Center of Excellence for Technical Training and Human Performance

Embry-Riddle Aeronautical University, University of Oklahoma and Wichita State University have joined together to lead a world-class research consortium of authorities in air transportation training and related technologies. The Center of Excellence for Technical Training and Human Performance focuses on research and development of technical training for air traffic controllers, aviation safety inspectors, engineers, technicians, and pilots. Our goal is to enhance and advance the teaching of these personnel with part-task training, immersive simulation, and adaptive learning technologies that are standard in other technical workforces. We also analyze human performance issues, including academic best practices and changes in learner expectations as well as innovative training methods for a new generation of learners.

The universities associated with the COE TTHP are recognized for their air traffic management programs, extensive online degree programs, state-of-the-art aerospace and weather facilities, multi-media and cinematic arts programs, and other specialized areas. Several of our universities and industry partners are researching the latest NextGen approaches to technical training and the associated human performance factors. With our broad range of expertise, the Center meets the challenge of developing and discovering solutions to improve the technical training and human performance for the FAA's Air Traffic Organization, Flight Program Operations, Flight Standards, Aircraft Certification Services, NextGen, and others.

The COE TTHP is the singular known organization in the world to integrate these aerospace pursuits.

Our Projects

Since 2016, the COE TTHP has executed over 70 grant awards. Our projects are conducted by over 100 faculty and student researchers of which the majority represent nationally recognized research institutions.

Our research is designed for ease of transition from the grant to contract vehicle to ensure implementation of solutions. Our Center has the capacity to conduct prototype testing at various research site locations nationwide.

Our researchers work with sponsors to modernize course content and delivery, collect and analyze curricula data, and analyze the factors that impact work environments. Full descriptions of our projects and research interests can be found at www.coetthp.org.

The COE TTHP Research Roadmap aligns with the ATO's Technical Training Strategy & Roadmap. Four main themes inform our research priorities:

1. *Workforce Development and Training*, focusing on human capital, management and systems, instructional design and training delivery, and technology;
2. *Human Factors* research, such as perception, cognition, workload, and skill acquisition;
3. *Safety* related topics in situation awareness, hazardous conditions, cybersecurity, and international priorities; and
4. *Analytics* research for data aggregation and data mining, statistical forecasting, and optimization.

Established: August 2016

Research Areas
- Workforce Development and Training
- Human Factors
- Safety
- Analytics

Sponsor:
FAA Office of Safety and Technical Training

http://www.coetthp.org

Core University Partners

- Auburn University
- Drexel University
- Embry-Riddle Aeronautical University
- Inter American University
- Oklahoma State University
- Purdue University
- The Ohio State University
- The University of Akron
- The University of Oklahoma
- Tulsa Community College
- University of Nebraska-Omaha
- University North Dakota
- University of Wisconsin -Madison
- Western Michigan University
- Wichita State University

Affiliate University Partners

- Central Washington University
- Coventry University
- Kent State University
- Louisiana Tech University
- OKC Metro Technology Centers
- Polk State College
- Spartan College of Aeronautics and Technology
- Tennessee State University
- Texas State University
- University of Southern California
- University of South Florida
- Vaughn College

Industry Partners

The COE TTHP includes over 40 companies who are leaders in the aerospace field with expertise in learning development, curriculum architecture, content management systems, aviation training and simulation, software programming, augmented and virtual reality, and artificial intelligence. These partners strengthen the activities of the Center and serve on the COE TTHP Industry Advisory Board, participate in specific research projects, and attend annual meetings.

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The FAA has also established the following Center of Excellence:

- Unmanned Aircraft System (UAS) http://www.assureuas.org
- Alternative Jet Fuels and Environment (AJFE) http://ascent.aero/
- General Aviation Safety (GA) https://www.pegasas.aero/
- Commercial Space Transportation (CST) http://www.coe-cst.org/
- Joint Center for Advance Materials (JAMS) http://www.jams-coe.org/
- Technical Training and Human Performance (TTHP) http://www.coetthp.org