Volume 4, Issue 1

August 2011

North Dakota State University

Computer Science Department

Thoughts from the Head

Dr. Brian M. Slator, Department Head

It's a Photoshop Phake, that "giant check" photo on page three. We got a nice grant to launch a little startup company, with a nice subaward for NDSU, but the photo is a phake. We held a piece of cardboard for the 'shoot' and pasted a check in later – it was a phunny Photoshop phraud.

Comedy aside, things have settled down a little bit. We have hired no new faculty in the last two years, and curriculum changes are either implemented or approved.

Enrollment growth has stabilized and the undergraduate population is just over 200. We raised admission standards in the graduate program, resulting in a slightly smaller, somewhat better graduate population – we are requiring the GRE exam, starting this year.

On the top of page 3 is a list of the generous donors who have contributed over the last four years – many thanks to you all. After this we will publish an annual list, making room for an "Alumni Updates" section where you can tell your story, and read about other alumni, far and wide, for example:

Alumni Updates

Adam Helsene (BS 2008) works as System Administrator for NDSU-CS, maintaining systems for academics and research groups while coaching the programming team. He has created an impressive server room for the department and is busy remodeling and setting up virtualization for the labs.

Otto Borchert (BS 2001, MS 2008) is employed as a Research Technician for NDSU-CS and as a programmer/analyst for the Center for Science and Mathematics Education where he develops educational games and assists with outreach efforts including Science Olympiad and Governor's School. His research on educational immersive environments continues as he pursues a PhD in CS at NDSU. He also bought his first house in north Fargo in 2009.

Nem W. Schlecht (BS 1998, MS 2009) works as a Systems Admin for Packet Digital in Fargo. He coordinates the Information Technology program of the NDSU Governor's School every summer, and he recently bought his first house near downtown Fargo.

Faculty members awarded "Smart Farm" grant

Agriculture is continually evolving. Gone are days of just buying seeds, planting them and harvesting the crop. In today's world, farmers have much more to consider if they are to be competitive. Three professors from the computer science department were awarded the first NSF-PFI (National Science Foundation - Partnership for Innovation) grant with NDSU being the lead institution. Anne Denton is the principal investigator of the $599,722 grant, joined by Saeed Salem and Dean Knudson.

The "Smart Farm" includes a data-driven decision support system incorporating sensor data, satellite images, and weather information to allow farmers to respond flexibly to production and environmental needs. The platform is versatile and can be applied to any crop. In the initial phase, sugar beets will serve as a prototype application. A strong partnership is in place (NDSU industry consortium). It includes the largest sugar beet cooperative in the region (American Crystal Sugar) and a provider for precision agriculture information (Agri ImaGIS). The proposed platform has a high potential for increasing US competitiveness.

Other personnel on the grant include co-investigators Philip Boudjouk and David Franzen; and Reza Maleki.

Do you have news to share? Send your story to

NDSU.Computer.Science@ndsu.edu

Dean Knudson receives Peltier Award

Congratulations, Dean Knudson, associate professor of computer science, for receiving the Peltier Award for Teaching Innovation. Dean has been the coordinator for Capstone since 2004. Capstone projects pair students with industry and government to give them real life experiences. The students work in teams and use their technical knowledge on projects for their assigned business.

Dean estimates 250 students have gone through the program. He continues to take them to a higher level as he adds more companies and projects.

Brian Slator, professor and department head of computer science, says “Over the years, this course has been refined and expanded, following industry initiatives, and providing students with authentic ‘learn-by-doing’ experiences using modern tools and methods borrowed from the regional companies that sponsor the projects. Students do real projects for real companies, drawing on their NDSU course work and training in order to effectively learn company methods and tools.”

Anne Denton named James A. Meier Junior Professor

Congratulations to Anne Denton on receiving the James A. Meier Junior Professorship for the College of Science and Mathematics. The Meier Professorships are funded through the generosity of James A. Meier, a graduate of the College and North Dakota State University. The award winner receives $2500 for a three-year term (Fall semester 2011 through Spring semester 2014) and is referred to as a James A. Meier Junior Professor for life. It recognizes either an associate or assistant professor who has contributed to teaching through his or her research program.

Dr. Denton's research is largely comprised of developing data mining techniques for diverse problems ranging from bioinformatics to optical luminescence. As such her work balances the theoretical underpinnings of clustering algorithms to the applied discovery of gene and protein sequences.

Dr. Denton’s research interests are in data mining of diverse scientific data sets that are too complex to be analyzed using classical statistics, and for which rigorous significance evaluations are required. She works with collaborators in plant sciences, microbiology, precision agriculture, and the chemistry of coatings.

As a consequence, in just a few years Anne Denton has published nearly 40 peer-reviewed journal and conference publications, and has participated in eight funded research grants: five internal and three external, four as PI. Equally impressive, these publications and grant awards represent at least five fundamentally different and highly varied research domains.

Anne’s CSci 372: Comparative Programming Languages designed a web site that allows anybody to report flood-related observations and photos. A computer science graduate student, Paul Loree, has now adapted that site to the flooding in Minot, and it has clearly become "viral" (reports being added at an amazing rate).

http://mouseriverflood2011.net

Bill Perrizo awarded 5th patent

William (Bill) Perrizo, Distinguished Professor of Computer Science, was awarded his fifth U.S. patent for his system and method for performing and accelerating cluster analysis of large data sets. The title of the patent is "Method and system for data mining of very large spatial datasets using vertical set inner products."

His expertise is in database systems, data mining, knowledge discovery, distributed database systems, high performance computer systems, communications networks, precision agriculture, bioinformatics and remotely sensed imagery analysis.

Perrizo and his team also developed a technology tool to help government and businesses quickly process massive data sets. As a result, Treeminer, Inc., has concluded a license agreement with the NDSU Research Foundation which gives Treeminer exclusive rights to further develop, market and sell the patented data mining solutions.

The technology represents approximately a 15-year effort in data mining research. "Efforts such as Perrizo's illustrate the expertise available at NDSU that contributes to the body of knowledge in many areas, and contributes to the strength and vitality of state and national economic interests," said NDSU President Dean L. Bresciani. "We congratulate Bill and his team on reaching this milestone."
Bill has been with the NDSU computer science department since 1973.

Alumni news

Paulette Armstrong graduated from NDSU in Spring 1986 with a Masters Degree in Computer Science and was hired by E-Systems, now Raytheon, to develop simulations to predict performance of systems during the design phase of the system. This allowed changes to be made to the system architecture during the design phase if the simulation predicted that the system performance wasn't adequate to meet requirements. After 4 years, she became supervisor of a System Performance group. She's been at Raytheon for 25 years and has moved into more senior management roles including program management.

The Operations Research emphasis in her studies and Master's thesis, an NSF project for which Dr. Ken Nygard had received a grant, prompted her first employer to hire her. She credits her career opportunities to the experiences afforded her in her degree program at NDSU.

Thanks to all who have donated funds to the CS department. It is because of you we are growing and succeeding. This is a list of donors since Brian Slator became department Head:

* denotes multiple donations

Hari Alluri	Karl Altenburg	Dale L Anderson	Robert Anderson	Steven Anonsen*
Ramkrishna Anugula*	Paulette Armstrong*	Ganesh Bell	Jay Bender	Dennis Berg
John Bergstrand	William Bleier	Chad Blumeyer	Doug Burgum	Mawshien Chen
George Clapp	Steven Clark*	Jay Cofell	James Council Jr	Mary Davis
Eric DeBilt	Anne Denton*	Hyunsook Do	Trent Doering	Ron Ehlers
Satya Ellina	Daryl Erdmann	D Bruce Erickson	M. Joy Erickson	Paul Fairweather
Gerard Fisher	James Foster	Thomas Fraser	Robert Gammill*	Prabhukumar Ganapathy
Hildegard Giese	John Goertel	Harley Guenther	Gail Hagen	Karen Halliday*
George Hamer*	Xudong He	Jeffrey Hernes	Mark Hilde	Ross Hillier
James Hinz	Marty Hoag	Beth Hopfenspirger*	Albert Horejsi Jr	Carole Huber*
Christie Iverson*	Robert Jacobsen	Eunice Johnston	Jon Jorgenson	Carolyn Juell
Sanju Kapoor	Angshu Kar*	Lyn Keller*	Gregory Kilwein	Paul Kingsley
Dean Knudson	Bruce Kosbab	Patsy Koser	David Larson*	Wade Brian Lee
Loren Lennie	Matt Lepird	Gang Li	Yuhuan Li	Lon Likness
Aaron Lindemann	Robert Lindvall	Nickolas Lindvall	Lynn Lingen	Shankar Manyem
Blair Martin	John C Martin	Prakash Melachuri*	Michael Miller	Arlyce Miller
Bradley Mittelstedt	Paul Munch	Ward Nelson	Joseph Nicholas	Michael Nordstrom
Kendall Nygard	Jay Olson	Kevin Olson	Betty Opheim*	Kristin Ottem
Venkata Peddu*	William Perrizo*	Philip Petersen	Mark Peterson	Jason Peterson
Michael Poepping	Gerald Pratt	Blayne Puklich	Mingbo Qin	Prabhu Ram
Everett Richardson	Jerry Rivers*	Bernhardt Saini-Eidukat	Sabah Salih	Rodney Salzwedel
Erik Sand	Michael Sangster	Howard Schantz	Quentin Schmierer	Curtis Schwandt
Don Schwert	Warren Shreve	Clair Simonson	Brian Slator	James Smith*
Douglas Smithers	Davis Spiekermeier	Michael Stabnow	Ron Stamen	Gregory Stangler
Raja Tella	Paul Tranby	Robert Traun	Timothy Trenbeath	Mark Wadman
James Walsh	Maurice Walters*	Debrah Wehmas-Walter	Tiffany Weidendorf	Joyce Weigel
David Wenberg	Norman Wentz	Roger Whitney	Dale Wick	Richard H Williams
Kyle Wurgler	Jeffery Wutzke	Brandon Wyman	Richard Zaylskie	Zhili Zhang

Would you like a PDF of this or an older newsletter? See

http://cs.ndsu.edu/newsletters

WoWiWe — Way to go!

The National Institutes of Health has awarded a two-year, $1.08 million competitive grant award to Brian Slator, professor of computer science, for his faculty startup venture known as WoWiWe (pronounced Wow' ee) Instruction Co. This team of researchers develops software that creates virtual worlds to teach science. Brian Slator, computer science department head, established the WoWi We research startup company to commercialize educational simulation games developed by NDSU's World Wide Web Instructional Committee. Students seamlessly enter a virtual world to become scientists: performing experiments, interacting with the world and with each other, applying the scientific method. "This approach represents the notion of learning by doing," explains Slator. "You are having experiences in the role of a scientist." WoWiWe Co. is planning to locate in NDSU's Business Technology Incubator, working to create seven educational software modules. "We try to make the learning engaging and keep the fun in learning," said Slator.

The award includes $369,276 for NDSU's Center for Science and Mathematics Education, led by Donald Schwert, professor of geosciences. Brad Vender, who earned his master's degree in computer science from NDSU, serves as principal investigator for the project.

Pictured are Don Schwert, Brian Slator & Brad Vender with a BIG check!

Computer Science Department 2740
North Dakota State University
P.O. Box 6050
Fargo, ND 58108-6050

E-mail:
NDSU.Computer.Science@ndsu.edu

Located at:
1320 Albrecht Blvd
IACC 258

Computer Science Newsletter

Inside this Newsletter:

We're on the Web!

http://cs.ndsu.edu/news.htm

Computer Science Donation Form

Name(s): _____

Address: _____

_____

My/our gift of $ _____ is pledged and presented to the North Dakota State University Development Foundation.

This gift is designated for the

_____ **Computer Science Endowment Fund** _____ **Computer Science Scholarship Fund** or _____ **The Paul Juell Scholarship Fund**

Credit Card: Please charge my gift of $ _____ to my [ ] VISA [ ] DISCOVER [ ] MASTERCARD

Account #: _____

Expiration date: _____ Signature: _____

Or, you can donate directly online at http://www.ndsufoundation.com. Click on **Give Now**, choose **College of Science and Math** in the drop down and designate the **Computer Science Department** in the **Additional Information Comments**.

Matching Gift: Does your employer or spouse's employer have a matching gift program? If so, ask your employer for the form and send to

NDSU Development Foundation
PO Box 5144
Fargo, ND 58105-5144

A signature is required for credit cards. *The NDSU Development Foundation is qualified to receive gifts, donations, and bequests that are deductible for federal income tax purposes.*