NEWS

TRB

Winners Selected for the 2015-2016
TRB Airport Cooperative Research Program
University Design Competition for Addressing Airport Needs

WASHINGTON - The Transportation Research Board (TRB) Airport Cooperative Research Program (ACRP) recently selected winners for its University Design Competition for Addressing Airport Needs. Top honors went to student teams from the University of Rhode Island; University of Colorado, Boulder; Stevens Institute of Technology; and University of Massachusetts, Amherst.

The competition encourages out-of-the-box approaches to airport issues while providing quality educational experiences and exposure to aviation and airport-related careers. Student designs offered novel thinking on airport operations including accommodations for aging travelers, using drones for removing debris from runways, improving options for applying energy-saving technology, presenting an innovative approach to queuing for security checkpoint lines, and designing a software program to optimize runway allocations.

Students were invited to propose in four technical challenge areas: airport operations and maintenance; runway safety; airport environmental interactions; and airport management and planning. The competition requires that students work with a faculty adviser and reach out to airport operators and industry experts to obtain advice and assess the practicality of their proposed designs/solutions.

The ACRP is sponsored by the Federal Aviation Administration (FAA) and managed by the National Academies of Sciences, Engineering, and Medicine through the TRB. This competition is managed for the ACRP by the Virginia Space Grant Consortium based in Hampton, Va. Partnering organizations are: American Association of Airport Executives; Airport Consultants Council; Airports Council International – North America; National Association of State Aviation Officials; and University Aviation Association. Partners assist in developing competition guidelines, providing expert advisers for teams, disseminating competition information to organizational members, and participating in design reviews.

Volunteer panels of airport industry, academic practitioners, and representatives from the FAA selected the winning proposals. Students from winning teams equally divide cash prizes. First place teams receive their awards and will present their work at the Academies on the morning of

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Aug. 11, 2016, and then present their designs as the keynote luncheon speakers at the Airport Consultants Council (ACC) Airports Technical Workshop in Washington, D.C., the same day.

Copies of designs receiving first, second, and third place awards are available at the competition website: http://vsgc.odu.edu/ACRPDesignCompetition/

New guidelines for the 2016–2017 academic year competition will be available by Aug. 1,2016.

First Place Winners:

Runway Safety, Runway Incursions, and Runway Excursions: Airport Secure Perimeter Control System (ASPECTS), submitted by the University of Massachusetts, Amherst. Adviser: Daiheng Ni, Ph.D., and Douglas Looze, Ph.D.

Airport Environmental Interactions: Mycoremediation Applications for Stormwater Management, submitted by the University of Colorado, Boulder. Adviser: Chris Corwin, Ph.D.

Airport Operations and Maintenance: SimpleQ, submitted by Stevens Institute of Technology. Adviser: Eirik Hole, MSc Aerospace Engineering

Airport Management and Planning: The Wingman 360 -- A Practical Approach to Automated Wingtip Collision Avoidance, submitted by the University of Rhode Island. Adviser: Bahram Nassersharif, Ph.D.

Second Place Winners:

Runway Safety, Runway Incursions, and Runway Excursions: Touchscreen Air Traffic Management System (TAMS), submitted by Purdue University. Adviser: Timothy Ropp.

Airport Environmental Interactions: Life-Cycle Assessment of Airport Pavement Design Alternatives for Energy and Environmental Impacts, submitted by Rutgers, The State University of New Jersey. Adviser: Hao Wang, Ph.D.

Airport Operations and Maintenance: Drone-Enabled Foreign Object Debris (FOD) Removal System in Ad Hoc Situations, submitted by the University of California, Berkeley. Adviser: Jasenka Rakas, Ph.D.

Airport Management and Planning (Two teams tied for second place): Multi-Objective Simulation-Based Optimization of Runway Operations Scheduling Using a Hybrid Metaheuristic Algorithm, submitted by Old Dominion University. Adviser: Ghaith Rabadi, Ph.D.

Planning the Intergenerational Airport: Making the Airport Better for Everyone, submitted by the University of Texas, Austin. Adviser: Sandra Rosenbloom, Ph.D.

Third Place Winners:

Runway Safety, Runway Incursions, and Runway Excursions: Vehicle Incursion Prevention System, submitted by Binghamton University. Advisers: Chad Nixon, MBA, and Zachary Staff.

Airport Environmental Interactions: Incorporating Renewable Power into Major U.S. Airports, submitted by Purdue University. Adviser: Mary Johnson, Ph.D.

Airport Operations and Maintenance: Just in Time, submitted by Georgia Institute of Technology. Adviser: John Paul Clarke, Sc.D.

Airport Management and Planning: Semi-Autonomous Electric Taxi System, submitted by Purdue University. Adviser: Mary Johnson, Ph.D.

Honorable Mentions:

Airport Operations and Maintenance: Design of a Robust, Inexpensive System to Enhance Drone Flight Data, submitted by the University of Southern California. Advisers: Thomas Anthony, Ph.D., and Daniel Scalese, Ph.D.

Airport Management and Planning: Capital Improvement Plan Automated Tool, submitted by Binghamton University. Advisers: Chad Nixon, MBA, and Zachary Staff.

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