

NDSU DEPARTMENT OF COMPUTER SCIENCE
AND OPERATIONS RESEARCH

ANNUAL REPORT 2010-2011

Primary Contact:

Dr. Kenneth Magel, Associate Head

Kenneth.Magel@ndsu.edu

Carole Huber, Administrative Assistant

Carole.Huber@ndsu.edu

Faculty, Lecturers and Special Appointments Profiles



Dr. Anne Denton, Associate Professor
PhD, University of Mainz, Germany 1996

Dr. Denton teaches courses in database management, bioinformatics, problem solving and foundations of computer science. Her research interests include data mining, bioinformatics, course management systems for distance education, and computational physics. Anne was promoted to Associate Professor with tenure effective August 2009.



Dr. Hyunsook Do, Assistant Professor
PhD, University of Nebraska – Lincoln 2007

Dr. Do joined the faculty in the Fall of 2007. She teaches courses in networks, network security, and software engineering. Her research program concerns software engineering, particularly software testing, maintenance, and empirical methodologies.



Dr. Tariq King, Assistant Professor
PhD, Florida International University 2009

Dr. King joined our faculty in Fall 2009. He teaches Formal Methods for Software Development and Software Testing and Debugging. His research interests include software testing, autonomic and self-managing systems, model-driven software development, and software maintenance.



Dr. Wei Jin, Assistant Professor
PhD, University of Buffalo, 2008

Dr. Wei Jin joined the faculty in the Fall of 2008. She teaches courses in comparative languages and information retrieval. Her research interests focus on Text Mining, Information Retrieval and social Network analysis and Bioinformatics.



Dr. Jun Kong, Assistant Professor
PhD, University of Texas at Dallas, 2005

Dr. Kong is interested in visual modeling languages, model driven development and web-data interoperation. He teaches courses in operating systems and human computer interaction.



Dr. Juan Li, Assistant Professor
PhD, University of British Columbia, Vancouver Canada
2008

Dr. Juan Li joined the faculty in the Fall of 2008. She teaches courses in artificial intelligence, parallel and distributed simulations. Her research interests are in networking and distributed systems.



Dean Knudson, Associate Professor
PhD, Northwestern University,

Dr. Knudson is coordinator of the capstone program for bachelor of science students in CS and MIS. In this role he develops external sponsors for projects and mentors the student teams in project management. He teaches CSci 445, Capstone: Software Projects. Dr. Knudson has extensive experience working as a development executive for Microsoft and several other companies. He is a half-time Associate Professor.



Dr. Simone Ludwig, Associate Professor
PhD, Brunel University, West London, UK 2004

Dr. Simone Ludwig joined the faculty in the Fall of 2010. She teaches courses in assembly programming and artificial Intelligence. Her research interest combines distributed computing with artificial intelligence.



Dr. Kenneth Magel, Professor and Associate Head
PhD, Brown University, 1977

Dr. Magel teaches a wide variety of courses, including software engineering, programming languages, and social implications of computing. His software engineering research activities explore what makes programming difficult and programs complex. Dr. Magel conducts seminars and courses in XML, C# and .net technologies. He coordinates the graduate programs in software engineering. Beginning July 1, 2007 he became Associate Head for the Department.



Dr. Kendall E. Nygard, Professor and Graduate Coordinator
PhD, Virginia Polytechnic Institute and State University, 1978

Dr. Nygard teaches courses in simulation, social implications of computing, mathematical modeling, network optimization, systems analysis and design, and software testing and maintenance. His research interests include software systems for military mission planning for cooperative control of autonomous aircraft systems, software agents, and geographic information systems (GIS) for school transportation. Primary sponsors of his research are the Air Force and Navy. Starting in summer, 2006 he became graduate coordinator for the Department.



Dr. William Perrizo, University Distinguished Professor
Ph.D., University of Minnesota, 1972

Dr. Perrizo teaches courses in database systems, data mining, bioinformatics, and networks. His research interests include database and information systems, data mining, data warehousing, distributed database systems, bioinformatics, precision agriculture, and remotely sensed data management and visualization. His research has been funded by many federal and private sources. Dr. Perrizo is a co-founder of the worldwide Virtual Conference on Bioinformatics. Dr. Perrizo has served in leadership roles for many conferences and on many boards and has a strong international reputation in research. In fall, 2007, he became one of the first seven University Distinguished Professors at NDSU, and in spring, 2008, was named Fargo-Moorhead Chamber of Commerce Professor



Dr. Saeed Salem, Assistant Professor
Ph.D., Rensselaer Polytechnic Institute, NY 2009

Dr. Salem joined the faculty Fall of 2009. He teaches courses in Bioinformatics and Data Mining. His research interests are in bioinformatics, biological networks, data mining and machine learning.



**Dr. Brian M. Slator, Professor and Department Head
Ph.D., New Mexico State University, 1988**

Dr. Slator teaches courses in artificial intelligence (AI), multimedia educational systems, computer science problem solving, and comparative languages. His research interests revolve around active environments for learning, including the use of software agents, case-based reasoning, knowledge representation, multimedia systems, distance education, synthetic environments, and multi-user educational games. Dr. Slator is a recipient of the Ernest L. Boyer International Award for Excellence in Teaching, Learning and Technology. Since fall, 2007, he has been Department Head.



**Dr. Vasant Ubhaya, Professor
Ph.D., University of California, Berkeley, 1971**

Dr. Ubhaya teaches courses in Discrete Mathematics, Algorithm Analysis, Performance Evaluation, Mathematical Programming, and Dynamic Programming. He does research in Algorithms, Optimization and Approximation, and publishes his results regularly in journals. He is often invited by professional societies to organize and chair sessions, and give talks at their meetings. His research has been supported by the National Science Foundation and EPSCoR.



**Dr. Gursimran Walia, Assistant Professor
Ph.D., Mississippi State University, 2009**

Dr. Walia joined the faculty in Fall of 2009. He teaches courses in Software Project Planning and Empirical Software Engineering. His research interests are empirical software engineering, psychology in software engineering, software quality, information assurance and software engineering for computer security.



**Dr. Changhui Yan, Assistant Professor
Ph.D., Iowa State University, 2005**

Dr. Yan joined the faculty in Spring of 2010. He teaches courses in Bioinformatics. His research interests include developing computational methods and tools to assist biologists to investigate problems in complex biological systems.



**Dr. Weiyi (Max) Zhang, Assistant Professor
PhD, Arizona State University, 2007**

Dr. Zhang joined the faculty in the Fall of 2007. He teaches courses in object oriented systems, and software engineering. His research interests are networking and bio-informatics. During the period January until September, 2011, Dr. Zhang went on developmental leave to work on a special project with AT&T. He resigned from NDSU effective August 15, 2011, to pursue a career in industry.

LECTURERS



**Joan Krush, Academic Advisor/ Lecturer
MA, University of Iowa**

Ms. Krush joined the faculty Fall 2009 as a halftime lecturer and advisor. Joan has a MA in student development in Postsecondary Education. She assists our students with their advising needs, leads student recruiting, and teaches sections of University 189.



**Ms. Dana Johnson, Adjunct Senior Lecturer
MS, University of Denver, 1980**

Ms. Johnson is retiring from the teaching of distance education courses for us starting summer, 2011.



**Dr. Sameer Abufardeh, Lecturer
Phd, North Dakota State University, 2009**

Dr. Abufardeh teaches courses in Java. His research interest has been in the area of requirements engineering. He received his Ph.D. from the Department in fall, 2008.



**Richard Rummelt, Senior Lecturer
MS, Grand Valley State University, Michigan, 2005**

Mr. Rummelt teaches courses in Java and the advanced Visual Basic .NET courses. His research interest has been in the area of requirements engineering. He is an active Ph.D. student. Starting in spring, 2006, he is the faculty advisor for our new chapter of UPE, the Computer Science Honor Society. Starting in spring, 2009, Richard became the ACM Student Chapter advisor. Mr. Rummelt was promoted to Senior Lecturer starting August, 2009.



**Dr. Oksana Myronvych, Professor of Practice
Phd, North Dakota State University 2010**

Dr. Myronovych teaches courses in Java and the advanced Visual Basic .NET courses. Her research interest has been in the area of requirements engineering. She received a Ph.D. in 2009. She is currently the Treasurer/Secretary for the student chapter of UPE, the Computer Science Honor Society. Dr. Myronvych was promoted to Professor of Practice in December 2010.



**Pratap Kotala, Lecturer
MS, North Dakota State University 2002**

Mr. Kotala teaches courses in systems analysis and design and foundations of programming for MIS majors. He also teaches the distance and continuing education sections of business use of computers.

STAFF



Adam Helsene, Systems Administrator

Adam Helsene is the department systems administrator and does all the maintenance and purchasing of all the computer equipment. He also does the configurations for the departmental instructional laboratories. He teaches the Introduction to UNIX in the fall semesters.



Carole Huber, Administrative Assistant

Ms. Huber coordinates the administrative functions of the department. This includes managing research and appropriated funds, purchasing and accounts payable. She is the contact person for all student employment applications, time-slips, and tuition waivers. She coordinates all Teaching/Research/Grading positions for the department.



**Betty Opheim,
Part-time Administrative Secretary**

Ms. Opheim carries out inventory, equipment and software support functions and assists in back-up office support. She is half-time.



**Stephanie Sculthorp,
Administrative Secretary**

Ms. Sculthorp carries out office support functions, including data development, reporting, survey work, and assisting students and faculty. She is the assistant to the Graduate Coordinator.



Otto Borchert
Programmer Analyst
MS, North Dakota State University, 2008

Mr. Otto Borchert began his Programmer Analyst position August 2007. His duties include educational games, research and software development.



Guy Hokanson
Programmer Analyst
MS, North Dakota State University, 2010

Mr. Guy Hokanson began his Programmer Analyst position August 2007. His duties include educational games, research and software development.

I. Goals/accomplishments for the 2010-2011

Major Accomplishments for the Department in 2010-11

1. The Department continued funded activities which received \$930,925. New grants during this year totaled \$1,277,587. This is an increase of more than one hundred twenty percent in new grants over last year. Altogether, fourteen faculty, five undergraduate students, and seventy-nine graduate students were involved in grants during this year;
2. The faculty published 73 refereed articles, 28 other articles, and made 34 presentations during 2009-10;
3. There were 3 Graduate Certificates in Software Engineering, 21 M.S. in Computer Science, 12 M.S. in Software Engineering, 1 Ph.D. in Computer Science, and 1 Ph.D. in Software Engineering graduated during this year;
4. We have 208 graduate students and 259 undergraduate majors;
5. We gained full University approval for extensive modifications of our B.S. and B.A. degree programs with implementation starting in fall, 2011;
6. The Master of Software Engineering online program had ten students in 2010-11 and should graduate its first student in 2012.
7. Dr. Anne Denton was named James A Meier Junior Professor for the College of Science and Mathematics, and Dr. Dean Knudson won the NDSU Peltier Award for Innovation in Instruction.
8. The NDSU Computer Science Industry Consortium Program (ICP) was founded with initial membership of Phoenix International, Agri ImaGIS, American Crystal Sugar, and RDO Equipment,

A. INSTRUCTION AND STUDENT SUCCESS

Exit Interviews

During 2010-11, the Department continued to interview graduating seniors. Each senior was asked to fill out an online questionnaire as part of the CSci 445 capstone course.

Capstone Projects:

The 2010-11 academic year marked the ninth year in which capstone projects for seniors in CS have been sponsored by external constituencies, primarily private corporations. The intent is to help students develop a strong background in real software development issues, learn software project management skills, and develop the ability to work in teams. Successful student teams use many of the skills they learned in earlier Computer Science courses. The sponsors for spring semester, 2011 were:

Agri-ImaGIS
Air Academy
ATC
Blue Cross Blue Shield
Intelligent Insites

Microsoft
NDSU CS
NDSU PS
NICS
Phoenix International

We were particularly happy that more than half of these companies had sponsored capstone projects in the past. We received inquiries from another eight companies who wished to sponsor projects, but whom we were unable to accommodate.

Capstone Project Student Survey – Results for Spring 2011

Knowledge in Scientific and Technical Areas: Did you have enough background from your class work to be able to learn what you needed to in order to make a good contribution to your project? (If not, should something be added to the curriculum?)

1. ☐	2. ☐	3. ☐	4. ☐	5. ☐	Average Score: 2.08
Very Good	Good	Marginal	Poor	N/A	
9	21	3	3	1	

Teamwork/Dedication to task: Did your team members work well together and show a dedication to completing your project on time and with high quality?

1. ☐	2. ☐	3. ☐	4. ☐	N/A ☐	Average Score: 1.76
Very Good	Good	Marginal	Poor	N/A	
17	12	8	0	0	

Communication/Status Reporting: How good were communications with your mentor and sponsor throughout the semester?

1. ☐	2. ☐	3. ☐	4. ☐	N/A ☐	Average Score: 1.16
Very Good	Good	Marginal	Poor	N/A	
31	6	0	0	0	

Capstone Project Value: Overall, what is your opinion of the value of the NDSU Computer Science Capstone Program?

1. ☐	2. ☐	3. ☐	4. ☐	N/A ☐	Average Score: 1.32
Very Good	Good	Marginal	Poor	N/A	
25	12	0	0	0	

Classroom lecture material: Were the classroom lectures (setting software engineering guidelines, etc.) of value? (What parts were of most value? What parts were of least value?)

1. ☐	2. ☐	3. ☐	4. ☐	N/A ☐	Average Score: 1.95
Very High	High	Marginal	Low	N/A	
12	18	4	3	0	

Project Definition: Was your project appropriate for a Capstone project?

1. ☐	2. ☐	3. ☐	4. ☐	N/A ☐	Average Score: 1.59
Very High	High	Marginal	Low	N/A	
19	15	2	1	0	

Schedule Conflicts: Did your team have many problems getting together for meetings among yourselves or with the mentor/sponsor? (What would you recommend to help deal with issues in this area?)

1. ☐	2. ☐	3. ☐	4. ☐	N/A ☐	Average Score: 3.24
Very Many	Many	Some	None	N/A	
2	1	20	14	0	

Summary tabulation of the Project Sponsor Survey, Compiled May, 2011

2011 Projects	Opinion of Capstone Program*	Willing to sponsor next year	Final Grade from Sponsor	Comments - mine	Comments - Sponsor/Mentor
Agri ImaGIS	Good	For Sure	A+	MUCH better than last year	Excellent teamwork. We are glad that we worked with such a team.
Air Academy	Very Good	Likely	A+	This was an extension of the project that started last year - another great job for AA.	Good chance to gain experience with the real-world applications and working in an environment where requirements and needs may evolve a bit over time
ATC	Very Good	Likely	A	Another great project for ATC	We're two-for-two with capstone, both were positive experiences. Likely to sponsor next year - we'd have to identify a need, but we can usually do that.
BCBS ND	Very Good	NA	A-	Very good project this year	In a re-organization so need to see what happens by next spring to decide on another project.
Intelligent Insites	Very Good	For Sure	A	MUCH better than last year	Very smooth and well organized - Hands-on experience is essential for graduating students!

Microsoft	Very Good	Likely	B	Great to have MS back in our capstone program	It's very good to be back in the program. We learned some things that we will work to improve upon from our side for future sessions. It's a great experience for the students.
NDSU CS	Very Good	For Sure	A-	Internal project that went well	Met requirements, everyone contributed, everyone learned about LDAP, C# and interfaces
NDSU PS	Very Good	For Sure	B	Sort of internal project - for Plant Science, turned out to be a bigger task than originally thought	Project was a bit much for them to handle in a single semester but the team did fine given the circumstances
NISC	Very Good	For Sure	B	Team delivered what was required but had a couple bumps along the way. Generally quite good.	I love working with NDSU on these projects. Would be willing to attempt an International project. Dean does a great job of working with and preparing the project teams. I feel the program provides valuable experiences for the students to gain knowledge of how software development works in the workplace.
Phoenix International	Good	Likely	A	Very good project this year	I appreciate the effort made to connect students with local employees and to offer them real-world experience. I firmly believe that programs such as this are invaluable both for students and the companies that participate. Best capstone project yet.
Polaris	Very Good	For Sure	A	Very good project again this year.	Great program/thanks Dean. Thanks to Stephanie for her support.

Rockwell Collins	Very Good	For Sure	A	Very good project this year - it is being used at Rockwell Collins already	Great effort, excellent communication, team would be an asset to SW teams across many different companies
State Bank & Trust	Very Good	Likely	A-	This was their first year sponsoring a project and it went well.	Coding skills were good, all did well.

In summary, two projects received an A+, four projects received an A, three projects received an A-, and two projects received a B grade from the sponsors. All projects were successful this year.

	Students	Program Value			
	Very Good	Good	Marginal	Poor	No Comment
2005	8	11	2	1	
2006	13	5	1	1	
2007	20	6			
2008	30	6			
2009	25	6	1		
2010	33	18	4	1	1
2011	27	10			
	Sponsors	Opinion of Capstone Program			
	Very Good	Good	Marginal	Poor	No Comment
2005	13	6	1	1	2
2006	8	3			
2007	8	3			
2008	9	5			
2009	5	5			
2010	7	5			
2011	11	2			

In summary, responses from students and sponsors continue to improve each year.

2. Advisees 2010 – 2011

The list below provides the student advisees for each faculty member. Non-tenured faculty are shielded from most undergraduate and graduate advising although they do take on some graduate student advising as they become more experienced.

With regard to graduate students, this list includes either the coursework advisor or the research advisor. The research advisor is listed only if the student has an approved Plan of Study.

Last Name	First Name	Academic Level	Major Description	Advisor Name
Agarwal	Palak	Senior	BS-Computer Science	Denton,Anne
Andersen	Zechariah	Junior	BS-Computer Science	Denton,Anne
Berstler	Christopher	Sophomore	BS-Computer Science	Denton,Anne
Bjornstad	Christopher	Sophomore	BS-Computer Science	Denton,Anne
Bliss	Spencer	Junior	BS-Computer Science	Denton,Anne
Brakvatne	Kristian	Sophomore	BS-Computer Science	Denton,Anne
Bugner	John	Senior	BS-Computer Science	Denton,Anne
Dammeier	Joel	Sophomore	BS-Computer Science	Denton,Anne
Douglas	Steven	Senior	BS-Computer Science	Denton,Anne
Ellingson	Christopher	Junior	BS-Computer Science	Denton,Anne
Gerhardt	Sean	Senior	BS-Computer Science	Denton,Anne
Al-Azzam	Omar	Graduate	PHD-Computer Science	Denton,Anne
Al-Nimer	Loai	Graduate	PHD-Computer Science	Denton,Anne
Chakraborty	Ushashi	Graduate	MS-Computer Science	Denton,Anne
Chitraranjan	Charith	Graduate	MS-Computer Science	Denton,Anne
Ganesan	Arjun	Graduate	MS-Computer Science	Denton,Anne
Gupta	Urvashi	Senior	BS-Computer Science	Denton,Anne
Kar	Angshu	Graduate	MS-Computer Science	Denton,Anne
Karagwal	Divek	Senior	BS-Computer Science	Denton,Anne
Mahodaya	Rupam	Sophomore	BS-Computer Science	Denton,Anne
Mendiratta	Suryank	Junior	BS-Computer Science	Denton,Anne
Nguyen	Austin	Sophomore	BS-Computer Science	Denton,Anne
Odden	Mathew	Senior	BS-Computer Science	Denton,Anne
Peterson	Randolph	Sophomore	BS-Computer Science	Denton,Anne
Ramirez				
Sanchez	Cesar	Junior	BS-Computer Science	Denton,Anne
Reetz	Shane	Junior	BS-Computer Science	Denton,Anne
Sabot	David	Sophomore	BS-Computer Science	Denton,Anne
Sahni	Ritika	Graduate	MS-Computer Science	Denton,Anne
Saxton	Robert	Junior	BS-Computer Science	Denton,Anne
Schmidt	Matthew	Junior	BS-Computer Science	Denton,Anne
Smothers	Tyler	Senior	BS-Computer Science	Denton,Anne
Voels	Zachary	Sophomore	BS-Computer Science	Denton,Anne
Wilson	Carey	Freshman	BS-Computer Science	Denton,Anne

Wu	Jianfei	Graduate	PHD-Computer Science	Denton,Anne
Beaty	Thomas	Sophomore	BS-Computer Science	Do,Hyunsook
Chugh	Raashi	Senior	BS-Computer Science	Do,Hyunsook
Dash	Siddhant	Junior	BS-Computer Science	Do,Hyunsook
Gallagher-Lein	Christy	Senior	BS-Computer Science	Do,Hyunsook
Gedgaud	Philip	Senior	BS-Computer Science	Do,Hyunsook
Jackson	Abram	Senior	BS-Computer Science	Do,Hyunsook
Johnson	Gunnar	Junior	BS-Computer Science	Do,Hyunsook
Jones	Andrew	Junior	BS-Computer Science	Do,Hyunsook
Khosla	Sourabh	Senior	BS-Computer Science	Do,Hyunsook
Kukule	Pasindu	Junior	BS-Computer Science	Do,Hyunsook
Kuruppu	Vishwajith	Junior	BS-Computer Science	Do,Hyunsook
Mehinagic	Damir	Senior	BA-Computer Science	Do,Hyunsook
Phelps	Bryan	Senior	BS-Computer Science	Do,Hyunsook
Rensberger	John	Junior	BS-Computer Science	Do,Hyunsook
Schaible	Zachery	Sophomore	BS-Computer Science	Do,Hyunsook
Subedi	Ujjwol	Senior	BS-Computer Science	Do,Hyunsook
Wiertzema	Travis	Sophomore	BS-Computer Science	Do,Hyunsook
Al Dhahi	Mahmoud	Senior	BS-Computer Science	Jin,Wei
Chitkara	Karan	Senior	BS-Computer Science	Jin,Wei
Geiser	Jeffrey	Junior	BA-Computer Science	Jin,Wei
Helbling	Chad	Senior	BS-Computer Science	Jin,Wei
Kumar	Ankit	Freshman	BS-Computer Science	Jin,Wei
Kumasaru	Kalith	Junior	BS-Computer Science	Jin,Wei
Kwiecien	Stanley	Senior	BS-Computer Science	Jin,Wei
Lindstrom	Robert	Senior	BS-Computer Science	Jin,Wei
Reuter	Chase	Junior	BS-Computer Science	Jin,Wei
Sharma	Harshvir	Senior	BS-Computer Science	Jin,Wei
Sharma	Yogesh	Senior	BS-Computer Science	Jin,Wei
Tangsrud	Andrea	Senior	BA-Computer Science	Jin,Wei
White	Ian	Junior	BS-Computer Science	Jin,Wei
Yan	Peng	Graduate	PHD-Computer Science	Jin,Wei
Alic	Edin	Senior	BS-Computer Science	Kong,Jun
Brink	Tyler	Sophomore	BS-Computer Science	Kong,Jun
Colvin	Cade	Junior	BS-Computer Science	Kong,Jun
Huckle	Lee	Freshman	BS-Computer Science	Kong,Jun
Kaufman	Mark	Senior	BS-Computer Science	Kong,Jun
Kohli	Jyotjeev	Graduate	MS-Software Engineering	Kong,Jun
Kondamarri	Samuel	Graduate	MS-Computer Science	Kong,Jun
Kotala	Pratap	Graduate	PHD-Computer Science	Kong,Jun
Lampl	Damian	Graduate	MS-Computer Science	Kong,Jun
Lanke	Ramesh	Graduate	MS-Computer Science	Kong,Jun

Limke	Jed	Graduate	MS-Software Engineering	Kong,Jun
Lutovsky	Joseph	Junior	BS-Computer Science	Kong,Jun
Malla	Jisshu	Freshman	BS-Computer Science	Kong,Jun
Narang	Deepanshu	Senior	BS-Computer Science	Kong,Jun
Nordlie	Jeffrey	Senior	BS-Computer Science	Kong,Jun
Petersen	Adam	Senior	BS-Computer Science	Kong,Jun
Prince	Adam	Senior	BS-Computer Science	Kong,Jun
Roudaki	Amin	Graduate	PHD-Computer Science	Kong,Jun
Roy	Arjun	Graduate	PHD-Computer Science	Kong,Jun
Schroeder	Kevin	Senior	BS-Computer Science	Kong,Jun
Sehgal	Ankita	Graduate	MS-Computer Science	Kong,Jun
Utke	John	Senior	BS-Computer Science	Kong,Jun
Wiesenborn	Jesse	Sophomore	BS-Computer Science	Kong,Jun
Xia	Xiaojun	Graduate	MS-Software Engineering	Kong,Jun
Yadav	Prayas	Senior	BS-Computer Science	Kong,Jun

Amell	Benjamin	Sophomore	BS-Computer Science	Krush,Joan
Anderson	Erik	Freshman	BS-Computer Science	Krush,Joan
Anderson	Travis	Freshman	BS-Computer Science	Krush,Joan
Assumani	Rafiki	Sophomore	BS-Computer Science	Krush,Joan
Bal	Mehmet	Junior	BS-Computer Science	Krush,Joan
Becker	Donavan	Sophomore	BS-Computer Science	Krush,Joan
Birrenkott	Christopher	Freshman	BS-Computer Science	Krush,Joan
Canillas	Eric	Sophomore	BS-Computer Science	Krush,Joan
Chale	William	Senior	BS-Computer Science	Krush,Joan
Chauhan	Gaurav	Junior	BS-Computer Science	Krush,Joan
Christiansen	Alycia	Freshman	BS-Computer Science	Krush,Joan
Cordes	Zachary	Freshman	BS-Computer Science	Krush,Joan
Cosmano	Richard	Freshman	BS-Computer Science	Krush,Joan
Crowley	Maxwell	Freshman	BS-Computer Science	Krush,Joan
Dolney	Robert	Sophomore	BS-Computer Science	Krush,Joan
Dosso	Vamorris	Senior	BS-Computer Science	Krush,Joan
Dvorak	Kavin	Freshman	BS-Computer Science	Krush,Joan
Freese	Joshua	Freshman	BS-Computer Science	Krush,Joan
Gao	Peng	Freshman	BS-Computer Science	Krush,Joan
Gelin	Robert	Freshman	BS-Computer Science	Krush,Joan
Granlund	Peter	Freshman	BS-Computer Science	Krush,Joan
Han	Naae	Freshman	BS-Computer Science	Krush,Joan
Harding	Steele	Freshman	BS-Computer Science	Krush,Joan
Haslop	Nolan	Freshman	BS-Computer Science	Krush,Joan
Higgins	Owen	Freshman	BS-Computer Science	Krush,Joan
Iliff	Shane	Freshman	BS-Computer Science	Krush,Joan
Knutson	Adam	Sophomore	BS-Computer Science	Krush,Joan
Kosis	Madeline	Sophomore	BS-Computer Science	Krush,Joan
Krebs	Colby	Freshman	BS-Computer Science	Krush,Joan

Kulzer	Anthony	Freshman	BS-Computer Science	Krush,Joan
Lafta	Ahmed	Sophomore	BS-Computer Science	Krush,Joan
Lien	Kristian	Sophomore	BS-Computer Science	Krush,Joan
Matzke	Ryan	Junior	BS-Computer Science	Krush,Joan
Melby	Derek	Sophomore	BS-Computer Science	Krush,Joan
Monson	Dwight	Sophomore	BS-Computer Science	Krush,Joan
Moss	Dane	Junior	BS-Computer Science	Krush,Joan
Nelson	Jeremy	Senior	BA-Computer Science	Krush,Joan
Paschke	Logan	Junior	BS-Computer Science	Krush,Joan
Pester	Blake	Sophomore	BS-Computer Science	Krush,Joan
Robinson	Christopher	Freshman	BS-Computer Science	Krush,Joan
Rotvold	Scott	Freshman	BS-Computer Science	Krush,Joan
Smothers	Jacob	Freshman	BS-Computer Science	Krush,Joan
Sperle	Aaron	Sophomore	BS-Computer Science	Krush,Joan
Stasko	Nicholas	Freshman	BS-Computer Science	Krush,Joan
Stevenson	Braden	Freshman	BS-Computer Science	Krush,Joan
Struxness	Jeremy	Freshman	BS-Computer Science	Krush,Joan
Talbot	Kristofer	Freshman	BS-Computer Science	Krush,Joan
Thompson	Matthew	Sophomore	BS-Computer Science	Krush,Joan
Verma	Goonj	Sophomore	BS-Computer Science	Krush,Joan
Weiland	Jesse	Junior	BS-Computer Science	Krush,Joan
Wickramaratne	Pankaja	Junior	BS-Computer Science	Krush,Joan
Williams	Brian	Senior	BS-Computer Science	Krush,Joan
Wills	Brian	Junior	BS-Computer Science	Krush,Joan
Bat-Otgon	Bat-Od	Junior	BS-Computer Science	Li,Juan
Bredahl	Joseph	Senior	BS-Computer Science	Li,Juan
Delaney	Michael	Senior	BS-Computer Science	Li,Juan
Drussell	Benjamin	Junior	BS-Computer Science	Li,Juan
Emamian	Peyman	Graduate	MS-Computer Science	Li,Juan
Goparaju	Aditya	Graduate	PHD-Computer Science	Li,Juan
Heier	Justin	Sophomore	BS-Computer Science	Li,Juan
Iverson	Kenneth	Junior	BS-Computer Science	Li,Juan
Kobilansky	Brandon	Senior	BS-Computer Science	Li,Juan
Krumm	Tanya	Sophomore	BS-Computer Science	Li,Juan
Li	Qingrui	Graduate	PHD-Computer Science	Li,Juan
Liu	Chao	Graduate	MS-Computer Science	Li,Juan
Mudgal	Akshay	Graduate	MS-Computer Science	Li,Juan
Narang	Lovekesh	Junior	BS-Computer Science	Li,Juan
Palazzo	Anthony	Junior	BS-Computer Science	Li,Juan
Pribble	Eric	Junior	BS-Computer Science	Li,Juan
Sarker	Mridula	Graduate	MS-Software Engineering	Li,Juan
Sharma	Akshat	Freshman	BS-Computer Science	Li,Juan
Sharma	Dakshi	Senior	BS-Computer Science	Li,Juan
Sharma	Shubh	Senior	BS-Computer Science	Li,Juan

Stenger	Craig	Senior	BS-Computer Science	Li,Juan
Al-Madi	Nailah	Graduate	PHD-Computer Science	Ludwig,Simone
Abeyratne	Keith	Graduate	MS-Software Engineering	Magel,Kenneth
Agbee	Adodo	Graduate	MS-Software Engineering CERT-Software	Magel,Kenneth
Ahmed	Syed	Graduate	Engineering	Magel,Kenneth
Akour	Mohammed	Graduate	PHD-Software Engineering	Magel,Kenneth
Alazzam	Iyad	Graduate	PHD-Software Engineering	Magel,Kenneth
Alemerien	Khalid	Graduate	PHD-Software Engineering	Magel,Kenneth
Anu	Vaibhav	Graduate	MS-Software Engineering	Magel,Kenneth
Asgar	Talukdar	Graduate	PHD-Software Engineering	Magel,Kenneth
Baishya Baruah	Prabahan	Senior	BS-Computer Science CERT-Software	Magel,Kenneth
Balbyshev	Vsevolod	Graduate	Engineering	Magel,Kenneth
Barakat	Rahaf	Graduate	PHD-Software Engineering	Magel,Kenneth
Bawa	Navdeep	Graduate	MSE-Software Engineering	Magel,Kenneth
Bindra	Dhruv	Graduate	MS-Software Engineering	Magel,Kenneth
Bremseth	Lucas	Senior	BS-Computer Science CERT-Software	Magel,Kenneth
Budati	Aastha	Graduate	Engineering	Magel,Kenneth
Christeson	Eric	Graduate	MS-Software Engineering	Magel,Kenneth
Christian	Benjamin	Senior	BS-Computer Science	Magel,Kenneth
Dicken	Austen	Senior	BS-Computer Science	Magel,Kenneth
Elhassani	Abdelhadi	Graduate	MS-Software Engineering	Magel,Kenneth
Ellingson	Mitchell	Senior	BS-Computer Science	Magel,Kenneth
Falah	Bouchaib	Graduate	PHD-Software Engineering	Magel,Kenneth
Fonseka	Nilukshi	Graduate	MS-Software Engineering	Magel,Kenneth
Full	Jacob	Sophomore	BS-Computer Science	Magel,Kenneth
Gedrose	Jordan	Freshman	BS-Computer Science	Magel,Kenneth
Geffre	Tyler	Junior	BS-Computer Science	Magel,Kenneth
Goswami	Anurag	Graduate	MS-Software Engineering	Magel,Kenneth
Gunderson	Karl	Graduate	MS-Software Engineering CERT-Software	Magel,Kenneth
Haque	Kazi	Graduate	Engineering	Magel,Kenneth
Hedden	David	Junior	BS-Computer Science	Magel,Kenneth
Jacobs	Adam	Graduate	MS-Software Engineering	Magel,Kenneth
Joshi	Kailash	Graduate	MSE-Software Engineering	Magel,Kenneth
Kaliki	Srikanth	Graduate	PHD-Software Engineering	Magel,Kenneth
Kittleson	Joshua	Sophomore	BS-Computer Science	Magel,Kenneth
Knudson	Ryan	Junior	BS-Computer Science	Magel,Kenneth
Kunwar	Ishita	Graduate	MS-Software Engineering	Magel,Kenneth
Lacher	Lisa	Graduate	PHD-Software Engineering	Magel,Kenneth
Lamb	Andrew	Junior	BS-Computer Science	Magel,Kenneth
Minot	Scott	Graduate	MS-Software Engineering	Magel,Kenneth

Mohpal	Aditi	Graduate	MS-Software Engineering	Magel,Kenneth
Mohpal	Aditya	Graduate	MS-Software Engineering	Magel,Kenneth
Mouw	Michael	Graduate	MSE-Software Engineering	Magel,Kenneth
Mueller	Benjamin	Senior	BS-Computer Science	Magel,Kenneth
Murugaiyan	Elangovan	Graduate	MS-Software Engineering	Magel,Kenneth
Nayak	Gaurav Kumar	Graduate	MS-Software Engineering	Magel,Kenneth
Njos	Robby	Graduate	MS-Software Engineering	Magel,Kenneth
Novotny	Judi	Graduate	MS-Software Engineering	Magel,Kenneth
Nygaard	Justin	Senior	BS-Computer Science	Magel,Kenneth
Omotoyinbo	Temi	Graduate	MSE-Software Engineering	Magel,Kenneth
Pandey	Anand	Graduate	MS-Software Engineering	Magel,Kenneth
Perez	Paulo	Graduate	MSE-Software Engineering	Magel,Kenneth
Pierce	Lance	Freshman	BS-Computer Science	Magel,Kenneth
Pillarikuppam	Naresh	Graduate	MS-Software Engineering	Magel,Kenneth
Puri	Rahul	Graduate	MS-Software Engineering	Magel,Kenneth
Rajendran	Senthilkumar	Graduate	MSE-Software Engineering	Magel,Kenneth
Riendeau	Justin	Junior	BS-Computer Science	Magel,Kenneth
Rogers	Wesley	Junior	BS-Computer Science	Magel,Kenneth
Roseen	Jeremy	Graduate	MS-Software Engineering	Magel,Kenneth
Roy	Pallavi	Graduate	MS-Software Engineering	Magel,Kenneth
Salam	Tareq	Graduate	PHD-Software Engineering	Magel,Kenneth
Sathiaseelan	Anu Evelyn	Graduate	MS-Software Engineering	Magel,Kenneth
Schauer	Jesse	Graduate	MSE-Software Engineering	Magel,Kenneth
Schuler	Jonathan	Senior	BS-Computer Science	Magel,Kenneth
Schwartz	Amanda	Graduate	PHD-Software Engineering	Magel,Kenneth
Serfling	Roger	Senior	BS-Computer Science	Magel,Kenneth
Sharma	Rahul	Graduate	MSE-Software Engineering	Magel,Kenneth
Sharma	Ashish	Junior	BS-Computer Science	Magel,Kenneth
Singh	Kunal	Graduate	MS-Software Engineering	Magel,Kenneth
Singh	Anoop	Senior	BS-Computer Science	Magel,Kenneth
Srichinta	Pallavi	Graduate	MS-Software Engineering	Magel,Kenneth
Srivastava	Arun	Graduate	MS-Software Engineering	Magel,Kenneth
Swoboda	Lance	Sophomore	BS-Computer Science	Magel,Kenneth
Timm	Geoffrey	Senior	BS-Computer Science	Magel,Kenneth
Upadhyay	Rajat	Graduate	MS-Software Engineering	Magel,Kenneth
Wallach	Michael	Graduate	PHD-Software Engineering	Magel,Kenneth
Wass	Cody	Senior	BS-Computer Science	Magel,Kenneth
Williams	Emmanuel	Graduate	MS-Software Engineering	Magel,Kenneth
Zeng	Lieming	Graduate	MSE-Software Engineering	Magel,Kenneth
Agarwal	Abhishek	Graduate	MS-Computer Science	Nygard,Kendall E
Aljarah	Ibrahim	Graduate	PHD-Computer Science	Nygard,Kendall E
Amanchi	Adithya	Graduate	MS-Computer Science	Nygard,Kendall E
Annadi	Ramakanth	Graduate	MS-Computer Science	Nygard,Kendall E
Annapureddy	Anupama	Graduate	MS-Computer Science	Nygard,Kendall E

Arafeen	Md.	Graduate	MS-Computer Science	Nygard,Kendall E
Bani Ta'an	Shadi	Graduate	PHD-Computer Science	Nygard,Kendall E
Baqui	Muhammad	Graduate	MS-Software Engineering	Nygard,Kendall E
Barat	Debarshi	Graduate	MS-Computer Science	Nygard,Kendall E
Basu	Samidip	Graduate	MS-Computer Science	Nygard,Kendall E
Bavanari	Haribabu	Graduate	MS-Computer Science	Nygard,Kendall E
Bou ghosn	Steve	Graduate	PHD-Computer Science	Nygard,Kendall E
Bouret	Megan Naga	Graduate	MS-Computer Science	Nygard,Kendall E
Byrisetty	Chaitanya	Graduate	MS-Computer Science	Nygard,Kendall E
Chakravarthi	Satheesh	Graduate	PHD-Computer Science	Nygard,Kendall E
Chekuri	Raju	Graduate	MS-Computer Science	Nygard,Kendall E
Chen	Min	Graduate	MS-Computer Science	Nygard,Kendall E
Chhina	Ramneet	Graduate	MS-Software Engineering	Nygard,Kendall E
Chintamaneni	Venkata	Graduate	MS-Computer Science	Nygard,Kendall E
Chinthakayala	Krishna	Graduate	MS-Computer Science	Nygard,Kendall E
Chowdhury	Md.	Graduate	MS-Computer Science	Nygard,Kendall E
Daggubati	Satyanarayana	Graduate	MS-Computer Science	Nygard,Kendall E
Dash	Debajyoti	Graduate	MS-Computer Science	Nygard,Kendall E
de Soysa	Shanaka	Graduate	MS-Computer Science	Nygard,Kendall E
Dumpala	Chaitanya	Graduate	MS-Computer Science	Nygard,Kendall E
El Ariss	Omar	Graduate	PHD-Computer Science	Nygard,Kendall E
Gadiparthi	Sudheer	Graduate	MS-Computer Science	Nygard,Kendall E
Gagneja	Kanwalinder jit	Graduate	PHD-Computer Science	Nygard,Kendall E
Ganti	Annaji Sharma	Graduate	PHD-Computer Science	Nygard,Kendall E
Garg	Bandana	Graduate	MS-Computer Science	Nygard,Kendall E
Garg	Tarun	Graduate	MS-Computer Science	Nygard,Kendall E
Ginjala	Ashok Reddy	Graduate	MS-Computer Science	Nygard,Kendall E
Ginjumpalli	Siva Krishna	Graduate	MS-Computer Science	Nygard,Kendall E
Gronneberg	Bethlehem	Graduate	MS-Software Engineering	Nygard,Kendall E
Guduri	Shailaja	Graduate	MS-Computer Science	Nygard,Kendall E
Guduru	Srinivas	Graduate	MS-Computer Science	Nygard,Kendall E
Hegde	Reshma	Graduate	MS-Computer Science	Nygard,Kendall E
Helsene	Adam	Graduate	MS-Computer Science	Nygard,Kendall E
Jahan	Farzana	Graduate	MS-Software Engineering	Nygard,Kendall E
Jaidev	Akanksha	Graduate	MS-Computer Science	Nygard,Kendall E
Jonnalagadda	Vindhya	Graduate	MS-Computer Science	Nygard,Kendall E
K.C.	Puja	Graduate	MS-Computer Science	Nygard,Kendall E
Kale	Neha	Graduate	MS-Computer Science	Nygard,Kendall E
Kandah	Farah	Graduate	PHD-Computer Science	Nygard,Kendall E
Kaparthi	Nikhitha	Graduate	MS-Computer Science	Nygard,Kendall E
Kapoor	Raghav	Graduate	MS-Computer Science	Nygard,Kendall E
Katiyar	Arti	Graduate	MS-Software Engineering	Nygard,Kendall E
Kaur	Harvinder	Graduate	MS-Computer Science	Nygard,Kendall E
Koganti	Nikhil	Graduate	MS-Computer Science	Nygard,Kendall E

Kolluru	Sunil	Graduate	MS-Computer Science	Nygard,Kendall E
Konar	Prosenjit	Graduate	PHD-Computer Science	Nygard,Kendall E
Kondoor	Dinesh	Graduate	MS-Computer Science	Nygard,Kendall E
Kostelecky	Marc	Freshman	BS-Computer Science	Nygard,Kendall E
Kroshus	John	Graduate	MS-Computer Science	Nygard,Kendall E
Landin	Michael	Graduate	MS-Computer Science	Nygard,Kendall E
Loree	Paul	Graduate	PHD-Computer Science	Nygard,Kendall E
Lundell	Martin	Graduate	PHD-Software Engineering	Nygard,Kendall E
Madamanchi	Manoj Babu	Graduate	MS-Computer Science	Nygard,Kendall E
Maddi	Sunil Reddy	Graduate	MS-Computer Science	Nygard,Kendall E
Mahabaleshwar	Mahesh	Graduate	MS-Computer Science	Nygard,Kendall E
Mandala	Narendar	Graduate	MS-Computer Science	Nygard,Kendall E
Marback	Aaron	Graduate	PHD-Computer Science	Nygard,Kendall E
McCulloch	Ryan	Graduate	MS-Computer Science	Nygard,Kendall E
Mukhami	Sudesh	Graduate	MS-Computer Science	Nygard,Kendall E
Murugesan	Karthiksivaram	Graduate	MS-Computer Science	Nygard,Kendall E
Nayakam	Ghanashyam	Graduate	MS-Computer Science	Nygard,Kendall E
Pachaiyappan	Sathya	Graduate	MS-Computer Science	Nygard,Kendall E
Pandey	Shivendushital	Graduate	MS-Computer Science	Nygard,Kendall E
Param	Sowjanya	Graduate	MS-Computer Science	Nygard,Kendall E
Paturu	Suresh	Graduate	MS-Computer Science	Nygard,Kendall E
Pikalek	Jonathan	Graduate	PHD-Computer Science	Nygard,Kendall E
Podagatlapalli	Chaitanya	Graduate	MS-Computer Science	Nygard,Kendall E
Pradeep				
Amaran	NFN	Graduate	MS-Computer Science	Nygard,Kendall E
Pradhan	Basudha	Graduate	MS-Software Engineering	Nygard,Kendall E
Pullagurala	Praveen	Graduate	MS-Computer Science	Nygard,Kendall E
Radermacher	Alex	Graduate	MS-Computer Science	Nygard,Kendall E
Ranganathan	Prakash	Graduate	PHD-Computer Science	Nygard,Kendall E
Rehman	Sana	Graduate	MS-Computer Science	Nygard,Kendall E
Sambaraju	Sharath	Graduate	MS-Computer Science	Nygard,Kendall E
Schaefer	Christopher	Graduate	MS-Computer Science	Nygard,Kendall E
Seetan	Raed	Graduate	PHD-Computer Science	Nygard,Kendall E
Sen	Sourya	Graduate	MS-Computer Science	Nygard,Kendall E
Sharma	Ranjana	Graduate	MS-Computer Science	Nygard,Kendall E
Sharma	Sonu	Graduate	MS-Computer Science	Nygard,Kendall E
Sharma	Susbi	Graduate	MS-Computer Science	Nygard,Kendall E
Sharma	Aman	Graduate	MS-Software Engineering	Nygard,Kendall E
Sikharam	Sandeep	Graduate	MS-Computer Science	Nygard,Kendall E
Singh	Manish	Graduate	MS-Computer Science	Nygard,Kendall E
Singh	Saumya	Graduate	MS-Computer Science	Nygard,Kendall E
Singh	Sonal	Graduate	MS-Computer Science	Nygard,Kendall E
Sundaram	Anita	Graduate	MS-Computer Science	Nygard,Kendall E
Teotia	Ashish	Graduate	MS-Computer Science	Nygard,Kendall E
Tirupathi	Phani Ganga	Graduate	MS-Computer Science	Nygard,Kendall E

Tiwari	Shweta	Graduate	MS-Computer Science	Nygard,Kendall E
Vallabh	Kiran	Graduate	MS-Computer Science	Nygard,Kendall E
Vellaswamy	Ashok Kumar	Graduate	MS-Computer Science	Nygard,Kendall E
Wijeyaratne	Pubudu	Graduate	MS-Software Engineering	Nygard,Kendall E
Yadav	Asha	Graduate	MS-Computer Science	Nygard,Kendall E
Yang	Ying Vishnu V	Graduate	PHD-Computer Science	Nygard,Kendall E
Yarram	Reddy	Graduate	MS-Computer Science	Nygard,Kendall E
Zhao	Jingjun	Graduate	PHD-Computer Science	Nygard,Kendall E
Agrawal	Ruhi	Senior	BS-Computer Science	Perrizo,William K
Anderson	Lawrence	Senior	BS-Computer Science	Perrizo,William K
Carlson	Daniel	Senior	BS-Computer Science	Perrizo,William K
Chatterjee	Arijit	Graduate	PHD-Computer Science	Perrizo,William K
Clark	Benjamin	Sophomore	BS-Computer Science	Perrizo,William K
Ehresmann	Nathan	Senior	BS-Computer Science	Perrizo,William K
Fleming	Eric	Senior	BS-Computer Science	Perrizo,William K
Greff	Alex	Junior	BS-Computer Science	Perrizo,William K
Haich	Abram	Senior	BS-Computer Science	Perrizo,William K
Hatfield	Andrew	Senior	BS-Computer Science	Perrizo,William K
Hofer	Brandon	Sophomore	BS-Computer Science	Perrizo,William K
Hossain	Mohammad	Graduate	PHD-Computer Science	Perrizo,William K
Janssen	Lance	Sophomore	BS-Computer Science	Perrizo,William K
Knight	Zachary	Senior	BS-Computer Science	Perrizo,William K
Ladwig	Andrew	Junior	BS-Computer Science	Perrizo,William K
Larson	Nicholas	Senior	BS-Computer Science	Perrizo,William K
Lee	Huheun	Senior	BS-Computer Science	Perrizo,William K
Lenthe	Josiah	Senior	BS-Computer Science	Perrizo,William K
Levahn	David	Senior	BS-Computer Science	Perrizo,William K
Lu	Tingda	Graduate	MS-Computer Science	Perrizo,William K
Mesich	Bryan	Graduate	MS-Computer Science	Perrizo,William K
Paramarta	Dienul	Sophomore	BS-Computer Science	Perrizo,William K
Pavicic	Abel	Junior	BS-Computer Science	Perrizo,William K
Piehl	Matthew	Graduate	MS-Computer Science	Perrizo,William K
Reznechek	Adam	Senior	BS-Computer Science	Perrizo,William K
Rogers	David	Senior	BS-Computer Science	Perrizo,William K
Singh	Ramesh	Senior	BS-Computer Science	Perrizo,William K
Strom	Steven	Junior	BS-Computer Science	Perrizo,William K
Stutsman	Samuel	Sophomore	BS-Computer Science	Perrizo,William K
Zumwalde	Sarah	Senior	BS-Computer Science	Perrizo,William K
Adducci	Christopher	Freshman	BS-Computer Science	Salem,Saeed
Alroobi	Rami	Graduate	PHD-Computer Science	Salem,Saeed
Brewer	James	Graduate	PHD-Computer Science	Salem,Saeed
Ching	Joseph	Junior	BS-Computer Science	Salem,Saeed

Johnson	Daniel	Sophomore	BS-Computer Science	Salem,Saeed
Reinbold	Kevin	Junior	BS-Computer Science	Salem,Saeed
Roemmich	Christopher	Junior	BS-Computer Science	Salem,Saeed
Frovarp	Richard	Graduate	MS-Computer Science	Slator,Brian
Borchert	Otto	Graduate	PHD-Computer Science	Slator,Brian
Frueh	Ryan	Senior	BS-Computer Science	Slator,Brian
Anderson	Justin	Senior	BS-Computer Science	Ubhaya,Vasant A
Bechtold	Benjamin	Junior	BS-Computer Science	Ubhaya,Vasant A
Bhardwaj	Vidushi	Senior	BS-Computer Science	Ubhaya,Vasant A
Bourdeaux	Christopher	Junior	BS-Computer Science	Ubhaya,Vasant A
Bragstad	Lance	Senior	BA-Computer Science	Ubhaya,Vasant A
Chintapalli	Veera Venkata	Graduate	MS-Computer Science	Ubhaya,Vasant A
Damm	Jaren	Junior	BS-Computer Science	Ubhaya,Vasant A
Devney	John	Sophomore	BS-Computer Science	Ubhaya,Vasant A
Gandrud	Ryan	Junior	BS-Computer Science	Ubhaya,Vasant A
Ghosh	Arko	Senior	BS-Computer Science	Ubhaya,Vasant A
Grimes	Timothy	Sophomore	BS-Computer Science	Ubhaya,Vasant A
Grueneich	Michael	Sophomore	BS-Computer Science	Ubhaya,Vasant A
Hanson	Kyle	Sophomore	BS-Computer Science	Ubhaya,Vasant A
Ibwe	Nico	Senior	BS-Computer Science	Ubhaya,Vasant A
Leingang	Brandon	Junior	BS-Computer Science	Ubhaya,Vasant A
Loeering	Davin	Junior	BS-Computer Science	Ubhaya,Vasant A
Mahrer	Alex	Senior	BS-Computer Science	Ubhaya,Vasant A
Mason	Brianne	Sophomore	BS-Computer Science	Ubhaya,Vasant A
Nordsven	Benjamin	Senior	BS-Computer Science	Ubhaya,Vasant A
Olson	Joseph	Sophomore	BS-Computer Science	Ubhaya,Vasant A
Shellito	Christopher	Sophomore	BS-Computer Science	Ubhaya,Vasant A
Skrei	Brandon	Senior	BS-Computer Science	Ubhaya,Vasant A
Vinta	Naveen	Graduate	MS-Computer Science	Ubhaya,Vasant A
Wollan	Alexander	Senior	BS-Computer Science	Ubhaya,Vasant A
Wolter	Michael	Senior	BA-Computer Science	Ubhaya,Vasant A
Yadav	Narender	Senior	BS-Computer Science	Ubhaya,Vasant A
Agarwal	Veenu	Senior	BS-Computer Science	Walia,Gursimran
Bartholomew	Joshua	Senior	BS-Computer Science	Walia,Gursimran
Bellefeuille	Joshua	Freshman	BS-Computer Science	Walia,Gursimran
Johnson	Lane	Sophomore	BS-Computer Science	Walia,Gursimran
Khan	Md.	Graduate	MS-Software Engineering	Walia,Gursimran
Rummelt	Richard	Graduate	PHD-Software Engineering	Walia,Gursimran
Saxena	Kaustubh	Graduate	MS-Computer Science	Walia,Gursimran
Tomer	Avijeet	Graduate	MS-Software Engineering	Walia,Gursimran
Valnes	Taylor	Junior	BS-Computer Science	Walia,Gursimran

Ahuja	Sarthak	Graduate	MS-Computer Science	Yan,Changhui
Cheng	Wen	Graduate	PHD-Computer Science	Yan,Changhui
Miller	Logan	Freshman	BS-Computer Science	Yan,Changhui
Sanjaka	Malinda	Graduate	MS-Software Engineering	Yan,Changhui
Summers	Kelly	Senior	BS-Computer Science	Yan,Changhui
Addy	Sydney	Graduate	MS-Software Engineering	Zhang,Weiyi
Amuge	Betty	Graduate	MS-Computer Science	Zhang,Weiyi
Bai	Shi	Graduate	MS-Computer Science	Zhang,Weiyi
Floan	Luke	Senior	BS-Computer Science	Zhang,Weiyi
Foertsch	Robert	Senior	BS-Computer Science	Zhang,Weiyi
Grendahl	Jacob	Junior	BS-Computer Science	Zhang,Weiyi
Gupta	Nimish	Senior	BS-Computer Science	Zhang,Weiyi
Larson	Rachel	Sophomore	BS-Computer Science	Zhang,Weiyi
Liu	Yang	Graduate	MS-Computer Science	Zhang,Weiyi
Rosnau	Joel	Junior	BS-Computer Science	Zhang,Weiyi
Singh	Yashaswi	Graduate	MS-Computer Science	Zhang,Weiyi
Teubner	Michael	Senior	BS-Computer Science	Zhang,Weiyi
Tran	Max	Sophomore	BS-Computer Science	Zhang,Weiyi
Chauhan	Anuj	Graduate	MS-Computer Science	Du,Xiaojiang
Dandey	Santosh Raj	Graduate	MS-Computer Science	Martin III,John C
Dutta	Anubrata	Graduate	MS-Computer Science	
Kambhampaty	Krishna	Graduate	PHD-Computer Science	Du,Xiaojiang
Aceituna	Daniel	Graduate	PHD-Software Engineering	
Kwete	Yannick	Graduate	MS-Software Engineering	Xu,Dianxiang
Stone	Jason	Graduate	MS-Software Engineering	

3 Curriculum and course development and changes:

Implementation of the Master of Software Engineering online degree program is well underway. Nine online courses have been completed and offered. The remaining three courses are being developed summer, 2011. The program presently has ten students. We expect the first graduate to complete in spring or summer, 2012. This is our only graduate program beyond a certificate that does not require a thesis or extensive paper. The Graduate Coordinator has begun to admit a small number of oncampus students who do not wish to pursue research into this program. We have decided to support completion of the MSE using any combination of distance and local courses.

The Department developed numerous changes to our B.S. in Computer Science degree program during 2009-10. These changes have been fully approved by the University and will be implemented starting fall, 2011. For the next three years, we will offer courses required for both the old version and the new version of this degree. Further, we have developed a correspondence matrix to support use of new courses in the old version of the degree and old courses in the new version of the degree.

The changes are:

Our charge was to develop modifications to our existing B.S. in Computer Science curriculum to address some concerns brought up frequently by potential employers and to bring the curriculum in line with satisfying the most recent ACM/IEEE curriculum guidelines. We were not to increase the number of hours required for the degree.

We believe we have satisfied our charge (and more) with the changes listed here.

1. Change the catalog descriptions for CSci 160 and 161 to
 - Clarify what each course is to accomplish
 - Add the prerequisite of an NDSU Mathematics or programming course to 160.

This is proposed because the 160 instructors believe that too many students take 160 who are unprepared to do well in the course. The Mathematics or programming course will provide some background in abstract reasoning. Exceptional students may request a wavier of this prerequisite.

2. Introduce a new course, CSci 213: Modern Software Tools with CSci 161 as a prerequisite. This course will provide students with experience doing requirements engineering, software design, test planning, implementation, and test plan execution with selected modern tools that cover configuration management, schedule tracking, bug tracking, symbolic debugging, and automatic unit testing. Students will work on the project individually to ensure that each student gains experience with each of the development activities. This course addresses a need cited often by the capstone project sponsors and mentors.

3. Introduce a new course, CSci 313: Software Development for Games with a prerequisite of CSci 213. This course will have students work in teams to implement a computer graphics display and an artificial intelligence-based computer opponent for a single human player. The course uses games because they combine substantial use of human-computer interfaces, computer graphics, and artificial intelligence (at least to the extent the ACM/IEEE 2008 update specifies these areas should be covered). The course will include introductions to the ACM/IEEE mandated coverage of these three topics. Student teams will continue to use the tools introduced in CSci 213.

The ACM/IEEE 2008 Update Book of Knowledge requires the following topic coverage that we have assigned to CSci 313:

- a. Human-Computer Interaction:
 - i. Foundations (6 class hours)
 - ii. Building GUI Interfaces (2 class hours)
- b. Graphics and Visual Computing:
 - i. Fundamental techniques (2 class hours)
 - ii. Graphic Systems (1 class hour)
- c. Intelligent Systems
 - i. Fundamental issues (1 class hour)
 - ii. Basic Search strategies (5 class hours)
 - iii. Knowledge based reasoning (4 class hours)

These hours will require approximately one half of the course. The rest of the course will cover software development topics reviewing and going beyond those covered in CSci 213.

4. Introduce a new course, CSci 415: Parallel Computation with prerequisites of CSci 313 and 374. This course is also mandated by the ACM/IEEE update. The course surveys parallel computation across hardware, software, programming languages, algorithms, and application

areas. This course is copied verbatim from the ACM/IEEE update. It contains enough networks material to satisfy the ACM/IEEE requirement for networking coverage.

The ACM/IEEE Update mandates the following coverage of Net-centric Computing:

- i. Introduction (2 class hours)
 - ii. Network communication (7 class hours)
 - iii. Network security (6 class hours)
5. Consolidate CSci 335 and 336 into a single course, CSci 336, which covers important automata theory and computability.
 6. Consolidate CSci 366 and 468 into a single course, CSci 366, which covers database management systems.
 7. Consolidate CSci 474 and 475 into a single course, CSci 474, which covers operating system concepts and implementation.
 8. Drop CSci 373 as a degree requirement and move a couple of weeks of assembly language programming into CSci 374 (Electrical and Computer Engineering already does this with their version of 374). CSci 366 replaces CSci 373 as the prerequisite for CSci 374.
 9. Make Csci 313 a prerequisite for CSci 372.
 10. Make CSci 313 a prerequisite for CSci 445.
 11. Make CSci 336 a prerequisite for CSci 467 to ensure that students do not leave 336 until their last semester.
 12. Update several course descriptions to reflect what we are currently doing in those courses.

The Department also modified our B.A. in Computer Science degree program during 2009-10 and received full approval for this program to be offered starting fall, 2011. The changes were even more extensive than those for the B.S. degree. The changes give a web design and development focus to this degree. We hope to get more students to consider and complete this degree with the new focus. The old version has had less than ten active students with perhaps two or three graduates per year. We plan to grow the B.A. degree to twenty-five majors by 2014 with at least five graduating each year.

4. Accreditation and reviews:

The B.S. in Computer Science had been accredited since 1986, the first year that accreditation was available.

The Department was scheduled to undergo an onsite review of its B.S. accreditation by an ABET visiting team in fall, 2009. The Department could not spare the necessary funds in this period of budget cuts and the University was unwilling to assume the \$8,000 obligation. Accordingly, we elected in late summer, 2009 not to undergo the reaccreditation evaluation. Our B.S. accreditation lapsed on July 1, 2010. The Department is undergoing a planned two year period of determining whether or not we will seek ABET accreditation in the future. This period includes surveys of graduates and prospective employers concerning their perception of the importance of ABET accreditation of Computer Science programs. When the two years are completed, we will decide whether or not to seek funds for a new accreditation visit. After the first year of this review, there appear to be almost no negative impacts from our decision to give

up our ABET accreditation. Neither students nor potential employers seem concerned that the program no longer is accredited by ABET.

5. Activities in student recruitment/retention, enrollment management, and other student activities:

The Department continued the two initiatives begun in 2005-06: introduction of a student honor society; and early selection of graduate teaching assistants as a recruiting tool. We expect to use the new focus of our B.A. degree on web design and development to help recruitment of interested students, starting in 2011-12.

At the undergraduate level the Department recognizes there is a retention problem. We have identified the problems as four-fold:

- (1) Students are not always sufficiently motivated to master the knowledge and skills they must learn;
- (2) By the end of their sophomore year, successful students have acquired skills and experiences which are sought by industry. Each year, several students leave to take well-paying industrial jobs;
- (3) Our courses are not sufficiently coordinated with each other to provide students with needed repeated reinforcement of skills and practices introduced in earlier courses;
- (4) The analytical material we introduce in several courses is not well-accepted or mastered by many of our students.

We continue to attempt solutions to these problems. The new B.S. curriculum we are introducing attempts to address some of these problems by replacing abstract, theoretical courses with more hands-on courses. The proposal includes a course on game development which should appeal to some students.

Our new half-time advisor, Joan Krush, is leading our expanded efforts in undergraduate student recruiting. We have prepared more visual recruiting materials. Joan has attended several conferences and meetings at which student recruitment from the upper midwest is done. She has initiated visits to area high schools.

Ms. Krush is leading our efforts to improve our student advising. She has helped to review all of our advising materials. Several improvements and clarifications to those documents and our Department web pages are being completed during summer, 2011.

Senior professors teaching freshman and transfer students:

Nearly all of the courses for CS majors, including those in the lower division, are taught by tenured or tenure-track professors, in accordance with ABET accreditation requirements. Entry level courses are regularly taught by senior professors.

Summer school activities:

The Department typically offers at least two graduate-level courses each summer, including at least one of the four graduate core courses. At least two courses for undergraduate majors are offered. Service courses, such as CSci 114 and 116 are offered also. The Department offers several courses each summer under the self-support program. The self-support program is very beneficial for the Department. Unfortunately, the minimum requirement for about twenty students in self support courses means that some of the

courses we would like to offer are not actually offered each year. Several distance education courses are presented as well.

Career Center student employment

CS Bachelor students employment rate is 94% at a salary range of Low-Average-High being 36-59-85K. We believe these figures significantly underestimate the real employment rate since many graduating students do not go through the Career Center to procure employment. Our own discussions with graduating students indicate an employment rate near 100% for students who immediately seek employment.

6. Distance Education and use of Technology in Courses:

The Department offers distance versions of CSci 114, 116., and 122 every semester and in the summer. Other service courses are offered via distance less frequently. Starting fall, 2006, we offered the Graduate Certificate in Software Engineering including four courses and a seminar through distance to students in India and elsewhere. The Master of Software Engineering program is available entirely through distance education. Introduction of new distance education courses is limited by the many time commitments already imposed upon faculty. Starting fall, 2011, we plan to advertise the Certificate and MSE programs regionally as well. Our efforts will be limited by our tight budget, however. Note that the incentives available presently for faculty to receive additional compensation by doing distance education courses are vital in achieving the level of distance education activity we had this year.

Every Computer Science course uses technology extensively. Courses use the Internet for delivery and many courses require extensive computer work. We are heavy users of Blackboard. Many courses use a variety of specialized computer software and network or grid computers.

7. Assessment

The Department followed our reorganized assessment procedures from 2008-09. This time, our reorganization was driven by a significant change in ABET accreditation requirements. For the first time, the ABET Computing Sciences Commission is requiring specific outcomes for the B.S. program. We replaced our existing outcomes with those required by ABET and reformulated our accreditation procedures to meet the new ABET requirements. Our University Assessment Report for 2009-10 was due January, 2011.

Service courses were assessed during 2010-11. Each course has a set of goals based on the General Education learning outcomes assigned to that course. We used formative assessment involving techniques described by Angelo and Cross in their book, Classroom Assessment Techniques, and cumulative assessment addressing the specific learning goals for each course.

We started to develop assessment procedures for our graduate courses during this academic year. The seven possible core courses (two unique to Computer Science programs, three unique to Software Engineering programs, and two common) were the focus during this year. We developed specific outcomes for each of those courses. Actual assessment began during 2010-11. Eventually, we expect to expand our graduate assessment to cover all regular graduate courses and seminars.

B. RESEARCH/CREATIVE ACTIVITY

1. Research and creative activities:

Almost all tenure track faculty regularly publish in high-quality media. Nearly all faculty submit at least one external, competitive grant proposal each year. This pattern continued in 2010-11.

The Department started a research enhancement program for junior faculty during 2005-06. This program continued in 2010-11. A program to encourage visits by more senior faculty from other institutions in research areas of interest to our junior faculty was begun in 2006-07. This program pays expenses and a small honorarium either for senior faculty to travel to NDSU to work intensively with our faculty for two weeks or for our faculty to travel to work intensively with senior faculty elsewhere for one or two weeks. Available funds have limited the use of this program to one or two instances per year.

Our long range goal for the next three to five years is to improve the visibility and prestige of the Department's research programs regionally and nationally. We believe the somewhat low visibility of the Department outside our region (where we are widely imitated as a research and teaching leader) hurts our grant acquisition capability from federal funding agencies and from large corporations. However, the NSF did cite our program as being in the top-100 Computer Science programs during 2006-07 and subsequent years.

The Department has active research programs in data mining, software engineering, networks, virtual environments, computer systems, software security, and bioinformatics. These programs should continue to achieve more visibility within the profession.

2. Grants/Contracts/Research:

COMPUTER SCIENCE DEPARTMENT GRANTS AND CONTRACTS, PART 1 PROJECTS INITIATED PRIOR TO JULY 1, 2010, AND CONTINUING INTO THE 2010-2011 ACADEMIC YEAR

YEAR	GRANT #	PRINCIPAL INVESTIGATOR OR	TITLE	FUNDING SOURCE	AMOUNT
3-1-09 to 2-28-12	15445	Denton	Construction of High Resolution Physical Maps for Large Plant Genomes	NSF	35,521
9-09 to 8-11	14736	Do	NSF – II-New Infrastructure for model-based security testing	NSF	220,000
5-10 to 8-11	17213	Do	II-New Infrastructure for model-based security testing	NSF	16,000
8-09 to 7-10	15352	Kong	Graphical Interface Interpretation Using Graph Grammars	Hewlett Packard	40,000
7-09 to 7-10	15845	Kong	Epscor State Seed Grant	NDSU	38,800
7-09	18703	Magel	Faculty Course Development for an on-line MSE		25,000
1/09 to 7/31/11	18139	Nygard	Military Logistics	Upper Great	15,000

YEAR	GRANT #	PRINCIPAL INVESTIGATOR	TITLE	FUNDING SOURCE	AMOUNT
				Plains	
9-09 to 7-11	16447	Nygaard	Designing Robust & Secure Heterogeneous Sensor Networks	US Army	124,544
1-10 to 8-10	16597	Nygaard/ Agarwal	Intelligent Insites Inc award to Abhishek Agarwal	Intelligent InSites	5,012
8-09 to 9-10	14560	Nygaard	Zhejiang Economic and Trade Polytechnic Instructional Workshop	Zhejiang Economic and Trade Polytechnic	11,000
7-15-08 to 7-14-11	13097	Nygaard/Du	Designing Robust & Secure Heterogeneous Sensor Networks	U.S. Army	358,748
7-09 to 7-10	15846	Zhang	Epscor State Seed Grant	NDSU	41,300
TOTAL					\$930,925

**COMPUTER SCIENCE DEPARTMENT GRANTS AND CONTRACTS
PROJECTS INITIATED DURING THE JULY 1, 2010 TO JUNE 30, 2011 TIME PERIOD**

YEAR	GRANT #	PRINCIPAL INVESTIGATOR	TITLE	FUNDING SOURCE	AMOUNT
8-1-10 to 7-31-11	18079	Denton	NDSU Computer Science Industry Consortium Program (ICP)	Phoenix International	15,000
8-1-10 to 7-31-11	18082	Denton	NDSU Computer Science Industry Consortium Program (ICP)	Agri ImaGIS Technologies	15,000
7-1-11 to 6-30-14	17967	Denton	Data Driven Support for the Smart Farm	NSF	254,499
9-1-10 to 8-31-11	17350	Do	EAGER – Adaptive Regression Testing (ART)	NSF	50,000
7/11 to 8/12	18674	Helsene	Desktop virtualization pilot project	NDSU Tech Fee	66,847
8-1-10 to 7-31-11	17553	Jin	Epscor Seed Award	NSF/Epscor	41,470
4/1/11 to 4/1/13		King	A Multi-user virtual biology environment for discovery oriented science education	NIH/WoWi We Instruction CO	369,276
7-1-11 to 6-30-14	18752	Knudson	Data Driven Support for the Smart Farm	NSF	24,928
4-16-11 to 4-15-12	18641	Kong	Designing Reliable Software with Graphical Notations	NASA/UND	11,436
8-16-10 to 6-30-11	17801	Ludwig	State Epscor Faculty Startup Award	Epscor	16,500

YEAR	GRANT #	PRINCIPAL INVESTIGATOR	TITLE	FUNDING SOURCE	AMOUNT
8-10 to 5-11	14560	Nygard	Zhejiang Economic and Trade Polytechnic Instructional Workshop	Zhejiang Economic and Trade Polytechnic	5,106
8-16-10 to 5-15-12	17887	Nygard	MPC Award – Year 4 – Education Program – Instructional Support	US Dept. of Transportation	5,000
1-22-10 to 8-31-11	17407	Nygard/Du	CRI – A Heterogeneous Sensor Network Laboratory	Temple University and NSF	44,185
8-1-10 to 7-31-11	18080	Salem	NDSU Computer Science Industry Consortium Program (ICP)	American Crystal Sugar	15,000
8-1-10 to 7-31-11	18083	Salem	NDSU Computer Science Industry Consortium Program (ICP)	RDO Equipment Company	15,000
7-1-11 to 6-30-14	18751	Salem	Data Driven Support for the Smart Farm	NSF	108,014
4-10 to 4-11	16884	Slator/ Nygard BouGhosn	Graduate Student Research Award (Steve BouGhosn)	US Dept of Energy	15,315
8-1610 to 8-15-11	17559	Slator/ Nygard McCulloch	Epscor Graduate Student Research Award (McCulloch)	NSF/Epscor	27,685
8-1-10 to 7-31-11	17488	Zhang	Epscor Seed Award	NSF / Epscor	42,900
5-1-11 to 4-30-12	17762	Zhang	Student Travel Support for IEEE INFOCOM 2011 to Shanghai China	NSF	25,000
9-1-10 to 8-31-12	16614	Zhang/Du	MRI – Development of Hybrid Wireless Network	Temple University and NSF	109,426
Totals					\$1,277,587

Fall 2010 / Spring 2011 Graduate Research Assistants

Daniel Aceintuna
 Sarthak Ahuja
 Omar Al-Azzam
 Iyad Alazzam
 Loai Al-Nemer
 Ibrahim Al Jarah
 Nailah Al-Madi
 Ramakanth Annadi
 Mohammed Akour
 Junaid Arafeen

Shadi Bani Taan
 Rami Alroobi
 Shi Bai
 Debarshi Barat
 Steve BouGhosn
 James Brewer
 Min Chen
 Wen Cheng
 Charith Chitraranjan
 Anubrata Dutta

Mohammad Hossain
Jyotjeev Kohli
Qingrui Li
Chao Liu
Yang Liu
Mahesh Mahabaleshwar
Aaron Marback
Ryan McCulloch
Ya Zhu

Alex Rademacher
Amin Roudaki
Arjun Roy
Malinda Sanjaka
Raed Seetan
Yashaswi Singh
Peng Yan
Jinjun Zhao

Fall 2010 / Spring 2011 Undergraduate Research Assistants

Zechariah Andersen
Rafiki Assumani
Benjamin Bechtold
Spencer Bliss
John Bugner
Lucas Bremseth
Joseph Ching
Raashi Chugh
Austin Dicken
Nathan Ehresmann
Sean Gerhardt
Abram Haich

Gunnar Johnson
Andrew Jones
Huheun Lee
Josiah Lenthe
Davin Loegering
Cesar Ramirez
Robert Saxton
Jonathan Scislow
Ramesh Singh
Craig Stenger
John Utke

3. Faculty Articles/Books/Publications/Presentation and Course Instruction:

Sameer Abufardeh

Research

- **2009 Calendar Year**

- i. **Refereed Publications**

- [1] **Abufardeh, S. and Magel, K.** (2009). "Software Internationalization: Testing Methods for Bidirectional Software," NCM, 2009 Fifth International Joint Conference on INC, IMS and IDC, IEEE: pp.226-231. Seoul, Korea.
 - [2] **Abufardeh, S. and Magel, K.** (2009). Software Internationalization: Crosscutting Concerns across the Development Lifecycle. International Conference on New Trends in Information and Service Science (NISS 2009), pp. 447-450. Beijing, China.

- **2010 Calendar Year**

- i. **Refereed Publications**

- [1] **Abufardeh, S.; Magel, K.** (2010). *Impact of Global Software Cultural and Linguistic Aspects on Global Software Development Process (GSD): Issues and Challenges*. 4th International Conference on New Trends in

ii. Pending Publications

- [1] (With M. Akour, K. Magel, Q. Al-Radaideh). **(2010) QArabPro: A Rule Based Question Answering System for Reading Comprehension Tests in Arabic.** (Submitted to American Journal of Applied Science – Computer Science).
- [2] (With Shadi Banitaan, Saeed Salem, Wei Jin, Ibrahim Aljara). **(2010)" Comprehensive Study on Entity Discovery using Classification Techniques and their Application to Opinion Mining. ".** (Submitted to ACM Transactions on Intelligent Systems and Technology (ACM TIST). "Special Issue: Search and Mining User Generated Contents").

• 2011 Calendar Year - In progress

- [1] Abufardeh, S.; Magel, K. (2011). ***Impact of Global Software Cultural and Linguistic Aspects on Global Software Development Process (GSD): Social Networks and Virtual Culture.*** To be submitted to International journal on Advances in Information Sciences and Service Sciences (AISS). (IP)
- [2] Abufardeh, S.; Magel, K. (2011). ***Security of Localized Software: Aspects and Challenges.*** (IP)
- [3] (With I. Aljarah, S. Salem, W. Jin, S. Banitaan). **(2011) Extracting Discriminating Words for Bug Assignment: A Comprehensive Analysis.** (IP)

• Teaching

• Spring, 2009

Course #	Credit Hours	# of students
CSCI 161 Sec I	4	±40
CSCI 161 Sec II	4	±35

• Fall, 2009

Course #	Credit	# of students
CSCI 161 Sec I	4	±40
CSCI 161 Sec II	4	±33

• Spring, 2010

Course #	Credit Hours	# of students
CSCI 161 Sec I	4	±40
CSCI 161 Sec II	4	±30

- **Fall, 2010**

Course #	C	# of students	Prep.
CSCI 161 Sec I	4	±37	
CSCI 161 Sec II	4	±17	
CSCI 373	Covered 7 weeks for Dr. Simon		New
CSCI 372 Sec I & 2	Covered 2 weeks for Dr. Wei Jin		New

- **Service**

- **2009**

- **Vice President** for Honor Society for NDSU Chapter - Upsilon Pi Epsilon (UPE) (2008-present)
 - **Member** of the Computer Science Dept. curriculum review committee member (2009-present).
 - **Monthly** Department Meetings.
 - **Reviewer:** International Conference on New Trends in Information Science and Service Science (NISS).
 - **Meeting** with prospective students/parents

Anne Denton

Research

- **2009 Calendar Year**

- i. **Refereed Publications**

Anne M. Denton and Jianfei Wu, "Data Mining of Vector-Item Patterns Using Neighborhood Histograms," Knowledge and Information Systems, 21:173-199, 2009.

Dietmar H. Dorr and Anne M. Denton, "Establishing relationships among patterns in stock market data," Data & Knowledge Engineering 68, pp. 318-337, 2009.

Anne M. Denton, "Subspace Sums for Extracting Non-Random Data from Massive Noise," Knowledge and Information Systems (KAIS) Journal, 20, pp. 35-62, 2009.

Dietmar H. Dorr and Anne M. Denton, "Clustering sequences by overlap," International Journal of Data Mining and Bioinformatics 3:26-279, 2009.

Anne M. Denton, Christopher A. Besemann and Dietmar H. Dorr, "Pattern-based time-series subsequence clustering using radial distribution functions," Knowledge and Information Systems (KAIS) Journal, 18, pp. 1-27, 2009.

Jianfei Wu, Anne M. Denton, Omar El-Ariss, and Dianxiang Xu, "Mining core patterns in stock market data," Mining Multiple Information Sources Workshop in conj. with the 2009 IEEE Int'l Conf. on Data Mining, Miami, Dec. 6, 2009.

ii. Presentations

Mining Multiple Information Sources Workshop in conjunction with the 2009 IEEE International Conference on Data Mining, Miami, Dec 6, 2009.

Presentation: See paper above

iii. Funded Research Proposals (title, PI and co-pi's, duration, amount, source)

TRPGR- Transformative research on the construction of high-resolution physical maps for large plant genomes

PI: Shahryar Kianian, Co-PIs: Anne Denton, Yong Qiang Gu, Ming-Cheng Gu, and Oscare Riera-Lizarazu

Funding Source: NSF-DBI

Amount: \$ 952,211

Award Period: 03/01/2009 – 03/01/2010

Pattern discovery in high-throughput biofilm data

PIs: Anne Denton and Birgit Prüß

Funding Source: NDSU CSM/AES Small Grant Program

Amount: \$6,200

Award period: 10/01/2008 – 9/15/2009

iv. Graduate Students completing for whom you were the advisor (name, degree, title of paper, date)

Szymon Woznica (M.S., N-gram-based search procedure, Jun. 2009)

v. Graduate Student Committees on which you serve (indicate those for which you are Chair)

Harsh Jain (passed Software Engineering M.S. paper defense Jan. 2009)

Daniel Aceituna (passed Software Engineering M.S. paper defense Feb. 2009)

Hui Zhao (passed Statistics M.S. paper defense Apr. 2009)

Monica Michalak (passed Genomics Ph.D. preliminary exam Jan. 2007, passed Ph.D. defense June 2009)

vi. Unfunded Research Proposals

Identification of specific nutrients and chemical properties that inhibit or support Escherichia Coli biofilm formation

PI: Birgit Pruess, Co-PI Anne Denton

Funding Source: NSF-MCB

Amount: \$574,423

Award Period: 03/01/11 – 02/28/14

Time Per Year Committed: 1 month

IGERT Thinkers for Tomorrow's Problems in Food Logistics and Security

PI: Charlene Wolf-Hall (Anne Denton among Participants)

Funding Source: NSF-IGERT (Preproposal)

Software and Computational Science Village

PI: Ken Nygard, Co-PIs Anne Denton, Brian Slator, William Perrizo, Kenneth Magel

Funding Source: NSF-SMP

Amount: \$700,000

Award Period: 07/16/10 – 07/15/13

Time Per Year Committed: 0.5 month

- **2010 Calendar Year**

- i. Refereed Publications**

Birgit M. Prüß, Karan Verma, Priyankar Samanta, Preeti Sule, Sunil Kumar, Jianfei Wu, David Christianson, Shelley M. Horne, Shane J. Stafslien, Alan J. Wolfe, and Anne Denton, "Environmental and genetic factors that contribute to *Escherichia coli* K-12 biofilm formation," *Arch. Microbiol.* **192**:715-728, 2010.

Dietmar H. Dorr and Anne M. Denton, "Generalised sequence signatures through symbolic clustering," *International Journal of Data Mining and Bioinformatics*, **4**(6):656 – 674, 2010.

Al-Azzam, Jianfei Wu, Loai Al-Nimer, Charith Chitraranjan, Anne Denton, "A weighted density-based approach for identifying standardized items that are significantly related to the biological literature," *Text Mining Workshop in conjunction with the Eleventh SIAM International Conference on Data Mining*, Mesa AZ, 30 April 2011.

Loai M. Alnemer, Jianfei Wu, Omar Al-Azzam, and Anne M. Denton, "A density-based algorithm for evaluating the statistical significance of individual classification results," in *Proc. 16th ACM SIGKDD Conf. on Knowledge Discovery and Data Mining: BLOKDD Workshop*, Washington DC, 25-28 July 2010.

Anne M. Denton, Jianfei Wu, and Dietmar H. Dorr, "Point-distribution algorithm for mining vector-item patterns," in *Proc. 16th ACM SIGKDD Conf. on Knowledge Discovery and Data Mining: Useful Patterns Workshop*, Washington DC, 25-28 July 2010.

- ii. Presentations**

Workshops in conjunction with 2010 ACM SIGKDD Conference on Knowledge Discovery and Data Mining

- Poster in BioKDD Workshop: See paper above
- Presentation in Useful Patterns Workshop: See paper above

- iii. Funded Research Proposals (title, source, PI and co-PIs, duration, amount)**

NDSU Computer Science Industry Consortium (ICP): Yield Extraction

PI: Anne Denton

Funding Source: John Deere

Amount: \$15,000

Award Period: 09/01/2010 – 08/30/2011

Time Per Year Committed: 0.5 months

NDSU Computer Science Industry Consortium Program (ICP): Agricultural Image Analysis

PI: Anne Denton

Funding Source: Agri ImaGIS Technologies

Amount: \$15,000

Award Period: 09/01/2010 – 08/30/2011

Time Per Year Committed: 0.25 months

TRPGR- Transformative research on the construction of high-resolution physical maps for large plant genomes

PI: Shahryar Kianian, Co-PIs: Anne Denton, Yong Qiang Gu, Ming-Cheng Gu, and Oscare Riera-Lizarazu

Funding Source: NSF-DBI

Amount: \$ 952,211

Award Period: 03/01/2009 – 03/01/2010

**iv. Graduate Students completing for whom you were the advisor
(name, degree, title of paper, date)**

Golam Osmani (M.S., "A data visualization tool to identify patterns formed by subsets of data", Apr. 2010)

**v. Graduate student Committees on which you serve (indicate those
for which you are Chair)**

Christopher Besemann (Ph.D., ongoing, chair of committee)

Jianfei Wu (Ph.D., ongoing, chair of committee)

Omar Al-Azzam (Ph.D., ongoing, chair of committee)

Loai Alnemer (Ph.D., ongoing, chair of committee)

Angshu Kar (M.S., ongoing, chair of committee)

Mohamed Rahman (M.S. ongoing, chair of committee)

Sujan Mamidi (passed Genomics Ph.D. preliminary examination Nov. 2007, passed Ph.D. defense Aug. 2010)

Ryan Carlson (passed Software Engineering M.S. thesis defense Oct. 2010)

Guy Hokanson (passed Computer Science M.S. paper defense Nov. 2010)

Preeti Sule (Ph.D. student in Microbiology, preliminary exam Mar. 2010)

Rinku Dutta (Ph.D. student in Pharmaceutical Sciences, passed preliminary examination May 2010)

Filippo Bassi (Ph.D. student in Genomics, Plan of Studies signed Jun. 2010)

vi. Pending Publications

Christopher A. Besemann and Anne M. Denton, "A Log-Linear Approach to Mining Significant Graph-Relational Patterns" under consideration by Data and Knowledge Engineering (Minor Revision requested)

vii. Unfunded Research Proposals

TOGETHER: Team Oriented Genetics Enhancement THrough Education and Research
PI: Shahryar Kianian, Co-PIs: Anne Denton, Lisa Montplaisir, Erika Offerdahl, and R
Craig Schnell

Funding Source: NSF-DGE

Amount: \$ 2,998,686

Award Period: 01/01/2010 – 01/01/2015

CDI-Type I: Significant Patterns in Diverse Microbiological Data

PI: Anne Denton, Co-PI: Birgit Pruess

Funding Source: NSF-CDI

Amount: \$ 399,959

Award Period: 12/01/2009 – 12/01/2012

Environmental control of Escherichia coli biofilm formation

PI: Birgit Pruess, Co-PI: Anne Denton

Funding Source: NSF-MCB Genes and Genome Systems

Amount: \$483,310

Award Period: 01/01/10 – 12/31/12

III:Small: Data mining of diverse data using vector attributes

PI: Anne Denton, Co-PIs: Birgit Pruess and Dean Webster

Funding Source: NSF-IIS

Amount: \$496,685

Award Period: 07/01/09 – 06/30/2012

viii. Teaching

a. Spring, 2009 (for each course give number, title, credits, number
of students and indicate if it was a new preparation for you)

CSci 372	Comparative Programming Languages	3 cr	36 students
CSci/Math/Stat 732	Introduction to Bioinformatics	3 cr	21 students

b. Fall, 2009 (same information)

CSci 790	Seminar: Data Mining in Science	1 cr	12 students
CSci 366	Files for Database Systems	3 cr	59 students

c. Spring, 2010 (same information)

CSci 790	Seminar: Data Mining in Science	1 cr	7 students
CSci 732	Introduction to Bioinformatics	3 cr	18 students
CSci 372	Comparative Programming Languages	3 cr	15 students
CSci 372	Comparative Programming Languages	3 cr	34 students

d. Fall, 2010 (same information)

CSci 366	Files for Database Systems	3 cr	65 students
CSci 335	Theoretical Computer Science new prep.	3 cr	48 students

ix. Service

e. 2009

- i. For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)

(For journal review see 2010)

Program committee for the Eighth International Conference on Machine Learning and Applications, ICMLA'09, Miami Beach, FL, Dec. 13-15, 2009.

Technical Committee of the Thirteenth Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-09), Bangkok, Thailand, April 27-30, 2009.

Program committee member for the 2009 ACM Symposium on Applied Computing, Waikiki Beach, Honolulu, HI, March 8 - 12, 2009.

Panelist for ND-EPSCOR Doctoral Dissertation Assistantship - NDSU 2009

ii. For the University (give activity, dates of involvement, and whether or not you held an office)

University Library Committee 2006 – 2009

(see ongoing committees under 2010)

iii. For the Department (same information)

Faculty Search Committee 2008/2009

(see ongoing committee under 2010)

a. 2010 (same information in the same categories)

- i. For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)

Panelist on NSF-IIS panel 2010

Review for the following journals:

IEEE Transactions on Knowledge and Data Engineering

Knowledge and Information Systems (KAIS), Springer

Data & Knowledge Engineering, Elsevier

BMC Bioinformatics

Program committee for the Ninth International Conference on Machine Learning and Applications, ICMLA'10, Washington, DC, Dec. 12-14, 2010.

Program committee member for the 2010 IEEE International Conference on Data Mining, ICDM-10, Sydney, Australia, Dec. 14-17, 2010.

Technical Committee of the Fourteenth Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-10), Hyderabad, India, June 21-24, 2010.

Technical committee member for the IEEE 2010 International Joint Conference on Neural Networks (IJCNN 2010), Barcelona, July 18-23, 2010.

Serving as an Editorial Board member of the Open Source journal entitled "Source Code for Biology and Medicine (SCBM)," which is part of BioMed Central (www.biomedcentral.com) as one of its independent journals. (since 2006)

ii. For the University (give activity, dates of involvement, and whether or not you held an office)

Chair of RCATT Listening Group II (2010)

Search Committee for Director of CCAST (2010)

Academic Affairs Committee (since 2009)

Steering Committee for interdisciplinary Genomics Program (since 2005)

Tech Fee Advisory Committee (since 2006)

Awards Committee (2006 – 2010)

iii. For the College (same information)

Ad hoc member of College Curriculum Committee (since 2009)

iv. For the Department (same information)

Departmental Curriculum Committee (since 2010)

Course Fee Committee (since 2009)

Hyunsook Do

Research

- 2009 Calendar Year
 - i. Refereed Publications
 - (1) A. Marback, H. Do, K. He, S. Kondamarri, and D. Xu, Security test generation using threat trees, AST, May, 2009.
 - ii. Other Publications
 - (1) P. Nagahawatte and H. Do, Can Regression Testing Techniques be Effective in Reducing the Occurrence of Residual Defects?, Tech. Report: NDSU-CS-TR-09-004, NDSU, June, 2009.
 - (2) D. Aceituna and H. Do, Validating Requirements Models Using SQ Querying, Tech. Report: NDSU-CS-TR-09-003, NDSU, June, 2009.
 - (3) A. Marback, H. Do, K. He, S. Kondamarri, and D. Xu Security Test Generation using Threat Trees, Technical Report: NDSU-CS-TR-09-001, NDSU, January, 2009.
 - iii. Presentations
 - (1) ICST10, The Effectiveness of Regression Testing Techniques in Reducing the Occurrence of Residual Defects, April 2010, Paris, France.

- iv. Funded Research Proposals (title, PI and co-pi's, duration, amount, source)
 - (1) NSF, CRI, II-NEW: Infrastructure for model-based security testing, controlled experiments, and education, PI, \$220,000, 9/1/2009 – 8/31/2011.
- v. Graduate Students completing for whom you were the advisor (name, degree, title of paper, date)
 - (1) D. Aceituna, Validating requirements models using SQ querying, MS, 2/19/2009.
- vi. Graduate Student Committees on which you serve (indicate those for which you are Chair)
- vii. Pending Publications
- viii. Unfunded Research Proposals
 - (1) NSF, CAREER, A New Generation of Context-Oriented Regression Testing Techniques and Strategies, \$579,992 for five years, submitted 7/21/2009.
 - (2) NDSU Advance Forward LEAP, Domain-aware regression test, \$29,790, PI, submitted 6/1/2009.
 - (3) ND EPSCoR IIP-Seed Program, Evolution-centric Regression Testing Incorporating Data Mining Techniques, \$79,200, submitted 4/20/2009.
 - (4) ONR Young Investigator Program, Evolution-centric, process-based, cost-effective regression testing, \$507,562, PI, submitted 1/12/2009.
- 2010 Calendar Year
 - i. Refereed Publications
 - (1) The Effects of Time Constraints on Test Case Prioritization: A Series of Controlled Experiments, Hyunsook Do, Siavash Mirarab, Ladan Tahvildari, and Gregg Rothermel. IEEE Transactions on Software Engineering, 36:(5), 2010
 - (2) SQ²E: An Approach to Requirements Validation with Scenario Question, D. Aceituna, H. Do, and S. Lee. APSEC, December, 2010.
 - (3) A Regression Testing Engine for PHP Web Applications: PARTE, Aaron Marback and Hyunsook Do. ISSRE, November, 2010.
 - (4) A Human Interactive Approach to Building Requirements Models, Daniel Aceituna, Hyunsook Do, and Seok-Won Lee. ISSRE, November, 2010.
 - (5) P. Nagahawatte and H. Do, The Effectiveness of Regression Testing Techniques in Reducing the Occurrence of Residual Defects, ICST, April, 2010.
 - ii. Other Publications
 - iii. Presentations
 - iv. Funded Research Proposals (title, source, PI and co-PIs, duration, amount)
 - (1) NSF, CRI, REU supplement, II-NEW: Infrastructure for model-based security testing, controlled experiments, and education, PI, \$16,000, 9/1/2010 – 8/31/2011.
 - (2) NSF, CCF, EAGER: Adaptive Regression Testing (ART) Strategies and Empirical Evaluations, PI, \$50,000, 9/1/2010 - 8/31/2011.

- v. Graduate Students completing for whom you were the advisor (name, degree, title of paper, date)
 - (1) R. Carlson, A clustering approach to improving test case prioritization: An industrial case study, MS, 10/27/2010.
 - vi. Graduate student Committees on which you serve (indicate those for which you are Chair)
 - (1) N. Takahashi, Kakuro solver application, MS, 3/5/2010.
 - (2) M. Bhogadi, Teaching Encryption: A learning theory approach, MS, 10/29/2010.
 - vii. Pending Publications
 - (1) A. Marback, H. Do, K. He, S. Kondamarri, and D. Xu, A Model-based Approach to Security Testing, Journal of Software: Practice and Experience, under review.
 - viii. Unfunded Research Proposals
 - (1) NSF, CCF, SHF: Small: Collaborative Research: Directed Automated Test Suite Augmentation, \$269,451, PI, submitted 12/17/2009.
- Other Research Activities
- **Teaching**
 - Spring, 2009 (for each course give number, title, credits, number of students and indicate if it was a new preparation for you)
 - CSci345, Practical Approaches to Software Testing, 3credits, 3 students, new preparation
 - Fall, 2009
 - CSci715, Software Requirements Definition and Analysis, 3 credits, 10 students
 - CSci413, Principles of Software Engineering, 3credits, 3 students, new preparation
 - Spring, 2010
 - CSci714, Software Project Planning and Estimation, 3credits, 6 students, new preparation
 - Fall, 2010
 - CSci715, Software Requirements Definition and Analysis, 3 credits, 17 students
 - CSci413, Principles of Software Engineering, 3 credits, 18 students
- **Service**
 - 2009
 - i. **For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)**
 - The conference program committee (TAICPART 2009); journal reviewer (ACM Transactions on Software Engineering and Methodology; IEEE Transactions on Software Engineering; Journal of Software Testing, Verification and Reliability; Information and Software Technology; Computers and Security)
 - ii. **For the University (give activity, dates of involvement, and whether or not you held an office)**
 - An advisor for the Bison Herald student organization at NDSU: this service involved several meetings with students to discuss their activities

(e.g. festivals and Korean language/culture class) and problems (e.g., funding) they faced.

iii. For the Department

-Faculty hiring committee: this service involved application reviews, phone meetings with candidates in a short list, and several hiring committee meetings; Free semester plan committee: this service involved several meetings and writing a draft of the plan; Technical report coordinator.

- 2010

i. For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)

-The conference program committee (ICST 2010, AST 2010, and SESS 2010); journal reviewer (ACM Transactions on Software Engineering and Methodology; IEEE Transactions on Software Engineering; Information and Software Technology; Software Quality Journal; Journal of Empirical Software Engineering; Journal of Software Testing, Verification and Reliability; Journal of Software Maintenance and Evolution; Journal of Systems and Software)

ii. For the University (give activity, dates of involvement, and whether or not you held an office)

- An advisor for the Bison Herald student organization at NDSU: This service involved several meetings with students to discuss their activities (e.g. festivals and Korean language/culture class) and problems (e.g., funding) they faced.

iii. For the Department

-Free semester plan committee; Technical report c

Wei Jin

- Research

- 2009 Calendar Year

i. Refereed Publications

Wei Jin and Hung Hay Ho. "A novel lexicalized HMM-based learning framework for web opinion mining", in *Proceedings of the 26th International Conference on Machine Learning (ICML 2009)*, pp. 465-472, Montreal, Canada, June 2009.

Wei Jin, Hung Hay Ho and Rohini K. Srihari. "OpinionMiner: a novel machine learning system for web opinion mining and extraction", in *Proceedings of the 15th ACM International Conference on Knowledge Discovery and Data Mining (SIGKDD 2009)*, pp. 1195-1204, Paris, France, June 2009.

Wei Jin and Xin Wu. "CDPRanking: discovering and ranking cross-document paths between entities", in *Proceedings of the 32nd ACM International Conference on Research and Development in Information Retrieval (SIGIR 2009)*, Boston, MA, July 2009.

ii. Presentations

"A novel lexicalized HMM-based learning framework for web opinion mining", in *the 26th International Conference on Machine Learning (ICML 2009)*, Montreal, Canada, June 2009.

"CDPRanking: discovering and ranking cross-document paths between entities", in *the 32nd ACM International Conference on Research and Development in Information Retrieval (SIGIR 2009)*, Boston, MA, July 2009.

iii. Graduate Student Committees on which you serve (indicate those for which you are Chair)

Swathi kondakindi
Mousumi Tanha
Sandeep Poreddy
Praveen Emmadi (completed)
Mridula Sarker
Yaswanth Potla (completed)
Pavan Bapanpally
Swapna Phadke (chair)
Shadi Banitaan

iv. Unfunded Research Proposals

2009 NIH Challenge Grants in Health and Science Research: A secure and convenient genome information management system (**co-PI**, collaborated with Department of Health Sciences, University of Pittsburgh, \$178,864)

2009 NSF Information and Intelligent Systems (IIS): Core Programs: DOMAIN DRIVEN ASSOCIATION DISCOVERY AND SCENARIO DETECTION FROM LARGE-SCALE HETEROGENEOUS DATA (**PI**, \$451,180)

2009 NSF Information and Intelligent Systems (IIS): Core Programs: A UNIFIED REPRESENTATION AND RETRIEVAL MODEL FOR TRADITIONAL WEB, SOCIAL WEB, AND SEMANTIC WEB (**PI**, \$333, 490)

• 2010 Calendar Year

i. Refereed Publications

Wei Jin and Xin Wu. " HCAMiner: Mining Concept Associations for Knowledge Discovery through Concept Chain Queries ", in *Proceedings of the 23rd International Conference on Computational Linguistics (COLING 2010)* , Beijing, China, August 23-27th, 2010, pp. 29-32.

Shadi Banitaan, Saeed Salem, **Wei Jin** and Ibrahim Aljarah. "A formal study of classification techniques on Entity Discovery and their application to Opinion Mining ", in *Proceedings of the International Workshop on Search and Mining User-generated Contents (SMUC 2010)*, colocated at the *19th ACM Conference on Information and Knowledge Management, (CIKM 2010)*, Toronto, Ontario, Canada, October 30, 2010

Abhishek Singh, Lucy Vanderwende and **Wei Jin**. "Ranking Summaries for Content and Coherence without Reference Summaries", in *the Pacific Northwest Regional Natural Language Processing Workshop (NW-NLP 2010)*, Microsoft Research Redmond, Redmond, WA 98052, April 23, 2010 (Poster).

Linyun Fu, Haofen Wang , **Wei Jin** and Yong Yu. "Towards Better Understanding and Utilizing Relations in DBpedia, to appear in the *Web Intelligence and Agent Systems: An International Journal (WIAS)*, accepted.

Wei Jin and Xin Wu. "Discovering, ranking and annotating cross-document relationships between concepts", in *Proceedings of the 19th ACM Conference on Information and Knowledge Management, CIKM 2010*, Toronto, Ontario, Canada, October 26-30, 2010 , pp. 1929-1930

Junquan Chen, Kaifeng Xu, Haofen Wang, **Wei Jin**, and Yong Yu. "Effective and Efficient Keyword Query Interpretation using a Hybrid Graph", in [Lecture Notes in Computer Science\(LNCS\) book series, Vol. 6488, Web Information Systems Engineering - 11th International Conference on Web Information System Engineering \(WISE 2010\)](#), Springer 2010

Peng Li, Bin Wang, **Wei Jin** and Yachao Cui. "User-related Tag Expansion for Web Document Clustering", to appear in the *Advances in Information Retrieval, Lecture Notes in Computer Science(LNCS) book series, 33rd European Conference on Information Retrieval Research, ECIR 2011*, Dublin, Ireland, Apr. 18-21, 2011, Springer 2011

Haofen Wang, Linyun Fu, **Wei Jin** and Yong Yu. "EachWiki: Facilitating Wiki Authoring by Annotation Suggestion", to appear in *ACM Transactions on Intelligent Systems and Technology* (accepted).

ii. Presentations

"Discovering, ranking and annotating cross-document relationships between concepts", in *the 19th ACM Conference on Information and Knowledge Management, CIKM 2010*, Toronto, Ontario, Canada, October 2010.

"A Formal Study of Classification Techniques on Entity Discovery and their Application to Opinion Mining", *ND EPSCoR 2010 State Conference*, Grand Forks, Fargo, ND, September 2010. ([poster presentation by Shadi Banitaan](#))

"HCAMiner: Mining Concept Associations for Knowledge Discovery through Concept Chain Queries", in *the 23rd International Conference on Computational Linguistics (COLING 2010)*, Beijing, China, August, 2010.

iii. Funded Research Proposals (title, source, PI and co-PIs, duration, amount)

ND NSF/EPSCoR Infrastructure Improvement Program – Seed Grants, \$41,470, 08/2010 – 07/2011 (Project# FAR0017553) (PI).

iv. Graduate student Committees on which you serve (indicate those for which you are Chair)

Swathi kondakindi (completed)

Mousumi Tanha (completed)

Sandeep Poreddy
Mridula Sarker (completed)
Xiaojun Xia
Chao Liu
Sunil Kolluru
Pavan Bapanpally
Peng Yan (Chair)
Swapna Phadke (chair)
Ya Zhu (Chair)
Shadi Banitaan

v. Pending Publications

Yuan Tian, Haofen Wang, **Wei Jin** and Yuan Ni. "A Pattern-based Approach for Efficient Query Processing over RDF Data", submitted to LNCS Transactions on Large- Scale Data and Knowledge-Centered Systems, Springer.

Haofen Wang, **Wei Jin**, Kaifeng Xu, Meilun Sheng, and Yong Yu. "Wikipedia Empowered Natural Language Interface for Web Search", submitted to *Journal of World Wide Web*, Springer.

vi. Unfunded Research Proposals

2010 NDSU Advance FORWARD Leap Grant: "DOMAIN DRIVEN ASSOCIATION DISCOVERY AND SCENARIO DETECTION FROM LARGE-SCALE HETEROGENEOUS DATA (**PI**; \$29,981).

vii. Pending Research Proposals

2010 NSF Information and Intelligent Systems (IIS): Core Programs: DISCOVERING COMPLEX AND HIDDEN RELATIONSHIPS OVER HETEROGENEOUS DATA SOURCES (**PI**, \$391,920, 07/2011 – 06/2014)

2010 NSF Information and Intelligent Systems (IIS): Core Programs: A UNIFIED REPRESENTATION AND RETRIEVAL MODEL FOR TRADITIONAL WEB, SOCIAL WEB, AND SEMANTIC WEB (**PI**, \$338,435, 07/2011 – 06/2014)

- **Teaching**

- Spring, 2009 (for each course give number, title, credits, number of students and indicate if it was a new preparation for you)

CSCI 345 Topics in Personal Computers//Information Retrieval and Web Search; 3 credits; 11 students; new preparation

CSCI 783 Topic in Software System/Information Retrieval and Web Search; 3 credits; 8 students; new preparation

- Fall, 2009 (same information)

CSCI 372 Comparative Languages; 3 credits; Section 1, 46 students

CSCI 372 Comparative Languages; 3 credits; Section 2, 34 students

- Spring, 2010 (same information)

CSCI 426 Introduction to Artificial Intelligence; 3 credits; 26 students; new preparation (Undergraduate Level)

CSCI 626 Introduction to Artificial Intelligence; 3 credits; 2 students; new preparation (Graduate Level)

- Fall, 2010 (same information)

CSCI 372 Comparative Languages; 3 credits; Section 1, 41 students

CSCI 372 Comparative Languages; 3 credits; Section 2, 30 students

- **Service**

- **2009**

- i. **For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)**

NSF Review panel: CDI (Cyber-enabled Discovery and Innovation) program, Arlington, Virginia, February, 2009

- ii. **For the College (same information)**

Junior Faculty Series: the 2nd year faculty development series

- iii. **For the Department (same information)**

Department of Computer Science Faculty Recruiting Committee (Spring 2009, Fall 2009)

- **2010** (same information in the same categories)

- i. **For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)**

Program Committee Member:

CIKM 2010 - The 19th International Conference on Information and Knowledge Management

WWW 2010 International Semantic Search Workshop - Located at the 19th Int. World Wide Web Conference.

IWGD 2010 - International Workshop on Graph Database, in Conjunction with the 11th International Conference on Web-Age Information Management

Journal Reviewer:

[DKE](#) - Data & Knowledge Engineering (Mar. 2010)

[JWS](#) - Journal of Web Semantics (Feb. 2010)

IEEE Intelligent Systems (Dec. 2010)

ii. For the College (same information)

Junior Faculty Series: the 2nd year faculty development series

iii. For the Department (same information)

Department of Computer Science Faculty Recruiting Committee (Spring 2010)

[Tariq King](#)

Research

• **2009 Calendar Year**

i. Refereed Publications

1. Tariq M. King, and Annaji Sharma Ganti. *Migrating Autonomic Self-Testing to the Cloud*. Proceedings of the 3rd International Conference on Software Testing, Verification and Validation (ICST 2010) Workshops, IEEE April 6-10, 2010, pages 438-442
2. Peter J. Clarke, Tariq M. King, and Edward L. Jones. *WReSTT – Web-Based Repository of Software Testing Tools*. Proceedings of the 9th Annual Workshop on Teaching Software Testing (WTST 2010), January 29, 2010, pages 52-59
3. Peter J. Clarke, James F. Power, Djuradj Babich, Tariq M. King. *A Testing Strategy for Abstract Classes*. Journal of Software Testing, Verification and Reliability (STVR), Wiley Interscience, DOI: <http://dx.doi.org/10.1002/stvr.429>
4. Andrew A. Allen, Yali Wu, Peter J. Clarke, Tariq M. King, and Yi Deng. *An Autonomic Framework for User-Centric Communication Services*. Proceedings of the 2009 Conference of the Center for Advanced Studies (CASCON 2009), ACM November 2-5, 2009, pages 203-215
5. Peter J. Clarke, Andrew A. Allen, Yali Wu, and Tariq M. King. *Experiences of Teaching Model-Driven Engineering in a Software Design Course*. Proceedings of the 5th Educators' Symposium of the MODELS 2009 Conference, ACM-IEEE October 4-9, 2009, pages 6-14

ii. Presentations

1. Autonomic Self-Testing of the Cloud, In the Cloud, the 2nd CS University-Industry Consortium Outreach Meeting: IBM, April 21, 2010, Department of Computer Science, NDSU, Fargo ND
2. A Web-Based Repository of Software Testing Tools, 9th Annual Workshop on Teaching Software Testing (WTST 2010), January 29, 2010, Melbourne FL.
3. Software Testing and Autonomic Computing Research, Empirical Software Engineering Group Meeting, September 28, 2009, Department of Computer Science, NDSU, Fargo ND.

iii. Unfunded Research Proposals

1. Tariq M. King (PI), Richard Rummelt. *Collaborative Research: Integrating Testing into CS1-CS3 with the Support of a Web-Based Testing Repository*, Agency: NSF. Program: CCLI. Amount Requested: \$173K for three (3) years. Collaborative proposal with Dr. Peter Clarke (PI-FIU) and Djuradj Babich (PI-MDC).

iv. Other Research Activities

1. Founded the Software Testing Research Group, <http://cs.ndsu.edu/strg> Currently consists of (6) graduate students, i.e., four (4) PhD students and two (2) MS students.
2. Coordinating four (4) research projects of the STRG in the following areas: Software Testing in the Cloud; Change Propagating Test Models for Adaptive Systems; Environment-Based Testing of Adaptive Software; and Testing Enterprise Resource Planning Systems.
3. Performing experiments to evaluate system-wide autonomic self-testing using the Communication Virtual Machine (CVM), <http://www.cis.fiu.edu/cml>
4. Collaborating with Dr. Gursimran Walia on two (2) research projects: estimating defect size in source code using capture/recapture techniques, and performing systematic reviews on testing autonomic and adaptive systems.
5. Held individual meetings with the following colleagues to discuss research collaboration possibilities:
 - Dr. Jun Kong – UML graph transformations to support self-testing
 - Dr. Hyunsook Do – evaluating model-driven scenario query with CVM
 - Dr. Weiyi Zhang – runtime test optimization based on network configuration and performance.

b. 2010 Calendar Year

i. Refereed Publications

1. Tariq M. King, Andrew A. Allen, Yali Wu, Peter J. Clarke, and Alain E. Ramirez. *A Comparative Case Study on the Engineering of Self-Testable Autonomic Software*. Proceedings of the 8th International Conference on the Engineering of Autonomic and Autonomous Systems (EASe 2011), IEEE April 27-29, 2011, to appear
2. Mohammed Akour, Akanksha Jaidev, and Tariq M. King. *Towards Change Propagating Test Models in Autonomic and Adaptive Systems*. Proceedings of the 18th International Conference on the Engineering of Computer-Based Systems (ECBS 2011), IEEE April 27-29, 2011, to appear
3. Peter J. Clarke, Jairo Pava, Yali Wu, and Tariq M. King. *Collaborative Web-Based Learning of Testing Tools in SE Courses*. Proceedings of the 42nd Technical Symposium on Computer Science Education (SIGSCE 2011), ACM, March 9-12, 2011, to appear
4. Peter J. Clarke, Andrew A. Allen, Tariq M. King, Edward L. Jones, and Prathiba Natesan. *Using a Web-Based Repository to Integrate Testing Tools into Programming Courses*. Proceedings of the International Conference on Object-Oriented Programming Systems, Languages and Applications (SPLASH 2010) Companion, ACM October 17-21, 2010, pages 193-200

ii. Pending Publications

1. Andrew A. Allen, Yali Wu, Fabio M. Costa, Zhenyu Yang, Tariq M. King and Peter J. Clarke. *Towards an Autonomic Approach to Support User-Centric Communication Services*. Submitted to the Journal of Systems and Software

iii. Presentations

1. Enhancing the Web-Based Repository of Software Testing Tools, 2nd Workshop on Integrating Software Testing into Programming Courses (WISTPC 2010), June 24, 2010, Miami, FL.

iv. Pending Proposals

1. Donald P. Schwert and Tariq M. King (Co-PI), *SBIR Phase II: An Environmental Geology Game for Discovery-Oriented Science and Mathematics Education*, Agency: NSF. Program: SBIR. Amount Requested: \$180K for two (2) years. Subcontract from the WoWiWe Instruction Co.
2. Donald P. Schwert and Tariq M. King (Co-PI), *SBIR Phase II: A Multi-User Virtual Biology Environment for Discovery-Oriented Science Education*, Agency: NIH.

Program: SBIR. Amount Requested: \$368K for two (2) years. Subcontract from the WoWiWe Instruction Co.

v. Unfunded Research Proposals

1. Tariq M. King (PI), Weiyi Zhang, and Dean Knudson. *Assured Internetwork-ing Protocol*. Agency: NSF. Program: FIA. Amount Requested: \$449K over three (3) years. Subcontract from the Architecture Technology Corporation.
2. Weiyi Zhang, Tariq M. King (Co-PI), Dean Knudson, Jun Kong, and Kendall E. Nygard. *Development of a Robust WiMAX-based Testbed for Public Safety*, Agency: NSF. Program: MRI. Amount Requested: \$321K for three (3) years.

vi. Other Research Activities

1. Directing the activities of the Software Testing Research Group (STRG), <http://cs.ndsu.edu/strg>. Currently consists of (9) graduate students, i.e., five (5) PhD students, and two (4) MS students. STRG published 2 research papers (1 workshop, 1 conference), with one more publication currently under review and three others under preparation. Ongoing projects include:
 - Formulating a workflow for providing test support as a service for cloud computing architectures, Annaji Ganti (PhD student)
 - Evaluating the Test Information Propagation approach for synchronizing adaptation and testing models at runtime. Mohammed Akour (PhD student), and Akanksha Jaidev (MS student).
 - Testing Adaptive Learning Systems, Richard Rummelt (PhD student)
 - Defining a formal modeling and test-driven development approach to building Enterprise Resource Planning systems. Talukdar Asgar (PhD student), Iyad Alazzam (PhD student), and Debajyoti Dash (MS student)
 - Dynamically scheduling regression tests in autonomic software. Asha Yadav (MS Student), and Arti Katiyar (MS student).
2. Collaborating with researchers at Colorado State University, Universidade Federal de Goias (Brasil), and Florida International University on modeling and realizing of user-centric communication services with the Communication Virtual Machine (CVM) platform, <http://cvm.cis.fiu.edu>.

• Teaching

• 2009 Calendar Year

i. Courses Taught

Course #	# of Students	Instructor Rating
CSci 718	9	4.89
CSci 718	25	4.75

ii. Major Professor (4 PhD, 1 MS Student)

1. Annaji Ganti, PhD
2. Mohammed Akour, PhD
3. Talukdar Asgar, PhD
4. Iyad Alazzam, PhD
5. Akanksha Jaidev, MS

iii. Graduate Student Committees (Completed)

1. Siva Vanteru, MS Thesis, Computer Science, Fall 2009 – Spring 2010, Major Advisor: Dr. Weiyi Zhang, completed oral defense on 5/14/2010.
2. Pramodh Talloji, MS Paper, Software Engineering, Spring 2010, Major Advisor: Dr. Kenneth Magel, completed oral defense on 5/17/2010.

• **2010 Calendar Year**

i. Courses Taught

Course #	# of Students	Instructor Rating
CSci 745	12	TBD
CSci 790	10	TBD
CSci 717	17	TBD
CSci 372	24	TBD

ii. Major Professor (6 PhD, 4 MS Students)

1. Annaji Ganti, PhD
2. Mohammed Akour, PhD
3. Iyad Alazzam, PhD
4. Richard Rummelt, PhD
5. Talukdar Asgar, PhD

6. Sagar Bakliwal, PhD
7. Akanksha Jaidev, MS
8. Debajyoti Dash, MS
9. Asha Yadav, MS
10. Arti Katiyar, MS

iii. Graduate Student Committees (Completed)

1. Srikanth Aakula, MS Paper, Computer Science, Fall 2010, Major Advisor: Dr. Weiyi Zhang, completed oral defense on 11/15/2010.

iv. Graduate Student Committees (Ongoing)

1. Richard Rummelt, PhD, Software Engineering, Fall 2010 to Present, Major Advisor: Dr. Tariq M. King
2. Akanksha Jaidev, MS, Computer Science, Spring 2011 to Present, Major Advisor: Dr. Tariq M. King
3. Farah Kandah, PhD, Computer Science, Fall 2010 to Present, Major Advisor: Dr. Weiyi Zhang.
4. Revathi Dhamotharan, MS, Electrical and Computer Engineering, Spring 2010 to Present, Major Advisor: Dr. Rajendra Katti.
5. Anupama Reddy Annapureddy, MS, Computer Science, Fall 2010 to Present, Major Advisor: Dr. Kendall Nygard
6. Yang Liu, MS Computer Science, Fall 2010 to Present, Major Advisor: Dr. Weiyi Zhang.
7. Shi Bai, MS, Computer Science, Fall 2010 to Present, Major Advisor: Dr. Weiyi Zhang.
8. Suresh Paturu, MS, Computer Science, Fall 2010 to Present, Major Advisor: Dr. Kendall Nygard
9. Jyotjeev Kohli, MS, Software Engineering, Spring 2011 to Present, Major Advisor: Dr. Jun Kong.
10. Bethlehem Gronneberg, MS, Software Engineering, Spring 2011 to Present, Major Advisor: Dr. Kendall Nygard
11. Anita Sundaram, MS, Computer Science, Spring 2011 to Present, Major Advisor: Dr. Kendall Nygard

3. Service

a. 2009 Calendar Year

i. Department

1. Faculty Advisor for the NDSU Chapter of Upsilon Pi Epsilon (UPE)

ii. Professional

1. Reviewer for the 3rd IEEE International Conference on Software Testing
2. Reviewer for NSF-funded CCLI Phase I Project: WReSTT – A Web-Based Repository of Software Testing Tools (DUE-0736833)
3. Invited Panelist for the 9th Annual Workshop on Teaching Software Testing

b. 2010 Calendar Year

i. Department

1. Faculty Advisor for the NDSU Chapter of UPE
2. Graduate Admissions Committee
3. Software Engineering Comprehensive Exam Committee

ii. Professional

1. Program Committee, IEEE INFOCOM 2011 Workshop on Machine-to-Machine Communications and Networking
2. Program Committee, 10th IASTED Conference on Software Engineering
3. Organizing Committee for the 2nd Workshop on Integrating Testing into Programming Courses
4. Reviewer for the International Symposium on Software Reliability Engineering

Dean Knudson

Research

a. 2009 Calendar Year

i. Refereed Publications

1. Dean Knudson, Alan Braaten, "Industry/University Cooperation in Defining Software Processes for use in Real-world Computer Science Capstone Team Projects", *SEPG 09 North America*, a Software Engineering Institute sponsored conference, San Jose, CA, March 23-26, 2009
2. Dean Knudson, Alex Radermacher, "Software Engineering and Project Management in CS Projects vs. 'Real-world' Projects: A Case Study", *IASTED-Software Engineering Applications 2009*, Cambridge, MA, November 2-4, 2009.

ii. Funded Proposals

1. NSF – Collaborative for Scholarships in Computer, Information Science, and Engineering (CoCISE), awarded 2006, and runs for four years, \$463,000, PI – Dr. Kendall Nygard, my role is to help coordinate the program by doing things like reviewing candidates and setting up talks for the students.

iii. Unfunded Proposals

1. Instructional Development Grant follow-on proposal to last year's *"Moving the Computer Science Capstone Course toward CMMI Level 2"*, Dean Knudson, one year, \$4500
2. NSF - OIA – CDI Type II: Netbook Learning: Farming in Virtual Fields, Brian Slator, Xiaojiang Du, Phillip McClean, Donald Schwert, four years, \$1,603,469 – my role was Senior Personnel to manage relationship with OLPC program in Uruguay
3. NSF – IGERT: IGERT THINKERS for Tomorrow's Problems in Food Logistics & Security, 5 years, Charlene Wolf-Hall, \$??, my role was industry liaison

iv. Other Research Activities

1. I worked with the legal department to get the proper forms ready in order to set up a university/industry consortium program. We developed a draft document that works for legal and I checked it out with some people in industry. Phoenix International agreed to join the group and we had preliminary discussions regarding potential projects. I also started discussions with other companies regarding membership.
2. I also worked on getting Ken Nygard and ATC connected to potentially work on projects having to do with teams of agents/robots working in a coordinated cooperating manner to do things like search buildings areas.
3. I got Weiyi Zhang connected with people at ATC and they teamed on an NSF grant dealing with Future Internet Architectures.
4. I worked with several companies that sponsor Capstone projects to get their input on the software development and project management processes we use in our Capstone class. People from Medtronic, Phoenix and ATK worked on a process audit on our capstone processes.

b. 2010 Calendar Year

v. Refereed Publications

Dean Knudson, Alex Radermacher, "Project Management and Software Development Processes for Computer Science Capstone Projects", Capstone Design Conference, Boulder, CO, June 7-9, 2010.

Alex Radermacher, Adam Helsene, Dean Knudson, "Improving Capstone Courses with Content Management Systems and Virtualization", Capstone Design Conference, Boulder, CO, June 7-9, 2010.

Dean Knudson, Alex Radermacher, "Meeting Today's Changing Needs Through the use of Capstone Programs", SITE 2011 Conference, Nashville, TN, March 7-11, 2011, accepted.

Dean Knudson, Alex Radermacher, "Updating CS Capstone Projects to Incorporate New Agile Methodologies used in Industry", CSEE&T 2011 Conference, Honolulu, HI, May 22-24, 2011, accepted.

vi. Other Publications

Alex Radermacher, Adam Helsene, Dean Knudson, "Implementing Content Management Systems and Virtualization for Computer Science Capstone Courses", SIGUCCS Spring Management Symposium, Victoria, BC, April 19-21, 2010, conference papers are not to be published.

vii. Funded Research Proposals (title, PI and co-pi's, duration, amount, source)

NSF – Collaborative for Scholarships in Computer, Information Science, and Engineering (CoCISE), awarded 2006, and runs for four years, \$463,000, PI – Dr. Kendall Nygard, my role is to help coordinate the program by doing things like reviewing candidates and setting up talks for the students.

viii. Unfunded Proposals

NSF – CCLI Type 2 – Improving Computer Science Capstone Project Experiences, Dean Knudson, Gursimran Walia, Kenneth Magel, three years, \$415,518.

NSF – MRI: Development of Robust WiMAX-based Testbed for Public Safety Monitoring, Weiyi Zhang, Dean Knudson, Jun Kong, Kendall Nygard, \$310,075.

ix. Pending Proposals

NSF – PFI: Data-driven Support for the Smart Farm, Anne Denton, Philip Boudjouk, David Franzen, Reza Maleki, Saeed Salem, \$599,303.

x. Other Research Activities

I worked with several companies (Microsoft, Sundog, Bolder Thinking, ATC, and Appareo) to determine how best to introduce a more agile development process into the capstone course. Several of the processes used by these companies are being introduced into the 2011 capstone course.

Worked with Carsten Kleiner from the University of Applied Sciences and Arts in Hannover, Germany to propose and get accepted a Birds of a Feather session on "Capstone Projects in CS and SE – How do we reach out?" which will take place during the SIGCSE 2011 conference in Dallas, TX, March 9-12, 2011.

I worked with Anne Denton and Saeed Salem to help get them started with research for the NDSU CS Industry/University Consortium.

I worked with Tariq King to get him tied into Garth Tschretter, an IBM Manager, to see if they could work together on research involving testing in the cloud.

Worked with NDSU legal and Research departments in order to finalize legal and overhead issues prior to setting up the industry/university consortium.

NDSU CS Industry/University Consortium established with four companies in the original team (Phoenix International, Agri ImaGIS, American Crystal Sugar, RDO Equipment)! Worked with the companies to define a project they are all interested in funding and got it coordinated.

Worked with Phoenix International to put in a proposal for corporate John Deere to fund their membership in our consortium through the NDSU Development Foundation.

- **Teaching**

- **2009**

Course #	# of students	Instructor Rating
CS 445 – 3 credits, not new preparation	42 (13 projects)	Instruction – 4.622 Instructor – 4.703 Communications – 4.757 Quality – 4.649 Fairness – 4.811 Understanding – 4.649
CS 716 – 3 credits, not new preparation	5 (1 project)	(no rating – Dr. Magel's class)

- **2010**

Course #	# of students	Instructor Rating
CS 445 – 3 credits, not new preparation	33 (9 projects)	Instruction – 4.324 Instructor – 4.441 Communications – 4.441 Quality – 3.882 Fairness – 4.353 Understanding – 4.353
CS 716 – 3 credits, not new preparation	16 (4 projects)	(no rating – Dr. Magel's class)

- **Service:**

- 2009**

- Department**

- Arranged for several lectures from managers at Microsoft, IBM and Thomson West and arranged for CoCISE scholarship award winners to attend these talks as well as CS majors.

- Worked with Ansal Institute students to screen them for the Capstone course and to recommend how to get ready for the course if they were not ready. Also screened all transfer students who came in after their sophomore year.

- Worked with the department to give feedback on curriculum issues raised by sponsors in industry. This continued on to working with a curriculum review team that is addressing the whole CS undergraduate curriculum.

- College**

- Arranged for a lecture from Olaf Storaasli, Distinguished Research Scientist, at Oak Ridge National Labs and introduced him to the people in charge of research in the Tech Park.

- 2010**

- Department**

- Arranged for several lectures from managers at Microsoft, IBM and ATK and arranged for CoCISE scholarship award winners to attend these talks as well as CS majors.

- Worked with Ansal Institute students to screen them for the Capstone course and to recommend how to get ready for the course if they were not ready. Also screened all transfer students who came in after their sophomore year.

- Attended several meetings with companies, delegates from China, Tech Fair, etc. in order to discuss our capstone program.

Jun Kong

Research

• 2009 Calendar Year

i. Refereed Publications

J. Kong, K. Zhang, J. Dong, and D. Xu, "Specifying Behavioral Semantics of UML Diagrams Through Graph Transformations", *Journal of Systems and Software*, Vol.82(2), 2009, 292-306.

S. Pinagapani, D. Xu, and **J. Kong**, "A Comparative Study of Access Control Languages", *3rd International Conference on Secure Software Integration and Reliability Improvement*, 2009.

W. Zhang and **J. Kong**, "Distraction-free Service in Pervasive Environments Based on Multi-Constrained QoS Routing", *2009 International Conference on New Trends in Information and Service Science*, 2009.

W. Zhang, **J. Kong**, K. Nygard, and M. Li, "Adaptive Configuration of Pervasive Computing System with QoS Consideration", *Proc. 6th Annual IEEE Consumer Communications and Networking Conference*, 2009.

ii. Funded Research Proposals

Title: Graphical Interface Interpretation Using Graph Grammars Source: HP
PI: J. Kong Duration: 08/01/2009 – 07/31/2010 Amount: \$40,000

iii. Unfunded Proposals

Title: Adaptation of Web Information for Mobile Display
Source: NSF-IIS PI: J. Kong

Title: WiMAX-based testbed for Public Safety Monitoring in Rural Areas
Source: NSF-CRI PI: W. Y. Zhang My Role: Co-PI

Title: Efficient and Trusted Information Sharing of Healthcare Systems
Source: NIH PI: J. Kong

iv. Graduate student advisees completed (Major Advisors): 6 students

Name	Degree	Date	Title
Thilak Rajaraman	Master	May 11, 2009	A comparative Study of Adaptive Layouts on Mobile Devices
Ramchandra Kadam	Master	Mar. 23, 2009	Automating a Robotic Coating System
Ambika S Tirupathi	Master	May 12, 2009	An Interactive Tool for JAVA Swing Education
Ravi Eda	Master	Sep. 4, 2009	A State Based Approach for Testing Menu Driven Applications
Yaswanth Potla	Master	Sep. 22, 2009	Adapting Web Page Tables on Mobile Devices
Qipeng Wu	Master	Dec. 15, 2009	A Graphical Tool for Test Generation for

v. Graduate student Committees on which you serve

Name	Name	Name	Name
Satheesh Chakravarthi	Praveen Kumar Emmadi	Annaji Ganti	Ramakrishnareddy Gooduru
Vasumathi Guduru	Harsh Jain	Jerilyn Kazeck	Oksana Myronovych
Huma Rizvi	Durga P. Ramamurthy	Sri Harsha Yamparala	

- **2010 Calendar Year**

i. Refereed Publications

Y. Potla, R. Annadi, **J. Kong**, G. Walia, and K. Nygard, "Adapting Web Page Tables on Mobile Devices", To appear in *International Journal of Handheld Computing Research*, 2010.

J. Kong, D. Xu, and X. Zeng, "UML-based Modeling and Analysis of Security Threats", To appear in *International Journal of Software Engineering and Knowledge Engineering*, 2010.

W. Zhang and **J. Kong**, "Multi-Constrained QoS Routing for Distraction-free Service in Pervasive Environment", *Journal of Next Generation Information Technology*, Vol.1(2), 2010, 35-44.

C. Y. Zhao, **J. Kong**, and K. Zhang, "Program Behavior Discovery and Verification: A Graph Grammar Approach", *IEEE Transactions on Software Engineering*, Vol.36(3), 2010, 431-448.

W. Zhang, **J. Kong**, K. Nygard, and M. Li, "Adaptive Design of Pervasive Computing System Under QOS Constraints", *International Journal of Computers and Applications*, Vol. 32(4), 2010, 482-492.

K. Zhang and **J. Kong**, Exploring Semantic Roles of Web Interface Components, *Proc. 2010 IEEE International Conference on Machine and Web Intelligence*, 2010, 8-14.

J. Kong, W. Zhang, J. Li and A. G. Roy, "A Cross-Layer Design for Adaptive Multimodal Interfaces in Pervasive Computing", *Proc. 22nd International Conference on Software Engineering and Knowledge Engineering*, 2010, 726-731.

ii. Funded Research Proposals

Title: Mobile-Friendly Web Browsing Source: ND
EPSCoR
PI: J. Kong Duration: 09/01/2009 – 08/31/2011 Amount: \$77,600

iii. Pending Research Proposals

Title: MRI: Development of a Cross-Platform Infrastructure for Natural Interaction Research Source: NSF PI: J. Kong Duration:
09/01/2011 – 08/31/2014 Amount: \$396,206

Title: HCC: Small: Collaborative Research: Adaptation of Web Information for Mobile Display
Source: NSF PI: J. Kong Duration: 09/01/2011 – 08/31/2014
Amount: \$276,850

iv. Unfunded Proposals

Title: II-NEW: WiMAX-based Testbed for Public Safety Monitoring in Rural Areas
Source: NSF PI: W. Zhang My role: Co-PI

Title: CAREER: Information Adaptation for Efficient Mobile Browsing
Source: NSF PI: J. Kong

Title: Designing Reliable Software with Graphical Notations
Source: ND NASA EPSCoR PI: J. Kong

MRI: Development of a Robust WiMAX-based Testbed for Public Safety Monitoring
Source: NSF PI: W. Zhang My role: Co-PI

Title: CDI-Type I: Discovering Information Organization From Unstructured Documents Using Graph Grammars
Source: NSF PI: J. Kong

Title: HCC: Human-Centric Adaptive Multimodal Interface Design in the Pervasive Environment
Source: NSF PI: J. Kong

v. Graduate student advisees completed (Major Advisors): 2 students

Name	Degree	Date	Title
Sandeep Raavi	Master	April 9, 2010	XGRAPHML – A Tool for Transforming UML to GraphML
Ankita Sehgal	Master	April 7, 2010	Automatic Evaluation on Mobile Web Pages

vi. Graduate student Committees on which you serve

Name	Name	Name	Name
Swathi Kondakindi	Phillip Reindl	Vijay anand Suravarapu	Naomi Takahashi
Siva Vanteru	Yan Wang	Benjamin Bengfort	Dibakar Bhowmick

vii. Pending Publications

H. Ahmadi and J. Kong, “User-Centric Adaptation of Web Information for Small Screens”, Submitted to Journal of Visual Languages and Computing, (Major Revision).

J. Kong, W. Y. Zhang, N. Yu and X. J. Xia, “Design of Human-Centric Adaptive Multimodal Interfaces”, Submitted to International Journal of Human Computer Studies, (Major Revision).

• Teaching

i. Spring, 2009

Course: CSci 475 Operating Systems Design Credits: 3 # of Students: 41

ii. Fall, 2009

Course: CSci 474 Operating Systems Concept	Credits: 3	# of Students: 41
Course: CSci 488 Human Computer Interaction	Credits: 3	# of Students: 21
Course: CSci 688 Human Computer Interaction	Credits: 3	# of Students: 20

iii. Spring, 2010

Course: CSci 475 Operating Systems Design Credits: 3 # of Students: 28

iv. Fall, 2010

Course: CSci 474 Operating Systems Concept Credits: 3 # of Students: 44

Course: CSci 488 Human Computer Interaction Credits: 3 # of Students: 19

Course: CSci 688 Human Computer Interaction Credits: 3 # of Students: 8

- **Service**

- **2009**

i. For the profession

Program Co-Chair

- The First International Workshop on Pervasive Computing Systems and Infrastructures (PCSI 2009), Held in conjunction with TridentCom'09, 2009.

Program Committee Member

- The 2009 Visual Information Communications International Conference
- The Annual ACM Symposium on Applied Computing - HCI Track
- The IEEE International Conference on Information Reuse and Integration
- The International Workshop on Visual Languages and Computing
- The International Conference on Software and Data Technologies
- The IASTED Intl. Conference on Internet & Multimedia Systems & Applications
- The IASTED International Conference on Wireless and Optical Communications

Guest Editor

- Multimedia Tools and Applications Systems

Journal Reviewer

- International Journal of Software Engineering and Knowledge Engineering
- International Journal of Computers and Applications

ii. For the University: University Senate

iii. For the College: faculty-student relations committee

iv. For the Department:

- CS Nomination Committee
- Faculty Recruiting Committee

- **2010**

i. For the profession

Program Committee Member

- The 2010 International Congress on Computer Applications and Computational Science
- The 9th International Conference on Web-based Learning
- Visual Information Communications International
- The Annual ACM Symposium on Applied Computing
- The IEEE International Conference on Information Reuse and Integration.
- The International Workshop on Visual Languages and Computing
- The International Conference on Software and Data Technologies
- The IASTED International Conference on Internet & Multimedia Systems & Applications

Journal Reviewer

- IEEE Transactions on Multimedia, 2010
- Multimedia Tools and Applications, 2010
- Journal of Software and Systems, 2010

ii. For the University: University Senate

Juan Li

Research

- **2009 Calendar Year**

i. Refereed Publications

Journals:

1. **J. Li**, "Exploiting Social Property for Improving Distributed Semantic Search", *International Journal of Computer & Information Science*, Vol. 10, No.2, 2009.
2. **J. Li** and Y. Su, "A Framework for Efficient Query Answering on Semantically Heterogeneous Grids", *the International Journal of Computational Science*, Vol. 3, No. 4, 2009.

Conference proceedings:

3. **J. Li** and S. U. Khan, "MobiSN: Semantics-based Mobile Ad Hoc Social Network Framework," *the IEEE Global Communications Conference (Globecom 2009)*, Honolulu, HI, USA, December 2009.
4. **J. Li**, "Building Distributed Index for Semantic Web Data", *the 23rd IEEE International Conference on Advanced Information Networking and Applications (AINA-09)*, Bradford, UK, 2009.
5. **J. Li** and Y. Su, "Bandwidth-Efficient Query Answering in Semantically Heterogeneous Grids", *the IEEE International Workshop on HPC and Grid Applications*, Sanya, China, April 2009.

Book Chapter:

6. **J. Li**, "Improving Distributed Semantic Search with Hybrid Topology and Peer Recommendation", a Chapter in Studies in *Computational Intelligence*, Springer, 2009.

ii. Presentations

1. "MobiSN: Semantics-based Mobile Ad Hoc Social Network Framework," in IEEE Global Communications Conference, Honolulu, HI, USA, December 2009.
2. "Building Distributed Index for Semantic Web Data", the 23rd IEEE International Conference on Advanced Information Networking and Applications, Bradford, UK, 2009.
3. "Bandwidth-Efficient Query Answering in Semantically Heterogeneous Grids", the IEEE International Workshop on HPC and Grid Applications, Sanya, China, April 2009.

iii. Funded Research Proposals

1. NDSU Advance Forward Travel Grant, (\$1,205), 2009.

iv. Graduate Committees served

- 1: Durga Ramamurthy (Advisor: Prof. Knygard)
- 2: Thilak Rajaraman (Advisor: Prof. Knygard)
- 3: Venkata Kurapati (Advisor: Prof. Knygard)
- 4: Qipeng Wu (Advisor: Prof. Kong)
- 5: Hari K Mukka (Advisor: Prof. Knygard)
- 6: Ushashi Chakraborty (Advisor: Prof. Denton)
- 7: Kareemullah Fazal (Advisor: Prof. Knygard)

v. Unfunded Proposals

1. NIH Recovery Act Limited Competition for NIH Grants: Research and Research Infrastructure "GO" Grant: "A User-centric, Efficient and Secure Healthcare Integration System." (co-PI) 2009.
2. NDSU Advance Forward Leap Research Grant: "Semantics-based mobile social network." 2009.
3. NDSU President's Community Projects Award 2009.
4. NSF IIS, CDI-Type I: "Discovering Hidden Associations in Large Text Corpora and Heterogeneous Data", (co-PI). 2000.
5. NSF IIS, Small: "Discovering Hidden Associations in Large-Scale Distributed Text Corpora.", (co-PI). 2009.

• 2010 Calendar Year**i. Refereed Publications****Journals:**

1. **J. Li**, "Grid Resource Discovery Based on Semantically Linked Virtual Organizations", Journal of Future Generation Computer Systems – Elsevier, Volume 26, issue 3, 2010.
2. **J. Li**, "Ontological Directory and Directory Load-balancing for Large Scale Grids" in International Journal of Applied Research on Information Technology and Computing, Vol 1, No. 1 January-April 2010.
3. **J. Li**, "Load-Balancing for Large-Scale Grids", International Journal of Computing & Information Technology, 2010.

4. M. A. Aziz, S. U. Khan, T. Loukopoulos, P. Bouvry, H. Li, and **J. Li**, "An Overview of Achieving Energy Efficiency in On-chip Networks," *International Journal of Communication Networks and Distributed Systems*, vol. 5, no. 4, pp. 444-458, 2010.
5. P. Lindberg, J. Leingang, D. Lysaker, S. U. Khan, and **J. Li**, "Comparison and Analysis of Eight Scheduling Heuristics for the Optimization of Energy Consumption and Makespan in Large-Scale Distributed Systems," *Journal of Supercomputing*, 2010.

Conference proceedings:

6. **J. Li**, W. Zhang, and X. Xia, "Scalable Publish/Subscribe Service in Wireless Mesh Networks", *IEEE Global Telecommunications Conference (Globecom 2010)*, Miami, FL, USA, December 2010.
7. **J. Li**, Z. Zhang, W. Zhang, "MobiTrust: Trust Management System in Mobile Social Computing", the Third IEEE International Symposium on Trust, Security and Privacy for Emerging Applications (TSP-10), 2010, UK.
8. **J. Li** and H. Wang, "Distributed Discovery of Semantic Relationships", 12th IEEE/IFIP Network Operations and Management Symposium (NOMS 2010), 19-23 April 2010 Osaka, Japan.
9. A. Roudaki, M. Doroodchi, **J. Li**, "Showing a Progress Bar while Executing Stored Procedures!", the 44th Hawaii Int'l Conference on System Sciences (HICSS-44), Grand Hyatt Kauai, Koloa, HI/USA, January , 2011.
10. P. Ranganathan, **J. Li** and K. Nygard, "A Multiagent oriented framework using ARM", the 2nd International Conference on Computer Engineering and Technology (ICCET 2010).
11. F. Kandah, W. Zhang, Y. Singh, and **J. Li**, "Interference-aware Robust Wireless Mesh Network Design", *IEEE Global Telecommunications Conference (Globecom 2010)*, Miami, FL, USA, December 2010.
12. J. Kong, W. Zhang, **J. Li**, and A. Roy, " A Cross-Layer Design for Adaptive Multimodal Interfaces in Pervasive Computing", 22nd International Conference on Software Engineering and Knowledge Engineering (SEKE 2010), San Francisco Bay, USA, July, 2010.
13. S. Liu, K. Bilal, S. U. Khan, H. Li, N. Min-Allah, **J. Li**, N. Ghani, P. Bouvry, and S. Madani, "Heuristics-based Nominal Channels Allocation in Cellular Networks," in 7th ACM/IEEE International Conference on Frontiers of Information Technology (FIT), Islamabad, Pakistan, December 2010.
14. A. Vosoughi, K. Bilal, S. U. Khan, N. Min-Allah, **J. Li**, N. Ghani, P. Bouvry, and S. Madani, "A Multidimensional Robust Greedy Algorithm for Resource Path Finding in Large-Scale Distributed Networks," in 7th ACM/IEEE International Conference on Frontiers of Information Technology (FIT), Islamabad, Pakistan, December 2010.

Book Chapter:

- P. Lindberg, J. Leingang, D. Lysaker, K. Bilal, S. U. Khan, P. Bouvry, N. Ghani, and J. Li, "Comparison and Analysis of Greedy Energy-Efficient Scheduling Algorithms for Computational Grids," in *Energy Aware Distributed Computing Systems*, A. Zomaya and Y.-C. Lee, Eds., John Wiley & Sons, Hoboken, NJ, USA, 2010.

ii. Presentations

1. “Scalable Publish/Subscribe Service in Wireless Mesh Networks”, IEEE Global Telecommunications Conference (Globecom 2010), Miami, FL, USA, December 2010.
2. “Distributed Discovery of Semantic Relationships”, 12th IEEE/IFIP Network Operations and Management Symposium (NOMS 2010), Osaka, Japan, April 2010. (Presentation and Q&A, through Skype video).

iii. Funded Research Proposals

1. NDSU Advance Forward Travel Grant, (\$1,380), 2010.

iv. Graduate Students completing

1. Mridula Sarker, Master in Software Engineering, "semantics-based Photo Album Design", September 2010.
2. Mousumi Tanha, Master in Software Engineering, "semantic relation discovery", April 2010.

v. Graduate Committees served

- | | |
|-------------------------|---------------------------|
| 1: Mridula Sarker | (Chair) |
| 2: Mousumi Tanha | (Chair) |
| 3: Guy Hokanson | (Advisor: Prof. Slator) |
| 4: Harika.Mattapa | (Advisor: Prof. Knygard) |
| 5: Shaminda Samaraweera | (Advisor: Prof. Knygard) |
| 6: Anshuman Manori | (Advisor: Prof. Knygard) |
| 7: Rajani Garimedi | (Advisor: Prof. Knygard) |
| 8: Anshuman Manori | (Advisor: Prof. Knygard) |
| 9: Arijit Chatterjee | (Advisor: Prof. Prerrizo) |
| 10: Chin Lua | (Advisor: Prof. Knygard) |

vi. Pending Publications

1. **J. Li**, H. Wang, and S. U. Khan, “A Fully Distributed Scheme for Discovery of Semantic relationships,” Journal of Web Semantics.
2. **J. Li**, H. Wang, and S. U. Khan, “A Semantics-Based Approach to Large-Scale Mobile Social Networking” ACM/Springer Mobile Networks and Applications.
3. **J. Li**, S. Khan , Q. Li, N. Ghani, N. Min-Allah,P. Bouvry, and W. Zhang, "Efficient Data Sharing over Large-Scale Distributed Communities", a chapter in Intelligent Decision Systems in Large-Scale Distributed Environments.
4. **J. Li**, Q. Li, and C. Liu, "Community-Based Collaborative Information System for Emergency Management", Computers & Operations Research.
5. **J. Li**, H. Wang, Q. Li, Z. Zhang and W. Zhang, "MobiTrust: A Decentralized Self-management Trust System in Mobile Ad Hoc Social Computing", Concurrency and Computation: Practice and Experience.

vii. Unfunded Proposals

1. CISCO University Research Program (CISCO URP), “Efficient Knowledge Management and Query Resolution for Service Center Processes”, (\$100,000), 2010.
2. STTR AF10-BT03 (AirForce) Innovative Approaches to On-Demand Cloud Computing over Ad-Hoc Wireless Networks. (co-PI). 2010.

3. Fonds National de la Recherche Luxembourg (FNR), ATTRACT, "Green-ICT: EnerGy, powerR, and thErmal –awarE data ceNter computations and CommunicaTions." (co-PI). 2010.
4. NDSU Advance Forward Leap Research Grant: "Semantics-based mobile social network." 2010.
5. NDSU President's Community Projects Award. 2010.
6. NDSU Development Centennial Endowment Fund, 2010.
7. NDSU Development Foundation Board of Trustees Endowment, 2010.

viii. Pending Research Proposals

1. NSF SoCS: Community-Based Collaborative Information and Communication System for Disaster Management, (\$737,552), 2010.
2. NSF NeTS: Small: Collaborative Research: A Middleware for Semantics-based Secure Mobile Ad Hoc Social Networking. (216,553), 2010.
3. Bill and Melinda Gates Foundation, "SMS-a-Mom: SMS-bAsed Maternal and newbOrn healthcare systeM", (\$100,000), 2010.

ix. Other Research Activities

Graduate students advising: (9 students, at least 1 hour each student per week)
Mridula Sarker, Mousumi Tanha, Farzana Jahan, Satheesh Chakravarthi, Chao Liu, Peyman Emamian, Shweta Tiwari, Ranjana Sharma, Qingrui Li

• **Teaching**

Term	No.	Title	New Prep.	Credits	Enroll ment	Course Rating
Fall 2010	790	Semantic Web Seminar		1	9	NA
Fall 2010	746	Development of Distributed Systems		3	9	NA
Spring 2010	738	Computer Networks	Yes	3	8	3.833
Spring 2010	724	Survey of Artificial Intelligence		3	33	3.414
Fall 2009	790	Semantic Web Seminar		1	3	5.000
Fall 2009	746	Development of Distributed Systems	Yes	3	10	4.700
Spring 2009	724	Survey of Artificial Intelligence	Yes	3	39	3.906

• **Service:**

• **2009 Calendar Year**

i. Professional

Program Committee of :

- The 15th International Conference on Distributed Multimedia Systems (DMS 2009)
- The IEEE workshop DSMSA2009
- The 2nd International Joint Conference on Computational Sciences and Optimization (CSO 2009)

Refereeing:

- IEEE's Transactions on Parallel and Distributed Systems
- IEEE Communications Letters

ii. Department

- i. Graduate Comprehensive Exam Committee
- ii. Undergraduate students advising (7 students)

• **2010 Calendar Year**

i. Professional

Program Committee of :

- The IEEE workshop IWHGA 2010
- The IEEE workshop DSMSA2010
- OPTIM'10 workshop on "Optimization issues in energy efficient distributed systems".
- The 3rd International Joint Conference on Computational Sciences and Optimization (CSO 2010)
- The Third IEEE International Symposium on Trust, Security and Privacy for Emerging Applications (TSP-10)
- The IEEE/ACM International Conference on Green Computing and Communications (GreenCom 2010), "Computer Networking and Internet" track.
- The international conference on frontiers of information technology (FIT 2010).
- The IEEE International Workshop on Networking and Communications for Advanced Society (NCAS2011)
- The Fourth International Joint Conference on Computational Sciences and Optimization (CSO 2011)
- The Sixth International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC 2011) (Track-chair)
- The 14-th IEEE International Conference on Network-Based Information Systems (NBIS-2011)

Editor of :

- International Journal of Computing & Information Technology (IJCIT)
- International Journal of Applied Research on Information Technology and Computing (IJARITAC)
- The Journal of Convergence (JoC)

Refereeing:

- The International Journal of Communication Networks and Distributed Systems
- IEEE's Transactions on Parallel and Distributed Systems
- IEEE Communications Letters
- Elsevier Computer Communications
- IEEE GLOBECOM 2009
- EURASIP Journal on Wireless Communications and Networking
- Informatica
- Journal of Systems and Software

- Journal of Parallel and Distributed Computing
- The journal annals of telecommunications - annales des telecommunications
- Multimedia Tools and Applications
- ii. **Department**
 - Graduate Comprehensive Exam Committee
 - Computer Science Tour for Science Fair 2010.
 - Faculty advisor of Microsoft MORE Program (Mentoring, Outreach and Retention in Education for Women).
 - Undergraduate students advising (16 students)
- iii. **College**
 - CSM Service & Outreach Committee

Simone Ludwig

Research

- **2009 Calendar Year**
 - i. **Refereed Publications**
 - S. A. Ludwig, "Sensor Grid Architecture for Remote Patient Health Care Monitoring", International Journal of Semantic Computing, vol. 3, no. 3, pp. 291-309, 2009.
 - S. A. Ludwig, V. Pulimi, A. Hnativ, "Fuzzy Approach for the Evaluation of Trust and Reputation of Services", Proceedings of 2009 IEEE International Conference on Fuzzy Systems (IEEE-FUZZ), Jeju Island, Korea, August 2009.
 - A. Hnativ and S. A. Ludwig, "Evaluation of Trust in an eCommerce Multi-agent System using Fuzzy Reasoning", Proceedings of 2009 IEEE International Conference on Fuzzy Systems (IEEE-FUZZ), Jeju Island, Korea, August 2009.
 - S. A. Ludwig, C. Thompson, K. Amundson, "Performance Analysis of a Deductive Database with a Semantic Web Reasoning Engine: ConceptBase and Racer", Proceedings of 21st International Conference on Software Engineering and Knowledge Engineering (SEKE), Boston, USA, July, 2009.
 - M. Naseri and S. A. Ludwig, "QoS-Aware Service Selection for Abstract Workflows using Provenance Data and Fuzzy Constraint Satisfaction Modeling", Proceedings of 2009 International Conference on Semantic Web and Web Services (SWWS), Las Vegas, USA, July 2009.
 - A. Moallem and S. A. Ludwig, "Artificial Life Techniques for Distributed Grid Job Scheduling", Proceedings of 23rd Annual ACM Symposium on Applied Computing (SAC), Honolulu, Hawaii, USA, March 2009.
 - ii. **Other Publications**
 - none
 - iii. **Presentations**
 - "Artificial Life Techniques for Distributed Grid Job Scheduling",

23rd Annual ACM Symposium on Applied Computing (SAC), Honolulu, Hawaii, USA, March 2009.

- “Performance Analysis of a Deductive Database with a Semantic Web Reasoning Engine: ConceptBase and Racer”, Proceedings of 21st International Conference on Software Engineering and Knowledge Engineering (SEKE), Boston, USA, July, 2009.

iv. **Funded Research Proposals (title, PI and co-pi’s, duration, amount, source)**

none

v. **Graduate Students completing for whom you were the advisor (name, degree, title of paper, date)**

- T. Guha, MSc Computer Science, “Service Selection: Comparison of a matchmaking algorithm with a Particle Swarm Optimization approach”, defended in August 2009.
- A. Moallem, MSc Computer Science, “Using Swarm Intelligence for Distributed Job Scheduling on the Grid”, defended in April 2009.

vi. **Graduate Student Committees on which you serve (indicate those for which you are Chair)**

- Committee Member, Tariq Muhammad, MSc defence, supervised by Dr. Julita Vassileva.
- Committee Member (external examiner), Roshan Parajuli, MSc defense, Department of Electrical and Computer Engineering, supervised by Dr. Carl McCrosky.
- Committee Member, Mohd Anwar, PhD defence, Department of Computer Science, supervised by Dr. Jim Greer.
- Dean’s designate, PhD defence of Doyle Anderson, Interdisciplinary Studies, supervised by Dr. Richard Long.
- Dean’s designate, PhD defence of Limei Zhang, Department of Geological Sciences, supervised by Dr. George.

vii. **Pending Publications**

n/a

viii. **Unfunded Research Proposals**

- S. Ludwig, New Investigator Establishment Grant Application, Saskatchewan Health Research Foundation, “Medical Decision Making”, \$80,000, March 2009.

• **2010 Calendar Year**

i. **Refereed Publications**

- S. A. Ludwig, “Comparison of a Deductive Database with a Semantic Web Reasoning Engine”, International Journal of Knowledge-Based Systems, vol. 23, no. 6, pp. 634-642, 2010.
- S. A. Ludwig, “Prediction of Breast Cancer Biopsy Outcomes Using a Distributed Genetic Programming Approach”, Proceedings of 1st ACM International Health Informatics Symposium, Arlington, VA, USA, November 2010.
- M. Naseri and S. A. Ludwig, “A Multi-Functional Architecture Addressing Workflow and Service Challenges Using Provenance Data”, Proceedings of Workshop for Ph.D. Students in Information and Knowledge

Management (PIKM) in conjunction with the 19th ACM Conference on Information and Knowledge Management (CIKM), October 2010, Toronto, Canada.

- S. A. Ludwig and S. Roos, “Prognosis of Breast Cancer using Genetic Programming”, Proceedings of 14th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES), September, 2010 Cardiff, Wales, UK.

- S. A. Ludwig, “Introduction of Particle Swarm Optimization for Matchmaking in Multi-attribute Auctions”, Proceedings of 3rd International Workshop on Agent-based Complex Automated Negotiations (ACAN) in conjunction with the 8th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Toronto, Canada, May 2010.

ii. **Other Publications**

none

iii. **Presentations**

- “Introduction of Particle Swarm Optimization for Matchmaking in Multi-attribute Auctions”, Proceedings of 3rd International Workshop on Agent-based Complex Automated Negotiations (ACAN) in conjunction with the 8th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Toronto, Canada, May 2010.

iv. **Funded Research Proposals (title, source, PI and co-PIs, duration, amount)**

- H. Ward, S. Card, S. Sheppard, S. Ludwig, B. Evans, K. Levesque, L. Ferguson, Inter-professional Health Collaborative of Saskatchewan (IHCS) Grant, A Pilot Case-based Virtual Learning Tool for IPE and Practice, \$10,000, 1 year, 2010.

v. **Graduate Students completing for whom you were the advisor (name, degree, title of paper, date)**

none

vi. **Graduate student Committees on which you serve (indicate those for which you are Chair)**

- Committee Member, MS thesis defence, Samidip Basu, Department of Computer Science, supervised by Dr. Kendall Nygard.

- Committee Member (external examiner), Brendon Fredlund, MSc defence, Department of Electrical and Computer Engineering, supervised by Dr. Ahn Dinh

- Committee Member, Mangalagouri Masarakal, MSc defence, supervised by Dr. Regan Mandryk.

- Committee Member (external examiner), Amitoz Ralhan, MSc defence, Department of Electrical and Computer Engineering, supervised by Dr. Soek-Bum Ko and Dr. Yang Shi.

- Committee Member, Anil Keela, MSc proposal, supervised by Dr. Nadeem Jamali.

- Committee Member, Edgar Lelei, MSc proposal, supervised by Dr. Jim Carter.

- Committee Member, Wengang Liu, MSc defence, supervised by Dr. Gordon McCalla.

- Committee Member, Yue Zhang, MSc defence, supervised by Dr. Nadeem Jamali.
- vii. **Pending Publications**
 - S. Ludwig and A. Moallem, "Swarm Intelligence Approaches for Grid Load Balancing", under review for consideration in the Journal of Grid Computing, Springer.
- viii. **Unfunded Research Proposals**
 - none
- **Other Research Activities**
- **Teaching**
 - **Spring, 2009 (for each course give number, title, credits, number of students and indicate if it was a new preparation for you):**
 - CMPT 418/820 T2, Intelligent Systems / Advanced Intelligent Systems, 3 credit course, 7 students.
 - CMPT 890 T2, Supervised research course, 3 credit course, supervised 1 student.
 - **Summer, 2009 (same information)**
 - none
 - **Fall, 2009 (same information)**
 - CMPT 317 T1, Introduction to Artificial Intelligence, 3 credit course, 25 students.
 - CMPT 100 Online T1, Introduction to Computing, 3 credit course, 15 students, new preparation.
 - **Spring, 2010 (same information)**
 - CMPT 418/820 T2, Intelligent Systems / Advanced Intelligent Systems, 3 credit course, 18 students.
 - CMPT 880 T2, Supervised research course, 3 credit course, supervised 1 student.
 - **Summer, 2010 (same information)**
 - none
 - **Fall, 2010 (same information)**
 - CSCI 373: Assembly Programming, 3 credit course, 35 students, new preparation.
- **Service**
 - **2009**
 - i. **For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)**
 - Reviewer, Journal of Service Oriented Computing and Applications, Springer, November, December 2009.
 - Session chair for IEEE International Conference on Fuzzy Systems, Jeju Island, Korea, August 2009.
 - Reviewer for International Journal of Electronic Business, October 2009.
 - Track Chair for Artificial Intelligence at 2nd International Conference on Computer Science and its Applications (CSA-09), Jeju, Korea, December 2009.
 - MITACS ACCELERATE Proposal, "Optimization of Road Alignment

Design", August 2009.

- Reviewer for travel scholarship applications for the Grace Hopper Celebration of Women in Computing, June 2009.

- Reviewer for Third IEEE International Conference on Self-Adaptive and Self- Organizing Systems, May 2009.

- Reviewer for IEEE Transactions on Services Computing, February 2009.

- Program Committee of MCETECH conference (Montreal Conference on eTechnologies), Ottawa, Canada, May 2009.

- Symposium Chair of Intelligent Systems Symposium at the 2009 World Congress on Computer Science and Information Engineering (CSIE), Los Angeles/Anaheim, USA, April 2009.

- MITACS ACCELERATE Proposal, "Complex Adaptive Networks for Computing and Communication", January 2009.

- Reviewer for Handbook of Research on P2P and Grid Systems for Service-Oriented Computing: Models, Methodologies and Applications, January 2009.

- Chair of Women in Engineering (WIE) Affinity Group for IEEE North Saskatchewan.

ii. **For the University (give activity, dates of involvement, and whether or not you held an office)**

- Member at large, College of Graduate Studies and Research.

iii. **For the College (same information)**

none

iv. **For the Department (same information)**

- Department of Computer Science, Member and Acting Chair of Academic Honesty Committee.

• **2010 (same information in the same categories)**

i. **For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)**

- Reviewer for Journal of Engineering Applications of Artificial Intelligence, Elsevier, October 2010.

- Program Committee, First International Workshop on Service Intelligence 2010 (SI 2010) held in conjunction with WI-IAT 2010 IEEE Conference on Web Intelligence and Intelligence Agent Technologies in Toronto, Canada, September 2010.

- Program Committee, Third International Conference on Human-Centric Computing (HumanCom 2010), Cebu, Philippines, August 2010.

- Reviewer for IEEE Transactions on Services Computing, June 2010.

- Reviewer for travel scholarship applications for the Grace Hopper Celebration of Women in Computing, June 2010.

- Reviewer, NSERC Discovery Proposal, January 2010.

- Chair of Women in Engineering (WIE) Affinity Group for IEEE North Saskatchewan.

ii. **For the University (give activity, dates of involvement, and whether or not you held an office)**

- Member at large, College of Graduate Studies and Research.
- Member of International Committee of College of Graduate Studies.
- iii. **For the College (same information)**
none
- iv. **For the Department (same information)**
•Department of Computer Science, Chair of Academic Honesty Committee,

Kenneth Magel

Research

a. Refereed

- i. "Software Internationalization: Testing Methods for Bidirectional Software", with S. Abufardeh, NCM Fifth International Joint Conference on INC, IMS, and IDC, Seoul, Korea, August, 2009.
- ii. "Software Internationalization: Crosscutting Concerns Across the Development Lifecycle", with S. Abufardeh, IEEE International Conference on New Trends in Information and Service Sciences, Beijing, China, June 30 – July 2, 2009.
- iii. "Culturalization of Software Architecture: Issues and Challenges", with S. Abufardeh, International Congerence on Computer Science and Softwarer Engineering, Wuhan, China, February, 2009.
- iv. "Impact of Global Software Cultural and Linguistic Aspects on Global Software Development Process: Issues and Challenges", with S. Abufardeh, the 4th International Conference on New Trends in Information Science and Service Science (NISS2010), Gyeongju, Korea, May 11 - 13, 2010
- v. Ranganathan, P., K. Magel, and K. Nygard, "UML design patterns in a Smart Grid," in the Proceedings of the 26th International Conference on Computers and Their Applications (CATA 2011), New Orleans, March, 2011.
- vi. (With M. Akour, S. Abufardeh, Q. Al-Radaideh). (2010) *QArabPro: A Rule Based Question Answering System for Reading Comprehension Tests in Arabic. (Submitted to American Journal of Applied Science – Computer Science)*.
- vii. Abufardeh, S.; Magel, K. (2011). *Impact of Global Software Cultural and Linguistic Aspects on Global Software Development Process (GSD): Social Networks and Virtual Culture. To be submitted to International journal on Advances in Information Sciences and Service Sciences (AISS). (IP)*
- viii. Abufardeh, S.; Magel, K. (2011). *Security of Localized Software: Aspects and Challenges. (IP)*

b. Research Proposals

I intended to complete a research proposal in 2010, but did not. I was a co-principal investigator on a proposal whose principal investigator was Dean Knudson to the National Science Foundation. It was not funded.

c. Graduate Students

- i. Completed.
 1. Oksana Myronovych, Ph.D., September 1, 2009.

2. Senad Cimic,, M.S., September 4, 2009
3. Naomi Takahashi, M.S., February 26, 2010.
4. Pramodh Thaloji, M.S., May 17, 2010.
5. Daniel Debilt, M.S., June 22, 2010.
6. Dibakar Bhowmick, M.S., September 8, 2010
- ii. Supervisor
 1. Falah Bouchaib, Ph.D., expected May, 2011.
 2. Nine M.S. students.

2. Service

a. Department

- i. Associate Department Head, July 1, 2007 - present
- ii. Developed Department Self Study Report for Program Review
- iii. Chair, Faculty Recruiting Committee, August 20, 2005 – present
- iv. Software Engineering Coordinator, July 1, 2002 – present
- v. Evaluate transfer equivalency for at least thirty-five requests each year
- vi. Representative to the NDUS Common Course Computer Science Group
- vii. Developed distance education version of Software Engineering Graduate Certificate
- viii. Developed distance education versions of five courses as part of the Master of Software Engineering online program. Coordinated development of five other distance education courses for this program by other department faculty.
- ix. Chair, B.S. Curriculum Review Committee, 2010 - present. Greatly revised B.S. and B.A. curricula were adopted by the Department in 2010 for implementation starting fall, 2011.
- x. Together with Dean Knudson, conducted interviews of all transfer students for suitability for the B.S. capstone course each fall.
- xi. Developed and graded the Software Engineering section of the Computer Science Comprehensive/Qualifier examination each semester
- xii. Developed and coordinated the group grading of the Software Engineering Comprehensive/Qualifier examination each semester
- xiii. Developed extensive assessment materials including the first materials for the graduate curricula
- xiv. Visited with more than 16 prospective students each year
- xv. Developed Department Annual Report analysis text each year
- xvi. Assessed at least eight graduate applications each year when requested by the Graduate COordinator

b. College

- i. Nominations and Awards Committee, October, 2005 – present; Chair August, 2007 - present
- ii. Curriculum Committee, October, 1985 - present

c. University

- i. Faculty Personnel Committee, May, 2005 – May, 2009
- ii. University Assessment Committee, July, 2006 – May, 2010.
- iii. Institutional representative to the Computing Research Association

d. Profession

- i. Referee for numerous conferences and journals
- ii. Institutional Representative, Computing Research Association

3. Teaching

a. Spring, 2009

Course	Special	Title	Students	SROI
CSci 374 (3 credits)	New preparation	Computer Organization	36	4.233
CSci 713 (3 credits)	Distance	Software Dev. Processes	8	
CSci 716 (3 credits)		Software Design	26	4.562
CSci 716 (3 credits)	Distance	Software Design	6	
CSci 790 (1 credit)	Seminar	Software Engineering	8	

b. Summer, 2009

Course	Special	Title	Students	SROI
CSci 713 (3 credits)	Distance	Software Dev. Processes	5	
CSci 716 (3 credits)	Distance	Software Design	4	

c. Fall, 2009

Course	Special	Title	Students	SROI
CSci 713 (3 credits)		Introduction to Software Engineering	22	4.450
CSci 713 (3 credits)	Distance		5	
CSci 790 (1 credit)	Seminar	Software Engineering	7	

d. Spring, 2010

Course	Special	Title	Students	SROI
CSci 374 (3 credits)	New preparation	Computer Organization	36	4.233
CSci 494 (3 credits)	Students doing individual projects in capstone course	Individual Study	3	5.000
CSci 716 (3 credits)		Software Design	26	4.562
CSci 716 (3 credits)	Distance		3	
CSci 790 (1 credit)	Seminar	Software Engineering	15	

e. Summer, 2010

CSci 713	Distance	Software Dev. Processes	1	
CSci 716	Distance	Software Design	7	
CSci 793	Not paid	Individual Study	3	

f. Fall, 2010

Course	Special	Title	Students	SROI
CSci 713		Software Dev. Processes	48	
CSci 713	Distance	Software Dev. Processes	13	
CSci 715	Distance; new preparation	Software Requirements	8	
CSci 716	Distance	Software Design	12	
CSci 718	Distance; new preparation	Software Testing	5	
CSci 790	Seminar	Software Engineering	13	

g. Spring, 2011

Course	Special	Title	Students	SROI
CSci 494 (Individual Study)	Students are doing individual projects for capstone course		4	
CSci 713	Distance	Software Dev. Processes	8	
CSci 715	Distance	Software Requirements	9	
CSci 716		Software Design	6	
CSci 716	Distance	Software Design	5	
CSci 718	Distance	Software Testing	13	
CSci 790	Seminar	Software Engineering	18	

[Oksana Myronovych](#)

Research

- 2009 Calendar Year

i. Other publications

- Modified Genetic Algorithm for Mutation-Based Testing, *WORLDCOMP'09 (The 2009 World Congress in Computer Science, Computer Engineering, & Applied Computing)*, Date and Location: July 13-16, 2009, Las Vegas, USA (Paper ID #: SER6011)

- **2010 Calendar Year**

- i. **Other publications**

- Genetic Algorithm and Mutation Analysis for Software Testing, *2010 World Congress in Computer Science, Computer Engineering, and Applied Computing, Software Engineering Research and Practice*, SERP 2010, July 12-15, 2010, Las Vegas, USA, pp. 247-252.
 - Radermacher, G. Walia, O. Myronovych, S. Abufardeh, and R. Rummelt, "Investigating the Use of Pair Programming at North Dakota State University: A Family of Empirical Studies", Technical Report, The Department of Computer Science, North Dakota State University, 2010, <http://cs.ndsu.edu/research/reports/>

Teaching

- **Spring 2009 (10 credits)**

Course #	# of students	Instructor Rating "Instructor as a teacher"
CSci160	33	4.1
CSci228	26	4.0
CSci316	34	4.2

- d. **Summer 2009 (3 credits)**

Course #	# of students	Instructor Rating "Instructor as a teacher"
CSci122	44	3.27

- e. **Fall 2009 (7 credits)**

Course #	# of students	Instructor Rating "Instructor as a teacher"
CSci160	41	4.5
CSci227	50	4.2

- f. **Spring – 2010 (13 credits)**

Course #	# of students	Instructor Rating "Instructor as a teacher"
CSci159	31	4.4

CSci160	35	4.46
CSci316	41	4.29
CSci228	43	4.34

g. Summer 2010 (3 credits)

Course #	# of students	Instructor Rating "Instructor as a teacher"
CSci122	28	4.29

h. Fall 2010 (10 credits)

Course #	# of students	Instructor Rating "Instructor as a teacher"
CSci160	44	N/A
CSci172	12	4.2
CSci227	36	N/A

Professional development:

Professional Conferences:

- *2010 World Congress in Computer Science, Computer Engineering, and Applied Computing, Software Engineering Research and Practice, SERP 2010, July 12-15, 2010, Las Vegas*
- *2009 International Conference on Software Engineering Research and Practice SERP'09, 2009 World Congress in Computer Science, Computer Engineering & Applied Computing WORLDCOMP'09, July 12-16, 2009, Las Vegas, USA.*
- *2009 Microsoft Web Design & Development Conference (MIX09), March 17-20, 2009, Las Vegas, NV.*
- *2009 MSDN Developer Conference, January 13, 2009, Minneapolis, MN.*

Service:

2009 - Department

- Member of CS Department recruiting committee for a new Bioinformatics tenure track position.

2010 - Department

- Member of CS Department curriculum committee.
- Advisor for : CSci122, CSci125, CSci159

Membership:

- Member of Upsilon Pi Epsilon (UPE) - NDSU Chapter
- Member of Association for Computing Machinery (ACM)

Kendall Nygard

Research

- **2009 Calendar Year**

- i. Refereed Publications**

Gagneja, K., X. Du, and K. Nygard, Enhanced Robust Routing Among Sensor Nodes in Heterogeneous Sensor Networks, Proceedings of the Future Computing Conference, Athens, November, 2009

Sachdev, R., and K. Nygard, Genetic Algorithm for Clustering in Wireless ad hoc Sensor Networks, Third International Conference on Geosensor Networks, Oxford,, 2009

Loree, P., X. Du and K. Nygard, An Efficient Post-Deployment Key Establishment Scheme, for Heterogeneous Sensor Networks, IEEE GLOBECOM, Hawaii, 2009

Zhang, W., J. Tang, K. Nygard, and C. Wang, REPARE: Regenerator Placement and Routing Establishment in Translucent Networks, IEEE GLOBECOM, Hawaii, 2009

Zhang, Weiyi, Xiaojiang Du, Kendall Nygard, and Tie Wang, "Dynamic p-cycle Construction within Link Capacity Constraint", Proceedings of the IEEE International Conference on Communications, Dresden, June, 2009

Zhang, W., J. Kong, K. Nygard, and M. Li, Adaptive Pervasive Computing System Configuration Under QOS Constraints, Proceedings of the 6th IEEE Consumer Communications and Networking Conference, Las Vegas, January, 2009

Moses, J., K. Altenberg, and K. Nygard, Strategies for Neutralizing Emergent Conflict Areas, First International Conference on the Dynamics of Information Systems, January, 2009

- ii. Funded Research Proposals** (title, PI and co-pi's, duration, amount, source)

Securing Communications in Sensor Webs, PI, NASA UND, 5/15/09 – 4/14/10, \$17,414.

Designing Robust and Secure Heterogeneous Sensor Networks, PI: James Du; Co-PI: Kendall E. Nygard, 9/08 – 8/11, \$358,497, DEPSCoR Army Research Office.

A Heterogeneous Sensor Network Lab for Integrated Research and Education, National Science foundation, 9/07 – 8/11, \$88,370 (\$44,185 NDSU subcontract).
CoCise S-STEM Scholarship Program, National Science Foundation, \$463,200, 10/06 – 9/11

Key Management in Wireless Networks, Graduate Student Research Assistantship Award, National Science Foundation and North Dakota EPSCoR , 6/1/08 – 8/15/10, \$33,392.

Advanced Technologies in Logistics, PI: Kendall E. Nygard, U. S. Army and the Upper Great Plains Transportation Institute, 1/1/09 – 5/15/09, \$7,500.

Faculty visitors from China program, PI: Kendall E. Nygard, Zhejiang Economic and Trade Polytechnic, 5/1/09 – 9/1/09, \$20,000.

Efficient Communication and Security Schemes, PI: Kendall E. Nygard, , NDSU Development Foundation 5/4/09 – 6/30/10, \$1,000.

Securing Communications in Sensor Webs, PI: Kendall E. Nygard, NASA, 5/15/09 – 4/14/10, \$17,414.

Effective Networking and Communication Systems for NASA Sensor Webs, PI: Kendall E. Nygard, NASA EPSCoR, 5/1/09 – 4/15/09, \$13,230.

iii. Graduate Students completing for whom you were the advisor

Durga Ramamurthy, MS, Ecommerce Application of Bloom's Taxonomy

Barjesh Arora, Conflict Area Resolution using Heterogeneous Resources in a Dynamic Environment

Vasanth Narayanan, A Sweep Search and Strink Air Conroller Mission Simulator

Pranav Dass, Dominating Set for Point Coverage in Wireless Sensor Networks

Sri Harsha Yamparala, MS, Sensor Network Routing Using Simulated Annealing

Annaji Ganti, MS, Learning Software Agents with Bloom's Taxonomy

Venkata Kurpati, MS, Shortest Path First Heuristics

Rajani Garimedi, MS, A Tutorial for Teaching E-Commerce Applications

iv. Graduate Student Committees on which you serve

See below

v. Pending Publications

vi. Unfunded Research Proposals

• 2010 Calendar Year

i. Refereed Publications

Ranganathan, P. and K. Nygard, An Optimal Resource Assignment Problem in a Smart Grid, In Proceedings of the Future Computing Conference, Lisbon, Portugal, November, 2010 (top paper award).

Zhao, J., and K. Nygard, A Dendritic Cell Inspired Security System in Wireless Sensor Networks, Proceedings of the Future Computing Conference, Lisbon, Portugal, November, 2010.

Ranganathan P. and K. Nygard 'Time Synchronization in Wireless Sensor Networks: A Survey', International Journal of Ubiquitous Computing (IJU), Vol.2, 2010.

Ranganathan, P. and K. Nygard, "A tool to Teach Remote Engineering Laboratories", Journal of Online Engineering Education, Vol.1 (1), 2010.

Potla, Y. R. Annadi, J. Kong, G. Walia, and K. Nygard, "Adapting Web Page Tables on Mobile Devices", To appear in *International Journal of Handheld Computing Research*, 2011.

Ranganathan, P., J. Li and K. Nygard "A Multiagent System (MAS) using Associative Rule Mining in a Collaborative Filtering Problem", IEEE-ICCET 2010, April, 2010.

Ranganathan, P. , K. Magel and K. Nygard, UML design patterns in Smart Grid, 26th International Conference on Computers and their applications (CATA 2011), New Orleans, Louisiana, March 23-25 2011 (to appear).

Gagneja, K. and K. Nygard, Adjusted Voronoi Clusters in Two-Tier Sensor Networks, 26th International Conference on Computers and their applications (CATA 2011), New Orleans, Louisiana, March 23-25 2011 (to appear).

Ranganathan, P. and K. Nygard, A Multi-Agent framework in a Smart Grid, International Journal of Research and Reviews in Computer Science, Volume 1 (4), December, 2010.

Bou Ghosn, S., P. Ranganathan, S. Salem, J. Tang, D. Loegering ;and K. Nygard, Agent-oriented Designs for a Self Healing Smart Grid, in Proceedings of the 1st IEEE International Conference on Smart Grid Communications, October 4-6, 2010, NIST, Gaithersburg, Maryland.

Ranganathan, P., K.Nygard and R. Schultz, How to Design an Engineering Course Syllabus to Satisfy ABET Program Outcomes and Course objectives, International Conference on Engineering Education (ICEE 2010), Gliwice, Poland, July, 2010.

Zhang, W., F. Kandeh, J. Tang and K. Nygard, Interference-Aware Robust Topology Design in Multi-Channel Wireless Mesh Networks, IEEE CCNC'2010: 7th Annual IEEE Consumer Communications and Networking Conference, 2010.

Gagneja, K. and K. Nygard, Energy Efficient variant of Enhanced Tree Routing Protocol for Heterogeneous Sensor Networks, In Proceedings of the International Conference on Computer, Information, and Systems Sciences, and Engineering (CISSE), 2010.

Ranganathan, P. and K. Nygard, Computer Based Teaching using Jing in Engineering Education, International Conference on Engineering Education, April, 2010.

Ranganathan, P. and K. Nygard, A Bloom's Online Assessment Test to Assess Student Learning Outcomes in a Distance Engineering Education Course, International Conference on Engineering Education and Technology, July, 2010

ii. Funded Research Proposals

Self-healing in the Smart Grid, subcontract PI: Kendall E. Nygard, US Department of Energy award DE-FG52-08NA28921, , 3/10 – 12/10, \$10,710.

Securing Communications in Sensor Webs, PI, NASA UND, 5/15/09 – 4/14/10, \$17,414.
Designing Robust and Secure Heterogeneous Sensor Networks, PI: James Du; Co-PI: Kendall E. Nygard, DEPSCoR Army Research Office, 9/08 – 8/11, \$358,497.

Smart Grid Simulation, Graduate Research Assistantantship Award, National Science Foundation and North Dakota EPSCoR, 8/10 -8/12, \$33,392.

Key Management in Wireless Networks, Graduate Student Research Assistantship Award, National Science Foundation and North Dakota EPSCoR , 6/1/08 – 8/15/10, \$33,392.

Advanced Technologies in Logistics, subcontract PI: Kendall E. Nygard, U. S. Army and the Upper Great Plains Transportation Institute., 1/1/10 – 5/15/10, \$5,000.

Faculty visitors from China program, PI: Kendall E. Nygard, Zhejiang Economic and Trade Polytechnic, 5/1/10 – 12/1/10, \$5,106.

Efficient Communication and Security Schemes, PI: Kendall E. Nygard, NDSU Development Foundation, 5/4/09 – 6/30/10, \$1,000,.

Securing Communications in Sensor Webs, PI: Kendall E. Nygard, , NASA, 5/15/09 – 4/14/10, \$17,414.

iii. Graduate Students completing for whom you were the advisor

Chin Lua, PhD, A Virtual Experiment Driven Process Model

Yan Wang, MS, A Closed Form Optimization Model for the Conflict Neutralization Problem

Samidip Basu, MS, Optimization of Mobile Sensor Movement in Self-Healing Sensor Networks

Shaminda Samaraweera, MS, A Network Optimization Solver for Routing in Wireless Sensor Networks

Venkata Raidu, MS, A Computational Procedure for the Conflict Neutralization Problem

Vijayanand Suravarapu, MS, A Technique to Detect a Black Hole in ad hoc Networks

Pavan Bapanpally, MS, Neutralization of Conflict Areas Using an Ant Colony Heuristic Approach

Manu Bogadi, MS, Teaching Encryption: A Learning Theory Approach

Harika Mattaparth, MS, Electronic Payment System Decision Support with Bloom's Taxonomy

Anshuman Manori, MS, Optimizaing Incident Management Strategies Using Simulation

Paul Loree, MS, Post-Deployment Key Management in Heterogeneous Wireless Sensor Networks

Shivendushital Pandey, Dynamic Algorithms for Sensor Scheduling and Adversary Path Prediction

Swathi Kondakindi, MS, Pheromone Clustering

Divya Gupta, MS, Alternative Clustering Algorithms in Sensor Networks

William Voorhees, MS, Sensor Network Clock Synchronization

Mayukh Sharma, MS, Web-based Meeting Scheduler

Joel Hensley, MS, Advanced Computational Ratings for College Football Teams

Hari Mukka, MS, A Software Agent System for Private Email

Phillip Reindl, MS, Anonymity and Hostile Node Identification in Sensor Networks

iv. Graduate student Committees on which you serve (includes both 2009 and 2010)

Ming Zhang, PhD, Computer Science, Chair

Jingjun Zhao, PhD, Computer Science, Chair

Jonathan Pikalek, PhD, Computer Science, Chair

Satheesh Chakravarthi, PhD, Computer Science, Chair

Paul Loree, PhD, Computer Science, Chair

Ying (Erin) Yang, PhD, Computer Science, Chair

Kanwaliner Gagneja, PhD, Computer Science, Chair

Lisa Lacher Bender, PhD, Software Engineering, Chair

Steve Bou Ghosn, PhD, Computer Science, Chair

Prakash Ranganathan, PhD, Computer Science, Chair

Martin Lundell, PhD, Software Engineering, Chair

Divya Dayala, MS, Computer Science, Chair

Richard Frovarp, MS, Computer Science, Chair

Ashish Teotia, MS, Computer Science, Chair

Karthik Murugesan, MS, Computer Science, Chair
 Aman Sharma, MS, Computer Science, Chair
 Naga Byrisetty, MS, Computer Science, Chair
 Saumya Singh, MS, Computer Science, Chair
 Siva Ginjupalli, MS, Computer Science, Chair
 Susbi Sharma, MS, Computer Science, Chair
 Ghanashyam Nayakam, MS, Computer Science, Chair
 Srikar Pachva, MS, Computer Science, Chair
 Arjun Gensan, MS, Computer Science, Chair
 Puja KC, MS, Computer Science, Chair
 Sunil Kolluru, MS, Computer Science, Chair
 Sowjanya Param, MS, Computer Science, Chair
 Sharath Sambaraju, MS, Computer Science, Chair
 Bandana Garg, MS, Computer Science, Chair
 John Kroshus, MS, Computer Science, Chair
 Divya Dayala, MS, Computer Science, Chair
 Birendra Thapa, MS, Computer Science, Chair
 Ritika Sahni, MS, Computer Science, Chair
 Md. Minhaz Chowdhury, MS, Computer Science, Chair
 Mohammed Baqui, MS, Computer Science, Chair
 Ryan McCulloch, MS, Computer Science, Chair
 Nikitha Kaparathi, MS, Computer Science, Chair
 Sudesh Mukhami, MS, Computer Science, Chair
 Sandeep Sikharam, MS, Computer Science, Chair
 Sandeep Poreddy, MS, Computer Science, Chair
 Sunil Maddi, MS, Computer Science, Chair
 Anupama Anupareddy, MS, Computer Science, Chair
 Kareen Fazal, MS, Computer Science, Chair
 Nazeer Fazal, MS, Computer Science, Chair
 Suresh Paturu, MS, Computer Science, Chair
 Anita Sundaram, MS, Computer Science, Chair
 Ramneet Chinna, MS, Computer Science, Chair
 Nikhil Koganti, MS, Computer Science, Chair

Chris Enyinda, PhD, Transportation and Logistics
 James Boe, PhD, Education
 Mohammed Rahman, MS, Computer Science
 Lei Fan, PhD, Transportation and Logistics, Graduate School Rep
 Jeffrey Wendt, PhD, Transportation and Logistics, Graduate School Rep
 Leelong Chen, PhD, Transportation and Logistics, Graduate School Rep
 Marvin Lenoue, PhD, Education, Graduate School Rep
 Peder Gjovik, PhD, Education, Graduate School Rep
 Aida, Vosoughi, MS, Electrical and Computer Engineering, Graduate School Rep

v. Pending Publications

vi. Unfunded Research Proposals

• Other Research Activities

• Teaching

• Spring, 2009

CSci 489/689, Social Implications of Computers, 3 credits, 74 students

CSci 783, Topics in Software Systems, 3 credits, 2 students

CSci 790, Graduate Seminar, Sensor Networks, 1 credit, 19 students

TL 725, Advanced Technologies in Logistics, 3 credits, 7 students

- Summer, 2009

CSci 473/773, Foundations of the Digital Enterprise, 3 credits, 40 students

CSci 774, Topics of the Digital Enterprise, 3 credits, 13 students

CSci 790, Graduate Seminar, 1 credit, 2 students

Educ 790, Graduate Seminar, 1 credit, 11 students

- Fall, 2009

CSci 418/618, Simulation Models, 3 credits, 16 students

CSci 790, Graduate Seminar, Sensor Networks, 1 credit, 13 students

- Spring, 2010

CSci 489/689, Social Implications of Computers, 3 credits, 96 students

CSci 783, Topics in Software Systems, 3 credits, 13 students

CSci 793, Individual Study, 3 credits, 1 student

CSci 790, Graduate Seminar, Sensor Networks, 1 credit, 20 students

TL 725, Advanced Technologies in Logistics, 3 credits, 8 students

- Summer, 2010

CSci 473/773, Foundations of the Digital Enterprise, 3 credits, 39 students

CSci 774, Topics of the Digital Enterprise, 3 credits, 26 students

CSci 793, Individual Study, 3 credits, 1 student

- Fall, 2010

CSci 453/653, Linear Programming and Network Flows, 3 credits, 16 students

Educ 790, Graduate Seminar, 1 credit, 6 students

- **Service**

- **2009**

- i. For the profession**

- Advisory Editor, Journal of Heuristics, 1994 –date

- Panel reviewer, NSF S-STEM program, 2009

- Referee for multiple technical papers for multiple journals

- ii. For the University**

- Faculty Advisor, Bangladeshi Student Association, 2009

- iii. For the Department** (same information)

- Graduate Program Coordinator

- Hosted and developed workshops for 8 visiting faculty members from China

- Departmental Award nominations committee

- **2010**

- i. For the profession**

- Advisory Editor, Journal of Heuristics, 1994 –date

- Referee for multiple technical papers for multiple journals

- Invited panelist, Context-aware Systems and Adaptation, The Future Computing Conference, Lisbon, Portugal, November, 2010

ii. For the University

Faculty Advisor, Bangladeshi Student Association, 2009

iii. For the Department (same information)

Graduate Program Coordinator

Hosted and developed workshops for 7 visiting faculty members from China

Hosted the President and 4 Deans from China Three Gorges University

Departmental Award nominations committee

William Perrizo

Research

iv. Refereed Publications

1. "Gene Function Prediction", ISCA Int'l Conf. on Software Eng. and Data Eng., July, 2009, Las Vegas, W.Perrizo, A.Perera.
- "Universality of NN Sets for Predictions", SE. & Data Eng., July, 2009, T. Lu, W. Perrizo, A. Perera, G. Wettstein, 2009.
- "An Evolutionary Nearest Neighbor Classification and :Prediction Framework", Proc. of International Conference on Software Engineering and Data Eng., July, 2009, A. Perera, D.G.N. Dayaratne, W. Perrizo, 2009.
- "Experimental Study on Item-based Ptree Collaborative Filtering", Proc. of International Conference on Software Engineering and Data Eng., July, 2009, T. Lu, W. Perrizo, A. Perera, Y. Wang, G. Wettstein, 2009.
- "Enhanced SMART-TV: A Classification with Vertical Data Structures and Dimensional Projections Pruning", The Internetworking Indonesian Journal, Volume 1, Number 2, pp. 3-10, 2009, A. Abidin, W. Perrizo.
- "Iterative Density Approach for clusters with Varying Densities", ISCA Journal, V17:1, p. 1, E.Wang, I.Rahal, W.Perrizo.
- "Jewels, Himalayas and Fireworks, Extending Methods for Visualizing N Dimensional Clustering", International Conference on Computers and Their Applications, March, 2010, W. Jockheck, W. Perrizo.
- "Novel Combinatorial Score for P-Tree Feature Sel.", Soft. Eng. and Data Eng., June, 2010, Y.Yang, T.Lu,W.Perrizo.
- "Extention Study on Item-Based P-Tree Correlaborative Filtering Algorithm", International Conference on Computers and Their Applications, March, 2010, T. Lu, Y. Wang, A. Perera, G. Wettstein.
- "Bidir. String Matching Algs in Text Mining", IADIS Info. Systems, Feb., 2010, A. Chatterjee, W. Perrizo.

- “Correlation Regression Extended to AR in MBR”, IADIS Info. Systems, Feb., 2010, A. Chatterjee, W. Perrizo.

i. Presentations 5 of the conference paper presentations as listed above.

ii. Funded Research Proposals (title, PI/Co, duration, amt, source)

1. NDSU University Distinguished Professorship Research Award, P.I., 2009, \$5,000, NDSU Office of the President.

iii. Graduate student advisees completed

1. M.S. Arijit Chatterjee, “String Matching, Correlation Regression and Maximum Likelihood Applied to ARM”, 2009.
2. Ph.D. William Jockheck “ Visualization of High Dimensional Data”, 2010.

iv. Other Research Activities

1. U.S. Patent 7,640,219 B2 was issued (W. Perrizo, inventor) entitled “Parameter Optimized Nearest Neighbor Vote and Boundary-based Classification”, December 29, 2009.
2. U.S. Patent 7,836,090 was issued (W. Perrizo, inventor) entitled “Vertical Set Inner Product Technology (VSIP) with Predicate Trees”, November, 2010.
3. Four of the NDSU patents for which I am the inventor of record have been licensed in an all-fields exclusive licensing agreement, along with approximately 10,000 lines of software implementing the technology (C++ programs, shell and perl scripts), to a company out of Maryland called Treeminer.

Teaching

• **2009**

Course #	# of students	Instructor Rating
479 Spring 2009	5	See dept records?
679 Spring 2009	17	See dept records?
766 Spring 2009	5	See dept records?
783 Fall 2009	12	See dept records?
765 Fall 2009	55	See dept records?

• **Spring 2010**

Course #	# of students	Instructor Rating
785 Spring 2010	12	See Dept. records
DCE765 Spr 2010	16	See Dept. records

• **Fall 2010**

Course #	# of students	Instructor Rating
783 Fall 2010	6	See Dept Records
765 Fall 2010	56	See Dept. records

- Spring 2011

Course #	# of students	Instructor Rating
785 Spring 2011	5	See Dept. records
DCE765 Spr 2011	16	See Dept. records

Service:

2009-2010

Department

Computer Science Department Bioinformatics Curriculum Committee
 Computer Science Department Graduate Program Fall Semester Comprehensive Examination Committee
 Computer Science Department Graduate Program Spring Semester Comprehensive Examination Committee

College

College of Science and Mathematics Mission, Vision, and Goals Development Committee
 College of Science and Mathematics Promotion, Tenure and Evaluation Committee
 University

Center for High Performance Computing Advisory Board
 University Distinguished Professorship Committee
 Genomics and Bioinformatics Interdisciplinary Degree Program Board Member
 Center for High Performance Computing Director Search Committee

Professional

Associate Editor, Journal of Computational Intelligence in Bioinformatics, JCIB
 Associate Editor, Bioinformation Journal
 Program Committee and referee for 8 International Conferences
 Refereed for 3 journals

Richard Rummelt

Research

- 2009 Calendar Year

i. Research Activities

Work on PhD dissertation, Dr. Tariq M. King advisor.
Validation of Course Modules in Standardized Adaptive Learning Systems

- 2010-2011 Calendar Year

i. Pending Proposals

Richard Rummelt (senior personnel), Tariq M. King (PI),
 “Collaborative Research: Integrating Testing into CS-I thru CS-III with the Support of a Web-Based Testing Repository”. Agency: NSF. Program: CCLI. Amount requested: \$173,000 for 3 years. Collaborative proposal with Dr. Peter J. Clark (PI-FIU \$367,000 requested) and Djuradj Babich (PI-MDC \$58,000 requested).

ii. Research Activities

Participated in an experiment on ‘Pair Programming’ in Computer Science I. Dr. Gursimran Walia – primary investigator.

iii. Publications

Investigating the Use of Pair Programming at North Dakota State University: A Family of Empirical Studies

Gursimran Walia, Richard Rummelt, et al

iv. Research Activities

Work on PhD dissertation, Dr. Tariq M. King advisor.

Validation of Course Modules in Standardized Adaptive Learning Systems

- Teaching

- 2009

Course #	# of students	Instructor Rating
CSci-160 - 4507	40	4.227
CSci-160 - 4511	41	3.950
UNIV-189 - 5021	17	N/A
UNIV-189 - 5027	27	N/A
CSci-160 – 4452	40	4.200
CSci-160 - 14636	14	4.222
CSci-160 - 18869	10	N/A

- 2010

Course #	# of students	Instructor Rating
CSci-116 - 11490	94	N/A
CSci-160 - 9874	43	4.100
CSci-160 – 13678	28	4.083
CSci-116 - 10089	38	4.76
CSci-116 - 3491	82	N/A
CSci-160 - 4919	42	4.115
CSci-160 - 4923	44	4.429

a. 2011

Course #	# of students	Instructor Rating
CSci-116 - 10200	77	In Progress
CSci-160 - 9424	43	In Progress
CSci-160 – 10956	31	In Progress
CSci-116 - 5805	N/A	Scheduled
CSci-116 - 1929	N/A	Scheduled
CSci-160 - 2617	N/A	Scheduled
CSci-160 - 2619	N/A	Scheduled

- **Service: 2009**

Department

- Recruiting/Advising – Regularly met potential students and their parents to promote the Computer Science undergraduate program.
- ‘Partnered’ with new junior faculty to assist them in conducting meetings with potential students and their parents.

College

- Faculty Advisor & President: Upsilon Pi Epsilon International Honor Society for the Computing Sciences
- Faculty Advisor: NDSU ACM Student Chapter

University

- Assisted in coordination of the Chinese Teachers’ Training Seminars
- Faculty Advisor: Sri Lankan Student Association

2010

- **Service: 2010**

Department

- Supervision and mentoring of Computer Science Graduate teaching assistants.

- Recruiting/Advising – Regularly met potential students and their parents to promote the Computer Science undergraduate program.
- ‘Partnered’ with new junior faculty to assist them in conducting meetings with potential students and their parents.
- Attended the Prentiss Hall Symposium for Information Technology Educators in Chicago, Illinois
- Attended the Course Technology Conference in Tampa, Florida
- Member of the Curriculum Development Committee
- Member of ‘Teaching Free Semester’ Review Committee.
- Attended the 2nd Workshop on Integrating Software Testing into Programming Courses at Florida International University, Miami Florida.

College

- Faculty Advisor: Upsilon Pi Epsilon, International Honor Society for the Computing Sciences
- Faculty Advisor: NDSU ACM Student Chapter

University

- Assisted in coordination of the Chinese Teachers’ Training Seminars
- Faculty Advisor: Sri Lankan Student Association
- Established an inter-departmental committee to coordinate Computer Science ‘Business use of Computer’ course content with the College of Business requirements.

Professional

- Judge for the Association of Computing Machinery: International Programming Competition

2011

Department

- Supervision and mentoring of Computer Science Graduate teaching assistants.
- Recruiting/Advising – Regularly meeting potential students and their parents to promote the Computer Science undergraduate program.
- ‘Partnered’ with new junior faculty to assist them in conducting meetings with potential students and their parents.

College

- President: Upsilon Pi Epsilon, International Honor Society for the Computing Sciences
- Faculty Advisor: NDSU ACM Student Chapter

University

- Faculty Advisor: Sri Lankan Student Association
- Continuing inter-departmental coordination of the Computer Science 'Business use of Computer' courses with the College of Business.

Saeed Salem

Research

- **2010-2011 Calendar Year**
 - i. **Refereed Publications**

Refereed Journals:

1. Shadi Banitaan, Saeed Salem, Wei Jin, Ibrahim Aljarah, Samir Abufardeh, A Comprehensive Study on Entity Discovery using Classification Techniques and their Application to Opinion Mining , ACM Transactions on Intelligent Systems and Technology (ACM TIST). Special Issue: Search and Mining User Generated Contents (Submitted).
2. M.A. Hasan, S. Salem, M. Zaki, SimClus: Clustering with lower bound on Similarity , <i>Knowledge and Information Systems Journal</i> , 2010 (In press) (in press), DOI: 10.1007/s10115-010-0360-6.
3. S. Salem, M. Zaki, C. Bystroff, FlexSnap: Flexible Non-sequential Protein Structural Alignment , <i>BMC Algorithms for Molecular Biology Journal</i> , 5(12), 2010.

Refereed Conferences/Workshops:

1- Saeed Salem, Khedidja Seridi, Loqmane Seridi, Jianfei Wu, Mohammed J. Zaki, VOKNN: Voting-based Nearest Neighbor Approach for Scalable SVM Training , <i>In 2nd Workshop on Large-scale Data Mining: Theory and Applications (with ACM SIGKDD)</i> , July 2010, Washington, DC.
2. Shadi Banitaan, Saeed Salem, Wei Jin, Ibrahim Aljarah, A formal study of classification techniques on Entity Discovery and their application to Opinion Mining , <i>In 2nd International Workshop on Search and Mining User-generated Contents (with ACM CIKM)</i> , October 2010, Toronto, Canada.
3. Jianfei Wu, Loai Al Nimer, Omar Al Azzam, Charith Chitraranjan, Saeed Salem, Anne Denton. Sequential Data Clustering , the Ninth International Conference on Machine Learning and Applications (ICMLA Challenge Poster), December 2010, Washington DC.
4. Bou Ghosn, S., P. Ranganathan, S. Salem, J. Tang, D. Loegering and K. Nygard, "Agent-oriented Designs for a Self Healing Smart Grid" , <i>Proceedings of the 1st IEEE International Conference on Smart Grid Communications</i> , October, 2010, Gaithersburg, MD 2010.

ii. Other publications

iii. Presentations

1. Saeed Salem, Khedidja Seridi, Loqmane Seridi, Jianfei Wu, Mohammed J. Zaki, **VOKNN: Voting-based Nearest Neighbor Approach for Scalable SVM Training**, *In 2nd Workshop on Large-scale Data Mining: Theory and Applications (with ACM SIGKDD), July 2010, Washington, DC.*

iv. Funded Research Proposals (title, PI and co-pi's, duration, amount, source)

1.PI: NDSU Computer Science Industry Consortium Program (ICP). American Crystal Sugar Company, MN, Amount: \$15,000. (Co-PI: Prof. Anne Denton) On paper, the above is the generic title of the grant. But we are doing this for the project, "Sugarbeet Yield Prediction using Satellite Imagery."
2.PI: Integrating GPS devices in the collection of yield data. RDO Equipment Co, MN, Amount: \$15,000. (Co-PI: Prof. Anne Denton)
3.Co-PI: NDSU Computer Science Industry Consortium Program (ICP). Agri ImaGIS Technologies, ND, Amount: \$15,000. (PI: Prof. Anne Denton) The title is the generic title. . But we are doing this for the project, "Sugarbeet Yield Prediction using Satellite Imagery."

v. Unfunded Proposals

vi. Pending Proposals

1.Co-PI: PFI: Data-driven Support for the Smart Farm. PI: Prof. Anne Denton Co-PI(s): David Franzen, Saeed Salem, Reza Maleki, Philip Boudjouk Requested Amount: \$599,303.00

vii. Graduate student advisees completed

Masters

Phd: Shadi BaniTaan (Ongoing) James Brewer (Ongoing)

Rami Alroobi (Ongoing) Ibrahim Aljarah (Ongoing)

viii. Other Research Activities

Supervising undergraduate research students:

Craig Stenger (undergraduate research assistant), Sugarbeet Yield prediction

Diego Pirizbrunty (Exchange Student: Graph clustering and Analysis)

Joseph Ching (Junior, Graph clustering and Network Analysis)

1. Teaching

a. 2010

	Course #	# of students	Instructor Rating
Spring 2010	CSCI 758 (Bioinformatics Data Mining)	10	Q2:--Q5:5.0, Q6:4.8
Spring 2010	CSCI 790 (Denton/Salem) Seminar	7	N/A
Fall 2010	CSCI479/679 (Intro to Data Mining)	14	N/A
Fall 2010	CSCI 474 Operating Systems	19	N/A
Fall 2010	CSCI 790 Graduate Seminar	14	N/A

b. 2011

	Course #	# of students	Instructor Rating
Spring 2011	CSCI 366	42	N/A
Spring 2011	CSCI 790 Seminar	6	N/A

2. Service:

2010-2011

Department

(Jan. 21010—present), Department Curriculum Committee
Attending Department meetings

College

Welcome Week, August 23rd 2010.

University

Judge: 2010 North Dakota State Science & Engineering Fair

Even Supervisor: 2010 “Compute This” ND Science Olympiad

Professional:

Reviewer: IEEE Transactions on Knowledge and Data Engineering, April, 2010
Reviewer: IEEE/ACM Transactions on Computational Biology and Bioinformatics, October, 2010
Reviewer: Journal of Combinatorial Chemistry, September, 2010
Reviewer: Journal of Mathematical Biology, December , 2010

Program Committee:

Community

Brian Slator

A. Research Accomplishments (January 1, 2009 through December 31, 2010):

Books and Creative Works

McClean, Phil, Brian M. Slator, Alan R. White, Christina Johnson, Daniel Reetz (2009).
Through the Virtual Cell. Screened at the South Beach International Animation Festival.
Miami Beach, FL, March 26-29. Noreen LeGault, Festival Organizer. See
<http://www.imdb.com/title/tt1370799/>. First Place Prize: Educational.

Journals

Daniels, Lisa, Otto Borchert, Guy Hokanson, Jeff Clark, Bernhardt Saini-Eidukat, Don Schwert,
Brian Slator, Jeff Terpstra (submitted 2010). Effects of Immersive Virtual Environments
on Student Achievement and Confidence. Journal of Educational Computing Research
(JECR). New York: Baywood Publishing Company
El Ariss, Omar, Dianxiang Xu, Santosh Dandey, Bradley Vender, Phil McClean and Brian M.
Slator (submitted 2010). A Conformance Testing Strategy for Reengineering Legacy
Software. Journal of Software Testing, Verification and Reliability. New York: Wiley.
Borchert, Otto, John Reber, Bernhardt Saini-Eidukat, Brian M. Slator (in revision 2009).
Computer Supported Collaborative Learning in a Virtual Geology World. Journal of
Instructional Science. Springer-Verlag.

Refereed Conference Papers

El Ariss, Omar, Dianxiang Xu, Santosh Dandey, Bradley Vender, Phil McClean and Brian M.
Slator (2010). A Systematic Capture and Replay Strategy for Testing Complex GUI based
Java Applications. Proceedings of the 7th International Conference on Information
Technology : New Generations (ITNG 2010). IEEE Computer Society/CPS (IEEE
Conference Publishing Services). April 12-14, Las Vegas, Nevada, USA.

Book Chapters

Vender, Bradley, Otto Borchert, Ben Dischinger, Guy Hokanson, Phillip E. McClean, Brian M.
Slator. (2010). JavaMOO Virtual Cells for Science Learning. In Shaolin Hai-Jew Editor,
Virtual Immersive and 3D Learning Spaces : Emerging Technologies and Trends (pp 194-
211). IGI Global.
Borchert, Otto, Lisa Brandt, Guy Hokanson, Brian M. Slator, Bradley Vender, Eric J. Gutierrez
(2010). Principles and Signatures in Serious Games for Science Education, in Gaming and
Cognition: Theories and Practice from the Learning Sciences Edited by: Richard Van Eck.
IGI Global. pp. 315-341.

Refereed Abstracts

Slator, Brian M. Otto Borchert, Guy Hokanson, Kim McVicar, John Reber, Donald P. Schwert
(Accepted, 2010). Assessing Performance and Confidence in a Multi-Player Environmental

Science Game. Manitoba Association for Distributed Learning and Training (MADLaT)
<http://www.madlat.ca/> 2011 International Conference

Foertsch, Robert and Brian M. Slator (2009). The Null Server: A Model for Server Farm System Security. The Midwest Instruction and Computing Symposium. University of Wisconsin. Eau Claire, WI. April 16-17.

Schlecht, Nem W., Brian M. Slator, Phillip McClean (2009). Usage of a Web-Based Factorial Experiment Testing System (FETS). The Midwest Instruction and Computing Symposium. South Dakota School of Mines and Technology. Rapid City, SD. April 17-18.

Hill, Curt, Brian M. Slator (2009). Captured Presentations for Online Learning. The Midwest Instruction and Computing Symposium. South Dakota School of Mines and Technology. Rapid City, SD. April 17-18.

Daniels, Lisa, Otto Borchert, Guy Hokanson, Jeff Clark, Bernhardt Saini-Eidukat, Don Schwert, Brian Slator, Jeff Terpstra. (2009). Effects of Immersive Virtual Environments on Student Achievement and Confidence. Proceedings of the American Educational Research Association Annual Meeting (AERA-09). April 13-17. San Diego.

Education Animations

McClean, Phil, Alan White, Brian M. Slator (2009). Signaling Pathways: Insulin Signaling (animation: Gerald Gallenbeck, Christina Johnson, narration, editing: Christina Johnson), Copyright: NDSU Worldwide Web Instructional Committee (WWWIC).

McClean, Phil, Alan White, Brian M. Slator (2009). Protein Recycling (animation: Gerald Gallenbeck, Christina Johnson, narration, editing: Christina Johnson), Copyright: NDSU Worldwide Web Instructional Committee (WWWIC).

Publicity

Wikipedia – Entry on "Word Sense Disambiguation"
 Cited in the 'References' as co-author of first book, "Electric Words". Referenced 7/20/08.
 See http://en.wikipedia.org/wiki/Word_sense_disambiguation

A.4 Presentations (list date, group presented to, title of presentation)

10/8/2009 – NDSU Collaborative Technology Conference – presentation on “Immersive Learning Environments – what we’ve learned”

A.5 Grants (list complete set of PIs and Co-PIs, title, program submitted to, amount, date, status (submitted, accepted, declined)):

See Below: **Entrepreneurial and Outreach Activities**

Honors and Awards: Prior Awards, Still Current (during 2009-2010)

2009-2012	National Science Foundation (CCLI) No. DUE-0918955, to Dr. Phil McClean, PI, Brian M. Slator and Alan R. White, Broadening the Accessibility and Portability of Biology Animations, 3 years, \$494,900
2006-2009	National Science Foundation (CCLI) No. DUE-0618766 to Dr. Phil McClean, PI, Lisa Daniels, Brian M. Slator, Jeff Terpstra, and Alan R. White, Visualization in Biology Education, 3 years, \$452,355
2006-2010	National Science Foundation (S-STEM). No. DUE-0631126 to Dr. Kendall Nygard, PI, Charles Harter, Rajendra Katti, Brian M. Slator, Collaborative for Scholarships in Computing, Information Sciences, and Engineering, 4 years, \$463,200

Honors and Awards: Prior Awards (Expired in 2009-2010)

2006-2009 National Science Foundation (Geo-Ed) No. GEO-0608082 to Dr. Brian M. Slator, PI, Lisa Daniels, Bernhardt Saini-Eidukat, Donald P. Schwert, and Jeff Terpstra, Pilot Project: Research on Serious Games for Geoscience Education, 2 years, \$149,984, plus one year no-cost extension

Entrepreneurial and Outreach Activities

WoWiWe Instruction Co LLC (President), SBIR Phase I: An Environmental Geology Game for Discovery-oriented Science and Mathematics Education. National Science Foundation. Award Number: IIP-0945807, 01/01/2010 - 12/31/2010, \$150,000

WoWiWe Instruction Co LLC (President), SBIR Phase I: A multi-user virtual Biology environment for discovery-oriented science education. National Institutes of Health. Award Number: NIH-1R43RR024779-01A1, 04/15/2008 - 4/15/2009, \$100,000

Proposals Submitted – Declined or Pending:

NSF-GEO3D, Geology Explorer 3D: Immersive physical geology in a college setting, Declined, Submitted 05/27/2010, \$200,000, requested

NSF-GEO, Track 1: Dissemination of a Serious Game for Environmental Science, Pending Submitted 03/08/2010, \$150,000.00 requested

NSF-DGE, Science Masters Program: Software and Computational Science Village, Declined, Submitted 11/20/2009, \$700,000.00 requested

NSF-CNS, CDI-Type II: Netbook Learning: Farming in Virtual Fields, Declined, submitted 06/03/2009, \$1,773,720.00 requested

NSF-CNS, CPATH-1: Empowering Computational thinking using an Immersive Virtual Environment, Declined, Submitted 05/05/2009, \$300,000.00 requested

NSF-EEC, An Exploratory Study to Develop Inquiry-Based 3D Case Study Modules Using 400-year-old Documents to Improve Student Understanding of Core Mechanical Engineering Concepts North Dakota State U Fargo, Declined, Submitted 03/09/2009 \$144,242.00 Requested

NSF-DRL ,Strategies: Bridging the Computer Science Crisis with Virtual Environments North Dakota State U Fargo Pending Submitted 02/20/2009 \$1,083,315.00 Requested

NSF-OCI ,Collaboration Research: vDUSEL CORE in support of Cyberinfrastructure-enabled Learning and Research Projects Dakota State Univ Pending Submitted 02/12/2009 \$966,558.00 Requested

NSF-DUE ,Broadening the Accessibility and Portability of Biology Animations North Dakota State U Fargo Pending Submitted 01/09/2009 \$494,900.00 Requested

B. Service:

B.1 Department:

CS-NOM (2007-present), Department of Computer Science Award Nomination Committee.

NDSU-CS (2002-2004, Chair, 2005-2006, Member), Department of Computer Science Faculty Search Committee

CS-MIS (1998-present). Committee member, Management Information Sciences (MIS) Steering Committee, Joseph Latimer, Chair.

CS-COMP (2008-2010). Comprehensive Exam Committee – Artificial Intelligence section.

B.2 College:

CSM Chairs Council (2007-present). Monthly meeting of the College and Science and Mathematics department heads/chairs with the Dean
 NDSU-RCC (2003-2006). College of Science and Mathematics representative on the NDSU Research and Consulting Committee

B.3 University:

Provost's Chairs Council (2007-present). Monthly meeting of the NDSU department heads/chairs with the Provost
 Graduate Leaders Forum (2007-present). Monthly meeting of the NDSU department heads/chairs with the Dean of the Graduate School

B.4 Profession:

10/26/2009 SBIR/STTR Phase II EA: Education Application Review Panel - National Science Foundation at 4201 Wilson Blvd, Arlington, VA, 22203

B.5 Other:

WWWIC (1996-present). Committee member. World Wide Web Instructional Committee (WWWIC). Phil McClean, Professor, NDSU Plant Science, Chair.

C. Teaching (list courses by semester including credit hours and numbers of students)

Semester	Course	Credit Hours	Number of Students
Spring 2009	CS 790	1	11
Spring 2009	CS345	3	26
Summer 2009	Governors School	N/A	9
Fall 2009	CS 790	1	11
Spring 2010	CS 790	1	12
Spring 2010	CS345	3	34
Fall 2010	CS790	1	16

Graduate Student Progress

a) as major professor (completed)

Ben Dischinger, (2010) M.S. Computer Science
 Guy Hokanson, (2010) M.S. Computer Science

b) as major professor (ongoing)

Jacob Halvorson, M.S. Computer Science

c) as examining committee member (completed)

Barjesh Arora, M.S. Computer Science, Richard Jockheck, PhD, Computer Science, Aaron Clarke, PhD, Psychology, Kanwal Gagneja, PhD, Computer Science

d) as examining committee member (ongoing)

Harvincer Kaur, M.S. Computer Science

Undergraduate Student Mentorship

Raashi Chugh, undergraduate research employee on the Blackwood Project
Robert Foertsch, undergraduate system administrator

Department Head Activities (January 1, 2009 – December 31, 2010)

1/23/2009 – Met Prof. Yadav, Dean, Ansal Institute
2/10/2009 – Hosted the Departmental visit by Dr. Chapman and Dr. Schnell, IACC 258C
2/11/2009 – Youth Entrepreneurial Task Force Meeting, Reimers Rm. Alumni Center
2/25/09 – Three Chairs Lunch with the Dean
3/2/2009 – Program Review on-site inspection
3/4/2009 – Met CSM PTE Committee, Dr. Jun Kong 3rd Year Review
April-May, 2009 – Hired Gursimran Walia, Tariq King, Saeed Salem, and Chengui Yan
4/24/2009 – Met Sudhir Mehta, Liaison, Ansal Institute
4/29/2009 – Hosted State Historical Society of North Dakota Homestead Project Group
5/7/2009 – CSM Awards Ceremony, Alumni Center
5/8/2009 – Luncheon, Dr. Toni Schmader, the Science of Unconscious Bias
5/11/2009 – Myers Summer Research Planning – MU, Lark Room
5/13/2009 – Program Review, committee meeting
6/8-7/17/2009 – Governors School – Business/Entrepreneurial Section
6/11/2009 – Video Conferencing capability installed in CS conference room
6/12/2009 – Student Orientation (also 6/15, 6/19, 6/22-26)
July09: Wrote and submitted EPSCoR Startup Proposal, funded for \$66,000
7/7/2009 – Student Orientation (also 7/8-11)
7/23/2009 – NDSU-Mississippi Valley State Summer Internship Presentation Day
7/29/2009 – Barjesh Arora MS defense
8/3/2009 – Student Orientation (also 8/4, 8/18, 8/24)
8/19/2009 – Met Sudhir Mehta, Liaison, Ansal Institute
9/14/2009 – Hosted Dr. Joseph Konstan on Social Computing Research
9/21/2009 – Three Chairs Lunch with the Dean
10/6/2009 – Junior Faculty visit to Microsoft, lunch for eleven
10/29/2009 – Three Chairs Meeting with the Dean
11/18/2009 – Meet John Jasper and Bolder Thinking Group, Stevens Hall
12/11/2009 – Three Chairs Lunch with the Dean
1/7/2010 – EPSCoR New Faculty Startup Interview, Research 1
2/16/2010 – Reception for Community Business, Alumni Center
2/26/2010 – North Dakota Science Teachers Assoc. meeting, Bismarck State College
3/16/2010 – Internet2 Conference Planning Meeting – conference call
4/8/2010 – Mousumi Tahna MS defense
4/12/2010 – William Jockheck PhD Defense
4/20/2010 – ZJEP Administrators meeting
4/27/2010 – Divya Gupta MS Defense
5/6/2010 – Ben Dischinger MS Defense
5/7/2010 – William Voorhees MS Defense
6/10/2010 – NATURE students software demonstration and hands-on session
6/17/2010 – Student Orientation/Advising (also 6/18, 6/21)
6/22/2010 – Dan DeBilt MS Defense
7/6/2010 – Student Orientation/Advising (also 7/7-9)
7/12/2010 – Host Digi-Key visit

7/13/2010 – Assisted with F&A talks for NDSU CS industry/university consortium
 7/13/2010 – Meet Madison Elementary Principal – Chris Triggs
 8/2/2010 – Student Orientation/Advising (also 8/3, 8/23)
 8/10/2010 – Plan Tech Expo regional business outreach breakfast
 8/31/2010 – Meet with Development Foundation fundraising staff – Andrea Jenson
 9/14/2010 – MIS Steering Committee Meeting
 9/22/2010 – Tech Expo regional business outreach breakfast
 9/30/2010 – RCATT Listening Group #4
 10/13/2010 – FORWARD Ally Training, MU Prairie
 10/19/2010 – CS Dept. Staff Meeting – MU Coffee Shop
 10/20/2010 – Microsoft MORE Program Presentation
 10/26/2010 – North Dakota IT Education and Industry Summit – Microsoft campus
 11/1/2010 – Madison Elementary Outreach Project Meeting
 11/12/2010 – Three Gorges Curriculum Meeting and Lunch Discussion
 11/17/2010 – CSM Emerging Leaders – Chair/Head Session (Slator, Bleier, Comez)
 12/2/2010 - Microsoft MORE Program Presentation
 12/9/2010 - NDSU Computer Science Industry Consortium Program Kick-off Meeting
 12/15/2010 – Three Chairs Meeting with the Dean

Gursimran Walia

Research

• 2009 Calendar Year

i. Refereed Publications

- **Walia, G.,** and Carver, J. “A Systematic Literature Review to identify a classify Software Requirement Errors.” *Information and Software Technology*, Vol. 51, No.7. (July 2009), pp. 1087-1109.
- **Walia, G.,** and Carver, J. “Evaluating the Effect of the Number of Naturally Occurring Faults on the Estimates Produced by Capture-Recapture Models,” *Proceedings of the 2009 International Conference on Software Testing, Verification, and Validation*. April 1-4, 2009. Denver, CO, USA. pp. 210-219.

ii. Presentations

- **Walia, G.,** and Carver, J. “Evaluating the Effect of the Number of Naturally Occurring Faults on the Estimates Produced by Capture-Recapture Models,” *Proceedings of the 2009 International Conference on Software Testing, Verification, and Validation*. April 1-4, 2009. Denver, CO, USA. p. 210-219.

iii. Graduate Student Committees on which you serve (indicate those for which you are Chair)

- Yashwant Potla (Major Advisor: Dr. Jun Kong)

- Sri Harsha Yampala (Major Advisor: Dr. Kendall Nygard)
- Hari Mukka (Major Advisor: Dr. Kendall Nygard)

iv. Unfunded Research Proposals

(Both the Proposals were rejected)

1. Source: National Science Foundation: Human-Centered Computing (NSF 09-557):
 Title: **Collaborative Research: Integrating Software Engineering and Cognitive Error Models to Improve Software Quality**;
 PI: Gursimran Walia (NDSU) and PI Jeffrey Carver (UA) ;
 Amount Requested: \$217,118 over a period of three years
2. Source: National Science Foundation : CCLI - Type 2 (NSF 09-529):
 Title: **Improving Computer Science Capstone Project Experiences**;
 PI: Dean Knuson, **Co-PI: Gursimran Walia**, and Kenneth magel
 Amount Requested: \$596,267 over a period of three years

• 2010 Calendar Year

i. Refereed Publications

1. **Walia, G.**, Carver, J. "Evaluate the Use of Requirement Error Abstraction and Classification Method for Preventing Errors During Artifact Creation: A Feasibility Study." *Proceedings of the 21st IEEE International Symposium on Software Reliability Engineering*. November 1-4, 2010. San Jose, California, USA. pp. 81-90.

ii. Other Publications

(Accepted for Publication in 2011)

- Radermacher, A., **Walia, G.** "Investigating Student-Instructor Interactions When Using Pair Programming: An Empirical Study," *Proceedings of the 24th IEEE-CS Conference on Software Engineering Education and Training*. May 22-24, 2011 Waikiki, Honolulu, Hawaii. **(To Appear)**
- Potala, Y., Annadi, R., Kong, J., **Walia, G.**, and Nygard, K. "Adapting Web Page Tables on Mobile Devices," *International Journal of Handheld Computing Research*, 2011. **(To Appear)**
- Radermacher, A., **Walia, G.** "Investigating the Effective Implementation of Pair Programming: An Empirical Investigation," *Proceedings of the 42nd ACM Technical Symposium on Computer Science Education*. March 9-12, 2011 Dallas, Texas, USA. **(To Appear)**

(Technical Reports)

- **Walia, G.**, and Carver, J. "Using Error Abstraction and Classification to Improve the Quality of Requirements: Conclusions from Family of Studies."

Technical Report, The Department of Computer Science, North Dakota State University, 2010.

- **Walia, G.**, and Carver, J. "Using Error Abstraction and Classification to Improve the Quality of Requirements: Conclusions from Family of Studies." Technical Report, The Department of Computer Science, North Dakota State University, 2010. <http://cs.ndsu.edu/research/reports.htm>

iii. Presentations

- **Walia, G.**, Carver, J. "Evaluate the Use of Requirement Error Abstraction and Classification Method for Preventing Errors During Artifact Creation: A Feasibility Study." *Proceedings of the 21st IEEE International Symposium on Software Reliability Engineering*. November 1-4, 2010. San Jose, California, USA. pp. 81-90.
- **Walia, G.**, "Integrating Software Engineering and Cognitive Error Models to Improve Software Quality," Psychology Colloquium, Department of Psychology, North Dakota State University, October 22, 2010.

iv. Graduate student Committees on which you serve (indicate those for which you are Chair)

- *Ankita Sehgal (Major Advisor: Dr. Jun Kong)*
- *Manu Bhogadi (Major Advisor: Dr. Kendall Nygard)*
- *Haribabu Bavanari (Major Advisor: Dr. Kendall Nygard)*
- *Dan Debilt (Major Advisor: Dr. Kenneth Magel)*
- *Vijay Anand Suravarapu (Major Advisor: Dr. Kendall Nygard)*
- *Mayukh Sharma (Major Advisor: Dr. Kendall Nygard)*
- *Sandeep Raavi (Major Advisor: Dr. Jun Kong)*

v. Unfunded Research Proposals

Proposal Currently Under Consideration:

Source: National Science Foundation: Division of Computer and Communication

Foundations: *Software and Hardware Foundations:*

Title: ***Collaborative Research: Integrating Software Engineering and Cognitiv***

Error Models to Improve Software Quality;

PI: Gursimran Walia (NDSU) and PI Jeffrey Carver (UA) ;

Amount Requested: \$315,535 over a period of four years

Teaching

- Fall, 2009 (for each course give number, title, credits, number of students and indicate if it was a new preparation for you)
 - CSCI 315-01 (4525); *System Analysis and Design*; 3 credit; 52 students; new preparation
- Spring, 2010 (same information)
 - CSCI 783-02 (34282); *Topics in Software Systems / Empirical Software Engineering*; 3 credit; 9 students; new preparation
- Summer, 2010 (same information)
 - CSCI 793-05 (15021); *Independent Study / Tutorial (Creative Information Technology)*; 3 credit; 2 students; new preparation
- Fall, 2010 (same information)
 - CSCI 315-01 (4935); *System Analysis and Design*; 3 credit; 44 students;
 - CSCI 783-02 (34029); *Topics in Software Systems / Empirical Software Engineering*; 3 credit; 1 student; new preparation (**Distance Education Course**)
 - CSCI 790-07 (25326); *Graduate Seminar - Empirical Software Engineering*; 1 credit; 9 students; new preparation
 - CSCI 793-02 (34494); *Independent Study / Tutorial (Creative Information Technology)*; 3 credit; 1 student
- **Service**
- **2009**
 - i. For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)
 - *NSF review panel for CSE REU site on December 7 and December 8 at National Science Foundation Office*
 - Reviewer: *Software Quality Journal*, *Information Sciences Journal*.
 - ii. **For the College (same information)**
 - University senate meeting (3:30 pm, Monday, November 2009, Memorial Union, Plains room) [filled in for Dr. Jun Kong's Absence]
- **2010 (same information in the same categories)**
 - i. **For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)**
 - Reviewer: *Information Sciences Journal*, *Annals of Nuclear Energy*, *The 42nd ACM Technical Symposium on Computer Science Education*

(SIGCSE), Conference on Innovation and Technology in Computer Science Education (ITICSE).

ii. For the Department (same information)

- Meet with Prospective Computer Science Student (Sat alongside Dr. Brian Slator).
- Review of Software Engineering PhD and Masters Comprehensive Examinations.
- Committee for Software Engineering Certification.

Changhui Yan

Research

• **2010 Calendar Year**

i. Refereed Publications

Journal Papers (with students underlined)

1. Hu, J. and **Yan, C.** *A comparative analysis of protein interfaces.* Protein Pept Lett. 2010;17(11):1450-1458.
2. **Yan, C.**, Luo, J. *An analysis of reentrant loops.* Protein J. 2010 Jul;29(5):350-4.

Conference Proceedings (with students underlined)

1. Alvarez, M. and **Yan, C.** *Exploring structural modeling of proteins for kernel-based enzyme discrimination.* In *Proceedings of IEEE Symposium on Computational Intelligence in Bioinformatics and Bioengineering.* 2010,1-5.
2. **Yan, C.** and Luo, J. *A comparison between transmembrane helices and reentrant loops.* In *Proceedings of IEEE International Symposium on Bioinformatics and BioEngineering.* 2010, 283-284.

ii. Presentations

Poster Presentation

Wen, C., Ahuja, S. and **Yan, C.** *Predicting the 3d structure of the helical-bundle of transmembrane proteins,* 2010 ND INBRE Annual Symposium, Oct. 28, 2010 Grand Forks, ND

iii. Graduate student Committees on which you serve (indicate those for which you are Chair)

Serve as Chair

Wen Cheng
Sarthak Ahuja

Malinda Sanjaka

Serve as Committee Member

Yang Liu

Xiaojun Xia

Vijayanand Suravarapu

- **Other Research Activities**

Pending research proposal submitted to NSF: "Predicting 3D structure of transmembrane helix bundle". PI: Changhui Yan

- **Teaching**

- **Spring, 2010**

CSCI 374 Computer Organization and Architecture, 3 credits, 40 students. New preparation

- Summer, 2010 (same information)

- Fall, 2010 (same information)

CSCI759 Computational Methods for Bioinformatics, 3 credits, 5 students. New preparation.

- **Service**

- **2010**

Reviewing papers for *Bioinformatics*. Oct15, 2010 and April 14, 2010

Reviewing paper for *BMC Bioinformatics*. Jan 12, 2010.

[Weiyi Zhang](#)

Research

- **2009 Calendar Year**

- i. **Refereed Publications**

- 1) Weiyi Zhang, Jun Kong, Kendall Nygard and Ming Li; Adaptive Design of Pervasive Computing System under QoS Constraints; *International Journal of Computers and Applications*; Accepted for publication.
- 2) Jian Tang, Guoliang Xue, and Weiyi Zhang; Cross-layer optimization for end-to-end rate allocation in multi-radio wireless mesh networks; *ACM Wireless Networks (WINET)*; Vol. 15, Issue 1, January 2009, pp. 53-64.

- 3) Weiyi Zhang, Xiaojiang Du, Kendall Nygard and Tie Wang; Self-protecting Networking using Dynamic p-cycle Construction within Link Capacity Constraint; *IEEE ICC'2009*.
- 4) Weiyi Zhang, Jun Kong, Kendall Nygard and Ming Li; Adaptive Configuration of Pervasive Computing System with QoS Consideration; *IEEE CCNC'2009*.
- 5) Weiyi Zhang, Jian Tang, Kendall Nygard and Chonggang Wang; REPARE: Regenerator Placement and Routing Establishment in Translucent Networks; *IEEE Globecom'2009*
- 6) Li Zhang, Jian Tang and Weiyi Zhang; Strong Barrier Coverage with Directional Sensors; *IEEE Globecom'2009*
- 7) Weiyi Zhang and Jun Kong; Distraction-free Service in Pervasive Environments Based on Multi-Constrained QoS Routing; *IEEE NISS'2009*
- 8) Weiyi Zhang, Jian Tang, Chonggang Wang, and Shanaka de Soysa; Reliable Adaptive Multipath Provisioning with Bandwidth and Differential Delay Constraints; *IEEE INFOCOM'2010: IEEE Conference on Computer Communications*; (acceptance ratio: 276 out of 1575, **17.5%**), Accepted for publication.
- 9) Weiyi Zhang, and Siva Vanteru; OFDMA Resource Allocation and QoS Provision in Hybrid Wireless Network; *IEEE VTC'2010: IEEE 71th Vehicular Technology Conference*; Accepted for publication.

ii. Other Publications

iii. Presentations

- IEEE CCNC'2009; Jan. 9, 2009, Las Vegas, NV; Presenter
- IEEE GLOBECOM'2009, 3 Dec., 2009, Honolulu, HI; Session chair, presenter
- IEEE ICC'2009, 15 Jun., Dresden, Germany; Presenter

iv. Funded Research Proposals (title, PI and co-pi's, duration, amount, source)

- Development of a Hybrid Wireless Network Infrastructure for Integrated Research and Education, *NSF Major Research Infrastructure (MRI) Program* (09-01-2009 to 08-31-2012)
Amount: \$198,851 (\$ 109,426 at NDSU)
PI: Xiaojiang Du (Temple University), Co-PI: Weiyi Zhang, Aaron Reinholz
- Robust Hybrid Wireless Network Coverage for Rural Public Safety, *ND NSF EPSCoR Infrastructure Improvement Programs (IIP)* (07-01-2009 to 06-30-2011)
Amount: \$82,600, PI: Weiyi Zhang

v. Graduate Students completing for whom you were the advisor (name, degree, title of paper, date)

vi. Graduate Student Committees on which you serve (indicate those for which you are Chair)

Oksana Myronovych, PhD, 9/1/2009

Senad Cimic, MS, 9/4/2009

Arijit Chatterjee, MS, 12/18/2009

vii. Pending Publications

viii. Unfunded Research Proposals

- 1) WiMAX-based testbed for Public Safety Monitoring in Rural Areas, *NSF CNS Computing Research Infrastructure (CRI) Program*, PI: Weiyi Zhang; Co-PI: Jun Kong
- 2) SEAMAN: An Integrated System of Sensor Web and Mobile Ad Hoc Network for Rural Public Safety; *ND NASA EPSCoR Graduate Student Research*, PI: Weiyi Zhang
- 3) Joint-layer Design for Reliable Rural Public Safety Coverage in Hybrid Sensor Web Networks, *ND NASA EPSCoR Faculty Seed Research*, PI: Weiyi Zhang
- 4) Joint-layer Design for Reliable Rural Public Safety Coverage in Hybrid Sensor Web Networks, *ND NASA EPSCoR Travel Award*, PI: Weiyi Zhang
- 5) Effective coordination for public safety support, *NDSU Community Projects Award*; PI: Weiyi Zhang
- 6) Joint Hardware-Software Design of Secure & Self-Organizing Embedded Systems; *ND Federal Government Relations (FGR) Program*; PI: Kendall Nygard; Co-PI: Weiyi Zhang, Xiaojiang Du, Rajendra Katti, Chao You
- 7) THINKERS for Tomorrow's Problems in Food Logistics and Security; PI: Charlene Wolf-Hall, Co-PIs: Margaret Khaita, Denver Tolliver, Kendall Nygard, Weiyi Zhang, etc. Funding source: *NSF IGERT*

• 2010 Calendar Year

i. Refereed Publications

- 1) Weiyi Zhang, Farah Kandah, Xiaojiang Du, and Chonggang Wang; Self-protecting Networking using Dynamic p-cycle Construction within Link Capacity Constraint; *WILEY Security and Communication Networks*; Accepted for publication.
- 2) Jian Tang, Roberto Hincapie, Guoliang Xue, Weiyi Zhang, and Roberto Bustamante; Fair Bandwidth Allocation in Wireless Mesh Networks with Cognitive Radios; *IEEE Transactions on Vehicular Technology*; Vol. 59, No. 3, 2010, pp. 1487-1496.
- 3) Weiyi Zhang and Jun Kong; Multi-Constrained QoS Routing for Distraction-free Service in Pervasive Environment; *Journal of Next Generation Information Technology*; Accepted for publication.
- 4) Weiyi Zhang, Farah Kandah, Chonggang Wang, and Tao Jiang; OFDMA Scheduling and QoS routing in Hybrid Wireless Network; *International Journal of Information Processing and Management*; Accepted for publication.

- 5) Weiyi Zhang, Farah Kandah, Chonggang Wang, H. Li; Dynamic Light Trail Routing in WDM Optical Networks; *Springer Photonic Network Communications*; Accepted for publication.
- 6) Weiyi Zhang, Shi Bai, Guoliang Xue, Jian Tang, and Chonggang Wang; DARP: Distance-Aware Relay Placement in WiMAX Mesh Networks; *IEEE INFOCOM'2011: IEEE Conference on Computer Communications*; (acceptance rate: 291 out of 1823; **15.96%**), Accepted for publication.
- 7) Benjamin Bengfort, Weiyi Zhang, and Xiaojiang Du; Efficient Resource Allocation in Hybrid Wireless Networks; *IEEE WCNC'2011: IEEE Wireless Communications and Networking Conference*.
- 8) Weiyi Zhang, Shi Bai, Yang Liu, and Jian Tang; Cognitive Radio Scheduling for Overwater Communications; *IEEE Globecom'2010: IEEE Global Telecommunications Conference*; Accepted for publication.
- 9) Weiyi Zhang, Xiaojiang Du, Jie Wu, Shanaka de Soysa , and Yang Liu ; Near-Minimum-Energy Routing in Heterogeneous Wireless Sensor Networks; *IEEE Globecom'2010: IEEE Global Telecommunications Conference*; Accepted for publication.
- 10) Farah Kandah, Weiyi Zhang, Yashaswi Singh, and Juan Li; Interference-aware Robust Wireless Mesh Network Design; *IEEE Globecom'2010: IEEE Global Telecommunications Conference*; Accepted for publication.
- 11) Husheng Li and Weiyi Zhang; QoS Routing in Smart Grid; *IEEE Globecom'2010: IEEE Global Telecommunications Conference*; Accepted for publication.
- 12) Juan Li, Weiyi Zhang, and Xiaojun Xia; Scalable Publish/Subscribe Service in Wireless Mesh Networks; *IEEE Globecom'2010: IEEE Global Telecommunications Conference*; Accepted for publication.
- 13) Jian Tang, Li Zhang, Richard Wolff, and Weiyi Zhang; Leveraging Cognitive Radios for Effective Communications Over Water; *IEEE SECON'2010: Seventh Annual IEEE Communications Society Conference on Sensor, Mesh, and Ad Hoc Communications and Networks* (acceptance ratio: **23%**), Accepted for publication.
- 14) Jun Kong, Weiyi Zhang, Juan Li, and Arjun Roy; A Cross-Layer Design for Adaptive Multimodal Interfaces in Pervasive Computing; *SEKE'2010: 22nd International Conference on Software Engineering and Knowledge Engineering*; Accepted for publication.
- 15) Juan Li, Zonghua Zhang, and Weiyi Zhang; MobiTrust: Trust Management System in Mobile Social Computing; *IEEE TSP'2010: 3rd IEEE International Symposium on Trust, Security and Privacy for Emerging Applications*; Accepted for publication.
- 16) Weiyi Zhang, Farah Kandah, Jian Tang, and Kendall Nygard; Interference-Aware Robust Topology Design in Multi-Channel Wireless Mesh Networks; *IEEE CCNC'2010: 7th Annual IEEE Consumer Communications and Networking Conference*; (acceptance ratio **30%**), Accepted for publication.

ii. Other Publications

iii. Presentations

- IEEE INFOCOM'2010; March 15-19, San Diego, CA; Presenter
- IEEE GLOBECOM'2010, Dec. 6 - 10, 2010, Miami, FL; presenter

iv. Funded Research Proposals (title, source, PI and co-PIs, duration, amount)

- Student Travel Support for IEEE INFOCOM'2011; *NSF Division of Computer and Network Systems (CNS); Research in Networking Technology and Systems (NeTS) Program*; PI: Weiyi Zhang
Duration: 5-1-2011 to 4-30-2012, Amount: \$25,000
- Resource Allocation for WiMAX-based Mesh Networks, *ND NSF EPSCoR Award*, (08-1-2010 to 7-31-2011),
Amount \$42,900, PI: Weiyi Zhang
- Development of a Hybrid Wireless Network Infrastructure for Integrated Research and Education, *NSF Major Research Infrastructure (MRI) Program* (09-01-2010 to 08-31-2012)
Amount: \$198,851 (\$ 109,426 at NDSU)
PI: Xiaojiang Du (Temple University), Co-PI: Weiyi Zhang, Aaron Reinholz
- Robust Hybrid Wireless Network Coverage for Rural Public Safety, *ND NSF EPSCoR Infrastructure Improvement Programs (IIP)* (07-01-2009 to 06-30-2011)
Amount: \$82,600, PI: Weiyi Zhang

v. Graduate Students completing for whom you were the advisor (name, degree, title of paper, date)

Siva Vanteru, MS, "REND: reliable and energy-efficient node-disjoint paths in wireless sensor networks", 5/14/2010

Benjamin John Bengfort, MS, "resource and Bandwidth Allocation in Hybrid Wireless Mobile Networks", 9/7/2010

Srikanth Goud Aakula, MS, "Design and Implementation of social networking website features", 11/15/2010

vi. Graduate student Committees on which you serve (indicate those for which you are Chair)

Phillip Reindl, MS, 2/24/2010

Chin Lua, PhD, 4/22/2010

Mayukh Sharma, MS, 5/3/2010

William D. Voorhees, MS, 5/7/2010

Siva Vanteru, MS, 5/14/2010; **Chair**
 Pramodh Kumar Thalloji, MS, 5/17/2010
 Shivendushital Pandey, MS, 6/22/2010
 Paul Loree, MS, 6/29/2010
 Omar El Ariss, PhD, 7/23/2010
 Benjamin John Bengfort, MS, 9/7/2010; **Chair**
 Dibakar Bhowmick, MS, 9/8/2010
 Shaminda Samaraweera, MS, 11/5/2010
 Venkata Raidu, MS, 11/9/2010
 Srikanth Goud Aakula, MS, 11/15/2010; **Chair**

vii. Pending Publications

Juan Li, Hui Wang, Qingrui, Weiyi Zhang; MobiTrust: A Decentralized Self-management Trust System in Mobile Ad Hoc Social Computing, Concurrency and Computation: Practice and Experience; Submitted

Farah kandah, Weiyi Zhang, Chonggang Wang, Juan Li; Diverse Path Routing with Interference and Reusability Consideration in Wireless Mesh Networks, Springer Mobile Networks and Applications; Submitted

Jun Kong; Weiyi Zhang; Nan Yu; Xiaojun Xia; Design of Human-Centric Adaptive Multimodal Interfaces, International Journal of Human-Computer Studies; Submitted

Shen Wan, Jian Tang, Brendan Mumey, Richard S. Wolff and Weiyi Zhang; Leveraging Multi-User Diversity, Channel Diversity and Spatial Reuse for Efficient Scheduling in Wireless Relay Networks; Eighth Annual IEEE Communications Society Conference on Sensor, Mesh, and Ad Hoc Communications and Networks (IEEE SECON'2011); Submitted

Yun Li, Nan Yu, Weiyi Zhang, Weiliang Zhao, Xiaohu You, Mahmoud Daneshmand; Enhancing the Performance of LEACH Protocol in Wireless Sensor Networks; IEEE INFOCOM 2011 Workshop on M2MCN-2011; Submitted

Yashaswi Singh, Farah Kandah, Wei-Yi Zhang; A Secured Cost-effective Multi-Cloud Storage in Cloud Computing; IEEE INFOCOM 2011 Workshop on Cloud Computing; Submitted

Yang Liu, Shi Bai, Wei-Yi Zhang, Jun Zhang, Low-cost Application Image Distribution on Worldwide Cloud Front Server, IEEE INFOCOM 2011 Workshop on Cloud Computing; Submitted

viii. Unfunded Research Proposals

1. Relay Placement and Resource Allocation for WiMAX-based Mesh Networks; *NSF Division of Computer and Network Systems (CNS); Research in Networking Technology and Systems (NeTS) Program*; PI: Weiyi Zhang
2. CPS:Small:Collaborative Research:Towards QoS Routing in Smart Grids; *NSF Division of Electrical, Communications and Cyber Systems (EECS); Cyber-Physical Systems (CPS)*; PI: Weiyi Zhang

3. Human-Centric Adaptive Multimodal Interface Design in the Pervasive Environment; *NSF Division of Information & Intelligent Systems (IIS); Human-Centered Computing (HCC) Program*; PI: Jun Kong; Co-PI: Weiyi Zhang
4. Robust WiMAX-based Testbed for Public Safety Monitoring; *NSF Division of Computer and Network Systems (CNS); Major Research Instrumentation (MRI) Program*; PI: Weiyi Zhang; Co-PI: Dean Knudson; Jun Kong; Kendall Nygard
5. II-NEW: WiMAX-based Testbed for Public Safety Monitoring in Rural Areas, *NSF Division of Computer and Network Systems (CNS) Computing Research Infrastructure (CRI) Program*; PI: Weiyi Zhang, Co-PI: Jun Kong
6. CAREER: Multilayer Network Fault Tolerant Design with QoS Considerations, *NSF Division of Computer and Network Systems (CNS)*, PI: Weiyi Zhang
7. Cross-layer Design for Rural Public Safety Coverage using Hybrid Sensor Web Networks; *NASA EPSCoR Seed Award*; PI: Weiyi Zhang

a. Other Research Activities

8. Teaching

a. Spring, 2009 (for each course give number, title, credits, number of students and indicate if it was a new preparation for you)

- CSci 476: Computer Forensics, 3 credits, **(new preparation)**

Number of student: 14; Instructor rating: 4.250

- CSci 676: Computer Forensics, 3 credits, **(new preparation)**

Number of student: 10; Instructor rating: 4.625

- CSci 785: Wireless Network and Mobile Computing, 3 credits

Number of student: 13; Instructor rating: 5.000

b. Summer, 2009 (same information)

- CSci 785: Wireless Network and Mobile Computing, 3 credits
- Number of student: 3; Instructor rating: 5.000

c. Fall, 2009 (same information)

- CSci 477: Objected-Oriented Systems, 3 credits
- Number of student: 15; Instructor rating: 4.545

- CSci 677: Objected-Oriented Systems, 3 credits
- Number of student: 8; Instructor rating: 5.000

d. Spring, 2010 (same information)

- CSci 459: Foundations of Computer Networks, 3 credits, **(new preparation)**
Number of student: 32; Instructor rating: 4.73
- CSci 659: Foundations of Computer Networks, 3 credits, **(new preparation)**
Number of student: 7; Instructor rating: 5.000
- CSci 785: Wireless Network and Mobile Computing.
number of student: 17; Instructor rating: 4.76

e. Summer, 2010 (same information)

f. Fall, 2010 (same information)

- CSci 477: Objected-Oriented Systems, 3 credits
Number of student: 21; Instructor rating: N/A
- CSci 677: Objected-Oriented Systems, 3 credits
Number of student: 13; Instructor rating: N/A

9. Service

a. 2009

i. For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)

Journal Reviewer:

IEEE/ACM Transactions on Networking

IEEE Journal on Selected Areas in Communications;

IEEE Transactions on Mobile Computing

IEEE Transactions on Wireless Communications

IEEE Transactions on Vehicular Technology

IEEE Transactions on Circuits and Systems for Video Technology

IEEE Communications Letters

IEEE Signal Processing Letters

OSA Journal of Optical Networking

Elsevier Journal of Computer Networks

Elsevier Journal of Adhoc Networks

Wiley Journal of Wireless Communications and Mobile Computing

Springer Journal of Mobile Networks and Applications

EURASIP Journal on Wireless Communications and Networking

Conference Organizations:

TPC Chair of International Workshop on Pervasive Computing Systems and Infrastructures (PCSI'2009), Washington DC, April 6-8, 2009.

Finance Chair of IEEE IWQoS'2009, Charleston, SC, July 13-15, 2009.

Publicity Chair of IEEE WoWMoM Workshop on Autonomic and Opportunistic Communications, (AOC'2010), Montreal, Canada, June 2010.

TPC Member of major conferences, including IEEE INFOCOM(2010), IEEE WCNC (2010), IEEE GLOBECOM (2009-2010), IEEE ICC (2009-2010), ACM/IEEE MSWiM (2009)

ii. For the University (give activity, dates of involvement, and whether or not you held an office)

iii. For the College (same information)

iv. For the Department (same information)

- Chair, Course Fee Committee
- Committee Member, Faculty Recruiting Committee
- Committee Member, Teaching Free Semester Committee

b. 2010 (same information in the same categories)

i. For the profession (refereeing, reviewing, service on Conference Committees or journal editorships) (give activity, dates of involvement)

Journal Editorship

Associate Editors-in-Chief: International Journal of Information Processing and Management

Associate Editor: WILEY's Security and Communication Networks Journal

Editor: International Journal of Intelligent Information Processing

Editor: International Journal of Digital Content Technology and its Applications

Journal Reviewer:

IEEE Transactions on Mobile Computing

IEEE Transactions on Wireless Communications

IEEE Transactions on Vehicular Technology

Elsevier Journal of Computer Networks

Wiley Journal of Wireless Communications and Mobile Computing

Conference Organizations:

Student Travel Grants Co-Chair: IEEE INFOCOM'2011, Shanghai, China, April 10-15, 2011.

TPC Co-Chair: IEEE INFOCOM Workshop on Machine-to-Machine Communications and Networking (M2MCN), Shanghai, China, April, 2011.

TPC Member of major conferences, including IEEE INFOCOM(2011), IEEE WCNC (2011), IEEE GLOBECOM (2009-2011), IEEE ICC (2009-2011)

ii. For the Department (same information)

- Chair, Course Fee Committee

C. OUTREACH

1. Professional Service:

2010:

August:

Coordinated a special advising session for incoming international students prior to the start of classes.

October:

Graduate fair at Concordia (Dr. Slator attended)

Information fair for undecided students (at Memorial Union)

November:

Graduate Recruitment event (@NDSU)

Fall Career fair (hosted Breakfast for CS industry representatives)

February:

Microsoft MORE event session (on campus)

Spring Career Fair (hosted breakfast for CS industry representatives)

Careers in Information Technology Panel (at Memorial Union) with Career Services

March:

Rediscover U event for sophomores and undecided students at Memorial Union

Microsoft MORE event session (on campus)

Microsoft MORE program at Microsoft campus (35 undergraduate and graduate students attended; 3 faculty from NDSU)

Faculty luncheon at Microsoft campus

April:

CSM Honors Day event (Dr. Slator and Joan Krush attended among CS awardees)

Discover NDSU days

June & July:
Orientation & Registration for new/incoming students.

STARS program application (currently on hold for submission 2011-2012).
Joan Krush is a representative on the Enrollment Management Advisory Board.
Joan Krush serves as a steering committee member for the Region 6 National Academic Advising Association (NACADA).

2.Alumni Events and other community related activities:

The Department continues to expand our efforts to reach alumni.. We have a web site that we hoped would be a resource for alumni, but it is not used very much. We created a new Departmental Web Site which has gotten rave reviews, especially by those who remember our previous web site.

At the urging of our College Dean, the Department started a newsletter during 2007-08. We have received some favorable comments from alumni and hope to continue to expand on relationships with our alumni.

The department continues to foster relations with area businesses, in particular Microsoft Business Solutions. Four social/technical events were held in the past year at the south Fargo campus of Microsoft.

3. Fund-raising accomplishments and other outreach activities:

We received a little over \$3,500 from alumni and friends this academic year in money and equipment. We need to do better. During the next academic year, we will make an effort to contact successful alumni. Our goal is to increase alumni giving to \$25,000 per year within five years. Our efforts are constrained by what the NDSU Development Foundation is willing to allow in solicitations of alumni.

4. Cooperative Education:

Placement Summary Fall 2010

Student	Employer	Job Type
Haribabu Bavanari	Saiana Technologies Edison, New Jersey	Full-time Coop
Satheesh Chakravathi	Northern Contours; Fergus Falls, MN	Full-time Coop
Robert Dolney	RTS (Restaurant Technology Services) Fargo, ND	Full-time Coop
Srinivas Guduru	The CE Shop	Full-time Coop

	Fargo, ND	
Yong-Sheng Lin	Phoenix International – John Deere Co. Fargo, ND	Full-time Coop
Christopher Mahoo	RTS (Restaurant Technology Services) Fargo, ND	Full-time Coop
Narendar Mandala	Ecliptic Technologies Fargo, ND	Full-time Coop
Srikar Pachav	International Association for Impact Assessment – IAIA Fargo, ND	Part-time Coop
Naresh Pillarikuppam	TEKsystems Edina MN	Full-time Coop
Sana Rehman	NAVTEQ Fargo, ND	Full-time Coop
Shaminda Samaraweera	NAVTEQ Fargo, ND	Part-time Coop
Ranjana Sharma	Novel Systems Inc. Dallas, Texas	Full-time Coop
Sandeep Sikharam	Bolder Thinking LLC Fargo, ND	Full-time Coop
Phani Tiruparthi	NAVTEQ Fargo, ND	Full-time Coop
Asha Yadav	Blue Cross/Blue Shield Fargo, ND	Full-time Coop
Vishnu Yarram	Prime IT & Consulting Corporation Irvine, CA	Full-time Coop

Placement Summary Spring 2011

Student	Employer	Job Type
Muhammad Baqui	University of North Dakota School of Medicine Grand Forks, ND	Full-time Coop
Haribabu Bavanari	Saiana Technologies Edison, New Jersey	Full-time Coop
Dhru Bindra	Novel Systems Inc. Dallas, TX	Full-time Coop
Joseph Bredahl	Phoenix International Corp –John Deere Co. Fargo, ND	Full-time Coop

Satheesh Chakravarthi	Northern Contours; Fergus Falls, MN	Full-time Coop
Venkata Chintamaneni	International Marketing System; LTD Fargo, ND	Full-time Coop
Peymain Emamian	Pedigree Technologies Fargo, ND	Full-time Coop
Siva Ginpalli	Vision Technologies, Inc. Cedar Park, TX	Full-time Coop
Srinvas Gudur	The CE shop Fargo, ND	Full-time Coop
Akanksha Jaidev	University of North Dakota School of Medicine & Health Sciences Grand Forks, ND	Full-time Coop
Arti Katiyar	Crary Industries West Fargo, ND	Full-time Coop
Narendar Mandala	Open Access Technology Int'l Inc. (OATI) Minneapolis, MN	Full-time Coop
Aditi Mohpal	Pardign Servies Inc. Denver, CO	Full-time Coop
Aditya Mohpal	Pardign Servies Inc. Denver, CO	Full-time Coop
Srikar Pachva	Kelmscott Communications; Chicago, IL	Part-time Coop
Chaitanya Podagatlapali	Critical Room Control Minneapolis, MN	Full-time Coop
Sourya Sen	L&T Infotech Edison, NJ	Full-time Coop
Aman Sharma	Cetero Research – FKA PRACS Institute Fargo, ND	Full-time Coop
Sonu Sharma	Greeya Solutions Folsom, CA	Full-time Coop
Kunal Singh	Multiband Corporation Fargo, ND	Full-time Coop
Geoffrey Timm	Phoenix International Corp John Deere Co. Fargo, ND	Full-time Coop
Phani Tirupathi	NAVTEQ Fargo, ND	Full-time Coop
Shweta Tiwari	Open Access Technology Int'l Inc. (OATI) Plymouth, MN	Full-time Coop
Yadav, Asha	Blue Cross/Blue Shield Fargo, ND	Full-time Coop

Xiaojun Xia	Invie Consulting Moorhead, MN	Full-time Coop
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Placement Summary Summer 2011

Student	Employer	Job Type
Alazzam, Iyad	MB Schoen & Associates Fargo, ND	Part-time Coop
Ahuja, Sarthak	ImageTrendm Inc Lakeville, MN	Full-time Coop
Bavanari, Haribabu	Saiana Technologies Edison, New Jersey	Full-time Coop
Devney, John	Naval Research Laboratory Washington, DC	Full-time Coop
Chhina, Ramneet	22 nd Century Technology McLean, VA	Full-time Coop
Elhassani, Abdelhadi	The Toro Company Bloomington, MN	Full-time Coop
Emamian, Peyman	Pedigree Technologies Fargo, ND	Full-time Coop
Garg, Tarun	Otter Tail Power Company Fergus Falls, MN	Full-time Coop
Ginjupalli, Siva	Scepter Technologies, Inc. Silver Spring, Missouri	Full-time Coop
Katiyar, Arti	REdplum Media Jamestown, ND	Full-time Coop
Khan, Md	ImageTrend, Inc. Lakeville, MN	Full-time Coop
Kohli, Jyotjeev	Summit Group Software Fargo, ND	Full-time Coop
Konar, Prosenjit	Novel Systems, Inc. Dallas, Texas	Full-time Coop
Murugesan, Karthik	Ecliptic Technologies, Inc. Fargo, ND	Full-time Coop
Nordie, Jeffrey	US Bank Richfield, MN	Full-time Coop
Sahni, Ritika	Red River Software Inc. Fargo, ND	Part-time Coop
Sen, Sourya	L&T Infotech Edison, New Jersey	Full-time Coop
Sharma, Aman	Cetero Research Fargo, ND	Full-time Coop
Sharma, Ashish	The Toro Company Bloomington, MN	Full-time Coop
Sharma, Sonu	Agreeya Solutions Folsom, CA	Full-time Coop
Singh, Ramesh	Clearwater Analytics	Part-time Coop

	Boise, Idaho	
Singh, Ramesh	Douglas Scientific Alexandra, MN	Part-time Coop
Tomer, Avijeet	Lighthouse Fargo, ND	Full-time Coop
Valnes, Taylor	Essentia Health Fargo, ND	Full-time Coop
Wijeyaratne, Pubudu	NAVTEQ Fargo, ND	Full-time Coop
Yadav, Asha	Blue Cross Blue Shield Fargo, ND	Full-time Coop

**Fall 2010 and Spring 2011
Microsoft Graduate Fellowship Awards**

Alic Edin, Fargo, ND	\$1,000
Joseph Bredahl, Bismarck, ND	\$1,000
Benjamin Christian, Miltona, MN	\$1,000
Michael Delaney, Horace, ND	\$1,000
John Devney, Northfield, MN	\$1,000
Shane Ewert, Monticello, MN	\$1,000
Matthew Frueh, Minot, ND	\$1,000
Jacob Grendahl, Fargo, ND	\$1,000
Brady Helmer, Fargo, ND	\$1,000
Uy Thic Huyhn, Worthington, MN	\$1,000
Bryan Phelps, Fargo, ND	\$1,000
Wesley Rogers, Laporte, MN	\$1,000
Kevin Rusmussen, Maplewood, MN	\$1,000
Matthew Smith, Glyndon, MN	\$1,000
Joshua Tan, Austin, MN	\$1,000

**Fall 2010 and Spring 2011
CoCISE Awards**

Eickhoff	Ross	\$ 1,500
Kastl	Thomas	\$ 1,500
Koski	Adam	\$ 1,500
Lynch	Andrew	\$ 1,500
Mayer	John	\$ 1,500
Seefeldt	Jon	\$ 1,500
Andersen	Zechariah	\$1,500
Beaty	Tom	\$1,500
Bredahl	Joseph	\$1,500
Bremseth	Lucas	\$1,500
Ching	Joseph	\$1,500
Christian	Benjamin	\$1,500
Delaney	Michael	\$1,500
Frueh	Ryan	\$1,500
Grimes	Timothy	\$1,500
Iverson	Kenneth	\$1,500
Krumm	Tanya	\$1,500
Ladwig	Andrew	\$1,500
Lee	Huheun	\$1,500
Nguyen	Austin	\$1,500
Phelps	Bryan	\$1,500
Reetz	Shane	\$1,500

Rogers	Wesley	\$1,500
Wako	Shambel	\$1,500
Bausman	Anne	\$1,500
Beaty	Elliott	\$1,500
Braaten	Brady	\$1,500
Gabel	Brandon	\$1,500
Garner	Christopher	\$1,500
Jackson	Abram	\$1,500
Jansen	Brian	\$1,500
Lee	Ryan	\$1,500
Mohamed	Omran	\$1,500
Peterson	Daniel	\$1,500
Rasmussen	Kevin	\$1,500
Schepers	John	\$1,500
Van Dame	Katie	\$1,500
Nagel	Matthew	\$1,500
Pederson	Alex	\$1,500
		\$58,500
		39 students

D. SPECIAL INITIATIVES

1. Cooperation programming/Interinstitutional activities:

We are active participants in several interdisciplinary efforts. Our faculty are significant members of the interdisciplinary graduate program in Genomics and Bioinformatics. One of our largest research groups, Use of Technology in Education, involves faculty and students from departments across this campus. Our cooperation with Electrical and Computer Engineering in offering three undergraduate courses continues well into its third decade.

2. International activities:

We continue to build relationships with Chinese academics. For the third straight year, Chinese faculty will visit the Department for three weeks during the summer. We were an active participant in the effort to offer academic programs for hundreds of Chinese students in Fergus Falls. We developed a proposal for a 2 and 2 twinning program with Chinese universities.

In 2009-10, we worked to solidify a cooperative 3+2 agreement with ZJEPT, a Chinese university. Ken Magel and Joan Kruse prepared three detailed curriculum layouts for this proposal which were shared with the President of ZJEPT and other Chinese faculty during their visit to our campus. Here is one of those three layouts:

Computer Science Major (B.S.) – Course Plan for ZJETP transfer students

****NEW B.S. Requirements expected Fall 2011****

-list includes coursework applicable to NDSU; includes only the ZJETP courses required to satisfy NDSU requirements. There is room for ZJETP to insert their other courses where they need them.

Y1 Fall	Cr.hrs	Y1 Spring	Cr.hrs
Political Theories		Political Sociology	3
+Music		Introduction to Psychology	3
ZJETP: Business Use of Computers (CSCI 114: Microcomputer Packages)	3	CSCI 122: Visual Basic (ZJETP: Visual Basic)	3
+Pre-Calculus		+Calculus I	3
Calligraphy		Intro to Database Systems	3
		Calligraphy	
Y2 Fall		Y2 Spring	
ZJETP: Discrete Structures I (CSCI 222: Discrete Mathematics)	3	ZJETP: Discrete Structures II (CSCI 335: Theoretical Computer Sci)	3
ZJETP: Computer Science I (CSCI 160: Computer Science I)	3	ZJETP: Computer Science II (CSCI 161: Computer Science II)	3
ZJETP: Web Application Programming I (CSCI 371: Web Scripting Languages)	3	ZJETP: Web Application Programming II (CSCI 473:Found. of Digital Enterprise)	3
+Physics I (Calculus-based, with laboratory)		+Physics II (Calculus-based, with laboratory)	
ZJETP: Data Structure & Algorithms	3	ZJETP: Structured Systems A&D (CSCI 315:Systems Analysis & Design)	3
Calligraphy		+Wellness (NDSU: HNES 200 Principles of Nutrition)	3
		Calligraphy	
Y3 Fall		Y3 Spring	
ZJETP: Comp Hdware, Data Comm & Network	3	ZJETP: Operating Systems Concepts	3

(CSCI 374:Comp Organization & Architecture)		(CSCI 474: Operating Systems Concepts)	
ZJETP: Advanced Database Issues (CSCI 366:Files for Database Systems)	3	ZJETP: Principles of Software Engineering (CSCI 413: Principles of Software Engineering)	3
ZJETP: Foundations of Computer Networks (CSCI 459: Foundations of Computer Networks)	3	ZJETP: Data Structure & Algorithms	3
ZJETP: Programming Languages		ZJETP: Advanced Computer Networks	
ZJETP: Management Information Systems			

Y4 FALL – NDSU		Y4 SPRING – NDSU	
CSCI 372: Comparative Languages	3	CSCI 313: Development Lifecycle	3
MATH 166: Calculus II	4	ENGL 120: College Composition II	3
ENGL 110: College Composition I	3	CSCI 467: Algorithm Analysis	3
CSCI 213: Modern Software Tools	3	General education (Add'l Hum/SociSci)	3
General education (Hum/FineArt)	3	General education (Soci/BehSci)	3
	16		15
Y4 SUMMER – NDSU			
Y5 FALL– NDSU		Y5 SPRING– NDSU	
CSCI elective I	3	STAT 368: Statistics	3
Science elective	3	Science elective	3
STAT 367: Probability	3	CSCI 445: Software Projects Capstone	3
General education (Add'l Hum/SociSci)	3	CSCI 489: Social Implications of Computers	3
COMM 110: Public Speaking	3	General education (Add'l Hum/SociSci)	3
Upper Level Writing Course ENGL 321 or 324	3		
	18		15

Transfer Courses – Applying to BS degree

NDSU		ZJETP
UNIV 189: Skills for Academic Success	1	waived
CSCI 160: Computer Science I	4	Computer Science I
CSCI 161: Computer Science II	4	Computer Science II
CSCI 222: Discrete Math	3	Discrete Structures I
CSCI 335: Theoretical Computer Sci I	3	Discrete Structures II
Wellness	3	HNES 200 from ZJTEP
CSCI 374: Computer Organization & Architecture	3	Computer Hardware, Data Communication & Networking

CSCI 366: Files for Database Systems	3	Advanced Database Issues
CSCI Elective I (CSCI 459)	3	Foundations of Computer Networks
CSCI Elective II (CSCI 473)	3	Web Application Programming II
CSCI 474: Operating Systems Concepts	3	Operating Systems Concepts

Our existing twinning relationships with the Ansal Institute in India and with Cairo University in Egypt continue. In 2008-09, we started a graduate student exchange program with the International Institute for Information Technology in India. This program continues.

3. Interdisciplinary activities:

The NDSU Computer Science Department is the largest and most prominent department of its kind over a wide geographical area that includes all of North and South Dakota and much of Manitoba, Montana and Minnesota. Given the increasingly prominent role of computing and information technology in our society, it is also of high importance for the Department to grow and thrive, producing well-educated computing professionals. We believe that our graduates do leave the university well prepared and that they are competitive anywhere in the country.

The Department had thirty-three M.S. and two Ph.D. graduates during the period May 16, 2010 through May 15, 2011. Particularly notable was the presence of four of our not-yet-tenured faculty in the list of faculty advisors for these students.

4. Economic Development Efforts:

The Department faculty met with several companies during 2010-11. As mentioned above, Microsoft visited campus on a number of occasions, and continues to fund undergraduate and graduate scholarships and fellowships for several students. Dr. Slator, Dr. Magel, Dr. Nygard, Mrs. Krush, and Dr. Knutson attended meetings with Microsoft Business Solutions. Dr. Nygard is a member of a Greater Fargo-Moorhead Development effort to develop a technology center in this area.

The department has begun a tradition of hosting a pre-Fair breakfast for industry representatives each semester before the doors open at the Career Fair. The most recent of these was well attended and featured a short presentation on the new Industry/University Consortium initiative, spear-headed by Dr. Dean Knudson.

E. PLANNING

The fundamental strength of the Department lies in the rigor of its academic programs. The B.S. degree, in particular, is by far the most rigorous in the region. Although difficult, the programs are well supported by faculty and open opportunities for our graduates. Major future plans have been basically described elsewhere in the report, but are succinctly summarized as follows:

- In research and within graduate programs, strengthen and expand in network security, information assurance, bioinformatics, and software engineering,. Continue to maintain excellence in core areas of computer science.
- At the undergraduate level, continue to develop a program that is a more applied alternative to the BS degree in computer science for students intending to enter the job market with a bachelor's degree. The program would expand existing elements of software engineering and information systems.
- Improve the quality of M.S. and Ph.D. students while reducing the total number of graduate students We hope to have 100 - 120 oncampus and 40 - 70 distance education graduate students within five years.
- Diversify funding sources and the number of faculty receiving external funding
- Continue to foster international programs, such as the ones underway with China, Egypt and India.
- Expand departmental research funding and reputation
- Take steps to become a designated Center of Excellence in Information Assurance and Security. This effort has been delayed due to our difficulty in retaining faculty in this area which is experiencing enormous demand.

F. Enrollment and FTE Data

Student Credit Hours and FTEs Generated

	2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
	Credit hours	FTE	Credit hours	FTE	Credit hours	FTE	Credit hours	FTE	Credit hours	FTE
100-200	8468	10.59	9128	11.42	8911	11.14	9458	11.82		
300-400	2172	3.99	2638	4.85	2697	4.96	3031	5.57		
600-700	1743	6.05	2005	6.96	2004	6.96	2253	7.82		
TOTAL	12383	20.63	13773	23.23	13612	23.06	14742	25.22		

SUMMER II SCHEDULE 2010

COURSE HOURS	CLASS TITLE	INSTRUCTOR	ENROLL	STUDENT CREDIT
741	Algorithm Analysis	V. Ubhaya	11	3
774	Topics of Digital Enterprise	K. Nygard	25	3
793	Special Topics – 6 sections	Faculty	6	3
797	Master Paper	Faculty	0	1-10
797R	Master Paper – <i>cont registration</i>	Faculty	2	R
798	Master Thesis	Faculty	5	1-10
798R	Master Thesis – <i>cont registration</i>	Faculty	2	R
799	Doctoral Dissertation	Faculty	13	1-15
799R	Doctoral Dissertation – <i>cont registration</i>	Faculty	2	R

FALL SEMESTER SCHEDULE
2010

COURSE HOURS	CLASS TITLE	INSTRUCTOR	ENROLL	STUDENT CREDIT
114	Microcomputer Packages	K. Kambhampaty	55	3
114	Microcomputer Packages	Tarun Garg	54	3
114	Microcomputer Packages	Sudheer Gadiparthi	54	3
114	Microcomputer Packages	Manish Singh	55	3
114	Microcomputer Packages	Lisa Bender Lacher	54	3
114	Microcomputer Packages	Ritika Sahni	55	3
114	Microcomputer Packages	Dana Johnson (Cont Edu)	78	3
116	Business Use of Computers	Viabhav Anu	55	4
116	Business Use of Computers	Judi Novotny	54	4
116	Business Use of Computers	Aaron Marback	56	4
116	Business Use of Computers	Reshma Hegde	49	4
116	Business Use of Computers	Bouchaib Falah	55	4
116	Business Use of Computers	Bouchaib Falah	55	4
116	Business Use of Computers	Richard Rummelt (Cont Ed	82	4
122	Beginning BASIC/Visual BASIC	Susbi Sharma	39	3
122	Beginning BASIC/Visual BASIC	Steve BouGhosn	37	3
122	Beginning BASIC/Visual BASIC - DCE	Daniel Aceituna	36	3
125	COBOL Programming - DCE	Amanda Schwartz	17	3
159	Computer Sc. Problem Solving	Adam Jacob	40	3
159	Computer Sc. Problem Solving	Omar ElAriss	26	3
160	Computer Science I	R. Rummelt	42	4
160	Computer Science I	O. Myronvych	44	4
160	Computer Science I	R. Rummelt	44	4
161	Computer Science II	S. Abufardeh	36	4
161	Computer Science II	S. Abufardeh	17	4
172	Intermediate BASIC/Visual BASIC -DCE	O. Myronovych	12	3
222	Discrete Mathematics	V. Ubhaya	36	3
227	Computing Fund. I	O. Myronvych	36	3
227	Computing Fund I	P. Kotala	8	3
277	Introduction to UNIX	Adam Helsene	20	3
315	System Anal & Design	G. Walia	43	3
315	System Anal & Design	P.Kotala	10	3
335	Theoretical CS I	P. Kotala	43	3
366	Files/Database System	A. Denton	68	3
372	Comparative Languages	W. Jin	41	3
372	Comparative Languages	W. Jin	29	3

373	Assembly Programming	S. Ludwig	35	3
374	Computer Organization	P. Kotala	29	3
413	Principles of Software Eng.	H. Do	18	3
453	Linear Program Networks	K. Nygard	4	3
474	Operating Systems Conc.	J. Kong	44	3
474	Operating Systems Conc.	S. Salem	19	3
477	Object Oriented Systems	W. Zhang	21	3
479	Introduction to Data Mining	S. Salem	7	3
488	Human-Computer Interaction	J. Kong	19	3
653	Linear Program Networks	K. Nygard	11	3
677	Object Oriented Systems	W. Zhang	13	3
679	Introducation to Datat Mining	S. Salem	8	3
688	Human-Computer Interaction	J. Kong	7	3
713	Software Engineering I	K. Magel	47	3
713	Software Engineering I- <i>DCE</i>	K. Magel	12	3
715	Software Req/Definition/Analys	H. Do	17	3
715	Software Req/Definition/Analys- <i>DCE</i>	K. Magel	8	3
716	Software Design - <i>DCE</i>	K. Magel	12	3
718	Software Testing and Debugging - <i>DCE</i>	K. Magel	5	3
741	Algoritm Analysis	V. Ubhaya	38	3
745	Formal Methods for Software Develop	T. King	11	3
746	Development of Distributed Systems	J. Li	9	3
759	Comp. Methods/Bioinformatics	C. Yan	5	3
765	Intro to Database Systems	W. Perrizo	43	3
783	ST/Adv Parallel Virt High-Performance	W. Perrizo	10	3
783	ST/Empirical Software Engrineering - <i>DCE</i>	G. Walia	1	3
790	Sem/Semantic Lab Technology	J. Li	9	1
790	Sem/Software Testing	Do/King	2	1
790	Sem/Educational Media	B. Slator	13	1
790	Sem/Software Engineering	K. Magel	13	1
790	Sem/Empirical Software Engineering	Walia/Do	9	1
790	Sem/ Applications of Networks	S. Salem	12	1
797	Masters Paper	Staff	27	1-10
797R	Masters Paper	Staff	39	R
798	Master Thesis	Staff	9	1-10
798R	Master Thesis	Staff	13	R
799	Doctoral Dissertation	Staff	26	1-15
799R	Doctoral Dissertation	Staff	6	R

SPRING SEMESTER SCHEDULE

2011

COURSE HOURS	CLASS TITLE	INSTRUCTOR	ENROLL	STUDENT CREDIT
114	Microcomputer Packages	Krishna Kambhapaty	57	3
114	Microcomputer Packages	Tarun Garg	55	3
114	Microcomputer Packages	Debashi Barat	55	3
114	Microcomputer Packages	Minesh Singh	56	3
114	Microcomputer Packages	Ritiki Sahni	58	3
114	Microcomputer Packages	Ririki Sahni	57	3
114	Microcomputer Packages - <i>DCE</i>	Dana Johnson	86	3
116	Business Use of Computers	Reshma Hegde	55	4
116	Business Use of Computers	Judi Nobotny	57	4
116	Business Use of Computers	Aaron Marback	56	4
116	Business Use of Computers	Viabhav Anu	55	4
116	Business Use of Computers	Bouchaib Falah	55	4
116	Business Use of Computers	Bouchaib Falah	54	4
116	Business Use of Computers - <i>DCE</i>	Richard Rummelt	77	4
122	Beginning BASIC/Visual BASIC	Damian Lampl	38	3
122	Beginning BASIC/Visual BASIC	Dan Aceituna	50	3
122	Beginning BASIC/Visual BASIC - <i>DCE</i>	O. Myronvych	44	3
159	Computer Sc. Problem Solving	Aaron Marback	39	3
159	Computer Sc. Problem Solving	Omar ElAriss	28	3
159	Computer Sc. Problem Solving - <i>DCE</i>	Adam Jacob	28	3
160	Computer Science I	R. Rummelt	43	4
160	Computer Science I	O. Myronvych	37	4
160	Computer Science I	R. Rummelt	31	4
161	Computer Science II	S. Abufardeh	42	4
161	Computer Science II	S. Abufardeh	41	4
222	Discrete Mathematics	V. Ubhaya	47	3
228	Computing Fundamentals II	O. Myronvych	31	3
316	System Testing & Maintenance	P. Kotala	29	
316	System Testing & Maintenance	P. Kotala	24	3
336	Theoretical CS II	S. Salem	42	3
345	Topics on Personal Computers	B. Slator	43	3
371	Web Scripting Language	P. Kotala	32	3
372	Comparative Prog Languages	O. Myronovych	28	3
372	Comparative Prog Languages	T. King	24	3
373	Assembly Programming	S. Srinivasan	30	3
374	Computer Organization	C. Yan	22	3
445	Software Projects Capstone	D. Knudson	32	3

459	Found/Computer Networks	Greg Wettstein	58	3
467	Algorithm Analysis	V. Ubhaya	53	3
475	Operating Systems Design	J. Kong	44	3
489	Social Implications of Comp	K. Nygard	86	3
494	Independent Study/Software Projects	K. Magel	3	3
494	Independent Study/Capstone Projects	K. Magel	1	3
659	Found/Computer Networks	Greg Wettstein	5	3
689	Social Implications of Comp	K. Nygard	16	3
713	Software Engineering I - <i>DCE</i>	K. Magel	8	3
714	Software Project Planning & Estimation	G. Walia	15	3
714	Software Project Planning & Estimat - <i>DCE</i>	H. Do	9	3
715	Software Requirements Defn & Anal.- <i>DCE</i>	K. Magel	9	3
716	Software Design	K. Magel	16	3
716	Software Design – <i>DCE</i>	K. Magel	5	3
717	Software Construction	T. King	17	3
718	Software Testing/Debugging - <i>DCE</i>	K. Magel	13	3
724	Survey/Artificial Intelligence	J. Li	32	3
732	Intro to Bioinformatics	C. Yan	10	3
747	Software Complexity Metrics - <i>DCE</i>	H. Do	4	3
765	Intro to Database Systems - <i>DCE</i>	W. Perrizo	12	3
778	Computer Networks	J. Li	9	3
779	Advanced Data Mining	W. Perrizo	7	3
783	ST/Adv. Technology in Logistics	K. Nygard	10	3
783	ST/Empirical Software Engineering	G. Walia	5	3
783	ST/Information Retrieval & Web Search	W. Jin	9	3
785	Adv Topics in Software Architecture	W. Perrizo	4	3
785	Adv Topics in Artificial Intelligence	S. Ludwig	7	3
790	Sem/Educational Media	B. Slator	16	1
790	Sem/Software Engineering	K. Magel	18	1
790	Sem/Data Mining in Science	S. Salem	6	1
790	Sem/HCI-Preserve Computing	Kong/Zhang	9	1
790	Sem/Parallel Vertical High Perform	W. Perrizo	3	1
790	Sem/Semantic Web Technologies	J. Li	2	1
793	IS/Optimization in Bioinformatics	K. Nygard	1	3
793	IS/Distributed Systems	J. Li	1	3
797	Masters Paper	Staff	33	1-10
797R	Masters Paper	Staff	39	R
798	Master Thesis	Staff	15	1-10
798R	Master Thesis	Staff	12	R
799	Doctoral Dissertation	Staff	30	1-15
799R	Doctoral Dissertation	Staff	9	R

**SUMMER I SCHEDULE
2011**

COURSE HOURS	CLASS TITLE	INSTRUCTOR	ENROLL	STUDENT CREDIT
114	Microcomputer Packages - <i>DCE</i>	P. Kotala	49	3
116	Business Use of Computers - <i>DCE</i>	R. Rummelt	44	4
122	Programming in Basic VB.NET - <i>DCE</i>	O. Myronvych	21	3
159	Computer Science Problem Solving - <i>DCE</i>	P. Kotala	23	3
469	Network Security	S. Abufardeh	1	3
473	Foundations of Digital Enter - <i>DCE</i>	K. Nygard	18	3
488	Human Computer Interaction	J. Kong	2	3
669	Network Security	S. Abufardeh	3	3
688	Human Computer Interaction	J. Kong	6	3
713	Software Engineering - <i>DCE</i>	K. Magel	4	3
714	Software Project Planning – <i>DCE</i>	H. Do	7	3
715	Software Requirements Definition - <i>DCE</i>	K. Magel	1	3
716	Software Design - <i>DCE</i>	K. Magel	1	3
717	Software Construction - <i>DCE</i>	T. King	4	3
718	Software Testng & Debugging – <i>DCE</i>	K. Magel	0	3
773	Foundations of Digital Enter	K. Nygard	26	3
724	Artificial Intelligence	J. Li	7	3

STUDENT RATING OF INSTRUCTION RESULTS 2010-2011

FALL, 2010 and SPRING 2011

Questions	VG	G	IB	P	VP	OMI T	DEPARTMENT LEVEL		
							Mean	S.D.	#R
100 TO 200 LEVEL									
1. Your satisfaction with the instruction in this course.	36.2	41.4	14.5	5.7	1.8	0.4	4.107	0.945	2144
2. The instructor as a teacher.	40.7	38.3	13.1	5.2	2.4	0.3	4.182	0.952	2144
3. The ability of the instructor to communicate effectively	33.9	37.1	19.7	5.6	3.4	0.4	4.050	0.990	2145
4. The quality of this course	29.8	44.5	18.3	5.9	1.0	0.5	4.037	0.915	2143
5. The fairness of procedures for grading this course.	48.9	37.2	9.8	2.7	1.1	0.4	4.340	0.834	2143
6. Your understanding of the course content.	35.7	42.1	16.3	3.9	1.7	0.3	4.087	0.897	2142
300 TO 400 LEVEL									
1. Your satisfaction with the instruction in this course.	37.8	40.5	15.3	3.6	2.8	0.0	4.107	0.945	2144
2. The instructor as a teacher.	45.0	36.3	13.2	3.0	2.3	0.2	4.182	0.952	2144

3. The ability of the instructor to communicate effectively	39.5	39.9	15.3	3.8	1.5	0.0	4.050	0.990	2145
4. The quality of this course	34.2	39.7	19.1	4.2	2.6	0.2	4.037	0.915	2143
5. The fairness of procedures for grading this course.	51.0	35.2	9.6	1.9	1.7	0.6	4.340	0.834	2139
6. Your understanding of the course content.	30.4	48.0	15.9	4.0	1.1	0.6	4.087	0.897	2142
600 TO 700 LEVEL									
1. Your satisfaction with the instruction in this course.	58.4	30.0	8.4	1.3	1.6	0.3	4.107	0.945	2144
2. The instructor as a teacher.	63.9	28.1	4.8	1.6	1.3	0.3	4.182	0.952	2144
3. The ability of the instructor to communicate effectively	61.0	25.8	9.7	2.9	0.6	0.0	4.050	0.990	2145
4. The quality of this course	56.1	32.9	8.4	1.9	0.6	0.0	4.037	0.915	2143
5. The fairness of procedures for grading this course.	62.9	25.8	8.1	1.6	0.6	1.0	4.340	0.834	2139
6. Your understanding of the course content.	48.4	37.1	9.0	3.2	1.9	0.3	4.087	0.897	2142

Department Employment of graduates:

Fall 2010

Graduate Teaching Assistants –

Graduate Teaching Assistant	Course	# of Students
Krishna Kambhampaty	CSCI 114	55
Tarun Garg	CSCI 114	54
Sudheer Gadiparthi	CSCI 114	54
Manish Singh	CSCI 114	55
Lisa Bender	CSCI 114	54
Ritika Sahni	CSCI 114	55
Vaibhav Anu	CSCI 116	54
Judi Novotny	CSCI 116	56
Aaron Marback	CSCI 116	56
Reshma Hegde	CSCI 116	49
Bouchaib Falah – 2 sections	CSCI 116	55 - 55
Susbi Sharma	CSCI 122	39
Steve BouGhosn	CSCI 122	37
Daniel Aceituna	CSCI 122	36
Amanda Schwartz	CSCI 125	17
Adam Jacob	CSCI 159	40
Omar ElAriss	CSCI 159	26

Fall 2010

Graduate Assistants (Graders/Tutors)

Min Chen
Debajyoti Dash
Ashok Ginjala

Nikitha Kaparathi
Sonu Sharma
Kunal Singh

Saumya Singh
Yashaswi Singh
Arjun Roy
Ibrahim Al Jsarah
Karthik Murugesan
Md Chowdhury
Khalid Alemerien
Jyotjeev Kohli
Sathya Pacbaiyapappan
Venkata Chintamaneni
Mohammad Hossain
Siva Ginjupalli
Alex Rademacher
Abhishek Agarwal

Mahesh Mahabaleshwar
Satyanarayana Daggubati
Raed Seetan
Junaid Arfeen
Anubrata Dutta
Anurag Goswami
Sonal Singh
Pallavi Roy
Arijeet Tomer
Rahul Puri
Mohammed Akour
Jingjun Zhao
Iyad Alazzam
Naha Kale

Spring 2011

Graduate Teaching Assistants –

Graduate Teaching Assistant	Course	# of Students
Krishna Kambhampaty	CSCI 114	57
Tarun Garg	CSCI 114	55
Debashi Barat	CSCI 114	55
Manish Singh	CSCI 114	56
Ritika Sahni – 2 sections	CSCI 114	58 - 57
Vaibhav Anu	CSCI 116	55
Judi Novotny	CSCI 116	57
Aaron Marback	CSCI 116	56
Reshma Hegde	CSCI 116	55
Bouchaib Falah – 2 sections	CSCI 116	55 - 54
Damian Lampl	CSCI 122	38
Daniel Aceituna	CSCI 122	50
Aaron Marback	CSCI 159	39
Adam Jacob	CSCI 159	28
Omar ElAriss	CSCI 159	28

Spring 2011

Graduate Assistants (Graders/Tutors)

Min Chen
Debajyoti Dash
Ashok Ginjala
Nikitha Kaparathi
Srinivas Amanchi
Qingrui Li
Shailaja Guduri
Anand Pandey
Arjun Roy
Karthik Murugesan
Md Chowdhury
Alex Rademacher
Sudheer Sikharam

Khalid Alemerien
Jyotjeev Kohli
Sathya Pacbaiyapappan
Manoj Madamanchi
Rami Alroobi
Siva Ginjupalli
Alex Rademacher
Rahaf Barakat
Mahesh Mahabaleshwar
Satyanarayana Daggubati
Raed Seetan
Srujan Chekuri
Anubrata Dutta

Anurag Goswami
Neha Kale
Sonal Singh
Pallavi Roy
Arijeet Tomer
Rahul Puri

Mohammed Akour
Jingjun Zhao
Iyad Alazzam
Lisa Bender
Krishna Kambhampaty

GRADUATE STUDENTS 2010-2011

Masters Students:

Aakula, Srikanth
 Agarwal, Abhishek
 Ahuja, Sarthak
 Amuge, Betty
 Annadi, Ramakanth
 Annapureddy, Anupama
 Arafeen, MD
 Bai, Shi
 Bapanpally, Pavan
 Basu, Samdip
 Bavanari, Haribabu
 Bouret, Megan
 Byrisetty, Naga
 Chakraborty, Ushashi
 Chatterjee, Arijit
 Chauhan, Anuj
 Chen, Min
 Chintamaneni, Venkata Santosh
 Chinthakayala, Krishna
 Chitraranjan, Charith
 Chowdhury, Md. Minhaz
 Dash, Debajyoti
 Dayala, Divya
 DeSoysa, Shanaka
 Dumpala, Chaitanya
 Emamian, Peyman
 Fazal, Kareemullah
 Fazal, Nazeer
 Frovarp, Richard
 Gadiparthi, Sudheer
 Ganesan, Arjun
 Garg, Bandana
 Garg, Tarun
 Ginjala, Ashok
 Ginjupalli, Siva
 Guduru, Srinivas

Gupta, Divya
 Hegde, Reshma
 Helsene, Adam
 Hensley, Joel
 Hokanson, Guy
 Jaidev, Akanksha
 Jonnalagadda, Vindhya
 Joseph, Priya
 K.C. Puja
 Kale, Neha
 Kaparathi, Nikhitha
 Kapoor, Chetan
 Kapoor, Raghav
 Kar, Angshu
 Khanchandani, Kavita
 Koganti, Nikhil
 Koluru, Sunil
 Kondamarri, Samuel
 Kondoore, Dinesh
 Kroshus, John
 Lampl, Damian
 Landin, Michael
 Lanke, Ramesh
 Liu, Chao
 Liu, Yang
 Lu, Tingda
 Maddi, Sunil
 Mahabaleshwar, Mahesh
 Mandala, Narendar
 Manori, Anshuman
 Mattaparthi, Harika
 McCulloch, Ryan
 Mudgal, Akshay
 Mukhami, Sudesh
 Murugesan, Karthiksivaram
 Nayakam, Ghanashyam

Olson, Nathan
Pachalyapparn, Sathya
Pachva,. Srikar
Padmanabhan, Ganesh
Pandey, Shivendushital
Param, Sowjanya
Paturu, Suresh
Phadke, Swapna
Piehl, Matthew
Podagatlapalli, Chaitanya
Poreddy, Sandeep
Pradeep Amar
Radermacher, Alex
Raidu, Venkata
Rehman, Sana
Sahni, Ritika
Samaraweera, Shaminda
Sambaraju, Sharath
Saxena, Kaustubh
Schaefer, Christopher
Sen, Sourya

Sharma, Ranjana
Sharma, Sonu
Sharam, Susbi
Sikharam, Sandeep
Singh, Saumya
Singh, Yashaswi
Singh, Sonal
Singh, Manish
Sundaram, Anita
Suravarapu, Vijay
Teotia, Ashish
Thapa, Birendra
Tirupathi, Phani
Tiwari, Shweta
Vaidya, Pramesh
Vanteru, Siva
Vellaswamy Chelaiah, Ganesh Kumar
Wang, Yan
Yadav, Asha
Yarram, Vishnu

SOFTWARE ENGINEERING MASTERS

Bawa, Nadeept –MSE
Perez, Paulo - MSE
Schauer, Jesse - MSE
Zeng, Lieming - MSE

Haque, Kazi – CERT

Abeyratne, Keith
Addy, Sydney
Agbee, Adodo
Anu, Vaibhav
Bhogadi, Manu
Bhowmick, Dibakar
Carlson, Ryan
Chauhan, Anuj
Chhina, Ramneet
Christeson, Eric
Dutta, Anubratna
Elhassani, Abdelhadi
Fonseka, Nilukshi
Goswami, Anurag
Gronneberg, Bethlehem

Gunderson, Karl
Jacobs, Adam
Jahan, Farzana
Katiyar, Arti
Kohli, Jyotjeev
Kunwar, Ishita
Kwete, Yannick
Limke, Jed
Minot, Scott
Mohpal, Aditi
Mohpal, Aditya
Murugaiyan, Elangovan
Nayak, Gaurav Kumar
Njos, Robby
Novotny, Judi
Pandey, Anand
Pillarikuppam, Naresh
Potla, Yaswanth
Pradhan, Basudha
Puri, Rahul
Rajendran, Senthilkumar
Roseen, Jeremy

Roy, Pallavi
Sarker, Mridula
Sathiaseelan, Anu Evelyn
Sharma, Aman
Singh, Kunal
Srichinta, Pallavi

Srivastava, Arun
Thalloj, Pramodh
Tomer, Avijeet
Wijeyaratne, Pubudu
Xia, Xiaojun

PhD STUDENTS:

Al-Azzam, Omar
Aljarah, Ibrahim
Al-Nimer, Loai
Bani Taan, Shadi
Bengfort, Benjamin
Borchert, Otto
Bou Ghosn, Steve
Brewer, James
Chakravarthi, Satheesh
Cheng, Wen
ElAriss, Omar
Gagneja, Kanwalinder
Ganti, Annaji
Hossain, Mohammad
Kambhampaty, Krishnan

Kandah, Farah
Konar, Prosenjit
Kotala, Pratap
Li, Qingrui
Loree, Paul
Marback, Aaron
Pikalek, Jonathan
Ranganathan, Prakash
Roudaki, Amin
Roy, Arjun
Seetan, Raed
Wu, Jiafei
Yang, Ying
Zhang, Ming
Zhao, Jingjun

SOFTWARE ENGINEERING PhD

Aceituna, Daniel
Akour, Mohammed
Alazzam, Iyad
Alemerien, Khalid
Altahlawi, Amro
Aijarah, Ibrahim
Asgar, Talukdar

Barakat, Rahaf
Falah, Bouchaib
Kaliki, Srikanth
Lacher, Lisa
Rummelt, Richard
Salam, Tareq
Schwartz, Amanda

Computer Science Department Enrollment Data

AY	Enrollment Fall 2010					Total UG	Total Grad	Total Degrees Fall 10/Spring 2011		
	1st FR	2nd SO	3rd JR	4th SR				BS/BA	MS Comp Sc. Software	PhD Comp Sc. Software
2010-2011	68	63	55	74		267	210	38/2	26/6	0/1
2009 - 2010	71	55	48	79		253	197	38/2	20/6	1/1
2008-2009	66	54	44	84		248	187	40/3	17/4	1/1
2007-2008	65	43	50	84		242	174	43/1	33/3	4/2
2006-2007	47	46	36	68		197	148	32/2	19/0	3/2
2005-2006	50	30	46	64		190	128	37	11/1	5/0

Graduate Degrees Awarded, 2010-2011

Summer Semester, 2010	Degree
Dischinger, Benjamin	MS, CS
Kondakindi, Swathi	MS, CS
Loree, Paul	MS, CS
Raavi, Sandeep	MS, CS
Sharma, Mayukh	MS, SE
Voorhees, William	MS, CS
Fall Semester, 2010	Degree
Aakula, Srikanth Goud	MS, CS
Bapanpally, Pavan	MS, CS
Bengfort, Benjamin	MS, CS
Bhowmick, Dibakar	MS, SE

Carlson, Ryan	MS, SE
Debilt, Dan	MS, SE
Gupta, Divya	MS, CS
Hensley, Joel	MS, CS
Hokanson, Guy	MS, CS
Manori, Anshuman	MS, CS
Mattaparthi, Harika	MS, CS
Potla, Yaswanth	MS, CS
Raidu, Venkata	MS, CS
Sarkar, Mridula	MS, SE
Samaraweera, Shaminda	MS, CS
Suravarapu, Vijay	MS, CS
Thalhoji, Pramodh	MS, SE
Vanteru, Siva	MS, CS
Wang, Yan	MS, CS
Spring Semester, 2011	Degree
Amaran, Pradeep	MS, CS
Annapureddy, Anupama Reddy	MS, CS
Lu, Tingda	MS, CS
Maddi, Sunil Reddy	MS, CS
Pandey, Shivendushital	MS, CS
Sehgal, Ankita	MS, CS
Sundaram, Anita	MS, CS
Falah, Bouchaib	PHD, SE
Lua, Chin	PHD, SE

H. DIVERSITY

The Department has always had a significant international representation, particularly people of color from the Far East and the Indian sub-continent, principally in the graduate program. Recently this has extended to the undergraduate program as NDSU has started to offer twinning programs (start in China, Egypt or India and spend the last year or two years at NDSU) at the undergraduate and graduate levels. We hope to expand these programs in Egypt (with which we have a faculty-student exchange) and China within the next few years.

The Department has worked hard to improve the representation of women and other disadvantaged groups in our faculty and student body. The lack of women students is a national problem which has become a priority for the national organizations in Computer Science. Our approach has been to increase female representation on our faculty to serve as role models and mentors for female students. We have been very successful in this effort. Five of our last ten faculty hires have been women. Until recently we had five female Assistant

Professors. The first of this cadre earned tenure and promotion to Associate Professor during 2008-09.

Starting in 2008-09, the Department encouraged these female professors to try to increase the representation of women within our student population. This effort will have two components:

- Asking each female faculty member to assist with developing relationships with area high school;
- Forming a committee of female faculty to review our practices and curricula for anything which might make the programs less attractive to women than they should be. This Committee started to meet during 2009-10, but has not made a report.

We realize this is a long term effort. While it is too early to measure success, we are encouraged by our modest initial progress. We hope to expand our outreach efforts during the coming years.

Other disadvantaged groups whose representation in our programs should increase include Hispanics, Native Americans, and African Americans (domestic people of color). As mentioned above, the representation of international students of color, particularly from Asia, and especially in our graduate programs and on our faculty, is well above the national percentage of these groups in the United States population.

The Department has tried to reach out to Native Americans in North Dakota through a variety of organizations. We have had little success. We will continue to try. With the help of the National Science Foundation, the Department has formulated a more comprehensive strategy for attracting disadvantaged students.

The NDSU CoCISE (Collaborative for Scholarships in Computer, Information Sciences and Engineering) is for students majoring in Computer Science, Computer Engineering, Management Information Systems or Pre-Management Information Systems. CoCISE is a scholarship program designed to provide scholarship support and academic mentoring to talented and financially disadvantaged computer engineering, computer science, and management information systems students at NDSU. The CoCISE program is funded by a four-year grant from the National Science Foundation. The state objectives of the program include: "Increasing the numbers of women and minority group students, particularly Native Americans, in the computer engineering, computer science, management information systems, and pre-management information systems programs.

A complete list of CoCise awards can be located above, under "Special Initiatives". This four year, \$500,000 program has just entered its fourth year. We expect to apply for a new grant through this program.