

Shodor's Director Honored at SC07

Award in his name presented for first time at international computing conference

On November 10, 2007, Dr. Robert M. Panoff, president and executive director of Shodor, a Durham, NC nonprofit serving students and educators nationwide, was honored by a computational science award given in his name at the Education Program of SC07, an international conference for high performance computing being held in Reno, Nevada this week.

This was the inaugural year for the "Dr. Robert M. Panoff Student Award For Explorations in Science Through Computation," which was established to promote excellence in student-driven explorations in science made possible through the use of computation. This program's purpose is to encourage science exploration at all academic levels and to recognize students that have woven insight and discovery together through the use of computation modeling, simulation, and/or data analysis.

The Panoff Award was one of three awards at the conference to recognize outstanding accomplishments in the applications of computational science among undergraduate faculty, K-12 Educators, and among high school, undergraduate and graduate students.

The inaugural recipient of the Panoff Award is **Eddie Maldonado**, a junior physics major at the University of Northern Iowa (UNI). Maldonado has been involved in a number of computational science projects, which have earned him recognition through this year's Panoff Award. As part of his award, Maldonado will be invited to be an intern at Shodor this summer. "Our best reward for good work, and Eddie has done outstanding work," said Panoff, "is the opportunity to do more of it and to get practical experience leading to future success."

Maldonado is involved in computational physics research with Dr. Mike Roth and he presents an admirable example of continued academic growth, starting from a limited background in science and computing. When he arrived at UNI with an Associate of Arts degree from Muscatine Community College (Iowa), he graduated with an Economics degree from UNI. However, in the middle of earning his economics degree he took a beginning course in physics, which inspired him to also pursue a Physics degree.

Maldonado's first project involved simulating the time evolution of noble gas discs in orbit about C60 fullerenes. He participated in code development and obtained interesting results when studying both thermal and mechanical disintegration of the noble gas disc. His findings were presented at a 2007 Sigma Xi poster session and there is currently a related manuscript under review.

His interests have included doing work that helps people. He is working on developing a C++ program incorporating a Material Point Method algorithm that simulates blood flow around artificial barriers, which has applications to medical treatment of blood. The code models red blood cells in viscous plasma and has provided interesting preliminary results. Maldonado has taken on a keen interest in vertical climbing robots and has developed an MPM code for synthetic gecko hair adhesion when anchored to a compliant surface. Maldonado's most developed simulations involve bullet impact on body armor. Eddie has systematically examined various bullet compositions and vest structures. A Computer Science faculty member at UNI is using the simulations with many more particles to test for size effects, resolution effects, etc.

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Other computational science awards given at the conference were:

- UCES
 - Award to **Dr. Wolfgang Christian**, Davidson College
 - Certificate of Commendation to **Dr. Bradley Efron**, Stanford University
- Dr. Mary Ellen Verona Award to **Ms. Charlotte Trout**, Williamsport High School

SC08 Education Program Awards

There will be a call for applications and nominations for all of these awards in 2008, which will be announced and awarded at the SC08 Education Program in Austin, Texas in November of 2008.

About SC07

SC07, sponsored by ACM and IEEE Computer Society, will showcase how high-performance computing, networking, storage and analysis lead to advances in research, education and commerce. This premiere international conference includes technical and education programs, workshops, tutorials, an exhibit area, demonstrations and hands-on learning. For more information, please visit <http://sc07.supercomputing.org/>.

Further Information

<http://www.krellinst.org/uces2007/>

<http://www.sc-education.org/awards/verona.php>

<http://www.sc-education.org/awards/panoff.php>

www.shodor.org