

The First Name in Research: Setting our sights on aviation and aerospace solutions

The stakes have never been higher for the United States to maintain its role as a global leader in aviation and aerospace. According to Aerospace Industries Association estimates, nearly 10 percent of the U.S. economy is directly tied to aviation. Add to that a rising demand for safer, more efficient, more secure transportation services and that percentage is likely to keep growing well into the foreseeable future.

The key to staying on top? Research and more of it. Most industry experts agree that investing in research and tech-

nology development is priority one for keeping U.S. aviation and aerospace companies at the leading edge.

In step with this industry need, Embry-Riddle is advancing an ambitious research agenda to ensure that innovation and solution-oriented projects remain a staple of its programming.

We asked Christina Frederick-Recascino, associate provost, to talk about how Embry-Riddle is working to become the first name in applied aviation and aerospace research.



Christina Frederick-Recascino

ASSOCIATE PROVOST

Embry-Riddle has worked hard in recent years to position itself in research activities that target current and future developments in the aerospace industry. Currently, the University has several thriving research centers. The oldest is the Center for General Aviation Research (CGAR), funded by the FAA. Led by Center Director Steve Hampton, the center has secured more than \$10 million in funding over the past five years. CGAR efforts have produced cutting-edge training for glass cockpit aircraft through the ERAU-led FAA/Industry Training Standards project.

Two other Embry-Riddle centers, the Center for Advanced Air Traffic Management Research (CAAR) and Eagleworks have newer foundations, but are also putting ERAU research on the map.

At CAAR, Director Ian Wilson has put together a highly skilled staff of computer and software engineers who tackle pressing airspace issues by developing simulation-based solutions for air traffic, weather and airline/airport operations. Right now, CAAR is engaged in a project to redesign the airspace in the central zone of Chile.

CAAR also is leading what might be the most exciting and potentially transformational research project the university has ever engaged in: the Integrated Airport project. In partnership with Daytona Beach International Airport (DBIA), Volusia County, Lockheed Martin, Transtech, ENSCO and Mosaic ATM, Embry-Riddle is building a national test bed for new aerospace technologies at DBIA. This multi-year, \$30 million effort will test new technologies related to airport and ground security, airport operations, air traffic management

and weather, in real time at a working commercial airport with no disruption to service.

Eagleworks specializes in engineering applications and has been recognized for its international expertise in integrating cutting-edge diesel and rotary engine designs into existing aircraft. Director Peter Pierpont is guiding this lab to new projects that involve testing systems for unmanned aircraft and integration of new or experimental systems onto existing aircraft platforms. Eagleworks has enabled researchers throughout the Daytona Beach Campus to become involved in exciting research endeavors.

Our research activity extends to our colleges too. Our Colleges of Arts and Sciences have developed an international reputation for space science research, and in Prescott, we are leading efforts related to border security and intelligence studies. The Colleges of Aviation are moving forward in the exploration of unmanned aircraft, highlighted by our first annual commercial unmanned aircraft conference last fall in Daytona Beach. The Colleges of Engineering are focusing efforts on propulsion systems, including exotic propulsion, and have applied these efforts to aircraft, spacecraft and high performance land vehicles. The College of Business, through the Aviation Operations Simulation Laboratory (see story on page 15) is providing simulation projects to airlines such as AirTran.

All in all, it's a great beginning for a university that's determined to become the world leader in applied aviation and aerospace research. If we stay the course in the coming years, I expect Embry-Riddle to be the first name that leaders of government and industry think of when they need a university partner to solve current and future aerospace problems.



With the use of technologies like this precision measurement and scanning tool, Embry-Riddle is taking engineering applications to new levels.