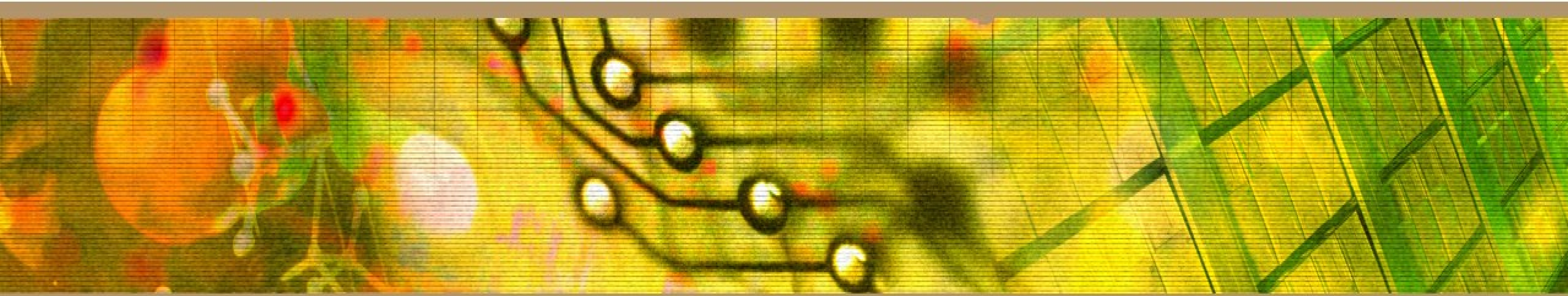
Purdue University

Security Awareness: Creating a Culture of Awareness

Presented by Cherry Delaney



SECURE PURDUE

Why Promote Security Awareness?

Security is about risk tolerance, an individual's actions and responsibilities, and applied technology. At Purdue, we are all accountable for our actions and we do what we can to keep our students, parents, staff and faculty as secure as possible. Awareness and education are vital for our success.

- "We need you to share your knowledge with your professional networks, friends and families, and invigorate their engagement on securing cyberspace. Using layperson language, encourage people to take the common sense steps that can directly influence the security of our cyber and physical infrastructures. It's a complex problem, but the dangers are easily understood. Help them understand what you already know–that cyber security is everyone's responsibility.
- With increased knowledge and awareness comes increased security. Together, we can make this happen. We must make this happen."

Remarks of Cybersecurity and Communications Assistant Secretary Greg Garcia at the Dartmouth CIO/CISO Executive Workshop on Cyber Security

Release Date: October 11, 2007

http://www.dhs.gov/xnews/releases/pr_1192138142478.shtm

How to create an awareness program

Get buy-in from upper management:

When the President says security is important and practices what she preaches, employees take notice. The same goes for all administrators and managers down the line.

How to create an awareness program

- **Appoint the right person(s) to lead the charge**:
- Dedicate at least one person to focus 100 percent of their energy on security awareness across the organization. This person needs to be an individual who communicates well and knows how to sell, market, and build relationships.

How to create an awareness program

- **Conduct extensive research**:
- Understand the target audiences and their organizational culture to customize your message for greater retention.

How to create an awareness program

- **Build relationships**:
- Security messages must permeate the enterprise for the awareness program to be successful. With minimal resources to carry out the program, it’s important to build strong relationships, engage influencers, and nurture those connections.

How to create an awareness program

- **Create security ambassadors**:
- Security ambassadors are the individuals in your organization who are willing to evangelize security awareness and directly influence behavior change.
- Purdue utilizes Security Officers throughout our decentralized IT organization.

Purdue Security Officers

- Policy work
- Technical community concerned with security
- SO model being copied by other Big Ten institutions
- Policies being used as templates for other institutions
- http://www.purdue.edu/securePurdue/security officers/index.cfm

How to create an awareness program

- Policies and Procedures
  - Fighting security violators requires that you develop policies and procedures.
  - The first step in any security plan is to instill an awareness of the vulnerability in all users of computer systems.
  - If your organization does not employ security experts, bring in an outside consultant.
  - Be prepared to respond to the consultant's recommendations, but keep in mind that even with the best of consultants, a security breach is inevitable.
  - Your organization should be prepared to respond to a security attack.

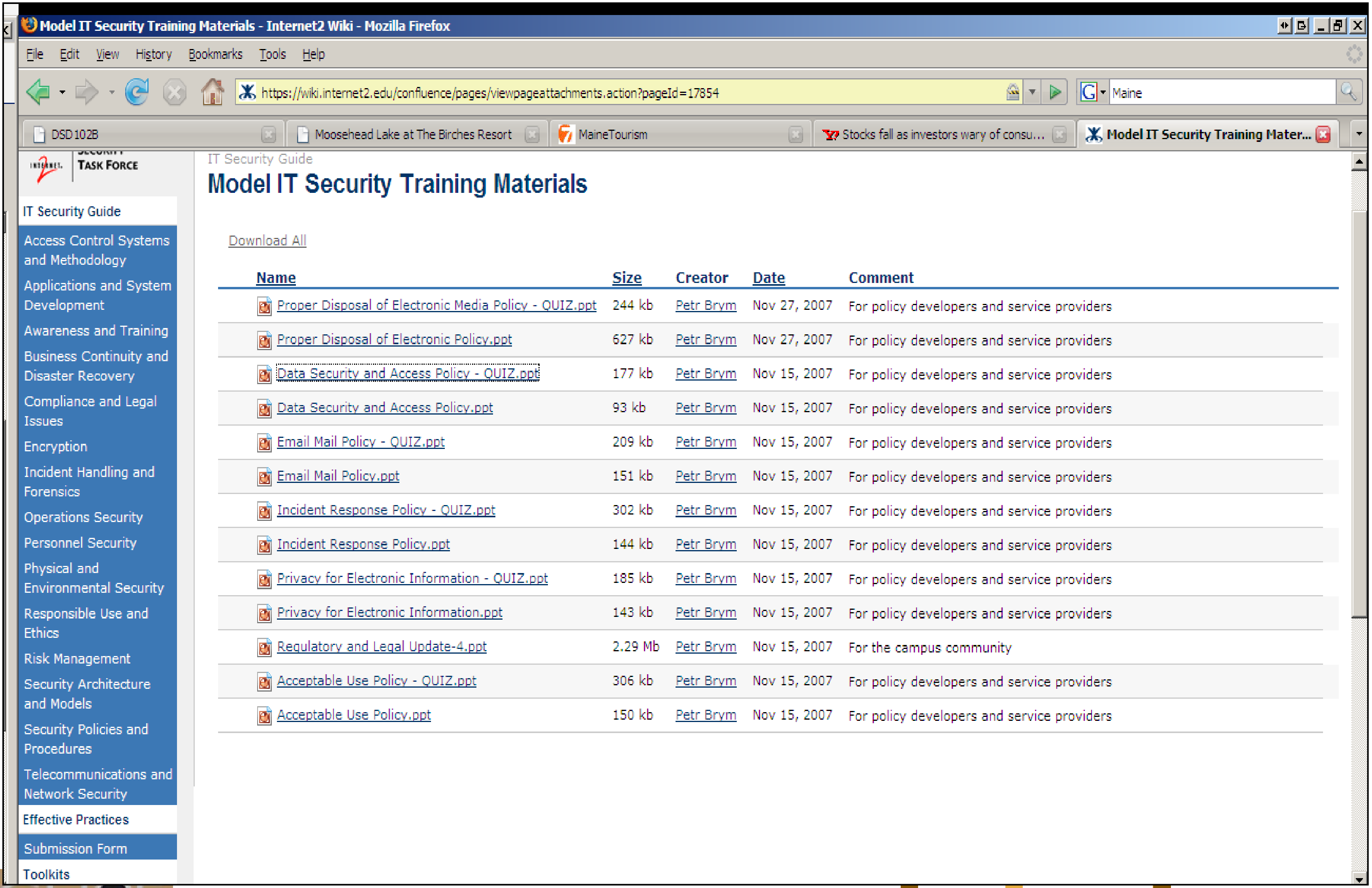
How to create an awareness program

- **Identify the right communications vehicles**:
- Look for opportunities to tell the security story. Include your message at special events, such as management meetings, and use newsletters. Don’t be afraid to reuse initiatives that have worked in the past.

Educause Collaboration

- Collaborate to create training materials to share
- Appropriate quizzing tools are included
- https://wiki.internet2.edu/confluence/pages/viewpageattachments.action?pageId=17854

Purdue's Contribution


Model IT Security Training Materials - Internet2 Wiki - Mozilla Firefox
File Edit View History Bookmarks Tools Help
https://wiki.internet2.edu/confluence/pages/viewpageattachments.action?pageId=17854
Maine
DSD 102B
Moosehead Lake at The Birches Resort
MaineTourism
Stocks fall as investors wary of consu...
Model IT Security Training Mater...
Security Task Force

IT Security Guide

- Access Control Systems and Methodology
- Applications and System Development
- Awareness and Training
- Business Continuity and Disaster Recovery
- Compliance and Legal Issues
- Encryption
- Incident Handling and Forensics
- Operations Security
- Personnel Security
- Physical and Environmental Security
- Responsible Use and Ethics
- Risk Management
- Security Architecture and Models
- Security Policies and Procedures
- Telecommunications and Network Security

Effective Practices

Submission Form

Toolkits

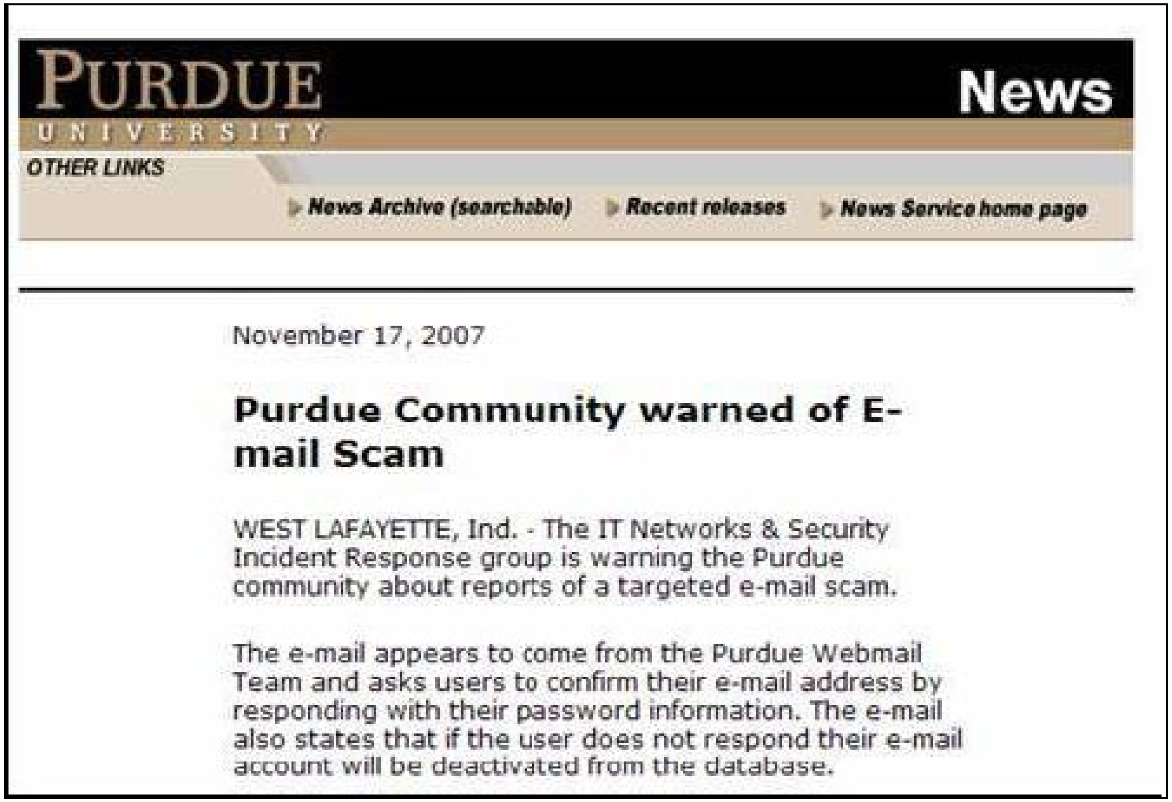
IT Security Guide

Model IT Security Training Materials

Download All

Name	Size	Creator	Date	Comment
Proper Disposal of Electronic Media Policy - QUIZ.ppt	244 kb	Petr Brym	Nov 27, 2007	For policy developers and service providers
Proper Disposal of Electronic Policy.ppt	627 kb	Petr Brym	Nov 27, 2007	For policy developers and service providers
Data Security and Access Policy - QUIZ.ppt	177 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Data Security and Access Policy.ppt	93 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Email Mail Policy - QUIZ.ppt	209 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Email Mail Policy.ppt	151 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Incident Response Policy - QUIZ.ppt	302 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Incident Response Policy.ppt	144 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Privacy for Electronic Information - QUIZ.ppt	185 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Privacy for Electronic Information.ppt	143 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Regulatory and Legal Update-4.ppt	2.29 Mb	Petr Brym	Nov 15, 2007	For the campus community
Acceptable Use Policy - QUIZ.ppt	306 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers
Acceptable Use Policy.ppt	150 kb	Petr Brym	Nov 15, 2007	For policy developers and service providers

Community Alerted



November 17, 2007

Purdue Community warned of E-mail Scam

WEST LAFAYETTE, Ind. - The IT Networks & Security Incident Response group is warning the Purdue community about reports of a targeted e-mail scam.

The e-mail appears to come from the Purdue Webmail Team and asks users to confirm their e-mail address by responding with their password information. The e-mail also states that if the user does not respond their e-mail account will be deactivated from the database.

Good Response to Phishing

From: PURDUE WEBMAIL TEAM <support@purdue.edu>

Sent: Sat Nov 17 00:28:43 2007

Subject: Confirm Your Email Address!

Confirm Your Email Address!

Dear purdue.edu subsccriber,

To complete your purdue.edu account, you must reply to this email immediately and enter your

password here (*********)

Failure to do this will immediately render your email address deactivated from our database.

You can also confirm your email address by logging into your purdue.edu account at

https://webmail.purdue.edu/

Thank you for using PURDUE. EDU!

THE PURDUE WEBMAIL TEAM

How to create an awareness program

- Publish SecurePurdue e-newsletter bimonthly since 2006
- Publish security related articles on student e-Board (since 2007 when e-Board was introduced)
- Contemplate using *facebook* to broadcast emergency messages because students are “there”
- Promoted registration of cell phone users to utilize our emergency cell phone notification process

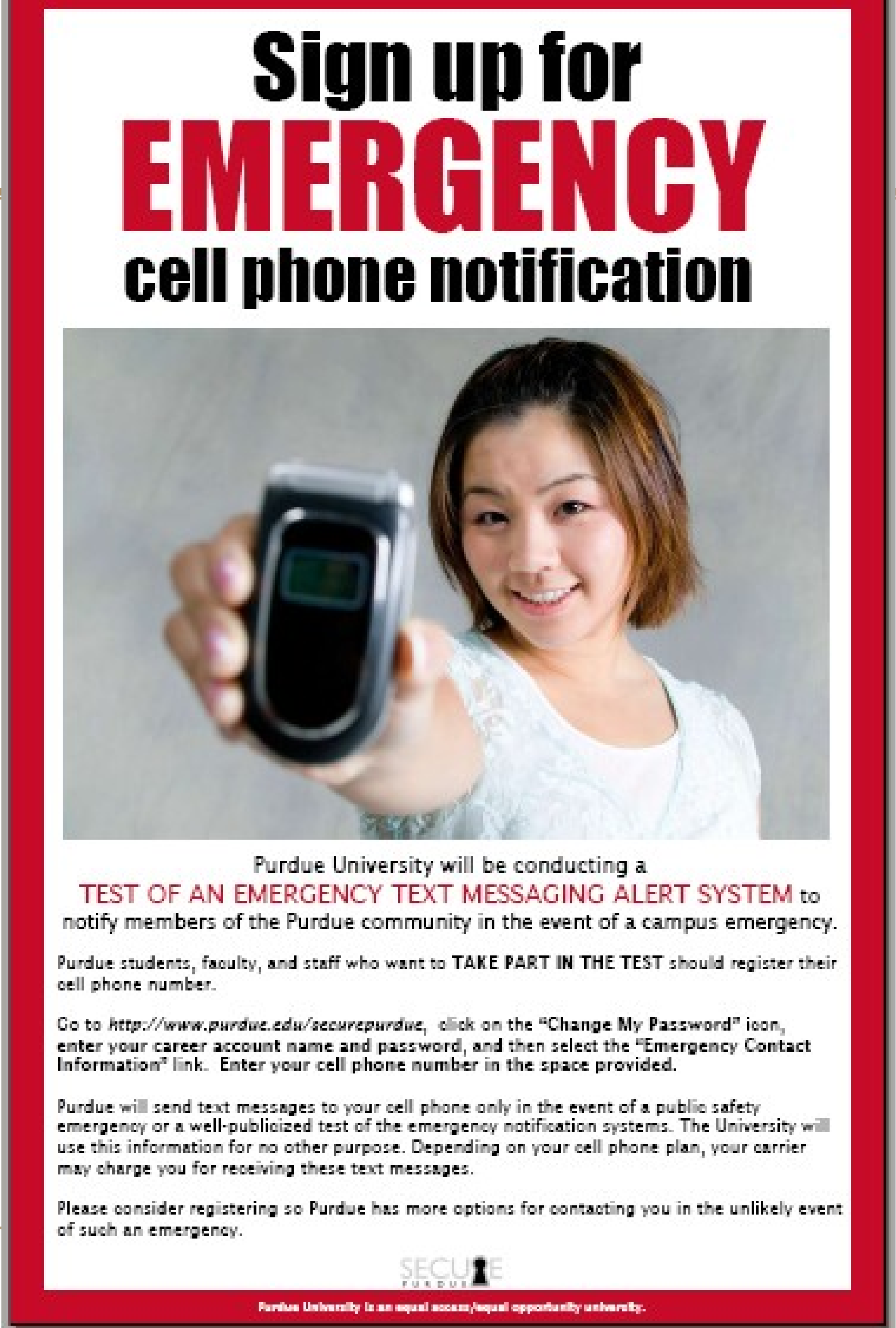
How to create an awareness program

- **Use credible sources**:
- When communicating to large audiences, feature people who are recognized and trusted and use respected communications vehicles.

How to create an awareness program

- **Keep your messages short and simple**:
- Short, clear messages are easier to retain. Keep in mind that message retention comes from a continuous, sustaining program, so repetition is a must.

Student newspaper advertisements and posters placed throughout campus – test was conducted September 24th.



Sign up for EMERGENCY cell phone notification

Purdue University will be conducting a
TEST OF AN EMERGENCY TEXT MESSAGING ALERT SYSTEM to
notify members of the Purdue community in the event of a campus emergency.

Purdue students, faculty, and staff who want to **TAKE PART IN THE TEST** should register their cell phone number.

Go to *http://www.purdue.edu/securepurdue*, click on the "Change My Password" icon, enter your career account name and password, and then select the "Emergency Contact Information" link. Enter your cell phone number in the space provided.

Purdue will send text messages to your cell phone only in the event of a public safety emergency or a well-publicized test of the emergency notification systems. The University will use this information for no other purpose. Depending on your cell phone plan, your carrier may charge you for receiving these text messages.

Please consider registering so Purdue has more options for contacting you in the unlikely event of such an emergency.

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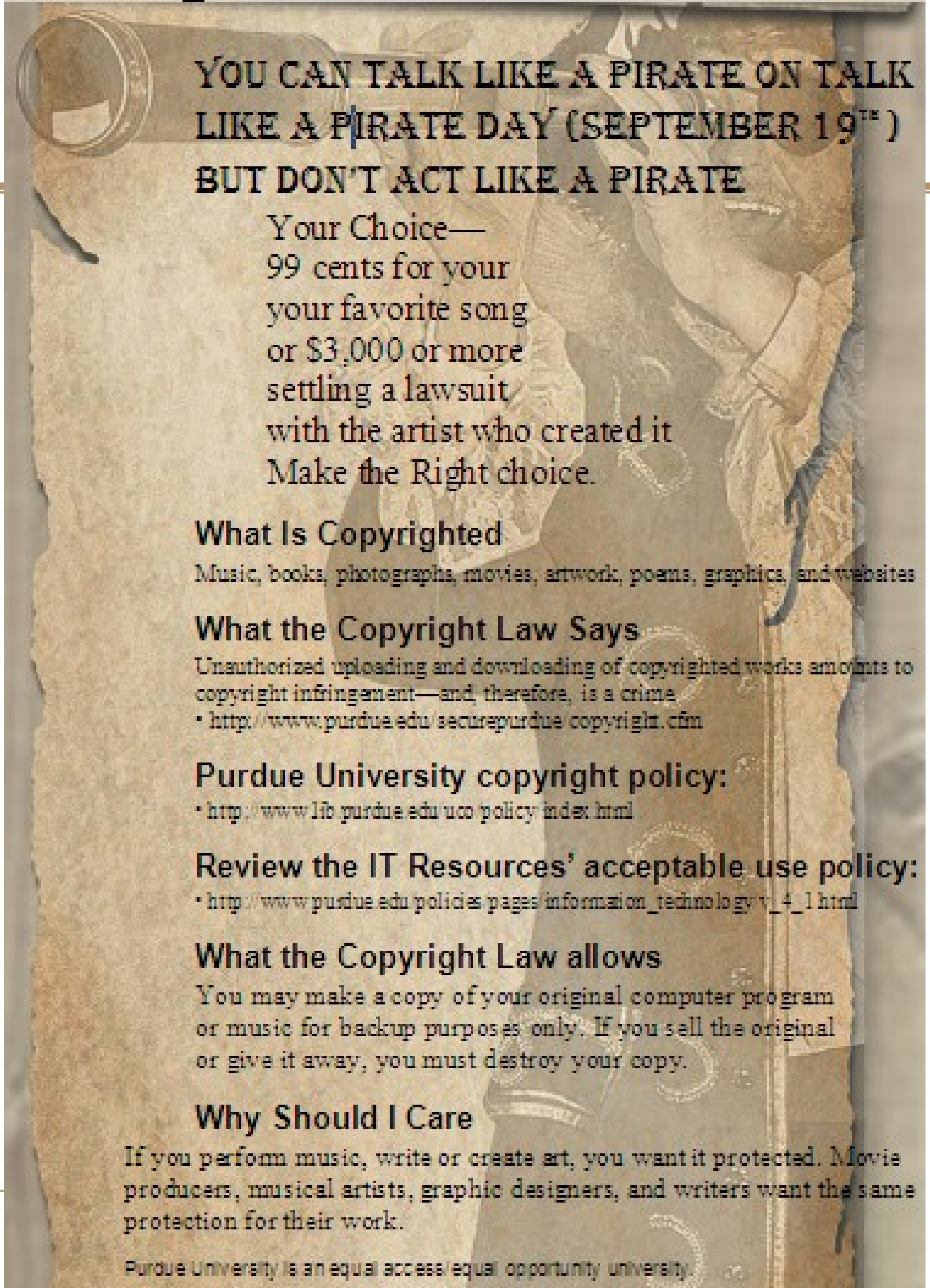
Purdue University is an equal access/equal opportunity university.

Student newspaper advertisements September 19th. These are also used as bookmarks distributed in residence hall packets each year.



YOU CAN TALK LIKE A PIRATE ON TALK LIKE A PIRATE DAY (SEPTEMBER 19TH) BUT DON'T ACT LIKE A PIRATE

Your Choice—
99 cents for your
your favorite song
or $3,000 or more
settling a lawsuit
with the artist who created it
Make the Right choice.

What Is Copyrighted

Music, books, photographs, movies, artwork, poems, graphics, and websites

What the Copyright Law Says

Unauthorized uploading and downloading of copyrighted works amounts to copyright infringement—and, therefore, is a crime.

- http://www.purdue.edu/securepurdue/copyright.cfm

Purdue University copyright policy:

- http://www.lib.purdue.edu/uco/policy/index.html

Review the IT Resources' acceptable use policy:

- http://www.purdue.edu/policies/pages/information_technology/v_4_1.html

What the Copyright Law allows

You may make a copy of your original computer program or music for backup purposes only. If you sell the original or give it away, you must destroy your copy.

Why Should I Care

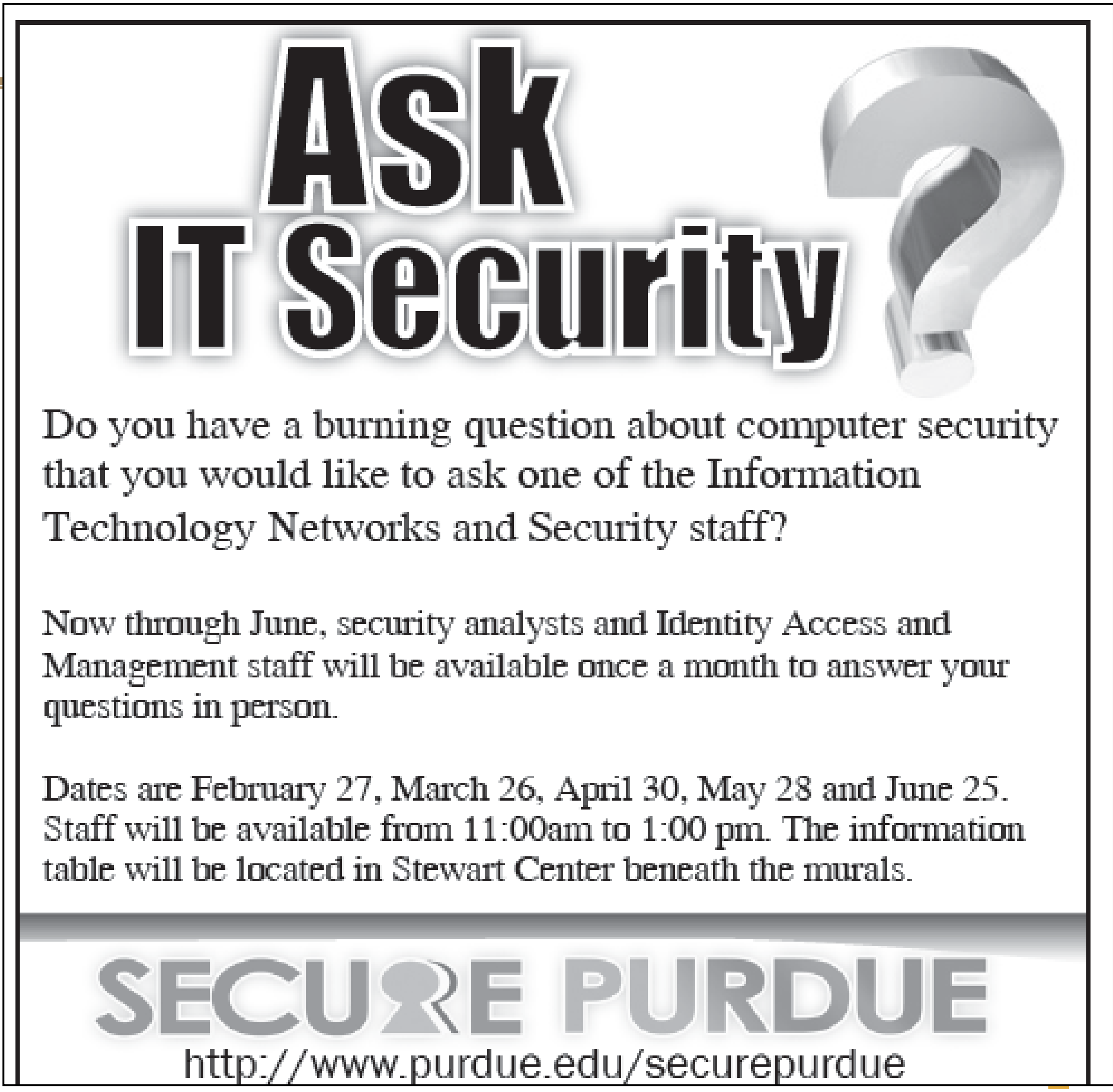
If you perform music, write or create art, you want it protected. Movie producers, musical artists, graphic designers, and writers want the same protection for their work.

Purdue University is an equal access/equal opportunity university.

How to create an awareness program

- Security brochures distributed to incoming Freshman and transfer students at day on campus
- Copyright bookmarks and security brochures distributed in residence hall goody bag: over 15,000 distributed every year

Published in Student newspaper before February, and March events.



Ask IT Security?

Do you have a burning question about computer security that you would like to ask one of the Information Technology Networks and Security staff?

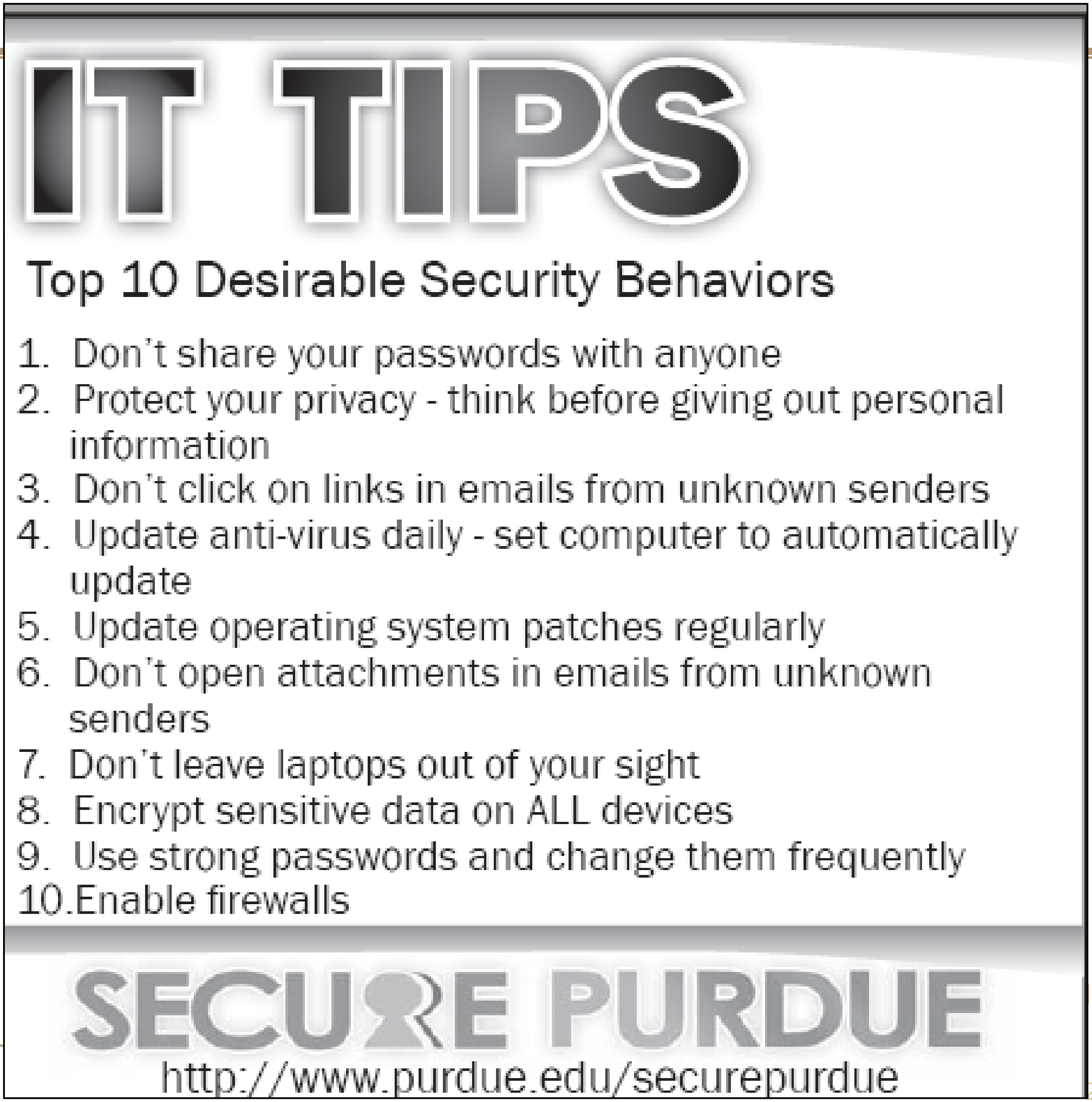
Now through June, security analysts and Identity Access and Management staff will be available once a month to answer your questions in person.

Dates are February 27, March 26, April 30, May 28 and June 25. Staff will be available from 11:00am to 1:00 pm. The information table will be located in Stewart Center beneath the murals.

SECURE PURDUE

http://www.purdue.edu/securepurdue

Published in Student newspaper in March and April



IT TIPS

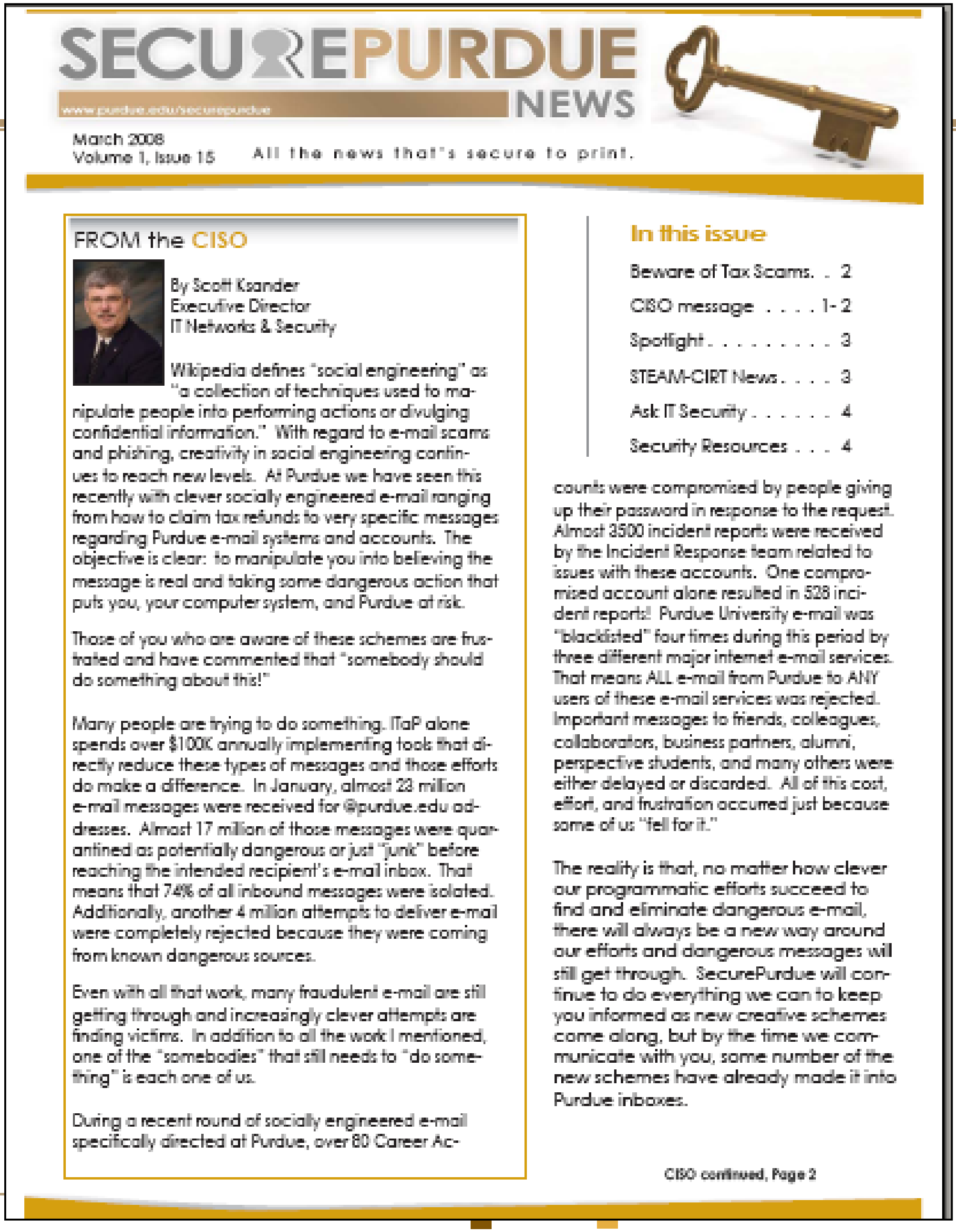
Top 10 Desirable Security Behaviors

1. Don't share your passwords with anyone
2. Protect your privacy - think before giving out personal information
3. Don't click on links in emails from unknown senders
4. Update anti-virus daily - set computer to automatically update
5. Update operating system patches regularly
6. Don't open attachments in emails from unknown senders
7. Don't leave laptops out of your sight
8. Encrypt sensitive data on ALL devices
9. Use strong passwords and change them frequently
10. Enable firewalls

SECURE PURDUE

http://www.purdue.edu/securepurdue

SecurePurdue Newsletter published every other month with timely articles



SECUREPURDUE NEWS
www.purdue.edu/securepurdue
March 2008
Volume 1, Issue 15
All the news that's secure to print.

In this issue

FROM the CISO

By Scott Ksander
Executive Director
IT Networks & Security

Wikipedia defines "social engineering" as "a collection of techniques used to manipulate people into performing actions or divulging confidential information." With regard to e-mail scams and phishing, creativity in social engineering continues to reach new levels. At Purdue we have seen this recently with clever socially engineered e-mail ranging from how to claim tax refunds to very specific messages regarding Purdue e-mail systems and accounts. The objective is clear: to manipulate you into believing the message is real and taking some dangerous action that puts you, your computer system, and Purdue at risk.

Those of you who are aware of these schemes are frustrated and have commented that "somebody should do something about this!"

Many people are trying to do something. ITaP alone spends over $100K annually implementing tools that directly reduce these types of messages and those efforts do make a difference. In January, almost 23 million e-mail messages were received for @purdue.edu addresses. Almost 17 million of those messages were quarantined as potentially dangerous or just "junk" before reaching the intended recipient's e-mail inbox. That means that 74% of all inbound messages were isolated. Additionally, another 4 million attempts to deliver e-mail were completely rejected because they were coming from known dangerous sources.

Even with all that work, many fraudulent e-mail are still getting through and increasingly clever attempts are finding victims. In addition to all the work I mentioned, one of the "somebodies" that still needs to "do something" is each one of us.

During a recent round of socially engineered e-mail specifically directed at Purdue, over 80 Career Accounts were compromised by people giving up their password in response to the request. Almost 3500 incident reports were received by the Incident Response team related to issues with these accounts. One compromised account alone resulted in 528 incident reports! Purdue University e-mail was "blacklisted" four times during this period by three different major internet e-mail services. That means ALL e-mail from Purdue to ANY users of these e-mail services was rejected. Important messages to friends, colleagues, collaborators, business partners, alumni, perspective students, and many others were either delayed or discarded. All of this cost, effort, and frustration occurred just because some of us "fell for it."

The reality is that, no matter how clever our programmatic efforts succeed to find and eliminate dangerous e-mail, there will always be a new way around our efforts and dangerous messages will still get through. SecurePurdue will continue to do everything we can to keep you informed as new creative schemes come along, but by the time we communicate with you, some number of the new schemes have already made it into Purdue inboxes.

CISO continued, Page 2

How to create an awareness program

- Planned Remediation Day
  - Create a security awareness culture by implementing yearly “rituals” or “traditions”
  - Onsite hard drive destruction, confidential material destruction

How to create an awareness program

- **Make training available**:
- Make training available at every level and encourage participation. When everyone is on board, the results can be impressive. It is helpful to include managers with their staff so they can be on board with what needs to happen and understand the technical issues
- Strive for employee…
  - Awareness
  - Responsibility
  - Accountability
  - Transparency…at all levels of the institution

Training Opportunities

- 3 major training sessions in 2007
  - Security Essentials
  - VISTA
  - Security Web Applications
  - Attended by 155 IT staff from both WL and Regional campuses
  - $2145/person training facilitated locally for $500/person
- CISSP training (12 sessions) to provide certification option for IT staff. (material have actually been purchased by Ivy Tech for use in their curriculum)
- Second Annual October Security Awareness Month program presented national and campus experts
- Watch for October 2008 announcements!!!

Weaknesses

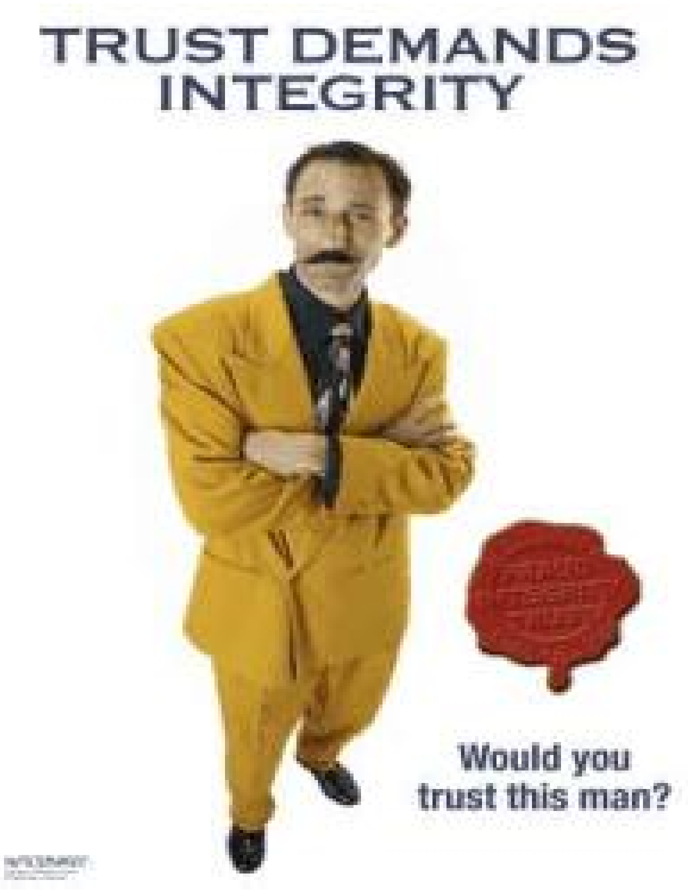
- Faculty Awareness
  - don’t tend to read things sent to them
  - believe they have “immunity” from prosecution
  - don’t want to be bothered
  - may share passwords to let IT staff perform computer work

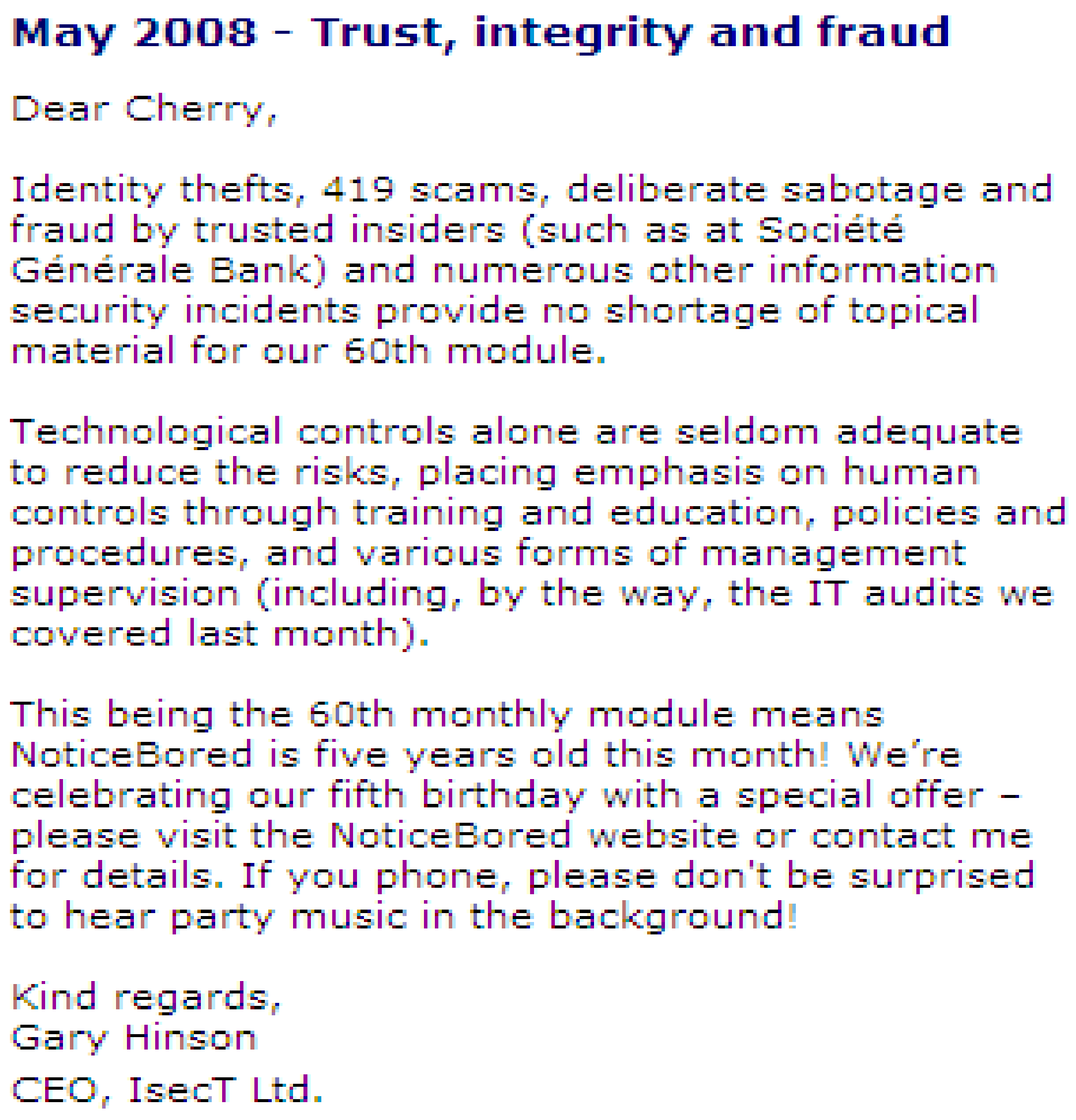
Weaknesses

- Students
  - think no harm will happen to them
  - trusting of others
  - don’t read things either
  - have more important things on their minds

PURDUE UNIVERSITY

The Human Factor





May 2008 - Trust, integrity and fraud

Dear Cherry,

Identity thefts, 419 scams, deliberate sabotage and fraud by trusted insiders (such as at Société Générale Bank) and numerous other information security incidents provide no shortage of topical material for our 60th module.

Technological controls alone are seldom adequate to reduce the risks, placing emphasis on human controls through training and education, policies and procedures, and various forms of management supervision (including, by the way, the IT audits we covered last month).

This being the 60th monthly module means NoticeBored is five years old this month! We're celebrating our fifth birthday with a special offer – please visit the NoticeBored website or contact me for details. If you phone, please don't be surprised to hear party music in the background!

Kind regards,
Gary Hinson

CEO, IsecT Ltd.

How to create an awareness program

- Continuing Security Awareness presentations
  - Introductory Series of 13 luncheons in 2006
  - CISSP Series of 12 presentations in 2007
  - Security Awareness Series of 7 Cybersecurity presentations for 2008

2006 CyberSecurity Events

- Targeted Data Handlers
- Changes in SSN handling laws
- Growing Awareness of need for data security

2007 Cybersecurity Events

- Targeted security and mobility
- Presented national and campus experts to speak
- Advertised to public to attend

Purdue information technology to mark Cybersecurity Awareness Month with series

WEST LAFAYETTE, Ind. — Nationally known academic and industry experts and a Purdue University student who was sued by the Recording Industry Association of America will speak during a series of lectures to mark October National Cybersecurity Awareness Month.

Purdue information technology to mark Cybersecurity Awareness Month with series

- The IT Networks and Security unit of the Office of Information Technology at Purdue has organized the series of forums that will take place on Wednesdays, Oct. 10, 17, 24 and 31. Sessions will take place from 9-11 a.m. in Stewart Center's Fowler Hall on each of those days. The speeches are free and open to the public.
- A "Security Halloween" contest also will be part of the final lecture on Oct. 31. Participants will dress in cybersecurity-related costumes, and prizes will be awarded.

October CyberSecurity 2007

- On Oct. 10, the topic is "Internet Riding Safely." Talks on appropriate information to display on Facebook
- Neil Daswani, an engineer from Google, also will discuss how engineers can go about learning what they need to know to prevent significant data security vulnerabilities.
- "Cybercrime and Copyright Infringement" The Purdue student, Amber, will talk about her experiences from being sued by the Recording Industry Association of America.

October CyberSecurity 2007

- Chris Burgess, a senior security adviser and chief scientist for CISCO Systems Inc., will speak on intellectual property strategies, and Marcus Rogers, a Purdue professor of computer and information technology, will speak on the law and cyber forensics.
- "Future Destinations: Trends in Technology." George Heron, a vice president and chief scientist for McAfee Inc., a company that specializes in intrusion prevention and security risk management, will speak.
- The series concludes on Oct. 31 with "Destination Unknown." Gerry McCartney, vice president for information technology and chief information officer, will speak on what higher education might look like in the year 2020.

October Cybersecurity 2008

- Focus on Secure mobility
- 4 events throughout October
- Security quiz for students with prizes: grand prize is touch iPod with 32 gb
- Conclude with annual Security Halloween contest

- We always have a CyberSecurity Awareness Halloween contest

Root Kit