MESSAGE FROM THE DEAN
We Have Not Seen Anything Yet!

by Dr. Susan M. Merritt

We have all heard about the Computer Revolution, the Networking Revolution, the Internet Revolution, the Information Age. We are experiencing a slow economy and a sluggish job market. Some wonder if the revolutions are ever. Not so! I predict that we have not seen anything yet. Just last week, The Chicago Tribune reported that the single fastest growing occupation in this decade will be computer software development. Moreover, in the top 15 jobs for the decade, 9 are in software, networks, or computer support. Just six months ago, The New York Times reported similar results indicating that only two fields dominate the list of fastest growing occupations: computers (and health care).

These predictions are supported by a number of well-known sources:

• The U.S. Bureau of Labor Statistics has identified the top five fastest growing occupations in the next ten years to be in the IT area. Topping the list of both the fastest growing and greatest number of new jobs created are those of computer software developer and computer support specialist.

• In the New York City region three of the top five fastest growing occupations are—computer software developer, computer support specialist, and systems analyst—according to the New York State Department of Labor Occupational Outlook 1998-2008. Moreover, most of these jobs will require a bachelor's degree, if not a master's degree with a technology core.

• According to the recent National Science Foundation's Science and Engineering Indicators 2002 report, employment in science and engineering occupations is expected to

(continued on page 15)

CSIS to Honor Daniel Cavanagh

MetLife Executive, This Year's LST Awardee

by Jennifer White, Assistant Dean for Research and External Relations & Vincent Minervini, Executive Assistant to Daniel Cavanagh

 Pace University's School of Computer Science and Information Systems will honor Daniel J. Cavanagh, MetLife executive vice president of operations and information technology, with its eighth annual Leadership and Service in Technology Award on June 2, 2003, at the Reuters building in Times Square. Inventor, president of DEKA Research and Development Corporation, and founder of the For Inspiration and Recognition of Science Technology (FIRST) Robotics Competition, Dean Kamen will give the keynote address at the event.

Mr. Cavanagh joined MetLife in 1957 as an insurance trainee in the industrial insurance department. He advanced through positions of increasing responsibility and has led both technology and business organizations. In 1983, he was promoted to senior vice president in charge of information systems. In 1991, he was appointed president of Metropolitan Property and Casualty Insurance Company and, in 1993, chief executive officer. He has served on its board of directors since 1986. Mr. Cavanagh was appointed executive vice presi-

dent in March 1999 and is currently in charge of Operations & Technology, which includes Information Technology, Customer Response Centers, Remittance Processing, and Individual Business Operations. He is also a member of MetLife's Executive Group, comprised of the top nine leaders of the enterprise.

(continued on page 2)
Dean Kamen to Deliver Keynote
by Louise P. Kleinbaum,
Assistant Dean and Director of Communications

For the first time since the inception of the annual Leadership and Service in Technology Award presentation, a guest speaker will deliver a keynote address at the event. Dean Kamen, an inventor, entrepreneur and tireless advocate for science and technology, will speak on "Educating the Next Generation in Science and Technology."

As an inventor, Dean Kamen holds more than 150 U.S. and foreign patents, many of them for innovative medical devices such as the wearable infusion pump, a kidney dialysis machine, the Crown Stent, and a personal transporter known as the IBOT that helps disabled people climb stairs, traverse difficult terrain and raise themselves to eye-level so that they can talk and interact with people who are standing. He recently received the $500,000 Lemelson-MIT Prize, the largest single award for invention, and generously donated the entire amount to For Inspiration and Recognition of Science and Technology (FIRST).

FIRST, founded by Kamen a decade ago, is an organization dedicated to motivating students to learn more about science and technology. The organization sponsors the FIRST Robotics Competition, which teams professional engineers with high school students across the country. The event impacts thousands of students nationwide, many of them women and minorities from large urban schools.

With the success of the FIRST Robotics Competition, FIRST introduced the FIRST LEGO League (FLL) in 1999 as a means of expanding FIRST's reach to expose younger children to the science and technology fields. As a result of a partnership between FIRST and the LEGO Company, FLL offers hands-on experience for 9- to 14-year-old children to explore and invent their own robotic creations. FLL has experienced tremendous growth, reaching more than 25,000 children in the United States since its inception.

Plans are underway for Pace to host the next FLL gathering next spring on the Pleasantville campus.

CSIS to Honor Daniel Cavanagh (continued from page 1)

Mr. Cavanagh has championed technology innovation, throughout his career, and continues to drive technology solutions that enable MetLife's businesses. He was recently named one of the "Premier 100 IT Leaders" by Computerworld.

Corporate citizenship and public involvement have been part of the MetLife philosophy since 1909 when MetLife Vice President (and later president) Haley Fiske announced that "insurance, not merely as a business proposition, but as a social program" would be the future policy of the company. This dedication to civic duty has led not only to extraordinary social programs, but also to a remarkable commitment to its employees. During the course of his 46-year career with the company, MetLife has provided Mr. Cavanagh with many educational and professional opportunities. As a result, he has dedicated his own career to helping young people realize the opportunities that are available to them in science and technology.

In 1976, MetLife established the MetLife Foundation to support health, civic, educational and cultural organizations. Mr. Cavanagh serves on the Foundation's Board of Directors. In 2002, MetLife and the MetLife Foundation contributed $30 million to support children and families, strengthen communities, promote inclusion, improve education and make the arts accessible to all. Among the many programs and activities that benefit young people and families are: The MetLife Survey of the American Teacher; Parent Talk, a parenting skills campaign to help prevent substance abuse; the MetLife Foundation Leveraged for Learning Fund, which creates after-school Learning Centers in local Boys & Girls Clubs; and Read with Me: The RIF Community Challenge. MetLife Foundation also provides support to Junior Achievement, the National 4-H Council and Girl Scouts of America, among other organizations that foster the positive development of young people. In 1998, Mr. Cavanagh served as United Way Chairperson for the State of Rhode Island. At MetLife, Mr. Cavanagh has sponsored, for many years, InRoads interns throughout his organization, offering talented minority youth the opportunity to experience work at a large financial institution. In addition, he has fostered the growth of promising young professionals through training, diversity and mentoring programs that promote development and provide opportunity.

Initially awarded in 1996, the Leadership and Service in Technology Award is presented annually to the individual or 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.

The annual award presentation and reception is the primary fund-raiser for CSIS. All proceeds from the event benefit the CSIS Endowed Scholarship Fund. These funds help to make a degree in technology a reality for promising students.

Contact Dr. Jennifer White at either (212) 346-1689 or jwhite@pace.edu, for more information or to register.
Sloan Scholar Grant Renewed
by Dr. David Sachs, Associate Dean

Pace University's School of Computer Science and Information Systems is proud to announce the award of a $350,000 grant from the Alfred P. Sloan Foundation. The grant is to be used to continue work that was begun in 2002 to provide Co-op internships to small businesses and nonprofit organizations located in lower Manhattan who were adversely impacted by the events of September 11, 2001, and who are in need of the available assistance at no cost or on a subsidized basis. The grant, which was written by David Sachs, associate dean, Susan Merritt, dean, and Joan Mark, executive director of Co-op Education and Career Services, will provide funds over the next year that will enable approximately 70 interns to work for these small businesses and nonprofits.

During 2002, 51 students who had 67 placements participated in the Sloan Scholar program. Twelve of them were CSIS students. They worked for 28 small businesses and nonprofit organizations. Several representative quotes provide insight into the value of the Sloan Scholar program and its impact:

“We were very pleased to receive an intern from the Sloan Scholar Program to assist us with our regeneration. The Sloan Scholar program was instrumental in allowing me to assign duties and focus my energies on the business.”
—Anastasia Gagas
Complete Mail Centers

“I want to express my sincere appreciation to Pace University and the Sloan Foundation for providing graduate students to assist in the rebuilding of my company, eSoftwareHelp.com. Having lost all employees shortly after September 11, I had to start over, rebuilding my company from the ground up. We could not have made it thus far without the help that these students have provided.”
—Rich Garboski
eSoftwareHelp.com

“Since last spring, we have been able to continue the rebuilding of our family audio/video business that was severely impacted by the events of 9/11 through the use of two student interns, subsidized by the Sloan Foundation. Laura, an undergraduate student majoring in marketing, helped us with rebuilding our customer mailing list, preparing direct mail materials, and writing press releases. Vikas has built a new Web site for us.”
—Michael Kramer
AST Sound

Joan Mark is now accepting applications for Sloan Scholar interns for summer and fall 2003. Ms. Mark may be reached at jmark@gcs.edu or (914) 773-3572.

CLOUT Receives $300,000 Grant
by Allison Horan, CLOUT Student Program Advisor and Seminar Coordinator

After nearly a year of proposals, presentations and site visits, the CLOUT program received a $300,000 grant from the Robin Hood Foundation’s Robin Hood Relief Fund. The Relief Fund was instituted in response to September 11 to provide aid to individuals suffering from the event’s economic impact, particularly low-income individuals. The funds received will enable eligible individuals to undergo job training and will cover the cost of books and supplies, transportation and a stipend.

According to a June 27, 2002 survey and analysis conducted by McKinsey and Co., which was sponsored by the 9/11 United Services Group, “33% of affected workers seeking employment cite computer skills as the biggest obstacle to securing employment and 16% claim they do not even know where to start looking for a job—making job training and job placement services imperative for many displaced workers.”

Accordingly, under the grant, 25 full-time and 25 part-time students whose employment at or below Canal Street was affected as a direct result of September 11 will receive training in computer applications and office management. Participants will engage in CLOUT’s Computer Applications for the Office Professional training program offered at the Midtown Center, which includes coursework in word processing, database applications and business communication as well as internships. The courses offered through the grant will be noncredit-bearing.

In addition to coursework, students will be guided in the acquisition of the “soft-skills” necessary to maintain employment—a facet of the CLOUT program that contributes to an employment rate of over 85 percent. To accomplish this, CLOUT will employ two staff members at the Midtown Center location—a full-time case manager and a part-time employment specialist.

Full-time training will take place over a six-week period, 35 hours per week, followed by an additional six weeks of internship or employment, if employment should occur first. The part-time program, which can be run during days or evenings, will be for approximately 15 hours per week, not including lab time, and will last eight months.

Like any other CLOUT student, those enrolled under the grant may take advantage of University facilities and services, including the services offered through the Thomas J. Mckane Center for Psychological Services. The counseling offered through the Center can help students overcome nonacademic obstacles to their success.

Recruitment has already begun to identify eligible participants. Lynne Larkin, program administrator for CLOUT, has been working with various agencies, community-based organizations, foundations, and settlement houses such as United Neighborhood Houses of New York, the Brooklyn Bureau of Community Service, Wildcat, 9/11 United Services Group, and the New York City Housing Authority to recruit potential students for classes, which are scheduled to begin in April.

Unlike groups that have previously been trained through the CLOUT program, those funded under this grant will not have to meet any financial prerequisites to be eligible for training. However, students must undergo a financial needs assessment to determine their receipt of stipends for transportation and incidental living expenses provided through the grant.

To date, the CLOUT program is one of seven organizations that provide employment training that has received a grant from the Robin Hood Foundation’s Robin Hood Relief Fund. “The Robin Hood Foundation has an impeccable reputation for funding organizations that produce consistent, positive results,” said Dr. Susan Merritt, CSIS dean.

“CLOUT is one such organization, and we’re so pleased to be able to work with the Robin Hood Foundation to help ease the burden brought on by the events of September 11.”
Technology Center Receives $25,000 Grant

JPMorganChase Foundation Supports Training for Nonprofits

by Babette Kronstadt, Director, Pace Computer Learning Center

Selected nonprofit organizations throughout lower New York State will be better able to take advantage of today's technologies to operate more effectively, thanks to free or low-cost training that the Technology Center for Education and Community Empowerment (Tech Center) will provide with help from a $25,000 grant from the JPMorganChase Foundation.

The Tech Center was started in 1997 with a grant from the Bell Atlantic Foundation. Its initial activities were focused primarily on K-12 teachers. It has continued and expanded its work with nonprofit agencies in Westchester during the last two years with a grant from Texaco Corp., offering free or subsidized training that has helped close to 20 nonprofits improve their computer skills. Prior to beginning training under the Texaco grant, the Tech Center surveyed the technology training needs of Westchester nonprofit agencies, finding that significant gaps in understanding and use of technology existed in many county nonprofit agencies.

Previous clients of the Tech Center have included Union Child Care Center in Greenburgh, the Family Service Agency of Westchester, Helping Our People Everywhere, Inc. (H.O.P.E.), Westhab and the Westchester Arts Council.

The new grant will allow Pace to expand computer training to additional nonprofits within Westchester and to others in Manhattan, Putnam, Rockland and Orange Counties. This is significant because the Tech Center's work with nonprofits indicates that the need is still there. In addition, because many nonprofits do not have the expertise to know what a computer can or cannot do to help meet their organizational goals, nor the human infrastructure to help each other effectively, they benefit greatly from many of the extras provided by the Tech Center's training.

A separate plan is established for each individual agency. Depending on the agency's needs, this may include selected staff members' participation in public Pace Computer Learning Center classes, customized workshops for the agency's employees, help with needs assessment and technology planning, focus groups, and posttraining visits to the participants at their workplaces to ensure that they are able to apply newly learned skills.

Nonprofit agencies interested in exploring participation in future training should contact Babette Kronstadt or Sylvia Russakoff at (914) 422-4328.

CSIS Wins Award for Online Education

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

Nancy Hale, Technology Systems chair, and David Sachs, associate dean, recently accepted the newly established 2002 Sloan-C Award for Excellence in Online Student Satisfaction in the National Coalition for Telecommunications Education and Learning (NACTEL) Program on behalf of the School. The award, which recognizes CSIS for its efforts to implement and share an improvement system to refine student services, pedagogy and curriculum based on ongoing student feedback, was presented at the awards banquet held on November 8 at the Eighth Sloan-C International Conference on Asynchronous Learning Networks in Orlando, FL.

In 1998, CSIS received a grant of $500,000 to develop an online associate's degree in telecommunications in conjunction with NACTEL for employees of four major telephone companies and two telecommunications unions. The program, which is commonly referred to as the NACTEL Program, is codirected by Nancy Hale and David Sachs. To date, 30 people have graduated from the program and several hundred students nationwide are currently enrolled. Prior to the creation of NACTEL, CSIS had received two smaller grants from the Sloan Foundation, which were used to create both credit- and noncredit-bearing, asynchronous telecommunications courses.

When informed of the award, Dean Susan Merritt said, "We are delighted that our students and members of the NACTEL team are being recognized by Sloan-C for their efforts to continuously improve and refine the online program. The feedback from students and faculty and staff have been outstanding."

Sloan-C is primarily a consortium of accredited higher education institutions that are actively involved in the development of equipment, tools and infrastructure support for the delivery of online education with funding from the Alfred P Sloan Foundation. Members share their experiences in an effort to make quality education online part of everyday life, accessible and affordable for anyone, anywhere, at any time, in a wide variety of disciplines.

CSIS Wins Award for Online Education

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

Nancy Hale, Technology Systems chair, and David Sachs, associate dean, recently accepted the newly established 2002 Sloan-C Award for Excellence in Online Student Satisfaction in the National Coalition for Telecommunications Education and Learning (NACTEL) Program on behalf of the School. The award, which recognizes CSIS for its efforts to implement and share an improvement system to refine student services, pedagogy and curriculum based on ongoing student feedback, was presented at the awards banquet held on November 8 at the Eighth Sloan-C International Conference on Asynchronous Learning Networks in Orlando, FL.

In 1998, CSIS received a grant of $500,000 to develop an online associate's degree in telecommunications in conjunction with NACTEL for employees of four major telephone companies and two telecommunications unions. The program, which is commonly referred to as the NACTEL Program, is codirected by Nancy Hale and David Sachs. To date, 30 people have graduated from the program and several hundred students nationwide are currently enrolled. Prior to the creation of NACTEL, CSIS had received two smaller grants from the Sloan Foundation, which were used to create both credit- and noncredit-bearing, asynchronous telecommunications courses.

When informed of the award, Dean Susan Merritt said, "We are delighted that our students and members of the NACTEL team are being recognized by Sloan-C for their efforts to continuously improve and refine the online program. The feedback from students and faculty and staff have been outstanding."

Sloan-C is primarily a consortium of accredited higher education institutions that are actively involved in the development of equipment, tools and infrastructure support for the delivery of online education with funding from the Alfred P Sloan Foundation. Members share their experiences in an effort to make quality education online part of everyday life, accessible and affordable for anyone, anywhere, at any time, in a wide variety of disciplines.

CSIS Wins Award for Online Education

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

Nancy Hale, Technology Systems chair, and David Sachs, associate dean, recently accepted the newly established 2002 Sloan-C Award for Excellence in Online Student Satisfaction in the National Coalition for Telecommunications Education and Learning (NACTEL) Program on behalf of the School. The award, which recognizes CSIS for its efforts to implement and share an improvement system to refine student services, pedagogy and curriculum based on ongoing student feedback, was presented at the awards banquet held on November 8 at the Eighth Sloan-C International Conference on Asynchronous Learning Networks in Orlando, FL.

In 1998, CSIS received a grant of $500,000 to develop an online associate's degree in telecommunications in conjunction with NACTEL for employees of four major telephone companies and two telecommunications unions. The program, which is commonly referred to as the NACTEL Program, is codirected by Nancy Hale and David Sachs. To date, 30 people have graduated from the program and several hundred students nationwide are currently enrolled. Prior to the creation of NACTEL, CSIS had received two smaller grants from the Sloan Foundation, which were used to create both credit- and noncredit-bearing, asynchronous telecommunications courses.

When informed of the award, Dean Susan Merritt said, "We are delighted that our students and members of the NACTEL team are being recognized by Sloan-C for their efforts to continuously improve and refine the online program. The feedback from students and faculty and staff have been outstanding."

Sloan-C is primarily a consortium of accredited higher education institutions that are actively involved in the development of equipment, tools and infrastructure support for the delivery of online education with funding from the Alfred P Sloan Foundation. Members share their experiences in an effort to make quality education online part of everyday life, accessible and affordable for anyone, anywhere, at any time, in a wide variety of disciplines.
Electronic Community Building: A Case Study

by Dr. Stuart A. Varden, CSIS Adjunct

What are the characteristics of the Internet that place it apart from what had come before? Is it the large repository of online information or the ability to transmit data, voice, image and video information over one seamless infrastructure? As important as these may be, I would argue that a more compelling characteristic of the Internet is its ability to serve as a platform for the creation of electronic communities of common interest that transcend time and distance. This article is about one such modest effort in electronic community building.

Fifty-three years ago Theodore "Fats" Navarro died in New York at the age of 26 of tuberculosis and heroin addiction. Andy Kirk, in whose famous Kansas City-based Clouds of Joy Orchestra Navarro had played in 1943 and 1944, paid for the funeral expenses and asked the funeral director to choose the burial ground. He selected the Rose Hill Cemetery in Linden, NJ. But who was Fats Navarro and why should anyone care? Well, he was one of the greatest jazz trumpet players ever. He was a contemporary of Charlie Parker, Dizzy Gillespie, and a young Miles Davis, and in the late 1940s helped create and establish what is known as "Bebop" or "modern" jazz.

Being a great jazz fan since childhood, I decided one day in 1997 to see what information was available on the Internet about my favorite trumpeter. I discovered that very little could be found beyond ads for records and CDs. The Web was still pretty new, so I immediately undertook the project of creating a Web page to honor him and his contribution to jazz. It included a biographical sketch, photos, audio clips of solos, and a complete discography of his recordings.

At first, nothing happened, but as the months and years went by, I received a regular stream of inquiries. They were from everywhere, including Japan, Australia, Africa, Europe, and all around the United States. They were from musicians, jazz historians, critics, writers, music students, record company executives, collectors, radio DJs, jazz fans like me, and even Navarro family members. Some just sent their good wishes, others had corrections or suggestions to offer. A few people sent me tapes of rare recording sessions. I noticed that other jazz Web pages had established links to my page. After about two years, the Web page was the first listed among some 10,000 responses to a google.com "Fats Navarro" search. In short, the Web page had become the main Web-based repository of information about Fats Navarro.

In seeking to photograph Navarro's headstone for posting on the Web page, I discovered that his grave was unmarked. On the Web page, I lamented this sad fact. Soon after, I heard from Linda Navarro, Fats' surviving daughter. We talked about the possibility of raising funds to erect a proper headstone, and I volunteered to use the Web page in this effort. This was in fall 2001. In the coming months, we received from five countries, 26 contributions ranging in amounts from $5 to $500. Our fundraising goal had been $2,500, but we raised $3,150. Maxine Gordon, widow of tenor sax great Dexter Gordon who had played with Navarro, called Bruce Lundvall, President of Blue Note Records and Board Chairman of Jazz Alliance International (JAI), for help with the project. JAI responded by establishing a Fats Navarro Scholarship for promising music students, and also became involved with the headstone ceremony.

On the morning of September 24, 2002, the 79th anniversary of Navarro's birth, JAI President Chuck Iwanusa presided over an impressive headstone dedication. About 50 were in attendance at the graveside, including people from as far away as Los Angeles and Denmark.

The handsome headstone has a portrait of Navarro in the upper left-hand corner and, over his birth and death dates, an inscribed statement he had made in an interview for Metronome magazine in 1947: "I'd like to play a perfect melody of my own, all the chord progressions right, the melody original and fresh — my own."

Following the graveside dedication ceremony, JAI sponsored a reception at Amici's Restaurant in Linden. The Mayor proclaimed the day "Fats Navarro Day" in Linden. That evening at New York's Jazz Standard, 14 of today's best jazz trumpeters gathered before a full house to pay homage to Navarro and help benefit the scholarship fund.

While I soaked in the experiences of the day, I reflected on how and why this rewarding and significant event had occurred. I recognized that there could be but one explanation — the Web page. The Web page had been the point of concentration that had pulled together a relatively small but devoted collection of like-minded people. There was now a "Fats Navarro Diaspora" of sorts that had been brought together to form a loose community of common interest. What I found to be particularly rewarding was that the collective energy of the community had been translated into positive actions that produced tangible and lasting results.

Special note of appreciation:
I would like to offer my thanks to Pace University and CSIS for hosting this Web page and for providing technology support where needed. The Fats Navarro Web page can be found at: http://csis.pace.edu/~varden/navarro/navarro.html.
Arts-in-Medicine: Healing Power of Music

Faculty Member Shares Knowledge and Experience

by Professor Michael Braudy, Information Systems

In April 2002, I attended the annual conference of the Society for the Arts in Health Care (SAH), in Gainesville, Florida, which brought together artists, poets and musicians who use art and music in the health profession. Shands, the University of Gainesville hospital, has been a pioneer in the arts-in-medicine (AIM) field, John Graham-Pole, a doctor in the bone-marrow cancer unit, and Mary Lockwood-Lane, a nurse, initiated the AIM program in 1999. Dr. Graham-Pole volunteers his time as a clown because he realizes the health benefits of laughter.

The conference, sponsored by the University of Gainesville, began with a day titled “Caring for the Caregiver,” and was of special interest to me because I have played violin, as a volunteer, in patients’ rooms at Long Island College Hospital (LICH) for the past year and a half. Doctors and nurses at LICH often comment that they need music as much as their patients, and a doctor often comes to the door, gives a “thumbs up,” and listens with the patient. Other sessions in the conference included “Creating a Successful Arts in Health Care Program” and “Caring for the Caregiver: Report from Japan.”

Guest speakers included Jean Watson, a nurse, and Don Campbell, author of *The Mozart Effect*, which details the benefits of listening to classical music.

Jill Sonke-Henderson, a dancer and artist in residence at Shands, led a session on movement that had us all dancing! Jill dances with patients, which is remarkable to see. She and I went into the wards together and played for a man awaiting a heart transplant. The music and dance lifted his spirits and seemed to make him less lonely in his wait.

One day at lunch time, a drummer and I played in the hospital lobby as patients, staff and visitors passed by or sat down to listen. I could see by their smiles that the music brightened their day.

There were several public evening performances in the conference, including a musical duo called Lelavision that played on original musical instruments of strings and metal, and Patch Adams, the famous doctor/clown. A highlight was the opportunity to accompany Coleman Barks, translator and reader of the mystic Sufi poet Rumi, along with three drummers from Tampa. Barks adds humor and depth to his performance. I was tickled when he asked me, “Do you know any Celtic tunes?” Because I do, I played the Scottish melody “Will You Go, Lassie, Go” as he read the first poem.

On the final day, in a session called “The Art of Wholeness in Medical Education,” we learned that medical training in universities now typically includes a unit on the use of music and art for patient and doctor. This underscored the fact that the medical profession now recognizes the connection between the arts and health.

My interest in music and health, especially Indian music, goes back three decades, when I first imagined using music for relaxation and health with no idea what form it would take. In 2001, when I first met doctor-physiologist-musician Dr. P. Bharathi, she had made a number of music therapy CDs corresponding to Indian raga (roughly equivalent to Western scales) with respiratory problems, blood pressure, insomnia, anxiety and depression. We have since made three recordings together, called Vridhithi (Growth), Sumanas (Music for the Heart) and Ragas for World Peace. (For more information, see www.michaelbraudy.com).

This winter, I taught a course in Pace University’s Adult and Continuing Education program called “Ragas: Emotion, Meditation and Health” in which I had a chance to share my recordings, current research on health and music, and source materials. I wrote a music software program for musicians in the 1980s called Ultimate Pitch that a graduate student and I are now updating to include Indian as well as Western classical music, as the violinist Yehudi Menuhin proposed to me several years ago.

Attending the SAH conference and becoming a member enables me to meet and work with people interested in the arts and medicine. For example, one member met at the conference is now helping LICH to obtain a grant to expand its arts program.

Michael Braudy is an assistant professor of information systems on the New York City campus. He holds a B.A. from Columbia University in music and an M.S. in computer science from Pace University.

Club Takes First S.T.E.P.s

by Eric Heinen (MS/CS)

John Robinson and I, two CSIS graduate students, have formed a new and exciting club for all interested Pace graduate students that will focus on the areas of technology and entrepreneurship. This organization, known as Students for Technology and Entrepreneurial Pursuits (S.T.E.P.), is an important resource for students who are interested in developing real-world skills and gaining valuable knowledge in the area of business start-ups with a focus on technology, finance, management, product development and venture capital.

The club held its first meeting on February 12, 2003, which was attended by over 15 graduate students from several Pace schools. Two CSIS administrators came to support the new initiative, including David Sachs, associate dean, and Jennifer White, assistant dean for research and external affairs. Both offered words of support and contributed greatly to the meeting’s success. The highlight of the first meeting was a speech given by Dennis Goett, an area businessman with over 30 years of experience in the venture capital and financial arena and a veteran of start-up companies. His insight and applied knowledge were invaluable in creating a realistic view of the current business landscape.

In the coming months, S.T.E.P. will hold meetings on the New York City and Pleasantville campuses in order to extend participation to all Pace students. Events such as a lecture series by local businessmen and faculty, new product development contests, and intercampus initiatives will be held in order to bring the best and most diverse experience possible to its members.

For more information on S.T.E.P., contact John Robinson at jrobinson@marsandco.com or Eric Heinen at eric31@hotmail.com.
Over 100 Women Attend Event
by Chris Longo, D.P.S. Program Administrator

In October 2001, a group of 30 women consisting of CSIS faculty and Doctor of Professional Studies (D.P.S.) in Computing students, met over dinner with Dean Susan M. Merritt to discuss issues and challenges facing women in the computing fields. As a result of that meeting, the first panel discussion, "Women in Computing: Paths to Doctoral Education, Teaching, and Research" was held on May 10, 2002, at the Graduate Center in White Plains. It was so successful it was decided to make this an annual event, and this year the focus was on leadership.

Women in Computing: Pathways to Leadership. On April 11, over 100 women gathered to share the experiences of the panelists who insightfully related their individual pathways to successful leadership. The panel consisted of two prominent guest speakers, Frances Allen and Elizabeth Flanagan. Dean Susan M. Merritt served as host and moderator.

The following brief biographies provide an overview of the accomplishments of these three accomplished women:

Frances (Fran) Allen, an IBM Fellow Emerita at the T. J. Watson Research Laboratory, is known for her contributions to the theory and practice of program optimization, compilers, parallelism, and high performance computing systems. This work resulted in Allen being named the first female IBM Fellow in 1989. She became fascinated with computer programming in 1957, and recently retired after a 45-year career with IBM. A holder of two honorary Doctor of Science degrees, including one from Pace University, Allen is a member of the National Academy of Engineering, the American Philosophical Society and the American Academy of Arts and Sciences. She is a Fellow of ACM, the IEEE, and the Computer History Museum. Fran Allen is an active mentor, advocate and role model for women in computing. Upon retirement she was featured in lengthy articles in both The New York Times and The Journal News.

Elizabeth (Liz) Flanagan is a Senior Vice President in Information Technologies at Home Box Office (HBO), a division of AOL Time Warner. Her responsibilities include new application development, support and maintenance, databases, packages and reporting, and partnering with all areas of the HBO business. She started her career at AT&T Bell Labs in the UNIX Systems lab, developing compilers and operating systems. She has an undergraduate degree in mathematics, a master's in Computer Science from Stevens Institute of Technology and a master's in the Management of Technology from National Technological University, which sponsors executive management programs. She is a WICT Betsy Magnus Fellow and holds a patent for the User Interface Development for interactive television.

Dr. Susan M. Merritt is the first woman in the United States to be appointed dean of a school of computing. She has been the Dean of the School of Computer Science and Information Systems (CSIS) at Pace University since its inception in 1983. Dr. Merritt is concerned about the continuing shortfall of women entering the computing fields. Even though CSIS does better than most institutions in its enrollment of women (for example, the percentage of women in the doctoral program is 32 percent compared to 16 percent nationwide), the significantly low percentages of women "represent a loss of talent, perspective and contribution in a critically strategic part of the U.S. economy, society and culture."

It was interesting and informative to hear the speakers describe their experiences as women in a field dominated by men. They acknowledged how styles of leadership vary (even theirs), and that it is important to define what leadership means to you and develop your own approach. Fran Allen suggested a book impressed with the care that the D.P.S. program takes to address these two critical concerns, provided a generous founding gift for a scholarship fund named in Marilyn's memory.

If you would like to contribute to The Marilyn Mead Endowed Scholarship Fund and help support women and minority members in computing, please make your check payable to Pace University and mail it to:

Pace University, CSIS
c/o Dr. Jennifer White, Assistant Dean
1 Martine Avenue
White Plains, NY 10606

Donations are tax deductible. Employer matching gifts are most welcome.


Marilyn Mead

Marilyn Mead, a member of the first class of students to graduate from our Doctor of Professional Studies (D.P.S.) in Computing program, passed away on September 9, 2002. She was one of four women in a class of 20. Marilyn persisted in staying in the program throughout a long illness, and because of her strong desire to complete her degree.

Marilyn was a fine example of a woman in computing who, in addition to a successful corporate career, was striving to attain a doctorate in the field. Currently, just 16 percent of doctorates in computing are awarded to women annually in the United States. Percentages of doctorates awarded to historically underrepresented groups are even lower.

Dr. V. Sadagopan of CSIS, written by Robin Gerber, Leadership the Eleanor Roosevelt Way.

The importance of mentoring was also mentioned, both being one and having one. A lively discussion period followed with questions from the audience. A very impressive audience it was, women from business and academia, as well as students of all ages from high school through the doctoral level attended. Refreshments and networking followed. As Dale Wolf, MS/CS '84, commented, "The seminar on Friday was easily the most intellectually gratifying event I've been to in a long while. What a treat to listen to intelligent, accomplished, articulate women!"

The program was sponsored by CSIS together with the Doctor of Professional Studies in Computing program.
Students Develop Interactive Visual System

by Patricia Thomas (MS/CS), Arthur Evans (MS/CS), John Sikorski (MS/CS)

This is the second year that students are developing real-world computer information systems for actual customers in Dr. Charles Tappert's capstone CS 615-616 sequence in software engineering. One of the most cutting-edge projects this year is a collaborative effort between Pace University and Rensselaer Polytechnic Institute (RPI) that involves developing a handheld pervasive computing component for an interactive visual system.

The project grew out of work by Dr. Nagy and his graduate student Jie Zou at RPI who created a desktop system called Computer Assisted Visual Interactive System (CAVIAR). The system identifies a flower image submitted by the user by comparing it to a species database. With minor system modification and a different database, the system could be used to identify species within any botanical class such as grasses, weeds or trees. Other applications may include parts identification or various biomedical uses such as cell or tumor identification. Although powerful in its own right, its usefulness is limited by running solely on a desktop or laptop computer. A more portable version could greatly extend its range of possible applications, allowing for real-time use in the field by hobbyists and professionals alike.

Our goal has been to adapt the CAVIAR system to run on a handheld computer. The key feature of this system, one that separates it from others, is human interaction. Significant advances have been made in pattern recognition in recent years but in all cases, they are far from perfect. The most difficult aspect of pattern recognition is to understand the context of an image, knowing its orientation, isolating it from background noise, and locating its distinct features. Humans do this instantly and automatically. When we look at a scenic picture we intuitively separate the trees from the forest. These are very difficult tasks to automate. Computers are not skilled at such commonsense intelligence. By allowing the user to segment the object manually we leave the computer to perform its most useful task, quickly searching through massive amounts of data making many cross comparisons, giving us insight into an object's possible identity.

Recent advances in processor technology have led to extremely small yet powerful computers. These systems rival desktops of only a few years ago. The handheld chosen for this project is the Sharp Zaurus (SL-5500), running a Linux operating system and Java. A camera attachment allows the user to take pictures directly from the handheld, which are then submitted to the system for identification. Written entirely in Java and running solely on the handheld, the system uses a nearest neighbor algorithm to identify a flower species. The user manually submits features such as petal color or petal count by interacting with the image on the handheld screen. When the user defines a feature, the information is sent to the internal classifier to determine the top three best matches. Thumbnail images are displayed to the user for positive identification. If the top three do not produce a hit, the user can submit an additional feature until positive identification can be made. Once identified, the image and its accompanying information may be added to the database allowing the system to "learn" as it is used. Combining the skills of humans and computers results in a system that can identify an object more accurately than a fully automatic system and faster than most humans can on their own.

New Undergraduate Certificates Introduced

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

In response to the growing demand for solid preparation in Web site development skills, CSIS has created two undergraduate Web-oriented certificates. Both require 15 credits of coursework.

The Certificate in Web Media is entirely new and is designed for students with little or no programming background. It is ideal for those who wish to pursue Web development in a marketing, project management or content development context. The program is decidedly client-side in orientation and uses various multimedia tools. The Certificate in Internet Technologies has been revised to accommodate those who prefer the programming or server-side of Web site development. It is designed to prepare skilled professionals who will develop and maintain electronic commerce Web sites. In addition to learning several industry-standard programming languages such as Java, JavaScript and Perl, students will also learn how to set up a Web server and an application server. Both certificates begin with the same two introductory courses, which allow the student to gain a firm foundation in Web site development before deciding which option to pursue. These course sequences are also available as minors for Pace University undergraduates. For more information, go to www.csis.pace.edu or contact Bernice Houle, assistant dean, at bhoul@pace.edu.
The Future of Internet Technology: A Student’s Vision

by Oleg Yunakov (BS/CS)

The Center for Advanced Media (CAM) at Pace University in collaboration with the CSIS Undergraduate Research Center is involved in many interesting and innovative projects related to Internet 2. One of them is the development of a PC-based Internet Protocol (IP) videoconferencing system that will allow more than two people to participate and collaborate in the same videoconference session over the Internet. IP videoconferencing technology allows people to see and hear each other at the same time. IP videoconferencing is an interesting mix of media telecommunication technology and computer science making the end product reliable and inexpensive.

Under the supervision of Drs. Dennis Anderson and Francis Marchese, I am working on developing a stable and efficient way of videoconferencing over the Internet. Proliferation of the number of users brought about the need for an expansion of connection bandwidth as well as the deployment of solutions to eliminate noise caused by long-distance data transfer. The goal is to create flexible client-based videoconferencing over the Internet using open-source OpenH.323 protocol. The main priority of the system is to allow multiple users to participate in the same videoconferencing session.

Until recently, the major factor that was preventing more people from videoconferencing was the cost of the equipment. About five years ago, the price tag on an average system ranged from $20,000 to $100,000. Systems that were once out of range for many, can now, with the development of IP videoconferencing, be easily used by almost anyone. The hardware part of the PC-based IP videoconference system does not require anything more than a simple WebCam (average price is $80) connected to a computer. Everything else is done with software.

In order to participate in the conference, users just need to know the IP address of the computer with a Multipoint Control Unit (MCU) and the connection is made. The server computer (that has the MCU installed on it) can connect four other computers to the conference. If any of those computers also has an MCU installed, then the number can be increased to eight. To participate, you simply dial the IP address of any of the computers with an MCU that is already in the conference. In the future, software will probably be improved to access a database of IP addresses so that the user will just have to choose the person from the list, click and be connected. Such IP videoconferences can be performed on a computer with regular display or on a big screen such as the “Immersive Virtual Table” that we have in the

(continued on page 15)

Programming Competition Is Fun and Games

by Dr. Allen Sist, Computer Science

On Friday, February 28, 2003, 13 undergraduate and graduate students in both CS and IS from Westchester and New York City participated in a programming competition at the Graduate Center in White Plains. The participants included Craig Baily, Edward Cappiolo, Igor Draytes, Arthur Evans, Aaron Flocke, Mark Gor, Larry LeFever, Boris Martinov, Brian Joseph Ordone, Billy Santamorena, Angela Tielen, Christ Tompkins and Jeffrey Weaton. The event was organized by Dr. Narayan Murthy, computer science chair, Westchester.

Unlike an ordinary programming contest, which lacks an animated look and feel, Dr. Murthy wanted it to have the flavor of a game show, as you might see on television, with a high degree of active competition, excitement and fun.

To accomplish this, the programming questions were multiple choice. Each one focused upon a principle of programming such as how floating point values are tested for equality, or how the manipulation of tag arrays were manipulated for logical as opposed to physical sorting. Students worked in teams. The first team to have an answer indicated, for one point, which one it was. Then, that team, for up to four more points, had to explain why the answer they selected was correct. If their explanation was faulty or imprecise, another team had the opportunity to explain for up to seven points. This put a premium on speed, but made conceptual accuracy paramount. It also meant that there was substantive discussion and learning.

The competition was further enhanced with sets of “Trivial Pursuit” questions interspersing the programming questions. Participants shouted out their answers immediately, and the student(s) who got the item right received a “fun-sized” chocolate bar delivered as a fast-ball courtesy of Dr. Mary Courtney, computer science. Questions included trivia such as:

Java’s mascot looks like a tooth with a big round red nose. What’s his name?

[Duke]

Which esteemed computer scientist has written books on the Bible and religion?

[Donald E. Knuth]

In the RGB color system, give the three numbers in base 10 that represent the yellowest yellow.

[255, 255, 0]

At the end of the evening the students and faculty shared pizza. Reflecting on how things went, Dr. Murthy believes that everyone was enthusiastic, and he is eager to make the programming competition an annual event.
CIRCUIT Hosts IT Career Forum

by Tricia Brogan, Academic Advisor

On Wednesday, March 26, the School of Computer Science and Information Systems (CSIS) along with CIRCUIT, the Westchester undergraduate computer club, hosted the Second Annual Information Technology Career Forum led by members of the Westchester Information Technology Cluster (WITC). WITC is an organization of over 200 local businesses, county government organizations, local colleges and universities, and the local community of certified public accountants working together.

The IT Forum was designed to help create an awareness among students of the current IT market. Professionals, who are currently working in the field, provided IT students with the knowledge to gain a competitive edge in the job market. These professional panelists included: Art Zuckerman, president of Armascan Development Group; Chris Furey, president of Savvy Networks, USA; T. Gregory Bender, president and CEO, Campaign Builder; Ugo Chiulli, Progressive Computing, Inc.; Christopher Iervolino, ITEC, Inc.; and Ed Shaw, secretary, Starpoint Solutions.

The forum began as an informal question and answer session. Some of the topics covered included marketing one's self, interviewing skills and planning for the future. The forum also gave Pace students the opportunity to meet Westchester County business owners who are looking to hire new career IT professionals. Students were able to make contacts and distribute their resumes.

The students who attended the IT Career Forum obtained a great deal of useful information. It gave them a realistic idea of what they had to do to enhance their chances of success in the ever-changing world of technology.

---

Faculty Achievements

Dennis Anderson, associate dean, and Anthony Joseph, Computer Science, recently served as judges at the New York City Science and Engineering Fair, a citywide event for high school students, sponsored by the New York Academy of Sciences and held at CUNY.

Three faculty members have received promotions effective September 2003. They include Paul Benjamin, Computer Science, and Jennifer Thomas, Information Systems, to the rank of Full Professor and Sotirios Skevoulis, Computer Science, to the rank of Associate Professor.

Sung-Hyuk Cha, Computer Science, and Charles Tappert, Computer Science, made presentations at the Center for Pattern Recognition and Machine Intelligence (CENPARMI), a research lab affiliated with Concordia University in Montreal. Dr. Cha presented “Establishing the Discriminative Power of a Biometric with Application to Handwriting Individuality”; Dr. Tappert presented “Shorthand Alphabets and Pen Computing.”

James Curry, director of administrative systems, attended the First Annual Academic Advising Administrators’ Institute sponsored by NACADA, the National Academic Advising Association, held in San Antonio, TX.

Nancy Hale, Technology Systems, and David Sachs, associate dean, co-directors of NACTEL, accepted the Sloan-C Award for Excellence in Online Student Satisfaction on behalf of the University at the Eighth Annual Sloan-C International Conference on Asynchronous Learning Networks held in Orlando, FL.

Richard Kline, Computer Science, recently attended the Conference on Human Factors in Computing Systems sponsored by the Association for Computing Machinery in Fort Lauderdale, FL.

James Lawler, Information Systems, received a fellowship from the Direct Marketing Association of the Washington Educational Foundation to attend the Direct Interactive Marketing Institute for Professors Conference held at the University of Maryland in College Park, MD.

Susan M. Merritt, dean, participated as an invited member of a panel on Advisory Boards and Development at the biannual Deans of IT Meeting in Washington, DC.

Beil Raggad, Information Systems, presented “Heterogeneous Uncertain Information Fusion in Multi-Agent DSS” at the International Conference on Computational Intelligence for Modelling, Control and Automation held in Vienna, Austria.

David Sachs, associate dean, delivered the keynote address titled “Seven Keys to Effective Web Development for Online Education” at the fall 2002 Conference of the Knowledge Workers Educational Alliance (KWEA) held in Brooklyn, NY.

Christelle Scharff, Computer Science, delivered “OLIVER: an Online Inference and Verification System” at the Frontiers in Education Conference—FIE 2002 held in Boston, MA.

Namchul Shin, Information Systems, presented his paper titled “The Economic Payoffs from e-Business Initiatives” at both the International Symposium on Research Methods and the International Conference on Information Systems held in Barcelona, Spain.
Graduates to Attend M.I.T. and Georgia Tech

Michael Holmes (BS/PCS '03) plans to pursue an M.B.A. at M.I.T.'s Sloan School of Management, where he has been awarded a fellowship. Mike attended Pace in the early 1990s but did not earn a degree. He returned last year, after gaining practical experience, to complete his degree. As an adult learner, he was required to prepare an Experiential Learning Assessment Portfolio, which, according to Susan Crawford, Coordinator of Experiential Learning Assessment, was "a model of what such a project should be—complete, beautifully designed, in-depth and very original."

George Baah (BS/CS '01, MS/CS '03) will be entering a Ph.D. program in computer science at Georgia Tech in September. George was an honors student throughout his studies at Pace University and received both the Scholastic Achievement Award and the Alumni Award upon completion of his undergraduate degree. Soon after arrival from his native Ghana in 1997, he entered Pace as a President's Scholar and was awarded a Gates Millennium Scholarship in 2000, a scholarship created by Bill Gates of Microsoft for outstanding minority students. George will continue to be funded as a Gates Millennium Scholar throughout his doctoral education. His plans are to focus on either software engineering or distributed computing.

Welcome Newcomers

CSIS is pleased to welcome those who joined us this spring:

Adjunct Faculty

Richard Brett
Information Systems
New York City

James Curry
Technology Systems

John Hammond
Technology Systems

Darren Hayes
Information Systems
New York City

Iris Hershenson
Technology Systems

Priyam Reddy
Computer Science
Westchester

Hugo Strubbe
Computer Science
Westchester

Graduate Assistants

Shankar Babu
Computer Science
Westchester

Chetanprakash Heda
Information Systems
Westchester

Muchiri Mwangi
Technology Systems

Mihail Stoica
Information Systems
New York City

Rui Tao
Information Systems
Westchester

Smittha Venkatesh
Technology Systems, 1st Course

CSIS Students Compete at McGill

Six CSIS graduate students, under the guidance of Dr. Sung-Hyuk Cha, participated in a Computer Science Game Competition held at McGill University in Montreal. Nineteen teams from Canadian and American universities competed against each other in seven challenging academic events and two invigorating scavenger hunts in the Canadian cold. The students representing Pace included Michael Daniels, Vinay Gaonkar, Eric Heinen, John Robinson, Christopher Tompkins and Naresh Trilok.

According to Dr. Cha, the students showed great teamwork in all seven three-hour academic events that covered Web design, AI programming, debugging, scripting and three separate competitions involving logic. They also performed well in the numerous sporting activities that provided some relief from the rigorous academic activities.

This is the first time that CSIS students have participated in a competition of this magnitude.

CSIS to Host First Annual Student Research Day

by James C. Curry, Jr., Director of Administrative Systems

The School of Computer Science and Information Systems will host its first annual Student Research Day on May 9, 2003, at the Graduate Center in White Plains. Undergraduate and graduate students from all areas of computing will have an opportunity to submit papers and projects for presentation to the University community. This is a very exciting opportunity for students to showcase their research accomplishments. All papers will be published in CSIS Student Research Day Proceedings.

CSIS students are encouraged to submit a paper or project for consideration. They should e-mail it to Dr. Charles Tappert, program chair, at www.csis.pace.edu/~ctappert/std/. Additionally, if there are questions regarding Student Research Day, please contact James J. Curry, Jr., at (212) 346-1005 or jcurry@pace.edu. We encourage the University community to attend and learn from the research findings of CSIS students.

CSIS in the News

Howard Blum. Computer Science, recently had his prediction regarding the future of wireless computing quoted in an article in Computerworld titled "The Next Chapter: Mobile/Wireless Computing."

Christopher Iervolino. CSIS adjunct, was cited in an article titled "Want an IT Job? Tech Skills Alone Aren't Enough" in the April 7, 2003 online Cyberside Chat of the Westchester County Business Journal.

Christopher Iervolino. CSIS adjunct, was cited in an article titled "Want an IT Job? Tech Skills Alone Aren't Enough" in the April 7, 2003 online Cyberside Chat of the Westchester County Business Journal.
Books, Journals, Articles and Conference Proceedings

D. Paul Benjamin

Kenneth Brancik

Sung-Hyuk Cha

Jean Coppola, Jennifer Thomas and Barbara Thomas

Constantine Coutsas

Catherine Daniels and Susan Feather
Results of their being interviewed about online teaching and learning appeared in "Technical Writing Course Focuses on Collaboration," Online CI@ssroom (December 2002).


Dan Farkas and Narayan Murthy

James Gabberty

Frances G. Gustavson and Stephen Chooflaian

Anthony Joseph and Mabel Payne
"Group Dynamics and Collaborative Group Performance," Proceedings of the 2003 Special Interest Group Computer Science Education (SIGCSE)
Technical Symposium sponsored by the ACM (February 2003).

Suman Kalia, Charles C. Tappert, Allen Stix and Fred Grossman

James Lawler


Pauline Mosley

Namchul Shin
Editor, Creating Business Value with Information Technology: Challenges and Solutions (Idea Group, 2002).

Jennifer Thomas


CSIS Technical Reports

Linda Jo Calloway and Leyton D. Murray
"Undergraduate Preferences for Courses Offered Online," Technical Report, No. 186 (February 2003).

Timothy M. Dietrich and Nicholas J. DeLillo

Louis V. Quintas and Eric M. Wahl

Lixin Tao

Charles C. Tappert

Carol E. Wolf
Faculty Participates in Resource Network

by Dr. Constance Knapp, Information Systems

Pace faculty members were awarded University Associate status based on their applications. Five of the 16 faculty members are from the School of Computer Science and Information Systems. They include Drs. Sung-Hyuk Cha, Michael Gargano, Namchul Shin, Lixin Tao and me.

University Associates have reading privileges at NYU’s Bobst Library, are granted permission to audit selected courses at NYU at no cost, and are invited to attend and participate in seminars, colloquia and other activities offered by NYU and by the Faculty Resource Network.

My particular project is the review and revision of our undergraduate degree programs in information systems. I am currently in the second year of a three-year term as the chair of the Information Systems Curriculum Committee. This committee has oversight responsibility for all of the information systems programs, including both degree and certificate programs.

As a University Associate, I participated in the Friday Faculty Forum in November 2002 on “Balancing Administrative Work, Teaching, Writing and Other Things.” The speaker was Sheril Antonio, associate dean for film, television and new media at NYU’s Tisch School of the Arts. Nearly 50 faculty members from the Faculty Resource Network, including visiting faculty at NYU, attended.

I also attended the welcoming reception for the spring 2003 Scholars-in-Residence and Exchange Students, held in January. I met the five faculty and seven students who will be working at NYU this spring. The reception was hosted by Vice Provost Sharon Weinberg and Dean Matthew Santirocco.

I have so far enjoyed my involvement in the Faculty Resource Network. In fact, I have found the experience so worthwhile that I applied to participate in this Summer’s Seminar Program! More on that later.

NACTEL Launches Online Labor History Course

by Pauline Waller, NACTEL Consultant

Pace University’s National Coalition for Telecommunications Education and Learning (NACTEL) Program has just launched a new online course in Labor History that presents an overview of the last 125 years of the U.S. labor movement through the eyes of the telecommunications worker. “Making the Connections: Telecommunications Workers and 20th Century U.S. Labor History,” taught completely online, is being offered for the first time this spring and is already proving extremely popular.

The NACTEL program, which consists of an online associate’s degree and certificate in telecommunications, was first created in 1999 to respond to the needs of the telecom industry as represented by the major telephone companies and the unions. Made up of a partnership of the Communications Workers of America (CWA), the International Brotherhood of Electrical Workers (IBEW) plus Verizon, Qwest, SBC and Frontier/Citizens, NACTEL sponsors the program that is offered through the School of Computer Science and Information Systems.

“Making Connections” was created jointly by NACTEL and Pace University faculty. Many of the resources used in the course were provided by the IBEW and the CWA, and the course was reviewed by history faculty at the National Labor College of George Meany Institute, as well as by representatives of the IBEW and CWA.

The “Making Connections” course includes the start of the union movement, racial discrimination and labor upheaval after WWII, the breakup of the Bell System and the current status of the telecom industry as it relates to the unions and to the worker. One of the experiential assignments for the course requires students to interview a coworker or manager who worked in telecommunications during the breakup of the Bell System and chronicle that interview in a historical context.

For more information on the “Making Connections” course and the NACTEL program at Pace University, visit: http://cis.pace.edu/nactel.

Tricia Ahern, NACTEL, (B.S. ’94, M.S.Ed. ’00) and Peter Vogel (B.A. ’96) on their marriage. The wedding took place on April 5 at the Good Counsel Chapel on the 78 North Broadway campus.

Eda Buett, dean’s office, and husband Tony on the birth of their grandson, Anthony Peter.

Peter Cronin, PCLC, on his marriage to Susan Kitz on March 29 at the Church of the Sacred Heart in Hartsdale.

Helena Guerin, CLOUT, and husband Denis on the birth of their granddaughter, Nina Johanna Gooren, on January 30.

Allison Horan, CLOUT, on her appointment to Student Program Advisor at CLOUT-Midtown where she will provide support to those who lost jobs as a result of 9/11. Allison will continue her work at CLOUT-Westchester where she has been teaching seminars and developing a college readiness program.

Adam Kuta (D.P.S. ’05), recipient of the Chairman’s Award on Business Transformation for 2002 as part of an Order Management Team at Avon Products, Inc.

Wille Porter, PCLC, and Courtnie Downey (B.B.A. ’01) on the birth of their daughter, McKenna Rain on February 2. Proud grandparents are Susan Downey, dean’s office, and husband Hugh.

Matthew Poli, PCLC, on his marriage to Alyce Ware (MS ’97). The ceremony took place on March 1 at the chapel on the Siena College campus in Loudonville, NY.
Graduate Students Further Study on E-Business in the Hudson Valley

by Dr. Jim Lawler and Dr. Bel Raggad, Information Systems

The fast implementation of e-Business, along with continual investment in Web sites, is decreasing in large- and small-sized businesses, due to diverse cultural, economic, financial, political and technological conditions. Businesses are especially uncertain as to the effects of recent international events on the economy. Of interest, however, are statistics from Information Week that indicate customer spending on Web sites of large businesses is increasing in 2003, implying the importance of e-Business to large businesses.

The importance of e-Business in small businesses in the slowed economy is unclear, as there are difficult definitional issues and limited information. Financial limitation and lower risk tolerance constrain small business sites. Still, the Gartner Group indicates that the small business market, when commingled with medium-sized businesses, is increasing technology spending through 2003–2005, so that e-Business is apparently not a luxury for them.

In CSIS, a new faculty and student study is analyzing collaboratively the importance of current e-Business characteristics in small businesses, specifically the Web sites of small businesses in the Hudson Valley of New York State. The study is demonstrating that B2C e-Business is as important for the future of small businesses as for large businesses, though tempered by financial sobriety and the sluggish economy.

Most small businesses that have personal computers have connectivity to the public Web, and most of these entities are engaging in some characteristics of B2C brochure, precommerce or commerce e-Business on their Web sites. Success is frequently determined by only simple functionality or displayed information that potentially leads to sales in the stores.

The characteristics of e-Business being analyzed in the study include context–depth of design, content information on products, communication dialogue of the customer with the small business, connection—degree of connecting to affiliated sites, community—interaction with other consumers, customization—degree of personalization, and commerce—extent of commercial transactions on the site. This study in CSIS consists of a sample of small businesses in the Albany, Columbia, Dutchess, Greene, Orange, Putnam, Rensselaer, Rockland, Ulster and Westchester counties of the Hudson Valley. Of 161 sampled businesses, 42 (26 percent) were initially shown as serviced with e-Business B2C Web sites. The 42 Web sites were analyzed in the study for their aforementioned e-Business characteristics. The study also includes a sample of 65 B2C Web sites of small market entities in counties of New Jersey and Pennsylvania, which were analyzed comparatively.

The preliminary study is indicating that most of the sites have high context (74 percent), content (63 percent) and owner communication (58 percent), intermediate affiliated site connection (50 percent), and low consumer community (26 percent), customization (24 percent) and commerce (29 percent).

These results are being tested through a survey of the sites, conducted by teams of CSIS students in the current IS 660B and 660U e-Commerce graduate courses and through subsequent statistical interpretation to be conducted by Drs. Bel Raggad and Jim Lawler.

This new CSIS study is helpful in initially analyzing the small business market, in that the preliminary results imply a need for small businesses to effect a controlled but continued e-Business strategy. The market is frequently focused on tactical, not strategic, technology considerations. Nevertheless, small businesses, in order to compete as the "local store" with other businesses that have technological foresight, have to consider future incremental investment in innovation that will enable their Web sites to effect enhanced customer relationships.

Sooner or later, small businesses will have to evaluate e-Business as an enabling innovation technology. The full potential of small commerce innovation remains to be realized by rudimentary precommerce and brochure sites. Though large businesses have financial advantages in funding innovation, small businesses have advantages in driving innovation, as entrepreneur–inventor types, and frequently have the stronger motivation to innovate in e-Business tools.

Through e-Business, the small business market is considered enabled to compete effectively, and small businesses, such as those of the Hudson Valley, are positioned to initiate optimizing the characteristics of their Web sites, in preparation for an economic recovery. Further analysis is needed to study the experiences of small businesses and the future of e-Business in this dynamic market, and this collaborative faculty and student study in CSIS is successfully initiating a new framework.

This study was recently presented by Jim Lawler at the Southeast Institute for Decision Sciences Institute (SEDSI) in Williamsburg, Virginia.
Staff Members Recognized

Several CSIS staff members were recognized for their outstanding contributions to Pace during Employee Recognition Week in December 2002. Employee Recognition Awards are presented annually at the year-end holiday parties on each campus to those whose commitment to the values and goals of Pace Quality has enhanced the University’s learning and working environment.

Susan Downey, CSIS director of budgets, was the recipient of the President’s Award for Excellence, one of the highest awards conferred.

Other CSIS awardees include: Tricia Brogan, academic advisor, Pleasantville; Fran O’Gara, assistant to the dean, White Plains; Tom Lombardi, senior technical architect, White Plains. All three were recognized for Quality Service.

Five-year milestones for employee service to the University were also acknowledged at the parties. Those recognized include:

5 Years
- Tricia Ahern
- Lovette Edsik
- Steve Sumner
- Jennifer Thomas
- Stanley Wine

15 Years
- Mehdi Badie
- Bernice Houle

20 Years
- Susan Blatt
- Kitty Daniels
- Paul Dantzig
- George Nossa
- June Reitmeier
- Allen Stix

25 Years
- Thomas Brier
- Daniel Farkas

Congratulations to all!
### Upcoming Events

#### April
- **25**
  - Digital Art Gallery Opening
  - 163 William Street—Lobby
  - New York City
  - 6:00 p.m.
- **26**
  - MASPLAS '03 Student Workshop
  - Haverford College
  - Haverford, PA

#### May
- **1**
  - CSIS Faculty Research Day
  - New York City
  - 9:00 a.m. – 3:00 p.m.
- **9**
  - Student Research Day
  - Graduate Center
  - White Plains
  - 9:30 a.m. – 3:30 p.m.
    - Upsilon Pi Epsilon Induction Ceremony
    - Graduate Center
    - White Plains
    - 4:00 p.m.
- **13**
  - CSIS Award Ceremony—Westchester
  - Pleasantville
  - 5:45 p.m.
- **18**
  - Graduate Commencement—Westchester
  - Pleasantville
  - 2:30 p.m.

#### June
- **19**
  - Undergraduate Commencement—Westchester
  - Pleasantville
  - 11:00 a.m.
  - NACTEL Graduation Reception
  - Graduate Center
  - 4:00 p.m.
- **20**
  - CSIS Award Ceremony—New York City
  - Courtyard
  - 5:00 p.m.
- **23**
  - Undergraduate Commencement—New York City
  - Radio City
  - 10:30 a.m.
    - Graduate Commencement—New York City
    - Radio City
    - 4:00 p.m.
- **31**
  - D.P.S. Barbecue
  - 78 North Broadway
  - 5:00 p.m.