

# Shiley-Marcos School of Engineering

*Inspiring Innovation*



## Endowed Chair in Design Thinking, Biorobotics or Software Engineering: \$5 million

### Background

The Shiley-Marcos School of Engineering recently added a design-centered approach throughout the curriculum, along with specific specializations in bio and software engineering. To attract a leader to oversee these areas, the school is seeking \$5 million to establish an **endowed chair in design thinking, biorobotics or software engineering**.

The Shiley-Marcos School of Engineering seeks to become a leader in undergraduate engineering education. A key strategy in reaching this goal is to recruit and hire cutting-edge faculty members with expertise in teaching innovation. A valuable tool is the ability to offer endowed or annual named professorships. This adds to the prestige of the position and allows us to supplement faculty salaries to compete with other engineering schools with larger endowments to support their faculty.

### Objectives

All three areas are important as we educate and train engineering students for professional careers. We will seek individuals with industry experience who can lead students in realistic engineering design projects and help develop a strong industry partnership program.

Over the last two decades, a significant movement has arisen that calls for more design-centric learning approaches as part of engineering curricula. To teach design thinking means students must engage in the authentic engineering practice of design and innovation. Curricula typically entail solving open-ended problems by groups of interdisciplinary student teams over an academic time period. This movement recognizes the motivational potential of design for learning engineering content and driving innovation. Several leading engineering schools across the country and around the world have embraced design thinking as the best way to prepare engineering students for success.

Private universities — such as Olin College, Harvey Mudd College and Stanford University, among others — have high-level faculty in design thinking to lead this curricular approach.

### Impact

San Diego has become a regional leader in the biotech industry and hosts numerous companies focused on medical devices and diagnostics. In fact, the Shiley-Marcos School of Engineering proudly bears the name of a visionary leader in biomedical devices. A leader in bioengineering would help with curriculum development and would lead students in applying their engineering knowledge and skills to areas of bioengineering. We envision opening a number of garages or studio spaces that are equipped with equipment relevant to bioengineering. This will be a place where a named professor in bioengineering would lead students in designing bio-devices, and where industry would interface with our students.

Software engineering is projected as one of the highest growth areas for the foreseeable future. Hiring software engineers is also highly important to the San Diego area, where there is a deficit of more than a thousand qualified individuals with these skills. Digital control systems are a critical component of almost every engineering design and device, including electrical, mechanical industrial systems and biorobotics. The programming of these digital control systems is often the most labor-intensive portion of creating a device. It is difficult to have students working on authentic projects without including software as an important component.

### For More Information

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