. if appropriate), when (ex. 2010 - 2014), full time or part time.


Non-academic

Design Engineer and Consultant, Various Assignments, Intel Corporation from 5/91 to 8/97 (part time).

- Revised and enhanced troubleshooting techniques and schematics for semiconductor manufacturing machines. Training department
- Revised and enhanced many data sheets for a variety of Intel micro-controller product.
- Worked with a group of engineers on Fuzzy Logic to enhance the use and applications of the Intel micro-controller

Honors and awards.

- (Summer 1999) Motorola Educator of the Year award
- (Spring 2000) National Institute for Staff and Organizational Development, EotY award
- (Fall 2009) Gilbert Community Excellence Awards, Educator of the Year award
- (Spring 2010) Electronic Engineering Times (EE Times) -- Educator of the Year award

Recent professional development activities

08/20-Current Program Manager and faculty for a new program/certificate in Artificial Intelligence and Machine Learning, Maricopa Community Colleges District, Workforce Office.

Co-developed and taught AIM 100: Introduction to Artificial Intelligence. Four more classes to be developed in the coming year. Leverage industry partnership needs. Lead the development and mapping of a new AAS and certificate in Artificial Intelligence and Machine Learning major program, in collaboration with Maricopa District Workforce and MCCCD Mapping Team. Lead the effort of a National Science Foundation (NSF) ATE grant around program and curriculum development, as well as outreach efforts.

RICO MEIER

Education

Dr. rer nat., Physics, Martin Luther University of Halle-Wittenberg, 2016
M. Sc., Physics, Leipzig University, 2008

Academic experience

Arizona State University, Assistant Research Prof., since 2018
Non-academic experience
Head of Team Lifetime and Weathering, Fraunhofer Center for Silicon Photovoltaics CSP, 2017-2018
Research Associate, Fraunhofer Center for Silicon Photovoltaics CSP, 2008-2017

Certifications or professional registrations
Certified LabVIEW Associate Developer, 2018

Current membership in professional organizations
German Society for Non-Destructive Testing (DGZfP)

Honors and awards
Materials Award 2017 of Schott AG (translated), Advisory Board Meeting, Halle (Saale), 2017
Best Student Paper Award in Structural Acoustics and Vibration, 164th Meeting of the Acoustical Society of America, Kansas City, 2012
Best Poster Award in Crystalline Silicon Photovoltaics, NREL 2011 PV Module Reliability Workshop, Golden, 2011

Service activities (within and outside of the institution)

Important publications and presentations from the past five years

10. Briefly list the most recent professional development activities
Development of new methods for non-destructive material and component characterization in the field of quality assurance and production surveillance
Microstructure manipulation and property design: Designing constitutive material or component properties (e.g. stress-strain relationship, fatigue properties, surface quality) by well-defined adjustment of the microstructure

Digitalization and holistic consideration and optimization of the product life cycle from raw material to recycling with focus on material properties: Multi-scale simulation of process-induced microstructure development for virtual material property design
DEIRDRE R. MELDRUM

Distinguished Professor of Biosignatures Discovery, Professor of Electrical Engineering, Director of Center for Biosignatures Discovery Automation

EDUCATION

• B.S. Civil Engineering, University of Washington, 1983
• M.S. Electrical Engineering, Rensselaer Polytechnic Institute, 1985
• Ph.D. Electrical Engineering, Stanford University, 1993
• Interpersonal Dynamics for High-Performance Executives, Stanford University, 2009
• Stanford Executive Program, Stanford Graduate School of Business, 2009

ACADEMIC EXPERIENCE

University of Washington, Seattle, WA

• Assistant Professor of Electrical Engineering, 1992 – 1998, full-time
• Founder and Director, the Genomation Laboratory, 1992 – 2006, full-time
• Adjunct Assistant Professor, Department of Bioengineering, 1997 – 1998, full-time
• Adjunct Associate Professor, Department of Bioengineering, 1998 – 2001, full-time
• Associate Professor with tenure, Department of Electrical Engineering, 1998 – 2001, full-time
• Adjunct Professor, Department of Bioengineering, 2001 – 2005, full-time
• Adjunct Professor, Department of Mechanical Engineering, 2001 – 2006, full-time
• PI and Director, NIH Center of Excellence in Genomic Sciences, 2001 – 2006, full-time

Arizona State University, Tempe, AZ

• Dean, Ira A. Fulton Schools of Engineering, 2007 – 2010, full-time
• Director, Bodesign Center for Ecogenomics, 2007 – 2010, full-time
• PI and Director, NIH Center of Excellence in Genomic Sciences, 2007 – 2013, full-time
• ASU Senior Scientist, 2011 – 2016, full-time
• Director, Center for Biosignatures Discovery Automation, 2011 – present, full-time
• Distinguished Professor of Biosignatures Discovery, 2007 – present, full-time
• Professor of Electrical Engineering, 2007 – present, full-time

NON-ACADEMIC EXPERIENCE

• Puget Sound Naval Shipyard, Design Engineer on ships and submarines, 1979, full-time
• NASA JSC, Shuttle Mission Simulator instructor for astronauts, 1980 – 1981, full-time
• Washington State Department of Transportation, Design Engineer on traffic control and transportation management systems, 1982 – 1983, part-time
• Jet Propulsion Laboratory/Caltech, Intern in Galileo Flight Test Group, Guidance and Control Section, tested Galileo flight hardware and software, 1984, full-time
• Jet Propulsion Laboratory/Caltech, Member Technical Staff, Machine Intelligence Systems Group, Automated Systems Section, flexible structures and robotics, 1985 – 1987, full-time
• Exelixis Pharmaceuticals, Inc., Consultant on biotechnology automation, 1997 – 1999, part-time
• DOE Joint Genome Institute Scientific Advisory Board Member, 2000-2002, 2016-2018
• NIH, Office of the Director, Peer Review Oversight Group (PROG), 2000 – 2004, part-time
• NIH, National Human Genome Advisory Council, Member, 2006 – 2008, 2011 – 2014
• Climos, Inc., Member, Scientific Advisory Board, 2007 – 2011, part-time
• Microsoft Research, Member, Advisory Board, 2007 – 2013, part-time
• Swiss NSF Intl. Review Panel, SystemsX Program, Member, 2009 – 2011, part-time
• Northern Arizona Healthcare Foundation Board of Directors, Vice Chair, Director, and Chair of Grants and Awards, 2016-present, part-time
CERTIFICATIONS OR PROFESSIONAL REGISTRATIONS
Engineer in Training (EIT), National Council of Examiners for Engineering and Surveying, 1983

CURRENT MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
• ACS Member (since 1999)
• AAAS Fellow (since 2003)
• IEEE Fellow (since 2004)
• AIMBE Fellow (since 2015)
• National Academy of Inventors (since 2017), 19 patents issued, 19 patents pending

HONORS AND AWARDS
• Fellow of AAAS, IEEE, AIMBE, and NAI
• Presidential Early Career Award for Scientists and Engineers (PECASE)
• NIH NCHGR (Human Genome) Special Emphasis Research Career Award (SERCA)
• PI and Director, the first NIH NHGRI Center of Excellence in Genomic Science (CEGS)
• UW Engineering Outstanding Faculty Award, Control Systems Laboratory and Curriculum
• Society of Automotive Engineers (SAE) Ralph R. Teetor Educational Award
• Chair, National Academy of Engineering, Grand Challenges Summit, Phoenix
• General Chair, IEEE Conference on Automation Science and Engineering (CASE)
• Founding Editor (1 of 4) & Sr. Editor, IEEE Transactions on Automation Science & Engineering
• Best paper of the year, IEEE Transactions on Automation Science and Engineering (T-ASE)
• Spansion Best Paper Award and Best Student Paper Award (advisor to student), IEEE CASE
• Distinguished Lecturer for IEEE Robotics and Automation Society
• Volunteer of the Year, Northern Arizona Healthcare Foundation

SERVICE ACTIVITIES (WITHIN AND OUTSIDE OF THE INSTITUTION)
• Director, ASU Center for Biosignatures Discovery Automation
• Member, IEEE Fellows EMBS Evaluation Committee
• Member, External Review Panel for the BIOS Institute, University of Arizona, Tucson, Arizona
• Steering Committee Representative for IEEE Robotics and Automation Society (RAS) to IEEE Transactions on NanoBioscience (IEEE RAS Publications Activity Board)
• Participant, Organizing Committee, Plenary Speaker, and Panel Moderator, NIH NIAID, Workshop on Single Cell Technologies for Infectious Diseases, Washington DC, 2017
• Chair, Northern Arizona Healthcare Foundation Board Committee on Grants and Awards, created the entire grants application process and lead the annual Northern Arizona Community Health Grant Cycle, 2016 – present, reviewer 2018-2020

SELECTED PUBLICATIONS AND PRESENTATIONS
• “Transcriptional regulation by normal epithelium of premalignant to malignant progression in Barrett’s esophagus,” Jia Zeng, Laimonas Kelbauskas, Aida Rezaie, Kristen Lee, Benjamin Ueberroth, Weimin Gao, Dmitry Derkach, Thai Tran, Dean Smith, Kimberly J. Bussey, and Deirdre R. Meldrum, Scientific Reports, 6, 2016
• “Improved performance of loop-mediated isothermal amplification assays via Swarm priming,” Rhett Martineau, Sarah Murray, Shufang Ci, Weimin Gao, Shih-Hui Chao, and Deirdre R. Meldrum, Analytical Chemistry, 89(1), 2016
• “A platform for high-throughput bioenergy production phenotype characterization in single cells,” Laimonas Kelbauskas, Honor Glenn, Clifford Anderson, Jacob Messner, Kristen B. Lee, Ganquan Song, Jeff Houkal, Fengyu Su, Liqiang Zhang, Yanqing Tian, Hong Wang, Kimberly Bussey, Roger H. Johnson, and Deirdre R. Meldrum, Scientific Reports, 7, 2017
• “Unlocking the photobiological conversion of CO2 to (R)-3-hydroxybutyrate in cyanobacteria,” Bo Wang, Wei Xiong, Jianping Yu, Pin-Ching Maness, Deirdre R. Meldrum, Green Chemistry, 20(16), 2018
• “cRGD functionalized 2,1,3-benzothiadiazole (BTD)-containing two-photon absorbing red-emitter-conjugated amphiphilic poly(ethylene glycol)-block-poly(ε-caprolactone) for targeted bioimaging,” Shanshan Wu, Fengyu Su, Hansa Y. Magee, Deirdre R. Meldrum, and Yanqing Tian, RSC Advances 9, 2019
• “Seriously Sensored!,” EUROPT(R)ODE XIII, Invited Plenary Lecture, Graz, Austria, 2016
• “Biosignatures for the 21st Century,” University of Southern California leadership, 2017

RECENT PROFESSIONAL DEVELOPMENT ACTIVITIES
ASU training: Biosafety, Lab Safety, Fire Safety, Information Security, Community of Care
NICOLÒ MICHELUSI

Education
- Ph.D. degree in Electrical Engineering, University of Padova, Italy, 2013
- MSc degree in Telecommunications Engineering, University of Padova, Italy, 2009
- MSc degree in Telecommunications Engineering, Technical University of Denmark, 2009
- BSc degree in Electrical Engineering, University of Padova, Italy, 2006

Academic experience
- Assistant Professor (tenure-track), Arizona State University, January 2021 - current, full time
- Assistant Professor (tenure-track), Purdue University, January 2016 - Dec. 2020, full time
- Postdoctoral Research Associate, February 2013 - December 2015, University of Southern California, Los Angeles, CA, USA, full time
- Visiting Research Scholar, August - October 2012, Aalborg University, Denmark, full time
- Visiting Research Scholar, January - July 2011, University of Southern California, Los Angeles, CA, USA, full time

Current membership in professional organizations
- Senior member of IEEE
- Member of IEEE Communications Society (IEEE ComSoc)

Honors and awards
- NSF CAREER award (2021) "CAREER: Adaptive Communications and Trajectory Design for UAV-assisted Wireless Networks: a Multi-Scale Decision Framework" (PI, $487,688.00)
- NSF grant CNS-1642982 extension "Real-time Control of Dense, Mobile, Millimeter Wave Networks Using a Programmable Architecture" (2021) (PI, $50,000.00)
- NSF grant CNS-1642982 "Real-time Control of Dense, Mobile, Millimeter Wave Networks Using a Programmable Architecture" (2016-2021) (PI, $941,197.00)
- DARPA grant on the Spectrum Collaboration challenge (SC2) "Adaptive Wireless Networks for Spectrally Efficient Communications" (2016-2019) (co-PI, responsible for $397,561.00)
- Purdue "Seed for Success" Award 2017 and 2018 (DARPA-SC2)
- Toni Mian award, for best MSc Thesis in Information Engineering (2010) (euro 2,000)
- Isabella Sassi Bonadonna 2013 award, to support my research at a prestigious international research institute or university (2013) ($16,000 award)

Service activities
- Associate editor for the IEEE Transactions on Wireless Communications (Nov. 2016-current)
- Symposium Chair for the "Wireless Communications Symposium" at IEEE Globecom 2020
- Chair of "IoT, M2M, Sensor Networks, and Ad-Hoc Networking" track in the IEEE Vehicular Technology Conference 2020
- Symposium Chair for "Cognitive Computing and Networking" at ICNC 2018
- Organized an invited session at Asilomar’16 and one at Asilomar’17
- Technical Program Committee member for several IEEE and ACM conferences
- Reviewer for several IEEE Transactions

Publications and presentations from the past five years
- Chang-Shen Lee, N. Michelusi, Gesualdo Scutari, "Finite Rate Distributed Weight-Balancing and Average Consensus Over Digraphs," in IEEE Transactions on Automatic Control
- Muddassar Hussain, Maria Scalabrin, Michele Rossi, N. Michelusi, "Mobility and Blockage-aware Communications in Millimeter-Wave Vehicular Networks," IEEE Transactions on Vehicular Technology, vol. 69, no. 11, pp. 13072-13086, Nov. 2020
Briefly list the most recent professional development activities

Attended the Faculty Success Program from the National Center for Faculty Development and Diversity in the Spring of 2020.

STEVEN D. MILLMAN

EDUCATION

- Ph.D. EE, Stanford University, Palo Alto, CA 1990
- MS EE, Stanford University, Palo Alto, CA 1985
- AB Physics w/ Math minor, Occidental College, Los Angeles, CA 1984, Summa Cum Laude

ACADEMIC EXPERIENCE

- Mesa Community College, part-time faculty, 1990-1992
- Arizona State University, Lecturer 12/2018-7/2019
- Arizona State University, Professor of Practice 8/2019-present

NON-ACADEMIC EXPERIENCE

- Motorola/Freescale/NXP, 12/1989-11/2018 eventually became Technical Director

HONORS AND AWARDS

- 25 U.S. patents

SERVICE ACTIVITIES

- President, Temple Beth Sholom of the East Valley, 2014-2018
- Past President, Temple Beth Sholom of the East Valley, 2018-2020
ARTHUR ONNO

Education

- PhD, Electronic and Electrical Engineering, University College London (UK), 2017
- MSc, Energy Engineering, Ecole Polytechnique (France), 2012
- MEng, Energy Engineering, ENSTA Paris (France), 2011
- BSc, Physics, Ecole Polytechnique (France), 2009

Academic experience

- Arizona State University, Assistant Research Professor, 2020–present, full time
- Arizona State University, Postdoctoral Research Scholar, 2017–2020, full time

Non-academic experience

- Total New Energies USA, Prospective technology analyst (technology scouting in the fields of solar energy and energy storage), 2012-2013, full time
- Total New Energies (France), Prospective technology analyst (technology scouting in the fields of solar energy), 2011, internship full-time
- Enedis (France), Energy optimization engineer (reducing energy waste in electrical substations), 2010-2011, internship part-time

Honors and awards

- ASU I-Corps Next Stage Training Lab Award, 2019
- European Photovoltaic Solar Energy Conference Student Award, 2017
- IEEE Photovoltaic Specialists Conference Best Student Presentation Award Finalist, 2017
- UCL EEE Cullen Prize for Best Research Student Poster, 2015

Service activities (within and outside of the institution)

- Tutorial Instructor, MRS Spring Meeting 2021, "Young Scientist Tutorial on Advanced Characterization Techniques for Thin-Film Solar Cells"
- Lead Organizer for the Holman Research Group Workshop on Physics of Solar Cells, 2019
- Session Chair, MRS Spring Meeting, 2018
- Special Section Guest Editor for SPIE Journal of Photonics for Energy—Special Section on Tandem Junction Solar Cells
- Reviewer for IEEE Photovoltaic Specialist Conference (2019, 2020)

Important publications and presentations from the past five years


ANAMITRA PAL

EDUCATION:
Ph.D., Electrical Engineering, Virginia Polytechnic Institute & State University (Virginia Tech), 2014

ACADEMIC EXPERIENCE:
(1) Arizona State University, Assistant Professor (08/2016 to present), full-time; (2) Virginia Tech, Applied Electrical and Computer Scientist (07/2014 to 07/2016), full-time; (3) Virginia Tech, Instructor (01/2014 to 05/2014), part-time

NON-ACADEMIC EXPERIENCE:
(1) Electric Power Group, LLC, USA, Summer Intern (05/2013 to 08/2013), full-time; (2) Electric Power Group, LLC, USA, Summer Intern (05/2012 to 08/2012), full-time; (3) Tata Steel Ltd., India, Manager: Electrical T&D (07/2008 to 06/2010), full-time; (4) Tata Steel Ltd., India, Summer Intern (05/2007 to 07/2007), full-time

5. Certifications or professional registrations: Future Professoriate Certificate (from Virginia Tech)

PROFESSIONAL MEMBERSHIPS:
IEEE Senior Member, Member of Tau Beta Pi

7. Honors and awards: (1) 2019 Outstanding IEEE Young Professional Award (IEEE Phoenix Section); (2) 2018 Young CRITIS Award (Best Young Researcher in Critical Infrastructure Protection); (3) Best New Employee of the Year (Tata Steel Ltd.); (4) Institute Gold Medal (Under-graduate)

SERVICE ACTIVITIES:
(1) Member of the Faculty Hire Search Committee in the Power System area (2017); (2) Faculty Advisor for the ASU student organization, Asha for Education (2019-2021); (3) Member of ASU’s New Faculty Advisory Council (2019-current); (4) Member of NSF Review Panels (2017, 2020); (5) Technical Program Committee (TPC) member of 6 conferences (2017-2021); (6) IEEE Young Professional Chair of the IEEE Phoenix Section (2019-current); (7) Editor for the Journal of Modern Power Systems and Clean Energy (2020-2021); (8) Associate Editor for IEEE Transactions on Power Systems (2021-current)

SELECTED PUBLICATIONS AND PRESENTATIONS IN THE LAST FIVE YEARS:

Presentations: (1) ATAL Faculty Development Program of N.I.T. Calicut: Invited to give a lecture on the “Application of Artificial Intelligence in Power System Operation and Control”. My talk was titled “Time-Synchronized State Estimation for Incompletely Observed Distribution Systems” and was delivered remotely on November 9, 2020. (2) Future Energy Forum at the 2nd World Young Scientist Summit: Invited to give a talk on the theme
"Sustainable Power Development amid the World’s Energy Transition”. My talk was titled “Time-Synchronized State Estimation for Incompletely Observed Distribution Systems” and was delivered remotely on October 17, 2020. (3) **Power Systems Engineering Research Center (PSERC) Webinar:** Invited to give a 1-hour webinar on “Coordinated Wide-Area Polytopic Control Design using Linear Matrix Inequality” on April 21, 2020. [Online]. Available: [https://pserc.wisc.edu/webinars.aspx](https://pserc.wisc.edu/webinars.aspx) (4) **International Workshop on Critical Infrastructure Network Security (CINS):** Invited speaker at the 3rd International Workshop on CINS held in conjunction with ACM Sigmetrics on June 28, 2019

**PROFESSIONAL DEVELOPMENT ACTIVITIES**

(1) Organized an Industry Panel Session on the topic of “Emerging Challenges in the Modern Electric Grid” at the 2020 IEEE SmartGridComm held in Phoenix, AZ, in November 2020. (2) Organized a Student-Industry-Faculty Interaction (SIFI) Session at the 2020 IEEE SmartGridComm held in Phoenix, AZ, in November 2020. (3) Volunteer for the TryEngineering Together program of IEEE (an eMentorship program) to inspire and educate the next generation (grades 3 to 5) of engineers, scientists and technical professionals.

**JOSEPH C. PALAIS**

**Education**

(All in Electrical Engineering)

Ph.D. University of Michigan, 1964
M.S.E. University of Michigan, 1962
B.S.E.E. University of Arizona, 1959

**ACADEMIC EXPERIENCE**

1973 - Present Arizona State University, School of Electrical, Computer and Energy Engineering, Professor (Emeritus Professor since 2011),
1985 - Present Graduate Program Chair, School of Electrical, Computer and Energy Engineering
2004 - Present Academic Director, Online and Professional Programs, Ira A. Fulton Schools of Engineering
8/94 – 6/95 Acting Associate Dean, College of Engineering and Applied Sciences,
1988 - 2001 National Technological University, Instructional Faculty
1973 Technion - Israel Institute of Technology, Visiting Associate Professor
1968 - 1973 Arizona State University, Department of Electrical Engineering, Associate Professor
1964 - 1968 Arizona State University, Department of Electrical Engineering, Assistant Professor

**NON-ACADEMIC EXPERIENCE**

1967 - 1968 Sylvania, Engineering Specialist
1965 - 1966 Stanford Research Institute, Research Engineer (Summer)
1960 - 1964 University of Michigan, Cooley Electronics Lab., Assistant Research Engineer
1959 - 1960 Motorola, Microwave Engineer
1956 - 1958 Motorola, Electronics Technician

[Type here]
CURRENT MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

2002 Life Fellow, Institute of Electrical and Electronic Engineers
1997 Fellow, Institute of Electrical and Electronic Engineers
1969 Chairman, Phoenix Combined IEEE Chapter on Antennas and Propagation, Electron Devices, and Microwave Theory and Techniques
1968 - 1972, Chairman of MTT Technical Committee on Optoelectronics and Holography
1990 - 1991, Member IEEE LEOS Committee on Education
1991 - 2001, LEOS Representative for Phoenix Section IEEE Waves and Devices Group
Optical Society of America
Society of Photo-Optical Instrumentation Engineers
IEEE Lasers and Electro-Optics Society
IEEE Education Society
ASEE

HONORS AND AWARDS

2007    Daniel Jankowski Legacy Award, Arizona State University, Ira A. Fulton Schools of Engineering
2001    IEEE Life Fellow
1999    Conferences and Professional Programs (CaPP) Faculty Service Award, University Continuing Education Association
1997    IEEE Fellow award for leadership and sustained contributions to university and continuous education, primarily in the area of fiber optic communications.
1993    IEEE Educational Activities Board Meritorious Achievement Award in Continuous Education for exemplary, sustained, and diverse contributions to continuing education primarily in the area of fiber optical communications
1989    Professor of Year, Industrial Fellows Program, Arizona State University
1974    IEEE Phoenix Section 1974 Annual Achievement Award for Contributions to Education, Academic and Industrial Research, and IEEE Technical Activities
1967    Ford Foundation Faculty Residency in Engineering Practice

Sponsored Research Fellowship, University of Michigan
Sigma Xi (member), Tau Beta Pi, Eta Kappa Nu, Pi Mu Epsilon, Phi Kappa Phi, American Men and Women of Science, Who's Who in the West, Who's Who in Technology, Who's Who in Optical Science and Engineering

SERVICE ACTIVITIES

1985 - Present    Graduate Program Chair, School of Electrical, Computer and Energy Engineering
2004 - Present    Academic Director, Online and Professional Programs, Ira A. Fulton Schools of Engineering

[Type here]
ANTONIA PAPANDREOU-SUPPAPPOLA

Education:
PhD, Electrical Engineering, University of Rhode Island, 1995

Academic experience: Professor, School of Electrical, Computer and Energy Engineering (ECEE), Arizona State University (ASU), 2008-present

Current membership in professional organizations:
• Institute of Electrical and Electronics Engineers (IEEE)
• IEEE Signal Processing Society
• IEEE Society of Women Engineers (SWE)

Honors and awards:
• Fellow of the Institute of Electrical and Electronics Engineers (IEEE)
• IEEE Region 6 Affinity Group Individual Award for Women in Engineering, 2020
• IEEE Phoenix Section “Outstanding Contribution to Promoting Women in Engineering” Award, 2020
• Top 5% Fulton School of Engineering Teachers Teaching Excellence Award, 2009, 2018, 2021
• Fulton Exemplar Faculty Award, 2014 (for recognition to outstanding tenured and tenure-track faculty who are strong contributors to both the education and research missions of the Ira A. Fulton Schools of Engineering)
• Fulton School of Engineering Award, 2013; Fulton School of Engineering Teaching Excellence Award, 2005
• NSF CAREER award (2002)

Service activities:
University Service: FSE Curriculum committee member (2020-present); ECEE Systems Area chair (2018-present) and member (1999-2018); ECEE Graduate committee chair (2011-present) and member (2005-2010); ECEE Undergraduate Award’s committee chair (2017-present) and member (2003-2017); Biological Design Graduate Program member (2013-present); FSE General Scholarship committee member (2018); ECEE Academic Teaching Load committee (2018); ASU Faculty advisor of Fellowship of Faiths and Cultures Club (2016-2017); FSE Dean’s Promotion and Tenure committee (2013–2015); FSE Research Advisory committee (2010–2011); FSE Quality of Instruction committee chair (2009-2010) and member (2004-2009); FSE Fulton Fellowship Steering committee (2005)

Most important publications and presentations (past five years):

- J. S. Kota and A. Papandreou-Suppappola, “Joint design of transmit waveforms for object tracking in coexisting multimodal sensing systems,” *Sensors, Special Issue Multiple Object Tracking: Making Sense of the Sensors* vol. 19, 2019
- “How can Bayesian nonparametric methods, applied to machine learning problems, improve information learning in multimodal sensing under time-varying conditions?,” AFOSR Science of Information, Computation, Learning and Fusion meeting, Boston, June 2019
- “Radar target tracking under varying environmental conditions, AFRL, September 2017

Most recent professional development activities:

- Participation in practice interviews for finalists for the Rhodes, Marshall, and Mitchell scholarships (2020)
- NSF panel reviewer (2020)
- Director of a minority student team project, sponsored by the Western Alliance to Expand Student Opportunities (WAESO) 2012

**STEPHEN M. PHILLIPS**

Professor of Electrical Engineering

Director of the School

School of Electrical, Computer and Energy Engineering

Arizona State University, Tempe, Arizona

**EDUCATION:**

- Ph.D., Electrical Engineering, Stanford University, 1988
- M.S., Electrical Engineering, Stanford University, 1985
- B.S., Electrical Engineering, Cornell University, 1984

**ACADEMIC EXPERIENCE:**

**Arizona State University, Tempe, Arizona**

- Professor and Director, Electrical Computer and Energy Engineering, 2009 – , full time
- Professor and Department Chair, Electrical Engineering, 2005 – 2009, full time
- Professor, Electrical Engineering, 2002 – 2005, full time

**Case Western Reserve University, Cleveland, Ohio**

[Type here]
• Assistant, Associate, Professor of Electrical Engineering, 1988 – 2002, full time
• Director of the Center for Automation and Intelligent Systems, 1995 – 2002, part time

NON-ACADEMIC EXPERIENCE:
• Litton Guidance and Control, Woodland Hills, California; Electrical Engineer, 1985, full time

PROFESSIONAL REGISTRATION

• Registered Professional Engineer, Ohio, 1990-

PROFESSIONAL MEMBERSHIP

• IEEE senior member
• Eta Kappa Nu

HONORS AND AWARDS

• IEEE Vice President – Educational Activities 2020 –
• IEEE Board of Directors 2020 –
• ABET Board of Directors 2013-2015
• ABET board of Delegates 20015 – 2020
• President, Electrical and Computer Engineering Department Heads Association 2012-13
• Robert M. Janowiak Leadership and Service award, ECE Dept. Heads Assn, 2017
• IEEE Educational Activities Board, 2015 –

SERVICE ACTIVITIES

• ABET Program Evaluator 2007-2014
• IEEE Educational Activities, Treasurer 2019
• IEEE Committee on Engineering Accreditation Activities 2012-
• IEEE University Resources Committee 2012-
• Director of the School of Electrical, Computer and Energy Engineering, 2009 –
• Chair of the Department of Electrical Engineering, 2005-2009

SELECTED PUBLICATIONS AND PRESENTATIONS IN THE LAST FIVE YEARS:

• Michael Goryll, Trevor Thornton, Chao Wang, Stephen. M. Phillips, David Allee
  “Online Undergraduate Laboratories in Electrical Engineering,”
  Proceedings of the IEEE Frontiers in Education Conference, Cincinnati, 2019
• Chao Wang, Stephen. M. Phillips “Connecting Theory to Practice in an Online Introductory Signals and Systems Course,” Proceedings of the IEEE Frontiers in Education Conference, San Jose, 2018
• Stephen M. Phillips, Marco Saraniti “A fully online accredited undergraduate electrical engineering program,”
  Proceeding of the ASEE Annual Conference and Exposition, New Orleans, LA, 2016
• Stephen M. Phillips, Online Delivery of Engineering Programs: Tips You Can Use From an Experienced ABET-Accredited Program. IEEE virtual event, 8 April 2020
• Russel Meier, Stephen M. Phillips, Ece Yaprak, Reimagining the Student Experience virtual conference:

RECENT PROFESSIONAL DEVELOPMENT:

• Strategies for Effective Delivery of Online Engineering Courses. Presented by Babak Beheshti, Dean, New York Polytechnic. IEEE virtual event 21 April 2020
• Engineering Education 2.0: Models, Methods and Techniques for Innovation, Presented by Arnold Pears, Chair of Learning in Eng. Science, KTH Sweden, 1 PDH 30 Sept 2020

IEEE virtual series on remote learning:

• Ditching the Traditional College Lecture in Remote Instruction, 1 PDH, 27 July 2020
• Managing remote Teams, 1 PDH 28 July 2020
• Making Labs Effective with Remote Learning, 1 PDH 29 July 2020
• Student Assessments for Remote Delivery, 1 PDH 30 July 2020
• Student and Data Privacy When Offering Remote Instruction, 1 PDH, 31 July 2020
DAVID REGENOLD

Education
Associate Degree, Electronics, Tri-Cities State Regional Vocational-Technical School, 1977
Bachelor of Science, Electrical Engineering, University of Tennessee, 1982
Master of Science, Electrical Engineering, Georgia Institute of Technology, 1984
Post Baccalaureate, Teacher Prep Program, Rio Salado Community college, 2004

Academic experience
University of Phoenix, Online Math Instructor, 2003-2010, part time
Arizona State University, Faculty Associate, 2015-2020, part time

Non-academic experience
General Electric Semiconductor, Design Engineer, digital/analog ASIC design, 1984-1987, full time
Intel Corporation, Design Engineer, digital processor design, 1987-2006, full time
Marvell Semiconductor, Senior Design Engineer, Memory & BIST design, 2006-2015, full time
ARM, Principal Engineer, Memory BIST design and Validation, 2015-2018, full time

Certifications or professional registrations
Associate Engineering Technician, The Institute for the Certification of Engineering Technicians, 1977
Engineer in Training, State of Tennessee, 1981

Current membership in professional organizations
Senior Member IEEE

Honors and awards
Intel Achievement Award

Service activities (within and outside of the institution)
Paper Reviewer for International Test Conference from 2017 through 2021

Important publications and presentations from the past five years
None within that time period. Currently retired from the industry

MARTIN REISSLEIN

Education
• Ph.D., Systems Engineering, University of Pennsylvania, 1998
• M.S.E., Electrical Engineering, University of Pennsylvania, 1996
• Diplom-Ingenieur (FH), Electrical Engineering, Fachhochschule Dieburg, Germany, 1994

Academic experience
• Arizona State University, Program Chair, Computer Engineering, 2018-present, full time
• Arizona State University, Professor, Electrical Engineering, 2011-present, full time
• Arizona State Univ., Associate Professor, Electrical Engineering, 2005-2011, full time
Arizona State Univ., Assistant Professor, Electrical Engineering, 2000-2005, full time

Current membership in professional organizations
- American Society of Engineering Education (ASEE), Member
- Association of Computing Machinery (ACM), Senior Member
- Institute of Electrical and Electronics Engineers (IEEE), Fellow

Honors and awards
- Friedrich Wilhelm Bessel Research Award from Alexander von Humboldt Foundation, 2015
- DRESDEN Senior Fellow, Technical University Dresden, Germany, 2016, 2019
- IEEE Transactions on Education Theodore E. Batchman Best Paper Award, 2016
- Best Paper Award of the IEEE ComSoc Techn. Committee on Communications Systems Integration and Modeling, 2017
- IEEE Education Society Outstanding Chapter Leadership Award, 2018

Service activities (within and outside of the institution)
- Computer Networks (Elsevier), Associate Editor, 2009-present
- IEEE Access, Associate Editor, 2017-present
- IEEE Commun. Surveys & Tutorials, Area Editor, Optical Communications, 2018-present
- IEEE Transactions on Education, Associate Editor, 2013-present
- IEEE Transactions on Mobile Computing, Associate Editor, 2017-present
- IEEE Transaction on Network and Service Management, Associate Editor, 2021-present
- Optical Switching and Networking (Elsevier), Co-Editor-in-Chief, 2018-present
- Wiley Encyclopedia of Electr. and Electronics Eng., Associate Editor for Networking, 2020-present

Most important publications and presentations from the past five years
CHRIST D. RICHMOND, PH.D.

1. Education:
   - Doctorate of Philosophy in Electrical Engineering (Ph. D.), MIT 1996
   - Electrical Engineering (E. E.) Degree, MIT 1995
   - Master of Science in Electrical Engineering and Computer Science (S. M.), MIT 1993
   - Bachelor of Science in Electrical Engineering with Honors, University of Maryland College Park 1990
   - Bachelor of Science in Mathematics Summa Cum Laude with Honors, Bowie State University 1990

2. Academic Experience
   - Associate Professor, School of Electrical, Computer and Energy Engineering (ECEE), Arizona State University, Tempe, AZ, July 2017—Present (full-time)
   - Lecturer (in-charge) and Associate of the John A. Paulson School of Engineering and Applied Science, Harvard University, teaching ENG-SCI 250 Information Theory, July 2014 – December 2015 (half-time)

3. Non-Academic Experience
   - Senior Staff, Advanced RF Sensors Techniques Group, MIT Lincoln Laboratory, Lexington, MA, August 1996 – June 2017 (full-time). Led research teams as principal investigator on several programs in the development of adaptive algorithms for detection and parameter estimation, performance bounding for active and passive radar/sonar, adaptive communications and passive RF geolocation systems.

4. Professional Organizational Memberships
   - IEEE, Fellow:
     IEEE Signal Processing Society, IEEE Information Theory Society,
     IEEE Aerospace & Electronic Systems Society, IEEE Ocean Engineering Society
   - Acoustical Society of America, Full Member
   - Tau Beta Pi, and Golden Key National Honor Society

5. Honors and Awards / Recognition
   - Elevated to IEEE Fellow for contributions to adaptive array processing algorithms, January 2020.
   - MIT Lincoln Laboratory Medal for teaching (Technical Education Committee) 2015
   - Promoted to Senior Staff, MIT Lincoln Laboratory, July 2010
   - Office of Naval Research (ONR) Graduate Fellowship Award, 1990—1994

6. Professional Service
   - IEEE Radar Systems Panel, elected to serve October 2020 for a 3 year term.
   - Senior Associate Editor for IEEE Signal Processing Letters, August 2018—Present

7. Important Publications:

[Invited Paper, Special Session: Robust Sensing and Detection in Congested Spectrum]


8. Professional Development Activity

- Participated in the 2019 NSF Minority Faculty Development Workshop held at Harvard University, Cambridge, MA.
LALITHA SANKAR
Assistant Professor
Arizona State University, Tempe, AZ 85287.

EDUCATION:

- Ph.D., Electrical Engineering, Rutgers University, 2007
- M.S., Electrical Engineering, University of Maryland, 1992
- B.S., Electrical Engineering, Indian Institute of Technology, Bombay, 1992

ACADEMIC EXPERIENCE:

Arizona State University, Tempe, Arizona
- Assistant Professor, Electrical Computer and Energy Engineering, 2012 – , full time

Princeton University, Princeton, New Jersey
- Research Scholar, Electrical Engineering, 2010-2012, full time
- Science and Technology Postdoctoral Fellow, Electrical Engineering, 2007-2010, full time

Rutgers, The State University of New Jersey, Piscataway, New Jersey
- Graduate Assistant, Electrical and Computer Engineering, 2002-2007

NON-ACADEMIC EXPERIENCE:

AT&T Shannon Labs, Florham Park, New Jersey
- Senior Member of Technical Staff, 1995-2002, full time

Polaroid Corporation, Cambridge, Massachusetts
- Principal Engineer, 1994-1995, full time

PROFESSIONAL MEMBERSHIPS


HONORS AND AWARDS

- IEEE Information Theory Society Distinguished Lecturer Jan 2020-- Dec 2022
- Lead PI, NSF HDR Institute Grant on Data Science for Electric Grid Monitoring 2019-2021
- NSF CAREER Award 2014
- IEEE Globecom Best Paper Award 2011

SERVICE ACTIVITIES

1. Conference Chair, IEEE SmartGridComm Conference 2020. Phoenix, USA
2. Area Chair NeurIPS 2020 and TPC member IEEE ISIT 2012-2021
4. 2020-2022: IEEE Information Theory Society Distinguished Lecturer
5. Introduced and developed EEE598: Statistical Machine Learning: From Theory to Practice
6. Graduate Program Chair, PhD program in Data Science, Analytics, and Engineering
7. Leading the MS in Data Science Program across ASU Engineering in collaboration with FSE Assistant Dean of Graduate Program Office

SELECTED PUBLICATIONS AND PRESENTATIONS IN THE LAST FIVE YEARS:


SARANITI, Marco

POSITION TITLE: Professor of Electrical Engineering

RESEARCH AND PROFESSIONAL EXPERIENCE:

PROFESSIONAL PREPARATION

<table>
<thead>
<tr>
<th>Institution</th>
<th>Major</th>
<th>Degree</th>
<th>Year</th>
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<tbody>
<tr>
<td>University of Modena, Italy</td>
<td>Physics</td>
<td>B.A.</td>
<td>1991</td>
</tr>
<tr>
<td>Technische Universität München, Germany</td>
<td>Physics</td>
<td>PhD</td>
<td>1996</td>
</tr>
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APPOINTMENTS

<table>
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<tr>
<th>Year</th>
<th>Position Title</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-present</td>
<td>Vice Dean for Faculty Administration</td>
<td>Arizona State University</td>
</tr>
<tr>
<td>2007</td>
<td>Professor</td>
<td>Arizona State University</td>
</tr>
<tr>
<td>2004</td>
<td>Associate Professor</td>
<td>Illinois Institute of Technology</td>
</tr>
<tr>
<td>2005</td>
<td>Visiting Scientist</td>
<td>Univ. of Illinois Urbana-Champaign</td>
</tr>
<tr>
<td>1998</td>
<td>Assistant Professor</td>
<td>Illinois Institute of Technology</td>
</tr>
<tr>
<td>1996</td>
<td>Faculty Res. Associate</td>
<td>Arizona State University</td>
</tr>
<tr>
<td>1991</td>
<td>Graduate Res. Associate</td>
<td>Technische Universität München, Germany</td>
</tr>
</tbody>
</table>

PUBLICATIONS

Dr. Saraniti is author/co-author of over 65 journal publications, 1 book, 4 book chapters, and several technical reports.

FIVE RELEVANT PUBLICATIONS:


FIVE OTHER SIGNIFICANT PUBLICATIONS:


**Graduate Advisees:** Shela Wigger (Synopsis) Jinsong Tang, Yibing Hu, Julien Branlard (Deutsches Elektronen-Synchrotron, Hamburg, Germany), Pawel Osuch, Sebastien Beysserie (Apple, CA), David Marreiro (On Electronics), Alex Smolyanitsky (NIST, CO), Nicolas Faralli (Google, CA), Fabio Marino (Qualcomm, CA), Diego Guerra (SpaceX, CA), Flavio Sabatti (Keysight, CA), Riccardo Soligo (Global Communication Semiconductors, CA), Alvaro Latorre-Rey (Intel, OR), Ky Merrill (Arizona State Univ.).

**Postdoctoral Advisees:** Shela Wigger-Aboud (Synopsis), Julien Branlard (Deutsches Elektronen-Synchrotron, Hamburg, Germany), Nicolas Faralli (Google, CA), Fabio Marino (Qualcomm, CA), Richard Akis, Ky Merrill (Arizona State Univ.).
JAE-SUN SEO

Education
- Ph.D., Electrical Engineering, University of Michigan, Ann Arbor, 2010
- M.S., Electrical Engineering, University of Michigan, Ann Arbor, 2006
- B.S., Electrical Engineering, Seoul National University, 2001

Academic experience
- Associate Professor (2020–Present), School of ECEE
- Assistant Professor (2014–2020), School of ECEE

Non-academic experience
- Visiting Faculty, Intel Circuits Research Lab, 2015
- Research Staff Member (full time), IBM T. J. Watson Research Center, 2010–2013

Current membership in professional organizations
- IEEE Senior Member
- IEEE Solid-State Circuits Society (SSCS) Member
- IEEE Circuits and Systems Society (CASS) Member
- ACM Member

Honors and awards
- Intel Outstanding Researcher Award, 2021
- Facebook Reality Labs Distinguished Faculty Award, 2020
- National Science Foundation CAREER Award, 2017
- IBM Major Outstanding Technical Achievement Award, 2012

Service activities (within and outside of the institution)
- ASU ARCS (Achievement Rewards for College Scientists) fellowship review committee member, 2018–2019
- ASU School of ECEE faculty search committee member, 2017, 2020
- ASU School of ECEE MSE comprehensive exam coordinator in circuits area, 2017–2018
- Associate Editor for IEEE Open Journal of the Solid-State Circuits Society (OJ-SSCS), 2020–present
- Editorial Review Board (ERB) member for IEEE Solid-State Circuits Letters (SSC-L), 2017–present

Important publications and presentations from the past five years
- Shihui Yin, Bo Zhang, Minkyu Kim, Jyotishman Saikia, Soonwan Kwon, Sungmeen Myung, Hyunsoo Kim, Sang Joon Kim, Mingoo Seok, and Jae-sun Seo, “PIMCA: A 3.4-Mb Programmable In-Memory Computing Accelerator in 28nm for On-Chip DNN Inference,” IEEE Symposium on VLSI Circuits, June 2021


**Briefly list the most recent professional development activities**

• “Introduction Into In-Memory Computing and Efficient AI Processing at the Edge” Presentation as part of the Educational Workshop “Edge AI and In-Memory-Computing for energy efficient AIoT solutions” at 2020 European Solid-State Circuits Conference


• “Structured Sparsity and Low-Precision Quantization for Energy-/Area-Efficient DNNs” Presentation as part of the Forum “ML at the Extreme Edge: Machine Learning as the Killer IoT App” at 2020 IEEE International Solid-State Circuits Conference (ISSCC)

• “The Role of NVM, Emerging Memories and In-Memory Compute for Edge AI” Panel at 2020 TinyML Summit

• “Early Career Workshop” Panel at 2018 ACM/IEEE Design Automation Conference (DAC)

**BRIAN J. SKROMME, PROFESSOR**

**EDUCATION**

• Ph.D., Electrical Engineering, University of Illinois at Urbana-Champaign, 1985
• M.S., Electrical Engineering, University of Wisconsin-Madison, 1980
• B.S. (with high honors), Electrical Engineering, University of Wisconsin-Madison, 1978

**ASU ACADEMIC EXPERIENCE**

• 2011-2019  Assistant Dean, Fulton Schools of Engineering, Arizona State University, 50% time
• 2006-present  Professor, Arizona State University, full time
• 1989-2006  Associate Professor, Arizona State University, full time

**NON-ACADEMIC EXPERIENCE**

• 9/07-5/08  Device Development Engineer (sabbatical leave), Freescale Semiconductor, Tempe, AZ, full time
• 9/98-5/99  Visiting Researcher in SiC and GaN device group of Syd Wilson, & 5/00-8/00  Materials Technology Laboratories, Motorola SPS, Tempe, AZ, full time
• 1985-1989  Member of Technical Staff, Bellcore, Red Bank, NJ, full time
• 1978-1985  Research Assistant, University of Illinois at Urbana-Champaign, 50% time

**CURRENT MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

• IEEE Senior Member
• Eta Kappa Nu
• American Society for Engineering Education

**HONORS AND AWARDS**

• Top 5% Teaching Award, Fulton Schools of Engineering
• Golden Key National Honor Society Outstanding Professor Award

[Type here]
• Eta Kappa Nu Young Faculty Teaching Award
• Best published student paper, 1984 Electronic Materials Conference
• Best oral student paper, 1982 Electronic Materials Conference

SERVICE ACTIVITIES

University (including college and department levels)
• University Graduate Council, 2014-17
• ASU General Studies Council, 2013-16 (including Chair, CS/MA Subcommittee)
• University Academic Integrity Committee 2017-2019

Professional
• Program Committee, 2013-2015, 2017 Frontiers in Education Conferences
• Served as volunteer moderator, Arizona Middle School Science Bowl (2014-2021)
• Member, Board of Directors, Arizona Nanotechnology Cluster (2013-present)
• Panelist for National Science Foundation; reviewer for various journals and conference publications

PRINCIPAL PUBLICATIONS (selected from 2015-2020)


PROFESSIONAL DEVELOPMENT ACTIVITIES

[Type here]
• Attended Frontiers of Education Conference and presented papers, 2015, 2016, 2019

ANDREAS SAVVA SPANIAS, PROFESSOR AND CENTER DIRECTOR

School of Electrical, Computer and Energy Engineering, ASU

Education

• Ph.D. 1988, Dept. of Electrical and Computer Eng., WVU.
• M.S. 1985, Dept. of Electrical and Computer Eng., WVU.
• B.S.E.E. 1983, Dept. of Electrical and Computer Eng., WVU.
• HTI Diploma, Nicosia Cyprus, 1979

Academic Experience

• Aug. 2009-present, Director SenSIP Center and NSF I/UCRC Industry Consortium, ASU.
• Aug. 2014-present, Senior Sustainability Scientist, Global Inst. of Sustainability, ASU.
• Aug. 2003-2011, Founding Associate Director of School of Arts, Media and Engineering, ASU.
• Aug. 1997-present, Professor, School of Electrical, Computer and Energy Engineering, ASU.
• Aug. 1993-July 1997 Associate Professor, Department of Electrical Engineering, ASU.
• Aug. 1988-July 1993 Assistant Professor, Department of Electrical Engineering, ASU.
• Aug 1983-Aug. 1988 Graduate Research Assistant, Funded by Naval Research Labs, ECE, WVU.

Memberships

• 2019 Elected Senior Member of the National Academy of Inventors (NAI), August 2019
• 2019 National Academy of Inventors (NAI) ASU Chapter, April 2019.
• IEEE Fellow (elected in 2003 for contributions in speech processing).

Honors and Awards

• 2019, 2020 Top 5% faculty in teaching award recipient, IAFSE Schools of Engineering, ASU, 2020.
• 2018 IEEE Region 6 Award “For Outstanding Research & Education Contributions in SP.”
• 2018 IEEE Phoenix Chapter Award “For significant innovations and patents”
• 2015 Harden-Simmons Prize Paper Award on Power Amplifier Linearization Techniques.
• 2012 Premier Award for iJDSP iPhone software (Plenary 500 attendees, IEEE FIE Seattle)
• 2004 IEEE Distinguished Lecturer in signal processing (7 international invited seminars in 2004).
• 2005 IEEE Signal Processing Soc. Award for Meritorious Service
• 2002 IEEE Donald G. Fink Prize Paper "Perceptual Coding of Digital Audio."
• 1993 Award Intel for "Contributions in the Development of the Intel 60172 SP Architecture."

Service Activities

• General Conference Co-Chair, (with Dr. Cochran) IEEE ICASSP-1999
• ECEE Systems Area Committee, Member 1988-present, Chair 1998-2016, Member.
• ECEE Graduate Committee, Chair 1996-97, Chair 2000-2008.
• IAFSE Deans Executive Committee, 2016-present.

Publications

Books


Journal Papers


Professional Development

- MIT Certificate on “Leadership Skills for Engineering and Science Faculty,” Massachusetts Institute of Technology, Short Programs, June 2017.
CIHAN TEPEDELENIOGLU

Education

B.S.  Electrical Engineering  Florida Institute of Technology  1995
M.S.  Electrical Engineering  University of Virginia   1998
PhD.  Electrical and Computer Engineering  University of Minnesota  2001

Academic experience

Arizona State University  Associate Professor (Electrical Engineering)  Aug. 2007 – Present
Arizona State University  Assistant Professor (Electrical Engineering)  Jun. 2001 – Aug. 2007

Current membership in professional organizations

Senior Member, IEEE

Honors and awards

Early Career Award from NSF, 2002-2007;
Outstanding Teaching Award, IEEE Phoenix Section, 2003;

Service activities (within and outside of the institution)

Advisor to the Student Branch of IEEE at ASU, 2003-present.


Finance Chair for CAMSAP, 2017.
Important Publications from the past 5 years


J. Fan, C. Tepedelenlioglu, A. Spanias, “Graph-Based Classification with Multiple Graph Shift Matrices”, IEEE Transactions on Signal and Information Processing over Networks, (to appear).


TREVOR J. THORNTON

Education

- BS, Physics and Theoretical Physics, Cambridge University, Cambridgeshire, UK, 1983
- PhD, Physics and Theoretical Physics, Cambridge University, Cambridgeshire, UK, 1987

Academic experience

- Cambridge University, Cambridge, Cambridgeshire, UK, Junior Fellow of Corpus Christi College, 1986 – 1988, full time
- Imperial College London, UK, Lecturer, Electrical Engineering, 1990 – 1996, full time
- Imperial College London, UK, Reader, Electrical Engineering, 1996 – 1998, full time
- Arizona State University, Tempe, AZ, Professor of Electrical Engineering, 1998 – Present, full time

Non-academic experience

- Bell Communications Research (Bellcore), Red Bank, NJ, Member of Technical Staff, 1988 – 1989, full time

Current membership in professional organizations

- Senior Member, IEEE

Honors and awards


Service activities

- ECEE Personnel Committee, Chair
- ASU NanoFab Governance Board, Member
- Secretary of the Waves and Devices Chapter of the IEEE Phoenix Section (http://ewh.ieee.org/r6/phoenix/wad/)

Publications

- V. Jha, H. Surdi, M. F. Ahmad, F. Koeck, R. J. Nemanich, S. Goodnick and T. J. Thornton
  "Diamond Schottky p-i-n Diodes for High Power RF Receiver Protectors"
  Solid State Electronics, in preparation, 2021
- H. Surdi, M. F. Ahmad, F. Koeck, R. J. Nemanich, S. Goodnick and T. J. Thornton
  "RF Characterization of Diamond Schottky pin Diodes for Receiver Protector Applications."
- X. Zhang, P. Mehr, and T. J. Thornton,
  "Self-Heating in 40 nm SOI MOSFETs on High Resistivity, Trap- Rich Substrates".
- P. Mehr, S. Moallemi, X. Zhang, W. Lepkowski, J. Kitchen, and T. J. Thornton,
  "CMOS-Compatible MESFETs for High Power RF Integrated Circuits"
- S. Moallemi, P. Mehr, K. Grout, T. J. Thornton and J. Kitchen,
  "Adaptive Power Control Using Current Adjustment for Watt-Level Power Amplifiers in CMOS SOI,"
- P. H. Mehr, W. Lepkowski, and T. J. Thornton
  "K-Band CMOS-Based MESFET Cascode Amplifiers"
  IEEE Microwave and Wireless Components Letts, vol. 28, pp. 609 – 611, July 2018
  “CMOS-Compatible MESFETs for High Power RF Integrated Circuits”
IEEE Trans. Semiconductor Manufacturing, vol. 31 pp. 1 – 8, August 2018

- P. H. Mehr, W. Lepkowski, X. Zhang, S. Moallemi, J. Kitchen and T. J. Thornton,
  "Enhanced voltage silicon NFET-MESFET cascode amplifiers integrated on a 45nm SOI CMOS technology
  for RFIC applications"
  28th Annual SEMI Advanced Semiconductor Manufacturing Conference (ASMC), Saratoga Springs, NY,
  USA, 2017, pp. 342-345. doi: 10.1109/ASMC.2017.796925

- T. J. Thornton, W. Lepkowski, and S. J. Wilk
  "Impact Ionization in SOI MESFETs at the 32-nm Node",

- M. Pepper and T. J. Thornton and D. A. Wharam
  "Early work on semiconductor quantum nanoelectronics in the Cavendish Laboratory"

- R. Tsui, R. Ehrmann, R. Furlan, and T. J. Thornton
  "Surveying the Sustainability of Nanotechnology Workforce Education Programs in the United States"
GEORGIOS TRICHOPOULOS

Education
PhD in Electrical and Computer Engineering, The Ohio State University (2013)

Academic experience:
- Assistant Professor – Arizona State University, ECEE 2015- present
- Senior Researcher - The Ohio State University, ECE 2014 - 2015
- Postdoctoral Researcher - The Ohio State University, ECE 2013 – 2014

Non-academic experience:
- TeraProbes Inc, Chief Technology Officer, 2014- present

Current membership in professional organizations
- Institute of Electrical and Electronic Engineers (IEEE)
- IEEE Antennas and Propagation Society
- IEEE Microwave Theory and Techniques Society
- URSI Member

Honors and awards
- National Science Foundation CAREER Award 2019
- IEEE International Microwave Symposium Three-minute Thesis Competition – 3rd Place and Audience Choice Award (2018). (PhD Student Theofanopoulos)
- IEEE Antennas and Propagation Symposium Student Paper Competition - Honorable Mention (2018). (PhD Student Theofanopoulos)
- IEEE Antennas and Propagation Symposium Student Paper Competition - Finalist (2014). (Caglayan, Trichopoulos, Sertel)
- OSU ElectroScience Laboratory Best Paper Award (2014). (Caglayan, Trichopoulos, Sertel)
- Inspiration Award - ElectronicProducts.com (technology portal) (2014) – (Trichopoulos, Sertel)
- 1st place in IEEE Antennas and Propagation Symposium Student Paper Competition (2013). (Trichopoulos, Sertel)

Service activities

International/national conferences committees
- 12th International Workshop on Low Temperature Electronics 18–21 September 2016, Tempe, AZ, USA.
- 31ST IEEE International Symposium on Space Terahertz Technology (2020, Local Organizing Committee)

International/national conferences sessions organized

[Type here]
University Services and Facilities Committee – NanoFab Core Facility Governance Board (Board Member, Elected, 2020- present)

Important publications and presentations from the past five years


Briefly list the most recent professional development activities

- Co-founded (with Prof. Imani) the Applied Electromagnetics Colloquium @ ASU (2021)
- (3 invited talks as of May 15, 2021)
- New Faculty Advisory Council (2016-2018) – Chair of the subcommittee for junior faculty mentoring.
- Mentored the Phoenix 3U Cubesat Team – Antenna Design and Communications Team
- Mentored 1 high school student in the summer 2018
- Mentored 2 undergraduate students in research projects (FURI Award)
- Mentored 7 graduate MS students in research projects (MORE Award)
KONSTANTINOS S. TSAKALIS

Professor, ECEE Undergraduate Program Chair

EDUCATION

• Ph.D., Electrical Engineering, University of Southern California, Aug. 1988.
• M.S., Electrical Engineering, University of Southern California, Dec. 1985.
• M.S., Chemical Engineering, University of Southern California, May 1984.
• Professional Diploma (B.Sc.), Chemical Engineering, NTUA, Greece, June 1983.

FACULTY APPOINTMENTS

• 2016-present: Undergraduate Program Chair, ECEE, Arizona State University.
• 2003-present: Professor, Department of Electrical Engineering, Arizona State University.
• 1994-2003: Associate Professor, Dept. of Electrical Engineering, Arizona State University.
• 1988-1994: Assistant Professor, Dept. of Electrical Engineering, Arizona State University.

RELATED NON-ACADEMIC EXPERIENCE

• InControl Engineering LLC, 2008 - present, Founder and Managing Partner
• Aug.-Dec. 2004: Visiting Professor, Department of Physics, University of Athens, Greece.
• May-Jun. 1998: Visiting Professor, Department of Physics, University of Athens, Greece.
• Consulting Experience And Patents, 1998-Present: Consulting with Semy Engineering, Semitool, Brooks Automation, Applied Materials, Honeywell, EPRI on applications of control, optimization, and system identification.

SOCIETY MEMBERSHIPS


HONORS AND AWARDS

• GreyDyne LLC (with A. Shafique): Dec 2018 - won the Skysong ASU Researcher Accelerator startup competition, Apr 2018 – won the Allstate Venture Challenge.
• Co-developer of the embedded controller SEMY’s MBTC, (U.S. Patent No. 5,895,596) that received an “Editor’s Choice Best Product Award” for 1998, by Semiconductor International (installed in more than 400 production furnaces world-wide).

INSTITUTIONAL AND PROFESSIONAL SERVICE (2015-2021)

• Associate Editor, IMA Journal on Mathematical Control and Information (2013-)
• Student Programs Chair for 2017 American Control Conference
• Member of the IFAC Technical Committee “Adaptive and Learning Systems” (2015-2017)
• Member of the Program Committee for the “Industrial Controls” track of ETFA 2015 Conf.
• International Program Committee for the IASTED conferences MIC 2006--2016.
• University Committee Service: Faculty Senate (2006-), Research and Creative Activities Committee (University, 2008-2010, 2014-), High-Performance Computing Committee (University, 2014-), Standards Committee (College, 2000-), Undergraduate Committee, (2005-2016), Personnel Committee, EE Dept. (2003-)


RECENT PROFESSIONAL DEVELOPMENT:

- Start-up company GreyDyne (with Shafique): Dec 2018 - Won the Sksyong ASU Researcher Accelerator startup competition ($25,000). Apr 2018 - Demo Day at ASU. Won the Allstate Venture Challenge $2,500
- Student Programs Chair for 2017 American Control Conference
DRAGICA VASILESKA

Professor

Education

M.S. Electrical Engineering, Ss Cyril and Methodius (1992)
BS (Diploma), Electrical Engineering, Ss Cyril and Methodius (1985)

Academic experience

- Professor Arizona State University Department of Electrical, Computer and Energy Engineering, Tempe, Arizona United States (2007 - Ongoing)
- Visiting Professor Universidade Federal do Rio Grande do Sul School of Electrical Engineering (2014 - 2014)
- Visiting Professor Purdue University, West Lafayette, Indiana United States (2006 - 2013)
- Institute for Microelectronics, Technical University of Vienna, Vienna Austria (2012 - 2012)
- Associate Professor Arizona State University, Tempe, Arizona United States (2003 - 2007)
- Purdue University, West Lafayette, Indiana United States (2005 - 2006)
- Assistant Professor Arizona State University, Tempe, Arizona United States (1997 - 2003)
- Faculty Research Associate Arizona State University, Tempe, Arizona United States (1995 - 1997)
- Graduate Research Associate Arizona State University, Tempe, Arizona United States (1991 - 1995)

Current membership in professional organizations

- IEEE Fellow (‘F2019)

Honors and awards

- NSF, CAREER 1998
- Fulbright Specialist program (2011 - 2012)

Service activities (within and outside of the institution)

- MSE Examination Committee (Solid State Area), (School of Electrical, Computer and Energy Engineering)
- Undergraduate Committee, (School of Electrical, Computer and Energy Engineering)
- Served as a Fulbright Mentor/Application Reviewer for year 2019, (School of Electrical, Computer and Energy Engineering), 2019
- IWCN, Committee Title: International Advisory and Program Committee, Role or Position: Member, 2012-Present
- Journal of Computational Electronics: Editorial Board Member.
- International Workshop for Computational Nanotechnology (IWCN): Organizing and Program Committee member for IWCN 2019.
- Organizing Committee Member of the 2017 IWCN Conference.
- Session Chair, IEEE IEDM, December 2-7, 2017, San Francisco, CA.

Most important publications and presentations from the past five years –

Books:

- D. Vasileska, Editor, Cutting Edge Nanotechnology, In-Tech, March 2010.

Recent Journal Papers:


VISAR BERISHA
Associate Professor

EDUCATION:
• Ph.D., Electrical Engineering, Arizona State University, 2007
• M.S. Electrical Engineering, Arizona State University, 2005
• B.S., Electrical Engineering, Arizona State University, 2002

ACADEMIC EXPERIENCE:
Arizona State University, Tempe, Arizona
• Associate Professor, Electrical Computer and Energy Engineering and Speech and Hearing Science, 2019 – present, full time
• Assistant Professor, Electrical Computer and Energy Engineering and Speech and Hearing Science, 2013 – present, full time

NON-ACADEMIC EXPERIENCE:
• Raytheon Co, Tucson, Arizona; Principal Research Engineer, 2009 - 2013
• MIT Lincoln Laboratory, Boston, Massachusetts; Technical Staff, 2007 – 2009

PROFESSIONAL MEMBERSHIPS
• IEEE Member
• Acoustical Society of America Member

HONORS AND AWARDS
• College of Health Solutions Research Award, 2021
• 2016 Editor's Award for Journal of Speech, Language, and Hearing Research, 2016
• Harvard Business School New Venture Competition Finalist, (Southwest), 2015
• Vodafone Wireless Innovation Challenge Finalist, 2014

SERVICE ACTIVITIES
• IEEE Speech and Language Technical Committee
• Associate Editor for Journal of Alzheimer’s Disease (2014 - 2016)
• Member of PhD Committee (SHS)

SELECTED PUBLICATIONS AND PRESENTATIONS IN THE LAST FIVE YEARS:


RECENT PROFESSIONAL DEVELOPMENT:

• IEEE Conference on Acoustics and Speech Signal Processing, 2021
• Interspeech Conference, 2020
• NeurIPS Conference, 2020
• AISTATS Conference, 2020

VIJAY VITTAL

Education:

• B.M.S. College of Engineering, Bangalore, India, Electrical Eng., B.E. 1977
• Indian Inst. Of Technology, Kanpur, India, Electrical Eng., M.T. 1979
• Iowa State University, Ames, Iowa, Electrical Eng., Ph.D. 1982

Academic Experience:

2005- Present Regents’ Professor, Ira A. Fulton Chair Professor, ASU Foundation Professor in Power Systems, School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ

2000 - 2004 Murray and Ruth Harpole Professor

1990 - 2004 Professor, Electrical Engineering and Computer Engineering Department
Iowa State University, Ames, IA

1986 - 1990 Associate Professor, Electrical Engineering and Computer Engineering Department Iowa State University, Ames, IA

1982 - 1986 Assistant Professor, Electrical Engineering and Computer Engineering Department Iowa State University, Ames, IA

Non-Academic Experience

1993-1994 Program Director for Power Systems, National Science Foundation, Division of Electrical & Communication Systems, Washington, DC

Current Membership in Professional Organizations

Life Fellow IEEE

Honors and Awards:

[Type here]
2019  IEEE Power and Energy Society, Best Transactions Paper Award
2019  Inaugural Class of Foreign Fellows of the Chinese Society of Electrical Engineers
2018  IEEE Power and Energy Society, Prabha S. Kundur Power System Dynamics and Control Award
2018  Utility Variable-Generation Integration Group (UVIG) Achievement Award
2013  IEEE Herman Halperin Electric Transmission and Distribution Award – IEEE Technical Field Award
2004  Elected to the U.S. National Academy of Engineering
2000  Outstanding Power Engineering Educator Award
1997  Elected Fellow of the Institute of Electrical and Electronics Engineers
1985  Presidential Young Investigator Award, received from the President of the United States in recognition of research and teaching abilities

Service Activities:
2021 – 2023  IEEE Fellows Committee
2020 – 2022  IEEE PES Vice President for Technical Activities
2020 – 2022  IEEE PES Chair, Technical Council
2018 – 2020  IEEE PES Vice Chair, Technical Council
2016 – 2018 IEEE PES Secretary, Technical Council
2005 – 2011  Editor in Chief IEEE Transactions on Power Systems

Publications:

Professional Development Activities
2005 – 2020  Director, NSF I/UCRC – Power Systems Engineering Research Center – One of NSF’s largest I/UCRCs
2017  Sabbatical at three of India’s leading technology institutions, - IIT Delhi, Indian Institute of Science, Bengaluru, and IIT Bombay – Taught courses and interacted with faculty on research. This led to the organization in 2019 of a US NSF, Japan ST, Norway SC, and India DST international workshop on cooperative research at IIT Bombay
2014  Served as a Ministry of Human Resource Development, India, external reviewer for the ECE Department at IIT Kanpur

[Type here]
2007  Member of the National Research Council Committee to examine the vulnerability of the electric grid to malicious attacks.

CHAO WANG

EDUCATION  Ph.D. in Electrical Engineering, University of Wisconsin, Madison, 2009
M.S. in Computer Science, University of Louisianan, Lafayette, 2001
M.S. in Telecommunications, University of Louisiana, Lafayette, 2000
B.E. in Wireless Engineering, Beijing University of Posts and Telecommunications, 1998

ACADEMIC EXPERIENCE
2016 – present       Senior Lecturer, Ira A. Fulton Schools of Engineering, Arizona State University
2010 – 2016       Lecturer, Ira A. Fulton Schools of Engineering, Arizona State University

PROFESSIONAL MEMBERSHIP
Member, American Society for Engineering Education (ASEE) since 2015
Member, Institute of Electrical and Electronics Engineers (IEEE) since 2019
Member, IEEE Education Society since 2019

AWARDS AND HONORS
Engineering Unleashed Fellow, 2020
1st Place Award for Best Paper in the First-Year Programs Division, Best Professional Interest Council (PIC) III Paper and Best Overall PIC Paper, American Society for Engineering Education (ASEE) 2020 Annual Conference, June 2020
2nd Place Award from 2020 ASEE Best Card Competition, June 2020
Best Paper Finalist, First-Year Programs Division, American Society for Engineering Education (ASEE) 2015 Annual Conference, June 2015

SERVICE
Mentorship  Senior Design Project, “Drone Detection System via Radar”, ECEE, ASU, Fall 2020, Spring 2021
Senior Design Project, “Auto-Follow System”, ECEE, ASU, Spring 2018 – Fall 2018
Fulton Undergraduate Research Initiative (FURI) Project, “MYO – Integrated Hand Prosthesis”, ASU, Spring/Summer 2018
Student Club “Society of Asian Scientist and Engineers”, ASU 2019 - present
Student Club “Giraffe”, ASU, 2017-18
Senior Design Project, “Calvary Band”, ECEE, ASU, Fall 2016 – Spring 2017
Senior Design Project, “Smart Home Dynamic Lighting”, EECE, ASU, Fall 2016 – Spring 2017
Committees

FSE100 Curriculum Committee, Ira A. Fulton Schools of Engineering, ASU, 2019-2020

Fulton Outstanding Lecturer Award Selection Committee, Ira A. Fulton Schools of Engineering, ASU, April 2017-18

Standards Committee, Ira A. Fulton Schools of Engineering, ASU, 2015-19

Senior Lecturer Promotion Committee, Ira A. Fulton Schools of Engineering, ASU, December 2016, 2018, 2019

Reviewer

American Society for Engineering Education (ASEE) Annual Conference, 2016-17, 2020-2021

Frontier in Education (FIE), 2020

Others

Chair of IEEE Education Society Phoenix Chapter (2020 – present)

PUBLICATIONS


PROFESSIONAL DEVELOPMENT ACTIVITIES

KEEN 200-300 Workshop, ASU, Fall 2019 & Spring 2020

KEEN Workshop on Motivation and Mindset, Atlanta, Georgia, August 12-15, 2019

Hacking for Defense Educators Course, Ann Arbor, Michigan, June 5 – 7, 2019
CHAO WANG (2)

EDUCATION AND TRAINING

POSITIONS AND EMPLOYMENT
- 2016.2– Assistant Professor, Arizona State University
- 2015.1–2016.1 Research Assistant Professor, Arizona State University
- 2012.3–2014.12 Postdoctoral research scientist, IBM T.J. Watson research center

RESEARCH AND PROFESSIONAL EXPERIENCE
- Member, EIPBN conference program committee
- Member, Materials Research Society
- Reviewer, NSF CMMI Nanomanufacturing panel
- Member, American Physical Society
- Member, ASU Nanofab Governance Board
- Member, Institute of Electrical and Electronics Engineers
- Reviewer, NSF CCF Foundations of Emerging Technologies panel

ASU INTERNAL SERVICE
2021.2 - ASU ECEE faculty search committee (Quantum information processing).
2019.2 - ASU FURI faculty committee.
2019.7 - ASU Nanofab Governance Board member.
2019.9 - ECEE communications committee

HONORS AND AWARDS (SELECTED)
2019 NSF CAREER award
2013 IBM Invention Achievement Patent Plateau award.
2011 Princeton EE department Outstanding Teaching Assistant Award 2006 Graduate Fellowship, Princeton University.

SYNERGISTIC ACTIVITIES
- Reviewer of 21 scientific journals:
- Member of program committee of the International conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN, 2015 to present).
- Instructor of a senior design project of ASU undergraduate students (2018). Topic: Design a portable, handheld, smartphone spectrometer.

[Type here]
• Education and outreach activities: 2018/2020: ASU Open Door. The PI’s lab hosted visitors interested in liquid biopsy and biosensing. 2018.3: DISCOVER The Fulton Schools. The PI discussed with high-school students from Arizona interested in ECEE programs at ASU.
• Undergraduate students mentoring: 5 students (Connie Kwok, Gideon Kamau, Vaughn Mcgill Adami, Jonathan Zhao, and Chau Nguyen)
• High-school student mentoring: 7 students, from 2017 to now.

REFEREED PUBLICATIONS (SELECTED, THE PAST 4 YEARS ONLY)
• Xiahui Chen †, Md Ashif Ikbal, Shoukai Kang, Zhi Zhao⁶, Jiawei Zuo, Yu Yao, Liangcai Gu*, and Chao Wang*, "Rapid Electronic Diagnostics of Ebola Virus with Synthetic Nanobody-Conjugated Gold Nanoparticles," Under preparation, bioRxiv 2021.05.09.443341.
• Pengkun Xia †, Jiawei Zuo, Pravin Paudel⁶, Shinhyuk Choi, Xiahui Chen, Md Ashiqur Rahman Laskar, Jing Bai, Weisi Song, JongOne Im, and Chao Wang *, "Sapphire-Supported Nanopores for LowNoise DNA Sensing," Biosensors and Bioelectronics, vol. 174, pp. 112829, 2020.

RESEARCH SUPPORT (SELECTED)
YANG WENG
Assistant Professor

EDUCATION

Huazhong University of Science & Technology, Wuhan, China, B.S., 2006
University of Illinois at Chicago, Chicago, Statistics, M.S., 2009
Carnegie Mellon University, Pennsylvania, Electrical Computer Engineering, Ph.D., 2014

ACADEMIC EXPERIENCE

<table>
<thead>
<tr>
<th>Years</th>
<th>Position</th>
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<tr>
<td>2017 – present</td>
<td>Assistant Professor, School of Electrical, Computer and Energy Engineering, Arizona State University</td>
</tr>
<tr>
<td>2014 – 2016</td>
<td>Post-Doctoral Fellow, Precourt Institute for Energy, Stanford University</td>
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CURRENT MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

IEEE Senior Member

HONORS AND AWARDS

- NSF CARRER Award, National Science Foundation, 2021
- Centennial Award, Graduate & Professional Student Association (GPSA), ASU, 2020
- Outstanding IEEE Young Professional, IEEE Phoenix Section, 2020
- Outstanding Faculty Mentor Award, Graduate School, ASU, 2020
- Best Paper Award, IEEE Sustainable Power & Energy Conference, 2019
- Best Paper Award, IEEE Conference on Energy Internet and Energy System Integration, 2018
- Best Paper Award, IEEE International Conference on Probabilistic Methods Applied to Power Systems, 2017
- Best Paper Award at the IEEE International Conference on Smart Grid Communications, Taiwan, 2012

SERVICE ACTIVITIES

- Consortium Chair, Comprehensive Cybersecurity Technology for Critical Power Infrastructure AI-Based Centralized Defense and Edge Resilience, Israel-U.S. Binational Industrial Research and Development Foundation, 2021 - Now
- Chair, Taskforce on Tutorial, IEEE PES Big Data & Analytics Subcommittee, 2017 - Now
- Chair, IEEE Phoenix Section - Conference Committee, 2019 - Now
- Publication Co-Chair, IEEE North American Power Symposium, 2021
- Chair, Tutorials, IEEE International Conference on Communications, Control, and Computing
- Technologies for Smart Grids (SmartGridComm), 2020
- Tutorial Speaker, Machine Learning and Big Data Analytics in Smart Grid, IEEE PES General Meeting, Montreal, Canada, 2020
KEY RELATED PUBLICATIONS (GOOGLE SCHOLAR H-INDEX = 20 AS OF FEB 2020)

- Q. Cui, Y. Weng, and C. Tan, “Electric Vehicle Charging Station Placement Method for Urban Areas”, IEEE Transactions on Smart Grid, 2019
MARNIE WONG

Education
Master of Science, Electrical Engineering, Arizona State University, Dec. 2006

Academic experience
Arizona State University, Senior Lecturer, 2015 – current, full time

Non-academic experience
- Cactus Semiconductor, Product Engineer, Jan. 2015 – June 2015, Part Time

Certifications or professional registrations –
- Master Online Teaching Certification, Arizona State University, Oct 2016

Current membership in professional organizations
ASEE (American Society for Engineering Education)

Honors and awards
Top 5% Teaching Award, Arizona State University, 2020-21

Service activities (within and outside of the institution)
- Fulton Schools of Engineering Academic and Student Affairs Personnel Committee member
- Faculty Advisor to the ASU Women’s Ultimate Frisbee team (Caliente)

Most important publications and presentations from the past five years
MENG WU

Education

- Texas A&M University, College Station, TX, Ph.D. in Electrical and Computer Engineering, December 2017
- Cornell University, Ithaca, NY, M.Eng. in Electrical and Computer Engineering, June 2011
- Tianjin University, Tianjin, China, B.Eng. in Electrical Engineering and Automation, July 2010

Academic experience

- Arizona State University, Tempe, AZ, School of Electrical, Computer and Energy Engineering Assistant Professor, January 2018-present
- Texas A&M University, College Station, TX, Department of Electrical and Computer Engineering Graduate Research Assistant and Teaching Fellow, 8/ 2013 – 12/2017

Non-academic experience

- Beijing Sifang Automation Co. Ltd, Beijing, China Research and Development Center, Power System Control Department Research Engineer, May 2012 – June 2013, Full Time
- China Electric Power Research Institute (China EPRI), Beijing, China Power System Department Research Engineer, August 2011 – May 2012, Full Time

Current membership in professional organizations

- Member, IEEE Power and Energy Society.

Honors and awards

- Best Project Poster Award, Power System Engineering Research Center (PSERC) Industry Advisory Board (IAB) meeting, 2015.
- Ebensberger Fellowship, Department of Electrical and Computer Engineering, Texas A&M University, 2015.
- Graduate Teaching Fellow, College of Engineering, Texas A&M University, 2015.
- Outstanding PhD Student Award, Department of Electrical and Computer Engineering, Texas A&M University, 2015.
- One-Time Graduate Merit Scholarship, Department of Electrical and Computer Engineering, Texas A&M University, 2013.

Service activities (within and outside of the institution)

- Technical program committee member, 2018~2020 IEEE International Conference on Communications, Control, and Computing Techniques for Smart Grids (SmartGridComm).
- Secretary, Research Subcommittee of IEEE Power and Energy Society Education Committee (PEEC), 2020-present.

Important publications and presentations from the past five years


JUNSHAN (JOSH) ZHANG

Education

Aug. 2000 Ph.D., ECE, Purdue University, West Lafayette, IN 47907.
July 1993 B.E., EE, Huazhong Univ. of Science & Technology (HUST), China.

Professional Experience

07/2015 - , Ira A. Fulton Chair Professor, School of ECEE, ASU, Tempe, AZ 85287.
07/2010–, Professor, School of ECEE, ASU, Tempe, AZ 85287.
07/2009–, Graduate Faculty, Computer Science program, ASU, Tempe, AZ 85287.
08/2005–06/2010, Associate Professor, School of ECEE, ASU, Tempe, AZ 85287.
05/2007–06/2007, Visiting Associate Professor, Dept. EE, Princeton University
01/2007–03/2007, Visiting Associate Professor, Dept. of ECE, Univ. of Illinois at Urbana Champaign
08/2000–07/2005, Assistant Professor, Department of EE, ASU, Tempe, AZ 85287.
01/1997–06/2000, Research Assistant, School of ECE, Purdue Univ., West Lafayette, IN 47907.

Entrepreneurship: Building on my research findings, I co-founded Smartply Inc. in 2015, a Fog/edge Computing startup company delivering boosted connectivity and embedded artificial intelligence. Smartply Inc was acquired by a Global Fortune 500 company in 2020.

Awards and Leadership/Distinctions:

- Keynote Speaker of the 2020 GLOBECOM Workshop on Edge Learning, Taipei, Taiwan, Dec 2020.
- Keynote Speaker of the ICNP workshop on AIMCOM2, Madrid, Spain, Oct. 2020.
- Plenary speaker at ICNC 2018, Maui, Hawaii.
- IEEE ICC 2017 Best Paper Award.
- Kenneth C. Sevcik Outstanding Student Paper Award of ACM SIGMETRICS 2016.
- IEEE Wireless Communications Technical Committee Recognition Award 2016.
- IEEE INFOCOM 2014 Best Paper Award Runner-up.
- Keynote speaker at WASA 2014.
- IEEE Fellow (for contributions on cross-layer optimizations in wireless networks), 2012.
- IEEE INFOCOM 2009 Best Paper Award Runner-up.
- IEEE ICC 2008 Best Paper Award.
- ONR YIP (Office of Naval Research Young Investigator) award, 2005.
- Editor-in-Chief, IEEE Transactions on Wireless Communications, 01/01/2019–.
- WTC Award Committee, IEEE Communication Society, 2017, 2018, 2019, 2020
- CTTC Award Committee, IEEE Communication Society, 2019, 2020
- General Co-chair of WiOPT 2016.

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TPC Program Co-chair of ACM MOBIHOC 2015.
IEEE Communications Society Award Committee member (2015–2017).
TPC co-chair of INFOCOM 2012.
TPC co-chair of ICC 2012.
Interviewed by Wall Street Journal (personal technology) on CDMA vs. GSM technologies for next generation iPhone on Oct. 7th 2010.
One journal paper was featured by the Technical Insights division of Frost & Sullivan, the largest global growth consulting firm www.ti.frost.com.
One-year earlier tenure promotion, 2005.
Outstanding Research Award from IEEE Phoenix Section, 2003.

References for Tenure/Promotion

- Have served as a reference for tenure/promotion cases at many universities, including Princeton University, Carnegie Mellon University, Ohio State University, Univ of Pennsylvania, Cornell University, Virginia Tech, and many other Universities.

Honor Societies and Other Honors: IEEE, ACM, ASEE

Appendix C – Program Assessment Plans and Assessment Reports