Sacramento State's College of Engineering & Computer Science (ECS) is playing a vital role in the economic and cultural revolution of Sacramento and its region. Exceptional educational opportunities are producing the next generation of innovative thinkers, problem solvers, and leaders.

As technology pervades an ever-increasing segment of daily life, the need for people with the skills and knowledge that are taught within the College of Engineering & Computer Science is ever growing in importance and demand. The College provides our students with contemporary curricula, engaging pedagogy, and in-depth research opportunities that are preparing them for a lifetime of professional achievement and intellectual growth. Our students are given hands-on learning opportunities through experiences connected to, for example, the Solar Nest House, Formula SAE Racing, the Pre-cast Pre-Stressed Concrete Institute Club, and the Computer Technology Club. The prestige of our programs also is on the rise. ECS is one of the few institutions in the country to have earned formal recognition by the National Security Agency and the Department of Homeland Security for cybersecurity education.

Our faculty within the College enhance the student experience with their passion for research, scholarship, and creative activity. ECS faculty are committed to discovery, the development of ideas, and dissemination of knowledge. Among our ranks, our faculty have received research grants from the National Science Foundation, contracts from the California Energy Commission, and support for sponsored projects from state and federal agencies and private and public organizations.

The impact of the College's work is manifested in the number of career-ready graduates. Within six months of graduation, 85% of ECS graduates secure a full-time job in their major field. Even more impressive, graduates from the Department of Construction Management have experienced 100% job placement for nearly a decade. By 2023, Sacramento State's College of Engineering & Computer Science will produce more career-ready engineers, computer scientists, and construction managers than any other college in the region.

We invite you to partner with us as we strengthen our position as the leader in engineering, computer science, and construction management education for the Sacramento region, the state, and the nation.

### On the Rise: The Campaign for Sacramento State

The Campaign for Sacramento State is supporting the College of Engineering & Computer Science as it seeks critical funds for these important initiatives:

- Create a supportive environment for student success.
- Promote effective teaching, scholarship, and professional development.
- Provide impactful service to our institution and community.

Together, we will develop tomorrow's leaders in engineering, computer science, and construction management — and keep Sacramento State On the Rise.
Hornet Leadership Program (HLP)

• The Hornet Leadership Program (HLP) is a co-curricular platform of leadership training experiences created to complement our students’ technical development. The goal of the program is to strengthen all students to serve society with excellence, distinction, and outstanding leadership qualities. With additional support, the HLP will further enhance program offerings which will create a lasting impact in the community.

Lab Renovations and Development

• For our students and faculty, we aim to improve our infrastructure for the computational and physical tools they need to advance their work related to discovery, demonstration, teaching and learning, and dissemination.

Teaching and Research Effectiveness

• Teaching, learning, and applied research are at the heart of our College. To maintain our excellence in the classroom, our faculty must continue to have the necessary time and resources to invest creative thought into innovative teaching methodologies, course content, and research opportunities.

Scholarships

• About 76% of Sacramento State students receive some level of financial aid. We want to increase scholarship funding for ECS students because academic studies have shown that students who receive financial assistance outperform students who are burdened with debt and educational repayment commitments.

Spotlight

Emergent Leadership in Action!

Students use innovative problem-solving to help respond to COVID-19 crisis

Within the College of Engineering & Computer Science (ECS), there are 45 different student organizations. These organizations are all connected to the Hornet Leadership Program, which supports students in developing their leadership skills through group settings that foster opportunities for innovation and teamwork. Emerging leaders drove one such team to form swiftly in response to the need for personal protective equipment (PPE) in March 2020.

Nine Sacramento State Mechanical Engineering (ME) students, who are active in various mechanical engineering student organizations, gave up their spring break to manufacture and deliver 3D-printed protective masks to staff at Mercy hospitals in the Sacramento region, providing critical protection to health care workers in the area.

“I am incredibly proud of our students who are so eager to provide behind-the-scenes help in protecting against the COVID-19 virus,” said professor and chair of the ME department Akihiko Kumagai.

Phil Olding, a senior ME major who has been printing in 3D for the past five years, approached Professor Kumagai and Lorenzo Smith, the ECS dean, for permission to pursue the project as reports of medical-grade mask shortages surfaced.

Students used a printing process called fused deposition modeling that encompasses a computer-aided design model to produce masks from thousands of layers of feedstock plastic filament that are extruded through a nozzle. Manufacturing a single 3D-printed mask with polylactic-acid filament can take up to five hours and the cost of materials is only about $2 per mask.

Jill Walsh, vice president of Mercy Medical Group’s board of directors, said partnerships like these are so important because there is a “critical shortage of personal protective equipment for our health care workers who are trying to save lives. This has been a wonderful collaboration with Sacramento State,” she said.

“The ability of our students to contribute to the community is central to our definition of student success,” Smith said. “Their selfless partnership with our friends in the medical community is proof that our College is leading the way in advancing student success.”