Connect
Information Technology at NYU
Volume 18, Number 1   Fall/Winter 2007

Service Without Boundaries
Technology at NYU’s International Locations

Humanitarian Emergencies
How GIS Mapping Software Can Help

Second Life
An Introduction

LIBRARY RESEARCH TOOLS • A DATA CENTER TRANSFORMATION • VISITING THE DIGITAL STUDIO
Welcome to the Fall/Winter 2007 Connect!

In this issue of Connect, we’re exploring ways that information technology is reaching out to facilitate and enhance research, instruction, communication and work at the University’s New York City campuses and global sites, in virtual worlds, and beyond. You’ll find articles on collaborative and quantitative research tools at NYU, possibilities for exploration in Second Life, Digital Studio services, plans for emergency resource sharing by the Medical Library, several new and updated services offered to the NYU community, a transformation in departmental server support, ways in which Geographic Information Systems can assist in humanitarian aid, and ITS’ enhancements of the technology infrastructure and services supporting NYU’s international locations.

On a personal note, this is my inaugural issue as Connect’s editor. I joined ITS in July and have been attempting to fill the shoes of Kate Monahan, who has moved into a new role in ITS Faculty Technology Services. I’m very grateful to my colleagues for their immense and patient help as I learn the ropes here at ITS and with Connect. If you have ideas for future issues of Connect, please let me know!

- Alissa Wilkinson

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 Welcome 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 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 an 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.

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In the 1950s, a highly popular children’s television program called *Winky Dink and You* provided a unique television experience that directly engaged the audience in an interaction with the host, Jack Barry, and the animated star, Winky Dink.

The technology used in the show was simple — a rectangular piece of clear vinyl plastic that was placed on a TV screen and rubbed with a cloth to create a static charge, which would hold the sheet to the screen. During the program the viewer would draw on the screen, at Jack Barry’s direction, to aid Winky in his animated world. Jack also emphasized inviting a friend over to watch the program; sharing crayons and sharing in the drawing were valued and encouraged.

For instance, Jack would point at the TV screen and say, “Winky needs a bridge to cross the river. Draw one here!” Suddenly, children were immersed in an action that moved the scenario along. Later in the program, the host might begin a circle and tell his audience: “Draw a line as I move my finger on the screen. Done? Now, say the magic word, Winko!” Suddenly, a child’s circle had a context — it was a bowl with water and gold fish!

Of course, even then there was the issue of a technology divide between the “haves,” those with a fifty-cent *Winky Dink* kit that contained the necessary vinyl sheet, cloth, and four color crayons, and the “have-nots,” who often — out of desperation — resorted to using ordinary crayons on the bare TV screen, to their parents’ chagrin.

*WHAT IS SECOND LIFE?*

Second Life is a software application operating across a grid of computers to produce a three-dimensional animated world populated by a global community of individuals who are Second Life members. Each member is represented in this world (termed “in-world”) by an animated character called an avatar, which one operates on a personal computer, using free proprietary software downloaded from the Internet.

Second Life was launched in 2003 by Linden Research, Inc., a San Francisco-based company. Its creator, Philip Rosedale, was the former Chief Technology Officer of Real Networks, makers of the popular digital entertainment software, RealPlayer. Unlike a game, Second Life is not associated with a specific goal or outcome. Through their avatars, members engage in all forms of social and creative interaction with one another and with their environment.

In Second Life, avatars ambulate through a world of earthly proportions. Second Life comprises about 10,000 islands that, when scaled to “real life” proportions, are 65,000 square meters each (about the size of Lincoln Center). One walks, runs, flies, or teleports to other locations in-world, communicating with others through text chat or instant messaging.

Voice communication has recently been added, using either a headset with a microphone or the simple built-in microphone and speakers that come with most computers today. Second Life members can also create and view presentations and send and receive information both in-world and between Second Life and the “real world.”
WHAT CAN YOU DO IN SECOND LIFE?
The 3D environment of Second Life has attracted millions of individuals from many countries. Second Life avatars, or residents, total nearly 9.5 million; more than 1.5 million residents have logged in during the last sixty days. At any moment, between 30,000 and 60,000 residents are logged in. This scale of participation in Second Life facilitates a potential cornucopia of digital cross-cultural encounters, experiences, and collaborations as residents play, socialize, conduct business, and go about their daily lives in ways that closely resemble the “real world”.

Second Life also has a robust economy, produced by in-world transactions for in-world goods, services, and real estate. Second Life has its own currency, Linden dollars (L$), which can be bought or earned in Second Life, and a money supply of more than L$3 trillion dollars. The L$ to US$ exchange rate is constantly changing, but is generally about L$270–300 to US$1. Currency flow in Second Life is facilitated by credit cards and PayPal. Many residents participate in Second Life by being the producers or consumers of Second Life goods and services. Products such as buildings, vehicles, and apparel mirror most of what we encounter in our daily lives; services span the areas of education, design, construction, security, entertainment, and real estate. Through real estate transactions, residents establish their own communities and business locations.

WHO IS USING SECOND LIFE?
Many colleges, museums, universities, and corporations have established a presence in Second Life for community building, education programs, and collaboration.

In Spring 2007, Red (an orchestra from Cleveland) performed the first-ever live digital simulcast of a classical orchestra in multiple Second Life amphitheaters. Each amphitheater had the capacity for about fifty avatars and displayed the streamed performance and graphic stills on three screens. Residents (avatars) attended, listened to stereophonic sound, and chatted about the musical program during both the concert and intermission. Case Western University, the New Media Consortium (of which NYU is a founding member), and the Andrew W. Mellon Foundation, among others, supported this project.

Filmmakers and animators, both amateur and trained, have produced entertaining, well-respected “Machinima” within Second Life. “Machinima” is a fusion of the words “machine” and “cinema”. It refers to a set of filmmaking techniques as well as a genre. From the Second Life interface, one can initiate a simple recording in QuickTime format of all that is seen in the viewing window. More complex projects require residents as actors, as well as sets, locations, costumes, and third-party video production software.

In June 2007, Jonathan Fanton, President of the MacArthur Foundation, delivered remarks on “Philanthropy in Virtual Worlds.” This presentation was broadcast into Second Life. Fanton elaborated on MacArthur’s recent announcement of a $50 million initiative “to investigate the role and impact of digital technology on the lives of young people.” About Second Life, Fanton stated, “In virtual worlds, we see unprecedented opportunity for innovation because interactions are multi-modal, simultaneous, physical, and virtual, and advances happen on a daily basis . . . it’s clear that there are real opportunities for education.”

HOW DO YOU GET STARTED WITH SECOND LIFE?
Getting started with Second Life is relatively easy. It involves acquiring a free membership and downloading free software for your computer from the Second Life website (http://www.secondlife.com/). Minimum software requirements are Windows 2000, XP, or Vista, Mac OS X 10.3.9 or higher, or 32-bit Linux. Computer hardware should not be more than two years old and a cable or DSL connection to the Internet is required. While basic Second Life membership is free, a premium membership for $9.95 permits one to own Second Life land and to receive a weekly stipend in Linden dollars.

The membership process requires your real name and a valid email address. You select a name for your in-world identity and choose an avatar from a small collection. The
final step involves a response to an email sent to your account. After that, you can download the software, and you are on your way to your first Second Life visit on an orientation island. Linden Labs provides optional software updates almost bi-weekly; you will learn of these when you log in. In tandem with these updates, the system grid goes offline for maintenance (usually Wednesdays, 12:00 p.m. - 3:00 p.m. ET).

**HOW DO YOU CREATE THINGS IN SECOND LIFE?**

There are numerous opportunities for creativity, self-expression, and fun in Second Life. A variety of tools with graphical interfaces are built into Second Life for changing the appearance of your avatar or constructing geometric elements that can be assembled to create more complex objects such as buildings, trees, and furniture. Files from high-end graphics software like Photoshop can also be uploaded into Second Life to add surface textures. Photographs and other flat art can be uploaded for use in Second Life art exhibits, too. The Linden Script Language (LSL) — a powerful, Java-like coding language — is also available for sculpting and creating objects or for simply adding behaviors to objects and avatars.

Of course, each resident is concerned with the appearance and identity of his or her virtual self, so intuitive Second Life tools and templates permit extensive enhancement of an avatar. Remember, if you cannot build it, you may be able to purchase what you need or contract another resident builder or consultant to do the work for you. Numerous help guides and in-world classes are available too.

Finally, because you control your intellectual property rights in Second Life, you can easily transfer or sell your creations to others.

**WHERE TO LEARN MORE**

At NYU, startup activities in Second Life began this past summer, as Information Technology Services (ITS) leveraged its membership in the New Media Consortium to lease Second Life property located on an educational community island. A modest Welcome Center, two amphitheaters, and several sandboxes for construction practice have been created and are available for use.

Currently, ITS is also working with three faculty members who are using Second Life in conjunction with their classes in Fall 2007. Their use involves Second Life as an object of study, as a means of strengthening student engagement and communication, and as an environment for media design and movie-making. In addition, several NYU student services organizations and clubs have expressed exploratory interest in Second Life.

For easy access to NYU’s Second Life facilities, log in to Second Life, type “NYU” into the Second Life search tool, and teleport directly to the NYU Welcome Center.

For more information regarding ITS’ nascent support services for the use of Second Life at NYU, contact Vincent Doogan at vincent.doogan@nyu.edu. Collaborations and partnerships are welcome.

*Vincent Doogan is the Director of ITS Student Technology Services.*
New and Improved Services

**Advanced Media Studio**
By Shelly Smith
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The Advanced Media Studio (AMS), operated by ITS Faculty Technology Services staff, offers a wide range of specialized services, including fine art archival printing, laser cutting, rapid prototyping, self-service drum film scanners, high-end imaging and 3D workstations, and more. The AMS has recently upgraded many of their tools, machines, and workstations and instituted a new pricing structure.

All AMS Self-Service Workstations have been upgraded to 8-core Mac Pro workstations with 16GB of main memory and RAID scratch disks. The Epson 4800 printers are now restricted to regular AMS hours only and require an AMS staff login for access. Their corresponding stations are available for reservation during off hours for file processing.

The AMS has upgraded to the new Universal Professional Series PLS6.120D Laser for etching and engraving. Improvements include operation reliability, speed, cutting and engraving quality, and resolution detail. Etching is now possible on uncoated metals such as stainless steel, chrome steel, and titanium without use of special metal marking compounds.

Starting this fall, the AMS has transitioned to a new charge system for all services. Job order pricing for each service is based on an internal charge cost and available only to those within or affiliated with the NYU community. These prices represent a great savings from commercial costs. For pricing information and payment terms, please refer to the AMS price list located at http://www.nyu.edu/its/ams/prices/.

**NYU Lists (Forums)**
By Jodi Goldberg
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NYU Lists (formerly called NYU Forums) are email-based discussion and announcement lists which can be used by NYU faculty, staff, or students to exchange ideas about specialized topics, post deadlines or homework assignments, or confirm meeting changes. A variety of options for reading, sending, and administering lists are available through the NYU Lists administration interface at http://lists.nyu.edu/.

ITS has recently upgraded the software that powers the NYU Lists service from Version 5 to Version 9. The new version provides enhanced functionality for list administrators and a better message reading interface for list subscribers. Subscribers may view their lists in the Lists channel in NYUHome.

Please note that the name of the NYU Lists server has changed from forums.nyu.edu to lists.nyu.edu. While messages addressed to the old server name (e.g., listname@forums.nyu.edu) will be delivered until late December, we ask that you please make every effort to begin sending mail to lists using the new server address format: listname@lists.nyu.edu.

For further information about NYU Lists, please visit the NYU Lists website at http://www.nyu.edu/its/lists/, the updated NYU Lists FAQs at http://www.nyu.edu/its/lists/faq/, and the updated NYUHome Lists Channel FAQ at http://www.nyu.edu/its/nyuhome/lists/. Questions may be directed to admin@lists.nyu.edu.
Throughout history and into current times, humanitarian emergencies — civil wars, famine, natural disasters, and other catastrophes — have devastated parts of the developed and developing worlds. The 2003 earthquake in Bam, Iran resulted in 30,000 casualties, and in 2004, over 20,000 lives were lost in the Indian Ocean tsunami disaster. In the United States, Hurricanes Katrina and Rita destroyed infrastructure, claimed the lives of thousands, and displaced hundreds of thousands in 2006. The level of devastation in these and other areas has been impacted by such physical factors as time, location, geographic accessibility, and resources, and by political, economic, and social stability. These factors can impact the number of lives saved, the effectiveness and efficiency of assistance, and the ability to prevent recurrence.

The United Nations (UN) and the non-governmental organization (NGO) community continue to develop innovative methods to manage emergencies more effectively. Agencies such as the Office of the UN High Commissioner for Refugees, the UN Mine Action Service, Save the Children, and Doctors Without Borders are working in crisis zones to ameliorate existing circumstances and deal with new crises as they arise. Management of humanitarian crises requires quick, decisive, and educated leadership, and these organizations are increasingly looking to emerging technologies to provide the information needed for effective crisis management.

This article will demonstrate how the use of a particular emerging technology, Geographic Information Systems (GIS), is assisting in the management of humanitarian emergency situations. Using examples based on current crisis situations, I will focus on three applications of GIS: landmine and minefield management, refugee camp management, and post-crisis analysis. GIS has been used in each of these areas to help leaders make informed decisions and save lives.

**WHAT IS GIS?**

GIS is software that stores information about locations and displays the data on a computer screen in the form of a map. The information can then be statistically and geographically analyzed, to provide, for example, physical information about a country’s ratio of water to dry ground or how much land lies within a mile of a specific body of water.

Additional information may be included with the basic data, providing a more complete view for further analysis. For example, GIS data could be used to determine which bodies of water represent vernal pools (water bodies that dry up in the summer), contain water that is unsuitable to drink, or are moving bodies with a particular level of water flow. Since GIS combines a database with an easy-to-understand map for displaying the information it stores, it can help individuals understand a situation and make more efficient, educated decisions.

**A HYPOTHETICAL EXAMPLE**

To better illustrate how GIS can function, consider hypothetical Country X, an underdeveloped nation in which over 60 percent of the population live in remote rural villages. Country X is located in the
Sahel with a semi-arid climate and a monsoon season; hence, food and water shortages frequently occur. Several years of civil and tribal warfare have exacerbated the tenuous situation and virtually guarantee that the central government would be incapacitated during an emergency situation.

Humanitarian aid organizations have stepped in to offer aid in areas ranging from refugee and IDP (internally displaced persons) camp management to food, water, and medical needs. These organizations have gained extensive knowledge about their areas of work and have created a GIS to store and share this information. The GIS contains information about the location, size, and surface area of all water bodies and water features in the country, as well as useful detailed topographical information, including high and low elevation locations, key geographic features, roads, and travel routes. Also stored in the GIS is location information for all cities, towns, and villages, their populations, and demographic information such as tribal affiliations, populations by age group, and community health status.

Using the GIS, aid organizations can perform detailed analysis to make decisions during humanitarian emergencies. If Country X were to experience a drought during the growing season, 90% of that season’s crops would die, causing famine. Knowing this, organizations can bring food and water to the villagers to mitigate the famine’s impact. However, resources in the more remote villages would be completely depleted, forcing the inhabitants to move to a nearby large town or city to find food. Using the GIS, aid organizations can identify which villages are located near extremely low water tables and would likely be especially devastated by the drought; therefore, they would know before arriving that the majority of these communities would have moved on to seek food. Program administrators can consult demographic information in the GIS before arrival to determine that the villagers would have moved to a town located 100 miles away instead of a closer one, because the nearer town is comprises a hostile tribe, while the latter town’s population consists mainly of a tribe with family ties to them.

Because of the central government’s lack of investment, few paved roads exist in our hypothetical Country X; however, a well-known trade route links the town and the village. The GIS contains partial data for the route, but because the route is understood to exist between two mountainous areas, the aid organizations can determine their path to the town and arrange in advance the delivery of aid for the population, which increased from 10,000 to 50,000 inhabitants at the onset of the famine. Without the information provided by the GIS, managing the famine would have been more complicated and greater competition would exist among the refugees for quickly diminishing supplies, likely increasing the death toll.

As you can see from this hypothetical example, using a GIS could make crisis managers better able to assess situations on the ground and
choose appropriate solutions. In humanitarian emergencies, the victims’ lives depend directly on the managers’ ability to make good decisions, and inefficient decisions can cause further complications at best — and disaster at worst. A GIS could be a critical element in enabling accurate assumptions and efficient decision-making.

Three possible applications of GIS use to humanitarian emergencies are landmine clearance and management, refugee camp management, and crisis security conditions analysis.

CLeaRING LANDMINES AND MANAGING MINEFIELDS

“The landmine is eternally prepared to take victims. It is the perfect soldier.”

In conflict and war situations, conditions can induce the mass exodus of refugees. Armed invaders can force the displacement of populations directly, through attacks, or indirectly, by cutting off inhabitant’s supply lines. As the population leaves, the military moves in and secures the area; as they strengthen their occupation, the area’s strategic value increases, and landmines are often put in place to protect it.

Unfortunately, once a conflict is over, landmines are typically left in place, leaving a dangerous scar of war for the returning refugees. As refugees return home, they quickly find — sometimes at the cost of their life — that the roads they once used and the fields they once farmed are no longer accessible. Landmines, explosive remnants of war (ERW) and other types of unexploded ordnance (UXO) remain as a reminder of the conflict and inhibit future economic growth long after the war ends. Many types of landmines and UXO retain the ability to kill and maim for decades.

Furthermore, landmines are cheap to build but expensive to deactivate, costing between $3 and $27 to produce but more than $1,000 to remove. Because UXO impedes economic rehabilitation, it also threatens political stability, particularly in areas with large numbers of returning refugees.

Currently, there are many organizations working to remove landmines in different countries, with the largest operations working in affiliation with the UN Mine Action Service. For instance, Afghanistan currently has the world’s largest mine action program (Mine Action Program of Afghanistan — MAPA). At the peak of operations, the program employed as many as 10,000 people in all areas of mine action.

The situation in Afghanistan continues to improve since the country signed the anti-personnel mine ban treaty in 2003. Unfortunately, the situation is still critical, as of 2006, 17% of the population still lived in mine-contaminated areas. Furthermore, an average of 62 Afghans were being killed each month by landmines; a majority of these casualties were male and half were children. The nation’s situation is still stark and requires an immense amount of continued work.

Tremendous numbers of landmines were laid in Bosnia during the Bosnian war in 1992 through 1996, and 3.68 percent of the territory in Bosnia and Herzegovina in 2006 was still afflicted — over a decade later. More than 14,000 locations still needed to be cleared, and there were 34 mine-related victims (death or injury). As in Afghanistan, the Bosnian landmine crisis poses a major barrier to returning refugees, internally displaced persons, and economic recovery.

Current methods of clearing landmines are slow, so GIS has been useful in improving landmine strategy and creating innovative protection methods and data collection devices, and has become a key element in information management systems for mine action.

In 1990, the Geneva International Center for Humanitarian Demining deployed the Information Management System for Mine Action (IMSMA). This geospatial tool was created to help “manage, report and map mine UXO and other ERW”5 using known landmine location data along with information gathered in the field. IMSMA integrates population distribution, density, and aggregate numbers (usually from estimates provided by the Global Population Database or the Gridded Population of the World) to help mine action organizations make real-time assessments of demining needs in the critical period immediately following a

1. Jody Williams, founding coordinator of the International Campaign to Ban Landmines, in her Nobel Peace Prize Acceptance Speech on December 10, 1997 at Oslo City Hall, Oslo, Norway.
In the long term, organizations can also use IMSMA to decide where to focus demining efforts in the country — particularly useful when funding decreases. IMSMA is currently being used in over 80% of all mine action programs around the world. Other systems, such as PARADIS, are being developed to make it easier to use GIS for demining.

Also under development is the Handheld Landmine Avoidance System called “Mine Alert.” With this system, miniaturized GPS receivers are installed into wristwatches for local villagers to wear. Each watch contains a GIS that “knows” the location of local landmine fields. Through GPS, the watch alerts the wearer with an extremely loud sound if he or she nears a landmine field. This would be particularly useful where signage or fencing around a field is in disrepair and for children (half of all landmine victims) who are more effectively deterred from landmine fields by a noise than a sign.

**Refugee Camp Management**

Conflict often results in the movement of peoples from the affected area to a new location. As the numbers of migrants increase, refugee camps are set up as temporary housing. For instance, after the 1994 civil war and genocide in Rwanda, more than 2 million Hutus, fearing repercussions, escaped the country to refugee camps in the neighboring nations of Burundi, Uganda, Tanzania, and Zaire.

The aftermath of the 2004 Indian Ocean tsunami disaster is a more recent example of large-scale displacement. With homes, businesses and crops devastated, millions were forced to move to undamaged higher ground, and many ended up in refugee camps.

In these and other emergency situations, entire populations are displaced and forced to settle in make-shift camps, often with no running water, unsanitary conditions, and no access to basic health care. The average refugee arrives with only what they could carry, resulting in large groups of vulnerable, hungry, thirsty and tired people. It is imperative that “a rapid estimate of the size of the displaced population [be made to provide] essential information with which to plan relief activities.”

Aid organizations also require ongoing, accurate data about the changing ground situation. Satellite imagery can fulfill these needs for regular updates during

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8. Cornfield, T., et. al. Handheld landmine avoidance. Department of Computing and Information Science, University of Guelph, Guelph, ON, Canada

Crisis situations.\textsuperscript{10} Today’s satellite imagery is called Very High Resolution Satellite (VHRS) imagery. These satellites are equipped with multi-spectral telescopic cameras, which are used to “do rapid population estimates of refugee camps.”\textsuperscript{11} Furthermore, VHRS imagery, in which every pixel represents an area measuring less than a meter, enables viewers to identify man-made structures such as buildings and vehicles.\textsuperscript{12} Aid workers must know where these structures are for refugee camp management. Because the identification process is labor-intensive and time-consuming, satellite imagery analysis is being streamlined using GIS. Currently, the process is being automated using an object-oriented approach to structure identification. Because all satellite imagery is raster data (a pixelated form of image data, such as a JPEG or PNG), every physical feature in the image is represented by a group of pixels. A car may be 6 pixels, while a truck is 12, and a tent is 40.

A GIS uses computer algorithms to rapidly and accurately identify and display existing conditions as an aid in better-informed camp planning, according to a study at the UN High Commission for Refugees Lukole refugee camp in Tanzania\textsuperscript{13}, where emergency managers analyze the location and size of tents for a quick population estimate. Furthermore, roadway identification facilitates greater traffic control policies and can inform growth patterns of the camps and security strategies. Also, camps are often set up before a formal agreement or Memorandum of Understanding is finalized, and this technology facilitates a camp management plan and strategy that minimizes the negative impact of the camp on the host community.\textsuperscript{14}

Vegetation assessment and change detection in refugee camp situations can also use VHSR multispectral satellite imagery to enable better-informed decisions for the camp’s growth.\textsuperscript{15} For instance, it can help distinguish flat, forested areas that can be cleared for land and building materials from hilly or wet areas that do not offer sufficient usable land or material for camp growth.\textsuperscript{16}

\textbf{Crisis Security Conditions Analysis}

Humanitarian organizations often must administer aid programs in situations that place workers in harm’s way. Political instability and civil strife can put aid workers at odds with one or another side of the conflict. In a civil war, providing food or medical supplies to the “other side” may be viewed as aiding the enemy.

The perceived distinction between an invading army and aid workers may also become blurred, placing the aid workers in greater danger. During the war in Afghanistan, for example, US troops administered leaflets to the population warning that future aid shipments would be withheld if the communities did not cooperate in the identification of understanding.\textsuperscript{6}

\textbf{GIS at NYU}

ArcGIS, ArcView, ArcIMS, and other ESRI products (\url{http://www.esri.com}) comprise the premier suite of Geographical Information System (GIS) tools used for research and instruction at NYU. ITS has upgraded the NYU site license for this software, providing many useful features for faculty members who wish to use the software with their classes.

The ESRI mapping software has a wide range of uses in teaching and research involving spatial data. For example, ESRI products have been used at NYU to build an inventory of artifacts and ancient structures at an archaeological dig in Turkey and to study the relationship of lung disease to dwelling locations in the Bronx.\textsuperscript{1}

Under a recently upgraded license for these ESRI tools, NYU faculty and researchers may obtain free one-year licenses for ArcGIS. This provides useful features for faculty considering the use of GIS software in their classes.

ArcGIS, ArcView, and many other ESRI tools, such as Spatial Analyst and 3D Analyst, continue to be available at ITS computer labs and classrooms under the NYU site license.

For more information on these products and the upgraded NYU site license, attend a GIS clinic, held each Tuesday at 1:00 pm in the ITS Data Services Statistics & Mapping Lab (75 Third Avenue), email data.services@nyu.edu, or visit \url{http://www.nyu.edu/its/gis/}.

\begin{itemize}
  \item \textsuperscript{1} \url{http://www.nyu.edu/its/pubs/connect/spring07/naphtali_gis.html}
\end{itemize}


12. Ibid.

13. Ibid.

14. From “Camp Management Toolkit”, available at \url{http://www.nrc.no/}


16. Ibid.
These actions contributed to a perception among the local population that all aid organizations were working for the US military, ultimately leading insurgents to target these organizations. In June 2004, after twenty-four years in Afghanistan, five members of the Doctors Without Borders staff members were killed in the climax of a steadily deteriorating security situation, and the organization was forced to leave in order to safeguard their workers.

Because security is so important, it is critical that humanitarian crisis managers have a complete understanding of the situation on the ground to ensure the safety of their staff members, and “[the] use of GIS methods for resource allocation, planning, and logistics has become a standard component in major humanitarian emergency operations.”

A 2005 study used publicly available data to create a standardized, geospatially-linked information database for Iraq that provided humanitarian organizations with access to an “on the ground” picture of conditions and their relationship to humanitarian efforts. Fighting and attacks on aid workers were tracked, as were general security and infrastructure conditions in the different regions. This information was then added to the GIS and used by humanitarian organizations to study changing conditions, particularly to infrastructure reconstruction and security.

The database is continually updated to keep up with the changing status on the ground, and the mapping function allows conditions to be viewed at a specific moment and as they change over time, enabling managers to make stronger assumptions about future conditions using trend analyses. Future GIS technology could identify areas within conflict zones that are most likely to produce refugee outflows or become refugee destinations. It could also map areas for site planning by reviewing information regarding environmental conditions, transport routes, habitable land, water, food, and fuel, as well as identifying areas of fighting and the status of security problems throughout the country.

This satellite image, layered over a map of Jefferson County, New Orleans, gives a clear view of the large number of bodies of water in the area, which can provide important information about possible problems to aid workers.

20. Ibid.

>> Continued on p. 14
In his welcome message to the NYU Community for the 2007-2008 academic year, President John Sexton referred to NYU’s emergence as a “Global Network University”:

“. . . just as New York has become the world’s first truly global city . . . so, too, is NYU increasingly becoming a global university. . . . our locus here at the center of a network of NYU sites across the globe will ensure that our community of scholars will make important contributions to the emergence of our city as an ‘idea capital.’”

NYU’s growth as a global university is accelerating, with new academic sites opened or announced in Shanghai (2006), Singapore (2007), Buenos Aires (2008), Tel Aviv (2008), and most recently, a regional campus in Abu Dhabi. As part of a highly engaged, multi-year strategic planning process, Information Technology Services (ITS) continues to update and expand its technology offerings abroad.

Over the last ten years, ITS has helped to support the launch of international academic programs in Europe, South America, Africa, and Asia. In providing technology services and support to these sites, ITS extends the scale economies with respect to resources, expertise, and support that they have developed at NYU’s Washington Square campus. As international programs continue to emerge and grow, ITS strives to design technology resources that will increase the sharing of academic experiences abroad, facilitate research activities, ease movement by faculty and students among locations, and foster efficiency in the administration of new programs. One key objective is to enable students, faculty, and staff to be active in the greater NYU community at any time, wherever they may be physically located.

GLOBAL INFRASTRUCTURE AND SERVICES
Over the past year, ITS has partnered with the Office of Global Programs (Global), a part of the Office of the Provost, on projects to improve technology at academic sites abroad. During summer 2006, major upgrades were completed to the network and telephone infrastructure at NYU in Florence, NYU’s largest international program. The upgrades included a new telephone PBX, handsets, and voicemail system; new network routing and switching electronics; wireless networking infrastructure; and the transition from an E1 Internet circuit to a higher-capacity E3 circuit. This multi-phase project paved the way for multiple improvements to service offerings at the La Pietra campus, including a five-fold increase in Internet bandwidth, many new telephone and voicemail features, a virtual private network (VPN) connecting Florence and New York, higher-performance video conferencing services, and NYU’s first international extension of the NYURoam wireless service.

1. NYU President John Sexton, e-mail message to the NYU community, September 6, 2007
Students, faculty, and staff with wireless-enabled laptops in Florence can now log on to the secure NYUROam wireless network with their NetID and password, just as they can when they are at the Washington Square campus.

ITS completed similar upgrades during the summer of 2007 to the Bedford Square Academic Center at NYU in London. The program is hosting over 300 undergraduates this semester, and the upgrades were a necessary step in supporting the increasing student enrollment. Like Florence, NYU in London now features NYU telephone and voicemail services and is part of the global NYU-NET via a site-to-site VPN. All five floors of the Academic Center now have full NYUROam wireless coverage, and videoconferencing facilities have been reconfigured to take advantage of a five-fold increase in the site's available Internet bandwidth. These changes are expected to enhance the already strong student life and in-classroom academic experiences that the program offers.

Global launched its first program in Asia — NYU in Shanghai — in the fall of 2006. NYU in Shanghai is located on the campus of East China Normal University and uses that University’s Internet and telephone services. Global and ITS worked together in Shanghai to establish wired classrooms, student computing clusters, and full access to both the NYUHome portal and the NYU Libraries eResources. The program has grown since inception, and technology service offerings have already been expanded to support that growth.

In Spring 2007, ITS partnered with Global at NYU in Prague to upgrade hardware and software in student computer labs, as well as the core network electronics of the Academic Center network. As NYU in Prague continues to serve more students each semester, Global and ITS have taken strategic steps in planning to match program growth with upgrades and new technology offerings, such as more computers per capita and plug-and-play workstations, in response to increasing enrollment.

Next spring, NYU in Ghana will open a new residence hall in response to recent growth. Ghana poses tough challenges in a unique technological landscape, and Global has consulted with ITS to design new network and Internet services specially tailored to provide security, reliability, and accessibility at the Accra, Ghana-based center. This model can be extended to benefit NYU in Ghana's other residence halls, as well as other University activities located in environments with similar infrastructure challenges.

**Branching Out**

ITS recently collaborated with the Tisch School of the Arts to architect and implement technical services for the launch of its Singapore branch campus, Tisch Asia. This program is unique among NYU’s international sites, which operate in a short-term “study abroad” structure. Tisch Asia is a multi-year, degree-granting program, a format that both new and existing international sites may adopt in the future. During the summer of 2007, ITS Communications and Computing Services worked with Tisch Special Programs to design sophisticated telephone and data networks for Tisch’s nearly 40,000 square foot campus facility in Singapore’s Queenstown district. As in London and Florence, Tisch Asia’s telephone and voicemail services mirror those in New York. Tisch Asia is also integrated into the global NYU-NET.

One of the core elements of the Tisch Asia project was the expansion of existing international technology support models to include Singapore-based Tisch community members. Given the 12-hour time zone difference, this effort provided the
opportunity for ITS to test innovative approaches to collaborative work and technical support. Through collaboration with on-site technical staff in Singapore, using ITS’ knowledge base, web-based service request submissions, and a new approach to support by phone, the Tisch Asia community will have timely access to qualified technical support staff and engineers equipped to assist them with a wide variety of issues and requests. A special website for Tisch Asia was set up, providing an overview of support and an online submission process for requests and a commitment to service response within 24 hours. For hours when the ITS Client Services offices do not have on-site personnel (midnight to 8:00 a.m. EST), the ITS Data Center team (who are on site at Washington Square overnight) and Client Services cross-trained on the use of the Ask ITS knowledge base and ITS’ service management system to track, document, and resolve service requests from Singapore by phone. Singapore-related service requests and tickets are now included in our ITS daily service reports.

LOOKING AHEAD
ITS’ partnerships with NYU’s international programs center on providing a path to more effective, reliable, and communication-rich academic experiences and administration for people who are spending time at one of NYU’s international sites. We continue to explore new methodologies, resources, and tools in these diverse settings, from web-based technology to NYURoam wireless services to Internet Protocol (IP) phones. As students, faculty, and staff move from one NYU location to another, it is our goal to provide a consistent, usable technical environment that allows students, staff, and faculty to focus on the academic and cultural experience of being abroad. We are developing a wealth of knowledge, lessons learned, and best practices for extending technology services from Washington Square to sites abroad, which we will continue to refine. As programs in new formats emerge in different contexts, NYU will be equipped with robust technologies to facilitate strong academic, interpersonal, and operational links among its many locations.

As Manager of Global Technology Services, Carlos García is responsible for coordination of international technology-related projects and initiatives at NYU. He can be reached at carlos.garcia@nyu.edu.

Additional article information contributed by Ben Maddox.

For More Information About International Programs at NYU

Office of Global Programs - http://www.nyu.edu/global/
Tisch Asia - http://www.tischasia.nyu.edu.sg/
Study Abroad - http://www.nyu.edu/studyabroad/
Office for International Students & Scholars - http://www.nyu.edu/oiss/
ITS at Global Sites - http://www.nyu.edu/its/global/
NYU President John Sexton’s speech announcing the opening of NYU in Abu Dhabi - http://www.nyu.edu/public.affairs/releases/detail/1787/

>> Geographic Information Systems, Continued from p. 11

CONCLUSION
The decisions that humanitarian organizations make in emergency situations about where to send food, what roads to use, and how to deal with affected populations can mean life or death to endangered people groups. Poor decisions can and often do mean that more people will die during a crisis. Aid organizations work with populations at their most vulnerable. In order to do their job properly, aid workers must have a full understanding of the situation on the ground, how it has developed, and how it will continue to develop.

This is where a technology like GIS can help greatly, and I believe GIS should be made an integral part of humanitarian aid and crisis management. GIS empowers people to combine all of the knowledge available about an area and use it to make better decisions.

GIS can organize information, turn abstract knowledge about a situation into an easily understood, straightforward map and enable rapid and informed decisions. These maps can further explain the circumstances and plans to local leaders, assisting in the critical task of involving the affected community in the aid process. When used properly during humanitarian emergencies, GIS can become a decision maker’s powerful resource and help ensure that the greatest number of lives are saved.

Jaime Martinez is an Assistant Professor at NYU’s Gallatin School of Individualized Studies.

Maps created by Frank LoPresti, Senior Faculty Technology Specialist at the ITS Data Services Statistics & Mapping Lab.
The NYU Digital Studio is a computer lab facility on the second floor of Bobst Library that offers a collection of information technology services to faculty members working on a wide range of instructional and research projects.

NYU faculty can visit the Digital Studio to use digital media computer equipment, receive assistance from Digital Studio lab assistants, and gain access to various supported technologies. The Digital Studio is a collaboration of NYU Libraries and Information Technology Services.

**OUR SERVICES**

As faculty work on instructional or research projects, the Digital Studio staff is available to provide the following types of assistance.

- **Guidance**: We provide many types of advice and consultation to guide faculty projects, including help with planning projects, selecting the correct tools to achieve the project’s goals, and following best practices in the use of new technology.

- **Hands-on Assistance**: We offer training to faculty in the use of the various tools that we offer. For instance, we can show you how to digitize video, use a learning management system such as Blackboard to create a course website, or use file management software to archive research documents.

- **Supported Tools**: We support a variety of systems and software applications that have been selected to help faculty meet their goals. The technologies we support are described in the Tool Selection Chart available on the Digital Studio website: [http://www.nyu.edu/its/studio/tools/](http://www.nyu.edu/its/studio/tools/).

**GETTING STARTED**

If you are planning a project that would benefit from Digital Studio services, we recommend that you begin by answering the questions in the Project Assessment Worksheet on page 4. This will help you and the Digital Studio staff to define your project’s goals and requirements and to select the best services and tools to meet those goals by using that information in conjunction with the Tool Selection Chart at [http://www.nyu.edu/its/studio/tools/](http://www.nyu.edu/its/studio/tools/).

In addition, be sure to read the following Sample Project Scenarios. These are descriptions of a few common types of projects and the solutions proposed by Digital Studio staff, created to give you a better idea of the kinds of assistance Studio staff can provide. Bear in mind that we can assist with many types of projects beyond those described here.
SAMPLE PROJECT SCENARIOS

The following project descriptions and proposed Digital Studio solutions are just sample scenarios, with hypothetical solutions based on real events. Each real case will differ, and the right solution will depend on the actual project’s variables.

Scenario 1: Using Movie Clips in Class
Professor Kubrick wanted to show his class a collection of twenty-five short movie clips from five different commercial films. He needed to be able to pause and rewind while discussing the content of the movies. Also, he wanted students to be able to review the movie clips outside of the classroom. Professor Kubrick was concerned about handling technical difficulties during class and about how long it would take him to complete the project. He was not aware of anyone in his department who could help him use these clips in the classroom.

Digital Studio Solution: DVD Production with Companion Course Site
To minimize technical complications in class and honor time constraints, Digital Studio staff showed Professor Kubrick how to author a DVD for in-class presentation. They helped him digitize the film clips, store them on an external hard-drive, create chapter markers, and burn them onto a DVD. Studio staff then referred Professor Kubrick to NYU’s Campus Media, who helped him schedule a classroom that had the appropriate equipment to show the video.

Once the DVD presentation proved successful, Professor Kubrick returned to the Studio and worked with Studio staff to put a link to a streamed version of the video content in a Blackboard course site so that students could review the clips outside of the classroom.

Scenario 2: Creating a Course Website
Professor Chasen had grown tired of replacing students’ lost syllabi and producing printouts of articles that she used in her undergraduate courses. She wanted to create a website to post a syllabus and PDFs of articles for a course that started in three weeks, and to be able to update the website for use in subsequent semesters. She had some concerns about copyright, since the articles would be posted online. She also had never made a course site before and didn’t have much time to devote to this project before classes began.

Digital Studio Solution: Blackboard Training, Blackboard Course Site Set-up, and Flatbed Scanning with Document Feeder
Digital Studio staff guided Professor Chasen towards using Blackboard, NYU’s learning management system. Since Blackboard is password protected and integrates with the University’s Registrar system to determine students’ access to course sites, Professor Chasen felt comfortable with the idea of placing her selected articles online.

Studio staff provided Professor Chasen with Blackboard training, and she was soon able to upload her syllabus, scan large numbers of documents into PDF format with the scanner and high-speed document feeder available at the Studio, and add links to websites she felt her students might find interesting and useful. She also received assistance with locating and linking to NYU-licensed resources that exist in permanent locations in online databases for access over multiple semesters.

Scenario 3: Digitizing Outdated Audio and Video Formats
Professor Lennon had a lot of audio and video content from his own collection that was still on vinyl LP, audio cassette, and VHS tape. He wanted to use some of this material for his teaching and scholarly activities and was interested in taking advantage of new digital technologies such as NYU Blackboard. He was also concerned about the longevity of his collection, as some items were beginning to show their age.

Digital Studio Solution: Audio/Video Digital Conversion
Digital Studio staff helped Professor Lennon digitize his old LPs and audio cassettes into AIFF files and...
Digital Studio Project Assessment Worksheet

Use this worksheet to determine your project’s needs.

What is the PURPOSE of your project?

Project Type:
Is the project primarily related to instruction for an academic course, to your research or scholarship, or to some other activity at NYU?

Project Goals:
What is the intended outcome of this project (e.g., a DVD, a web page, an online service or database, a printed document)?

Who will have ACCESS to the results of the project and how?

Target Audience:
Who needs to see or use the result(s) of the project? Is it primarily intended for students, other NYU faculty, staff and/or administrators, individuals not part of NYU, or a combination of the above?

Distribution:
How will the audience access the result(s) of the project?

Level of Access Privileges:
What type of access do other project participants and the audience need? Will they access the content as passive viewers, as active viewers who provide feedback, as viewers with rights to edit the content, or as a combination of these?

Copyright and Protection:
Is the material used in the project copyrighted? Who owns the content? If the results of the project will be available on the Internet, is it okay for people to download the file(s) or should access be restricted?

What are the STORAGE and MEDIA requirements of this project?

File Format:
What file formats are being used in this project?

Storage Requirements:
What is the average file size? About how much total material will this project involve? How long should it be kept?

Significance:
How important/unique is the material? Is it one-of-a-kind or ubiquitous? Of long-term significance or ephemeral? Is the value/interest-level of this content: personal, departmental, school-wide, discipline-wide, inter-institutional, or worldwide?

Access:
Does the material need to be easy to retrieve? Will project participants require frequent access?

How much TIME and how many RESOURCES will this project require?
Are development resources available? Is this project part of a grant?

Are staff resources available (e.g., students)?

How comfortable are you with using technology?
store them on an external hard drive. He was also instructed in how to dub old VHS tapes to MiniDV to capture later.

Studio staff showed Professor Lennon how he could, on his own, convert selected AIFF files into MP3s, a more web-ready format, and helped him upload and organize these files in NYU’s Webspace file storage system for future use in Blackboard and other online venues.

Scenario 4: Scanning Images for Publication
Professor Leibowitz was preparing a book for publication. She had about 100 slides and flat photographs from her own collection that she needed to digitize, in a format specified by her publisher, for inclusion in her book. After the images were sent to the publisher, she was also interested in exploring ways in which she might be able to incorporate those and other images into her class lectures.

Digital Studio Solution: High dpi Slide and Flatbed Scanning
Digital Studio staff helped Professor Leibowitz understand the format requirements from the publisher, trained her and her assistant in using the Studio’s digital slide and large format flatbed scanners, and devised a workflow to complete the project on schedule. Studio staff helped her transfer her new digital content to an external hard drive for long-term storage and advised her on the best file format to use when sending files to the publisher. The staff also showed Professor Leibowitz how to convert these print-ready, higher-resolution images to web-ready versions for a system like Luna, which she could use for her class lectures.

YOUR NEXT STEPS
For more information about the NYU Digital Studio, please visit our website at http://www.nyu.edu/its/studio/ or send email to digital.studio@nyu.edu. To schedule an appointment or consultation with Digital Studio staff, please fill out the form at http://www.nyu.edu/its/studio/appointments.php. If you are planning a project, be sure to bring your answers to questions on the Project Assessment Worksheet (see page 17) when you come!

Jeffrey Bary, Ethan Ehrenberg, Barbra Mack, and Kate Monahan are Faculty Technology Specialists within ITS Faculty Technology Services.
NYU’s ePASS system enables all full-time NYU employees — faculty members, administrators, and staff — to view and update their home and work addresses, cell phone numbers, emergency contact information, and other items of personal information listed in the University’s Human Resources/Payroll database. Launched in early 2007, ePASS allows you to request changes via the web, thereby streamlining a process that previously required submitting a request to a human resources officer, who would then have to initiate the change. With ePASS, employees can submit their own information and receive automated confirmation that their requested changes have been entered.

Because it is web-based, ePASS may be accessed through NYUHome (http://home.nyu.edu) from anywhere with an Internet-connected computer. For the most reliable experience, ITS highly recommends using Internet Explorer (for Windows) or Safari (for Macintosh) to access ePASS. To use the system:

1. Log in to NYUHome using your NYU NetID and password.
2. Click the Work tab.
3. Locate the ePASS Employee Self Service channel and click the Login button.
4. Enter your NetID and password if prompted to log in to the Admin Services portal.
5. On the Admin Services page, locate the PASS channel and click the link for ePASS: Employee Self Service.

Use ePASS to request changes to your personal contact information maintained in the University’s Human Resources/Payroll database.

and click the link for ePASS: Employee Self Service.

On the ePASS screen, you can use the left navigation menu to verify and, when necessary, change your information. For example, to enter a new cell phone number, click Home Information in the navigation menu. Your home address and contact information will be displayed. If you currently have a cell phone number entered, it will show up, along with a text box where you can enter your new number. At this time, ePASS only allows one cell phone number per employee, although if you have an alternate cell phone for international use, that information can be entered in the area labeled International Cell Phone.

Once you have entered the new information, click the Preview/Submit button at the bottom of the page. A preview of your request will display. If you need to make any further changes, click Go Back and make your changes before clicking Preview/Submit again. When you are finished with your changes, click Submit.

You can track the status of your submitted requests from the Admin Services portal by locating the PASS channel and clicking ePASS: My Active Requests. Once the request is approved, your information will be updated. Your home and work information is used for your paycheck, W2, and University mailings, and your cell phone number is used to reach you in emergencies.

For related information on updating your email address in the NYU Directory, see page 33.

Keith Allison is a technical writer and editor with ITS Client Services’ Publications & Communications Group.

1. For an article on the PASS system, see the Fall 2005 issue of Connect (http://www.nyu.edu/its/pubs/connect/fall05/colt_pass.html).
There are many thousands of computers connected to NYU-NET through office, residence hall, and wireless connections and many more connected from off-campus locations. As computers, Internet connectivity, and diverse computer-based applications become an increasingly essential part of conducting day-to-day administrative and academic business at NYU, the collection of technical information that you may need to quickly find is also rapidly growing. Information Technology Services (ITS) handles many technology-related help desk calls and emails on a daily basis.

ITS is committed to providing timely, accurate technical support and information that assists NYU students, faculty, staff, and alumni in using technology to accomplish their goals. ITS is exploring new ways of delivering support that is quick and easy to access, 24 hours a day, seven days a week.

In a heterogeneous computing environment like NYU, specialized knowledge and skills often provide the fastest solutions to technical problems. Sharing this specialized knowledge across the NYU community, which now quite literally spans the globe, is a challenge, and the newly expanded Ask ITS service (http://AskITS.nyu.edu/) and its future development will help us meet this challenge.

**How-To’s, Reference Items, and a Service Catalog**

Ask ITS is an online complement to the one-on-one technical support distributed throughout the University at the ITS computer labs, the Client Services Center, and elsewhere. Ask ITS is easy to access and use and provides hundreds of publicly searchable reference items that can help you troubleshoot problems, configure software, find information on ITS service offerings, and keep up to date on security and software issues. It’s also an easy-to-find web-based way of emailing your questions, comments, and suggestions to Client Services support analysts.

Launched in August of this year, the new Ask ITS tool provides a means of sharing a wealth of IT-related knowledge with the whole of the NYU community. Go to [http://AskITS.nyu.edu/](http://AskITS.nyu.edu/), type in your keywords, use the pull-down menu to select your search options, then click Search. You will see a list of reference items and can open any of them by simply clicking on its title.

Also included as part of Ask ITS is the ITS Service Catalog, a growing, searchable listing of 150 distinct ITS services and offerings. Want to know about blogs at NYU? Just go to [http://AskITS.nyu.edu/](http://AskITS.nyu.edu/), enter “blogs” into the search box, and choose Service Catalog from the drop-down Search menu. There are many benefits to a publicly searchable service catalog, the most important of which may be that it fosters the continued growth of a solid, two-way relationship between ITS and the NYU community members we support. Service catalogs have recently become a top priority for IT organizations across the academic landscape, and ITS is proud to be at the forefront in developing this exciting communication tool.

The development of this reference tool is a significant expansion of the first edition of the Ask ITS service. Launched in the Fall 2006 semester, the Ask ITS service within NYUHome is an area where NYU community members can review service and security alerts, download software, and send questions to Client Services support analysts.

As a supplement to our phone, web-based, and email support, Ask ITS is available 24 hours a day, seven days a week, regardless of whether your local time is New York City, Florence, or Singapore. It is a place where you can independently review information that a support analyst has given you, find answers to related questions, and obtain service descriptions and contact information for requesting services.

**Still Have Questions?**

You can submit questions directly to ITS Client Services through the “Contact Us” tab on the Ask ITS service.
Find detailed answers to your questions and descriptions of services that ITS provides to the NYU community, using the new Ask ITS searchable service catalog and how to's located at http://AskITS.nyu.edu.
The “Web 2.0” paradigm, in which virtual communities use shared spaces to generate content through a back-and-forth collaborative process, has changed the role of conventional research and citation tools. This more collaborative way of working on the web makes the discovery of new information and its subsequent delivery to a wider audience a more seamless process that invites conversation, feedback, and critique. To help researchers take advantage of this Internet-based paradigm, the newly redesigned NYU Libraries website includes a multifaceted palette of academic and nonacademic tools, located at http://library.nyu.edu/tools/, which supplement commonly used programs such as RefWorks, EndNote, and ProCite.

Online research community websites such as CiteULike (http://www.citeulike.org/) are part of this move toward generating research in a collaborative fashion. Not only are these sites compatible with most citation tools, including RefWorks, but they also provide useful places for individuals to browse through homegrown databases and find articles about emerging academic fields.

As disciplines merge and blur traditional academic boundaries, it is increasingly difficult to locate recent articles on many cutting-edge topics. Established online databases with a controlled vocabulary have a difficult time keeping up with rapidly changing fields, resulting in a time lag from when a “descriptive term” becomes officially acceptable to when it becomes searchable.

COLLABORATIVE TAGGING

On the other hand, user-generated tags or “folksonomies” have become the norm for online communities. In sites such as Flickr and del.icio.us, “tagging” — a user-generated categorical system in which website users may “attach” one or more words or short phrases to an article, link, or other web-based item — has evolved as a way of quickly organizing and sharing information about something new. The beauty of this system is that it opens up immediate possibilities for research; for instance, a user who searches for articles tagged with “cancer” will be able to find the most recently tagged work. The downside is that the information a user finds in a search may or may not be accurate; just because something is tagged with “cancer” doesn’t necessarily mean that the corresponding reference is relevant or correct.

This is precisely why online communities such as CiteULike provide a valuable resource for researchers. CiteULike was started by Richard Cameron in November of 2004. After a return to academia, Cameron was shocked by the lack of quality tools available to help academics in their
work. So, he took it upon himself to build CiteULike, an “open” online reference library where people can store and share articles that are relevant to their own research. It appropriates the basic tagging idea and adds the slightly more sophisticated ability to input necessary metadata (such as author, publisher, and publication date) for creating a bibliography.

You can add any scholarly paper to your own CiteULike library, but articles that appear on the site and are most accessible to other CiteULike users are limited to “peer-reviewed” articles. How does this work? If you want to add your own unpublished paper, you may, adding the citation details manually; however, in order for someone to actually see your paper, they must search for it specifically or browse through your library, because it will not appear in the most recently posted articles or the searchable “tag cloud.” If you add an article from any of CiteULike’s many supported databases, the citation details are automatically added to your library and the article is immediately searchable on the site.

In effect, CiteULike has taken a precautionary step to limit the accessibility of what gets posted on the site, so what you see on the site is mostly peer-reviewed work suitable for scholarly research. Nevertheless, if you continue to search, you will find both unpublished and unreviewed work.

Besides allowing researchers to “self-publish”, how does CiteULike differ from other research databases, such as Proquest? These other tools do a great job of creating in-depth searchable descriptive terms, but they do not indicate to researchers how others are using the database. In contrast, CiteULike’s tagging mechanism allows its users to see which tags are popular in the CiteULike user community and thus can highlight a particular area of research. This function is likely to become available in many databases in the near future; Factiva, a financial and economic research database owned by the Dow Jones company, has already adopted a cloud tag feature in its “Search 2.0” engine, though it is not generated by users of the site. This indicates that these technologies are not only in demand, but also relevant in the academic setting.

### Community Focus

Another unique feature of CiteULike is the “groups” section of the website. Here, an individual can create a “user community” and spearhead a “research team” of sorts — whether it’s a study group from a class or a group of like-minded individuals across the web.

This community-oriented feature opens up the ability to share sources and build a database related to a particular area of study. For example, the Librarians group on CiteULike

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### NYU Library Tools Comparison Chart

<table>
<thead>
<tr>
<th>Access</th>
<th>RefWorks</th>
<th>EndNote</th>
<th>EndNote Web*</th>
<th>ProCite</th>
<th>Connotea</th>
<th>CiteULike</th>
<th>Zotero</th>
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<td>Web-based</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<td>Must be online to use</td>
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<tr>
<td>Cost</td>
<td>Free**</td>
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<th>Adding References</th>
<th>RefWorks</th>
<th>EndNote</th>
<th>EndNote Web*</th>
<th>ProCite</th>
<th>Connotea</th>
<th>CiteULike</th>
<th>Zotero</th>
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<tbody>
<tr>
<td>Import from online databases</td>
<td>Yes</td>
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<tr>
<td>Import web pages</td>
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<td>Yes</td>
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<tr>
<td>Import data from RSS feeds</td>
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<td>No</td>
<td>No</td>
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<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Utilize NYU’s SFX link for full text</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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<th>Output</th>
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<td>Create bibliographies</td>
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</tr>
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<th>EndNote</th>
<th>EndNote Web*</th>
<th>ProCite</th>
<th>Connotea</th>
<th>CiteULike</th>
<th>Zotero</th>
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</tbody>
</table>

* EndNote Web adds many online features to the EndNote desktop application, but may be used alone.
** NYU Libraries licenses the use of RefWorks for NYU students and faculty.
*** Can be exported to other desktop manager.

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Though research methods vary, both qualitative and quantitative data are used across disciplines to tell stories, test hypotheses, and provide new insights. In particular, quantitative methods and the use of numerical data and statistics can help support the research process, whether this data comes from historical archives, surveys and interviews, or discoveries in a laboratory.

NYU provides many excellent resources, whether you are an experienced user of statistics, a qualitative investigator interested in learning the basics, or a faculty member looking for tools to share with your students. The on-campus resources listed in this article will help you find useful new data sources, get assistance in storing, interpreting, and analyzing numeric data, and connect with other scholars using quantitative methods in their research.

NYU also offers many courses in quantitative research and statistics. Check with your department and the online course listings of your school or division for information on these.

GETTING DATA
Collecting data can be challenging and time-consuming, but there’s no need to reinvent the wheel. Excellent sources of already-collected data are available, and many are supported and paid for or subscribed to by NYU. Previously-collected data (or previously-developed and pilot-tested surveys) can help inform your research strategies.

NYU subscribes to powerful data sources that can be a great contribution to research projects. Here are a few of note:

- **ICPSR**: NYU is a member of the Inter-University Consortium for Political and Social Research (ICPSR). This resource provides a wealth of federal, state, and local social science resources, including a large archive of machine-readable social science data and training facilities in basic and advanced techniques for quantitative social analysis. NYU students, staff, and faculty can gain access to ICPSR resources by visiting [http://www.icpsr.com](http://www.icpsr.com/) and logging in when required with their NYU email address.

- **Geolytics**: An extensive source of census data, demographic information, market research data, and geocoding for researchers. This resource is available by appointment in the ITS Data Services Statistics and Mapping Lab (see sidebar on page 25) and includes built-in mapping capabilities for displaying demographic data.

- **Reference USA**: Provides detailed information on the majority of businesses and consumer households in the US and Canada. Using industry codes, location, size of business, and other criteria, NYU researchers can create and download datasets (which include latitude/longitude, square feet of business space, number of employees, annual income, etc.) into Microsoft Excel spreadsheets and various statistical and spatial analysis packages. Reference USA is available in the ITS Data Services Statistics and Mapping Lab (see sidebar on page 25).

To use these data sources, contact the ITS Data Services Statistics and Mapping Lab for an appointment. The NYU Libraries’ online catalog, website, and highly skilled librarians can also direct you to important resources for your project, and ITS staff are available in the Statistics and Mapping Lab to support NYU researchers in their quest for data. See the sidebar on page 25 for details.

LEARNING A STATISTICAL PACKAGE
Microsoft Excel can handle some basic statistical functions and simple graphs, but if you’re interested in performing more sophisticated statistics, it’s important to learn the tools of the trade. Using statistical software effectively and efficiently will require a significant investment of time — so choose your package wisely. Talk to other faculty members and colleagues in your department and consult journals in your field to find out which software packages are typically used in your field. The “big
three” at NYU are SPSS, SAS, and Stata, all of which are available at the ITS computer labs. If you’re brave, you may also want to learn the up-and-coming package known simply as “R”.

Learning new software can be an overwhelming process, but it’s amazing how quickly you can cover the basics of running descriptive statistics, saving and managing data, creating and labeling new variables, and mastering basic statistical functions with a solid beginner’s manual. The Little SAS Book¹, The SPSS Survival Manual², and A Gentle Introduction to Stata³ are excellent choices.

ITS Data Services offers a statistics clinic and runs ongoing seminars at various skill levels on common software packages; see the sidebar for more information.

DON’T SWEAT THE SMALL STUFF – LEARN WHERE TO GET GOOD HELP

When you’re in the early stages of learning statistics, managing datasets, and running complex statistical tests in a new software package, it’s easy to get stuck or waylaid by small problems. Don’t let an error code, a fancy-sounding statistical term, or small variable construction problem stymie your progress. Troubleshooting errors and interpreting complex pages of output are skills that take learning and practice.

Everyone needs strong backup resources: knowledgeable, approachable people, including other faculty and graduate students and the staff at the Statistics and Mapping Lab (see sidebar); a few thorough, understandable statistics text books; and online resources, such as UCLA’s online statistics archives (http://statcomp.ats.ucla.edu/), stocked with plenty of free books, tutorials, and terrific resources.

LEARN HOW TO MAKE MAPS

Learning to make maps is a good idea, no matter what you are studying. Effective maps can create compelling visual images and highlight the relevance of your data. Consider using Geographic Information Systems (GIS) software to open a whole world of potential tools for analyzing and presenting your data.

At the ITS GIS Clinics, you can learn more about NYU’s mapping and GIS resources and network with other researchers who use these technologies. Workshop schedules and other statistics and mapping news are announced on the “Statistics” email list; see the sidebar for more information.

IT’S WORTH THE EFFORT

Becoming a quantitative researcher or a competent user of quantitative methods to support a qualitative approach can be a long, labor-intensive journey, but it’s worth the work. You will be armed with highly relevant and transferable technical and analytic skills that can be applied to future projects and help you interpret research from a broad set of literatures. Investing the time well before deadlines loom to master basic statistical theory, brush up on statistical computing skills, and identify key resources for support on campus will pay off in spades. In the end, you may even find that this stuff is fun.

Jennifer Black is a doctoral candidate and adjunct instructor of Community Nutrition in the Department of Nutrition, Food Studies, and Public Health at NYU’s Steinhardt School of Education, Culture, and Human Development, and a senior aide in the ITS Data Services Statistics and Mapping Lab.

Some Statistics Resources at NYU

Software for Your Computer
SAS and SPSS are available for purchase at academic prices by faculty, administrators, staff, and matriculated graduate students. See http://www.nyu.edu/its/statistics/ for details and purchase locations.

At the NYU Libraries
The Libraries website provides many resources to aid researchers in finding data specific to their fields. A good place to start is http://library.nyu.edu/research/tutorials/. Find answers to your questions at http://library.nyu.edu/ask/.

Statistics Workshops, Classes, and Clinics
ITS offers statistics and mapping clinics and ongoing seminars for the NYU community. For a schedule, check the NYU calendar or the ITS website at http://www.nyu.edu/its/classes/statistics/. For updates, subscribe to the email announcement list by sending a blank email message to subscribe-statistics@lists.nyu.edu.

ITS Statistics & Mapping Lab
The ITS Data Services’ Statistics and Mapping Lab is in the ITS Third Avenue Center, located at 75 Third Avenue, level C3. Contact the lab at data.services@nyu.edu or 212-998-3398 for hours or a consultation.

In May 2006, NYU’s Frederick L. Ehrman Medical Library was awarded a five-year contract to serve as a Regional Medical Library in the National Network of Libraries of Medicine. The Network consists of eight competitively selected regional medical libraries and over 5,700 health sciences and public libraries.

The Regional Medical Libraries assist in administering the web-based interlibrary loan routing system called DOCLINE, offer in-person and online training on National Library of Medicine products and services, and award funding to help network members (libraries as well as community-based organizations) improve library resource sharing or conduct outreach to unaffiliated health professionals and under-served populations. For the five-year period of 2006-2011, the Regional Medical Libraries (RMLs) also took on a national collaboration in emergency preparedness planning to ensure that technology-based services, as well as all of the services available through the RMLs, would continue to be accessible before, during, and after a disaster.

**Katrina and Emergency Preparedness**

Emergency preparedness planning took on special urgency after the impact of Hurricane Katrina. Two Regional Medical Libraries (the Southeast RML at the University of Maryland, Baltimore and the South

*Map distinguishing the various regions of the National Network of Libraries of Medicine by color.*
Central RML at Houston Academy of Medicine – Texas Medical Center) were involved in assisting health sciences and public libraries both before and after the disaster. Days before Katrina struck, RML staff contacted medical libraries in the Gulf area and set thirty-one Mississippi libraries’ DOCLINE accounts to “inactive.” This prevented potentially affected libraries from receiving requests and ensured that service remained uninterrupted for the rest of the country. In turn, the National Library of Medicine (Bethesda, MD) document delivery staff assisted the RML in instituting alternative and delayed methods of delivering requested articles to the affected areas.

After the storm struck and national television carried pictures of the devastation, the National Network of Libraries of Medicine, South Central Region (SCR), established a blog, “Hurricane Katrina in the SCR,” to assist communication efforts among network members. The blog addressed members in both the South Central and Southeastern Atlantic regions and welcomed personal stories, information, and questions regarding colleagues and libraries affected by Katrina.

Member libraries immediately offered assistance to Katrina-affected libraries. For several weeks the RML brokered those offers so as not to overwhelm those institutions near New Orleans. Offers of free back issues became so frequent that the coordinator brokered an understanding with PubZilla, a specialized site for back volumes and issues of biomedical serials. After discussion, PubZilla offered unlimited free use of its site for donating, tracking, and requesting journals for hurricane-impacted libraries.

Within the month, the RML formulated and publicized the availability of Katrina awards of up to $5,000. The Katrina Relief Award was available to libraries, clinics, and hospitals adversely affected by Hurricane Katrina to aid in the recovery of information services or information access. This funding effort continues through 2007.

NATIONAL COLLABORATION

For this new contract cycle, the National Network of Libraries of Medicine saw the need for a more systematic planning process in which emergency preparedness and business continuity issues would be addressed. The collaboration has set three goals:

1. Ensure continuity of access to knowledge-based emergency-related health information to support health care before, during, and after local, regional, and/or national emergencies.

2. Facilitate communication among regional medical libraries, network members, and the National Library of Medicine in the event of a local, regional, and/or national emergency.

3. Encourage sharing of knowledge, experience, training, and planning materials to enhance the development of regional and local emergency preparedness plans and expertise throughout the National Network of Libraries of Medicine.

The National Network of Libraries of Medicine’s web-based interlibrary loan routing system, DOCLINE.

To achieve the first goal of continuity of access to knowledge-based information, the Regional Medical Libraries must collaborate to ensure that DOCLINE continues to provide knowledge-based information to those institutions that need it the most.

DOCLINE allows libraries to create, receive, and manage interlibrary loan requests using a web-based system managed by the National Library of Medicine and the eight RMLs. More than 2.3 million requests were routed through DOCLINE in 2006 alone. Over 92% of those requests were filled, and over 84% of the requests were filled within one routing (i.e., the first library to receive the request successfully filled the request). On average, a request is completed within 1.24 routes and within one day from the request being routed. A sample DOCLINE homepage can be seen in the image above.

The heart of DOCLINE is a unique routing system that quickly cross-checks the information in a request with the journal holdings of those libraries in the routing schedule. Additional criteria included in the routing of requests are the specific level of service required, including “Rush” (same day service), “Urgent Patient Care” (processed and shipped immediately for emergency/urgent clinical care for patients), or “Color Copy Request”; and the specific.
delivery method, such as email, fax, web server, or even regular mail. DOCLINE sends the request to one library that matches the specifics of the request. That library in turn agrees to acknowledge and respond to the request in a specified amount of time.

In times of emergency, continued access to knowledge-based resources may be vital to patient care in disaster-affected region. Simultaneously, disaster-affected libraries may not be able — or even staffed — to fill requests in a timely manner. When disaster strikes, RML staff must be prepared to deactivate DOCLINE accounts, thus relieving affected libraries of the responsibility of filling requests for other requesting libraries. DOCLINE allows deactivated libraries to submit requests without having to receive requests, thus ensuring that even disaster-affected institutions can access knowledge-based resources. By preventing requests from routing to disaster-affected libraries, RMLs also insure that institutions outside of the immediate disaster area will continue to request and receive articles in a normal pattern.

An RML is just as prone to disaster as any other library, so a major component of the National Network of Libraries of Medicine’s disaster plan is an RML-to-RML buddy system. This buddy system will have procedures in place in the event a disaster strikes one of the eight Regional Medical Libraries. The affected RML’s duties will be assumed by the buddy RML, whose staff will deactivate any necessary libraries, including the RML, and ensure that regular DOCLINE activities continue. NYU’s Middle Atlantic Region has an emergency “buddy” in the South Central Region, housed at the Houston Academy of Medicine — Texas Medical Center.

Selection of an RML buddy was based on the number of libraries within each given region and time differences. Buddy responsibilities include managing telecommunications of the affected region (listserv, blog, website); assisting in managing, posting, and directing network members to an emergency blog (if the blog is separate from Middle Atlantic Region or South Central Region blogs); and managing DOCLINE routing, including re-routing requests for libraries in affected areas and continuing normal DOCLINE operations for libraries within affected regions, but outside of affected areas. Other RML buddy responsibilities are still in the planning stages, including re-routing of the RML’s toll-free phone number and provision of online knowledge resources to library users in affected areas.

**FUTURE PLANS**

Future plans for the national collaboration will potentially include a network of servers hosted by the Regional Medical Libraries, which would ensure continued access to electronic knowledge resources, as well as discussions with publishers regarding methods of authenticating users and opening up the availability of online databases and journals, should the licensed holder (a given university, for example) be put out of service or offline in a disaster.

**Kathel Dunn, MSLS** is the Associate Director of the National Network of Libraries of Medicine, Middle Atlantic Region (NN/LM MAR).

**Miguel Figueroa, MLS** is Network Services Coordinator for the National Network of Libraries of Medicine, Middle Atlantic Region at NYU’s Ehrman Medical Library.

**Beth M. Wescott, MLS** is the Network Access Coordinator for the National Network of Libraries of Medicine, Southeastern Atlantic Region where she worked in support of health information during and after Katrina, as well as other disasters and emergencies in her region.

2. [http://www.nyu.edu/its/pubs/connect/spring07/ntk_refworks.html](http://www.nyu.edu/its/pubs/connect/spring07/ntk_refworks.html)
Since it was first introduced at the University, the Meeting Maker collaborative calendar and scheduling software has become a widely used software application offered by NYU to its employees. Using Meeting Maker, NYU faculty, administrators, and staff are able to share their schedule and plan meetings with others within their departments and across the University. In August of 2007, Information Technology Services (ITS) released a new version of Meeting Maker that boasted many new features and improvements. One of these features topped the list of improvements most desired by those NYU community members using Meeting Maker: a web-accessible Meeting Maker interface.

Previously, you had to install the Meeting Maker software on any computer from which you might want to access your calendar. This meant that after installing the software on your office computer, you might also have to download and install it on the laptop you use while traveling, or on a home computer you might use to check your schedule while away from your office. Although the centralized storage of your information meant that your information would always be synchronized across the many computers you use, it still required that you download and install the software on each machine.

Now, to access your Meeting Maker information, all you need is a computer with an Internet connection. The Meeting Maker web calendar offers most of the same functionality of the Meeting Maker client, but without the need to install software. Your meetings and schedule — as well as those of your fellow employees — are now easily accessible from nearly anywhere in the world via the new web interface.

If you already use Meeting Maker, you can use the web calendar by visiting http://webcal.nyu.edu and logging in using your NYU NetID and password. The web calendar is also accessible via the Meeting Maker channel within the Work tab on NYUHome. All changes and additions to your calendar are synchronized, whether they are made from an installed Meeting Maker client or the web calendar. While the web calendar does not include every administrative function offered by Meeting Maker — to get the full palette, you still need to download and install the client software — it does include the vast majority of options that most employees need.

Meeting Maker is available to all full-time NYU faculty, staff, and administrators. The web calendar is just one of many service enhancements introduced by the recent upgrade. For more information on Meeting Maker and the web calendar, visit http://www.nyu.edu/its/meetings/. You can also access a link to the web calendar from that page. If you or your department are interested in using Meeting Maker, please send email to meetingmaker.request@nyu.edu.

Keith Allison is a technical writer and editor with ITS Client Services’ Publications & Communications group.
In the spring of 2007, a dedicated group of NYU professional staff and students collaborated to develop, design, name and brand “NYUeVita,” a unique interactive e-portfolio system.

NYUeVita is a new online service that provides to students a convenient, organized place to record and archive their many experiences outside the classroom that will be of interest to potential employers and/or graduate and professional school admission officers. Designed to complement a student’s academic transcript and professional resume, NYUeVita presents information about a student’s accomplishments, interests, and level of involvement in the NYU community and beyond. The service may be accessed by students in degree programs via NYUHome’s “NYULife” tab.

Using NYUeVita’s basic template, students can quickly build, customize, and share personalized comprehensive e-portfolios with potential employers, scholarship programs, and graduate and professional schools.

Since its launch this past August 27, more than 2,500 students have accessed the system. Undergraduate, graduate, and doctoral degree students in schools ranging from the College of Arts and Science to SCPS’ McGhee Division to the Stern School of Business and the School of Medicine have all inquired about the system. Most recently, faculty, staff, and alumni have expressed a strong desire to use this new online portfolio system. NYU hopes to eventually expand this service to these groups.

The overall student response has been positive. Students are excited to have this unique e-portfolio and are eager to begin mapping their NYU experience.

“I really like that with NYUeVita I can have so many different aspects of my work collected all in one place,” expressed one member of the Class of 2010. “It’s great to have something that really highlights my personality outside of the classroom; this e-portfolio helps show who I am as a well-rounded individual, not just who I am academically. It’s also great that I can access it almost anywhere, which I’m sure will help me in the future to market myself as someone with a breadth of knowledge, interests, experiences, and skills!”

Employers at both major corporations and non-profit organizations firmly believe that NYUeVita will serve as an excellent complement to a candidate’s resume.

“At Goldman Sachs, we make an unusual effort to identify and recruit the very best person for every job,” stated Les Nelson, Managing Director at Goldman Sachs. “In order to find the right people, we consider every aspect of someone’s candidacy and look for the well-rounded individual. NYUeVita allows students to highlight such attributes as teamwork, leadership, and creativity in addition to academic merit. NYUeVita is a unique resource available for students to showcase all that they have to offer to prospective employers.”

To view a sample of the NYUeVita portfolio, please visit http://www.nyuevita.nyu.edu/.
Raised Floor Evolution
Transforming Departmental Server Support

Joanna Ratajczak
joanna.ratajczak@nyu.edu

In 1998, early in my career at NYU, I joined a small group of IT staff responsible for managing local area network (LAN) servers used primarily for departmental business and administrative applications and file storage. We operated out of a large machine room that housed the mainframe computer on which some of the University’s business and administrative systems ran. Raised flooring, typical in such facilities, provided space for air flow, power, communication cabling, and so on. Our portion of the machine room consisted of four cabinets, each containing six PC-based servers. They occupied a space of perhaps 20-by-30 feet in the back, sectioned off from the rest of the room and secured under lock and key. We nicknamed it “the Cage” and the name stuck.

Over the past nine years, our section of the machine room has evolved from that small fenced-in area to a cutting edge environment and an enterprise-level service. By 2005, rapidly increasing demand, changing business requirements, and new departmental applications had transformed that small fenced-in area into a larger and still growing server farm. Located in one of NYU’s data centers, it was managed by ITS System Administration Services (SAS). Managing a burgeoning collection of servers in a finite amount of space, while meeting the explosive growth in demand from the NYU community for new departmental applications and services, along with continuing to provide a high level of performance and reliability — these presented a formidable set of challenges.

Over the past several years, SAS has researched and implemented new technologies that are providing solutions and enabling us to meet these challenges. An earlier Connect article describes three of these technologies — storage area networks (SANs), blade servers, and virtualization — in technical detail.

Together, they have enabled ITS to consolidate servers, optimize server use, and create a flexible, extensible, cost effective, and more easily managed server platform.

OPTIMIZING SERVER USE
Virtualization is a technique that enables a single physical computer to be partitioned into one or more “virtual machines”, each with its own virtual hardware, operating system, and application. With virtualization, several distinct applications can be run on one physical machine, and can more readily be copied or moved from one machine to another for purposes of backup, testing, and efficiency. SANs make it possible to share storage more effectively among applications and adjust that storage dynamically, as needed.

With virtualization and dynamic storage, ITS has been able to host more servers, and to use each server more efficiently. Optimizing each server’s use is a major focus; while in a traditional server farm environment, some servers might have been working at perhaps 10 percent of capacity at one time or another, ITS now has each shared physical server working at much better efficiency.

Virtualization is an important methodology underlying an increasing number of the departmental application services that ITS supports today. In the future, when applied to specific functions within applications or server operating systems, virtualization techniques can also make it possible to efficiently distribute and run parts of systems among physically distinct machines. Additionally, the technology provides a cost-effective means of setting up alternate locations for business continuity and recovery in emergency situations.

Virtualization is playing an important role in simplifying the development, testing, and delivery of departmental servers and applications. But it is blade technology — in our case, IBM Blade Servers — in combination with virtualization that has enabled us to consolidate servers and make

better use of the limited available space. Blades are slim independent units, each with its own processors, memory, local storage, network controllers, and operating system, that can fit in a single chassis and share power, cooling, and other common utilities. Blades are easy to add and reconfigure to meet increasing and changing resource demands. Further, IBM's Blade Server technology increases significantly in power every few months, offering a cost-effective means of expanding services while keeping performance high. Multi-core processors — in which two or more independent “core” microprocessors are combined into a single computer chip, enabling the efficient simultaneous processing of several tasks — are also playing a noticeable role in changing the dynamics inside data centers and out. Both AMD, Inc. and Intel Corporation, the two semiconductor giants, are moving in the direction of multicore technology.

The majority of departmental systems managed by ITS now run on IBM Blade systems. When departments request that ITS provide management of Intel-type servers, the applications running on these servers are routinely converted to run on Blades. Most new ITS-managed departmental systems are automatically installed on Blades. Using virtualization, we are able to run multiple systems on a single Blade when appropriate. Virtualization and Blades have helped us moderate the equipment needed to support last year’s 100% growth in the number of ITS-managed departmental application servers.

Looking Ahead

Innovative practices, system management optimization, and careful planning for and investing in efficient, increased cooling capacity will continue to be critically important for ITS, and more generally for IT organizations, in the coming years.

With continued growth in computing and the proliferation of high density computing environments, such as those enabled by virtualization and blade technologies, some have predicted that by 2010, data centers may consume three times more energy than they do today, generating a corresponding amount of additional heat. A range of new cooling systems that address high-density computing environments is now emerging, but the timeframe remains uncertain for the routine availability and deployment of these systems.

Software tools and network-based technology improvements will offer more efficient ways of managing and optimizing the systems. New software-based system management tools will make it possible to merge the administration of application servers and storage resources, allow us to manage systems remotely, and automate many processes that now require on-site manual administration. Already, technical improvements such as these are helping to make it possible for our group to handle the rapid growth in the number of systems we manage. In the near future, improvements in network technology, together with virtualization techniques, will enable greater integration among the Blades, so that a large collection of Blades could be managed as one whole.

Virtualization, storage pooling, and blade servers are real life examples of new and innovative technologies that help us continue our hardware evolution and meet the growing technology needs of the NYU community.

Joanna Ratajczak started working at NYU’s University Computing Center, an ITS predecessor organization, in 1998 and has been a LAN services systems administrator for nine years. She has recently taken on a new role as manager of the UNIX systems within ITS Communications & Computing Services’ System Administration Services.

IBM Blades in a chassis. Picture courtesy of IBM Corporation.
Did You Know?
Personalizing NYUHome

There are many ways to customize your NYUHome experience. Through the Preferences link in the upper right-hand corner of the NYUHome header, you can change your password, manage your NYU Directory and email preferences, and choose a style theme for your NYUHome portal.

One of the ways you can customize your NYU email is to set up a personal address, an email address that more closely resembles your name than the default NetID@nyu.edu format.

To create your personal address, click the Edit button in the Personal Address area on the Preferences page, and be sure to read the guidelines. Your NetID@nyu.edu address will remain active, but will be complemented by your new personal address. When you send email from NYUHome, your personal address will be displayed in the “From” field, which may help recipients of your emails recognize your email address more easily.

Your NYU Directory listing defaults to your personal address. If you wish to change this setting, click on the Edit button in the NYU Directory address area. Faculty and staff are automatically listed in this online directory; however, students will need to opt in via the link provided on the Preferences page.

— Alissa Wilkinson (alissa.wilkinson@nyu.edu)
Your Cell Phone and Your Safety

NYU can send text messages to your mobile device in order to provide you with direct and timely information in case of an emergency. These messages are important to your personal safety.

To ensure you receive emergency messages, you should update your cell phone number in the University’s records. Students may update their cell phone in Albert; faculty, administrators, and staff may make the update using ePASS (see page 19).

NYU Public Safety will conduct one University-wide test per semester; otherwise, the system will only be used in emergency situations.

Other key sources of campus-wide emergency information include http://www.nyu.edu/info.alert/, the NYU Information Hotline at 212-998-1220, uniformed Public Safety Officers, and your email inbox.

Search for “Cell Phone Text Messaging” at http://AskITS.nyu.edu for more details.