

SCHOOL OF SCIENCE AND MATHEMATICS

COMPUTER SCIENCE

NEWSLETTER

Millersville University, Department of Computer Science ♦ <http://cs.millersville.edu/>

Notes from the Chair

Our faculty continue to be very active in grant work (some noted below), and scholarship, publishing a dozen papers in conference proceedings, and attending several regional, national, and international conferences.

Dr. Elzer, working with others at the University, received a \$182,541 grant from PASSHE to establish a Software Productization Center at Millersville. This grant will help us establish more ties with industries in our region. She has also received, with others in the school of Science and Mathematics, a NSF S-STEM grant for \$584,980 that will allow the school to provide many scholarships to deserving students over the next five years. Drs Webster and Zoppetti have been working on a \$90,000 grant to simulate aspects of cranial surgery.

Our students continue to be involved in many exciting activities. Students presented three papers at regional conferences during the past year. One student participated in a National Institute of Standards and Technology (NIST) fellowships this summer. A total of sixteen independent studies were conducted last year.

We continue to upgrade our equipment. The latest upgrades include new computers and multimedia equipment for our classrooms.

You can update your postal and email addresses by visiting our website, <http://cs.millersville.edu>, and following the instructions and link at the bottom of the main page.

Several more of you have contacted me since our last newsletter with updates on your activities. We enjoy hearing from you. Feel free to drop me an e-mail at hutchens@cs.millersville.edu. If you would like for us to include comments on your activities in future newsletters, state that explicitly in your email.

If you are returning for Homecoming, please drop by to see us! Information about the annual picnic and student research poster display can be found below.

-- Dr. David Hutchens

Training Surgeons

Dr. Zoppetti and student researcher Jon Mease, collaborating with Verefi Technologies, will soon complete software development of a haptic neurosurgical simulator as part of a two-year grant awarded by the Telemedicine and Advanced Technology Research Center (TATRC). The project aims to produce a simulator that will increase the supply of medical personnel that can treat soldiers sustaining penetrating head trauma. In August, Zoppetti and Mease attended a cranial workshop at Lancaster General Hospital where they drilled on cranial models using a high-torque drill with perforator and router bits, tools neurosurgeons use for exposing the brain. This, along with subject matter expertise and testing from a local neurosurgeon, has helped the MU team refine the haptic fidelity of the simulator. The simulator will be presented to TATRC early next year. To date, five students have been involved in the project.

Lancaster Streetcars Project

Dr. Roger Webster, along with students Kevin Workman, Mat Sejas, and Simon Littlejohn, are working with the Lancaster Streetcar Company, the City of Lancaster, RRTA, the Lancaster Parking Authority, and the private sector, to improve the transit system within Lancaster City. Dr. Webster and his students have built a simulation animation to show how streetcars would operate in downtown Lancaster. The models were built with 3DS max software and various textures of buildings, sidewalks, and streets on Queen street in the center of town. The animation shows the streetcar traveling down Queen Street by the new convention center, by Issac's restaurant and towards Orange street. The video can be found by clicking on the Media tab at: <http://www.thelancasterstreetcar.com/news.html>. The electric streetcar system will begin with a compact loop that stitches together a wide range of attractions and employers. The project will be expanded in the future to the extent possible to include other areas in the City, making the City of Lancaster an even better place in which to live. For more information, you can also visit <http://cs.millersville.edu/~webster/LancasterStreetCars/>.

The Software Productization Center at Millersville University

The mission of the Software Productization Center (SPC) at Millersville University is to provide emerging software businesses within the Central Pennsylvania region with assistance in advancing software products from concept to marketable product. The SPC will assist selected entrepreneurs or businesses with (1) the implementation of a working prototype of the software, (2) the development of business and marketing plans for the launching of the product, and (3) the branding and physical packaging of the product. The SPC is a cross-disciplinary effort, and the faculty steering committee consists of Dr. Stephanie Elzer (Center Director), Dr. Theresa Russell-Loretz (PR/Communication), Dr. Pat McCaskey (Business/Marketing), and Dr. Nancy Mata (Art/Graphic Design). The faculty steering committee is assisted by the SPC Advisory Board, which is composed of community business and non-profit leaders and technology experts. The SPC is funded by a three-year \$182,541 PASSHE Business Infrastructure Grant. The initial call for applications for local entrepreneurs to participate with the SPC yielded thirteen potential candidates, seven of whom were subsequently invited to submit full proposals (due in October). Look for news on the selected project(s) and future SPC activities in upcoming newsletters and at <http://www.millersville.edu/spc>.

Homecoming Weekend Activities

Saturday, November 1, 11:30 a.m. to 1:30 p.m.

Science and Mathematics Alumni Luncheon (Steinman Courtyard, Argires Science Complex). Science and Mathematics alumni are cordially invited to this luncheon. No charge with advanced reservations; please call the Alumni Office (800-681-1855) or register online at www.villealumni.com.

Science and Mathematics Student Research Poster Display. Caputo Hall Lobby. Current undergraduate/graduate research poster papers will be displayed.

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Highlights

Faculty Activities

Dr. Stephanie Elzer was recently awarded tenure and promoted to Associate Professor. Congratulations, Dr. Elzer!

Dr. Nazli Hardy received a \$5,000 Keystone Innovation Zone (KIZ) Grant of The Innovation Transfer Network (ITN) to work with 2 students, **Justin Kunder** and **Pasan Perera**, and the security firm, White Wolf Security. The project involves designing, developing, implementing, and evaluating Web applications for security testing. Each of the applications will include a database back end, web interface front end, and network-based transactional communications. For each application, two versions are being developed: 1) a non-secured version with several security vulnerabilities and 2) a secured version which will be patched and virtually impenetrable to attacks. The applications will be tested and evaluated by White Wolf Security and used at the National Collegiate Cyber Defense Competition. This work is being presented as a poster at the Eastern Conference of the Consortium for Computing Science on October 11, 2008.

Dr. Blaise W. Liffick was appointed to both the Millersville University President's Commission on Cultural Diversity and the President's Commission on the Status of Women. Both appointments are for 3 year terms.

Dr. Stephanie Elzer is a co-PI on a recently-awarded National Science Foundation grant for providing scholarships to students in the STEM (Science, Technology, Engineering, and Mathematics) disciplines. The \$584,980 grant, titled "Building the Future: Improving Recruitment and Retention of Underrepresented and Financially Disadvantaged Science and Math Students," lasts for five years and will provide eligible students with scholarships of up to \$5000 each.

Dr. Nazli Hardy has played an integral role in the formation of the MU-Penn Manor Cyber Partnership. The initial activities of this alliance include a Fall Lecture Series on Computer Security and a Spring Learning Series designed to give high school student exposure to the broader spectrum of computer science. Please see <http://cs.millersville.edu/activities> for more information.

Drs. Roger Webster and **Gary Zoppetti** are researching XNA Game Studio for use in CSCI 475: 3D Game Programming and Computer Animation and CSCI 375: Computer Graphics and Virtual Reality. Their independent study research students (**Jordan Hollinger, Jim Rittle, Robert Metzger, Michael Newswanger, Matt Sejas; and William Killian**) are investigating skeletal/humanoid animation, Havok physics integration, C#.NET, and object-oriented extensions to XNA to simplify advanced game development. This work is part of a two year (\$150,000) grant, awarded to Drs. Webster and Zoppetti, from the National Science Foundation (NSF) to develop graphics and game development curriculum.

Dr. Stephanie Elzer has been awarded a \$54,648 grant over the next three years to continue her joint research with the University of Delaware. This award is part of a \$600,000 grant intended to investigate the accessibility of information graphics through multiple modalities, including automatically generated tactile graphics and textual summaries designed to convey the intended message of the graphic.

Student Activities

Cyber Defense Team

This year has been an interesting year for the Cyber Defense team. We said goodbye to the members of the team that went to the national contest and wished them well in their futures. But we said hello to a new team. In the fall of 2007 we had to rebuild the team from the ground up due to most of the team graduating last semester. The new team consisted of Matt Kibler, Dan Baker, Dave Hober, Mike McLaughlin, Dan Henrich, Mike Ridgway, Josh Adams, and Mark Pitts. These guys started by renovating the networking lab, rebuilding it from the ground up, including the following: reinstalling operating systems, rewiring the networks, and reworking the firewall. Late in the Fall 2007 semester we found out from the organizers of the Cyber Defense contest that due to the large number of teams, there would be a qualifying round. Despite working long and hard in the lab for this contest (hosted by White Wolf Security), Millersville did not advance to the regional contest. The team came back with a newfound respect for network security and a burning desire to do better next year. This semester, the team is getting ready to once again defend their network from professional hackers in the qualifying round this January 2009.

Programming Teams

This year our programming teams competed in 2 contests. In the Fall 2007, two teams competed in the ACM-ICPC (Association for Computing Machinery – International Collegiate Programming Contest). We competed in the Mid-Atlantic Region with 138 teams representing 61 schools. The Millersville Gold team consisting of David Hober, Kenneth Mitton and Joe Lyga placed 37th in the region. The Millersville Black team consisting of Mike Ridgway, Dan Henrich, and Jordan Hollinger ranked 89th in the region.

In April 2008 we took 3 teams to the PACISE (Pennsylvania Association of Computer and Information Science Educators) contest at Kutztown University. The Millersville Gold team consisting of Jordan Hollinger, Joe Lyga and Kenneth Mitton took third place. Clarion took second and Bloomsburg took first place.

The department would like to thank the students for taking the time to practice, compete, and represent Millersville at these annual competitions. We also would like to wish graduates Jarett Cummings, Dan Henrich, Joe Lyga, and Kyle Lehman the best on their future endeavors!

How YOU Can Help

Like what you read about CSCI alumni, faculty, students, and programs? Please keep our programs strong and support CSCI students. Give on-line @ www.millersville.edu. Click on the 'Giving' tab OR send your gift to Millersville University, Development Office, P.O. Box 1002, Millersville, PA 17551-0302. Gifts can be restricted or unrestricted.