Teaching **SPAM** and Spyware at the University of C@1g4ry

UNIVERSITY OF
CALGARY

John Aycock
Department of Computer Science
University of Calgary
Calgary, Alberta, Canada

Why Teach Spam & Spyware?

- Spam and spyware are legitimate areas of security research
- Spam and spyware are major problems for our computer-connected society
- Universities should produce graduates educated about, and able to help solve, society’s problems

Why Teach Spam & Spyware?

- Spam and spywar as
  of securi
- s
  f
- U aduates
  ed able to help solve,
  soc problems

Why aren’t *more* universities teaching their students about this?

Why Spam <u>and</u> Spyware?

- They both start with the letter "S"
- Historical reasons
  - We already have a course on computer viruses and malware
- It's about information
  - Stolen
  - Volunteered
  - Surrendered under false pretenses

About the Course

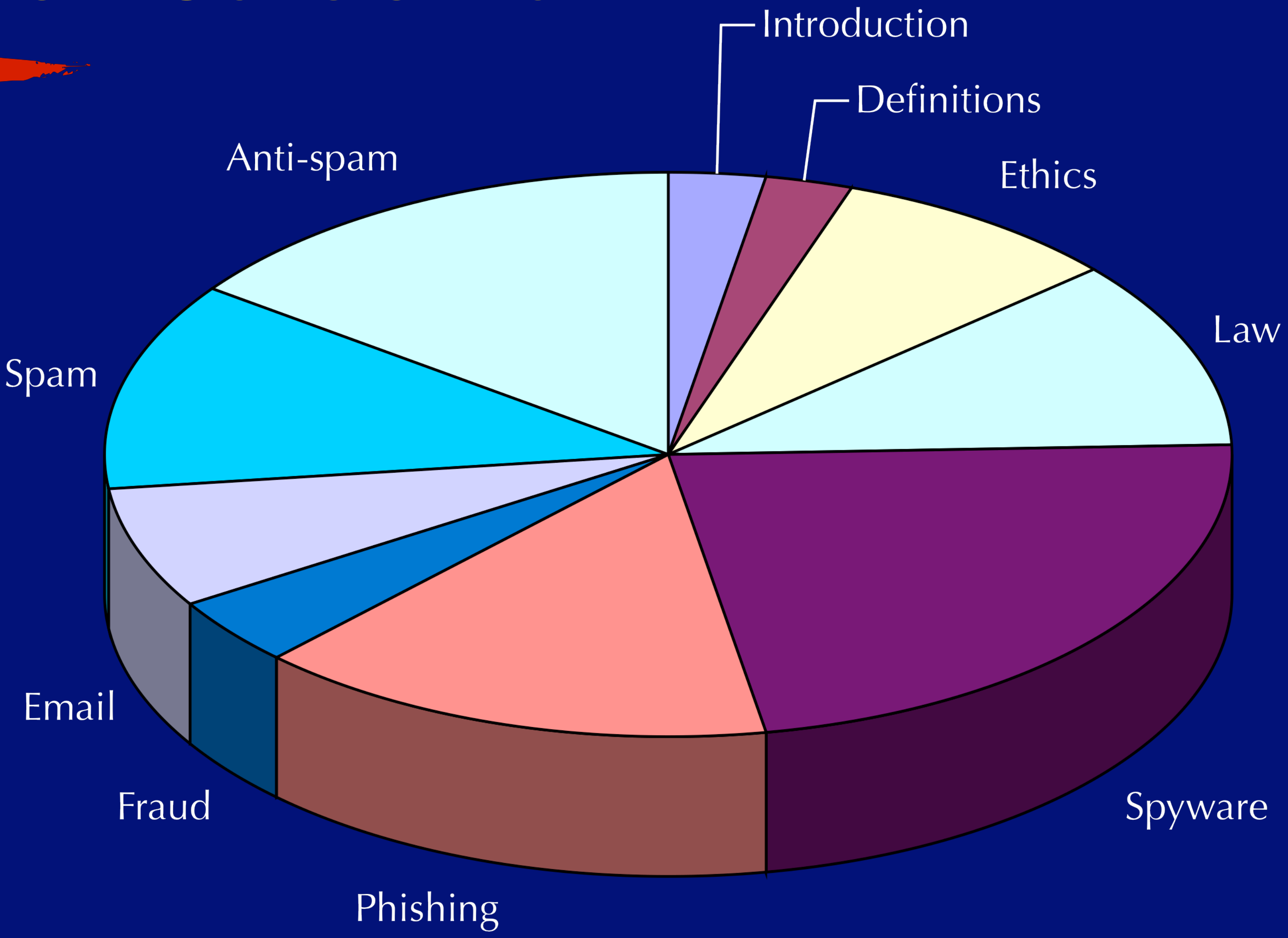
- First offered in fall 2005
- 13-week computer science course
- 150 minutes of lecture time/week
- Offered at 4th-year/senior undergraduate and graduate levels
- Hands-on approach taken; students write
  - Spamming and anti-spam software
  - Spyware and anti-spyware software

Why Hands-On?

I hear, and I forget.
I see, and I remember.
I do, and I understand.

- Anonymous

Course Content



Course Admission

- No “sitting in” or auditing lectures; student identities verified by instructor
- Undergrad admission requirements:
  - GPA requirement
  - Computer Science students
  - 4th-year or higher
  - Admission essay
- Maximum of 16 students

Secure Lab Facility

- Secure environment created in part through lab protocol, legal agreement, law & ethics lecture content
- "Medium-security" facility
  - Separate locked room
  - Isolated network
  - Computers locked down, literally and figuratively
- SMTP servers, proxy server, DNS

Assignments

- One written ethics assignment
- Four programming assignments done in the secure lab:
  - Spyware - startup hooks, keylogging
  - Anti-spyware - detection, identification, removal
  - Spam - bulk mailing software
  - Anti-spam - filtering
- Pairs of offensive/defensive assignments

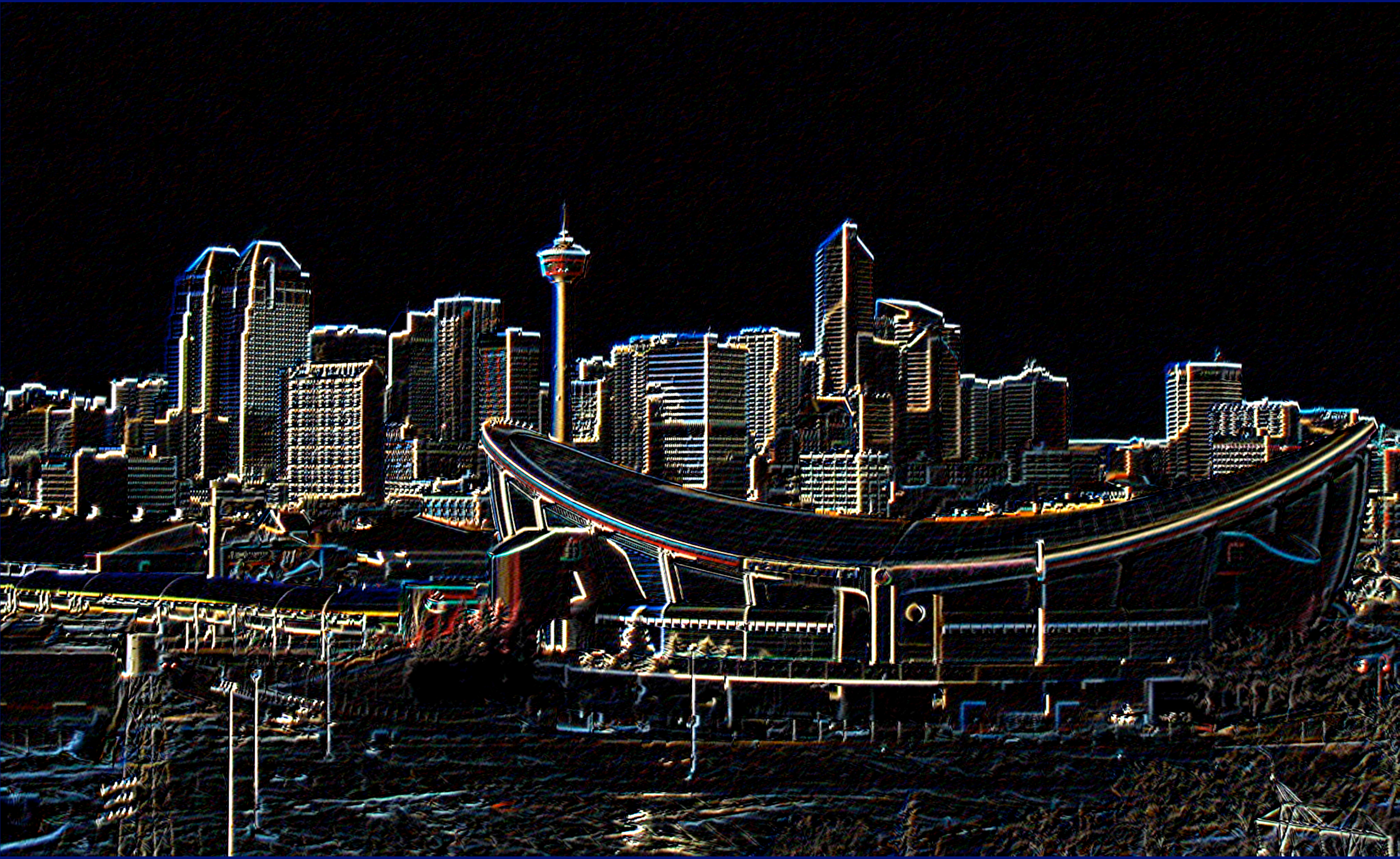
Conclusion

- Spam and spyware can be taught safely and effectively
- Spam and spyware *should* be taught
- “Education” isn’t only for end-users; the next generation of defenders needs to be educated too

Conclusion

- Spam and spyware can be taught safely and effectively
- Spam and spyware *should* be taught
- “Education” isn’t only for end-users; the next generation of defenders needs to be educated too

- For industry: our students are some of the best-trained in the world (hint, hint)



Teaching Spam and Spyware at the University of C@1g4ry
John Aycock <aycock@cpsc.ucalgary.ca>