

**Wick and Stevenson Promotions**  
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of mutual interest, most recently including work in the field of steganography, the hiding of secret messages within images. Dan's expertise is in computer vision (image understanding), graphics, robotics, and web applications. In his letter of support for Dan, Dr. Phillips wrote, "There has never been a moment when I wasn't convinced that he would be successful here. Dan has provided a model for our future probationary faculty to follow. He has done outstanding work in every area, and I fully expect him to continue this level of excellence. He is, in my estimation, a future leader of this Department." Poor Dan....

**FACULTY PROFILE**

**Steven J. Ratering**

Dr. Steven J. Ratering joined the CS Department in the fall of 2003, the second of two new hires resulting from the state supported Chippewa Valley Initiative.



Steve received his B.S. in Mathematics and Computer Science from Central College in Pella, Iowa, 1984, and his

M.S. and Ph.D. in Computer Science from the University of Minnesota in 1987 and 1992, respectively. After teaching computer science at his alma mater, Central College, from 1987 to 1997, he joined Lucent Technologies in Naperville,

Illinois to develop software for a tele-communications switch.

Steve and his wife Karen met in their church choir and got to know each other rehearsing for Dutch dancing at Pella's Tulip Time. They have three children born in Minnesota, Iowa, and Illinois. They enjoy swimming, biking, playing in parks, and walking together.

Steve has a variety of teaching interests including theory of computation, artificial intelligence, discrete mathematics, data structures, algorithms, and software engineering. He is also looking forward to developing his research interests in the Department.

With Steve's addition to the Department, we now have five faculty with advanced degrees from the Computer Science program at the University of Minnesota! We're very excited to have Steve join us, and we're confident that he'll make a significant impact on our students and our computer science program.

**BITS AND BYTES**

**COMPUTER SCIENCE NEWSLETTER**



October 2003

**Letter from the CS Department Chair**

For many years now the faculty in the Department of Computer Science at UW-Eau Claire have discussed how difficult it is to attract into our program Wisconsin's top students from the graduating senior high school classes around the state. Students who excel in mathematics and computer science in their high schools have many choices for a college education, and those choices often involve partial or full tuition scholarship funding. Now, thanks in large part to the generosity of David and Marilyn Karlgaard and some additional hard work in obtaining federal grants for scholarships, we too have the ability to offer students financial assistance in the form of scholarships based on both merit and need. In fact, you'll discover in this newsletter that we named our first round of fourteen new Karlgaard Scholars and six new EMACS Scholars, providing these twenty students with scholarship funds that cover either partial or full tuition for an entire academic year.

In this our third annual newsletter, I'll update you on these scholarships and on some of our other major projects and accomplishments. But unlike the past two years, I'm making a special pitch to you this year: if it's been awhile since you visited our department in person, please come and check things out. Pay us a visit and let us show you first hand the quality education and environment we are providing. Our labs are all newly renovated and in state of the art condition. Our curriculum is modern and exciting. I'm quite confident that you won't be disappointed.

Also in this issue, you'll discover that



Computer Science staff for 2003-2004. Seated left to right are: Steven Ratering, Thomas Moore, Janet Quarderer, Daniel Stevenson, and Judi Mueller. Standing left to right are Jack Tan, Paul Wagner, Andrew Phillips, and Michael Wick. Missing from photo: Susan Harrison.

we received a \$100,000 National Science Foundation grant to help us design and build a new state of the art Computer Security Lab where we now provide hands on practical experience with attack and defend scenarios in information warfare. You'll discover that Dr. Michael Wick and Dr. Daniel Stevenson, two of our most popular faculty, have been promoted to higher academic ranks. You'll discover that we've hired Mr. Jason Wudi as our new full-time system administrator. And you'll discover that we've added Dr. Steven J. Ratering to our faculty, the last of our new faculty hires resulting from the

Chippewa Valley Initiative. Finally, while I decided again not to include an article on it this year, we were named, for the third straight year, the UW-Eau Claire nominee as the Outstanding Teaching Department within the UW System.

I hope you enjoy this 2003 newsletter. And whether you're an alum, a regional industry partner, or just a friend of the program, please help us spread the word about the great things happening here in CS at UW - Eau Claire. We remain proud of our program, and we hope you feel the same.

Best wishes for another great year.  
Andrew Phillips

**If it's been awhile since you visited our department in person, please come and check things out.**

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## Six New Freshmen EMACS Scholars Named

Six students entering the University of Wisconsin-Eau Claire this coming fall will be the first freshman to receive Excellence in Mathematics and Computer Science Scholarships as part of a new program beginning with the 2003-04 academic year. The new EMACS scholars are Tina Baker, West Salem; Joshua Burton, Knapp; Marcus Clare, Hayward; Travis Gruchow, Waterloo; Jenna Helbing, Platteville; and Amanda Schara, Athens.

In September 2002 it was announced that the Department of Computer Science and the Department of Mathematics at the UW-Eau Claire had received a \$400,000 grant from the National Science Foundation (NSF) to develop the EMACS Scholarship Program. Dr. Michael Howe, Associate Professor of Mathematics, Dr. Andrew Phillips, Professor of Computer Science, and Dr. Alex Smith, Associate Professor of Mathematics, developed the EMACS Scholars program, which will provide 30 students - new freshmen or currently enrolled students who demonstrate financial need and academic potential - with scholarships as well as support in the form of faculty and peer mentoring, student/faculty research projects, capstone and independent study opportunities, career counseling that includes preparation for graduate school, and service-learning and internship opportunities.

When awarding the grant, the NSF reviewers noted UW-Eau Claire's outstanding faculty and academic programs, the importance the university places on student-faculty research, the quality of its mathematics and computer science programs, and the overall excellence of the university.

## 14 New Computer Science Scholarships Awarded

Fourteen computer science students have been named the first recipients of Karlgaard Computer Science Scholarships, which cover either full or half tuition per academic year. Seven returning students will receive Karlgaard Scholarships: sophomore Brett Allenstein, Weyauwega; sophomore Aislin Laski, Haugen; sophomore Michael Lemay, Eau Claire; senior Heidi Miller, Richland Center; freshman Christopher Spencer, Eau Claire; senior Theresa Steffen, Osceola; and senior Marcia Vaughn, Medford. In addition, another seven incoming freshmen also will receive Karlgaard Scholarships: Scott Atkinson, Montfort; Joshua Burton, Knapp; Mark DeNeve, Altoona; Eric Lobner, Wisconsin Rapids; Karen Ploetz, Brookfield; Stephen Smith, Cassville; and Michael Weber, Hudson.

All Karlgaard Scholars are selected based on merit; all freshman applicants must have a minimum GPA of 3.5, while all returning students must maintain a minimum 3.0 GPA. In addition, Karlgaard Scholars must be either computer science or software engineering majors

at UW-Eau Claire and must collaborate with a computer science faculty member to produce at least one scholarly publication and/or formal presentation external to UW-Eau Claire in each of their junior and senior years.

The Karlgaard Computer Science Scholarship Fund was established in April 2002 as part of the Karlgaard Excellence in Computer Science Program. The program is funded by a \$500,000 pledge from David and Marilyn Karlgaard of Fairfax, Va., to the UW-Eau Claire Foundation's ongoing comprehensive fund-raising campaign, Fulfilling the Promise of Excellence. The Karlgaards' campaign gift also includes a \$4 million trust, which ultimately will endow the Karlgaard Excellence in Computer Science Program.

In the coming years, the Department of Computer Science will be seeking to award upwards of ten new freshman Karlgaard Scholarships each year in addition to the returning student scholarships, hoping to attract into the program the best and brightest students from around the state of Wisconsin.

## Jason Wudi Hired as CS System Administrator

Mr. Jason Wudi has joined the Department as the CS System Administrator, a position funded by the Chippewa Valley Initiative. Wudi, as he prefers to be called, received his B.S. in Management Information Systems (MIS) from UW-Eau Claire in 2001. Since that time he has been employed by the Computing and Network Services unit at UW-Eau Claire as an IS Technical Support Specialist, providing the campus with technical support for both hardware and software for over 1100 campus workstations.

As the Department's System Administrator, Wudi will oversee our network of over 80 workstations, running both Windows XP and Redhat Linux operating systems. He will be responsible for software and hardware maintenance and upgrades, but more importantly he will

play the lead role in training our team of three to four student system admins as they also learn to become IS professionals.



## NSF Funds New Computer Security Lab

In May of this year, the National Science Foundation (NSF) announced that the Department of Computer Science would be awarded a \$100,000 federal grant for the design and implementation of a new computer lab along with the associated courses and curriculum in computer and information security. The project is titled "CLICS: A Computational Laboratory for Information and Computer Security," and Dr. Paul Wagner and Dr. Andrew Phillips are the principal investigators for the grant.

In recent years, computer and information security issues have become increasingly significant for business, industry, and government, leading to an immediate need for increased computer security education through undergraduate level computer science curricula. This grant project meets this need through three primary objectives: first, by developing a sophisticated heterogeneous computer and information security laboratory; second, by adapting and developing computer and information security curriculum including two new stand-alone courses titled "Computer Security" and "Cryptography and Network Security"; third, by using this laboratory and curriculum as the foundation for a formal application by UW-Eau Claire to become a Center for Academic Excellence in Information



Assurance Education, as certified by the National Security Agency.

The new lab, completed this past summer, is located in Phillips Hall room 168 and contains eight workstation areas each containing two Pentium 4 based computers, one running Windows XP and the other running Redhat Linux. In each area, the two machines share a single 20" flat panel monitor via a keyboard/video/mouse (KVM) switch, thereby allowing students to work on both systems while

practicing concepts in computer security on each.

In addition to the two new elective courses in computer security and cryptography, the faculty in the Department are developing a variety of course projects involving concepts in security that can be used in many other courses. These include projects involving common buffer overflow exploits, hardware encryption algorithms, database security, and basic steganography.

## Mike Wick and Dan Stevenson Promotions Announced

At their June meeting in Madison, WI, the UW System Board of Regents officially approved the promotions of Computer Science faculty members Dr. Michael R. Wick to Professor and of Dr. Daniel E. Stevenson to Associate Professor (with tenure).

Mike has been on the faculty at Eau Claire since 1992 after spending three years in the Computer Science Department at Washington State University. In 1995, he was promoted to Associate Professor (with tenure). Mike has taught

over twelve different courses from freshman to senior levels, always remaining the Department's most popular (and most demanding) instructor! His computing interests involve newly published software development techniques and the integration of those techniques across the computer science curriculum. In recent years, he has focused his efforts on object-oriented design and analysis techniques, design patterns, and Java/C++ implementation techniques. In his letter of support for

Mike, Dr. Phillips wrote, "Mike is a 'workhorse'. There is nothing he can't do. With Mike on our faculty, we have a really incredible program. It's that simple."

Dan Stevenson joined the Department in 1997, immediately following the receipt of his PhD from the University of Iowa. Since that time he has taught eight different classes, and done so at all levels of the program. Dan also works with students each year on research projects

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