

## Securing sensitive personal information



**W**as the neighbor's daughter admitted to the academic program she wanted? Why was a student removed from the intercollegiate sports team? Was the student leader's illness more serious than a head cold? How much money is my brother-in-law putting in his retirement account?

Specific university employees are entrusted with answers to questions like these in order to perform required work responsibilities. That trust means that the employee would never discuss the answers at a local coffee shop or let paper documents lie around in public places.

Once confidential information exists in electronic form, the vulnerability to being "overheard" is less obvious. What prevents confidential information sent in e-mail from being seen by unauthorized, prying eyes? If confidential materials need to be communicated electronically, what methods ensure confidentiality?

Virginia Tech has taken steps to assist employees in safeguarding

confidential information in electronic forms. First, awareness training is available from the Information Technology Security Office. The basic training outlines the importance of keeping intruders out of university information technology systems by maintaining firewall settings, upgrading and patching software, and maintaining antivirus software.

Second, policies, standards, and tools address the increasing portability of computing and its related vulnerability. Memory sticks or flash drives, CDs, laptops, and tablet computers offer convenience but are also easily misplaced or stolen. Careful users do not download confidential information from university central systems without clear necessity. When necessary, such information must be encrypted. Tools for encryption are described on the security website ([www.security.vt.edu](http://www.security.vt.edu)).

Third, policies, standards, and tools establish procedures for specific confidential data elements. Social

Security numbers and credit or debit card numbers can be found and identified for removal from both portable computing devices and from desktop machines using "Find\_SSNs" and "Find\_CCNs" ([www.security.vt.edu](http://www.security.vt.edu)). Each of these data elements provide key information for would-be identity thieves. Social Security numbers are specifically protected by university policy and related standards (See [www.banner.vt.edu](http://www.banner.vt.edu)). This standard addresses restricting display of SSNs on screens and reports, access controls, limiting storage, and secure transmission. Similarly, the university policy on customer nonpublic financial information safeguards information, such as credit card or debit card numbers, as required by the Gramm-Leach-Bliley Act ([www.policies.vt.edu/7025.pdf](http://www.policies.vt.edu/7025.pdf)).

Additional policies and resources for ensuring the security and confidentiality of university data are available from the Information Technology Security website ([www.security.vt.edu](http://www.security.vt.edu)).

## Why is there spam?

Do you wish for the days when “junk mail” consisted of a few fliers and bulk rate letters in your postal mailbox? Spam—that unwanted, unsolicited commercial e-mail—threatens to overtake productive uses of e-mail.

A 2007 Federal Trade Commission report called spam “intractable,” and various studies put spam at nearly 90 percent of all e-mail. At Virginia Tech alone, spam volume has risen to five times what it was only two years ago. (See <http://babylon5.cc.vt.edu/~jarrell/eseagraph/spamdaq.html>). Spam proliferates because the cost of sending it is nearly zero. Harvesting e-mail addresses from websites, directories, or online discussions is easy and inexpensive. And the profits—if only a small percentage of recipients respond—are attractive.

Even the most innocent of spam consumes valuable space in your own mailbox and in the systems that serve you. More dangerously, spam can contain “malware”—viruses and other malicious programs that can harm your computer, possibly turning it into the machine that sends out the spam. Known as “bot”ing, this type of “bot” is called a “zombie.” Through phishing, spam can steal your identity, a serious

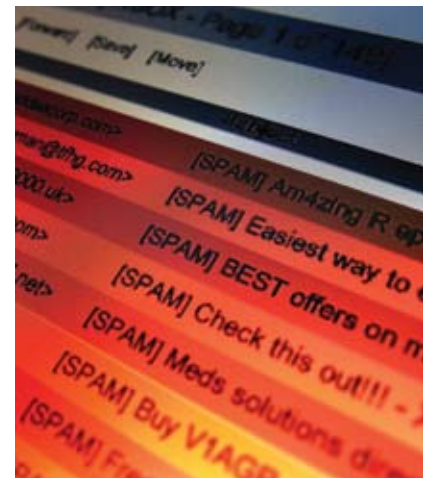
financial risk. According to the Federal Trade Commission’s report, spam has shifted to these more malicious forms. Motives have shifted from commerce to crime.

Reducing the amount of spam reaching the Virginia Tech community is one goal of the central provision of e-mail. Balancing spam reduction with ensuring that desired e-mail is delivered is especially important in our internationally relevant, heterogeneous community.

### What Virginia Tech does

More than 25,000 Internet addresses with a history of generating spam are blocked from university e-mail. As you might imagine, dedicated spammers are quite adept at changing—and spoofing—addresses, so that list continues to expand.

Incoming e-mail is scanned for signature marks of spam and rated. The rating is combined with other rules, systems, and techniques to detour the likely spam out of your inbox. The newest tool deployed last fall is Junk Mail Manager (JMM). JMM puts the filtering tools in the hands of the recipients. From basic settings, spam is sent to a junk quarantine, separated



from your inbox. If a sender that is being quarantined is one that you want to see, you can use JMM to “white list” the sender for you alone. Conversely, if there are senders that the basic setting doesn’t classify as “junk” but which you never want to see, you can “blacklist” that sender, again, for you alone. Quick reviews of the quarantine can help detect any desired mail that has gotten caught up with the spam.

For additional steps you can take, search for “Unwanted e-mail” on [www.computing.vt.edu](http://www.computing.vt.edu). To learn how to use the JMM, try this link: [www.computing.vt.edu/email\\_and\\_calendar/jmm.html](http://www.computing.vt.edu/email_and_calendar/jmm.html).

## Patriot Award



Network Infrastructure and Services, led by Judy Lilly, was recognized with the Patriot Award for employer support of the guard and reserve. Ron Keller, 1st sergeant of the West Virginia Army National Guard, and Robert Roberts, staff sergeant, United States Army Reserve, nominated Lilly. The award, given through the Defense Department’s Employer Support for the Guard and Reserve (ESGR) program, recognizes employers who go above and beyond what the law requires in providing support to their employees called to active duty.

# High-Performance Computing Boot Camp

Virginia Tech and the University of Virginia have collaborated on the High-Performance Computing Boot Camp. First held last summer, the gathering introduces faculty members, graduate students, and research staff members to the basics of high-performance parallel computing and the national cyber-infrastructure.

Sixty-seven participants attended the workshop, held in Charlottesville, with a one-day visualization seminar that used the immersive environments at Virginia Tech, including the CAVE. Participants came from across the commonwealth, including both co-sponsoring universities, as well as Virginia Commonwealth University, and the University of Virginia at Wise.

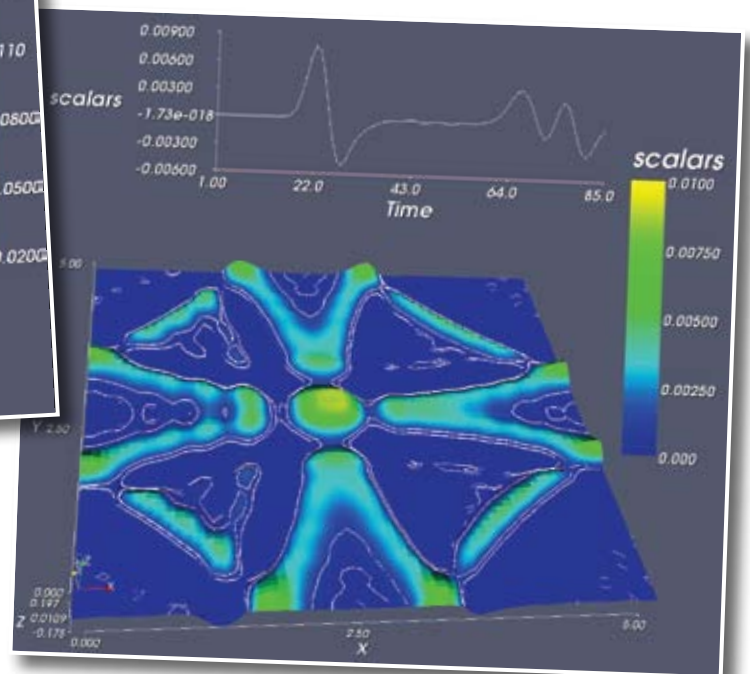
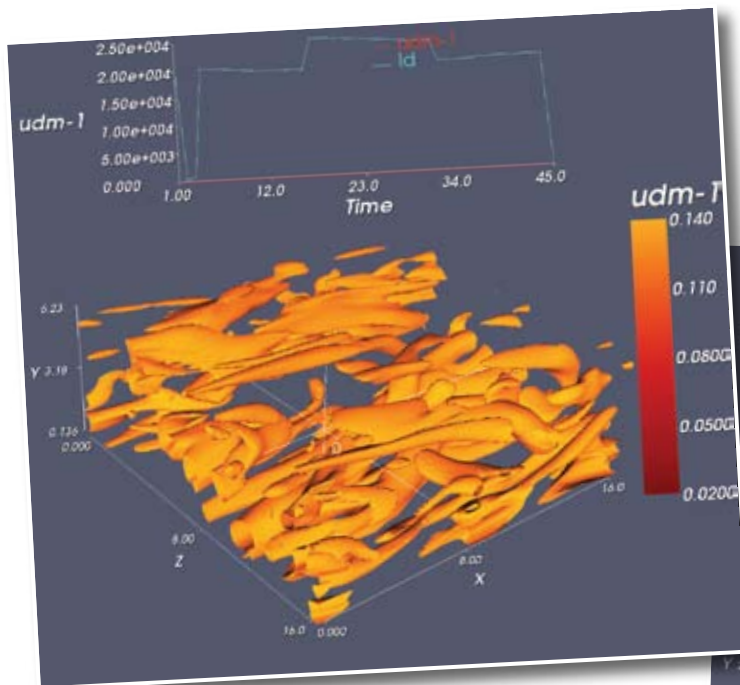
A second boot camp is planned for summer 2008.

In contrast to traditional serial programming, parallel computing is based on dividing large problems into smaller ones and resolving them concurrently. Parallel processing takes advantage of multiple processing units, such as the 2,200 processors in System X.

In the boot camp, participants had a morning lecture and then an afternoon hands-on sessions to learn the basics of parallel computing techniques. This includes an enhanced understanding of HPC machine architectures, decomposition and optimization of algorithms for parallel execution, and memory management. Not

only did attendees learn how to solve their computational problems faster, they also learned about the principles and tools for visual data analysis and communication.

The collaboration is managed for Virginia Tech by the research computing area within Information Technology, and through the participation of the computer science faculty. Additional support for the program came from the National Science Foundation's Cyberinfrastructure TEAM and Silicon Graphics Inc.



These graphics are visualizations of simulated data of turbulence (left) and wave propagation (right) in different fluids. In the three-dimensional view, the overall system is visualized and animated; the embedded two-dimensional graph illustrates a local point's property over time.

## Information Technology

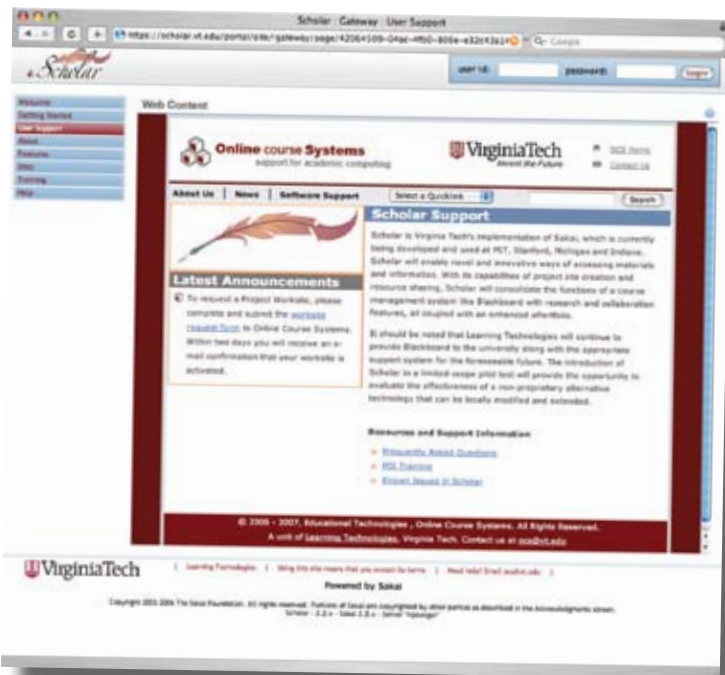
Virginia Tech  
1700 Kraft Dr. (0169)  
Blacksburg, VA 24061

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Virginia Tech is an equal opportunity, affirmative action institution.

VT/0308/9M/28-1636

# Online course evaluation system



For years, course evaluations were end-of-term, hurried events using opscans. "Does anyone have an extra No. 2 pencil?"

Emerging tools for online evaluations improve efficiency in administration and data collection, and they save valuable class time. They also provide students an opportunity to produce more thoughtful

responses. Students don't have to worry that teachers will recognize their handwriting, and faculty members can forgo deciphering that handwriting. Concerns about online evaluations include differences from the optical scanned forms, but studies elsewhere have not uncovered consistent differences. Another concern has been response rate. Systems that permit reminders by e-mail have demonstrated improved, rather than reduced, response rates. Colleges or departments may also control the scheduling of the time interval for responding to the evaluation, and of reminder e-mails to non-responders. Results may be analyzed through the reports provided, or by downloading the data for extended analysis.

The new online evaluation system

responses. Students don't have to worry that teachers will recognize their handwriting, and faculty members can forgo deciphering that handwriting.

Concerns about online evaluations include differences from the optical scanned forms, but studies elsewhere have not uncovered consistent differences. Another concern has been response rate. Systems that permit reminders by e-mail have demonstrated improved, rather than reduced,

begin with development efforts by Virginia Tech's Learning Technologies staff in collaboration with the information technology staff at Columbia University.

Pilot usage of the online evaluation system resulted in more than 10,000 student responses last spring semester, and more than 15,000 this past fall semester. E-mail reminders, among other factors, produced response rates of 72 percent in the spring and 77 percent in the fall, comparable to the response rate for the paper-based system.

Work continues to improve the online evaluation tool and to integrate it with the open-source learning tools community of Sakai, known at Virginia Tech as "Scholar." Collaborating institutions include the University of Michigan, the University of Maryland, and Cambridge University.

Learning Technologies works with the Center for Excellence in Undergraduate Teaching in creating these tools. The University Committee on Evaluation of Teaching, formed in 2007, is charged with studying processes currently in place to evaluate teaching, including student perceptions of instruction.