S E P T E M B E R 2 0 1 1

Microsoft VP Returns to Alma Mater to Inspire Students

Article by Jennifer Boyett

When Terri Jordan graduated from the University of Central Arkansas with a bachelor's degree in computer science in 1985, she never imagined that 26 years later she would be living in Seattle, Wash., working for "one of the most amazing technology companies in the world."

Jordan, a native of Morrilton, Ark., has worked as vice president of technology, retail stores for Microsoft since 2009. Before that she spent nearly three years at eBay as vice president of technical operations, and that was after working her way to the Presidency of Wal-Mart Information Systems Division where she began as an entry-level programmer.

On Friday September 9th, Jordan returned to her alma mater to discuss her career path with UCA computer science students and faculty.

Because technology is rapidly evolving, Jordan told students, "What you're learning in class now is a foundation for new things *(continued)*

Save the Date!

Arkansas INBRE Conference
October 21 - 22

Mid-Terms
Grades due by Noon
October 19

Fall Break
October 20 - 21

Chalktalks
October 27
X-Period, LSC 100

Victor Sheng Receives Best Paper Award

Dr. Victor Sheng, Assistant Professor of the Computer Science Department, received the best paper award in the 11th Industrial Conference of Data Mining ICDM 2011, which was held in New York, August 30 to September 3, 2011. (Information about the conference can be found at http://www.data-mining-forum.de/). Dr. Sheng's paper was selected to be the final winner from three nominated papers. All nominated papers made significant contributions to the field of data mining. The final selection was made after the presentations of the nominated papers and the following discussions.

Dr. Sheng's research interest is centered on data mining, machine learning, and related applications. Over the past years, he has made significant contributions to data preprocessing, data acquisition, cost-sensitive learning, *(continued)*

Microsoft Vice President Terri Jordan returned to her alma mater last Friday to visit with UCA computer science students about careers in information technology.

(continued) that you'll be doing in the workplace in two-to-five years." When she began studying computer science in the mid-1980s, Jordan programmed on punch cards using an early computing language called Fortran (Formula Translation).

Today, Jordan operates as the chief information officer for Microsoft's retail stores, a new operation that was launched two years ago. There are 12 stores located along the west coast and in other major metropolitan areas such as Houston and Atlanta. Three more stores are under construction now and expected to open for the holiday shopping season and 75 stores are scheduled to open in the next three years.

In addition to her successful career, Jordan also discussed what it was like being a female in a male-dominated field. She said it is disappointing that the number of females in computer science is decreasing. "We try to make sure we have diverse candidate pools, but it can be difficult," she said. "The thing about corporations is you need diversity, both in gender and other demographics, because it will make for a better product at the end of the day."

In conjunction with Jordan's visit, the UCA Foundation announced the endowment of the Computer Science Scholarship Fund, which will be used to recruit a diverse group of students to the computer science program. Students will be able to apply for the Computer Science Student Scholarship in the spring. It will be awarded for the 2012-13 academic year.

Dr. Chenyi Hu, Chair of the Department of Computer Science, said, "While we are very proud of our past accomplishments, we are also facing a challenge to recruit and retain high-quality students especially female students. I am so grateful that we have the opportunity to endow this scholarship, which will help us bring more diverse students to the field."

The scholarship was endowed with approximately $30,000 from a larger donation made a decade ago by the Conway Development Corporation in order to help UCA build a strong computer science department.

"The Conway Development Corporation is very proud of the accomplishments of UCA's Computer Science Department," said CEO Brad Lacy. "It is critical for us to have a strong department as the City of Conway continues growing and recruiting knowledge-based industries."

Through the assistance of private gifts like the one from Conway Development Corporation, the Computer Science Department has thrived. In 2004, the department began offering a master's degree program, which has produced about 30 graduates to date; the department has been accredited by the Accreditation Board for Engineering and Technology (ABET) since October 2006; and the strong faculty that have been recruited and retained have worked diligently with students to earn the department a national and international reputation for excellence.

Earlier this year, the Computer Science Department's students' software design team placed third nationally in the 2011 Microsoft Imagine Cup competition; 100 percent of the manuscripts co-authored by 12 students and their faculty mentors were published by the 2011 International BIOCOMP Conference (overall acceptance rate was less than 23 percent); and a paper authored by a UCA Computer Science faculty member won the best paper award at the 2011 Industrial Conference of Data Mining, an international meeting. The National Science Foundation also has selected the UCA Computer Science Department as a host site for a Research Experience for Undergraduates program from 2011-2013. This program is the first of its kind in the computer science field for the state of Arkansas.

(Dr. Sheng continued) and mining user generated data. All of these topics have arisen from attempts to use data mining and machine learning techniques for real-world applications, where costs and benefits must be taken into account.

The title of his award winning paper is "Fast Data Acquisition in Cost-Sensitive Learning", which is motivated by the questions from collaborators. Data acquisition is the first and one of the most important steps in many data mining applications. It is a time consuming and costly task. Acquiring an insufficient number of examples makes the learned model and future prediction inaccurate, while acquiring more examples than necessary wastes time and money. That is why collaborators always ask how many examples are needed. Thus it is very important to estimate the number examples needed for learning algorithms in machine learning.

In his paper, Dr. Sheng proposed an intelligent data acquisition strategy within a simple on-line cost-sensitive framework. This intelligent data acquisition strategy is able to estimate the number of examples needed in each acquisition and acquire them simultaneously. It reduces significantly the time required for data acquisition and model building. This intelligent data strategy is also able to tell what kind of examples are the best for improving the model performance. This significantly reduces the total cost due to misclassification, data acquisition arrangement, computation, and examples acquired costs. Thus, the data-mining project can be deployed sooner.

Dr. Sheng also has won several awards for his outstanding research, such as the best paper award runner-up from the top data mining conference, ACM SIGKDD International Conference on Knowledge Discovery and Data Mining 2008, NSERC Postdoctoral Fellowship, and NSERC graduate scholarship. His current research on data quality improvement and data mining has received attention from world-class companies such as IBM, Google, Microsoft, and Siemens. In 2008, IBM provided $200,000 to support this research. Very recently, the National Science Foundation awarded him a research grant in the amount of $174,942 for the next two years and $85,886 pending in the third year.

UCA Awarded Complete College America Grant Funds

In August 2011, the University of Central Arkansas was selected to become one of four universities from Arkansas to participate in a national project Complete College America (CCA). The grant awarded $1 million to Arkansas, which will be shared among four universities and seven community colleges across the state. The project, which originated through the Arkansas Department of Higher Education, proposes to transform remedial education at universities and colleges. The grant will focus on more efficient options for providing remediation in literacy and mathematics for students allowed to enter the university having ACT scores below the required 19. The premise of the grant is that campuses – both two year and four year – across the state will seek to develop options for the required remediation while enrolled in credit-bearing courses. Dean Steve Runge, Dr. Ramesh Garimella, Dr. Charles Watson, and Dr. Uma Garimella represent the College of Natural Sciences and Mathematics on this project. Dr. Julia Winden Fey and Ms. Lisa Christman represent mathematics faculty from the University College.

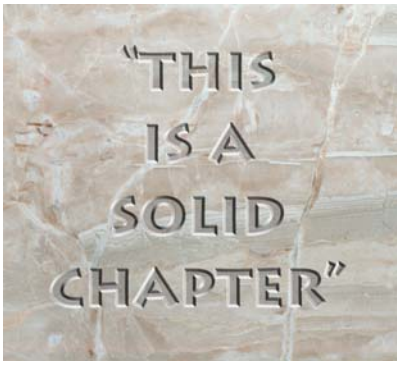
The focus of such remediation in *(continued)*

Charles Watson

(CCA Grant Funds continued) mathematics is linked to students' options for completing required remediation in mathematics while enrolled in other regular credit-bearing courses. In the spring 2011, the Mathematics Department (with representation from University College) conducted research to determine which course content or topics seemed to emerge as essential for students to master as part of the general education requirement. Dr. Charles Watson chaired this team. From the work of this group, the Mathematics Department endorsed content revision of the current Math 1360 (Math in Society), which is being piloted in two sections during the Fall 2011 semester. During the development phase of the project, the team will explore a more modular approach to general education mathematics courses and linking those modules to required remediation. Funding for the CCA grant for UCA is expected to be between $75,000 and $100,000 over an 18-month period.

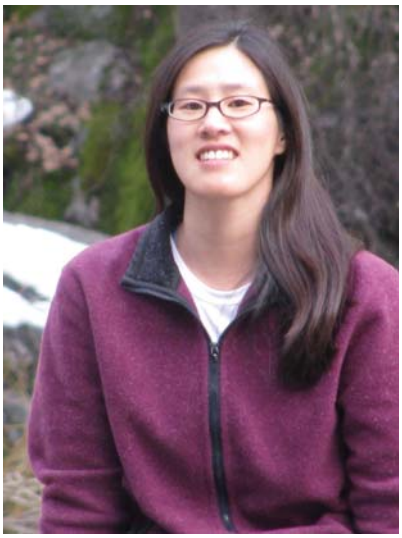
ACS Receives Honorable Mention Chapter Award

UCA's American Chemical Society Student Chapter has received an Honorable Mention Chapter Award for its 2010-2011 activities from the ACS Society Committee on Education. To earn this award the students had to demonstrate in an annual report their efforts to promote chemical education on departmental, college, university, and community levels. Additionally, the chapter had to indicate its efforts in promoting a unified chapter through



chapter meetings and social activities. The report was submitted and reviewed by three faculty advisors that provided helpful feedback to the group. The overall comments from the reviewers stated: "This is a solid chapter. They are active in attending meetings and in departmental service. This chapter is on the cusp of taking a significant step forward." The chapter officers plan to continue these efforts and take the chapter to new heights for the 2011-2012 academic year.

UCA Researcher to Help with Study of New Orleans Rebuilding



Dr. Jennifer M. Wang, a new research associate in the Department of Biology, has received a grant in the amount of $34,996 from the Mississippi-Alabama Sea Grant Consortium to investigate the effects of nonprofit assistance on home rebuilding after Hurricane Katrina. Dr. Wang and her co-PI Dr. David T. Mitchell, assistant professor of economics in the Dept. of EFIRM, College of Business, are partnering with a nonprofit organization, the Phoenix of New Orleans, to apply spatial and econometric analysis to a five-year dataset of rebuilding and recovery in the Mid-City district of New Orleans. In addition to providing substantive research on spatial spillover effects and the optimal spatial allocation of resources, the researchers will produce a guidance document for nonprofit, public, and private organizations participating in redevelopment and recovery projects.

Mathematics Graduate Teaching Assistants Positioned to Make Their UCA Students Successful in the Classroom

On August 17, 2011 the Department of Mathematics welcomed fifteen graduate teaching assistants (GTAs), seven returning and eight new, to become part of the instructional staff of the department. Returning GTAs teach Business Calculus (Math 1395) or College Algebra (Math 1390) and all new GTAs teach College Algebra. This new cohort of students includes four international students from China, Côte d'Ivoire, Nepal and South Korea. All GTAs participated in a two-day orientation sessions to receive pre-class training. Dr. Charles Watson, and Ms. Loi Booher coordinated the sessions.

The training program included a wide array of topics such as organizing and scheduling for instruction, effective instructional strategies, content refresher, introduction to the on-line homework manager, and a session on what to do during the first day of class. Video excerpts from previous lessons were used to provide pointers as to classroom management and effective questioning strategies. The Mathematics Department's annual induction program is credited with the overall success rate of approximately 75% of the students in College Algebra where the overall success rate across the United States is approximately 50%.

Dr. Watson is the coordinator for College Algebra and supervises all GTAs who teach it. Ms. Booher supervises GTAs who teach Business Calculus. Both Watson and Booher conduct weekly meetings with the GTAs to provide opportunities for self-reflection and growth in teaching strategies. The supervisors provide constructive criticism and offer help in trouble-shooting problems, should there be a need.

According to Dr. Ramesh Garimella, Chair of the Department of Mathematics, on the average the department offers about 25 sections of Math 1390 and six sections of Math 1395 per semester. Dr. Garimella says, "our investment in the personal and professional development of GTAs through these orientation sessions and weekly meetings is paying off. The student success rate in the courses taught by GTAs is comparable to the courses taught by the full time faculty members." The Department offers a Masters of Arts in Mathematics Education and a Masters of Science in Applied Mathematics. For more information about graduate programs in mathematics, please contact the Department of Mathematics at 501-450-3147.

From Left to Right: Front Row- Ramesh Garimella (Faculty), Alex Gramling (MA), Sang Lee (MS), Sarah LeMaster (MA), Kritika Chhetri(MA), Xeiowei Hu (MS), Brady Sharp (MS); Back Row : Charles Watson (Faculty), Jonathan Taylor (MS), Kasey Evans (MS), Martha Watkins (MA), Rossaland Phillips (MS), Kasey Ballard (MA), Ezechiel Degny (MS), Loi Booher (Faculty) and Crystall Spellman(MS).

UCA Students Participate in EcoFest Activities

On September 10 students from the Biology and Chemistry departments participated in the 2011 EcoFest at Laurel Park in Conway. EcoFest is organized by independent members of the community in partnership with the City of Conway. It is an interactive, educational festival with the goal of helping people to understand the environment that we live in. There was a record turnout this year with lots of fun and education.

ACS at Ecofest 2011

UCA's American Chemical Society group volunteered at Ecofest. Venusa Phomakay, Jordan Wilkerson, Katie Primm, and Ashley McKinney helped attendees make a memory game and officiated a relay race relating to the recycling of polymers. The memory game involved kids coloring recycling symbols, gluing the symbols to construction paper and cutting the symbols into squares to make the game. The relay race involved teams of kids identifying the recycling number on a series of plastics, running to the opposite end of the playing field and matching it to the appropriate symbol and polymer name, and then running back and tagging the next player in line. This continued until a team won by identifying the polymers correctly. The children that attended the booth had a fantastic time learning about recycling.

Biology at Ecofest 2011

UCA's Biology Department was well represented at the 2011 Conway Ecofest. Faculty put together several UCA tents to show critters of all sorts and environmental projects within the college. There were 13 graduate students, 4 undergraduate students, and 2 student alums manning our booth.

AETN Family Day

On Saturday, September 17, 2011, the Arkansas Educational Television Network (AETN) hosted AETN Family Day – a free public event to encourage community spirit through family-friendly fun and entertainment, educational activities and community service campaigns. The Biology Department partnered with AETN providing tours of the Jewel Moore Nature Reserve. Biology graduate student Kyle Hurley lead the tours with Chuck Dovish, host of "Exploring Arkansas" for about 50 people throughout the day.

Chuck Dovish (left), Kyle Hurley (Right)