

# is&t

News about information services and technology throughout MIT

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## Technology Helps Give Voice to People with Autism

• Robyn Fizz

Through the Internet, people with autism are making themselves heard. They have created an Autism Liberation Front on Second Life and a community on Yahoo! They write blogs and upload videos. A video that's gone viral on YouTube is "In My Language" by Amanda Baggs. It offers a translation for "neurotypicals" of how a person with autism interacts with her world.

The presence of these communities is challenging the conventional wisdom about autism. Spokespeople such as Michelle Dawson (who has autism and works for Professor Laurent Mottron's Autism Research Group at the University of Montreal) are advocating "neurodiversity" – the idea that people with autism are different, but have unique strengths, perceptions, and talents that deserve recognition and respect.

Professor Rosalind Picard, who is leading the MIT Media Lab's research efforts in autism communication technology, has come to appreciate the insights that people with autism have to offer in the development of new software and tools. It's a journey that began several years ago.

Picard is the founder and director of the Media Lab's Affective Computing Research Group, whose aim is to develop software and sensors that enable computers and other devices to respond with intelligence to the emotions of those who use them. As Picard and her researchers began to understand the kinds of "sensing" it would take to develop affective software, they realized that the tools they hoped to create could benefit people on the autism spectrum. People with autism can have difficulty communicating with others, in part because they aren't skilled at reading social cues and facial expressions.

### Self-Cam

Picard's group has experimented with a range of tools over the years. One device they've developed and tested is a wearable camera system called Self-Cam. Research assistant Alea Teeters built Self-Cam as a tool to help people see how well their outward expression mirrors their inner state.

Self-Cam consists of a small chest-mounted camera that hooks to a laptop or to a video recorder worn on a belt. The wearer adjusts the camera so that his or her face is recorded at about the same distance a conversational partner would observe. Streaming video of the wearer's facial expressions and head movements are sent to the laptop in real time or to the recorder for later processing. The device can be used in a research setting or at home.

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## Technology Helps Give Voice

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Commercial software from Google does face-tracking, placing points on the brow, eyes, nose, and mouth, and then following their movements. This data is fed into an application developed by MIT post-doctoral associate Dr. Rana el Kaliouby that recognizes a range of expressions and gestures such as head shaking, tilting, or nodding; lip pulling or puckering; and eyebrow raising.

Using a statistical model, the software computes probabilities for each of six affective categories: thinking, interested, unsure, concentrating, agreeing, and disagreeing. As Picard notes, "We are putting together the individual facial muscles and the combination of facial muscles, the individual head movements and the combination of those over time, to come up with the equivalent of a facial phrase."

Self-Cam helps people see how what they feel on the inside may not be reflected by what they show on the outside: "Gee, is this how I really look when I feel happy? I don't look any different."

Picard's group is also working on a tool to help people with autism improve their ability to read other people's faces. The group has collected over 100 videos of conversations between pairs of people, each of whom wore a Self-Cam. The videos have been segmented into short chunks and labeled according to expressive content. Individuals can use these videos to gauge how well they're reading the faces of people engaged in typical conversations.

### Wrist Watch

Some individuals on the autism spectrum are nonverbal and have difficulty indicating what they're feeling. For example, an autistic child may look calm on the outside but be reacting strongly to a sound in the distance. People with autism often have acute sensory abilities, which can lead to information overload. This can result in unexpected outbursts that take caregivers by surprise.

Picard's group is developing a wrist-worn device that wearers can use to communicate their internal physiological state to trusted caregivers. Picard and members of her group and their families are testing this technology on themselves to make sure it is comfortable and reliable before starting tests with autistic individuals.

## Reciprocity

Picard's group has worked with students on the autism spectrum at the Groden Center in Providence and at MIT. Along the way they've come to realize that there are many things they can learn from those they hope to help. Inspired by the way people with autism think, the researchers have brought them in as co-participants, not just in technology design but for insights about methodology and pattern analysis.

One trend is building tools that can be taken home. Picard calls it "a little lab for every person." Participants can measure and learn from responses in themselves. On a voluntary basis, they can upload data they wish to share into a larger data pool. The plan is to build a web site of tools that will allow individuals to compare their patterns with those of others, while honoring the privacy of personal information.

Working together, members of Picard's group and study participants have gained insights into how communication happens. On this two-way path, both researchers and participants are learning, and their efforts are leading to a more inclusive science.

To find out more about the Affective Computing Group and its projects, see [affect.media.mit.edu/projects.php](http://affect.media.mit.edu/projects.php). §

## The Search Is On, Thanks to Tools from the MIT Libraries

The MIT Libraries are serious about searches. They provide several tools to help community members conduct online searches for abstracts and articles, books, and theses, as well as database searches. They also provide instructions, including video tutorials, to help you on your way.

You may want to start at the *Search Our Collections* page at [libraries.mit.edu/search](http://libraries.mit.edu/search). In addition to introducing the Barton catalog and Vera, a listing of databases and e-journals, this page provides a link to a self-help guide, *The Information Navigator*.

### LibX

One of the most flexible search tools the Libraries offer is LibX. Note that LibX works only with the Firefox browser; a version for Internet Explorer is under development.

LibX lets you quickly search Barton, Vera, Google Scholar, and the SFX FullText Finder. With LibX, you can also highlight text on a web page or PDF and right-click for a menu of search options.

To learn more about the MIT edition of LibX, go to [libraries.mit.edu/libx](http://libraries.mit.edu/libx). This page links to a video tour of LibX. For a complete list of video tutorials from the MIT Libraries, go to [libraries.mit.edu/videos](http://libraries.mit.edu/videos).

### Explore More!

There are many ways to streamline your online searches. Check out *10 ways to access MIT Libraries e-journals from anywhere* at [news-libraries.mit.edu/blog/access-ejournals/999](http://news-libraries.mit.edu/blog/access-ejournals/999). You'll also want to bookmark the Betas page at [libraries.mit.edu/betas](http://libraries.mit.edu/betas), which is loaded with tools, tips, and gadgets. To keep up to date with MIT Libraries News, read their blog at [news-libraries.mit.edu/blog](http://news-libraries.mit.edu/blog).

If you get lost along the way, guides are nearby. Connect with them through the Ask Us! page at [libraries.mit.edu/ask-us](http://libraries.mit.edu/ask-us). §



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## Leopard at Large: Mac OS X 10.5 Now Supported at MIT

• Lee Ridgway

IS&T has announced full support for Mac OS X 10.5 (Leopard), after comprehensive testing in the MIT environment. In addition to testing Mac OS X 10.5, support was contingent upon the release and testing of new versions of key applications used at MIT that are compatible with Leopard.

### New Features

Leopard abounds with new features – over 300, according to Apple. Among them:

- *Stacks* give fast access to folders and their files. Just move folders you want to open frequently to the Dock. Click on a folder and its files spring from the Dock in a fan or grid for easy selection.
- With *Spaces* you can divide your Mac display into separate workspaces and assign one or more applications to each space. This can reduce screen clutter by showing only those applications and open windows you are using in a particular space.
- *Quick Look* lets you preview files without opening them in their native application. Sneak a peek at everything from multi-page documents, PDFs, and spreadsheets to images and videos. Simply select the file and press Command-Y.
- Leopard ships with a new version of Apple's email application. *Mail 3* runs only on Leopard, not previous versions of Mac OS X. Among Mail 3's new features is an Archive command for backing up mailboxes to a hard drive or CD. Also, you can subscribe to RSS feeds, which will deliver news articles to a mailbox in the Mail sidebar or, if you prefer, to your Inbox.
- *Notes* and *To-Dos* are new features in Mail that you can integrate into your email handling. And if you use the Mac's iCal calendar, Mail now recognizes dates and times within messages, giving you a drop-down menu to let you add an entry to iCal.



Mail 3 has a new feature that lets you add an event to iCal, the Mac calendar.

iCal takes the subject of the email as the name of the entry, and even recognizes relative dates, such as “next Wednesday” or “day after tomorrow.”

### Not Supported

Mac OS X 10.5 contains two features that IS&T does not support at this time: Time Machine and Boot Camp.

Time Machine is a backup application built into Mac OS X 10.5, designed to be used with an external or second drive. IS&T continues to recommend and support TSM for backup of Institute data.

Boot Camp is software that supports Windows XP or Vista on Mac OS X 10.5. IS&T recommends VMware's Fusion for early adopters who need to run Windows on a Mac. For details, see <https://nic-too.mit.edu/cgi-bin/vmware>.

### Getting Leopard

Mac OS X 10.5 is available for free to MIT faculty and staff, for use on MIT-owned equipment only. Faculty and staff planning to upgrade MIT-owned Macintoshes should contact their departmental software liaison to find out if licenses have already been acquired. IS&T also requests that licenses be acquired only for more recent Macintoshes that will be used through the end of 2008 or beyond.

Mac OS X 10.5 for personal use is available for purchase, at an educational discount, through MIT's ECAT Apple page at <https://web.mit.edu/ecat/apple/secure>. Other retailers may also offer Leopard at a discount.

### Compatible Software

The following IS&T-supported applications, which are key to MIT's work environment, are compatible with Mac OS X 10.5:

FileMaker Pro 9  
Kerberos Extras Rev. 14  
SAP R/3 SAPgui 7.10 Revision 1.2  
TSM 5.5 (for OS X 10.5 only)  
VirusScan 8.6  
VPN 4.9

For details on the use of these applications at MIT, see [itinfo.mit.edu/product.php?platform=Macintosh](http://itinfo.mit.edu/product.php?platform=Macintosh).

Leopard-compatible software from other vendors has been released or is under development. Watch for future announcements from IS&T as these packages are tested at MIT.

### Support and Training

For help with Leopard, see the Mac OS X 10.5 page at

[itinfo.mit.edu/product.php?vid=767](http://itinfo.mit.edu/product.php?vid=767).

The page contains links to system requirements and upgrading instructions, as well as configuration instructions for MIT certificates, email, connecting to MITnet, printer setup, and VPN.

To learn more about new features in Mac OS X 10.5 and procedures for upgrading, attend a Leopard Quick Start session (see the training insert for a schedule).

For additional assistance, contact the Computing Help Desk at [computing-help@mit.edu](mailto:computing-help@mit.edu) or 617.253.1101. §



# Network Notes

## IS&T Offers New Virtual Server Service

• Jody Housman

IS&T recently completed an evaluation and pilot of open-source virtualization software technologies. Server virtualization is reshaping the management of centralized computing, and is a key component of IS&T's strategy to provide more energy-efficient IT services to the MIT community. Based on the success of its recent pilot, IS&T's Server Operations Team has launched a fully managed Virtual Server service.

All data centers are faced with the need to reduce their time to deployment, space footprint, and power consumption. According to industry estimates, only 15 percent of server capacity is used on average. Despite this low figure, servers still require full power, cooling, maintenance, administration, and rack and floor space.

The familiar data center standard of "one application per server" isolated security breaches and server failures. In most cases, if the server was compromised or failed, it was limited to the operating system or application running on that server. The use of virtual servers replaces this standard data center practice by significantly reducing server sprawl while still allowing for the isolation of an operating system and application from other virtual servers sharing the same physical server.

Virtual servers provide a variety of advantages. They reduce

- Capital costs (due to increased server consolidation and utilization)
- Power and cooling needs and costs
- Rack/floor space requirements
- Management and maintenance complexity, freeing up personnel resources
- Lifetime operating costs

### Xen Virtual Server Platform

IS&T's new service is built on the Xen virtual server platform. Xen manages multiple virtual servers (operating system instances) running simultaneously on a single physical server while sharing hardware and other

resources. Each virtual server operates as if the full resources of the physical server are dedicated to it. Xen's VM Migration technology makes moving or replicating virtual servers fast and easy.

The supported operating systems for the Xen platform are Red Hat Advanced Server 4 and 5 running on Linux HP DL380/G5 hardware.

### Options for Customers

IS&T will work with customers to plan the migration of existing web services and to deploy new applications and services using Xen's virtual server technology. Two options are being offered:

- Provision of a virtual server within a shared virtual server farm
- Provision of a stand-alone virtual server

These options are available in both development/test and production environments.

IS&T support for virtual servers includes the operating system, Kerberos configuration, Kerberized SSH, centralized monitoring for the server and applications, and certificate management, as well as monitoring, backups, and restores using TSM. Support for custom applications and configurations such as Apache, Tomcat, PHP, and MySQL is available upon request. IS&T will also develop customized build templates for clients who want to rapidly deploy virtual servers that have the same setup and environment.

FY 2008 pricing for IS&T's Virtual Server offering is based on the level of support desired. For details about Server Operations' managed services and pricing, see [web.mit.edu/ist/topics/servers/unixintro4.html](http://web.mit.edu/ist/topics/servers/unixintro4.html).

### VMware

MIT recently completed an enterprise license for VMware and its industry-standard virtualization software. IS&T is evaluating the use of VMware within the data center and will provide updates to the community in the near future.

### Getting in Touch

If you have questions about the Virtual Server service or the use of VMware in the data center, contact IS&T's Server Operations Team at [ops@mit.edu](mailto:ops@mit.edu). §



# Bits and Bytes

This column presents announcements about IS&T-supported software. For more information about recent releases, see [web.mit.edu/swrt](http://web.mit.edu/swrt).

## IS&T Releases TSM 5.5 for Mac OS X 10.5

IS&T recently released TSM 5.5 backup software for Mac OS X 10.5 (Leopard). IS&T recommends that all registered TSM users running Leopard install this version of TSM. If you plan to upgrade to Leopard from a previous version of Mac OS 10.x, install TSM 5.5 *after* upgrading to Leopard.

Users with machines running Mac OS X 10.4 need to stay with TSM 5.4. TSM 5.5 only functions on machines running Leopard.

Mac OS X 10.5 comes with Time Machine, an automatic backup option. IS&T continues to recommend TSM for backing up Institute data and does not support Time Machine.

**Note:** Time Machine data is excluded from TSM backup.

You can download TSM 5.5 from the MIT Software Distribution site at [web.mit.edu/software](http://web.mit.edu/software). Certificates are required.

To learn more about TSM 5.5, go to [itinfo.mit.edu/product.php?vid=786](http://itinfo.mit.edu/product.php?vid=786). For assistance, contact the Help Desk at [computing-help@mit.edu](mailto:computing-help@mit.edu) or 617.253.1101.

## IS&T Supports OpenAFS 1.4.6 for Red Hat Linux 5

IS&T now fully supports OpenAFS 1.4.6 for Red Hat Enterprise Linux 5 (RHEL 5). Version 1.4.6 offers bug fixes and enhancements to reliability and performance.

Users of RHEL 4 should stay with version 1.4.1. OpenAFS 1.4.6 is installed using the yum utility, which is not part of RHEL 4.

IS&T continues to recommend that the community upgrade from RHEL 4 to RHEL 5, and this release makes that possible for users of AFS (the Andrew File System).

For documentation about OpenAFS 1.4.6 for Linux, including a download link, visit [itinfo.mit.edu/product?vid=785](http://itinfo.mit.edu/product?vid=785). If you have questions, contact the Help Desk at [computing-help@mit.edu](mailto:computing-help@mit.edu) or 617.253.1101. §



# Safe Computing

## Protecting Data Through PCI Compliance

• Monique Yeaton

Roughly ten percent of the data stolen or lost due to security breaches is credit card information. This problem has led to a high incidence of identity theft and fraud – crimes that affect merchants, financial institutions, and individuals.

To combat this problem, the credit card companies created regulations to help protect consumers' data. The Payment Card Industry Data Security Standards (PCI-DSS), created and agreed to by the four major credit card companies, took effect in June 2005. The goal was to protect merchants, employers, employees, and consumers from suffering financial and data loss because of unprotected network systems.

### PCI and Higher Education

Universities have been disproportionately vulnerable to security breaches. According to an article published in *AFP Exchange* in March 2007, almost one third of the 666 security breaches reported over a seven-year period have occurred at universities. Given this history, it's essential that staff at MIT be particularly careful when storing sensitive data.

Because universities have credit-card-accepting merchants on campus, there are two separate routes they are taking in regard to PCI-DSS. One is outsourcing all card processing to a PCI-compliant provider and strictly controlling any on-site acceptance centers. The other route is securing the computer networks on campus to meet PCI-DSS. MIT is following the first route.

Standards are not optional: if you accept payment via credit cards anywhere on campus, you are subject to the standards. In addition, there can be a significant cost to noncompliance. For example, if the Institute suffers a security breach and cardholder data is compromised, there



are direct costs (various bank and notification fees) and indirect costs (damaged reputation, loss of merchant status). In addition, the Institute may be fined by the card association(s) whose cardholders were affected. In 2006, Visa alone issued merchant fines totaling \$4.4 million.

### MIT Merchant Services Project Team

To become compliant, merchants should have a plan in place to remove and destroy – by shredding or other means – any cardholder-related information from their existing paper and digital files, as well as a plan for securely storing any future files that contain personal information. These mitigation plans are audited.

All of the 100 or so merchants at MIT have been contacted and hope to be in line with PCI-DSS by June 30, 2008. The MIT Merchant Services Project Team is helping these merchants transition to the selected PCI-compliant provider, CyberSource ([www.cybersource.com](http://www.cybersource.com)). The team is demonstrating the software, training staff, and providing written documentation on PCI compliance regulations. Approximately 40 MIT merchants are already using the CyberSource online payment processing service for their credit and debit card transactions.

### Questions?

If you have questions about the impact of PCI compliance on campus, or if you're interested in becoming a new MIT merchant that handles credit card payments, visit [web.mit.edu/chargemit](http://web.mit.edu/chargemit) or contact the team at [merchant-services-core-team@mit.edu](mailto:merchant-services-core-team@mit.edu).

To learn more about PCI-DSS, visit [www.pcisecuritystandards.org](http://www.pcisecuritystandards.org). §

## Hannaford Chain Discloses Serious Data Breach

• Monique Yeaton

In mid-March, the Maine-based Hannaford supermarket chain reported a serious data breach. During the authorization process, credit and debit card information was stolen as it was being transmitted to banks for approval. Hannaford was found to be in compliance with Payment Card Industry (PCI) security standards. While the breach is still under investigation, it appears that sophisticated malware was installed on store servers.

The card data was reportedly exposed between December 7, 2007 and March 10, 2008. The company estimates that 4.2 million account numbers were compromised. Around two thousand cases of fraud have been reported in connection with the breach. The breach affected all 165 Hannaford stores in the Northeast as well as 106 Sweetbay stores in Florida.

If you used a credit or debit card at a Hannaford store during the security breach period, you may want to monitor your statements for any sign of suspicious activity. If you suspect that your account has been compromised, notify your card issuer or bank immediately. The good news is that cardholders are not liable for any activity on their cards that they did not authorize.

Hannaford has published a FAQ about the breach at [www.hannaford.com/credit\\_card\\_security/qa.htm](http://www.hannaford.com/credit_card_security/qa.htm).

### MIT Credit Union Cardholders

The MIT Federal Credit Union (MITFCU) reports that 424 of its debit and credit cardholders may have been affected by the Hannaford data breach; however, to date, no fraudulent activity has been reported. The MITFCU has notified these cardholders.

If you have any concerns, contact the MITFCU's Call Center at 617.253.2845 during business hours (Monday through Friday, 8 am to 5 pm). You may request a new credit or debit card if you feel that it is warranted. To visit the MITFCU web site, go to [www.mitfcu.org](http://www.mitfcu.org). §

# ? Tech Tips: Mac OS X 10.5 (Leopard)

This column presents tips about computing. For more information technology Q&As, check the IS&T Stock Answers database at [itinfo.mit.edu/answer](http://itinfo.mit.edu/answer).

**Q.** I recently upgraded to Mac OS X 10.5 (Leopard). Everything seemed to go fine, but my printers are missing. Did I do something wrong during the upgrade?

**A.** No, you didn't do anything wrong. When upgrading from a previous version, Mac OS X 10.5 doesn't retain any of the printers that were installed in the previous operating system. You will have to reinstall each of the printers individually. For instructions on how to do this for printers in your building and printers connected to MITnet at other campus locations, see [itinfo.mit.edu/article.php?id=8629](http://itinfo.mit.edu/article.php?id=8629).

**Q.** A colleague of mine is using Spaces in Leopard to define and organize digital

workspaces. Whenever he opens Mail, it always opens in the same virtual desktop. How do I set that up?

**A.** First, check to see that you have Spaces enabled. Go to **System Preferences** and open the **Exposé & Spaces** control panel. Make sure that the **Enable Spaces** checkbox is checked.

Next, add the number of virtual desktops (Spaces) you want to use by clicking the Rows and Columns **plus (+)** and **minus (-)** signs.

Now move to the **Application Assignment** area, where you can assign an application to a specific virtual desktop. Click the **plus (+)** icon at the bottom of the **Application Assignment** window. This will open a window with the list of applications on your Mac. Scroll to Mail (or whatever application you'd like to use in a given Space), select it, and click **Add**.

You'll see Mail in the **Application Assignment** column with a Space assigned to it in the Space column (e.g., Space 1). Click on the up and down arrows in the same area to select the Space to which you want Mail assigned. Now, whenever you launch Mail, it will automatically open in that Space.

**Q.** I've been using Leopard for awhile and don't like the translucent menu bar. Is there any way to make it solid instead?

**A.** You'll need to be running version 10.5.2 to be able to change the translucency of the menu bar. Go to **System Preferences** and open the **Desktop & Screen Saver** control panel. Make sure the **Desktop** tab is selected at the top of the window. At the bottom of the window, uncheck the **Translucent Menu Bar** option. The menu bar will immediately turn solid. §

## Branding IS&T: Visual Aid for the Community

• Robyn Fizz

We've all experienced those moments when we register that someone's look has changed, even if there's no question of who they are. As you picked up this issue of *is&t*, you may have noticed that it's been redesigned – for the first time since 1990. What's behind the change?

### Consistent Branding for IS&T

Information Services and Technology (IS&T) offers a breadth of IT services to the MIT community. But customer surveys show that many at MIT are unaware of the full range of IS&T offerings.

This newsletter is one way that IS&T reaches out to its customers. The department also maintains an extensive web site at [web.mit.edu/ist](http://web.mit.edu/ist), publishes postcards and brochures – such as *IS&T Services at a glance* – and hands out materials at fairs and forums on campus. While all of these vehicles discuss IS&T services and display the IS&T logo, each has a different look.



Last fall, IS&T hired Tank, a Cambridge design firm, to develop a consistent look for all IS&T print materials, to go hand and hand with a redesign of the department's web site. This branding will make it easy to identify communications from IS&T, helping customers get a clearer picture of the services that IS&T provides.

To improve navigation of the IS&T web site, Tank designed a grid format and a set of icons for key services. These will be front and center when the redesigned web site launches later this year. In *is&t*, you'll see those icons used in column headers and as screened-back graphics. The grid is at work in tables and the training insert. The print materials and web site will also share a color palette and fonts.

### is&t Subscription Options

The *is&t* newsletter will continue to be sent to all faculty and staff at the Institute, but you can now opt out if you prefer not to receive a copy. To do this, send an email message to [ist-opt@mit.edu](mailto:ist-opt@mit.edu) that includes either your name and MIT room number or your MIT ID number. You will receive an email asking you to confirm your request. IS&T will offer an online opt-out option when the redesigned IS&T web site launches.

You can also sign up to receive email alerts when new issues of *is&t* are posted online at [web.mit.edu/ist/istnews](http://web.mit.edu/ist/istnews). To get these alerts, fill out the form at [mailman.mit.edu/mailman/listinfo/ist-notification](http://mailman.mit.edu/mailman/listinfo/ist-notification). The online newsletter is available in PDF and text-only formats. §

# Computer Currents

## CommuniTech Helps MIT Neighbors Cross the Digital Divide

• Robyn Fizz and Karla Mansur

CommuniTech is a volunteer-based initiative at MIT, under the umbrella of IMARA, a broad outreach effort supported and operated by the Computer Science and Artificial Intelligence Lab (CSAIL).



CommuniTech works to bridge the Digital Divide – the gap between those who have access to information tech-

nologies and those who do not. When it began in 2000, CommuniTech focused on refurbishing older donated computers and giving them to economically disadvantaged people in the area.

With that piece in place, the volunteers discovered that their job was only half done. Those given computers had to reach a comfort level in using them, which was hard to do on their own. So CommuniTech began to offer an introductory computer course to the recipients of the systems.

Today, CommuniTech has two branches. The MIT Used Computer Factory (UCF), coordinated by Henry Wu, refurbishes donated computers. Families Accessing Computer Technology (FACT), coordinated by Randall Shults, handles the software training side.

### UCF: The Fix-IT Factory

CommuniTech is always looking for donations of Pentium IV machines or better. (Macintoshes are currently not part of the program.) Flat-screen LCD monitors in full working order are also welcome. CommuniTech asks those making donations to include the equipment manuals if possible.

If you have a computer you'd like to donate, begin by filling out the form at [imara.csail.mit.edu/?q=node/45](http://imara.csail.mit.edu/?q=node/45). If your department has older computers available for donation, contact MIT's Property Manager, Michael McCarthy, so that he can deactivate the computers and keep a

record of the donation. You can reach him at [mmccarth@mit.edu](mailto:mmccarth@mit.edu) or 617.253.2779.

UCF has placed over 200 computers in local homes since 2000. About half of the recipients sign up for Internet service (56K dialup). The connections are provided at the significantly discounted price of \$5 per month by Elirion ([www.elirion.net](http://www.elirion.net)).

Another benefit of UCF is the recycling of older computers that might otherwise end up in landfills.

### FACT Gives Back

The FACT course covers hardware basics and word processing, spreadsheet, web browser, and email applications. Each volunteer is matched with a client and works with him or her for two hours on Saturday mornings over six weeks.

Shults, the FACT program coordinator, relishes making a difference in the local community: "I was given an amazing opportunity when MIT accepted me. This is my way of giving back and using the skills I've acquired to help others improve their lives."

### Get Involved

Anyone at MIT is welcome to help with UCF or FACT. Both programs have training sessions for volunteers at the start of each semester. Volunteers also meet periodically to discuss their experiences and issues concerning the Digital Divide.

CSAIL staff members Karla Mansur and Jason Dorfman volunteer their time to run CommuniTech and raise funds for the program. To get in touch with them or the UCF or FACT coordinators, send mail to [communittech-staff@mit.edu](mailto:communittech-staff@mit.edu), call 617.324.9135, or stop by Room 32-268 in the Stata Center.

IMARA, the organization in CSAIL that sponsors CommuniTech, strives to empower underserved communities through sustainable technology and education. (Imara means "power" in Swahili.) IMARA also sponsors projects in the Fijian Islands, Kenya, the Middle East, and Navajo communities in the U.S. Southwest.

To learn more about IMARA and its outreach efforts, including CommuniTech, visit [imara.csail.mit.edu](http://imara.csail.mit.edu). §

## Before You Say Goodbye... Erase Data from Computers

• Monique Yeaton

If you plan to donate, recycle, or sell an old computer, be sure to delete the data on it first. It's not enough to toss files into the computer's trash bin and empty the trash. Those actions delete the record of the file, but not the data the file points to. Think of it as removing the labels from folders in a file cabinet: the folders and information in them still exist, even if retrieving the data takes more work.

The same is true if you reformat a hard drive: it's still possible for someone with the right tools to retrieve data on the drive.

### Recommended Steps

IS&T suggests these guidelines if you plan to repurpose or sell your computer:

- Make sure the hard drive is completely erased ("wiped"). You can either do this yourself or pay someone to do it for you. The potential liability if sensitive data gets out easily justifies the cost.
- If wiping the drive yourself, use a utility that overwrites every sector of the hard drive with binary 1s and 0s. Tools that meet government security standards overwrite each sector multiple times for added protection. Windows, Macintosh, and Linux users can download free software such as Darik's Boot and Nuke at [dban.sourceforge.net](http://dban.sourceforge.net). Other free or fairly inexpensive products are listed in the table on the Media Sanitizing web page at [web.mit.edu/ist/topics/security/media\\_sanitizing1.html](http://web.mit.edu/ist/topics/security/media_sanitizing1.html).

Mac users can also use the Disk Utility or Secure Empty Trash command built into Mac OS X 10.4 and 10.5.

### Exceptional Measures

Other data removal processes that various companies offer as a service, such as degaussing and shredding, will destroy the disks in the hard drive on which the data is stored. However, this makes it impossible to reuse the computer unless a new hard drive is installed. Determine the sensitivity of the data and how important it would be to keep the data out of others' hands before you decide which option to use. §



# Getting Help

If you don't know where to get help for your computer, network, or telephone problems, dial one of the help lines listed to the right.

If you prefer to use email, you can send your questions to the corresponding email addresses. (When logged into Athena, you can also use the **olc** command to send questions to Athena's online consultants.) You can also submit a question online via the Request Tracker link on the Getting Help page at [web.mit.edu/ist/help](http://web.mit.edu/ist/help).

For help with...	Dial...	Or send a message to...
<b>General computing questions</b> Macintosh, Windows, network/connectivity, business applications, computer buying advice, repairs	617.253.1101	computing-help@mit.edu
<b>Athena computing environment</b>	617.253.4435	olc@mit.edu
<b>Disabilities and computing</b>	617.253.7808	atic@mit.edu
<b>Telephone support and repairs</b> Traditional and MITvoip phones	617.253.4357	telephone-help@mit.edu
<b>Traditional phone moves/changes</b> For use by AOs/DLC Administrators	617.253.3670	telecom-csr@mit.edu
<b>Unix/Linux</b>	617.253.1103	unix-linux-help@mit.edu




# Surf Sites: The Autism Spectrum

The Internet is making a difference in the lives of many people with autism and their families. At the same time, it is helping to educate the public about autism. Estée Klar-Wolfond, in "From Fear and Fascination to Respect: A Fair Way" at [www.media.mit.edu/events/movies/video.php?id=klar-wolfond-2007-05-08](http://www.media.mit.edu/events/movies/video.php?id=klar-wolfond-2007-05-08) discusses the importance of accepting people with autism on their own terms and making accommodations for them. **Note:** This 2007 lecture was delivered as part of the MIT course, Autism Theory and Technology (MAS.962).

The web sites on the right offer related resources, from advocacy to support.

- Asperger's Association of New England**  
aane.org
- The Autism Acceptance Project**  
taaproject.com
- The Autism Consortium [MIT is a member]**  
www.autismconsortium.org
- The Autism Source**  
www.maapservices.org
- Autism Speaks**  
www.autismspeaks.org
- Help with Autism, Asperger's Syndrome & Related Disorders**  
autism-help.org
- The Joy of Autism**  
joyofautism.blogspot.com


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