

NSERC ISSNet: Internetworked Systems Security Network

Overview

February 2013

<https://www.issnet.ca>



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What is ISSNet?

- NSERC Strategic Network, currently in year 5 of 5
- \$1 million/yr x 5 yrs (NSERC funding) plus partner funds
- computer and Internet security research (cyber-security) emphasizing computer systems and human elements, and experimental or observational approaches
- "hands on" research, directly related to the Internet
- involves leading Canadian researchers in computer and network security and related areas from academia, with partners from industry, provincial and federal governments

Who is ISSNet?

University team:

- 15 Profs at 8 Canadian Universities (1 Tier-1, 3 Tier-2 Canada Research Chairs, two Heads of Computer Science departments)
- 4 Research Collaborators
- 2 Postdoctoral Fellows, 3 Postdoctoral Collaborators
- 31 PhD students
- 25 Masters students

Non-NSERC sponsoring partners:

- 3 Government partners (CFNOC, CSE, Province of BC)
- 4 Industry (Bell, CA, RIM, Trend Micro)
- 1 University (Carleton University)

Network Goals

- To foster computer security research within Canadian universities
- To train tomorrow's computer network security experts: address critical shortage of skilled researchers, architects
- To help industry and government: transfer expertise to Canadian companies, government
- To provide new technology solutions & Internet security innovation, including methods to enhance usability and security (with focus on human-computer interaction)

ISSNet Moving Forward

- Computer internet security remains of vital importance to Canadian society, thus continued focus is needed on:
 - research to protect against new, evolving threats
 - training of ongoing pool of security experts
 - collaboration among academic, public sector and industry communities to address info security risks
- Privacy: growing public awareness and new regulations are causing increased need for expertise, knowledge
- Importance of security and privacy growing in many verticals (healthcare, financials, government)
- Exploring funding options for the future

Supplementary Information: Theme and Project Organization

Theme 1	Theme 2	Theme 3
Network-Oriented Security	Software Systems-Oriented Security	Human-Oriented Security
Security involving communications networks	Security involving network-accessible computers	Issues associated with the human element and information visualization
1.1 Network Traffic Classification & Analysis 1.2 Enterprise Defense & Network Hardening 1.3 Botnet Analysis & Supporting Infrastructure	2.1 Software System Hardening & VMM Technologies 2.2 Ensuring Software Integrity of Hosts 2.3 Host-based Detection of Malicious Activity	3.1 Usability of Authentication & Access Control Mechanisms 3.2 Human Behaviour & Computer Security 3.3 Visualization for Understanding Network Behaviour & Security Management

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Sponsoring Partner Benefits

Access to:

- World-class researchers
- Upcoming talent (PhD students, Postdoctoral Fellows)
- Early review of cutting-edge research results
- High quality, cost-effective university-partner research collaborations
- Member resources on ISSNet web site

Potential to:

- Reduce overhead costs for collaborative research
- Influence direction of ISSNet research
- Serve on ISSNet boards and committees
- Attend and contribute to ISSNet summer schools and workshops

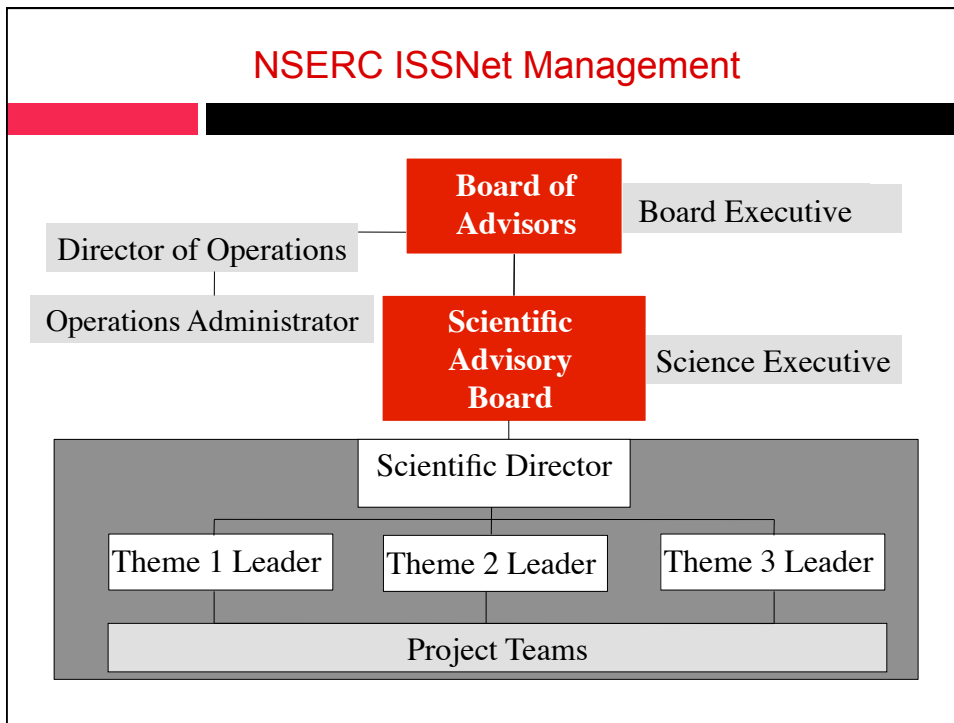
More information at: <https://www.issnet.ca>

More Positive Results Reported at end of Year 4

- Upward of 150 students involved with graduate-level and world class research within ISSNet scope
- Over 200 publications, a majority refereed papers at top conferences and in leading journals
- 48 ISSNet grads hired in academia, industry and government, 7 alumni hired as faculty in inter-network security, more than 60 graduate students continuing their work
- Among strongest contributors to international ACM SOUPS (Symposium on Usable Privacy and Security conference)
- ISSNet Researchers presenting at and contributing to the organization of major international conferences such as USENIX Security Symposium and ACM CCS Computer and Communications Security Conference

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NSERC ISSNet Management



Board of Advisors (BOA)

1. Bill Aiello, Theme 1 Leader, Professor, UBC
2. Pierre Boucher, Deputy Chief Information Officer, Treasury Board Secretariat
3. *Jim Brookes, ISSNet Board Chair, President, JRL Consulting
4. Rémy Chabot, Portfolio Manager, NSERC (Ex-officio, Non-voting)
5. *Andrew Csinger, Entrepreneur in Residence, UBC
6. Robert Dick, Director General, National Cyber Security Directorate, Public Safety
7. David Dietz, Director of University Relations, Research in Motion
8. Kim Matheson, VP (Research & International), Carleton University
9. *Shirley McKey, ISSNet Director of Operations, Carleton University (Ex-officio, Non-voting)
10. Mike Milinkovich, Executive Director, Eclipse Foundations Inc.
11. Brian O'Higgins, President, Brian O' Higgins & Associates
12. *Paul Van Oorschot, ISSNet Scientific Director, Carleton University
13. Rob White, VP, Mergers & Acquisitions, IBM Software Group

*Member of Board Executive

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1. *Bill Aiello, Theme 1 Leader, Professor, UBC
2. *Robert Biddle, Theme 3 Leader, Professor, Carleton U
3. *David Lie, Theme 2 Leader, Professor, U of Toronto
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5. John McHugh, Adjunct Professor, U of NC at Chapel Hill
6. Andrew Patrick, IT Research Analyst, Privacy Commission
7. Niels Provos, Principal Software Engineer, Google
8. *Paul Van Oorschot, Scientific Director, Prof., Carleton U

*Member of Science Executive

Network Co-investigators

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| 1. Bill Aiello (UBC) | 9. David Lie (U of Toronto) |
| 2. John Aycok (U. Calgary) | 10. Stephen Neville (UVic) |
| 3. Kosta Beznosov (UBC) | 11. Anil Somayaji (Carleton U) |
| 4. Robert Biddle (Carleton U) | 12. Paul Van Oorschot
(Carleton U) |
| 5. Sonia Chiasson (Carleton U) | 13. Andrew Warfield (UBC) |
| 6. José Fernandez (École
Polytechnique de Montréal) | 14. Carey Williamson
(U. Calgary) |
| 7. Philip Fong (U. Calgary) | 15. Nur Zincir-Heywood
(Dalhousie U) |
| 8. Scott Knight (Royal Military
College of Canada) | |