

Rowan University 2008 Marsh White Report

By Robert Booth, past Treasurer and Erik Pfeiffer, Vice President of Outreach

With our Marsh White Award we purchased a Van de Graaff generator and some very strong NdFeB permanent magnets. They were great assets in the outreach projects we led this semester. The hand-crank Van de Graaf generator was a safe way to demonstrate charge buildup and static electricity while displaying impressive amounts of discharge. Likewise, the strong magnets were paramount in ferro-fluid demonstrations as well as other simpler exercises in classical magnetism. In both our November 14 event at Pitman High School and December 12 program at Glassboro High School, the Van de Graaff generator proved to be the most popular demonstration of our many physics experiments. It was particularly exciting for students as they were able to participate in this activity unlike other demonstrations such as the liquid nitrogen. This led to a very interesting discussion of the basic physics behind the machine which was comprehensible to students at the high school level.

We plan to continue utilizing these demonstrations as an integral part of our very active high school outreach program. Every year we visit multiple institutions, and we have found this to be very effective in recruiting physics majors at Rowan University, both for students who want to be high school teachers and who want to be scientists. Many of our current students found themselves amazed by such demonstrations while in high school and we have even used these activities on campus to recruit transfer students.



Discussion of the Van De Graaff generator.



Magical disappearing balloons with liquid nitrogen.



Demonstration of conservation of angular momentum.