



SUCCESS

EDUCATION PARTNERSHIP AGREEMENTS

AEROSPACE SYSTEMS DIRECTORATE Uses Educational Partnerships to Further STEM Program

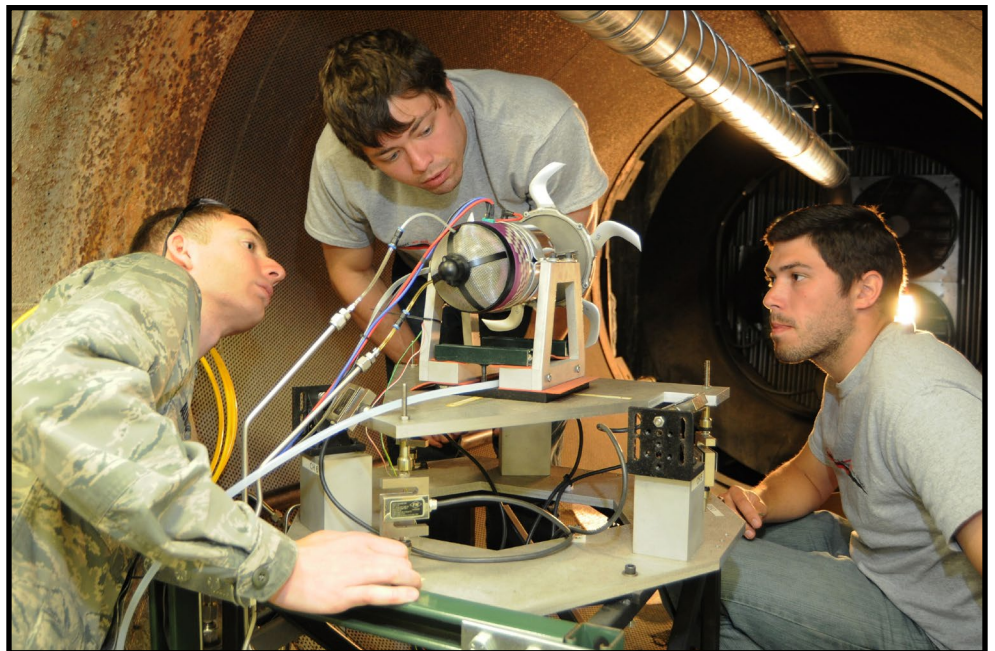
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WRIGHT-PATTERSON AIR FORCE BASE, Ohio – The Air Force Research Laboratory Aerospace Systems Directorate's (AFRL/RQ) is using Educational Partnership Agreements (EPAs) as important tools in the Aerospace Propulsion Outreach Program (APOP).

The program, referred to as APOP, is a directorate science, technology, engineering, and math (STEM) initiative that funds year-long undergraduate engineer capstone programs across the country that focus on gas turbine engine projects. APOP has been in place for seven years.



Captain Joseph Ausserer assists Aerospace Propulsion Outreach Program students installing their design for testing and evaluation in the Aerospace Systems Directorate's Small Engine Research Laboratory. The program, referred to as APOP, is a directorate science, technology, engineering, and math (STEM) initiative that funds year-long undergraduate engineer capstone programs across the country that focus on gas turbine engine projects. (U.S. Air Force photo)

This year the program has signed EPAs with eight universities in order to loan each school a Jetcat P90 turbojet engine. The Jetcat P90 is a turbojet designed and marketed to the model aircraft market. While Jetcats are not optimized for military use, at ~\$100 per lb of thrust, they are a cost-effective development testbed or low-cost turbojet alternative.

“APOP is intended to get undergraduate engineering students excited about gas turbine engines. The EPAs are a flexible tool by which we can quickly loan equipment to the universities and make the process easier,” said Paul Litke, Lead Engineer in the RQ Small Engine Research Lab (SERL). “These engines are the perfect, cost-effective platform for this type of program.”

One of the features of APOP is that at the end of the year-long project, student teams are expected to come to Wright-Patterson AFB, install their design on the thrust stand in the RQ SERL, and SERL personnel evaluate their design against a set of design criteria and key performance parameters that were established at the beginning of the year. Without the EPAs, most of the schools wouldn't have access to the Jetcat P90 engines and other equipment used in the past years.

This year, the six universities are designing a new engine nozzle for a Jetcat P90 turbojet, which they will demo in SERL. Additionally, they participate in a poster session in mid-May 2017.

“One additional benefit of funding six university teams is a recruiting aspect; student resumes are collected and circulated through the turbine engine division through the year. A handful of students have been hired out of APOP by a number of USAF organizations on base,” said Litke

Linking technology with the mission and marketplace.

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