In This Issue:

- NYU's New Supercomputer
- Password Change Initiative
- From UNIVAC to Max
- Library Alerting Services
- Data Management in SAS/FSP
- GIS Highlights at NYU
- ITS Computer Lab News
- Enhancing Participatory Learning with Blackboard
- The Mac OS X Keychain
- Getting Employees on the Payroll with PASS
- Blackboard Faculty Survey Highlights
Welcome to the Fall/Winter 2005 Connect!

As you’ll read in this issue, ITS is in the midst of organizing a celebration of the golden anniversary of information technology at NYU. As this initiative progresses, I am looking forward to learning more about the rich history of technological innovation at our University. I also feel fortunate that my role as Editor of Connect gives me the opportunity to share news about many of the University’s recent accomplishments as they occur. In this issue alone, for example, you will read about Max, the new IBM supercomputer recently installed at NYU, and currently the fastest computer in New York City. In addition, you will learn about PASS, a new automated system designed to improve workflow and reduce the use of paper forms; library alerting services that can significantly streamline the research process; ways in which Blackboard is enhancing teaching and learning at NYU; renovations to facilitate collaborative work at the ITS computer labs; and much more. I hope you enjoy this issue of Connect, and continue to share your ideas and achievements with us in the future.

- Kate Monahan

About Connect

Connect: Information Technology at NYU is edited and published by Information Technology Services (ITS). Its scope includes information about computing, networking, and telecommunications across NYU’s various schools, departments, and administrative units, as well as developments in information technology outside the University.

Print copies of Connect are available at the ITS Faculty Technology Services Center, the ITS computer labs, the ITS Client Services Center, the NYU Information Center, and most graduate school offices. Copies are mailed to full-time University faculty, staff, administrators, and researchers, based on mailing lists administered by the Human Resources Division. Current and past issues of Connect are also available on the Web at http://www.nyu.edu/its/pubs/connect/.

If you are a full-time faculty member and do not receive a copy, please notify your dean’s office; full-time staff should notify their human resources representative. If you are not among these groups but would like a free subscription, please send email to its.connect@nyu.edu.

We welcome your comments about the articles in this issue, as well as suggestions for future issues. Contributions are invited for consideration by the editor.

Opinions expressed in the articles in this publication are those of the authors and not necessarily those of Information Technology Services or of New York University.

Editor
Kate Monahan
kate.monahan@nyu.edu

Associate Editors
Jill Hochberg
jill.hochberg@nyu.edu
Keith Allison
keith.allison@nyu.edu

Contributors
David Ackerman
John Bako
Derrick Bell
Robyn Berland
Mary Colt
Eduardo De León
Ethan Ehrenberg
Ron Farrell
William Fry
Ying-Hua Liu
Frank LoPresti
Tracey Losco
Neptali Martinez
Elease Martinez
Kara Whatley

Thanks also to...
Jeff Bary
Doug Carlson
Jane DelFavero
Vincent Doogan
Marie Gayle
Jeffrey Lane
Ben Maddox
Carol Mandel
Marilyn McMillan
Tom McNulty

– Cover: Max supercomputer, detail, see pp. 2-3 –

http://www.nyu.edu/its/pubs/connect/
Copyright © 2005 New York University
Table of Contents • Fall/Winter 2005

FEATURE: SUPERCOMPUTING AT NYU

› NYU Acquires Fastest Supercomputer in NYC: IBM Supercomputer to Aid NYU Research
  By David Ackerman .............................................................. 2

CELEBRATING COMPUTING HISTORY

› From UNIVAC to Max: Tracing NYU’s Information Technology Achievements
  By Neptali Martinez ............................................................ 4

INSTRUCTIONAL TECHNOLOGY

› Enhancing Participatory Learning with NYU Blackboard
  By Derrick Bell ................................................................. 5

› Highlights from the 2005 NYU Blackboard Faculty Satisfaction Survey
  By Ethan Ehrenberg ............................................................ 7

COMPUTER & NETWORK SECURITY

› Change is in the Air: ITS’ Password Change Initiative
  By Tracey Losco ............................................................... 9

› Identity Management & the Mac OS X Keychain
  By Eduardo De León .......................................................... 10

NYU LIBRARIES

› Alerting Services: Timesavers in the Age of Information Overload
  By Kara Whatley ............................................................... 13

ADMINISTRATIVE COMPUTING

› Getting Employees on the Payroll is Easier with PASS
  By Mary Colt & Elease Welch, with Ron Farrell ....................... 15

ITS STUDENT TECHNOLOGY SERVICES

› What’s New at the ITS Computer Labs?
  By Robyn Berland, with John Bako & William Fry .................... 19

SOCIAL SCIENCES, STATISTICS & MAPPING

› Geographic Information System Highlights @ NYU
  By Frank LoPresti ............................................................. 23

› Data Management in SAS/FSP
  By Ying-Hua Liu .............................................................. 26

› SAS vs. SPSS: A Student’s Perspective
  By Ying-Hua Liu .............................................................. 28
New York University recently installed a new IBM eServer BladeCenter system capable of a peak performance of 4.5 teraflops (one trillion floating-point operations per second). According to the TOP500 List, a ranking of supercomputers published at http://www.top500.org, NYU’s supercomputer is the fastest in New York City and the 117th fastest supercomputer in the world. The acquisition of this supercomputer, which will support NYU research with heavy computational requirements, was made possible by a gift from IBM and federal funding. The supercomputer has been dubbed “Max,” in honor of Max Goldstein, a computing pioneer and—among his many accomplishments—the first director of NYU’s Academic Computing Facility, one of Information Technology Services’ predecessor organizations.

Operations began in May 2005. Among the research enterprises that are early beneficiaries of the new system are NYU’s Center for Atmosphere-Ocean Science in the Courant Institute for Mathematical Sciences, which is developing sophisticated models to study the behavior of the Earth’s atmosphere and oceans, and the Center for Comparative Functional Genomics and the Courant Institute of Mathematical Sciences, in their new program of collaborative research in genomics and bioinformatics.

RE-ESTABLISHING NYU’S LEADERSHIP IN HIGH PERFORMANCE COMPUTING

As NYU Provost David McLaughlin noted, “The Courant Institute of Mathematical Sciences is world-renowned for the strength of its scholarship in mathematics and computer science. NYU had an important and prominent role in the development of computers and the field of computer science. This technology will not only be a tremendous resource for a number of our faculty in areas of scholarly strength for the University, but also helps re-establish our role as an important center for computing. We are grateful to IBM for their generosity, and to the Office of Naval Research and the U.S. Army Medical Research and Materiel Command for their support of our research.”

According to NYU Associate Provost and Chief Information Tech-
Fall/Winter 2005 • Connect: Information Technology at NYU

Innovative, Space-Saving Design & a New Test Center

NYU’s new BladeCenter supercomputer consists of a cluster of 256 IBM eServer BladeCenter JS20 systems running Linux, each with dual 2.2 GHz PowerPC 970 processors, or 512 processors in total. It is the first supercomputer in the United States to use IPv6, the next generation Internet Protocol.

“The innovative design of IBM’s BladeCenter systems has revolutionized high performance computing, offering organizations such as NYU the option to scale-out its infrastructure in a space-saving manner without sacrificing power or performance,” said Dave Turek, Vice President of Deep Computing at IBM. “We’re looking forward to working with NYU on a powerful, state of the art clustered supercomputing solution that will help the Courant Institute and other parts of the University maintain leadership in scientific research and help make IBM’s JS20 systems the platform of choice for high performance computing applications.”

IBM is also working with New York University to create a joint test center, where high performance computing application developers can enable, test, and tune their applications and solutions using IBM JS20 systems. This center will be capable of a peak performance of more than one teraflop, and will consist of 64 IBM eServer BladeCenter JS20 systems (128 processors) running Linux. The new center will help to promote innovation utilizing IBM’s BladeCenter JS20 and Linux on Power platforms. Myrinet switch technology connects each cluster of the BladeCenter systems. Myrinet is an extremely high-performance, low-latency switching technology used to interconnect computer clusters and allow the distribution of demanding computations across an array of cost-effective hosts.

Facilitating Research Requiring Heavy Computation

One of the NYU research enterprises already making use of the new supercomputing system is the Center for Atmosphere-Ocean Science in the Courant Institute for Mathematical Sciences (http://caos.cims.nyu.edu/). The Center uses computational modeling to simulate atmospheric circulation and oceanic currents.

The acquisition of the supercomputer, supported in part by the Department of the Navy’s Office of Naval Research, will help researchers combine theory, mathematical analysis, and numerical models to better understand the Earth’s climate, including the impact of weather events such as thunderstorms and hurricanes, coupled atmospheric and oceanic oscillations such as El Niño, and oceanic currents like the Gulf Stream and the Antarctic Circumpolar Current.

The supercomputer is also helping to foster a research program in genomics at NYU, enhancing collaboration between the Center for Comparative Functional Genomics and the Courant Institute of Mathematical Sciences. Aspects of this research include advanced algorithm and software development for data integration, data mining and visualization, biological network simulation, and high-throughput microscopy. The acquisition of the supercomputer has been supported in part by the U.S. Army Medical Research and Materiel Command (USAMRMC).

If you are a researcher or advanced student engaged in research with heavy computational requirements, contact ITS high performance computing support staff at hpc@nyu.edu for further information, access, and help.

Dr. David Ackerman is Executive Director for ITS’ .edu Services and the Digital Library Program.
In celebrating NYU’s recent installation of Max, now the fastest supercomputer in New York City (see article on p. 2), a number of us began reflecting on all the past accomplishments that have set the stage for this important achievement. Parallels were quickly drawn between Max and the UNIVAC computer—hailed as the fastest of its day—that was installed at NYU by the Atomic Energy Commission in the early 1950s, leading to the creation of the Courant Mathematics and Computing Laboratory.

With these two achievements in mind, we soon began discussing ways to commemorate this Golden Anniversary of information technology at NYU and to highlight the many related innovations over the past five decades that have transformed teaching, learning, research, and the conduct of University business. We realized that the most interesting details about some important milestones might exist today primarily in the memories of the people who participated in them, and that many of those people are now scattered throughout NYU and far beyond it.

Marilyn McMillan, Associate Provost and NYU’s Chief Information Technology Officer, recognized that this Golden Anniversary offers a prime opportunity to assemble the stories of our University’s long, vibrant track record of achievements in information technology. Over the summer, an ITS team considered how best to gather recollections and other documentation of significant events in computing at the University during the past 50 years or so. We’ve also begun thinking about methods for sharing what is collected with the NYU community and the general public.

We want the collection to be electronic. We’d also like it to be multimedia. We think it should include recollections about past achievements in all the Schools and Offices of the University. We want to encourage participation by all members of today’s NYU community. We also want to reach out beyond NYU to people who participated in earlier milestones.

So, for starters, we’ve established a page on NYU’s website, http://www.nyu.edu/about/techtimeline/, where you can make an entry for the collection. If you have first-hand information—stories, documents, photos, links—related to a significant event in NYU’s information technology history, or know someone who does, please take a few minutes to write an entry about it using the online form, and encourage your colleagues to do the same!

When it comes to presentation of this evolving collection, we’ve decided our first offering will be an interactive timeline. We’re looking forward to launching the timeline on NYU’s website later this semester with a smattering of entries at first, perhaps a few per decade, and an easy link to the new-entry submission form. We hope the availability of the timeline will stimulate memories and motivate even broader participation in building the Golden Anniversary collection.

Throughout the academic year, we expect to fill in the timeline with additional entries and to explore other ways to make the contents of the collection available.

Be sure to keep your eye out for an email announcement and posters around campus with more information about the Golden Anniversary collection. If you have any questions or comments about this effort, or if you’d like to get involved in it, please send email to techtimeline@nyu.edu.

Neptali Martinez is the ITS Director of Human Resources.
Over the past three decades, personal computers have revolutionized everything—education included. There are few administrative functions in the modern university that have not been substantially altered by the computer. Even exams can now be administered via computer, thus rendering obsolete the time-honored blue book and the sore eyes of countless teachers who labored long hours to decipher often inscrutable student exam answers. Now, the challenge for educators is how to utilize this digital revolution to successfully advance the learning process.

Surely, I am not the only teacher who has recognized that the traditional final exam, particularly those that bar students from using their textbooks or notes, favors those students who possess good memories, swiftly functioning analytical skills, and smooth writing styles—none of which are required in order for a student to have a thorough understanding of the course content. Additionally, final exams are often graded on a curve with the intention of making grades consistent across sections of the same course, a practice that can further distort our measurement of a student’s actual knowledge of content.

To better evaluate those students whose mastery of a course is greater than their ability to convey it on final exams, I adopted the practice many years ago of basing final grades on a series of papers that students wrote and submitted throughout the semester. Rather than answer questions, they wrote essays or reflections offering their views on the various components of the course. The essays turned in following one class were used as the subject of discussion at the next.

This procedure was effective, but required a great deal of sifting through papers and highlighting of comments for exploration at the next class. Within each week’s shower of papers, some were very good, reflecting thought based on obvious knowledge of the subject matter. There were also, alas, papers written in haste in the hope that they would become lost in the shuffle. Even so, in determining final grades, I could use each student’s understanding of the course as reflected in their writings, in addition to their class preparation and participation. The evaluation process, while arduous, was more interesting than the marathon grind of reviewing what each student wrote about the same series of final exam questions.

For me, the computer has changed this essay-oriented teaching and grading approach for the better. Early on, staff members of the NYU School of Law’s information technology department spent many hours designing and launching a course website with provisions for me to post assignments, cases, and other reading materials. This was a convenience, but the website also provided an area where each week, students could post their essay-reflections. Once these were posted, students knew that their classmates would have access to their essays and could, if they wished, post responses and critiques.

What a difference it made. Peer pressure was more effective than faculty admonishment. Few students are willing to appear stupid and unprepared to their classmates. The essays were more thoughtful, discussing in real depth the law and policies underlying given issues. The topics became more adventurous, and sometimes controversial, as students set out in writing views they had not expressed in class. Some essays were better than others, but very few were written in the hope that they would be lost in the paper chase. And, motivated by the posted essays, students began out-of-class dialogues, often raising perspectives about the subject matter beyond those discussed in class and, not infrequently, bringing to the subject facts and writings of which I was not aware. We were, quite literally, learning from one another by teaching one another—the ideal form of learning.

Then, a few years ago, NYU’s Information Technology Services made available the NYU Blackboard course management system. Blackboard allows the creation and administration of course content without the need to purchase or learn a full-fledged web-editing program. It also provides access to numerous
interactive tools, such as discussion boards, email lists, and online assessments, that would otherwise be rather difficult to set up.

With the adoption of Blackboard, I reluctantly had to abandon the website tailor-made for my courses, but the system does have a wider selection of components and is equally accessible from Macintosh and Windows computers. Once a Blackboard website for a course is established, an instructor can make it available to students and teaching assistants (TAs) who are enrolled or otherwise authorized to access the course through the Academics tab on NYUHome.

In addition to facilitating the sharing of essay-reflections, Blackboard enables me to contact students in a course prior to the first class. Detailed course instructions and readings are available under a section titled “Course Readings,” and I also post a list of hypothetical or actual cases that students will brief, argue, discuss, and decide upon during the course. I ask each student to select three cases on which he or she would like to work in order of priority, a request that leads students to review a good portion of the course content before the course even begins. Using their choices as a guide, I assign students to three- or four-person “hypo” (hypothetical) teams.

By the first class, the course docket or schedule is already set. The teams, an advocate for each side and a chief justice to moderate the argument, review the material I have posted and supplement them with cases and other articles downloaded from one of the Internet databases, such as Westlaw or Lexis. They prepare briefs and bench memos that are posted in another section of Blackboard days before the class meets. The rest of the class can also read the briefs online or download and print them. The briefs and bench memos contain much of the material available in textbooks or case manuals, but now the applicable law and policy issues are interpreted by fellow students, who stand before the class and make their points in oral arguments subject to the often tough questions posed by their classmates. Student teams devote many hours to their presentations and many of them utilize PowerPoint and video to give sparkle to their presentations.

With so much preparation shared via Blackboard, each course session becomes less of a class and more of an event. Attendance and involvement are much greater than would be the case were I to stand before them and lecture or try to get a discussion going. The discussion during the presentations is always stimulating and often heated when the issue is controversial. The votes can be close but, win or lose, the case arguments are about learning, and sharing what you have learned with others. In applying for a TA position with my course next year, one student explained that his main motivation was his desire “to contribute to what I think is one of the few potentially transformative experiences available at law school. I would like to help students from different academic backgrounds, life experiences, and political persuasions to better understand one another.”

In my constitutional law class of over 100 students, there are often 40 or 50 essay-reflections (we now call them op-eds) posted after each class. Many of them exceed 1,000 words and often reflect outside research. Posting these op-eds to the NYU Blackboard website, often in the wee hours of the morning, students gain a degree of control over their participation. In addition to the op-ed section for each case, we have a special “Global Op-ed” section of the website where students can post articles commenting on our case discussions, or essays they have written that don’t fit into any of the case sections but offer views the students wish to share. While no credit is promised for these postings, students post a few dozen each week.

Here is what one student said about the op-ed writing and presentation process: “The first time I wrote an op-ed for Professor Bell’s class, I was (without any exaggeration) terrified. Nothing I had written or even published in the past had ever gone before a gauntlet of 95 sharp law students, 19 TAs and one legendary law professor. I think I edited my 800 or so words at least 10 times… What I learned, slowly, was to listen, read, read again, and think through the topics we tackled. Just when I thought I had a grip on an issue, a classmate would bring up another facet that undercut my foundation. Though I often disagreed with various viewpoints, absorbing all of them was the key to honing my own.”

In his book, What the Best College Teachers Do, Ken Bain, Director of NYU’s Center for Teaching Excellence, reports that people tend to learn most effectively (in ways that make a sustained, substantial, and positive influence on the way they think, act, or feel) when (1) they are trying to solve problems…or create something new that they find intriguing, beautiful, and/or important; (2) they are able to do so in a challenging yet supportive environment in which they can feel a sense of control over their own education; (3) they can work collaboratively with other learners to grapple with the problems; (4) they believe that their work will be considered fairly and honestly; and (5) they can try, fail, and receive feedback from expert learners in advance of and separate from any summative judgment of their efforts.1

Ken Bain has visited my class on a few occasions and he and his staff have made several helpful suggestions. One of them was to permit students to do a mid-semester evaluation of the course. On an anonymous basis, they can tell me what they like about the course and what they would like to see changed. I then publish on Blackboard a summary of their comments and discuss them


Continued on p. 8 >>
Highlights from the 2005 NYU Blackboard Faculty Satisfaction Survey

By Ethan Ehrenberg
ethan.ehrenberg@nyu.edu

Toward the end of the Spring 2005 semester, ITS conducted a voluntary satisfaction survey of faculty using the NYU Blackboard course management system. Of 3,157 people with Instructor access to NYU Blackboard who were contacted, 261 responded (an 8.3% response rate). Below are some highlights of the responses we gathered.

PARTICIPANT BACKGROUND & MAKE-UP
School of primary affiliation:
• 32% of respondents indicated the Gallatin School of Individual Study as their primary affiliation
• 25% indicated the Tisch School of the Arts
• 18% indicated the School of Law
• 25% indicated some other NYU school or library

Computer/platform used:
• 74% of respondents use a Windows PC most often
• 18% use a Macintosh
• 6% use both platforms
• 2% use some other platform

Semesters using Blackboard:
• 48% of respondents have used NYU Blackboard for 4 semesters or more
• 12% for 3 semesters
• 24% for 2 semesters
• 16% for 1 semester

COURSE SETUP & STUDENT USE
In their experience with the process of requesting and activating a course site:
• 46% of respondents indicated that they were very satisfied
• 26% were satisfied
• 12% were neutral
• 3% were less satisfied
• 2% were not satisfied
• 11% were not involved in this process

In estimating how many hours were needed for the initial setup of the course site:
• 30% of respondents indicated that it took less than 1 hour
• 27% indicated 1 - 2 hours
• 24% indicated 2 - 4 hours
• 9% indicated 5 or more hours

For use of the “re-use content” feature:
• 64% of respondents indicated that they had not used the feature
• 36% had used the feature

For overall student satisfaction:
• 15% of respondents indicated that their students were very satisfied
• 38% indicated students were satisfied
• 17% indicated students were neutral
• 2% indicated students were less satisfied
• 2% indicated students were not satisfied
• 26% had no opinion

CONTENT & TOOLS
For posting of a syllabus:
• 86% of respondents indicated that they had posted a syllabus
• 14% had not posted a syllabus

Of the major Blackboard tools:
• 92% of respondents used the Email tool, with 86% of these indicating that it was either very useful or useful.
• 89% used the Announcement tool, with 85% of these indicating that it was either very useful or useful.
• 61% used the Assignment tool, with 85% of these indicating that it was either very useful or useful.
• 38% used the Discussion Board tool, with 74% of these indicating that it was either very useful or useful.
• 30% used the Groups tool, with 63% of these indicating that it was either very useful or useful.
• 20% used the Digital Drop Box

1. For general information about Blackboard and how it is used at NYU, see http://www.nyu.edu/its/blackboard/.
tool, with 70% of these indicating that it was either very useful or useful.

- 14% used the Test and Survey tool, with 50% of these indicating that it was either very useful or useful.
- 9% used the Collaboration tool, with 41% of these indicating that it was either very useful or useful.

**SUPPORT & TRAINING**

- 77% of respondents indicated that they had used ITS support for enrollment, activation, and access, with 75% of these indicating that it was either very useful or useful.
- 74% had used ITS support for how-to and general use questions, with 72% of these indicating that it was either very useful or useful.
- 41% had used ITS phone support, with 76% of these indicating that it was either very useful or useful.
- 44% had used ITS email support, with 61% of these indicating that it was either very useful or useful.
- 43% had used ITS online support, with 62% of these indicating that it was either very useful or useful.

For training areas that would be most helpful in the future:

- 51% of respondents indicated advanced features
- 16% indicated integrating multimedia
- 13% indicated integrating library resources
- 7% indicated getting started
- 7% indicated troubleshooting
- 6% indicated faculty case studies

**FUTURE ENHANCEMENTS**

Of the future enhancements listed in the survey, the following received the highest approval ratings:

- 75% of respondents rated the ability to copy a previous semester’s course content to a new course, directly from the Control Panel, as very important or important.²
- 67% rated the ability to submit end-of-semester course evaluations and final grades as very important or important.³
- 63% rated the ability to research cases of suspected plagiarism as very important or important.⁴
- 49% rated the ability for students to view Blackboard content offline on their personal computers as very important or important.

**OVERALL SATISFACTION**

For overall personal satisfaction with NYU Blackboard:

- 82% of respondents reported being very satisfied or satisfied
- 98.5% of all respondents reported that they planned to use NYU Blackboard in future semesters

---

² This process was enabled system-wide in August 2005. For more information on how to use this new feature, see [http://www.nyu.edu/its/ftc/blackboard/tutorial/whatsnew/bblocks/coursecopy.html](http://www.nyu.edu/its/ftc/blackboard/tutorial/whatsnew/bblocks/coursecopy.html).

³ ITS is currently investigating a solution for this feature.

⁴ ITS is also currently investigating a solution for this feature.

---

During class. Much of what I get is quite complimentary, some is critical, and there are suggestions that I have integrated into the course.

The availability of Blackboard at NYU is one of many resources that make teaching here so rewarding. When, after a dozen years of civil rights practice, I was offered the opportunity to teach law, I accepted because it offered an opportunity to do research and writing. After a few years of teaching, I recognized the challenge of providing course structures that enabled students to do what most of us find most satisfying about the profession. Although what I call a “participatory learning process” would be possible without Blackboard, or even without computers, the presence of both greatly enhance my courses. Blackboard provides a vehicle that facilitates my effort to meet the challenge posed by Paulo Freire and often quoted in my writings on teaching, namely that: “Education must begin with the solution of the teacher-student contradiction, by reconciling the poles of the contradiction so that both are simultaneously teachers and students.”²

---


---

**Editor’s Note**

On November 8, 2005, NYU’s Center for Teaching Excellence will host a workshop by Professor Bell entitled Students Teaching Students. The session “will help participants explore ways they might utilize [Professor Bell’s] highly successful participatory learning model...” For details, including registration information, visit [http://www.nyu.edu/cte/registration.html](http://www.nyu.edu/cte/registration.html).

Derrick Bell is a Visiting Professor at the NYU School of Law.
Using strong passwords and changing them regularly helps safeguard your privacy and identity. As part of an ongoing effort to improve computer security at the University, you must now change the password you use with your NYU NetID (to access NYUHome and other applications) at least once every six months.

More and more of NYU’s services, including student grades, registration, and staff pay stubs, are being made available through NYUHome as a convenience to you. By formally implementing this computer security practice, NYU is helping to better protect your personal information, University data, and the range of services available through NYUHome.

Changing your password before it expires will ensure uninterrupted access not only to NYUHome but also to NYU email, dial-up, NYUroam wireless, proxy, and other restricted-access services, as well as any applications you might be using that, like Oracle Workflow, require central NYU NetID authentication. The password-changing rule also affects you if you are using an email client like Eudora or Outlook to check your NYU mail. You will need to change your password at least every six months for continued access to these services.

**Reminders & Help**

ITS will notify you by email when your password is due to expire, and include instructions on how to change it (they’re also available at the end of this article). You will receive three email messages: first, three weeks before your password’s expiration date, then one week before, and finally one day before it is set to expire. At these same intervals (three weeks, one week, one day), reminders will be displayed in the “splash” channel of NYUHome, at the top right corner of your main NYUHome screen.

If you change your password before the expiration date, you won’t receive any further reminders until it’s time to change your password again. If you change your password more frequently than the six-month interval, you will avoid these notices altogether! If you do not change your password by the deadline, however, it will expire, cutting off your access to the valued services mentioned earlier, until you set a new, strong password.

**STRONG PASSWORDS, REGULARLY CHANGED: WHY?**

At NYU and elsewhere, attempts to break into individuals’ computers or into accounts on shared computers are more common than most people realize. While hackers use many different methods, password attacks are the most common. These include the use of password-cracking programs, which run through all the words in the dictionary in an attempt to guess your password. If you are using a password that is a dictionary word, then it is likely to be cracked very quickly by this type of program.

The longer you use the same password, even if it’s a strong one (difficult to hack), the more vulnerable it is. The longer you have it, and the more places you use it, the greater the chance that one of those systems will be hacked and your password cracked or exposed. In addition, someone close to you could guess it, or inadvertently have access to it. If that person later becomes untrustworthy (for example, an ex-spouse or ex-friend), their knowledge of your password becomes a risk. Regular password changes prevent a mistake from a year ago causing a compromise today. Since the number of key services that are available through NYUHome or otherwise rely on NetID/password authentication has increased, and will continue to increase, this vulnerability is now a security concern for everyone.

Ongoing improvements to the ITS Start page, where people create and change their passwords, have included stronger password requirements. So now, when you change your password, you not only pick a new one, you pick a better one. And our regular password change cycle will allow us to continue improving password selection, as attacks get more sophisticated.

ITS assistance is available to any of our clients who might desire help.
Technology can make the completion of a variety of everyday tasks faster and easier, from withdrawing money at an ATM, to communicating with a colleague via email, to paying bills online. What sometimes used to take days can now be done in minutes. However, in order to accomplish these types of personal tasks electronically, it is essential to establish your identity accurately, securely, and with a reasonable degree of privacy. To do so, you need something that will authenticate your online identity while preventing others from pretending to be you—the equivalent of showing someone your driver’s license or passport.

To help accomplish this goal, we use usernames and passwords—tokens of uniquely associated electronic information. For example, to log into your NYUHome service, you must first enter your NetID and password before you are allowed to look at your email, your online classes, and so on. Your NetID is your electronic identity token, which tells the system who you are and what access and privileges you have, and your password is the electronic authentication token, which helps verify that you really are who you say you are. You can think of usernames and passwords as the “keys” to the kingdom: in order to enter the castle, you must use the right key, and no one is issued a key unless they are legitimately authorized to enter.

As you use more online services, however, the number of “keys” you need to keep track of quickly increases. The challenges of remembering the username and password associated with each service and keeping them secure and private have become difficult for many people. In addition, the growing threat of identity theft has made stricter password policies necessary, requiring you to use more complex passwords and to change them more frequently, to help protect your private information.

THE MAC OS X KEYCHAIN

Since technology got us into this situation, it seems only fair that it should help us get out. Enter the Mac OS X Keychain. The Keychain is a Macintosh application that stores your username and password “keys” in one protected place, and makes them accessible to you as they’re needed—much like a real keychain.* Once you’ve set up your Keychain properly, it allows you to quickly and securely access many of your private online resources (see “Is it Safe?” on p. 11). The Keychain works with a variety of Macintosh applications, including Eudora for Macintosh, Mail, Entourage, Fetch, and Apple’s Safari web browser, among many others.

When an application attempts to access an item in your Keychain, you are automatically notified and prompted to unlock your Keychain by entering your Mac OS X username and password. By default, your Keychain is unlocked automatically when you log into your Mac, so you may not even have to enter your password again when an application needs access to the Keychain; you may simply be asked to grant or deny the application access to the Keychain. You also have the option to allow access once, to always allow access, or to deny access to that Keychain item.

USING THE KEYCHAIN

To have the system Keychain remember your passwords, you need to tell your applications to save your password. For example, the first time you open Eudora, it asks if you would like to use the Keychain to remember your email password. If you answer yes, Eudora saves your password in the Keychain and accesses it automatically when it needs it to check your email. If you are already using Eudora and would like it to store your NYUHome password in the Keychain, select Settings from the Special menu, click the category Checking Mail and enable the option to Save Password. Also enable the option to Use system keychain to store passwords in the category Miscellaneous.

* There is currently no built-in Windows application for this purpose.
To have Entourage keep your NYUHome password in the Keychain, select Account Settings from the Entourage menu (for older versions, select Accounts from the Tools menu), then select your NYUHome email account and click Edit to edit its settings. Then enable the option to Save password in my Mac OS keychain.

To have Apple Mail save your NYUHome password in the Keychain, select Preferences from the Mail menu, then click Accounts. Select your NYUHome email account from the list on the left, then enter your password in the password field. (You can also enable the option Remember this password in my keychain, in the dialog box that prompts you to enter your password when you check your mail.)

If you use Safari and have websites for which you would like to store usernames and passwords in the Keychain, select Preferences from the Safari menu, and click AutoFill. Enable the option that reads User names and passwords, and Safari will prompt you as to whether you want to store this information in your Keychain whenever you enter it on a website.

**SECURE NOTES**

The Mac OS X Keychain also allows you to save secure text notes on your home computer with information that you wish to keep private. ATM and credit card PINs, account numbers, and other important confidential information can be stored as secure notes in the Keychain. Keeping secure notes of this sort in the Keychain can be safer than writing this information on a piece of paper that someone might find, as it is encrypted and protected with your Keychain password. Do not, however, store secure notes of this kind on any computer outside of your home.

To create a secure note, open the Keychain Access application (Hard Drive > Applications > Utilities > Keychain Access), then select New Secure Note from the File menu. You will then have a new window into which you can enter private information. Then, when you want to recall that information, simply open the Keychain Access application, select the item from the list, and enter your Keychain password to view its contents.

**MULTIPLE KEYCHAiNS**

Keychain also allows you to create multiple keychains, each one storing passwords for a different purpose. For example, you can create one keychain for work keys, another keychain for personal keys, and yet another keychain for financial information. Each keychain is locked with a different password of your choosing.

To create a new keychain, open the Keychain Access application (Hard Drive > Applications > Utilities > Keychain Access), then select New Keychain from the File menu. You will be asked to select a name and location for the keychain, and then enter a password to lock and unlock your new keychain. You can also save your Keychain to a removable disk and use your Keychain items on another computer. See the Help menu in the Keychain Access application for details (Hard Drive > Applications > Utilities > Keychain Access > Help).

**IS IT SAFE?**

The potential risks of using the Keychain are significant, and should not be overlooked. For example, if the password that unlocks your Keychain is compromised or shared, unauthorized persons could access all the resources stored in your Keychain, along with the online services for which you’ve saved password keys. Another potential risk is that someone with malicious intent could create a program that uses the Keychain legitimately (say, through an application that you voluntarily install and use) but then gains access to private resources on your Keychain by using some clever wording to trick you into allowing access.

Another risk arises if you use a weak (easy to guess) administrator password on your computer, or if you don’t change it periodically. A weak password is like a weak lock, in that it takes less effort to break, and a password that is not changed is increasingly likely to be compromised. At present, experts estimate that the time required to crack a strong password is about six months worth of computing time, which is why good password policies require a combination of letters, numbers, and special characters, no dictionary words, and periodic changing of passwords (see the article on p. 9).

To help mitigate these security risks, ITS recommends the following security practices:

- Use strong passwords (see http://www.nyu.edu/its/faq/passwords/).
- Don’t share your passwords with anyone.
- Set up an automatic screen lock to protect your computer soon after you walk away from it (System Preferences > Security > Require password to wake this computer from sleep or screen saver.)
- Maintain a physically secure environment for your computer so that no one can tamper with it in your absence.
- Lock your Keychain. You can choose to require your administrator password every time an
application needs access to an item on the Keychain. This will help prevent unauthorized access to Keychain items if someone else gains access to your computer.

On the other hand, the advantages of using the Keychain to store your usernames and passwords are also significant. If properly used, it is generally more secure (and certainly more convenient) than writing your passwords on a piece of paper, saving them in an email message, using easy to guess passwords, or using the same password for multiple services and resources—all practices that ITS strongly discourages. The Keychain can remember passwords for many of the online services you use and recall them when needed; it can store passwords for applications on your Mac, encrypted disk images, and other resources; it can safeguard your secure notes; and it allows you to access all of this information with just one username and password.

For additional information about the Mac OS X Keychain, search the Mac Help documentation installed on your computer (Finder > Help Menu > Mac Help), or browse the Apple Support website at http://www.apple.com/support/.

Eduardo De León is a User Support Specialist at the ITS Client Services Center.

>> Continued from p. 9

as this new password change cycle and password selection procedure is implemented. Password attacks are the most common vector through which data is exposed, and this procedure is necessary for the protection of accounts and data. There have certainly been compromises of individual systems and accounts that were linked to weak passwords here at NYU and elsewhere, and experts foresee an increasing number of attempts at such compromises.

NYU and ITS work hard to protect the data on NYU’s campus network, and block these and other sorts of attacks. For example, ITS Technology Security Services scans all of NYU-NET looking for computers that have been compromised, in an attempt to contain any possible damage. We maintain a dialogue with departmental system administrators, working with them to secure their departments’ machines and to remediate any problems. Our Network Operations Center monitors the network for any spikes in traffic that might signal potential problems or break-ins. In addition, Technology Security Services is in the process of investigating intrusion prevention systems that can detect many types of malicious network traffic and stop it before it reaches its destination.

These are just a few of the ways in which we work to protect your systems, accounts, and data. However, it is difficult to tell at a network level when passwords are used fraudulently, so we still need each of you to do your part by making your password strong, keeping it private, and changing it regularly.

WHAT IS A STRONG PASSWORD?

In addition to changing your password on a regular basis, choosing a strong password is a vitally important part of good computer security. Key characteristics of a strong password include having eight or more characters, and using a combination of letters (A-Z, a-z), numbers (0-9), and special characters (!@#$%). It’s also important not to re-use old passwords, use words that are found in a dictionary, or use someone’s name—even if you add numbers or characters to them. Many password-cracking programs try to guess words such as these; for example, passwords such as hat123 or 123Sam would not be good choices.

Overall, it is important to choose a password that would be difficult for someone else to guess, but is easy for you to remember. As an example, you might use the first line of a song—“All I want to do is have some fun”—and create the password “A1w2D1Hsf!” This would be easy for you to remember but almost impossible for someone else to guess. Never use a combination of your first and last name, or the name of your spouse, parent, significant other, and so on, as these are far too easy for a hacker to guess.

HELP & ADDITIONAL INFORMATION

- To change your NetID password now or at any time, visit the ITS Start Page at http://start.nyu.edu, sign in with your current NetID and password, click the “Change your password” link on the next page, then follow the instructions to reset your password. Keep in mind that your new password must be a minimum of eight characters, including letters, numbers, AND special characters. Also, you may not re-use a password that you formerly used.

- For answers to frequently asked questions about passwords and password changing, visit http://www.nyu.edu/its/faq/passwords/.

- If you have questions about this important initiative, please send email to its.clientservices@nyu.edu or call the ITS Client Services Center at 1-212-998-3333.

Thank you for changing your password regularly and helping to make NYU’s computing environment more secure.

Tracey Losco is a Network Security Analyst in ITS' Technology Security Services.
Alerting Services  
Timesavers in the Age of Information Overload

By Kara Whatley
kara.whatley@nyu.edu

Faced with what seems like an ongoing avalanche of professional literature in their fields of interest, many researchers feel overwhelmed by the daunting task of keeping “au courant.” Not only is the quantity of published information on the rise, but that information is appearing in a variety of formats that can keep faculty, students, and other researchers running back and forth between the computer and the shelves of print journals in the library. Now, at last, the beleaguered researcher has access to some new online tools—“alerting services”—that can make finding and managing information seem almost effortless.

**WHAT ARE ALERTING SERVICES?**
Alerting services consist of email messages that are distributed to subscribing researchers at intervals they specify (daily, weekly, or monthly). Depending upon the particular alerting service, these messages might include bibliographic citations for articles on certain topics or notices of new research by authors of interest. Setting up an alert is relatively straightforward, and they are available from a wide variety of online sources.

**TYPES OF ALERTING SERVICES**
There are two basic types of alerting services: table of contents alerts and search alerts. Both are useful tools intended to help researchers stay current with publications in their field(s) of interest.

A researcher can set up a table of contents alert by selecting his or her journals of interest; email alerts composed of each journal’s table of contents are then sent to the researcher as they become available. Often, a link to the electronic edition of the journal is provided as well, allowing easy access to the journal’s complete text.

The second type of alerting service—the search alert—functions as the electronic equivalent of a personal researcher. Bibliographic databases that offer search alerts allow the researcher to construct a search, and instruct the database to automatically run the search and email the results to the researcher at regular intervals (e.g., weekly or monthly). (See figure 1.)

Search alerts can also be tailored to seek newly published works by particular authors. In this case, the researcher constructs a simple author search and saves the search using...
the database’s alerting feature; the resulting email alert will include references to any new work by the chosen author.

One of the most interesting and powerful types of search alert is the “citation alert.” These are usually set up in databases—like the Web of Science*—that track the number of times an individual article is cited. Citation alerts allow published researchers to stay informed about scholarly references to their articles or other published work. With a Web of Science citation alert, for instance, each time a new article cites a selected work, an email notification is sent to researchers who have chosen to monitor citations of that selected work (see figure 2).

**ALERTING SERVICES & BIBLIOGRAPHIC MANAGEMENT PROGRAMS**

In order to make the best use of the notifications received via alerting services, many researchers organize their work by constructing a personal database. Numerous bibliographic management programs—including EndNote, ProCite, and RefWorks—are available to help simplify this task. Some alerting services include links that allow the subscriber to automatically upload citations into a personal database.

One of the most user-friendly database programs, RefWorks, is freely available to the NYU community (see http://library.nyu.edu/bib/refworks.html). Once an article has been added to a RefWorks database, an “NYU” link to the work’s electronic version will appear, further streamlining the research process.

**ALERTING SERVICES: GETTING STARTED**

If you are interested in setting up a search alert for topics or authors of interest, you may want to consult a subject specialist librarian at Bobst Library for assistance in selecting appropriate databases (see the end of this article for contact information). Once the database has been selected, visit the NYU Libraries’ alerting services page, http://library.nyu.edu/research/alerting/, for instructions on configuring your alert(s).

Setting up a table of contents alert can be a bit more complicated. While there are some services, like Ingenta, that provide access to journals from a variety of publishers, most table of contents alerts must be set up on the desired journal’s own website. Identifying the publisher of a journal is the first step; with this information, visit the NYU Libraries alerting services page (as described above) for links to publishers’ websites. If the sought-after publisher is not listed, contact your NYU subject specialist librarian for further assistance.

Once you’ve set up your first alert service, you’re sure to find it quick and easy to subscribe to as many more as you’d like in the future. Also, keep in mind that NYU’s subject specialist librarians are available to help you. For a full list of subject specialist librarians, see http://library.nyu.edu/research/lib_arc.html, or, to submit a question to a librarian via the Ask-a-Librarian service on the Libraries website, visit http://library.nyu.edu/ask/.

Kara Whatley is the Librarian for Life Sciences at NYU’s Bobst Library.

---

* Note that, despite its name, the Web of Science database is not restricted to the sciences—it also includes the humanities and social sciences.
Over the past two years, New York University has been engaged in a multi-project initiative to enhance the administration and support of grant awards and other sponsored programs. The Grants Management Initiative is a joint effort involving the Office of the Controller, Human Resources (HR), Purchasing Services, and Information Technology Services (ITS). With guidance from schools across NYU, including fiscal officers, HR officers, and other school administrators, the Grants Management Initiative combines tighter policy controls with state of the art technology.

The applications under development by NYU/ITS’ Administrative Computing Services (ADCOMS) perform a number of critical functions during the funding process. The technology components of the Grants Management Initiative are part of an integrated strategy to:

- provide a web-based, paperless process that speeds up payment of employees and enhances the quality of financial and business controls;
- provide sponsor organizations with uniform financial reporting, including personnel activity;
- better monitor sponsored programs for compliance with state and federal guidelines.

There are two major technology components to the initiative, each at varying stages of development. The first part of the initiative, comprising the Grants Reports and the Grants Management Planning Tool (GMPT), is complete, though a second round of changes is planned prior to rollout to the NYU community. The second part of the initiative, the Personnel Action Submission System (PASS), is well underway in a multi-part implementation that began in October 2004. Together, these applications represent a major advance in the monitoring and administration of grants and other sponsored programs here at NYU.

PASS, which will be the focus of this article, is a new automated workflow system that uses a web-based interface to enable HR officers, their staff, and other University offices to submit, route, track, review, approve, and update personnel actions in NYU’s Human Resources Information System (HRIS)—all without the necessity of processing paper Personnel Action Forms (PAFs). Personnel actions are events that change an employee’s job or personal information. PASS provides upwards of 30 different types of personnel actions, including leaves of absence, salary increases, promotions, resignations, retirements, new hires, additional compensations, and address changes.

PASS speeds up the process of paying employees by (1) automating the submission and approval processes, (2) enhancing internal controls related to financial and human resources business requirements, (3) providing easily accessible tracking and reporting related to personnel actions, (4) improving the quality and efficiency of personnel information management, and (5) eliminating most of the paperwork associated with the former paper-based personnel action process.

Comments from our clients about PASS:

“We’re excited for it—no more paper!”

“Excellent system that reduces/eliminates time, paper, human error, not knowing the status of a request, or where it is.”

“The tracking system makes life so much easier!”

“Excellent process, will greatly improve operations.”
1. AUTOMATED SUBMISSION & APPROVAL
People authorized to use PASS can access it anytime, anywhere through NYUHome (http://home.nyu.edu). PASS leverages the same technologies—Java, Javascript, Oracle Workflow—used by other new NYU Workflow applications, including the Budget Integrated Application (BIA) and the Tuition Remission System. As with these other systems, minimal technical expertise is required to use PASS.

Within PASS, there are various types of user roles. The five principal roles are: Requestor, Finance Officer, HR Rep/Coordinator, Delegate, and Administrative/Academic Officer. Requestors initiate personnel action requests; the other four roles can review or approve requests. HR Rep/Coordinators also manage the approval process for their units.

Figure 1. An overview of the PASS login process and main screen.
Submitting Requests

The formerly-used paper-based PAF contained approximately 200 distinct fields, of which an average of 10-15 are required for each action. By structuring each personnel action as a different web page, PASS eliminates the confusion a requestor can experience in not knowing what information is required; this allows the requestor to focus on filling in the required information instead of having to recall what information is necessary. In addition, PASS includes validations for each field, eliminating common errors, such as inadvertently entering an effective date outside the date range for an appointment, entering an invalid "fame" (Financial Administration Made Easy) chart-field, or placing someone on a leave for which they are not eligible.

Overview of PASS Features

• Easy access through NYUHome.
• Employee search by name or UID (University Identification Number), with a corresponding search result list.
• Employee summary and detail screens containing employee information.
• Job summary and detail screens containing job information.
• Submission, preview, and confirmation pages for each action.
• Data validations which follow defined business rules for each of the 30 personnel actions.
• Printer-friendly pages at each step in the process.
• Ability to cancel requests at any time prior to updating HRIS.

Approving Requests

After a request is submitted, either it is routed for approval or notifications are sent based on the approval process established by the unit. After the unit approves the request, it may be routed to central administrative offices for approval. The central administrative units’ approval flow varies by action and is often based on the request. For instance, if a restricted fund is included in an account change, NYU’s Research/Limited Accounting Services (RLAS) will be notified; if the salary is above a certain limit, Compensation will be notified; if an employee’s work authorization expiration date is revised, Employment will be notified. Many of the items that are currently checked by various University offices will be done automatically in PASS, so fewer items require review by people in the central units.

FlexRoles Features

• A flexible approval and notification process for each unit, called FlexRoles, that can differ by unit and by action (see figure 2). For instance, the unit’s Finance Officer(s), Dean, HR Officer, or other approver can receive notifications (FYIs) or Requests For Approvals (RFAs) for leaves of absence, but not account changes.
• Ability to manage and change FlexRoles at any time.

Worklist Features

• Online Worklist keeps track of all outstanding Requests For Approvals (see figure 3).
• Online Worklist History keeps track of all requests that you have submitted, approved, or been notified of.

Request For Approval (RFA) Features

• Email alerts of your FYI and RFA notifications.
• One-click access to TRACK IT!, an online view of who has already been notified and who still needs to approve or review a request.
• Ability to view, modify, approve, cancel, reject, or reassign requests (see figure 4, p. 18).

2. ENHANCED INTERNAL CONTROLS

In addition to basic data validations, there are also business requirements in place to enhance internal controls. For example, when salaries or chartfields change, PASS checks the "fame" budget; during a separation, a requestor cannot pay more vacation than is permitted by University policy without approval from central HR; and certain eligibility requirements must be met in order to qualify for retirement benefits. Including these business requirements in PASS allows the majority of PASS requests to bypass approvals that were required with the paper process.

3. EASILY ACCESSIBLE TRACKING & REPORTING

One of the most common complaints about the paper process was that once a requestor had submitted a PAF, they had a hard time determining the location of the PAF within the University review process and no way of knowing how close it was to being completed. PASS enables a requestor to easily track the progress of a request and see who is currently approving it. The requestor also receives confirmation once the request has updated...
HRIS. Reporting is easier and more accessible for both the requesting unit and the central administrative departments, and can be generated by action, status, or date.

4. IMPROVED QUALITY & EFFICIENCY OF PERSONNEL INFORMATION MANAGEMENT

The system security for PASS, which is based on current HRIS department access, is extensive. Automatic updates to HRIS help eliminate human transcription errors. Online help resources allow access to support information with a click of the mouse.

5. LIMITED PAPER!

PASS will eventually eliminate the use of many thousands of pieces of paper at NYU each year! Only certain documents, such as I-9s, Social Security Cards, Birth Certificates, etc., are required, and PASS lets the requestor know what documentation is needed on the confirmation screen when a request is made.

DEVELOPMENT STATUS

The entire University has been employing PASS since March 2005, with over 300 people currently using the system. PASS has been used to update personal information and work authorization; change names, dates of birth and social security numbers; and authorize leaves of absences, extensions of leaves, returns from leave, separations, account changes, salary changes, and new hires. Recently, functionality for processing new and additional appointments and additional compensation has also been added.

IT’S ALL ABOUT THE PEOPLE

The development, implementation, and continual evolution of PASS are the results of a major team effort involving all University HR departments and reviewers and technical experts in other University offices. The project was supported by a steering committee, a project advisory group, and an implementation team consisting of functional and technical sub-teams.

The project advisory group, which consisted of representatives from each of the schools and several administrative units, met with the implementation team at least once a month for the past two years to develop system requirements and evaluate functionality. The support of the advisory group was essential to ensuring that the system was well tested and met the varying needs of the diverse group of people who use it.

MORE INFORMATION

If you are interested in learning more about PASS, please visit the NYU Human Resources website at http://www.nyu.edu/hr/records/training.html.

Mary Colt, Author, is a Project Analyst in Human Resources and a member of the PASS Implementation Team.

Elease Welch, Author, is the Director of Records & Information Services and Information Systems in Human Resources and a member of the PASS Implementation Team.

Ron Farrell, Contributor, is the ITS Manager of Application Services.
As the dog days of August were hitting record highs, the ITS Multimedia Lab began work on a major remodeling of its furniture design and network infrastructure. The Multimedia Lab, located at 35 West 4th Street on the second floor of the Education Building, is one of four ITS computer facilities that provide technology resources to students and faculty. The Multimedia Lab comprises three large rooms—known as Multimedia Rooms I, II, and III—and a Reception Area previously known as the Front Desk.

**ENVIRONMENTAL & INFRASTRUCTURE IMPROVEMENTS**

As part of a major renovation of the air conditioning system for the Education Building, the ITS Multimedia Lab will gain an independent air conditioning (A/C) system. The two A/C units that have maintained the lab’s airflow in the past are being replaced with larger units that will provide at least twice the capacity of the previous system. The NYU Heating, Ventilation, and Air Conditioning (HVAC) control center will monitor the system over NYU-NET, enabling on-the-spot adjustments of airflow and temperature throughout the facility. This project began in January 2005, when the ductwork throughout the lab was rebuilt to withstand the projected increase in air pressure and provide improved control of room temperatures. The project is expected to be completed during the fall 2005 semester.

Next on our list of environmental improvements was the reduction of background noise. The ITS Multimedia Lab is a low-ceilinged facility. Ductwork suspended from the ceiling not only encroaches on the already-limited space, but also acts as an amplifier of sound. We are situated below and next to the Steinhardt School of Education dance studios and music practice rooms, so, depending on where they choose to sit and work, our student clientele and staff can usually enjoy jazz, opera, or dance rhythms. Street noises, computers, printers, scanners, and, of course, human activity further intensify the din against which teaching and learning activity compete every day. As a first step in reducing this background noise, we have installed carpeting in our three main rooms. Combined with the upcoming removal of our window air conditioners, this will soon make it effortlessly possible to teach, learn, listen, and speak in modulated tones in our lab.

With the expectation of continued growth in and dependence upon network-based educational tools and resources, we have upgraded our network cable infrastructure from Category 5e to Category 6. Cat 6 has a typical data rate range from 100 Megabit per second (Mbps) to 1 Gbps over the same 100 meters (120 mph). During this academic year, we hope to upgrade our network switches as well, facilitating the use of network-based lab management tools and NYU community resources.

**A NEW LOOK WITH ADDED FLEXIBILITY**

The most exciting aspect of the ITS Multimedia Lab’s transformation is the purchase of new furniture, which gave us the opportunity to rethink the layout of the rooms based on how students and faculty have been using them. The selection of furniture and its arrangement are a reflection of the desire to:

- Maintain current seat capacity while providing workspaces for collaboration
- Design work areas conducive to reflective individual activity as well as those that allow peer-to-peer and group discussion
- Continue to host hands-on class sessions
- Continue to provide wired, ITS-configured workstations (Apple Macintosh G5) while providing wireless workspaces for personal laptop computers
- Improve accessibility and comfort
- Preserve the open space design in our multi-purpose rooms while adding multifunction work surfaces
• Provide staff expertise closer to student work areas
• Create storage space for our Lending Library and other stock items
• Work within the existing physical room structure of the facility

Standard furniture components (desks, chairs, etc.) have been used to shift unused space from behind flat panel monitors to the center of the room. Connecting corner components have created additional work surfaces to accommodate peripheral devices, such as flatbed scanners, and increased surface space for adjacent workstations.

We have also installed an adjustable height table in each of our work areas to better meet diverse accessibility needs. All of our chairs allow height adjustment and have armrests that can be folded back out of the way. Area screens have been strategically placed to provide a feeling of privacy, but their transparency ensures that it is a room with a view for both clients and ITS staff monitoring lab activity.

**MULTIMEDIA ROOM III—MODULATED TONE ZONE**

Freeing space in the middle of Multimedia Room III enabled us to add a counter island there. The base of the island is composed of five storage cabinets that contain the lab’s lending library and other stock items. Faculty may use the lending library to distribute course-specific resources to their students for use within the lab. A large collection of cables, film adapters for our scanners, drawing tablets, microphones, manuals, and more is available for students and faculty to borrow from for use within the lab. Power and data poles installed at each end of the island make it a versatile workspace, enabling us to locate the room’s printer in the center of the room adjacent to the island; provide workspace for Lab Assistants managing the library and assisting clients; and offer an additional work surface for students using their laptops. Small groups can also utilize the counter space for group discussion.

Using Apple Macintosh G5 towers as a space divider, we have created individual and dual workspaces. Since Multimedia Room III is a high traffic area providing access to Multimedia Rooms I and II, area screens have been placed so as to separate workspaces from pedestrian traffic and create an area of lower workstation density that can be used by small groups of students. In recognition of the activity and collaboration taking place there, Multimedia Room III has been designated a modulated tone zone.

**MULTIMEDIA ROOM I—COLLABORATION, INDIVIDUAL WORKSTATIONS & VIDEO EDITING**

Multimedia Room I, through the use of screens and furniture design layout, has been divided into two zones. A smaller cluster includes six video editing workstations and a dub rack, in addition to four multimedia workstations. A café table with four chairs stands at the center of this space. This area is considered a quiet zone, although it can accommodate a small group working on a joint video project.

A larger cluster contains 14 multimedia workstations distributed in the same single and dual workstation pattern as used in Multimedia Room III. The area has laser printers and flatbed scanners situated on corner tables. This cluster has an instructor’s station that includes a projector, computer, and VCR useful for class meetings or special events during our low usage periods. Students working on course-related group projects might reserve this system for collaborative work. If requested, we will create an ad hoc space, walled in by our new screens, in the center of the room. A high café table with stools stands in the center of the room and can be used either by instructors during class or by students as an additional workspace.

**Summer Upgrades at the 14 Washington Place Lab**

Recent renovations at the ITS 14 Washington Place computer lab in the Windows and SGI rooms provide both a new look and added capacity. In addition to new carpeting and tiling, new furniture was selected to maintain the lab’s tradition of supporting quiet individual work with well-defined desk areas partitioned to provide students with privacy.

The Windows portion of the lab now has 68 computers, including an additional Windows computer in the SGI room, where Computer Science teaching assistants can hold in-lab hours in a quieter setting. For students needing to accomplish tasks quickly, the reception area now provides four “express” Windows computers and a printer, allowing them to dash in and out without having to wait for a seat to become available.

**...and at the ITS Tisch Hall Lab**

At the ITS Tisch Hall computer lab, 61 Windows-based computers in the LC-8 section of the lab were replaced. The new Dell GX280 computers have a smaller footprint than the previous models, freeing up additional desk space at each workstation.

- John Bako
MULTIMEDIA ROOM II—CLASS MEETINGS & QUIET INDIVIDUAL WORKSPACES

When not in use as open, quiet-zone lab space, Multimedia Room II is used for hands-on class meetings. There are 24 student workstations and an instructor’s station. The station includes a SMARTBoard interactive white board that allows control of the computer through the touch of an instructor’s finger and/or a wireless keyboard and mouse. A tall café table is available to hold the instructor’s laptop. Faculty can annotate and record presentations during class discussion using the SMARTBoard toolset. Recorded presentations may then be uploaded to a course’s Blackboard site. Using Apple's Remote Desktop application, instructors can also control and manage student workstations. For more information on these tools, refer to “Technology in the ITS Multimedia Classroom” in the Fall 2004 issue of Connect; http://www.nyu.edu/its/pubs/connect/fall04/. The additional space in the center of Multimedia Room II, which includes a café table with four chairs, creates additional workspace for students to gather for class discussion.
HANDS-ON CLASSROOM RESOURCES FOR FACULTY

Although the ITS Multimedia Lab is primarily a walk-in student facility, we also host class meetings based on space availability. Faculty who feel their students would benefit from hands-on class session(s), and would like to reserve time in an ITS computer lab or classroom, should visit http://www.nyu.edu/its/classrooms/ for more information, including a link to our computer classroom reservation form. Details about all four ITS computer labs, including platform and software information and a complete schedule, are available at http://www.nyu.edu/its/labs/.

EVOLUTION

See the sidebars on p. 20 and below for news about recent improvements at our other ITS computer labs, and be sure to stop by our labs to see the changes for yourself. Going forward, we hope to further evolve all of our labs to accommodate student and faculty learning and teaching requirements, as they are transformed by the use of network- and computer-based communication tools and resources, as well as developments in educational theory. We hope to add even more group-based spaces and collaborative tools in the future, and extend SMARTBoard resources beyond faculty to student groups.

What’s New at the Third Avenue North Lab?

The ITS Third Avenue North computer lab is NYU’s largest general-purpose computer facility for use by students and faculty. Located at 75 Third Avenue in the C3 level of a freshmen residence, the lab includes over 2,300 square feet dedicated to general-use Macintosh and Windows computers. In addition to these general-use computers, the lab provides NYUroam wireless access, a 17-seat PC-based training center with video projection capabilities, and a 15-seat video editing lab / training center with a SMARTBoard.

During the summer months of 2005, the Third North lab has benefited from some facilities improvements. We started by enclosing the two freestanding air conditioning units. This not only reduced the ambient noise levels, but also created a storage closet and a staff conference room. The addition of several permanent partitions has created collaborative workspaces for our student clientele. We also took this opportunity to “mix things up” a bit. With a new floor arrangement—and with the creation of clusters of Macintosh computers mixed with clusters of Windows-based computers—our Mac-centric clientele will be working side-by-side with our PC aficionados. This blending of computing platform clusters not only preserves platform-based collaboration, it also encourages cross-platform, idea-centric collaboration.

Taking the new spaces into account, Third North now has security video cameras in all the general-use rooms (East and West), as well as in the video lab, the PC training room, and the reception area. The video feeds are digitally recorded and sent to monitors in the lab’s reception area and to the guard’s station at street level. The new video security system makes the facility even safer and thus more comfortable for staff and students alike.

And last but not least, with the new partitions, video security system, and floor layout come new computers! We now boast 26 new iMac G5 general-use stations and 15 new PowerMac G5 video editing stations. There is now plenty of people-friendly computing power to go ‘round for everyone.

Exciting things are in store for Third North’s future: new furniture that will allow us to make more effective use of the collaborative spaces, as well as wireless access, more video editing stations, a full-featured dubbing station, a sound editing station, and updated PCs.

-Robyn Berland is the Manager of the ITS Multimedia Lab.

John Bako is the Manager of the ITS Tisch Hall and ITS 14 Washington Place computer labs.

William Fry is the Manager of the Third Avenue North computer lab.

Continued feedback from faculty and students is essential to our keeping the development of ITS lab resources on track; please submit your suggestions and comments to its.clientservices@nyu.edu. For additional information about any of the ITS computer labs, visit http://www.nyu.edu/its/labs/.

-William Fry
From the first days of computational research, the geographic nature of most data was at issue and often contributed to the results. Statistical researchers’ first analyses of spatial data occurred in the 1960s and used programming languages like Fortran. Then, in the 1980s, specialized programs, such as ArcInfo, provided the tools researchers needed to answer the questions inherent in spatial data. (See http://www.esri.com/company/about/history.html for historic details.)

At New York University, statistical research technologists within Information Technology Services and one of its predecessor organizations, the Academic Computing Facility, have been supporting research employing Geographic Information Systems (GIS) for almost two decades. NYU researchers doing GIS work in the late 1980s under the University’s first ArcInfo license may remember that the software was run on Archimedes, an SGI minicomputer.

GIS software enables maps and spatial data to be created, stored, and studied using PCs and servers. Any file with addresses or a latitude/longitude field—Census data, for example—begs for spatial visualization or analysis (see the figure on p. 24). And today, mapping applications can be used over the Web. Using contemporary web-based GIS software, MapQuest-like interfaces can be designed and published by university researchers.

Digital maps can be thought of as layers of data associated with points, lines, and polygons. For example, we could create a layer in which lines represented city streets and a street name was associated with each of these lines. This would be a street layer, and we would have created it using a vector model, one of the models used in creating map layers.

GIS software can do more than store maps and data. These high-level languages are rich with tools. Tasks that researchers need to perform in order to answer a range of research questions have been made into functions. There are functions that select corridors along a street. I could create a mile-wide corridor along a street and select the people living there. I could study what educational services are needed by that population. Or, I could use the corridor function to find all streets that pass through high-population areas.

Another function, Geocoding, takes a list of addresses and locates them on a street map. This is often used to create a layer with specific types of facilities, for example, a layer of subway stations created from a list of the street intersections where the stations are located.

GIS SOFTWARE @ NYU
The GIS software available through ITS can be classified as proprietary software that NYU/ITS has

---

purchased from a vendor, and Open Source software, which is free. Applications may also be classified as workstation- or web-based. Most GIS work is performed at a workstation, and includes such activities as preparing a data layer to visualize as a thematic map or doing layout work for printing by choosing colors for different regions. In other cases, one could share a Web application with other members of a project team. These advanced web-based applications involve the use of “front-end” server software, in addition to the GIS tools described above, with which the underlying “maps” are created. Advanced GIS applications may also use spatial database software available at the ITS Faculty Technology Services Center.

Proprietary Software
Two workstation-based, proprietary GIS software packages are available at the ITS Statistics and Mapping Computational Lab: MapInfo, from Principia Products, and ArcGIS, from ESRI.

MapInfo is a good teaching resource, completely sufficient for introductory courses with mapping projects and most research applications. NYU has a University-wide license that allows faculty to use the software in developing their skills or creating courses. Their students may also install copies of the MapInfo software to use while taking the course.

ArcGIS, which is also used for introductory course work and research, is considered by many to be the more sophisticated of these two packages. Under the University’s ArcGIS license, NYU students and researchers may take online courses from ESRI Virtual Campus that provide an introduction to GIS and address such specific tasks as labeling, annotation, and creating legends, as well as advanced topics like spatial and network analysis. Integrated with ArcGIS is ArcSDE, server software enabling the use of relational database tools like Oracle and DB2 to store and manage mapping data and serve spatial data to ArcGIS applications and other members of the ESRI GIS software suite.

At NYU, these tools have been used in a range of research applications. The NYC Housing and Neighborhood Information System is one of the rich and exciting web-based GIS applications developed at NYU. Created by the Furman Center for Real Estate and Urban Policy, a joint research center of the School of Law and the Robert F. Wagner Graduate School of Public Service, this freely accessed website (http://www.nychanis.com/NYU/NYCHANIS/) enables a visitor to interactively select New York City neighborhood data—population, demographics, housing, mortgages, taxes, and more—to create maps and data sets (see figures at left). This complex system uses a GIS web server application (ArcIMS), ArcGIS, and a geodatabase, all of which are products available to NYU researchers at the ITS Faculty Technology Service’s Statistics and Mapping Computational Lab.

Open Source Software
The ITS Faculty Technology Services (FTS) Center staff also have experi-
ence using open source GIS software. GRASS (Geographical Resources Analysis Support System) is the largest free software Geographical Information System. GRASS was an early entry in the field, originally programmed by the U.S. Army Construction Engineering Research Laboratory (USA-CERL) in 1982 as a tool for land management and environmental planning. QGIS (Quantum GIS) is another all-purpose GIS supported at the FTS Center.

These systems are used in conjunction with other open source tools, the front- and back-ends to complex GIS applications. MapServer is an open source development environment for constructing spatially enabled web applications. PROJ.4 is a cartographic projections library. PostGIS adds support for geographic objects to the PostgreSQL object-relational database.

Many advanced open source GIS extensions are available on computers at the ITS Statistics and Mapping Computational Lab, along with additional mapping resources and consultation and support in the use of GIS.

Sources of Data
The New York State GIS Data Sharing Cooperative is a group of governmental entities and not-for-profit organizations (NYU included) that have executed Data Sharing Agreements for the purpose of improving access to GIS data among members. All New York State agencies are mandated to join the Cooperative.

Most of the data available through the Cooperative’s archives is from New York state, county, or city agencies. Boundaries, tax parcels, imagery, and political, education, health, and other data and maps are available. See http://nysgis.state.ny.us/ for a full list of the archive’s contents.

GeoLytics’ CensusCDs simplify the creation of map data sets with imbedded census data. ITS Faculty Technology Services has obtained the 1970 through 2000 collection. It is available for your academic research with an academic library license. See http://www.geolytics.com/ for more information on this value-added Census data collection, and see http://www.nyu.edu/its/pubs/connect/spring04/pdfs/lopresti.pdf for an overview of this complex subject.

HELP & ADDITIONAL INFORMATION
ITS Faculty Technology Services hosts clinics in GIS and open source software each semester. Subscribe to the Statistics Forum to receive email notifications about the times and topics of these clinics and other ITS statistical and GIS offerings. To subscribe, send a blank email message from your preferred email account to: subscribe-statistics@forums.nyu.edu, or subscribe through the Forums channel in NYUHome (http://home.nyu.edu). If you have questions about GIS resources at NYU, stop by the ITS Statistics & Mapping Computational Lab within the ITS Third Avenue North Lab (http://www.nyu.edu/its/labs/third.html) or send email to the author of this article: frank.lopresti@nyu.edu.

These related Connect articles may also be of interest:

Frank LoPresti is a Senior Faculty Technology Specialist at ITS’ .edu Services who specializes in research methods, statistics, and mapping.

In Memoriam: Antonio Lopez
ITS Faculty Technology Services GIS and statistics staff, and all who knew him, regret the passing of Wagner graduate, Antonio Lopez. Over the past 10 years, Antonio was a major contributor to NYU’s efforts in these areas. During his student years at NYU’s Robert F. Wagner Graduate School of Public Administration and at Hunter College, Antonio served as a lab consultant for ITS. While at the Metropolitan Transit Authority (MTA) as a Senior Planner, Antonio developed an MTA/NYU cooperation in GIS, which included his attendance as consultant to the Friday Mapping Clinics, articles for Connect (several of which are referred to in this issue’s article on GIS), and his arrangement of student internships. Antonio Lopez will be greatly missed.
The SAS statistical program (see inset, p. 28) offers many supplemental tools, such as SAS/AF and SAS/SQL, that are very useful to intermediate and advanced programmers. Another such product is SAS/FSP (Full Screen Products), an advanced SAS tool used to interactively update and maintain databases. Procedures in SAS/FSP are developed by the Display Products Division. The product allows researchers to create “views” in SAS that are operating system-independent. Product development features include design, programming, debugging, support, and preliminary documentation.

Using SAS/FSP software you can:
- browse and edit the contents of SAS data sets;
- enter data into existing SAS data sets;
- create new SAS data sets;
- browse and edit SAS data views created with SAS/ACCESS;
- browse SAS data views created with the SQL procedure in Base SAS software;
- create, edit, and print form letters and reports;
- build and customize end-user applications.1

SAS/FSP’S MAIN PROCEDURES

The four main procedures in SAS/FSP are: fsbrowse, fsedit, fsview, and fsletter.

First, in order to view a full screen, you must create a new folder in the C:\ drive of your computer and give it a name (e.g., “London”). If you forget to create this new location and then refer to it in your code (as described below), all of your work will be put into the SAS/FSP temporary work library, which will be deleted when you close your session.

In SAS/FSP, enter the following statement:

```
libname librif “C:\London”;
run;
proc append base=librif.company
data=sashelp.company;
run; (This appends a copy of the file company within sashelp to your library librif.)
proc contents data=librif.company;
run; (This displays how many variables there are in company, their types, and any observations in the data.)
```

1. [http://support.sas.com/onlinedoc/913/docMainpage.jsp](http://support.sas.com/onlinedoc/913/docMainpage.jsp)
2. Librif is the SAS library name. Replace “C:\London” with the name of your new folder, e.g., “C:\YourFolderName”.
Fsbrowse
The fsbrowse procedure provides a custom display in which you can specify how your data are presented and add descriptive text, if you wish. Fsbrowse allows you to browse the contents of a SAS data set one observation at a time.

```sas
proc fsbrowse data=librif.company;
run;
```

You will now see a full screen, as shown in figure 1 on p. 26. In full screen mode, you can browse each case from the View pull-down menu (see figure 2). More important, you can also find a case using the Search menu. To do so, type the variable, then enter the value or character in which you are interested. For example, if you want to find level5=“Steffen Graff”, enter level5 as the variable name, then enter “Steffen Graff” as the value; since level5 is a string, you should include quotation marks around “Steffen Graff”.

Fsedit
The fsedit procedure lets you update the database by editing, deleting, or adding a new observation. To use fsedit, go to the Edit menu and select Update, or write the following fsedit statement. (Be sure to close the fsbrowse window first.)

```sas
proc fsedit data=librif.company;
run;
```

To edit and delete an observation, first find the observation using the Search menu, then go to the observation. From there, you can change the value for each observation or add and delete values or cases by going to the Edit menu and selecting “Add Record” or “Delete Record.”

Fsview
Fsview enables you to browse or edit a SAS data set, displaying it as a table of rows and columns. You can use this procedure to create a new SAS data set. Fsview also provides tools for customizing an fsview application. For example, you can redesign the display by changing the size, position, and colors of the fsview window. In addition, you can add computed variables, which display values that are calculated from other variables in the data set.

```sas
proc fsview data=librif.company;
run;
```

The output will be similar to the sample shown in figure 3.

Fsl etter
The fsl etter procedure enables you to create, edit, and print letters and other documents. When creating and editing documents in the fsl etter window, you can use all the features of the SAS text editor, including the spell checker.

Keep in mind that your fsl etter documents can include named fields. When the document is printed, you can fill in these fields manually, or the procedure can fill in the fields automatically using values from a SAS data set. This is convenient for creating and maintaining form letters, for example. You can print individual copies of the document, or you can automatically print a copy for every observation in a data set. For more information about fsl etter, visit http://support.sas.com/91doc/docMainpage.jsp.

DATA SELECTION & DATA MERGE
Say that you have finished your data entry, and now you want to separate your data into subsets and then examine a single subset. For instance, you might only want information about New York, Tokyo, or London. You can get each data subset using the “where” statement:

```sas
Data librif.Company;
Set librif.company;
Where level2="Company";
run;
```

```sas
Data librif.Newyork;
Set librif.company;
Where level2="New York";
run;
```

```sas
Data librif.London;
Set librif.company;
Where level2="London";
run;
```

```sas
Data librif.Tokyo;
Set librif.company;
Where level2="Tokyo";
run;
```

Figure 3. A sample data set as it appears in fsview (fictitious data is used here).
Using the “Explorer” window, you will be able to see the four data sets you have created. You may now work on all four data sets at once (see figure 4).

**OVERVIEW**

SAS/FSP is a powerful tool for managing databases. Clinical and business research projects with anticipated long periods of data input and management could benefit from this tool. All computers in the ITS computer labs (Macintosh and Windows) offer SPSS software, and all Windows computers in all of the labs offer SAS. If you have any comments and questions about this software, attend one of ITS’ free workshops (http://www.nyu.edu/its/classes/) or contact Frank LoPresti at frank.lopresti@nyu.edu.

To receive email notices about statistical package training and clinics, join the “Statistics” Forum found in the Forums channel in the Home tab of NYUHome (http://home.nyu.edu).

Ying-Hua Liu is a graduate student at NYU’s Robert F. Wagner Graduate School of Public Service and works as a statistician assistant for ITS Faculty Technology Services.

---

**SAS vs. SPSS: A Student’s Perspective**

When learning to do research using statistical software packages, many students choose to work either with SPSS or SAS, and are interested in exploring the differences between the two programs. Both packages have advanced tools and powerful data management products, but as you might imagine, each package has its own unique style and its own strengths and weaknesses.

SPSS is one of the most popular statistical packages. It has a very fast learning curve, due in part to its user-friendly pull-down menus. SAS, on the other hand, requires the use of at least some written commands, making it more difficult for beginners to use. But SPSS also offers a written command language (a “syntax” language) that students can learn by “pasting” the syntax from the package’s point-and-click menus into a file. The ability to write and store programs makes both packages important research tools.

SPSS has some very interesting data management tools. For instance, it has commands for reshaping data files from “wide” format to “long” format—i.e., making rows into columns. SPSS also allows you to work with many files if they are tables in a database.* SPSS boasts a friendly data editor that allows you to define the data set’s variables (names, types, etc.) and enter your data into a display that resembles Excel. Saving an SPSS data set is similar to saving a Word document. But even with these advanced features, if you intend to be a power user, you will likely outgrow SPSS over time. Many researchers eventually move to other packages, such as SAS.

SAS is a powerful package and, accordingly, is more difficult to learn than SPSS. For the beginner, one of the most common problems is the complexity of defining, using, and saving data sets. Even professional programmers can make mistakes when creating a SAS data set. SAS is mired in old concepts, such as libraries, so beginners are often uncertain whether they have really saved their data. Almost all data management and analyses in SAS are done by writing programs. When beginners make a mistake in writing their SAS programs, it is hard for them to see where the error occurred or how to correct it. All these difficulties can be overcome with practice, but many students intend to do only a single analysis required for their degree. When this is the case, SAS is perhaps not the program best suited for a student’s needs.

If you need help deciding between SAS and SPSS, or information about classes and other resources that can help you learn these programs, contact Frank LoPresti at frank.lopresti@nyu.edu.

- Ying-Hua Liu

October is National Cyber Security Awareness Month!

Sponsored by the National Cyber Security Alliance (www.staysafeonline.info) and EDUCAUSE (www.educause.edu), National Cyber Security Awareness Month is a nationwide initiative to promote computer security awareness.

This year’s theme is identity theft. For detailed information about ways to help protect yourself from identity theft, along with information on what you should do if you become a victim of it, see the Federal Trade Commission’s website: www.consumer.gov/idtheft/.

ITS has updated the computer and network security awareness website (www.nyu.edu/its/securityawareness/) with a calendar of security tips for October, specific information about identity theft, and a list of helpful websites.

Please also browse the ITS computer and network security website (www.nyu.edu/its/security/) and follow the recommended instructions to help keep yourself and your private information secure!

Questions or comments? Send them via email to security@nyu.edu.

NYU Information Technology Services
10 Astor Place, 4th Floor
New York, NY 10003