

FAA Airport Design Competition for Universities – Winners 2007

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The Federal Aviation Administration (FAA) recently selected winners for its first FAA Airport Design Competition for Universities. San Jose State University, San Jose, Calif. and George Mason University, Fairfax, Va. captured first place awards; eight other teams also received awards.

The FAA created this competition to engage individual students or teams of students at U.S. universities working under the guidance of a faculty mentor to address airport operations and infrastructure issues and needs. Students were presented with a number of technical challenges relating to airport operations and maintenance, runway safety/runway incursions, and airport environmental interactions. The technical challenges embraced many engineering and science disciplines and were often used as part of a design course. The Competition required students to reach out to airport operators and industry experts to advise them in their proposals and to help them assess the efficacy of their proposed designs/solutions. The Competition sought to provide a framework and incentives for quality educational experiences for college students and to raise student awareness of airports as a vital and interesting area for engineering and technology careers.

Partnering organizations included: American Association of Airport Executives, the Airport Consultants Council, Airports Council International – North America, and National Association of State Aviation Officials. Partners helped to develop Competition guidelines, provided members to serve as expert advisors to students, and assisted in proposal reviews.

The FAA received 34 proposals from 16 colleges and universities. The vast majority of the work was done by student teams. The Competition opened on April 17, 2006 and closed on April 20, 2007. The winning proposals were selected by panels of FAA, industry and academic experts. Students from winning teams will equally divide prizes as follows: \$2500 for first place, \$1500 for second place, \$1000 for third place and \$500 for honorable mention. The first place teams will present their work at the American Association of Airport Executives annual meeting in Washington, DC on June 12.

Faculty and student evaluations of the Competition experience cited the outstanding educational opportunity offered by working on real-world problems. They liked being challenged to propose innovative solutions and the impetus to interface with industry and government experts. As one faculty member noted, “For the majority of students, this was their first experience of working on a collaborative team design project in which different academic disciplines were represented and, as such, it was exciting to witness the student development in such a challenging, yet rewarding environment.” Another faculty advisor noted the importance of creating “significant learning experiences outside

the classroom which allow students to engage in ‘real-world’ issues and seek innovative ways in which to solve problems.” As one student commented, “...this hands-on experience with industry experts and front line managers has been priceless. It has really helped to open my eyes up to the variety of issues that an aerospace professional has to look at on a daily basis...it has also opened my eyes up to a broader spectrum of opportunities in the aviation business world.”

The First place Award for Runway Safety was won by a student team from the Psychology Department at George Mason University in Fairfax, Va. Dr. Raja Parasuraman was the team’s advisor. The students designed a system to address runway incursions called “Runway Incursion Monitoring and Direct Alert Systems (RIMDAS).”

The Department of Aviation and Technology at San Jose State University, San Jose, CA. had the distinction of submitting first place winning team proposals for both Airport Operations and Maintenance and Airport Environmental Interactions. Their teams also garnered two honorable mentions. Dr. Triant Flouris was the teams’ faculty advisor. The Airport Operations and Maintenance top award was for a proposal titled, “Airport Communicator Software, ” which considered a software approach to integrating airport communications. The First Place winning team in Airport Environmental Interactions from San Jose State addressed the “Feasibility of Replacing Conventional Airport Lighting with Light Emitting Diodes.”

Other student team winners are:

Airport Operations and Maintenance Challenge:

Honorable Mention – Department of Aviation and Technology, San Jose State University. Dr. Triant Flouris, Faculty Advisor.

Runway Safety/Runway Incursions Challenge:

Second Place - The Departments of Aerospace, Industrial and Systems Engineering at Georgia Institute of Technology, Atlanta, Ga. Dr. Amy Pitchett and Daniel Bruneau, Faculty Advisors.

Third Place - Department of Systems and Information Engineering, University of Virginia, Charlottesville, Va. Dr. Barry Horowitz, Faculty Advisor.

Honorable Mentions:

Department of Computer Science, University of Southern California, Los Angeles, Calif. Dr. David Wilczynski, Faculty Advisor.

Department of Mechanical and Industrial Engineering, University of Minnesota Duluth, Duluth Minn. Dr. David Keranen, Faculty Advisor.

Department of Aviation and Technology, San Jose State University, Dr. Triant Flouris, Advisor.

Airport Environmental Interactions Challenge:

Second Place - Department of Civil, Construction and Environmental Engineering, University of Alabama Birmingham. Dr. Robert Peters and Nasim Uddin, Faculty Advisors.

Third Place - Department of Civil Engineering, Rose-Hulman Institute of Technology, Terre Haute, Ind. Dr. Michael Robinson, Faculty Advisor.

The competition is managed for the FAA by the Virginia Space Grant Consortium, Hampton, Va. Additional information on the Competition can be found at:
http://www.faa.gov/runwaysafety/design_competition.htm

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