North Dakota State University

Computer Science Department

Thoughts from the Head

Dr. Brian M. Slator,
Department Head

We continue to get a little bit bigger (210 graduate students, plus 267 undergraduate CS majors, for a total of 477), and a little bit more famous every year.

Since the last newsletter, some of the more noteworthy events include the retirement of Dr. John Martin and the addition of two new faculty: Dr. Changhui Yan and Dr. Simone Ludwig. Dr. Yan joined us from Utah State University, Logan UT, in January of 2010. Dr. Ludwig arrived more recently from the University of Saskatchewan, Saskatoon, SB, Canada.

In response to industry feedback from both employers and Capstone participants, a year-long study of the undergraduate curriculum has been undertaken by a blue-ribbon committee chaired by Dr. Ken Magel. As a result of that work, a number of recommendations have been developed, and we have entered into the year-long process to make curriculum changes. In summary, we are adding some practical, applied, development skills and eliminating some of the theory required for the major. Among the more controversial ideas: eliminating CS 373: Assembly Language Programming.

As in past years, we are soliciting your opinions on the matter by means of an online survey that describes the curriculum change ideas, and gives you the opportunity to register your views.

The subject of the last survey was accreditation, and a small number of people expressed strong viewpoints in the survey. We also took the survey to the Job Fair last month and solicited opinions over a free breakfast. While most people seemed to think accreditation was not a big issue in Computer Science, those people who disagreed, did so most vehemently.

Please, take our new survey:
cs.ndsu.edu/NDSUCS-Survey/

Department news

- The Department continued externally funded activities which received $1,095,271. New grants this past year totaled $580,090. Altogether, twelve faculty received grant funds last year.

- We had an impressive number of graduates: 2 Graduate Certificates in Software Engineering, 19 M.S. in Computer Science, 5 M.S. in Software Engineering, 1 Ph.D. in Computer Science, and 1 Ph.D. in Software Engineering.

- A comprehensive review of our B.S. degree is being conducted and there will be several substantive changes anticipated for 2011-2012. (See survey)

John Martin retires

One of the biggest changes to the CS Department was the retirement of Dr John Martin. He was a 'fixture' in our department for 37 years. John authored the textbook "Introduction to Languages and the Theory of Computation" which is widely used throughout the country. He used it to teach the two semester course "Theoretical CS."

He taught Theoretical Computer Science I & II, Algorithm Analysis for undergrads, and Foundations of Programming. Which, if you took the course, you would know the material was *intuitively obvious*.

(continued on page 2)

Inside this issue:

Special points of interest

- Donate to the CS Department Scholarship fund(s) see page 4 for details.

- You or your spouse's personal contribution to the Computer Science funds may be matched by your employer. Ask your employer for the form.

- Give us your opinion regarding curriculum at: http://cs.ndsu.edu/NDSUCS-Survey/

Students visit Microsoft

Microsoft's Fargo campus hosted a spring workshop in April. The workshop focused on jobs and specifically job opportunities for women at Microsoft. A panel discussion was followed by a question and answer session. Tours of the technical support and development labs and user experience studio were given. Students participated in a series of informational interviews with Microsoft personnel and received information about internship and job opportunities.

Three faculty members, Dr Anne Denton, Dr Juan Li (2nd & 3rd from right) and Joan Krush (on left), Lecturer, and 12 NDSU students went.

Digi-Key internships

The NDSU Department of Computer Science has been very successful through the years at the Digi-Key Collegiate Computing Competition. We send our brightest students and they have repeatedly impressed the judges by placing well.

As a result of this spring's competition, three of our students received summer internships at Digi-Key in Thief River Falls. They are CS majors Nathan Ehresmann and Ben Christian, and Edic Alic, Computer Science / Math double major .

When Nathan was asked about what he gained from the experience, he said, "The most important thing I've learned through working at Digi-Key is the development process of software in a business setting. Learning about the software development life cycle in a classroom is one thing, experiencing it firsthand is something completely different."

Simone Ludwig

Simone Ludwig joined the Dept of CS as an Associate Professor in Fall 2010. Prior to joining NDSU, she worked at the University of Saskatchewan, Canada, Concordia University. Canada, Cardiff University

New curriculum changes on horizon

The CS Department's curriculum committee, headed by Dr. Ken Magel, met regularly during the spring semester to discuss the current structure to the undergraduate and graduate curriculum. Guided by an intense review of the computing curricula, a cooperative project of the Association for Computing Machinery (ACM), the Association for Information Systems (AIS) and the Computer Society (IEEE-CS), the group identified necessary components for each required course in the CS curriculum. In addition, a review of the body of knowledge area recommended by such computing curricula has shaped the content of current and new course offerings.

Each course currently required in the degree program and its content was discussed by faculty and recommendations for adjustments as well as new course development ideas were debated. At this time, no dramatic changes to the existing curriculum are expected. A few changes have been proposed including consolidation of the Theoretical Computer Science sequence to one course. Also discussed would be implementing a prerequisite course in programming or computer science problem solving prior to enrollment in the Introduction to Computer Science course. In addition, an integration of new courses in modern software development as well as software development for games is expected to better reflect content outlined by the computing curricula. A course in parallel computation is also being considered. These additions will complement the existing curriculum in the Bachelor of Science degree program.

The new changes are subject to university curriculum committee approval and could be implemented as soon as Fall 2011. The CS curriculum committee will continue to meet in the upcoming semester to discuss pertinent curriculum changes and the body of knowledge covered in the graduate curriculum to see if adjustments may be recommended. We look forward to continuing to offer a comprehensive and current curricular educational experience for NDSU students.
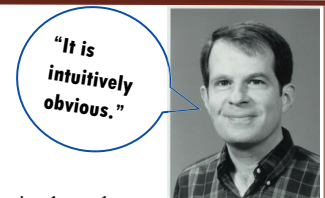
Recognize them?

Do these professors look familiar? They should — they are Dr William Perrizo (joined in 1973), Dr Kendall Nygard (joined in 1977), and Dr Kenneth Magel (joined in 1983). They really haven't changed that much.

"It is intuitively obvious."

Students have many fond memories of John. Many stories have been shared about his teaching style and what they learned from him. "Dr Martin was an excellent instructor because he actually tried to teach his students. His classes were often frustratingly hard but his classes were about learning, not the proctored self-study that reading and copying down lecture notes achieves. When you were finished with his class, you knew you learned a lot more than you expected." Guy Hokanson, CS Graduate student.
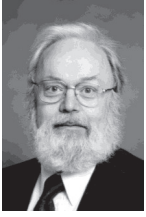
Dedicated teachers like John are too rare and he will be missed.

Other fun facts

A look at the last five years of CS majors indicates the average number of incoming majors is 60. These students have a GPA of 3.30 and a composite ACT score of 24.72. (According to Registration and Records census data 2009)

It is our loss

Founding member of the CS Department, Dr. D. Bruce Erickson, 66, professor emeritus in the Department of Computer Science and Operations Research, died Wednesday, December 23, 2009.

Bruce coordinated the undergraduate program in Computer Science for many years. He also coordinated and gave generously to the departmental scholarship program for undergraduates. Bruce's main academic interest was undergraduate teaching.

Students have many fond memories of Bruce. MSc Jason Peterson says, *"I credit him for so many wonderful memories, such as the time he randomly jumped up on a table and told us to* **"Never dereference a null pointer."** *He also said that if he had to play a recorder through his nose to get that to stick he would. Well, thankfully he did not go that far. Since it has been about 14 years ago when he did that, I think it has stuck quite well. His devotion to teaching was evident and effective. I learned more in his classes* than in any other."

Successful students

Besides working at the Microsoft Fargo campus as an SDET (Software Development Engineer In Test), Annaji Sharma Ganti is also pursuing his PhD in Computer Science at NDSU. He credits to the Microsoft Tuition Assistance Program for helping him. His current area of research is software testing in the Cloud. Recently he and his advisor, Dr. Tariq King, had a chance to write a research paper titled *"Migrating Self-Testing into the Cloud"*. Their paper was selected for inclusion in the Software Testing in the Cloud Workshop which was held on April 10, 2010 in Paris, France as part of the 3rd IEEE International Conference on Software Testing, Verification, and Validation (ICST 2010).

How does Annaji feel about it? He says, "*The conference was a great learning experience. Apart from the conference I was also able to have a great time going around the beautiful city of Paris.*"

Do you have news to share for the next newsletter?
Fill out the form at http://cs.ndsu.edu/alumniform.htm

Alumni news

Annette Godtland (Schauer) received a BS degree, majoring in CS, Math, and Math Education. Annette recently published her first book '*This Little Program Went to Market: Create, Deploy, Distribute, Sell, and Market Software and More on the Internet at Little or No Cost to You.*' Annette graduated from NDSU in 1980 and lives in Rochester, MN.

She worked as a computer programmer at IBM for 20 years, then at Kingland Systems Corporation for 5 years. In 2004 Annette started Godtland Software Corporation. She sells some of her own programs on her Web site, www.godtlandsoftware.com. She says, *"I've now compiled the tips, tools, and techniques that I used for the entire creation -to-sales process of my programs, demonstrated step-by-step, and published them in my first book."* Congratulations!

Jorgensen seminar

In Aug, Paul C. Jorgensen, Professor of Computer & Information Systems at Grand Valley State University in Allendale Michigan gave a presentation on "Test Driven Development: A Faustian Bargain." An internationally renowned author and speaker on Software Engineering topics, he was a guest of Richard Rummelt. There was a good turnout, which included NDSU alumni, faculty, graduate students and several professional software engineers from the FM-Developers group.

Simone Ludwig

and Brunel University, UK. She received her PhD and MSc with distinction from Brunel University, UK, in 2004 and 2000 respectively. Before starting her academic career she worked several years in the software industry. Her research interests include artificial intelligence, evolutionary computation, knowledge engineering, semantic grid/web, and grid computing.

Congratulations, Dr Do

Dr Hyunsook Do, Assistant Professor, received a $16,000 grant in June 2010 from National Science Foundation: NSF REU (Research Experience for Undergraduates). This grant is specifically for supporting undergraduate students. Through this grant, students will construct infrastructure for software security testing, and this work will provide research experiences to undergraduate students. She also received another grant from NSF Computing and Communication Foundations starting from 9/1/2010 for one year for $50,000. The project title is "Adaptive Regression Testing (ART) Strategies and Empirical Evaluations"

Congratulations, Dr Do!

CS impact in Miami

In June 2010, Dr Tariq King, Associate Professor (4th from left) and Richard Rummelt, Senior Lecturer (3rd from left), attended the second annual "Workshop on Integrating Software Testing into Programming Courses" at Florida International University in Miami Florida.

The event was hosted by Peter J. Clark, Professor of Comp.& Info Sciences, FIU and Professor Edward L. Jones, Chair, Department of Computing and Information Sciences Florida A&M University.

Participants included representatives from several Florida schools as well as universities in Ohio, Puerto Rico, South Carolina and, of course, the great state of North Dakota.

Remember room 244

IACC 244 lab has under-gone a great transfor-mation. It went from a lab to one that doubles as a classroom. The room has an overhead projector, pull down screen and seats 20 comfortably. Our thanks go to Adam Helsene and his student workers for the changes.

North Dakota State University

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Computer Science Newsletter

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- Department News

- Faculty News

- Student News

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http://cs.ndsu.edu/

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Thank you from all of us at NDSU Computer Science!