



## **Educational Outreach - Community Partnerships**

### ***Wall of Wind Mitigation Challenge (WOW! Challenge) – May 21st, 2014***

Teams comprised of South Florida high school students brainstormed innovative wind mitigation concepts within a well defined problem scope developed with IHRC academia. These concepts were then tested by the 12-Fan Wall of Wind, which was developed by the International Hurricane Research Center at Florida International University. The students focused on developing hurricane mitigation techniques that lead to human safety, property loss reduction, insurance cost reduction, and a "culture of preparedness" for natural disasters. This learning experience involved problem solving, teamwork, creativity and the subjects of science, technology, engineering, mathematics, architectural design and business entrepreneurship. This experience also increased student interest in pursuing an education and career in areas related to wind engineering and hurricane mitigation. National media and distinguished hurricane experts attended and participated in the competition, giving IHRC the opportunity to showcase its research projects and the Wall of Wind.

The WOW! Challenge is a judged competition. Student teams prepared four components for the competition to address the hurricane wind mitigation challenge: a physical test, an oral presentation, a written paper and a video.

The objective for the 2014 Wall of Wind Mitigation Challenge was for students to improve a building's aerodynamic performance. Each team's task was to develop a mitigation solution that would improve aerodynamic performance through shape optimization by minimizing aerodynamic drag. Building models were tested by the real 12-Fan Wall of Wind to evaluate the effectiveness of the building model. The goal was for the building model to remain upright to as high a wind speed as possible.

Teams from eight South Florida high schools participated in the competition. They were from Miami Coral Park Senior High School, Jose Marti MAST Academy, Booker T. Washington High School, North Miami Senior High School, Robert Morgan Education Center, Miami Northwestern High School, G. Holmes Braddock High School and George T. Baker Aviation.

An informational workshop detailing this year's *Challenge* was done for teachers and students before the actual competition. It was recorded and the video and workshop PowerPoint were made available on the *WOW Challenge* web page. All of the details of the *Challenge* rules and guidelines for the four required components are also found on the *WOW Challenge* web page located at: <http://www.ihrc.fiu.edu/outreach-education/wall-of-wind-challenge-2014/>

All four required components of the competition were judged and scored by a combination of IHRC academia and a panel of experts.

The judges included the following individuals:

- Arindam Gan Chowdhury, PhD, Wall of Wind Director, International Hurricane Research Center
- Peter A. Irwin, Ph.D., Wall of Wind Professor of Practice
- Cathie Perkins, Emergency Management Planner, Office of Emergency Management, Miami-Dade Fire Rescue Department
- Gladys A. Barrio, Ph.D., District Science Supervisor, Division of Mathematics, Science, and Advanced Academic Programs, Miami-Dade County Public Schools
- Kirk Nieveen, High School Curriculum Support Specialist, Miami-Dade County Public Schools
- Jaime D. Gascon, P.E., Supervisor, Product Control Section, Miami-Dade County Department of Regulatory and Economic Resources (RER)

- Jennifer Gray, Meteorologist, CNN News
- Kait Parker, Meteorologist, The Weather Channel

The scores from the judging for all three required components were added up for a cumulative total and were used to determine the top three teams; the final results were as follows:

- *First Place* achieved by North Miami Senior High School.
- *Second Place* achieved by Miami Coral Park Senior High School.
- *Third Place* achieved by Miami Northwestern Senior High School.

Once again the *Challenge* was supported by national media. This resulted in great positive visibility in the community for IHRC, FIU and FLDEM's message of mitigation. The following media representatives participated:

- Jennifer Gray, Meteorologist, CNN News
- Kait Parker, Meteorologist, The Weather Channel
- Suzette Laboy, Associated Press



*Student Team giving their oral presentation.*



*Judges for oral presentation.*



*Judges and students observing a physical test.*



*Example of a building model.*