Training the Next Generation of Airport Researchers

Center of Excellence for Airport Technology

Through its Center of Excellence Program, the FAA establishes partnerships with universities throughout the country. The Centers of Excellence provide a formal structure that facilitates research, education, training, and technology transfer. Participating universities benefit through funded research programs that enrich the educational opportunities for students by linking their learning to real world experiences.

“The Center of Excellence for Airport Technology plays an important role in the FAA’s airport technology research and development activities,” states Dr. Satish Agrawal, FAA Airport Technology R&D program manager. Established in 1995, faculty and students from the University of Illinois, Northwestern University, Embry-Riddle Aeronautical University, and North Carolina A&T State University conduct research in material characterization and modeling, non-destructive evaluation of pavements, structural behavior and modeling, airport pavement design concepts and procedures, and wildlife hazard mitigation.

Current research projects include:

- Analysis of Pavement Response Data from Denver International Airport
- Analyses of National Airport Pavement Test Facility (NAPTF) Pavement Response Data
- Fatigue Resistance of Airport Concrete Pavements
- Analysis of Flexible Overlay Systems for Airport Pavements
- The Greater Peoria Regional Airport Demonstration Project
- Model to Predict Fatigue Response of Concrete Airport Pavement
- Modification of Coal-Tar Rejuvenator Specifications
- Characterization and Design of Aggregate Interlock Joints in Concrete Pavements Using Surface Roughness Measurements

According to Dr. Agrawal, “This Center of Excellence not only serves as an important research partner, it also is training the next generation of aviation engineers. It supports a large number of graduate students, training to be the researchers of tomorrow.” To date, students supported by the Center have completed approximately 20 Ph.D.s, and a significant number of master’s degrees. Students have published over 150 peer-reviewed technical papers, technical reports, and other publications. Currently 15 students from four universities are conducting research under the auspices of the Center.

Students from the COE have been recognized as some of the best young researchers in the country. The FAA recognized Daniel Sherman as its 2003 Center of Excellence student-of-the-year. The Department of Transportation has honored three students as its University Transportation Students of the Year:

1999 - Bill Vavrik  
(University of Illinois, Urbana-Champaign)
2001 - Sean M. Smith  
(University of Illinois, Urbana-Champaign)
2002 - Brent Brown  
(University of Illinois, Urbana-Champaign)

At the 2003 Centers of Excellence Conference, the FAA and its university and industry partners recognized several students for their ongoing research. Shihui Shen (University of Illinois, Urbana-Champaign) received top honors in the student poster competition and Alex Apeagyei (University of Illinois, Urbana-Champaign) and Farid Mugbil (North Carolina A&T) earned fourth place honors. In the paper competition, Jonathon Fisher (University of Illinois, Urbana-Champaign) earned third place and In Tai Kim (University of Illinois, Urbana-Champaign) received an honorable mention.

Because the Centers of Excellence form flexible, multi-disciplinary teams with other government organizations and industry affiliates, students get a wide array of experiences. The Center of Excellence for Airport Technology, for example, has teamed with Boeing, AvTurf, Inc., Trigon Engineering Company, among others. The team members coordinate research and development in areas of aviation technologies that are critical to the FAA’s mission and long-term vision.

For additional information on the FAA’s Center of Excellence for Airport Technology, please see http://cee.uiuc.edu/research/coeairporttech/.