**Hails, Farewells & Congratulations!**

Please join us in welcoming Kristen Jones to the ANT Center's staff as the new Executive Officer. Kristen comes to us from Riverside Research and we are very happy to have her on board!

And let's welcome back Nicole Elkins, former Executive Officer, as the ANT Center's new Project Manager.

Congratulations to Dr. John Raquet and Dr. Bert Peterson on their recent promotion to the academic rank of Full Professor.

And last, but certainly not least, congratulations to Dr. Brett Borghetti on his recent retirement from Lt Col to civilian faculty!

**Faculty Highlight**

Dr. David Jacques

Dr. David Jacques holds a Ph.D and M.S. in Aeronautical Engineering from The Air Force Institute of Technology (AFIT) and a B.S in Mechanical Engineering from Lehigh University in Bethlehem, Pennsylvania. He started his contributions to AFIT in 1999 as a military professor spanning to 2003. In 2004 Dr. Jacques retired as Lt Col and became civilian faculty. Within his time at AFIT he served as a faculty member in the Aeronautical and Astronautical Engineering Department. He then transitioned to the Department of Systems Engineering and Management, in which he has been the program chair since 2003.

Dr. Jacques' main research area consists of cooperative behavior and control of autonomous vehicles, specifically Unmanned Aerial Systems (UAS). He continues to expand his research in this area and guides his students through collaborative, interdisciplinary projects which focus on system effectiveness. Dr. Jacques strives to educate students on the technology of UASs and continues to aid in the research of them. Most recently the UAS lab was expanded where it serves as both a simulation lab and research area for his students.

**Recent Activity**

**Successful Flight Test at Camp Atterbury, IN**

Dr. John Raquet Retires from the AF Reserves
Dr. John Raquet, ANT Center Director retired from the Air Force Reserves on October 7, 2013 as a Lt Col. Congratulations on your milestone Dr. Raquet!

UAS Lab Expanded

At the end of the 2013 spring quarter the Department of Systems Engineering & Management expanded one of its lab spaces on the 3rd floor of building 640 in AFIT. This extra space will benefit Dr. Jacques' students whose research includes UAS (Unmanned Aerial Systems) and allow them to comfortably perform simulations and also serve as a research hub.

Videos

Radio tomography: Seeing Through Concrete Walls

Persistent Monitoring System for US Aircraft Carriers

Recent Research Projects

SPACE JAM

The ANT Center, AFRL, and the USAF Test Pilot School designed, built, and flight tested the Simulated Programmable Aircraft Embedded Jammer (SPACE JAM). The goal of this system is to increase access to realistic GPS jamming training and mission rehearsal. SPACE JAM is a form, fit, and function replacement for the AE-4 Antenna Electronics unit, a line replaceable unit used on many aircraft such as the F-16D. SPACE JAM replaces the AE-4 and provides the additional functionality of a dynamic GPS injection jammer.

The purpose of SPACE JAM is to demonstrate a low cost, 24/7/365 GPS jamming capability for aircrew training applications which stimulates all on-board GPS-dependent aircraft systems. The fidelity of the simulation is appropriate to support familiarization training, tactics, techniques, and procedures work as well as mission rehearsal without the need for open air GPS jamming. SPACE JAM eliminates the need for GPS jamming frequency clearance, restrictions on time of day or jamming power levels and GPS jamming range assets. This system does not disrupt civil or other military use of GPS on the training range (e.g., range instrumentation and GPS-dependent sensors) and can be used by any number of aircraft simultaneously and autonomously.

SPIDER
Dr. John Raquet, along with Research Engineers Mark Smearcheck and Daniel Marietta, have been working closely with engineers from the 746th Test Squadron at Holloman Air Force Base in New Mexico to develop updated reference system software capable of fusing measurements from various navigation sensors using any of the traditional filtering methods. This project is titled SPIDER: Sensor Processing for Internal Dynamic, Error Reduction. The software will provide the 746th Test Squadron with more modern, more accurate, and expandable reference system software to be used for navigation system flight testing.

SPIDER will also be used as a tool for teaching and research within AFIT. Students taking AFIT’s stochastic estimation courses will be exposed to this software and become familiar with its capabilities. This will especially benefit AFIT students that receive follow-on assignments with the 746th Test Squadron at Holloman. SPIDER is set for completion in late 2014.

Recent Visits

Dr. Mica R. Endsley

The ANT Center was recently privileged to provide a tour to Dr. Mica R. Endsley as part of a visit she made to AFIT. Dr. Endsley is Chief Scientist of the U.S. Air Force, Washington, D.C. She serves as the chief scientific adviser to the Chief of Staff and Secretary of the Air Force, and provides assessments on a wide range of scientific and technical issues affecting the Air Force mission.