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MESSAGE FROM THE DEAN

## Pace Awarded NSF Grant

by Dr. Susan M. Merritt



We are pleased to announce that Pace University has been awarded a grant of \$150,000

by the National Science Foundation (NSF) for "High Performance Network Connections for Science and Engineering Research - HPNC: Internet 2 at Pace University." Dean Susan M.

Merritt, principal investigator, with co-investigators Dr. Dennis Anderson, Ms. Jean Coppola and Dr. Francis Marchese, won the grant, which is effective September 15, 2001, extends over two years and enables Internet 2 connectivity for the whole University. Internet 2 (I2) is a new national high-performance network initially intended for research, but with transformative potential for new ways of delivering and structuring teaching and learning.

The successful proposal was required to show a plan for introducing the Internet 2 network, developed by Mr. Robert Yannoccone with Ms. Jean Coppola to be implemented by January 2002, and to demonstrate that such a network was needed for existing research. Such research is underway in CSIS' Center for Advanced Media (CAM) by Dr. Francis Marchese, Chief Scientist, with projects "Collaborative Immersive Visualization" and

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## Goldman Sachs Exec Honored

by Louise P. Kleinbaum,  
Assistant Dean and Director  
of Communications

One New York Plaza, the lower Manhattan home of the Prudential Insurance Company of America, served as the setting for this year's CSIS Leadership and Service in Technology Reception. Over 250 members of the CSIS community, including faculty, staff, students, advisory board members and alumni/ae as well as friends and supporters from the IT and financial services industries, gathered together on June 11 to honor Leslie C. Tortora, CIO and Managing Director of Goldman Sachs & Co.

As CIO, Leslie Tortora heads up the firm's Information Technology Division and is responsible for its overall technology strategy and



(left to right) Provost Marilyn Jaffe-Ruiz, honoree Leslie Tortora, CSIS Dean Susan Merritt and CSIS alumni/ae association president Nancy Turbe.

technological operations. Leslie joined Goldman Sachs in 1984, became a partner in 1992, and was named managing director in 1996 and CIO in 1999. Prior to joining Goldman Sachs, she was director of technical services for General Electric. She is a graduate of Trinity College.

In the late afternoon prior to the main event, there was a small reception on the 34th floor of the Prudential site honoring CSIS's top undergraduate and graduate students who were expected to graduate soon and embark on IT careers. The prospective graduates were given the opportunity to

(continued on page 2)

“Common-Wall: A Shared Collaborative Space.” Other projects include: “Virtual Video Conferencing” (Dr. Dennis Anderson), “Scalable Application Server Technologies and Middleware” (Dr. Lixin Tao), “Pervasive Computing” (Dr. Chuck Tappert), “Enhanced Student Services for Asynchronous Distance Learning” (Dr. David Sachs and Prof. Nancy Hale) and “Virtual Community of Scholars of the Middle Ages” (Dr. Martha Driver).

As a University at the forefront of asynchronous distance education and active in Internet technology research, Pace is well posi-

tioned to contribute to further development of Internet 2 technologies, to transfer Internet 2 technologies to government, industry and the community, and to enhance the quality and availability of higher education.

Additionally, CSIS faculty have been very successful in garnering other external funding. Associate Dean David Sachs recently received \$338,784 from the Department of Education FIPSE program “Learning Anytime Anywhere Partnerships Program,” the third installment of a \$997,017 grant won in 1999. This funding enables work in student support,

student mentoring, and secure online testing directly related to the NACTEL program, the A.S. degree in telecommunications done in partnership with Citizens, Qwest, SBC Communications, Verizon, International Brotherhood of Electrical Workers (IBEW) and Communications Workers of America (CWA). The work also is extendable to all current and future asynchronous distance-education programs at Pace.

Associate Dean Dennis Anderson received \$197,084 from the NSF for the Computer Science, Engineering and Mathematics

Scholarships (CSEMS) Program for approximately 30 scholarships for eligible junior and senior students who wish to study computer science or information systems at Pace.

Dr. Paul Benjamin, chair of the computer science department in New York, won a \$296,000 grant from the Department of Energy. This grant, which is specifically for research in “Integrating Perception and Action through Local Symmetries and Invariants,” will allow the School to purchase a new robot with stereo color vision and a robotic arm. ■

## Goldman Sachs (continued from page 1)

interact with representatives from those corporations that provide substantial support for the School and are often looking to hire talented and well-prepared new graduates. Included among the companies represented were Prudential Insurance, Prudential Securities, Sprint, Keyspan Energy, Verizon, Unittech Corp. and EMC Corp.

The evening began with a lively cocktail reception generously underwritten by Prudential through the gracious efforts of Bill Friel, last year’s honoree, who is the senior vice president and CIO of Prudential Insurance. An hour into the evening, the formal program, overseen by Susan Merritt, CSIS Dean, began. She first introduced Pace University President David A. Caputo who welcomed the attendees, followed by Nancy Turbe, President of the CSIS Alumni/ae Association, who did the same. Dean Merritt introduced Leslie Tortora, the guest of honor, citing her numerous accomplishments and contributions to the industry. Following her introduction, Leslie spoke on the role of the CIO in the modern corporation. Upon completion of her remarks, she was presented with a formal citation and a crystal disk from Tiffany’s commemorating the occasion.

The Leadership and Service in Technology Award is presented annually to an individual or a company that best exemplifies leadership in the field of technology, innovation in the development and application of technology to serve people, and commitment to community service and education. This is the sixth



CSIS students talk with Pace President Caputo at the reception preceding the Leadership and Service in Technology event.

year that the award has been given.

The Leadership and Service in Technology Award Reception is the School’s primary fundraiser. The proceeds from this event benefit the CSIS Endowed Scholarship Fund, which makes a degree in computing a reality for many deserving students. This year, for the first time, the School was able to distribute \$13,500 in scholarship monies among seven qualified undergraduates (see related article on page 11).

The proceeds from the evening amounted to \$110,000. This suc-

cessful outcome was particularly satisfying in light of the economic downturn in the financial markets and IT industry. It was accomplished through the extraordinary efforts of the CSIS Advisory Board and Sponsorship Committee led by Howard Medow of Modis, Inc., and Raul Perez of Unittech Corp., co-chairs of the event.

We are pleased by the continuing support of our corporate friends and welcome those who attended for the first time this year. We look forward to seeing everyone again in 2002. ■

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## Programming Is Fun & Games

by Professor Cathy Dwyer, Computer Science and Information Systems

Last spring, after nearly three years of work and many rewritten chapters, Dr. Jeanine Meyer and I published *Programming Games With Microsoft Visual Basic* (Course Technology, 2000), a text for beginning students. Draft versions of the text have been used in Pace graduate courses and an undergraduate course at SUNY/Purchase. The book contains 10 chapters, each one dedicated to a different computer game.

Our choice of games arose when Dr. Meyer “taught herself” Visual Basic by programming a version of Minesweeper, a game that comes with Windows where the object is to flag the locations of hidden mines. Because many programmers learn new languages by tackling a specific project, we decided to apply this technique to a text and started off with a chapter on Minesweeper.

As you can imagine it was a monster. Minesweeper is hardly the kind of game to start a text for beginning programmers, but we were hooked on the idea of using games, and started working “backwards,” preceding Minesweeper with easier and simpler games (Minesweeper is now chapter 8).

### Advantages of using games

What has our success been with games? It has shown itself to have these advantages:

Students are very motivated to build their own games, and they have frequently added enhancements and extra features to the bare bones version from the text.

We think programming is fun, and are quite disappointed when anyone thinks otherwise! Programming games, while challenging and often frustrating, is still fun.

While the idea of games seems trivial, there are difficult, thorny issues that need to be tackled. For example, in Hangman, the game starts off displaying a string of

dashes, one dash for each letter. As the player guesses a letter, that letter needs to appear in the correct place instead of the dash. Solving this problem uses a sophisticated application of concatenation or combining strings.

In a fairly thin textbook, we tackled many essential concepts, such as recursion, randomization, devising a strategy for the computer’s move (in Tic Tac Toe the computer is your opponent), data structures, connecting a Visual Basic front end to a database back end, and event-driven programming.

Because students have an idea of how a game is supposed to work, they are more aware when their own game is not working properly. In other programming classes, students have to be pushed to thoroughly test their programs. In contrast, students immediately know if their own game is not working because they know how it is supposed to work. They subject their work to rigorous testing and even invite their fellow students to play the games.

### Students add enhancements

We greatly encouraged students to improve each game by adding enhancements and extra features. For each game chapter, the text includes suggested enhancements, but many students devised and implemented their own.

One chapter implements the game Memory (also called Concentration). In Memory, 16 face-down cards are displayed to the player who then clicks pairs of cards. If the selected pair has matching images the cards are removed from the playing board. The chapter suggests giving the player a preview of where the images are located before the game starts.

Students implemented this preview function in several ways. The simple solution uses a button to preview or show the cards and a button to turn them over and start the game. Another student used a method to show the cards one at a time in a series. Yet another showed the cards in a series a maximum of three times, each time decreasing the amount of time the image was displayed. Students not only created

their own enhancements, but they figured out how to implement them on their own, using features beyond the material in the text. Student motivation to go beyond the material was very high.

### Students comment on learning games

How do the students themselves feel about learning programming using games? The following are excerpts from an online discussion from the IS graduate elective IS 660Z Programming Games in Visual Basic:

“I have found this class both entertaining and educational. I think that the objective of this class, which is making a live game, is very positive. I’ve learned a lot about topics that were never covered in other classes. Overall this was an interesting class, which was geared towards fun learning. Games incor-

a much less difficult task for students to learn the concept in a way that is fun. Game programming allows students to learn the concepts of programming and teaches them that programming can be a very creative and interesting activity. Also, game programming is a business application for the game industry — an industry that students are never given a chance to explore in a traditional programming class.”

As a CSIS faculty member, I ask myself the following question: What do students need to know (understand) about programming for a career in IT?

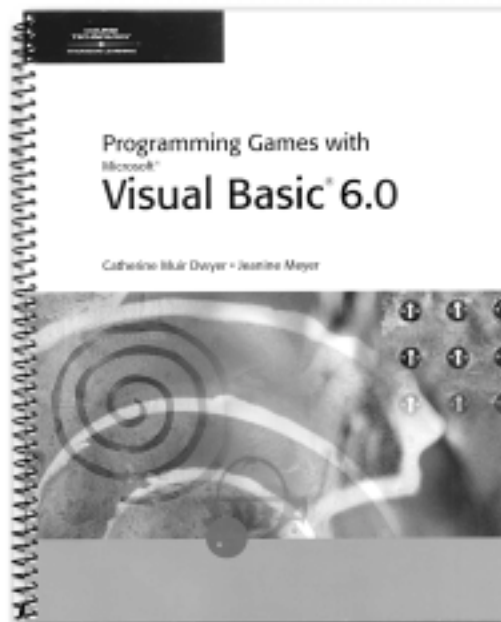
I am prejudiced in favor of learning games, of course, but I do have these reasons:

Most companies have IT and business rules requirements that are too specific and individual to be included in a programming class. So students will have to learn them on the job anyway.

The technology changes so fast that they will always need to develop new skills. In order to do this, a student will need to transfer a knowledge set from one application to another. By transferring an understanding of games to other applications, they are doing that.

We have used the material for three different classes. Each one has been more successful as we have

taken the opportunity between offerings to further refine the material. The material in the textbook is the result of a cooperative collaboration with our students, along with a very helpful editor from the publisher. It has been a rewarding and enlightening experience. We are now considering whether to move on to a second volume of games in Visual Basic, or try the approach in another environment, perhaps using Asp or Java. In any event, we will continue to explore this approach. ■



porate knowledge of physics, math, and artistic ability. It also takes a lot of dedication and creativity.”

“I have learned enough to understand the basics of how Visual Basic works, and in a very interesting way. I think beginner programming classes should definitely include games, in this way it makes the class and the language more interesting while still learning the basics of any programming language.”

“Having taught topics such as recursion in the traditional way, I can see how it would have been

# Third D.P.S. Class Enrolled

by Chris Longo, D.P.S. Program Administrator

The Doctor of Professional Studies in Computing (D.P.S.) Program welcomed the incoming Class of 2004 on September 13, 2001.

This marks the beginning of the third year this new innovative doctoral program has been in effect, and the first year where three classes — 2002, 2003 and 2004 — are enrolled at once.

The D.P.S., which is recognized as a research doctorate equivalent to the Ph.D. by the National Science Foundation, is structured for working information technology professionals. The program uses a team approach to both teaching and learning and combines monthly face-to-face residence weekends with asynchronous distance learning via the Internet. The D.P.S. is structured so that it can be completed in three years, including the completion of the dissertation. It is a 48-credit program, assuming the prior completion of a master's degree in computing or a closely related discipline.

The new class was scheduled to start orientation on September 12, 2001, with a "kick-off" luncheon attended by President David A. Caputo and other distinguished guests. Due to the tragic circumstances at the World Trade Center, the luncheon was cancelled and orientation was postponed for a day, but we are extremely grateful that all the new students and their families were safe and well and still very excited about beginning their studies.

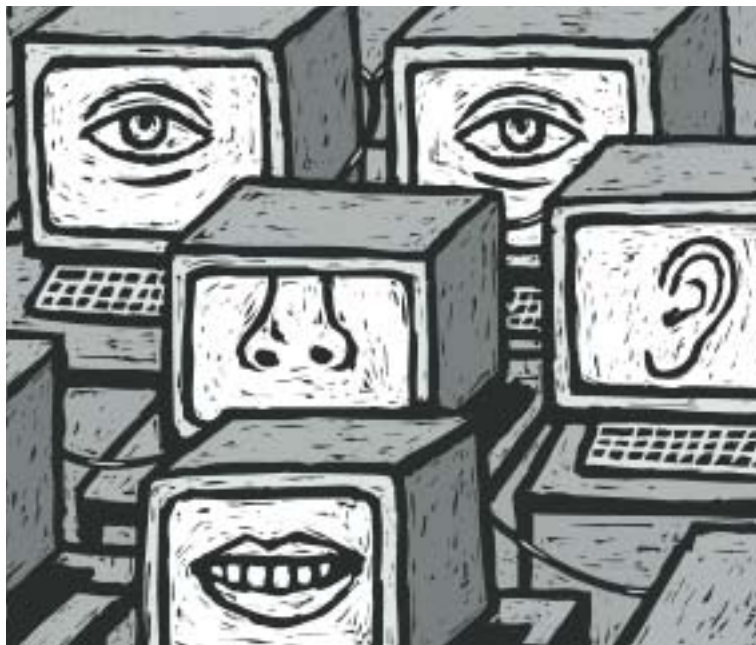
The Class of 2004 and the two previous D.P.S. classes are noted for their diversity. Of the 19 new students, women outnumber men 10 to 9, which is quite impressive for a doctoral program in computing. Nearly half the class is made up of minority members with 4 Hispanics, 3 Asians, and 2 African-Americans. On residence weekends these new students travel to class from six states, including

Virginia, Pennsylvania, and Maryland. Some received their master's degrees from Pace, and others from such diverse institutions as New York Institute of Technology, Long Island University, Johns Hopkins, Polytechnic University, Illinois Institute of Technology, Central Michigan University, Rutgers, and Dartmouth. Their employers include Analyst International, Becton Dickinson, Sotheby's, The Hackley School, College Misericordia, N. Bronx Healthcare, Institute for Community Living, The Jewish Board of Family & Children's Services, IBM, Lucent, and Verizon. It was exciting and challenging to assemble this distinguished class of doctoral candidates from a pool of over 50 applicants.

As the number of our students has grown over the past three years from one class totalling 19 to three classes totalling 57, so has the number of faculty and staff to service them. Dr. Fred Grossman has been named D.P.S. Program Chair, and Dr. Charles Tappert has been appointed Assistant Program Chair. There is now a D.P.S. office located on the fourth floor of the Graduate Center and a D.P.S. Program Administrator, Chris Longo.

As with any new program, the challenges have been constant and the outcomes very rewarding, whether it is deciding on a dissertation timeline, a brochure, or the look of the new D.P.S. Web site.

The most rewarding and anticipated event this year, though, will be the graduation of the first D.P.S. class in Spring 2002. Dissertation research is underway. Topics, advisors and committee members have been chosen. This first class is leading the way and helping to mold the program. The Class of 2002 will have the distinction of being the first of many to graduate with a Doctor of Professional Studies in Computing from Pace. ■



## New CSIS Programs

### New M.S. in Internet Technology for e-Commerce Enthusiastically Received

by Louise P. Kleinbaum, Assistant Dean and Director of Communications

In the Pace tradition of responding to the educational needs of a changing workplace, the School of Computer Science and Information Systems (CSIS) is introducing a new master's level program — the Master of Science in Internet Technology for e-Commerce — this fall. This is the first new master's program offered by the School since the M.S. in telecommunications was made available in 1989. The degree is being offered in conjunction with the Lubin School of Business. It is an interdisciplinary degree that provides the student with a thorough background in Internet programming and network design combined with a solid understanding of marketing and management as they relate to e-commerce. Individuals possessing both technical skills and business know-how are in strong demand.

The M.S. in Internet Technology for e-Commerce was conceived and designed by the two Westchester department chairs, Dr. Narayan Murthy (CS) and Professor Dan Farkas (IS) and is currently available only in Westchester. The 36-credit program is structured as follows:

	Credits
Required Internet Technology Courses	12
Required Business Courses	6
Elective Courses (both IT and business options)	12
Capstone Project	6
<b>Total</b>	<b>36</b>

For those students with limited or no background in the area of Web site design, Java programming or marketing, there are several graduate-level preparatory courses that they may take to ready themselves for the more advanced coursework. Also available is a 19-credit Advanced Certificate in Internet Technology that focuses primarily on the technical aspects of Web site development. Credits earned towards the Advanced Certificate may be applied towards the degree program at a later date.

Also available for the first time this fall are a number of new combined-degree programs that enable academically strong students to earn both a baccalaureate and a master's degree in five years. By satisfying prerequisite requirements and taking several lower level graduate courses as an undergraduate, a student can complete both degrees in less time than it would take to complete them independently.

(continued on next page)

# NACTEL Program Update

by Louise P. Kleinbaum, Assistant Dean and Director of Communications

## NACTEL graduates first class

**T**he National Advisory Coalition for Telecommunications Education and Learning (NACTEL) Program graduated its first eight A.S. degree recipients:

**Joseph Courtemanche**, St. Paul, MN  
**Shawn Henson**, Munds Park, AZ  
**Phyllis Jones**, Houston, TX  
**Palah Massey**, Folsom, CA  
**Terry Sanner**, South Charleston, WV  
**Cathy Shufelt**, Euless, TX  
**Thomas Toner**, Benicia, CA  
**Darryl Young**, Riverview, FL

These students participated in a unique three-year online program leading to an Associate in Science in Telecommunications. The program, which was initially launched in 1998 and is sponsored by NACTEL, was designed for telecommunications workers across America. Today there are 543 students from 41 states enrolled in the program. Professor Nancy Hale and Dr. David Sachs are the co-directors of NACTEL.

A brunch celebrating the NACTEL graduates was held at the Graduate Center in White Plains on May 21 prior to the formal Westchester Commencement ceremonies. Martin Bahr, International President of the Communications Workers of America, attended and expressed his support for the program. Two of the eight graduates were physically present at the event and one of them, Joe Courtemanche of Qwest Communications, CWA Local 7200 from St. Paul, MN, shared his experiences with the audience and expressed his gratitude for the opportunity to earn a degree. The others, unable to

make the trip to New York, participated appropriately enough via telephone and streaming video. The July 2001 issue of *CWA News*, which is published by the Communications Workers of America, highlighted the first NACTEL graduation.

## PACE receives third installment of FIPSE Grant

Pace University recently received the third and final installment of a grant from the U.S. Department of Education. This award, from the Learning Anytime Anywhere Partnerships Program within the Fund for the Improvement of Post Secondary Education (FIPSE), is for \$338,784. Dr. David Sachs, Associate Dean, is the Project Director of the Grant. Funds from the award are used to enhance online learning, primarily in the NACTEL program. Specific emphasis is placed on enhanced student support services and secure online testing.

## External evaluation indicates high level of satisfaction

A survey, administered online by IOTA Solutions in September to new and returning students in the NACTEL program, offers much useful information about continued program improvement. The survey assessed five aspects of the program: (1) the registration process; (2) attitudes towards online learning; (3) an attitudinal comparison of online learning and traditional classroom learning; (4) overall attitudes towards the NACTEL/Pace program; and (5) demographic information.

103 students (38 new and 65 returning) responded to the survey. Returning students responded very positively when asked to rate their overall satisfaction with the program: 98 percent responded "very satisfied" or "satisfied" while the other 2 percent responded "neither satisfied nor dissatisfied." Comments can be found through this report demonstrating students' satisfaction. ■



Joseph Courtemanche speaks at the NACTEL graduation brunch.

## Typical comments include:

*"Everyone at Pace is always very helpful when there is a problem."*

*"I would like to thank everyone involved with the program who have allowed me to pursue this degree, which I otherwise would not have had access to. The level of quality of both the faculty and the course materials are far beyond my expectations. Thank you."*

*"Online learning has been very nice. I have a very hectic travel schedule and it has been nice to be able to work on courses when I am able to do so."*

*"Again, I would like to commend the staff and the instructors. They are what made this course so enjoyable and as accessible as a traditional learning experience."*

*"The course, teachers and overall quality of the learning experience impress me. I have used much of what was taught in the first two classes. I look forward to obtaining my A.S. degree."*

*"Please offer a Bachelor's degree soon."*

## CSIS Programs *(continued)*

The combined CSIS degree programs include:

B.A. in computer science/  
M.S. in telecommunications

B.A. in computer science/  
M.S. in information systems

B.S. in information systems/  
M.S. in computer science

B.S. in technology systems/  
M.S. in information systems

Other options bridge the B.S. in Chemistry offered by the Dyson College of Arts and Sciences with one of two CSIS master's degrees:

B.S. in chemistry/  
M.S. in computer science

B.S. in chemistry/  
M.S. in information systems

For additional information about the new M.S. in Internet Technology for e-Commerce or the combined-degree programs, contact Louise Kleinbaum, assistant dean, at either (914) 422-4191 or [kleinbaum@pace.edu](mailto:kleinbaum@pace.edu). ■

# Pervasive Computing Lab Established

by Dr. Charles Tappert, Computer Science

Funding from the Hudson Valley Center for Emerging Technologies (HVCET) has allowed the School of CSIS at Pace University to set up a Pervasive Computing Laboratory under the direction of Dr. Charles Tappert.

Pervasive computing goes beyond the realm of today's personal computer to ubiquitous devices that are becoming smaller and more powerful with embedded technology and connectivity. It concerns the idea that almost any device, from clothing to appliances to cars to homes and to the human body, can be imbedded with chips to connect the device to an infinite network of other devices. Pervasive computing combines current network and wireless technologies with progressively smaller computing devices, voice recognition, artificial intelligence, and Internet capability, to create an environment where the connectivity is unobtrusive and always available.

Human-computer interaction (HCI) has not really changed for several decades and we continue to use the highly successful graphical user interface commonly referred to as the WIMP (windows, icons, menus, pointer) interface with our

personal computers. However, this paradigm will not meet the uses of computers in the future because computers are getting smaller and more pervasive with wireless communication so the size factor makes graphical user interfaces impractical, and the push to make computers easier to use is leading us in the direction of interacting with machines in human modalities, such as speech, handwriting and gestures.

The purpose of this laboratory is to provide the environment for students and faculty:

- to study and better understand the available HCI techniques and combinations of techniques.
- to study new HCI techniques for small mobile devices and for embedded devices.
- to examine how people interact with each other and with the real world in order to devise better HCI techniques.
- to explore and better understand ways to enable computers to use human communication modalities such as speech recognition, speech synthesis, and emerging voice technologies and applications; handwriting

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Pervasive computing creates an environment where the connectivity is unobtrusive and always available.

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ing recognition, pen computing and applications; and other pattern recognition and artificial intelligence technologies.

- to explore other emerging information technologies that are enabling pervasive computing such as wearable and handheld computing devices, head mounted displays and virtual reality, and wireless technologies.
- to help businesses understand and utilize these emerging pervasive computing technologies.

One of the highlights of our research during the past year has been the beginning of the design and construction of our in-house VoiceXML development facility and the development and implementation of a number of VoiceXML applications. VoiceXML applications allow

users to interact with computers through voice dialogs over an ordinary telephone, and we have developed and implemented both University and business VoiceXML applications. One University application is a course grade system that allows students to access their course grades over the telephone. The business applications allow users to obtain information about restaurants, about real estate, or concerning train schedules. These are real-time applications and directions for testing them can be found on the Web site.

Over the past year, the students and faculty involved with pervasive computing have published a book article and a CSIS *Technical Report*; gave presentations and talks at HVCET meetings, at MASPLAS '01, at the Pace Research Day workshop, at the Pace Teaching, Learning, and Technology Roundtable, and at a Pace e-Business Seminar breakfast; written a proposal to the National Institute of Justice; and have, in progress, a doctoral dissertation and several master's level projects.

Further information about the Pervasive Computing Laboratory can be found at <http://www.csis.pace.edu/~ctappert/pervasive/>. ■

Save the Date! April 19, 2002

## School to Host Workshop, MASPLAS '02

by Dr. Charles Tappert, Computer Science

Pace University's School of CSIS in cooperation with ACM SIGPLAN will host this year's Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS '02) at the Graduate Center on Friday, April 19, 2002. This is a one-day workshop that provides both graduate and undergraduate students with the opportunity to present their research. Student papers will

appear in two places: the workshop proceedings and the electronic version of proceedings on the MASPLAS Web site. At present, further information on this workshop and how to submit papers can be obtained from the Web site at <http://www.csis.pace.edu/~masplas/papers.htm/>. Dr. Susan M. Merritt, CSIS dean, and Dr. Charles Tappert will serve as conference co-chairs; Dr. Fred Grossman and Dr. Allen Stix will

serve as program co-chairs.

The last workshop, MASPLAS '01, was held at the IBM Watson Research Center in Hawthorne, NY, on April 27, 2001. Six papers by CSIS students were presented and appear in the *Proceedings*, four under the direction of Dr. Charles Tappert and two under the direction of Dr. Mehdi Badii. The eight students whose work was presented were Darshan Desai, Engin Erdogmus, Jing Fu,

Jonathan Law, Shreenath Laxman, Sowmya Prabha Nagaraja, Yuan Pan and Chetan Sharma. Jonathan Law is in our new Doctor of Professional Studies in Computing program and the others are in or have graduated from our master's program. (See Student Achievements article for details regarding the student presentations.) ■

# CSIS Welcomes New Faculty

by Louise P. Kleinbaum, Assistant Dean and Director of Communications and Ken Norz, Assistant Dean and Director of Academic Systems

Six new faculty members joined us this fall. **Michael Braudy** is returning to CSIS after an absence of many years as a full-time lecturer in information systems in New York City. He previously taught as an adjunct



for the Computer Science Department from 1983–89 and has been employed as a programmer and systems designer for various companies in the area.

Michael holds a B.A. in music from Columbia and is an accomplished violinist. He also received an M.S. in computer science from Pace in 1985. In regard to his affiliation with Pace, Michael said, “I still find Pace to have wonderful students, full of heart, of a wonderfully diverse population of the world. Great also to see the wonderful faculty still intact and brimming with enthusiasm.”

**Dr. Sung-Hyuk Cha** joins the CS department in Westchester as an assistant professor. He recently completed his Ph.D. at SUNY-Buffalo with a dissertation titled “Use of Distance Measures in Handwriting Analysis.” His other research interests are in document analysis and pattern recognition. Originally from South Korea, he did his undergraduate



work at Rutgers University in New Jersey. When asked why he chose Pace, he replied, “I like academia. Pace is an excellent place. I like the D.P.S. program. It really attracted me.” He also wanted to live close to New York City and thinks that Westchester is beautiful. “Pace students are very good and my colleagues are very nice to me. We can collaborate on research.” He and Chuck Tappert have already submitted a proposal to the National Institute of Justice for research on handwriting analysis.

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**Dr. Lixin Tao** has also accepted an appointment to the CS department in Westchester as a full professor of computer science.

Coming to Pace from Concordia University in Montreal, Dr. Tao has taught a broad range of courses in computer science and has enjoyed a distinguished career in both teaching and research including considerable collaboration with industry. He holds a Ph.D. in Computer and Information Sciences from the University of Pennsylvania and has mentored many master’s and doctoral students over the years. His research interests include Internet computing, component techniques, and parallel and distributed computing. Dr. Tao will be teaching for us primarily in the D.P.S. program. “Pace gives me the environment to take advantage of my expertise. Pace students have work experience and a motivation to study. My colleagues are helpful. We can easily sit down and discuss issues and solve problems.”

Joining us from more southern climes is **Jean-Christophe Deprez** of Breaux Bridge, LA. Mr. Deprez is about to complete a Ph.D. from the University of Louisiana at Lafayette and has five years of teaching experience primarily in programming and software development. His research interests include programming, software testing and multimedia in a programming environment. He has been appointed an assistant professor



in the Information Systems Department in Westchester. He accepted a position at Pace “because teaching is a priority here” and because of our proximity to New York City. “So far the students are great. We have lots of dialogue. I like teaching graduate and undergraduate students.”



Another new faculty member who is about to complete his Ph.D. from Rensselaer Polytechnic Institute in Troy, NY is **Richard Kline**. Mr. Kline has been named assistant professor of computer science in New York. His research interests include human/computer interaction, multimedia, information retrieval, and universal accessibility. He plans to play an active role in the Center for Advanced Media. He sums up his initial impression of Pace by saying: “I am pleased to be able to teach such a culturally diverse group of students in my classes, and I have been impressed by their resilience during this traumatic semester. Terrible as it was, the recent terrorist attack has given me the opportunity to learn of the generous spirit of New Yorkers and members of the Pace community. I appreciate the friendly welcome given me by the faculty and staff in CSIS, especially under these trying circumstances.”

Also joining the Computer Science Department in New York as an assistant professor is **Dr. Christelle Scharff**. Dr. Scharff, a native of France, earned her Ph.D. in computer science from Université Henri Poincaré in Nancy, France. She taught math and an introductory computer science course with Java at SUNY-Stony



Brook last year. Prior to that, she taught several computer science courses at the Institute of Technology of Cambodia. Her primary areas of research are in automated deduction and theorem proving and computer-aided verification. “I wanted to be in a school in Manhattan and be able to teach graduate students. So far I like it. The students are nice and polite and they are good.” As for her colleagues, “There is always someone to talk to and everyone is congenial.” ■

## CSIS Continues to Grow

CSIS is pleased to welcome the following people who recently joined us:

### Adjunct Faculty

Michael Braudy	CS	New York City
Kevin Burns	IS	Westchester
Ronald Cococcia	CIS	Westchester
Mary Curtin	CIS	Westchester
Frank D’Esposito	CIS	Westchester
Gideon Frydman	CS	New York City
Derrick Garrett	IS	New York City
Maria Gregorio	TS	Westchester
Edward Hanssen	TS	Westchester
Collin Harris	CLOUT	Midtown
Kenneth Mias	IS	Westchester
Linda Paz	CIS	Westchester
Michael Pilla	CS	Westchester
Julia Pischansky	CIS	Westchester
Ronald Saul	CIS	Westchester
Arben Shanja	CS	New York City
Michael Sidasaras	TS	Westchester
Anand Vadul	CS	New York City

### CIS 101 Lab Instructors

Teresa Ashley	New York City
Mark Fletcher	New York City
Maria Galdos	New York City
Vikram Muthanna	Westchester
Suma Pramod	New York City
Saby Taveles	New York City
Erik Magnuson	New York City

### Staff

**Academic Advisor  
CSIS Westchester**  
Tricia Brogan

**Employment and  
Student Counselor  
CLOUT Midtown**  
Erin Rein

**Academic Advisor  
New York City**  
Marion Viray

### Student Aides

Trista Chiarulli	CSIS	Westchester
Ashley Joseph	PCLC	Midtown
Aaron Labiaga	CSIS	New York City
Ilyas Pinkhasov	CSIS	New York City

### Graduate Assistants

Martina Blackwood	CS	New York City
Arthur Evans	Dean’s Office	Westchester
Brent Ferguson	NACTEL	Westchester
Yani Mulyani	Dean’s Office	Westchester
Leighton Murray	CSIS	New York City
Ravi Patchigolla	PCLC	Westchester
Saurabh Pethe	DPS	Westchester
Vivek Rudrapatna	IS	Westchester
Karpoor Shashidhar	CS	Westchester
Avinash Srinivasan	CS	Westchester
Stoytcho Stoev	TS	New York City
Pasupathy Trilok	HVCET	Westchester
Jingliang Wang	CS	New York City

Brian Cosgrove, a CSIS advisory board member, was featured in an article in *CIO Magazine* in April of this year. Cosgrove, a former homicide detective with the New York City Police Department, joined the Securities Industry Automation Corp. (SIAC) in 1987 initially to assess security issues relating to their planned move out of lower Manhattan to the new Metrotech area of Brooklyn. A natural community builder, Cosgrove became involved in community affairs in the area and was instrumental in converting nearby George Westinghouse High School, a down and out vocational high school fraught with gangs and crime, into a model IT school that has been renamed George Westinghouse Information Technology High School. He has since been named community relations director for SIAC and is now advising Brooklyn Technical High School on how to align their curriculum with current marketplace needs.

According to *The New York Times*, The New York Stock Exchange selected CSIS advisory board member Catherine R. Kinney as one of two executive vice presidents who will replace William R. Johnston who is retiring as president and chief operating officer. She will be sharing the responsibilities of vice chairman, chief operating officer and president with Robert G. Britz.

Paul Lacouture, president of network services for Verizon and CSIS advisory board member, was noted in the October 15th issue of *Fortune* magazine for his role in Verizon's herculean effort to restore phone and data services to lower Manhattan in time for the reopening of the New York Stock Exchange following the World Trade Center attack on September 11. He was quoted as describing the scene as the worst he has ever seen in 29 years in the business: "I've gone into our buildings after fires. I've restored our networks after floods and earthquakes. This was a combination of all those things, times a factor of three or four."

### Faculty Members Research ERP

by Dr. Constance Knapp and Dr. Namchul Shin, Information Systems

We have been studying the performance impacts of Enterprise Resource Planning systems, commonly referred to as ERP systems. These are software packages that contain modules that perform all of the functions of a business, using a single database. ERP systems are fully integrated so that data has to be entered once only. For example, a customer places an order. The order entry portion of the system will allow the data about the order to be stored in the database. The production department can then use that same data to schedule the production of the product, and the billing department then uses it to invoice the customer.

An ERP system is a very complex piece of software that can cost many thousands of dollars and take years to install completely. We are interested in learning if companies that install such software improve their performance, both operationally and financially.

To learn about ERP systems, we

have been conducting interviews with consultants who help companies select and install such software, and with employees at companies that have embarked on installing the software. So far we have learned that while there are only a few vendors supplying ERP software, different vendor's products might be better suited for different industries. We have also learned that any company that does decide to install an ERP system must first analyze its business procedures. Many ERP packages require that the firm change the way they currently perform a particular function, or set of functions, to match the software. Often companies gain great benefits from this reengineering process. However, this process can also be wrenching, as all processes become subject to review and change. As the CIO at one firm told us, "The biggest thing about ERP is change management. ... If the organization is unable or unwilling to change you will corrupt the design of your ERP

and you will struggle. If the organization is willing and able to change it will be very successful and will realize tremendous benefits."

We presented our preliminary findings at the Global Information Technology Management Association meeting in Dallas in June, and the Americas Conference on Information Systems in Boston in August. The next phase of our work includes a second round of in-depth interviews. We will be developing a theory of ERP implementation based on these interviews and we will then test our theory using published data. We have been working on this project for nearly a year, and will probably spend another six months finishing up our work — about as long as it takes companies to install these systems! We welcome participation from readers of *Communiqué*. We can be reached at the following e-mail addresses: Constance Knapp at cknapp@pace.edu and Namchul Shin at nshin@pace.edu. ■

### Faculty Launches New Journal

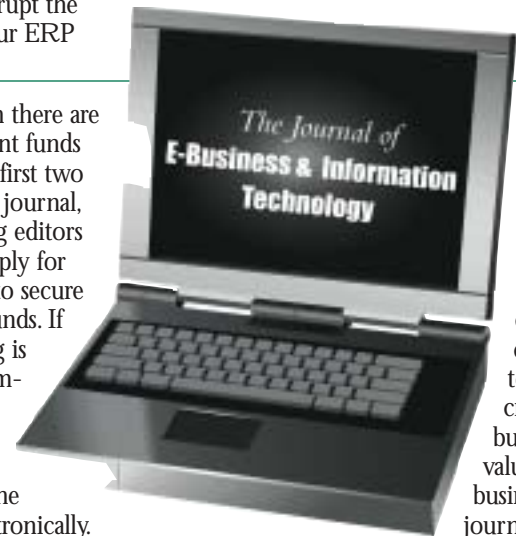
by Dr. Bel Raggard, Information Systems

The *Journal of e-Business and Information Technology* is a new journal that has just been launched by Dr. Bel Raggard, Information Systems, and Dr. Charles Tapert, Computer Science. The idea for this new journal has been circulating for several years and planning it with the help of several other scholars in both the academic and the industrial sectors has been ongoing. It only became a reality, however, when the two faculty members obtained a grant from the Hudson Valley Center for Emerging Technologies (HVCET) to publish it.

Although there are only sufficient funds to print the first two issues of the journal, the founding editors intend to apply for new grants to secure additional funds. If new funding is not forthcoming, they intend to continue publishing the journal electronically.

The aim of *The Journal of e-Business and Information Technology* is to publish articles of high quality dealing with how online business technologies relate to information technologies. The journal, which will be published semiannually, will address various forms of e-business and their evolution and will cover all aspects of IT, with emphasis on those relating to the Internet.

Another goal of the journal is



to assist the local and global business communities to efficiently exploit IT towards the creation of business value in e-business. The journal welcomes all types

of applied research studies in global computing that add value to e-business owners, customers, developers and evaluators. Particularly sought after are applied studies in IT, online business technologies (all e-business forms, e-commerce, etc.), and Internet security.

For additional information or to submit a paper, contact braggad@pace.edu. ■

## Dean Receives ACE Award

by Tricia Brogan, Academic Advisor, CSIS Westchester



Dean Susan Merritt after receiving the ACE Award.

**O**n April 20, 2001, the American Council on Education (ACE)/National Network of Women Leaders regional branch presented Dr. Susan Merritt, dean of the School of Computer Science and Information Systems, with the Dr. Carol S. Russett Distinguished Service Award at a luncheon held at the Chart House in Dobbs Ferry, NY.

ACE is an organization consisting of leaders in higher education. Its mission is to develop and promote the advancement of women in higher education administration and reaffirm the principles of diversity and inclusion. Towards this end, it confers this award annually on a leader in higher education in the Westchester/Rockland area who:

- exemplifies the mission of ACE/National Network of Women Leaders;
- dedicates herself to higher education by serving her students, colleagues and institution generously;
- demonstrates a personal commitment to professional growth and enrichment;
- unselfishly gives her time and energy in assisting other women in their professional development as a mentor and role model; and
- demonstrates an interest and concern for her community outside the academic environment.

Dean Merritt certainly personifies all of these criteria. She was the founding chair of the Computer Science Department at Pace University as well as the founding

Dean of the School of Computer Science and Information Systems. She has been an outstanding educator on all fronts and has been particularly active in encouraging women to pursue careers in computing. Recently, she was instrumental in the development of the innovative Doctor of Professional Studies in Computing Program that has attracted an unusually high number of women. She is also credited with creating the CLOUT Program, which prepares individuals (mostly women) on public assistance to enter the workforce with solid skills to become self-supporting.

The Pace community congratulates Dean Merritt on receiving this prestigious award. ■

## log in

## CSIS Provides Additional Student Support

by Louise P. Kleinbaum, Assistant Dean and Director of Communications

**I**n order to accommodate our expanding undergraduate population, CSIS welcomes three new student advisors — one in Pleasantville, one on the downtown New York City campus and one at the Midtown Center.

**Tricia Brogan**, academic advisor, Pleasantville. Tricia graduated from Wagner College in Staten Island in May 2000 where she majored in Psychology and minored in Sociology. She came to Pace in June and plans to continue on with graduate studies in psychology. She appears to enjoy her work: "I think both the staff and the faculty in CSIS are great. They were very helpful when I first started and continue to be very easy to work with. They are very much concerned with the success

of their students who are also wonderful. In general, they are very nice and very hardworking."

**Marion G. Viray**, academic advisor, New York City. Marion received his undergraduate degree in psychology from San Diego State University. After graduation, he decided to head to the "Big Apple" to work on a master's degree in counseling psychology at New York University, which was conferred last May. He had planned to go on vacation after completing his degree, but was lured back to the world of work because the right job presented itself. After careful review of the advertised Pace position, he realized that both the position and the University offered him great opportunity for both professional

and personal growth. The campus is diverse in terms of faculty, staff and students, which is one of many reasons why the position interested him. "Dealing with the students at Pace is 'heaven sent.' They are driven and self-motivated to succeed. Helping a student develop and prepare to enter the workforce is of great interest to me, which is why the job is both rewarding and enjoyable."

**Erin Rein**, employment and student counselor, CLOUT Program, Midtown Center. Originally from St. Paul, Minnesota, Erin earned her B.A. from the University of St. Thomas with a triple major in sociology, women's studies and peace/justice studies. Upon completion of her undergraduate degree, she worked on two

statewide political campaigns as public policy/research associate and the director of communications. She also has two years of experience in the nonprofit sector as an employment counselor. After moving to New York City, she was employed by the University Settlement Society of New York. She is now pursuing her master's degree in public administration/nonprofit management at Pace. As for the CLOUT students, "I have witnessed enthusiasm and dedication and am looking forward to this unique opportunity and sharing in their well-deserved success." ■

# Faculty Achievements

**Dennis Anderson**, Assistant Dean, was successful in obtaining funding in the amount of \$197,084 from the National Science Foundation for the Computer Science, Engineering and Mathematics Scholarships (CSEMS) Program. This funding will provide scholarships, academic support and career counseling to financially disadvantaged undergraduate students pursuing degrees in computer science and information systems.

He was also invited to serve on the CIO Executive Programs Advisory Board and attended the first official meeting, which was part of the CIO 100 Symposium and Awards Ceremony held in San Diego, CA. CIO is part of CXO Media, Inc. He also received a grant in support of his attendance at the Fulbright Senior Specialist in Information Technology Conference held at the Université de Mons-Hainaut in Belgium where he will be a guest lecturer.

**Paul Benjamin**, Computer Science, was awarded a grant in the amount of \$296,000 by the Department of Energy to support the CSIS Robotics Lab over three years. The lab is located on the New York City campus. The grant is specifically for research in "Integrating Perception and Action through Local Symmetries and Invariants" and will allow the School to purchase a new robot with stereo color vision and a robotic arm.

**Joseph Bergin**, Computer Science, had a professionally active summer. He attended the ChiliPLOP — Pattern Languages of Programming Conference in Phoenix, AZ, where he participated in a working group and the European Conference on Object-Oriented Programming — ECOOP '01 in Budapest where he co-led a workshop on Pedagogical Patterns. He also presented "Coding at the Lowest

Level: Patterns for Novices" at EuroPLOP in Insee, Germany, and led another workshop on teaching Extreme Programming at the Extreme Programming Universe held in Raleigh, NC. Additionally, he attended the Innovation and Technology in Computer Science Education — ITiCSE Conference held in Canterbury, England, and is on the Planning Committee for next year's gathering.

A party was thrown at Coogan's, a restaurant in Washington Heights, in June in celebration of the publication of **Cathy Dwyer's**, Computer Science and Information Systems, and **Jeanine Meyer's**, Information Systems, book *Microsoft Visual Basic: Games Programming*, which was published by Course Technology in April. The book was an outgrowth of the course on Programming Games Using Visual Basic, which they had team-taught over the past few years during January break.

**Susan Feather**, Technology Systems, was named this year's National Business Educator's Association (NBEA) "Educator of the Year." This award, given annually by the NBEA, establishes national recognition of her exceptional contributions to the field. She is also the recipient of the Metro Chapter Award from Delta Pi Epsilon for the best article of 1999 in the technology systems discipline for "The Impact of Group Support Systems on Collaborative Learning Groups' Stages of Development," which appeared in the *Journal of Information Technology, Learning, and Performance* in fall 1999.

Over the summer, **Anthony Joseph**, Computer Science, attended a workshop on Inquiry Based Collaborative Learning held at Hampshire College in Amherst, MA.

**Jim Lawler**, Information Systems adjunct, developed a new

course in Relationship Management Processes and Technologies, which he is teaching for the first time this fall.

**Susan Merritt**, CSIS Dean, was honored at a luncheon where she was awarded the Dr. Carol S. Russett Distinguished Service Award, which is presented annually by the American Council on Education's (ACE) National Network of Women Leaders. She and **David Sachs** attended the Technology Transfer Summit held in Albany and sponsored by Columbia University; Cornell University; the New York State Office of Science, Technology, and Academic Research (NYSTAR); the State University of New York; and the Commission on Independent Colleges and Universities.

**John Molluzzo**, Information Systems, took two online courses offered by the Learning Resource Network — LERN in Teaching Online and Designing Online Instruction — in preparation for teaching an online offering of Computer Organization and Programming for the first time this year.

**Namchul Shin**, Information Systems, presented numerous papers over the summer, including "Competition in the Bricks-and-Clicks World: Strategic Implications of Market-Segment-Specific Differences" to the 7th Americas Conference on Information Systems; "How e-Business Can Achieve a Competitive Advantage" at the 2001 Portland International Conference on Management and Technology; and "The Impact of Information Technology on Firm Performance: An Empirical Study on the Role of the Alignment of IT with Business Strategies" to the 12th Information Resources Management Association International Conference. He also co-authored two papers with **Constance Knapp**, Information Systems: "Perfor-

mance Impacts of Enterprise Resource Planning Systems Selection and Implementation" which was presented to the 7th Americas Conference on Information Systems and "The Organizational and Economic Impacts of Enterprise Resource Planning Systems" presented to the 2nd Annual Global Information Technology Management World Conference. All papers were published in their respective conference *Proceedings*.

**Sotirios Skevoulis**, Computer Science, presented a paper titled "A Transformation Mechanism to Facilitate Verification of Java Programming Properties" which was published in the *Proceedings* of the 4th International Conference on Systemics, Cybernetics and Informatics. The conference was held in Orlando, FL.

Three faculty members and two computer science graduate students shared their research findings with the CSIS community at Faculty Research Day held on May 2, at the Graduate Center. **Charles Tappert**, Computer Science, and **Shreenath Laxman** (MS/CS) and **Darshan Desai** (MS/CS) presented "VoiceXML and the CSIS VoiceXML Research Facility"; **Jennifer Thomas**, Information Systems, discussed her work in "Technology Integration and Critical Thinking"; and **Nanda Surendra**, Information Systems, talked about "Designing and Developing Web Applications: An Ethnographic Study (in Progress)."

CSIS peers honored three faculty members for outstanding contributions to the School at the spring Faculty Council meeting. **Joseph Bergin**, Computer Science, received the Excellence in Service Award, while **Namchul Shin**, Information Systems, and **Sotirios Skevoulis**, Computer Science, shared the Excellence in Research Award.

# Student Achievements



Dr. Charles Tappert with third-place winners Darshan Desai and Shreenath Laxman in IBM's VoiceXML Programming contest.

**W**ith the encouragement of Drs. Charles Tappert and Mehdi Badii, eight CSIS students presented their research at the Mid-Atlantic Student Workshop on Programming Languages and Systems – MASPLAS '01 sponsored by IBM in cooperation with ACM SIGPLAN. The workshop was held at the T.J. Watson Research Center in Hawthorne, NY on April 27. The participants included:

**Darshan Desai** (MS/CS) and **Shreenath Laxman** (MS/CS) "Voice XML Application Design Issues"

**Engin Erdogmus** (MS/CS) "Design and Implementation of a Generic Electronic Retailing Software"

**Jing Fu** (MS/CS) "Design of Dialog Systems Using Voice XML"

**Jonathan Law** (DPS) "A Template-based Application Framework for Building Multi-language Voice XML Applications"

**Sowmya Prabha Nagaraja** (MS/CS) and **Yuan Pan** (MS/CS) "A Parallel Merging Algorithm and Its Implementation with Java Threads"

**Chetan Sharma** (MS/CS) "The State of the Art in Voice XML"

**Darshan Desai** and **Shreenath Laxman** were awarded 3rd place in a VoiceXML programming contest also sponsored by IBM.

**Eric Cole** (D.P.S.), an expert in Internet Security, had his book *Hackers Beware* published by New Riders in August.

**Roberto Rodriguez** (BS/CS) was invited to teach a class in networking at Mount St. Michael's High School in the Bronx.

Numerous CSIS students were recipients of scholarships awarded for the first time this year:

**Frank J. LoSacco Ph.D. Memorial Scholarship**  
**Morris Cyrus** (MS/IS)



Morris Cyrus, recipient of the Frank J. LoSacco Ph.D. Memorial Scholarship with LoSacco family members.

## CSIS Endowed Scholarships

### Entering Students:

**Jessica Bonner** (BS/IS)  
**Alexander Grozdzburg** (BA/CS)  
**Irina Lysochenko** (Undecided CSIS)  
**Shuana Thompson** (BA/CS)

### CLOUT Student:

**Christina Clohessy** (AS/AIT)

### Continuing Students:

**Alisa Berdichevskaya** (BS/CS)  
**James Stempel** (BS/CS)

## Gloria Steinem Scholarship Competition — 1st Prize

**Philomena Connors** (BS/PCS)

**Rafael Diaz** (AS/OFT) and **Eugene Pepe** (AS/OFT), both Verizon employees from White Plains and Mahopac, respectively, were featured in "Online for Advancement," which appeared in *The Journal News* on August 2, 2001. Rafael and Eugene are two of 600 students nationwide who are pursuing an associate's degree in telecommunications online through the CSIS NACTEL program. Both have demanding jobs and young children and enjoy having the flexibility to study when and where it suits them.

## Gloria Steinem Scholarship Awarded

by *Tricia Brogan*, Academic Advisor, CSIS Westchester

**W**e would like to extend our congratulations to Philomena Connors (BS/PCS) for placing first in the Gloria Steinem Scholarship competition, which was held last spring. The award was based on submission of a paper relating to Women's Studies issues. Ms. Connors' work was initially written for Dr. Nancy Reagin's course on Models and Meanings of Motherhood in European History and Literature before she was nominated for the scholarship.

The Gloria Steinem Scholarship was established this year after Ms. Steinem spoke at Pace. Ms. Steinem generously donated the fee she would have earned for speaking to the Women's and Gender Studies Program. After receiving additional donations from the Pace University English Department and the Lubin School of Business, a scholarship was established in Ms. Steinem's name to award excellence in the field of Women's and Gender Studies.

Ms. Connors is currently a senior and is working towards her B.S. in Professional Computer Studies. After moving to the United States from Ireland in 1999, she received the Pace Trustee Scholarship and has been named to the Dean's List every semester since she began her studies with an impressive G.P.A. of 3.93.

In addition to writing the paper about Christine de Pizan, a medieval feminist, Ms. Connors has created a Web site on the topic. For more information or to read Ms. Connors' paper, log on to: [http://webpage.pace.edu/nreagin/spring02g/Christine\\_home.htm](http://webpage.pace.edu/nreagin/spring02g/Christine_home.htm).

## CLOUT Students' Success Stories

by Charlene Labenda, Director, CLOUT Program

Recently, the CLOUT Program had the unique opportunity to share its history, experiences, and student success stories in an interview on a local cable television program, "Views from the Pews." Fran Keegan, a CLOUT Advisory Board member, connected the CLOUT Program with Dr. Everett Parker, who was eager to learn more about it. After several conversations and sharing of background information, Dr. Parker arranged for the CLOUT Director, Charlene Labenda, and two CLOUT students, Janet Fisher and Christina Clohessy, to be interviewed on "Views from the

Pews" by Rev. Charles Calgani of the Congregational Church of the Highlands. The program aired on November 2 and 4 on Channel 71 White Plains Cable.

Undoubtedly, the most captivating parts of the interview were the moments when the students shared their thoughts, feelings, and experiences. Both Janet and Christina would also like to share their experiences with the Communiqué readers. Their stories are truly a reflection of their hard work, determination, and achievements.

**Janet Fisher:** It started approximately two years and four months ago. I was evicted out of my apart-

ment, and my fiancé left me with a newborn baby and many bills. I was depressed, ashamed and felt I had nowhere to go. My life was spiraling into a sea of negativity. It seemed as if nothing good was happening to me. I finally got the nerve to go to my local Department of Social Services office.

While receiving public assistance, I received a card in the mail about the CLOUT Program offered by Pace University. When I visited Pace, there were students who had previously been in my situation, talking about how their whole life had changed. After passing the entrance exam, I gladly accepted the offer to enroll in the

certificate program. It was not easy. My children missed me, and I missed them. At the time my children were 1 and 7 years of age. While attending the CLOUT Program, I found out that I was carrying yet another child. This made me strive harder to succeed.

CLOUT helped me to build confidence and make friends with women who were also transforming their lives. We were all working towards the same goal. I had a very strong support group, and we helped each other with homework and personal problems. This experience helped us to form a lifetime

*(continued on page 16)*

## Software Engineering Offers Practical Experience

by Judith Sullivan, MS/CS '02

Training students to be software developers in contemporary organizations is the objective of the yearlong CS615-616 course in software engineering that culminates the master's degree program in computer science. The course has always had an applied focus in which theoretical ideas were exemplified by bringing a true-to-life project through the life cycle of solidifying the specs, architecting the design, writing the code, acceptance testing, and performing feature upgrades. Projects were always of sufficient size that a group effort, with a well-coordinated division of labor, was a requirement for successful completion.

This year, Dr. Charles Tappert, Professor of Computer Science, who teaches the seminar, has made the traditionally true-to-life projects thoroughly genuine. He canvassed the campus in search of actual needs for new software among administrative units and faculty members. By the opening of the fall 2001 semester, Professor Tappert had lined-up a dozen substantial and challenging projects from which

teams of student developers could choose for their yearlong effort. Projects spanned the gamut of leading-edge technology, including an online survey system, needed by Barbara Penipede, the Associate Director of University Assessment; two different VoiceXML applications; a handwriting recognition application; and a medical system for entering patient data on a handheld device, needed by Dr. Barbara Thomas of the Lienhard School of Nursing who is assisted in this endeavor by Jean Coppola of the Department of Information Technology (DoIT).

In return for the promise of a custom-made application, the requesting client agreed to dispatch the role of a paying customer relying upon the on-time completion of an application that works dependably and according to specifications. Each client's first job was to meet iteratively with the development team in order to establish the system's requirements. This culminated with the team's delivery of a requirements document on which, if satisfactory, the client signed-off.

The nature of these projects is

illustrated by the medical data entry system for patient symptoms that I am working on. The data, entered via an interactive graphical user interface, is presented on a Palm Pilot that is being developed for bedside use in hospitals by nursing students. A typical use-case scenario opens with the entry of a patient identification followed by the presentation of the image of a body. Pointing to different parts of the body will evoke pertinent pop-up menus, check boxes, and combo boxes (drop-down list of choices with a field for text entry). Upon request, the personal digital assistant will display a report summarizing the physical examination with respect to fifteen realms of symptomatology (e.g., ear; eye; throat and neck; hip and thigh; knee and leg; feet and ankles; abdominal; gastrointestinal; cardiovascular; etc.). When the nursing student completes the exam, the record is saved. Later, the collected records are uploaded from the Palm to a database in the instructor's computer. The software development team consists of eight members: Judy Sullivan, Nat Panchee, Sten Westgard, Scott Palmer, Karen

Thabet, Hy Gia Park, Scott Palmer, and Patrick Cunning. They began work by establishing a Web site for posting notes from client meetings; notes from team meetings; their log of weekly accomplishments, "blueprints," and emerging deliverables; their e-mail archive; and their collection of links to sites with useful technical information. Their next two steps, taken concurrently, were: (1) capturing and finalizing the software's requirements, and (2) immersion in the technology of Sun's Java2 Micro Edition Wireless Toolkit, the PalmOS emulator, and integrated development environments especially suited to creating J2ME-Wireless applications. The team foresees design and coding taking place in three cooperating sub-groups; one focused upon the user interface, one focused upon the record format and the database, and one focused on information transfer between the Palm and the desktop computer.

The development experiences conveyed by the projects corralled by Professor Tappert will further promote CSIS's goal of equipping students to be practitioners conversant with the latest technology. ■

## CSIS Alumni/ae Association Hosts Event

by Mary Curtin, MS/CS '92 and Vice President, CSIS Alumni/ae Association

The CSIS Alumni/ae Association hosted Wireless Technology: What Will It Take to Cut the Cord? on October 25 on the New York City campus. The event, which was conducted by CSIS alums for CSIS alums, attracted over 35 graduates. Jeannie Song MS/CS '98 is credited with suggesting the topic.

Two CSIS alums — William R. O'Connell (MS/CS '87) and Daniel Crespo-Dubie (MS/TLC '92) — spoke to the topic. Nancy Turbe, president of CSIS alumni/ae association and managing director of Bear Stearns, moderated the discussion.

William O'Connell is the CIO of Consac Industries, a national manufacturer and supplier of vitamins, skin care products and herbal teas. He talked about his experiences with mobile computing,

specifically sales force automation. O'Connell also discussed real business problems regarding credit card processing, credit authorization and approval, and how sales force automation facilitates the completion of sales calls.

Daniel Crespo-Dubie is the director of IT communications for KeySpan Energy, the company that evolved as the result of the merger of Brooklyn Union with the Long Island Lighting Company in 1998. KeySpan, the largest gas company in the Northeast, offers a wide range of products and services for homes and businesses, including supplying natural gas and the maintenance of heating and central air conditioning systems to perform at peak efficiency. Additionally, the company offers the broadest spectrum of paging products ideal for Remote Energy Management. Crespo-Dubie provided an

implementation perspective in terms of planning and deploying an enterprise wireless application. Wireless technology is not new to KeySpan; they have been using it for some time in various functions such as the widespread use of meter reading systems.

A question and answer period followed the presentation. Afterwards, the graduates had time to network among themselves.

Any CSIS alum who is interested in becoming more involved in planning future events or who has not been receiving mailings in recent years, should contact Sheri Gibson, associate director of alumni relations, at (212) 346-1619. In addition, alums can update their profiles and learn the whereabouts of fellow classmates by going to [www.pace.edu](http://www.pace.edu) and clicking on "Online Community." ■

## I Do! I Do! I Do! I Do!

by Ken Norz, Assistant Dean and Director of Academic Systems

Love and marriage must be back in style, at least in CSIS. Dan Farkas, Dino Coutras, and newcomers Jean-Christophe Deprez and Richard Kline all said "I do" at some point over the summer.

Dan Farkas, chair of the IS Department in Westchester, married Paulette Muller-Girard (MS/IS '99). Paulette currently works for the Pace Computer Learning Center as a database manager. They met at Pace two years ago when Paulette joined the PCLC. Dan and Paulette were married on July 21 at the Vassar College Alumnae House. A reception attended by many CSIS faculty followed. This was not a union of just two people, but of seven! Between the two of them, they have five children. Dan has two sons, Tim and Devon, from a previous marriage and Paulette has three children — Mathew, Julia and Elise. All moved into Dan's house, which is undergoing a much-needed expansion at this time.

Both avid equestrians, Dan and Paulette honeymooned in Canada on a horseback-riding trip.

This was Dino Coutras' "second" marriage. Well, it was actually Dino's and his wife Stella's "second" marriage. Dino, of our CS Department in New York City, and Stella Farmaka were first married on January 29, 2000, at City Hall in Chicago. On June 24 of this year they had a formal church wedding in Nicosia, Cyprus, with many family and friends in attendance. The ceremony took place in a Greek Orthodox church, which dates back to the Byzantine era. Dino's friend Vassilis and Evi, a friend of Stella's, were witnesses. Two hundred people attended an outdoor reception and watched Dino and Stella perform traditional Greek dances. As for which anniversary they will celebrate, "We'll celebrate both," he said.

Jean-Christophe Deprez, a new faculty member in the IS Department in Westchester, has a similar

tale to tell. He and his bride Fabienne Ardus were married in Lafayette, LA, on June 21, 2001. There was a small ceremony in the backyard of the home of a French-speaking judge. The photographer and the judge's wife served as witnesses. Next summer, they will return to Belgium, their native country, for a larger "second" wedding with family and friends. Jean-Christophe and Fabienne knew each other for eight years before they began dating. They then dated for two years before marrying.

Richard Kline, a new faculty member in the CS Department in New York City, and his wife Maria Viggiani (Dyson '95) were married in St. Ann's Church in Yonkers on May 26. A reception for 120 guests followed at Villa Barone in the Bronx. Richard's brother Chris and Maria's long-time friend Annette served as witnesses. The couple met at Rensselaer Polytechnic Institute where Richard is completing his Ph.D. in computer science and Maria earned an M.S. in biology. They honeymooned on a Caribbean cruise. ■

## Congratulations!

Children of two members of the administrative support staff in the Dean's Office graduated from Pace in May. **Susan Downey's** daughter **Courtne** received a B.B.A. in finance and **Sue Montanti's** daughter **Jennifer** earned a B.B.A. in marketing.

**Sue Montanti's** other daughter **Jaclyn** was named Miss Columbus 2001 at the Columbus Day Parade on October 13 sponsored by the City of White Plains and the Antonio Meucci Lodge. In addition to writing an essay, eligibility was determined on the basis of the applicant's connection to the City of White Plains. Because Jaclyn is both a student (B.B.A. '00; M.B.A.) and employee at Pace, she qualified on two fronts!

**Dr. Mary Courtney's** son **Kevin** graduated from the University of Scranton in May with a B.S. in mathematics. He is currently teaching math at Monsignor Scanlon High School in the Bronx.

**Martinette Meikle**, Staff Assistant, completed her M.S. in information systems and has left the University to pursue a career as a database administrator.

**Dan Farkas**, IS Chair/Westchester, placed first in the Hunt Division at the Fifteenth Annual Memorial Country Pace last May. The Bedford Riding Lanes Association in Bedford, NY, sponsored the competition.

Wedding bells were ringing continually over the summer for four CSIS faculty members:

**Constantine Coutras**, CS, to **Stella Farmaka**  
January 29, 2000 (Chicago)  
June 24, 2001 (Nicosia, Cyprus)

**Jean-Christophe Deprez**, IS, to **Fabienne Ardus**  
July 21

**Dan Farkas**, IS, to **Paulette Muller-Girard** (MS/IS '99)  
July 21

**Richard Kline**, CS, to **Maria Viggiani** (Dyson '95)  
May 26



Here are four highly informative and interesting books that may be of interest to people in the computing disciplines.

***The Universal Computer: The Road from Leibniz to Turing***

by Martin Davis, W.W. Norton and Co. (2000) is a wonderfully gripping history of the theoretical foundations upon which our technologically modern computers are built. This is the story of insightful leaps in the theory of logic created by seven mathematical giants – Leibniz, Boole, Frege, Cantor, Hilbert, Gödel, Turing – and also includes many others. Davis paints biographical, yet human, portraits of each of these great thinkers to demonstrate how their struggle for truth, logic and beauty leads us to the advent of a universal machine – one of mankind’s greatest achievements. In this erudite book we learn the personal motivations and goals of these extraordinary pioneers whose originality over the last four centuries laid the groundwork for today’s computers. There is also a chapter on the history of the physical realization of the powerful ideas of these brilliant innovators, which documents the development of the first electronic computers in the twentieth century.

***Identification Numbers and Check Digit Schemes***

by Joseph Kirkland, MAA (2001) is a pellucid presentation of mathematical check digit schemes that recognize transmission errors when recording, scanning, or transmitting data via computers. Ubiquitous, identification numbers encode information related to products, documents, accounts, or individuals and allow the receiver of the information to recognize when an error has occurred. The addition of extra data to identification numbers in the form of a check digit(s)

increases the reliability that the receiver accepts transmitted information correctly. Kirkland provides a smooth and gentle transition from simple concepts to more complex mathematical structures used in check digit schemes. A panoply of specific codes is discussed (e.g., U.S. document identification numbers, U.S. post office money orders numbers, UPCs, ISBNs, as well as the more general IBM and Verhoeff schemes) using concepts from number theory and group theory. Because different check digit schemes have varying capabilities, Kirkland consistently discusses the pros and cons of each code and various criteria are used to judge the efficacy of each method.

***Cryptological Mathematics***

by Robert Edward Lewand, MAA (2000) is a concise and rigorous introduction to the art and science of cryptological methods. Cryptography, the encoding and decoding of information into hard-to-break secret codes for security, is extremely important for computer science and Internet communications. Using key ideas from a wide spectrum of mathematics (e.g., abstract algebra, discrete math, matrix theory, probability and statistics), the reader is gradually led from simple substitution ciphers to polyalphabetic and polygraphic ciphers, and finally to public key systems. Lewand, aided by the comic antics of the book’s main cartoon characters Beth, Stephanie, and Molly, adroitly demonstrates how and why the mathematical techniques for enciphering and deciphering actually work. Because serious cryptology must be done with high-level computing equipment, there are many exciting code making and code breaking exercises and projects to delight computer scientists who enjoy doing problems on their computers.

These problems will surely test their creativity, intuition and tenacity.

***The Difference Engine***

by Doron Swade, Viking Penguin, (2001) is the dramatic story of Charles Babbage (1791 – 1871), the inventor of the computing machine. In the early nineteenth century, engineering, insurance, banking, science, and navigating relied heavily on tables, which were manually calculated. Mathematician Charles Babbage, frustrated by calculations that were both tedious and error prone, was determined to create an engine that would eliminate these problems. His brilliant ingenuity not only allowed him to design reliable mechanical, arithmetic calculating machines, but it also led him into the uncharted realms of computing and programming. Via his analytical engine (the world’s first computer), Babbage and his supporter, Ada, Countess of Lovelace, foresaw the important consequences of the computing machine. They were however thwarted in their attempts to realize their vision by assembly disputes, funding crises, personality clashes, and the limitations of nineteenth-century technology. The last part of the book is an ironic, déjà vu story of a group of modern-day scientists and engineers who finally succeed in building a working Babbage computer based on his old plans in time for his 200th birthday celebration, but not before encountering similar trials and tribulations.

I thoroughly enjoyed each of these stimulating books on computer science and the history of computing and I hope you will too. ■

## BOOKS, JOURNAL ARTICLES, and CONFERENCE PROCEEDINGS

### Joseph Bergin

"The Undergraduate Language Course: What to Do?," *SIGPLAN Notices of the ACM*, 36:6 (June 2001).

### Tom Brier and L. Bishara

"Prudential Real Estate and Relocation Services: The Customer Is Everything," a case study published by the IBM Advanced Business Institute.

### Eric Cole

*Hackers Beware*, New Riders (August 2001).

### Michael L. Gargano and W. Edelson

"Constrained Minimal Spanning Trees Solved by a GA with Feasible Encodings," *Congressus Numerantium*, 143 (2001).

"Modified Prufer Code — an  $O(n)$  Implementation," *Graph Theory Notes of New York XL*, New York Academy of Sciences (2001).

### Michael L. Gargano and M. R. Gargano

"GA Optimization Experiments on Electoral Divisor Methods," *Graph Theory Notes of New York XL*, New York Academy of Sciences (2001).

### Michael L. Gargano, Z. Chen and H. Zhang

"Evolving Optimal Reliability Networks Subject to Budget Constraints Using Genetic Algorithms," *Congressus Numerantium*, 143 (2001).

### Michael L. Gargano, L. Quintas and J. Rubens

"Complement Domination," *Congressus Numerantium*, 145 (2001).

### Anthony Joseph, A. Brodzik and R. Tolimieri

"Under-sampled Weyl-Hershenberg Expansions via Orthogonal Projections in Zak Space," *Signal Processing*, 81:11 (November 2001).

### Susan M. Merritt, Fred Grossman, Charles Tappert, Joseph Bergin, Howard Blum, Ronald Frank, David Sachs, Allen Stix and Stuart Varden

"The Doctor of Professional Studies in Computing: An Innovative Professional Doctoral Program," *Proceedings of the 19th Annual Information Systems Education Conference — ISEC-ON 2001* (November 2001).

### Susan M. Merritt

"CSIS Builds the IT Workforce for the New Millennium," *Hudson Valley Business Journal*, p. 15 (August 13, 2001).

## ELECTRONIC PUBLICATIONS

### Joseph Bergin

"Coding at the Lowest Level: Patterns for Novices," presented at the EuroPLOP Conference held in Irsee, Germany, in July and available at <http://csis.pace.edu/~bergin/patterns/codingpatterns.html>

### Joseph Bergin, K. Marquardt, J. Eckstein, and M. Voelter

"Patterns for Experiential Learning" presented at the EuroPLOP Conference held in Irsee, Germany, in July and available at <http://www.hillside.net/patterns/EuroPLOP/papers/Eckstein-MarquardtVoelter.zip>

### Joseph Bergin, J. Eckstein, E. Wallingford, and M. L. Manns

"Patterns for Gaining Different Perspectives" presented at the Pattern Languages of Programming – PLOP 2001 Conference held in Monticello, IL and available at [http://jerry.cs.uiuc.edu/~plop/plop2001/accepted\\_submissions/PloP2001/ewallingford0/PloP2001\\_ewallingford0\\_1.pdf](http://jerry.cs.uiuc.edu/~plop/plop2001/accepted_submissions/PloP2001/ewallingford0/PloP2001_ewallingford0_1.pdf)

## CSIS TECHNICAL REPORTS

### Nelson A. Carella

"The Totient Function of Composite Integers  $n = pq$ ," *Technical Report*, No. 165 (July 2001).

### Michael L. Gargano, J. W. Kennedy and L. V. Quintas

"Recurrence Relations and Sums of Powers of Integer Sequences," *Technical Report*, No. 163 (May 2001).

### Susan M. Merritt

"A Simple Story of the Evolution of New Understandings in Computer Science," *Technical Report*, No. 164 (June 2001).

### Sotiris Skevoullis and X. Jia

"Generic Invariant-Based Static Analysis Tools for Detection of Runtime Errors in Java Programs," *Technical Report*, No. 162 (April 2001)

### Lixin Tao

"Application Service Provider Model: Perspectives and Challenges," *Technical Report*, No. 168 (October 2001)

### Charles C. Tappert and Pauline H. Mosley

"Recent Advances in Pen Computing," *Technical Report*, No. 166 (August 2001).

### The Asynchronous CS 502 and CS 504 Development Team

"Exception Handling in Java: the try/catch/finally Statement," *Technical Report*, No. 167 (September 2001)



## CLOUT Students (continued from page 12)

CLOUT, my daughter went from having C's to B's and A's.

I am now able to save my own money for my children's future. I now have great computer skills, earn three times the minimum wage, have great health benefits, and have my own apartment and a car. I graduated with distinction, earning a GPA of over 3.5. I earned both my Certificate in Personal Computer Applications for the Office Professional and my associate's degree in Applied Information Technology.

I recommend this program to anyone who is ready for a change and would like to be self-sufficient. This program is not easy, but has many rewards for those who are serious about changing their life and future.

**Christina Clohessy:** In 1999, I received a letter from Pace telling me about the CLOUT Program.

I was extremely interested in the enclosed literature, and attended the next information session. The program director and other CLOUT students made such a compelling case for the program that I left there knowing I would do whatever it took to join. When I received confirmation of my acceptance, I was thrilled.

I had very little computer

knowledge. I realized that in order to move away from minimum wage, dead-end jobs, I would need to have the necessary computer skills with the latest technology. This is what the CLOUT Program offered, so I jumped at the chance. I attended the certificate program every day. The first few weeks were a little intimidating and many times I feared I would not be able to fully comprehend all this new information. As time progressed so did my thirst for knowledge. I never missed class, thanks to an invaluable babysitter, a determination to succeed, and the generous support I received from the CLOUT staff and instructors.

Over the next eight months, I became proficient in Microsoft Office applications, HTML, and related office procedures. I completed my internship in the Graduate Admission Office at Pace University, White Plains. Through my internship experience, I was able to further enhance my computer skills in an office environment. The assistance I received on that internship was second to none. The staff did everything possible to make my experience educational, informative and supportive. It also made the transition from school to work easier. I had become accustomed to leaving



home and children each day, and that discipline helped my family and me cope with the changes more rapidly.

After I graduated from the CLOUT Certificate Program (with Dean's List Honors) in June 2000, I applied for a position in the Graduate Office of Sarah Lawrence College in Bronxville. I was hired as an Administrative Assistant to the Human Genetics Program. I am still employed there today. I have continued on at Pace for the associate's degree in Applied Information Technol-

ogy, remained on the Dean's List, and I hope to complete it in December 2001. I also plan to continue on with my education in 2002.

To sum up, words cannot adequately express my gratitude to Pace University, the CLOUT Program, the instructors and staff that have made my dream of an education and quality employment a reality. Not only has Pace provided me with an education, it had elevated my self-worth as a human being.

Thank you Pace! ■

## upcoming events

### December 2001

- 17 President's Visit  
156 William Street
- 18 President's Visit  
Graduate Center
- CLOUT Graduation  
Graduate Center

### January 2002

- 16 CSIS Advisory Board Meeting Videoconference  
Graduate Center and Midtown Center
- 17 CAM Steering Committee Meeting  
Midtown Center
- 25 Faculty Research Day  
Graduate Center
- 30 CLOUT Advisory Board Meeting Videoconference  
Graduate Center and Midtown Center

### April 2002

- 19 Mid-Atlantic Student Workshop on Programming Languages and Systems - MASPLAS '02  
Graduate Center

### May 2002

- 14 Westchester CSIS Award Ceremony  
Pleasantville
- 20 Westchester Commencement  
Undergraduate 1:00 p.m.  
Graduate 5:00 p.m.  
Westchester County Center
- 23 New York Commencement  
Radio City Music Hall