



Information Trust Institute Overview

US-China Summit Delegation Visit

William H. Sanders

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www.iti.uiuc.edu

ITI Vision: Trust in Society

Trust is about **public confidence**: It's about security, availability, safety, survivability, and correctness. It's about both the system itself (broadly defined), and the perception of the human's that interact with that system.

Society needs systems that it trusts and that are worthy of that trust:

- Dramatic societal and economic advances can result from trustworthy systems
- Conversely, loss of public trust could have devastating economic & social consequences
- Using societal and industrial problems to drive research and education efforts, ITI develops solutions by...

Designing in Trust

Providing system design & validation tools, and architectural constructs to deploy and validate trustworthiness in critical applications & systems

Ensuring Public Confidence

Providing designers and agencies with the tools to measure and validate trust in critical applications and systems

Providing Public Education

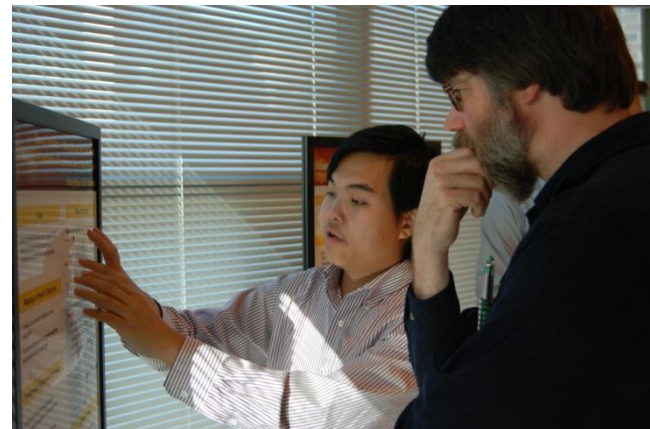
Addressing workforce needs: university & college programs, professional programs, public awareness

ITI Today

- Combines:
 - unique, broad strength of UIUC faculty in **computing and information technology**
 - faculty/department **expertise across campus** in specific application areas, and in human and economic endeavors
- Leverages **multi-disciplinary excellence** for maximum impact, using societal and industrial problems to drive research
- Significant Successes and Accomplishments to Date:
 - Large (90+) coalescence of ITI community of faculty and senior researchers
 - Considerable external core research funding (30 Million +) plus 100+ smaller research projects and creation of new research centers
 - Major industrial and government partnerships established and being formed (35% of funding from industry)

ITI: A Campus-Wide UIUC Effort

- 90 + Faculty Members and Senior Researchers
- Broad Cross-Campus Membership:
 - College of Agricultural, Consumer and Environmental Sciences
 - Agricultural and Biological Engineering
 - College of Applied Health Sciences
 - Community Health
 - Disability Resources and Educational Services
 - Kinesiology
 - Speech and Hearing Science
 - College of Business
 - Business Administration
 - College of Engineering
 - Aerospace Engineering
 - Bioengineering
 - Civil and Environmental Engineering
 - Computer Science
 - Coordinated Science Laboratory
 - Electrical & Computer Engineering
 - Industrial & Enterprise Systems Engineering
 - Mechanical Science and Engineering
 - College of Law
 - Intellectual Property & Technology Law
 - College of Liberal Arts and Sciences
 - Atmospheric Sciences
 - Chemical and Biomolecular Engineering
 - Linguistics
 - Mathematics
 - Political Science
 - Psychology
 - Statistics
 - National Center for Supercomputing Applications (NCSA)
 - Program in Arms Control, Disarmament, and Int. Security (ACDIS)



ITI Partnerships

- 50+ Industry Partnerships in Critical Diverse Application Areas, including:

- AMD
- AT&T
- Boeing
- Sun
- HP
- Hewlett-Packard
- IBM
- KEMA
- Open Systems International
- PowerWorld
- Rockwell Collins
- SAIC
- Trusted Computer Solutions
- Xilinx

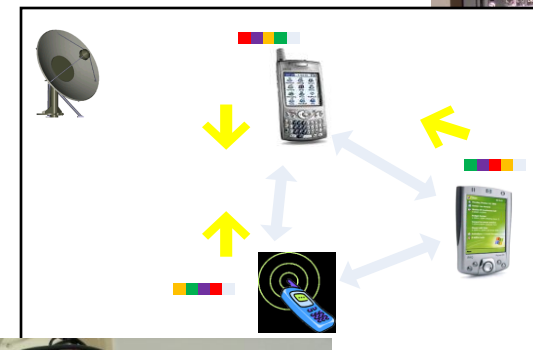
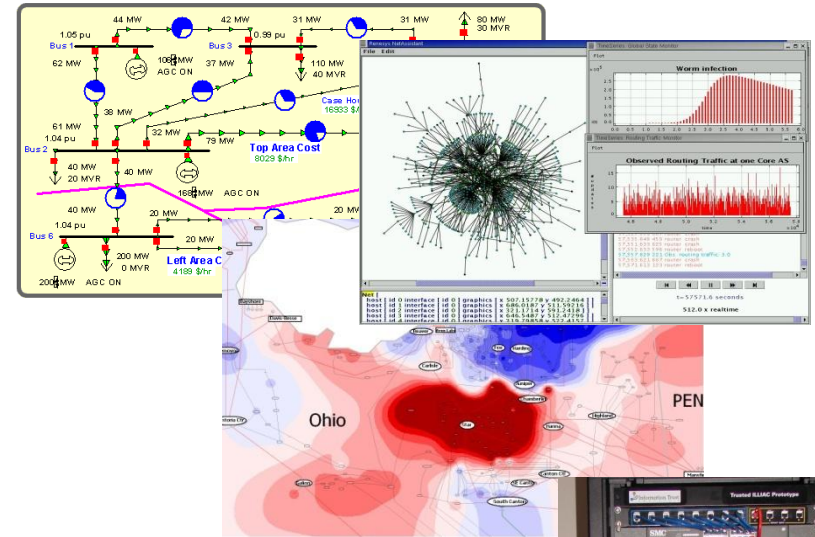
- Government Partnerships

- Department of Homeland Security (DHS)
- State of Illinois Department of Commerce & Economic Opportunity (DCEO)
- Department of Energy
- National Science Foundation
- Sandia National Laboratory
- Pacific NW National Laboratory (PNNL)
- US Small Business Administration (SBA)
- Singapore A*STAR and SERC
- European Union



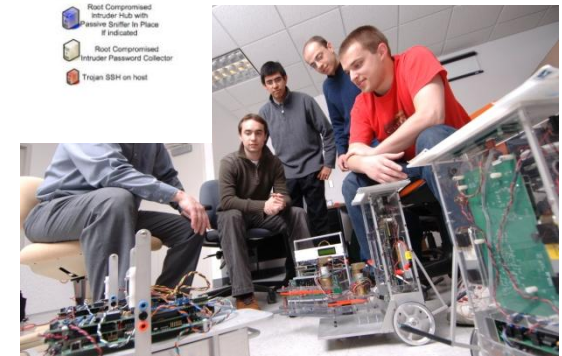
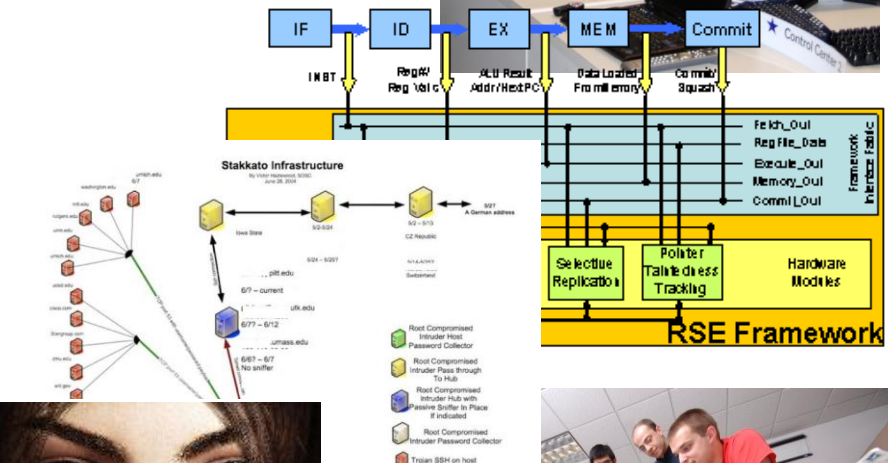
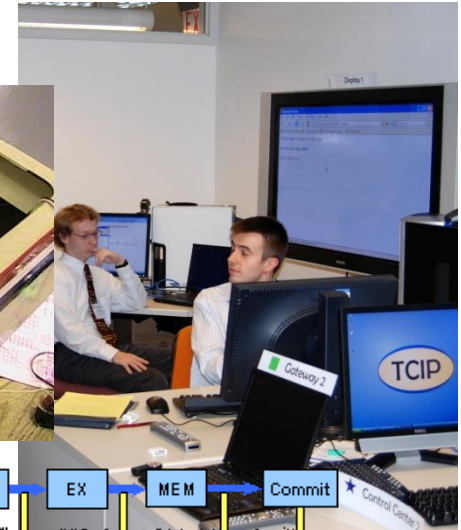
Research Themes

- Critical Applications, Infrastructures & Homeland Defense (David Nicol, lead)
 - Protecting the critical applications of today's society; how to design, build, and validate large cyber infrastructures that rely on computer networks and systems
- Multimedia and Distributed Systems (Klara Nahrstedt, lead)
 - Ensuring that software used in multimedia and other distributed systems (from IPTV on cell-phones to tele-immersive collaborative environments) is secure, is reliable, and operates correctly.
- Embedded & Enterprise Computing (Wen-mei Hwu, lead)
 - Meeting the needs of business to provide trust in computer-based embedded (from automobiles to microwave ovens) enterprise computing settings



Current ITI Research Centers

1. Boeing/UIUC World Partnership in Trusted Software (B. Vojak & B. Sanders, leads)
2. TCIP: Trustworthy Cyber Infrastructure for Power (B. Sanders, lead)
3. Trusted ILLIAC - *Trustworthy System Testbed & Concept Demonstration* (Ravi Iyer, lead)
4. NCASSR - Nat. Center for Adv. Systems Security Research (V. Welch & R. Butler, leads)
5. CAESAR: the Center for Autonomous Engineering Systems and Robotics (M. Spong, lead)
6. CIF: Center for Information Forensics (P. Moulin, lead)



ITI Education Activities

- Center for Information Assurance Education (Roy Campbell, lead) won re-designation as a NSA Center of Academic Excellence in Information Assurance Education for 2006-2009
- Developed 7 new courses; Published course roadmaps in 5 trust areas
- Sponsored Cyber Defense Competitions
- Developed applets and middle school course materials
- Successful ITI undergraduate summer research fellowship program (32 applicants this year)

