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College of Engineering hosts Air Force Science and Technology 2030

RESEARCHERS FROM UNIVERSITIES IN SOUTHEASTERN U.S. SHARE INNOVATIVE IDEAS TO HELP SHAPE U.S. AIR FORCE FUTURE CAPABILITIES.



In an effort to help the U.S. Air Force in its mission to "invent the future for 2030 and beyond" the University of South Florida and the USF College of Engineering hosted a technical forum for the U.S. Air Force's "Science and Technology 2030" (S&T 2030) initiative held April 25 and 26 on the Tampa

campus at C.W. Bill Young Hall. Managed by the **Air Force Research Laboratory** (AFRL), headquartered at Wright-Patterson Air Force Base, Ohio, the S&T 2030 technical forum offered academic researchers who attended the USF forum the opportunity to present their ideas and innovative technologies in six critical areas to aid the U.S. Air Force in improving national defense.

The 152 conference participants from around the southeastern U.S. were welcomed to USF by Dr. Ralph Wilcox, USF provost and executive vice president, College of Engineering Dean Robert H. Bishop, and Eric Forsyth, director of the College of Engineering's new Institute for Applied Engineering, who initially reached out to the AFRL and helped bring the S&T 2030 forum to

USF.

Provost Wilcox told the gathering that USF was delighted to host the conference and workshops and noted that USF was a "young, agile, innovatively driven global research university" well-positioned and eager to assist the AFRL. "To USF's advantage," said Wilcox, "we have the flexibility and freedom to work across our 13 colleges and disciplines." He cited USF's Center for Cyber Security as an example of a cooperative effort involving five colleges.

College of Engineering Dean Robert Bishop echoed Wilcox's welcome and told attendees that the USF College of Engineering has increased student enrollment by 30% in the last five years to 7,000 and increased its faculty by 40 percent. "We look forward to building this new relationship with the AFRL and continue with our already strong relationship with the U.S. Special Operations Command (SOCOM), which provides us an opportunity to offer our students real world experience with a mission," said Bishop.

Dr. Morley Stone, AFRL's Chief Technology Officer and the primary science and technology advisor to the AFRL, told attendees that the Air Force's S&T 2030 forums are part of a "listening tour," scouting innovative ideas. The effort, he explained, is a part of the initiative and challenge announced by Secretary of the Air Force Heather Wilson in September 2017 to update the Air Force's science and technology strategy for the year 2030. In response, AFRL has embarked on a yearlong study to discover innovative new research and explore how to put the best ideas into the development pipeline.

"We're here to listen," Stone told participants. "We want to hear about your ideas and your early and applied research and see how we can make them part of our research portfolio."

The year 2030 became a target, according to Stone, as it takes about 12 years for innovations at the bench to come to fruition at the flight line. Anything that they can do to accelerate travel along that pathway to reality is a plus.

Having the Air Force listen to innovative ideas from academic researchers in the southeastern U.S. was the impetus behind Forsyth's quest to bring S&T 2030 to USF. Forsyth, who retired after 26 years of USAF service as an engineer and program manager, came to USF to build and facilitate better collaboration between academia and the Air Force.

"I worked closely with universities during my Air Force career," explained Forsyth. "When the Secretary of the Air Force announced this initiative, I told the AFRL that USF would be very happy to help facilitate the S&T 2030 forum in the southeast."

Brain McJilton, the Air Force program lead for S&T 2030 said, "Eric carried the ball and put a lot of work into this."

USF was the second stop on the university tour after the first technical forum

held at the University of Nebraska in March. The listening tour will stop at four other major research universities in other U.S. regions before September when their report to the Secretary of the Air Force is due.

In many ways, hosting S&T 2030 was the first big task of USF's new Institute for Applied Engineering, which aims at helping COE faculty and students develop and apply their innovative ideas. The Institute - in the planning stages for some time - will be a reality by next fall, with Forsyth at the helm.

Researchers from 60 universities across the southeastern U.S. were invited to the technical forum . The smaller workshops with the forum, featuring 82 presentations on innovative technologies offered by scientists and engineers from both academia and industry, focused on six technology areas: Global Precision Strike; Command and Control; Enhancing the Performance of Airmen; Air, Space and Cyberspace Superiority; Global Integrated Intelligence, Surveillance, and Reconnaissance and; Rapid Global Mobility. After a plenary session, participants met in morning and afternoon workshops where those with innovative technologies - both on the 'drawing board" or in prototype models – could present their ideas under the appropriate rubric. After the brief presentations, each topical workshop broke into smaller discussion groups to evaluate and further review the technologies presented.

Among the AFRL staff based at Wright-Patterson Air Force Base helping to conduct the S&T 2030 technical forum were two USF College of Engineering alums, Colonel Douglas S. Martin, who earned his BS in Electrical Engineering at USF in 1989, and who now serves as Mobilization Assistant to the AFRL Commander, and Colonel Philip Preen, who received his BS in Electrical Engineering from USF in 1990 and MS in Environmental Engineering in 1999, is Director, Human Systems Integration Directorate for the 711th Human Performance Wing at AFRL.

"Our mission is to take the lead in discovery, development and integration of warfighting technologies for our air, space and cyberspace force," explained Martin, a Lakeland, Florida native who helped facilitate the "Air, Space and Cyberspace" workshop.

Preen, who ran track and cross-country while at USF, works in human systems engineering. One of his goals, he said, is to make technologies used by personnel more ergonomically friendly to help reduce injuries and wear and tear on those carrying out important tasks. "Not everything is about artificial intelligence - we want to keep everyone healthy for the long-term," said Preen, who helped facilitate the workshop on "Command and Control."

The forum closed with a plenary session in which representatives from the workshop groups took the floor to inform forum attendees about stand out technologies presented in their groups.

"This is an especially exciting time for USF and the College of Engineering as we continue to increase our research footprint and impact across a broad spectrum

of global challenges," said Dean Bishop. "We are so pleased we were selected as the host of the Air Force S&T 2030 Workshop on the USF campus and I was amazed to witness first-hand the high level of intellectual firepower of faculty and industry focused on addressing challenging technical problems facing the U.S. Air Force and the nation. It was a very creative day."

Workshop participants and the Air Force contingent from AFRL were assisted throughout the conference by cadets from USF's Air Force Reserve Officer Training Corps (AFROTC).

by Randolph Fillmore



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