



Relationship with UC Santa Barbara Pays Off for Technology Leader: Capstone Courses are Critical

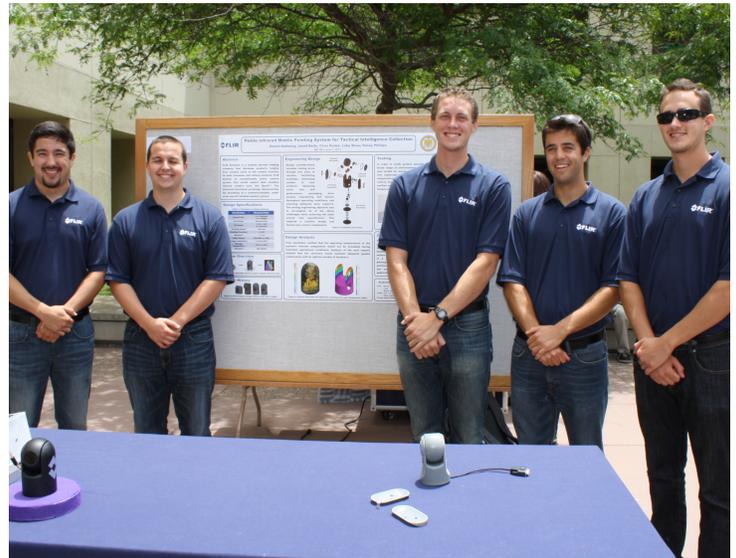
For cutting-edge technology companies, gaining access to the next generation of expertise, technology and talent presents a major challenge. Market changes and the pace of innovation continue to accelerate, requiring companies to be nimble and well prepared. Strategic relationships, especially with leading universities such as UC Santa Barbara, are key to success, as one technology leader has found.

FLIR Systems is a company that specializes in the design and manufacturing of infrared cameras. FLIR offers a diversified solutions portfolio that serves the government, defense, industrial, and commercial markets. The company's Goleta, California office has been the fastest-growing division, employing more than 500 people and focusing on sensor development and core thermal cameras. According to site leadership, part of its "secret sauce" has been its partnership with UC Santa Barbara, which began small but has evolved and strengthened over the last 10 years. As Marcel Tremblay, Director of Mechanical Engineering at FLIR Goleta says, "Having a good relationship with a leading university has improved FLIR's hiring, technology and costs."

A highlight of this relationship has been FLIR's active involvement in the College of Engineering's many Capstone Courses, which are offered in the departments of Mechanical Engineering (ME), Computer Science (CS) and Electrical and Computer Engineering (ECE). Here students work in teams under the direction of a faculty advisor to tackle an engineering design project, in most cases proposed by sponsoring companies interested in working with these teams.

Once the team has chosen its project, it works with the sponsoring company to master the real-world constraints and workflows that will bring the project to completion. Engineering communication, such as reports and oral presentations, are required throughout the Capstone project, and teams work closely with their company "team-mates." Companies benefit from the emphasis on practical, hands-on experience, and integrate analytical and design skills acquired during the project's path into the company's practices and products.

An example of a FLIR-sponsored Capstone project was the thermal sensor cluster, in which students designed and created a working prototype of a heat detecting "grenade." The cluster can be used to detect people in a dark building, or even one filled with smoke or soot, and has been used for market exploration.



FLIR has also helped push the College of Engineering to create an interdisciplinary version of the Capstone program that, while harder to organize, provides a better experience for students. Stephen Laguette, Department of ME at UC Santa Barbara, commented, "I had the pleasure of working with FLIR and Marcel on several ME Capstone projects. All were high performance teams with the guidance, efforts, and support of Marcel. However, we noted that the student experience and project outcomes could have been enhanced if they had been multidisciplinary teams. Through subsequent pilot efforts with FLIR involving ME and ECE students, we were able to address needs that have now evolved into a formal course structure. We recognized Marcel and FLIR in 2016 with our Industry Partner award for his passionate dedication and support that was instrumental for our Capstone program." A result of this interdisciplinary effort was the creation of a thermal imager incorporated into a hands-free thermal imaging system. This was used to inspire 3M Scott to develop their Sight product.



FLIR's Tremblay enthusiastically supports Capstone Courses and touts the many benefits to FLIR. Beyond tangible outcomes, the Capstone Courses have allowed FLIR to innovate with the ideas and energy of the student. The courses also allow FLIR to access the expertise of faculty members who specialize in technology FLIR wants to package into a future product. "We have to be quick to investigate new innovations," says Tremblay. "Our ability to access some of the best students at UC Santa Barbara allows us to stay ahead of the curve."

FLIR has also benefited through its membership in UC Santa Barbara's Corporate Affiliates Program, which facilitates key relationships between member companies and the campus. For example, through Corporate Affiliates companies can more easily find and connect with key faculty and discover who the best students are as hiring prospects. In fact, finding the best students and hardest workers is invaluable information for FLIR to stay at the top of its game.

The UC Santa Barbara Corporate Affiliates Program is a fee-based service designed for companies who want to devote their time and resources to a deep relationship with the UC Santa Barbara engineering and the sciences community. The objective of the Corporate Affiliates Program is to provide a dedicated portal for companies to explore prospective research partnerships, utilize world-class facilities and equipment and to recruit top students.

Finally, FLIR has had years of success conducting materials testing and creating some product concepts using the advanced equipment available in UC Santa Barbara's multi-use facilities. For a reasonable usage fee, corporate partners gain access to the campus's 46 cutting-edge multi-user laboratory facilities. There are hundreds of pieces of equipment that would be unaffordable for individual corporations to buy and maintain, but UC Santa Barbara provides equipment, training and technical expertise for any corporation that registers and obtains training. More information is available at <https://industry.ucsb.edu/equipment-and-facilities>.

UC Santa Barbara was praised by Tremblay for teaching students good fundamentals and producing students with a grasp of the theoretical side of engineering. As he and other senior leaders look toward the future, they want a university partner who is not only on the forefront of discovery and produces top-notch graduates, but one that makes it easy to access resources and expertise. "We would always wish to seek out the best university partner for our needs," asserts Tremblay. "Lucky for us, it's located in our back yard!"

To learn more about how your company can work with UC Santa Barbara, contact Leslie Edwards (805-893-3944/edwards@engineering.ucsb.edu) or Chris Russo (805-893-5544/crusso@engineering.ucsb.edu) in the Corporate Affiliate Programs office.