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## **BOISE STATE ENGINEERING STUDENT RECEIVES NATIONAL HONOR FROM U.S. DEPARTMENT OF TRANSPORTATION**

### ***Arlen Planting named 2007 FAA Air Transportation Centers of Excellence Outstanding Student of the Year***

The U.S. Department of Transportation has named Boise State University graduate student Arlen Planting as the 2007 Federal Aviation Administration Air Transportation Centers of Excellence Outstanding Student of the Year. Planting was selected from among students at more than 60 top universities from across the nation.

Planting, who is pursuing a master's degree in electrical engineering at Boise State, received the award in official ceremonies held Jan. 20 in Washington, D.C. Planting was accompanied to the ceremony by Ambassador Edward W. Stimpson, former U.S. representative to the Council of the International Civil Aviation Organization. Stimpson and Planting were joined by former U.S. Secretary of Transportation Norman Mineta, who received a lifetime achievement award. Planting was also accompanied by Barry Scott, Acting Director, FAA Office of Aviation Research, and Patricia Watts, National Program Director for the FAA Air Transportation Centers of Excellence.

Planting's research is sponsored through the FAA Center of Excellence for Airliner Cabin Environment Research by the FAA Office of Aerospace Medicine. Jack Spengler, a Harvard University professor and the center technical lead, endorsed Planting's submission for this award. "Because of Arlen's maturity and research acumen, he has emerged as a leader among the research team," Spengler said. "His dedication and enthusiasm inspire his fellow students, staff and faculty alike."

"This is terrific news for Boise State University, and speaks to the national caliber of the students and research found here," said Cheryl Schrader, dean of the College of Engineering at Boise State. "We offer our heartiest congratulations to Arlen for receiving this prestigious national recognition."

Planting was selected for the DOT award for his research contributions as part of the FAA Centers of Excellence Program. The Center of Excellence for Airliner Cabin Environment Research is one of two FAA Centers of Excellence at Boise State, a collaborative long-term research partnership with Harvard University, Auburn University, the University of California-Berkeley, Purdue University, and several other universities. The FAA established this Center to study cabin air quality and conduct assessments of chemical and biological threats in airliners.

Nationwide, more than 60 universities have competed to become members of FAA Centers of Excellence, including MIT, Princeton, Stanford, Rutgers, Rensselaer Polytechnic Institute, and many others. Over the past decade, the FAA has established

eight Centers of Excellence to focus on research, education and training in mission critical areas.

Planting conducts research under the direction of Sin Ming Loo, a Boise State electrical and computer engineering professor who has received more than \$700,000 in federal grants for his research connected with the center. Boise State's part of the project involves the development of sensors and instrumentation to monitor air quality and detect contaminants.

Planting has played a pivotal role in the integration of hardware and software design for a wireless sensor network that could be used to detect and measure contaminants in airliner cabins, Loo said. The system would include flexible circuitry that allows an interchangeable number and type of sensors to be placed in the airliner cabins to measure contaminants such as smoke, ozone, bacteria, noise level and carbon dioxide. Other sensors could also be incorporated in the flexible circuitry if deemed necessary.

Data collected by the sensors on the amount and types of contaminants present in the atmosphere could then be transmitted to an onboard base station for processing and later retrieval. Further phases of the project would involve refining the network to provide real-time information about contaminants to the flight crew or a ground station.

Over the past 19 months, Boise State researchers have developed prototypes of a wireless platform serving multiple sensors. The next phase of the project involves conducting electromagnetic interference, or EMI, tests aboard a grounded airliner.

"We have made some excellent progress, thanks to the hard work of Arlen and the rest of our research team here at Boise State," Loo said. "We're now preparing to conduct a series of tests to determine how well the prototype performs in the environment for which it was designed — inside an airliner cabin."

After completing Boise State's pre-engineering program in the 1970s, Planting earned a bachelor's degree in mathematics at Boise State and then took post-baccalaureate courses in computer science at Oregon State University. He has worked in various technical positions at Hewlett Packard, H&W Computer Systems, the Oregon Department of Higher Education, and others for more than a decade. His love for computer science and engineering and his enthusiasm for research prompted him to enroll in Boise State's master's program in electrical engineering in 2004.

"Working with Dr. Loo as part of this FAA Center of Excellence has been a great experience," Planting said. "I've really enjoyed the opportunity to conduct research that has the potential to someday have a positive impact on everyone who flies aboard commercial airlines. Receiving this national award was a wonderful surprise, and I feel very honored to receive it."

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**Photo caption:** Boise State engineering professor Sin Ming Loo, left, and graduate engineering student Arlen Planting display a prototype circuitry system they have developed as part of research conducted at the FAA Air Transportation Center of Excellence for Airliner Cabin Environment Research at Boise State. Planting was named the 2007 FAA Centers of Excellence Outstanding Student of the Year.

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