



Dr. Mladen Vouk, pictured here with Bob Carrigan, CEO of IDG Communications Worldwide, and Chairman of the Chairman's Committee at the Computerworld Honors Program, accepts the medal.

## NC State Recognized as a 2009 Laureate for Cloud Computing Services

The Computerworld Honors Program recognized NC State University as a 2009 Laureate in the Education category for its VCL-based Cloud Computing Services case study in a medal ceremony at the Andrew W. Mellon Auditorium in Washington, D.C., on June 1, 2009.

Dr. Mladen Vouk, professor, computer science department head, and associate vice provost for information technology at NC State, accepted the medal on behalf of the university.

Each year the Computerworld Honors Program recognizes people, organizations and institutions from around the world whose visionary application of information technology promotes positive social and economic progress.

***This is the second time NC State has won this award.***

The university was honored as a 2007 Laureate in the category of education for its Virtual Computing Laboratory (VCL) project.

NC State has been researching VCL open source technology since 2003, and

operating on-demand cloud computing services since 2004. VCL ([vcl.ncsu.edu](http://vcl.ncsu.edu)) was jointly developed by College of Engineering, Office of Information Technology, and Computer Science.

VCL-based cloud computing was designed to deliver over-the-network on-demand and scheduled services that can give students access to advanced educational materials, select software applications, and comprehensive computing and storage resources. Only requiring an Internet connection, students and teachers can remotely access a desired set of applications and educational programs over the Web using a PC, laptop or Internet-enabled device anywhere, anytime. Access to these applications, stored in a virtual cloud, is on-demand and offers a range of options from single desktops to classroom-sized labs, to collections of servers, to high-performance computing services.

The NC State Cloud Computing Services case study will be included as part of the Global Program Archives on six continents and in the permanent research collections of over 350 distin-

guished national archives, museums and institutions of higher learning. [more](#) ▲

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**Computer Science**  
**NC STATE UNIVERSITY**

## Inside the Fight for Privacy Protection

*One computer scientist gets everyone involved.*

Coming from a family of physicians, **Dr. Annie Antón** knows that protecting privacy is important.

The professor of computer science at NC State is a spokesperson for the cause, as she has become an internationally recognized expert on privacy policy in software systems. She's breaking new ground in the field by bringing legal and technical minds together to tackle complex privacy policies, the technology that supports them, and the practices that can lead to security breaches and data leaks.



*"There's no way we can solve this problem by just sitting around in our offices with other computer scientists," she said.*

*"You have to talk with people in other fields. With lawyers. With lawmakers. With chief security, privacy and information executives in companies."*

Antón's research began with analyzing privacy policies. This led to investigating data breaches and suggesting ways to prevent them. But now she's taking it further, bringing these issues to light by speaking at panels and workshops and even testifying before Congress. She works to make information more secure by educating lawmakers and policy writers and trying to reduce the complexity of privacy policies so people can actually understand them. She's pushing to hold companies accountable for protecting the personal information in their possession and urging them to reduce vulnerabilities in the software systems that handle it.

At NC State, she's seeking the establishment of the Institute for Science, Technol-

ogy and Engaged Public Policy (In-STEPP) to apply science, technology and engineering to public policy and to encourage university-wide communication that will extend to national interaction.

But all these endeavors start with changing mindsets and emphasizing multidisciplinary approaches.

"We're slowly getting into the right circles and working to get lawmakers to understand – when you're writing law, if it governs information systems and you expect us to implement software – we need to work together." [more](#) ▲

## Lester Elected Editor-in-Chief of the *International Journal of Artificial Intelligence in Education*

**Dr. James Lester**, associate professor of computer science, has been elected Editor-in-Chief of the *International Journal of Artificial Intelligence in Education*, the premiere journal in the field of intelligent tutoring systems. The editorship will be for a six-year term beginning in 2009. [more](#) ▲

## New Tool Helps Researchers Identify DNA Patterns of Cancer, Genetic Disorders

A new tool will help researchers identify the minute changes in DNA patterns that lead to cancer, Huntington's disease and a host of other genetic disorders. The tool was developed at NC State University and translates DNA sequences into graphic images, which allows researchers to distinguish genetic patterns more quickly and efficiently than was historically possible using computers.

**David Cox**, a Ph.D. student in computer science at NC State, devised the "symbolic scatter plot" tool to provide a visual representation of a DNA sequence.



Cox explains, "The human visual system is more adept at identifying patterns, and differentiating between patterns, than existing computer programs such as those that try to identify repetitions of DNA sequences." In other words, the naked eye sees patterns better than computers can.

Cox, who is advised by **Dr. Alan Tharp**, professor of computer science, presented the research in July at BIOCAMP '09. The research was co-authored by Dr. Lina Dagnino of the University of Western Ontario. [more](#) ▲

## Impact Bytes

**Dr. Annie Antón**, professor of computer science, has been named one of ten distinguished academics to the non-resident Fellows Program for the Center for Democracy & Technology (CDT). Antón is the only non-lawyer named to the program. [more](#)

**Dr. Robert D. Rodman**, professor of computer science, has been elected to the American Academy of Forensic Sciences (AAFS) as an associate member in the Engineering Sciences section. [more](#)



**Dr. Munindar P. Singh**, (above) professor of computer science, has been honored for his body of work by the Institute of Electrical and Electronics Engineers, which recently voted him an IEEE Fellow. [more](#)

Alumnus **Mark Wyatt** (B.S. '80) and his wife Robin, have finalized gift plans to establish the **Mark and Robin Wyatt Scholarship Endowment**, a gift valued in excess of \$500,000. [more](#)

**Dr. Tao Xie**, assistant professor of computer science, has received an NSF Faculty Early Career Development (CAREER) Award valued at \$425,000. Xie becomes the department's 19th NSF CAREER Award Winner! [more](#)

**Dr. R. Michael Young**, associate professor of computer science, has been named 2009 Research Director for the Triangle Game Initiative. [more](#)

Ten faculty were selected to receive 2009 IBM Faculty Awards totaling over \$365,000. Winners of the highly competitive awards include **Drs. Kemafor Anyanwu, Rada Chirkova, Patrick Dreher, Helen Gu, Christopher Healey, Xiaosong Ma, Peng Ning, Mladen Vouk, Laurie Williams and Tao Xie.** [more](#) ▲

## New Tool Improves Productivity, Quality When Translating Software

Researchers in the Department of Computer Science at NC State University have developed a software tool that will make it faster and easier to translate video games and other software into different languages for use in various international markets – addressing a hurdle to internationalization that has traditionally been time-consuming and subject to error.

If you want to sell or promote a software application in a foreign market, you have to translate it into a new language. That used to mean programmers would have to pore over thousands of lines of code in order to identify every little string that relates to what appears on a user's screen. This could be incredibly time consuming and, even then, there was always room for human error. Programmers have to be certain they are not replacing code that governs how the program actually works.

But now researchers from NC State and Peking University have created a software tool that identifies those pieces of software code that are designed to appear on-screen and communicate with the user (such as menu items), as opposed to those pieces of code that govern how the program actually functions. Once those "on-screen" pieces of code have been identified, the programmers can translate them into the relevant language – for example, translating the tabs on a toolbar from English into Chinese.



"This is a significant advance because it saves programmers from hunting through tens of thousands of lines of code," says **Dr. Tao Xie**, an assistant professor of computer science at NC State (pictured above).

*"Productivity goes up because finding the 'need-to-translate' strings can be done more quickly. The quality also goes up, because there is less chance that a programmer will make a mistake and overlook relevant code."*

As an example of how the software tool can identify errors and oversights made by human programmers, Xie says, the researchers found 17 translation omission errors when they applied the software tool on a popular online video game. The errors were then corrected.

The research was supported in part by the National Science Foundation and the U.S. Army Research Office. The research was presented in May 2009 at the International Conference on Software Engineering in Vancouver, Canada, and published in the proceedings of the conference. [more](#) ▲

## "Top Pick" in IEEE Software's 25th Anniversary Issue

**Dr. Laurie Williams**, associate professor of computer science at NC State University, has been honored by having one of her co-authored papers selected by *IEEE Software's* editorial and advisory boards as one of its "25th Anniversary Top Picks" for full-length, peer-reviewed articles. The article, "Strengthening the Case for Pair Programming," was co-authored by Robert R. Kessler, Ward Cunningham, and Ron Jeffries, and appeared in the July/August 2000 issue of *IEEE Software*. [more](#) ▲



## Remembering Dr. Robert E. Funderlic (1937 - 2009)

**Dr. Robert E. Funderlic**, former Department Head from 1986 to 1992, and Professor Emeritus for the NC State University Computer Science Department, lost a long and courageous fight with cancer on September 5, 2009.

"Bob Funderlic was a leader, a visionary, an award-winning educator, and an internationally recognized numerical analyst," said Dr. Mladen A. Vouk, current computer science department head. "He provided critical leadership during the formative years of the Department, and he laid the foundations of the department we know today." [more](#) ▲



## Collins Family Makes Transformational Gift Plans



Computer Science alumnus **Keith Collins** (B.S. '82), and his wife **Margaret** (B.S. Horticulture '79) have recently finalized gift plans with an estimated value in excess of \$2.5 million that will benefit faculty and students in both the College of Engineering and the College of Agricultural and Life Sciences.

When fully in place, the gift plans will create several named endowments to benefit the NC State Department of Computer Science, including the **Collins Distinguished Professorship in Computer Science**, intended to help the computer science department attract top talent to study ways to use data management and high-performance computing in development of large-scale business analytic solutions, and the **Collins Leadership and Computational Excellence Scholarship in Computer Science**, to be awarded to top students who have demonstrated strong aptitude and interest in research and mathematics. The gifts will also establish the **Collins Computer Science Discretionary Fund**, an endowment which will provide the department head additional resources to recruit students and faculty, provide support for student organizations, support lecture series and make faculty awards, among other initiatives.

In addition, the Collins' gift plans will establish the Margaret "Margie" P. Collins Fund for the College of Agricultural

and Life Sciences, which will provide funds to support the JC Raulston Arboretum, the CALS Ambassador program, and CALS student scholarships.

The gifts represent the largest planned gifts ever documented from an NC State computer science alumnus. [more](#) ▲

## Williams Wins ACM's 1st SIGSOFT Influential Educator Award



**Dr. Laurie Williams**, associate professor of computer science, (shown with William Griswold, chair of ACM SIGSOFT) has been selected as the inaugural winner of the Association for Computing Machinery (ACM) **2009 SIGSOFT Influential Educator Award**. In being recognized for her significant and lasting contributions to software engineering and computer science education, [Williams](#) was particularly singled out for her outstanding work in propagating pair-programming as a widely adopted educational practice, her work in establishing an Open Seminar environment for Software Engineering, and in creating an Agile Software Engineering curriculum. ▲

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Copyright 2009. This document was produced by the NC State Department of Computer Science, with the financial support of the ePartners Program and the NC State Engineering Foundation, Inc.

No state funds were used; 1,000 copies of this document were printed on recycled paper at a total cost of cost of \$540.