

# Karacal helps explain engineering

This summer on Segue, Southern Illinois University Edwardsville's premier radio show, host Randy Pembroke, PhD, SIUE chancellor, took the opportunity to interview various members of the University community to explore the ideas and issues occurring on campus and beyond.

On this week's episode, Pembroke speaks with Cem Karacal, PhD, dean of the SIUE School of Engineering (SOE).

The episode will air at 9 a.m. on Sunday, Aug. 12, on WSIU 88.7 FM The Sound.

Karacal earned his bachelor's in industrial engineering from Middle East Technical University in Turkey, followed by both his master's and doctorate in the discipline from Oklahoma State University. He began his academic career as an assistant professor at SIUE in 1993 and was named SOE dean in 2016.

"I appreciate the opportunity to talk about our School," Karacal says. "I believe we have a great story to tell."

"Maybe one way you can tell the story of the School of Engineering is by giving our listeners a little bit of an insight into what goes on in the School," Pembroke suggests.

Karacal tells Pembroke about

## Segue

SOE's six departments: civil engineering, computer science, construction management, electrical and computer engineering, mechanical engineering, industrial engineering, and mechatronics and robotics engineering. Students can choose from eight different undergraduate degree programs and five graduate degree programs. Students seeking doctoral degrees can pursue one of two cooperative PhDs—computer science or engineering science—in conjunction with SIU Carbondale.

"As of fall 2017, we had approximately 1,852 students, which makes us the largest engineering school in our immediate geographic area," Karacal says.

One of its newest degree programs, the mechatronics and robotics engineering curricula was built as a result of the School's industry partnerships.

"As the technology becomes an integral part of our lives, we believe that there is a strong need for individuals who have the skills to design electro-mechanical devices," Karacal mentions. "The program is off to a good start. Companies

are already approaching our students to hire them for internships and for jobs prior to graduation."

The School is also working to create a new master's program in biomedical engineering, along with a new program for cybersecurity engineering.

"What type of work would biomedical engineering involve?" Pembroke inquires.

"Biomedical engineering is a wide area, from instrumentation to biomechanics, and spans over several disciplines," the dean says. "A good example of biomedical engineering would be the design of prosthetics, installing and controlling those devices."

"Another would be the material used inside the human body, in stents, new tissues and artificial skins. Other areas will be instrumentation, such as MRIs, other devices used in diagnosis and treatment that are designed by biomedical engineers."

"It is a broad field, but certainly people are yearning to join that field!" Pembroke exclaims.

"The more engineers are involved in addressing these medical problems, the applications to these systems will be



**Karacal**

even wider," Karacal says.

Luckily, the future of students' engineering career prospects look extremely bright.

"Engineering, in the future, is going to be a highly promising field," Karacal says. "The Bureau of Labor Statistics projects growth in nearly every engineering field, and in most cases, it is double-digit percentage growth."

The dean expresses an increased need for specialized employees in the engineering workforce. What is the best way to meet the industry's

need? Apply for one of SIUE's focused graduate programs.

"Not only is it wise for career advancement, but it's also great for humanity. It comes with a degree of satisfaction!" Karacal says.

Though the campus at SIUE is a lot quieter during summer session, many of the academic units have been hard at work providing extensive educational camps for students around the region and beyond. One camp, hosted by SOE and sponsored by the Phillips 66 Wood River Refinery and MiTek, exposed high school students to the world of engineering.

"Engineers started some of the most successful and largest corporations such as Amazon and Uber!" Karacal says. "We wanted to give the students a wider view of engineering—the social impact—not only the technical knowledge, but also the consequence of engineering solutions, and how it can improve human life."

The chancellor and dean's entire conversation will air at 9 a.m. on Sunday, Aug. 12, on WSIU 88.7 FM The Sound.

*By Madelaine Dearthuff, SIUE Marketing & Communications*