New Institute for Applied Engineering to Work Closely with SOCOM at MacDill AFB

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The USF College of Engineering (COE) wants to help make the nation safer and stronger, says Eric Forsyth, a retired U.S. Air Force Colonel with USF's new Institute for Applied Engineering (IAE), an organization devoted to creating innovative technologies.

"Other research universities have programs or centers to translate engineering research into practical solutions for difficult problems," explains Forsyth. "But what sets USF apart are our core competencies and the fact that we have been working with our local defense establishment and industry for a long time, but perhaps not in the most concerted and comprehensive way."

Eric Forsyth, Director of the USF Institute for Applied Engineering

The new IAE will be working in a more concerted way with the DoD, promises Forsyth, and he easily spells out those USF core competencies - autonomous systems; cyber security; human performance enhancement technologies; energy and transportation infrastructure systems; and supporting capabilities including data analytics and advanced manufacturing. Those core competencies, and the links already existing between the COE and the United States Special Operations Command (USSOCOM) at MacDill Air Force Base in Tampa, are the bedrock for the Institute.

A recent on-campus event put IAE on the new technology "map" and also placed some USF researchers in the spotlight.

Through the efforts of Forsyth and Dean Robert H. Bishop, the COE was the driving force behind bringing the U.S. Air Force Research Lab (AFRL) to campus last month for the "Science and Technology 2030." S&T 2030, a workshop through which attending researchers from throughout the southeastern U.S. explained to representatives of the AFRL how their innovative technologies might help the U.S. Air Force's goal of reshaping its technology by the year 2030, was a big success.

"USSOCOM Science & Technology Directorate appreciated the opportunity to co-facilitate several of the workshops at the S&T 2030 event," says Lisa R. Sanders, Director, Science & Technology, Special Operations Forces Acquisition, Technology & Logistics. "We are looking forward to receiving and reviewing the submissions that are being gathered by the Air Force to leverage concepts which have the potential to address Special Operations Forces specific capability objectives."

The conference and workshop attracted 152 participants from around the Southeastern U.S.

"S&T 2030 was a great event," says Dean Bishop. "Several USF researchers were among those who presented their innovative ideas. We really appreciate their efforts and hope that their ideas are now a step closer to being realities. I am also very pleased that our existing partnership with USSOCOM and SOFWERX enabled us to work quickly and effectively together to host the S&T 2030 event."

IAE'S MISSION AND PARTNERS

An important mission for IAE will be finding solutions to the challenges and problems faced by the warfighter. A crucial link to achieving that mission's goal is found in an organization called SOFWERX. SOFWERX, located in Ybor City, was created more than two years ago under a Partnership Intermediary Agreement between the Doolittle Institute and USSOCOM. The IAE/SOFWERX linkage aims at reducing the time and cost for getting innovations from design, to prototype, to final product. The goal is to get the technology into the hands of the warfighter faster.

Tim Baxter, director of USF/SOFWERX Operations, said that IAE will be the 'easy button' for USF and USSOCOM collaborations. According to Baxter, a recently retired U.S. Army Special Forces Colonel who worked for many years at USSOCOM, the links between USF, SOFWERX, and USSOCOM at MacDill Air Force Base were forged by Dean Bishop, who wanted to see USF researchers and USF interns work more closely with USSOCOM.

“Proximity really means something,” says Baxter, noting the close proximity of SOFWERX in Ybor, to MacDill AFB just a few miles south, and to USF just to the north. “In the future, USF hopes to lead a consortium of universities working with USSOCOM. The collaboration is a win/win for both USF and USSOCOM.” “We are excited about the potential opportunities that might arise with the formation of USF Institute for Applied Engineering,” says Sanders. “As the institute becomes established we look forward to clarifying areas of common interest, and developing opportunities of mutual benefit to USF, USSOCOM, and the institute.”

According to Sanders, USF facilitates an academic internship program in coordination with their SOFWERX collaboration enterprise. The interns play a big role at SOFWERX and, currently, a USF College of Engineering PhD student and six engineering undergrads are building three communications ‘cube satellites’ at SOFWERX.

“These juniors and seniors, from a wide variety of colleges and universities are able to gain real work experience in a dynamic environment addressing real world, highly impactful problems,” explains Sanders. “Internships are granted in the following disciplines: Graphic Design, Data Analytics, Mechanical Engineering, Computer Science, Business, Electrical Engineering, Physics, and Robotics.”

A ground station at SOFWERX will allow the USF student interns to communicate with satellites overhead. The students are taking the aluminum- cased cube satellites from design, through prototype, to final product.

Perhaps appropriate for having been fashioned in Ybor City, the cube satellites are about the size of a small cigar box. Soon, says Baxter, they will be circling miles above the Earth and sending data back to their Ybor City birthplace.

“USSOCOM buys launch space on various platforms,” says Baxter. “The satellites will be launched into orbit later this year.”

“As we get closer to opening IAE, we’ll be continuing to identify researchers with innovative ideas and technologies and building our business plan,” explains Forsyth, who sees the launch of the nonprofit IAE as similar to that of any start-up company.

IAE expects to be “open for business” shortly before the start of the fall semester.

“In the meantime, we’ll continue scouting out initial projects and working ever closer with SOFWERX and USSOCOM,” he concludes.

Story by Randolph Fillmore