CINC UP: CYBERSECURITY RESEARCH ACCELERATION TRANSITION TO PRACTICE (TTP) WORKSHOP AND SHOWCASE (NSF #1650445)

April 26, 2017
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AGENDA

• Goals and Approach for Cybersecurity Research Transition to Practice Acceleration
• University CIO Perspective on Leveraging Cybersecurity Research, Bruce Maas, University of Wisconsin-Madison
• Cybersecurity Researcher Presentations
  – Identity & Access Management and Network Security
    – Jim Basney, University of Illinois at Urbana-Champaign
    – Roberto Perdisci, University of Georgia
    – Ted Allen, Ohio State University
    – Christian Collberg, University of Arizona
  – Smart Grid – Aranya Chakrabortty, North Carolina State University
  – Cloud Security & Storage – Radu Sion, Stony Brook University
  – Data Analytics & Security
    – Alex Rasin, DePaul University,
    – Raju Gottumukkala, University of Louisiana-Lafayette
  – Internet of Things
    – Fareena Saqib, Florida Institute of Technology
    – Michael Anderson, University of Hartford, Susan Anderson, University of Connecticut
End-to-End Trust & Security was one of the top three focal areas identified in a May 2015 Internet2 member innovation survey.

E2E Trust & Security (E2ET&S):
- TIPPS for IoT – Trust, Identity, Privacy, Protection, Safety, Security
- NSF EAGER Cybersecurity Transition to Practice (TTP) Acceleration
- SDP (Software Defined Perimeter), Network Segmentation for IoT

Distributed Big Data & Analytics (DBDA):
- Health & Life Sciences / Genomics
- Smart Campuses and Cities
- NSF Big Data Hub Collaboration

Internet of Things (IoT):
- IoT Sandbox
- Smart Campuses and Cities
- Smart Grid Testbed
Internet2 Collaborative Innovation Community has grown to 335+ individuals representing 135 institutions that can be leveraged for cybersecurity research matchmaking. As of April 12, 2017
Challenge:
• Accelerate Transition To Practice (TTP) of NSF funded later stage cybersecurity research into operational Research & Education (R&E) environments through applied research pilot deployments

Solution:
• Identify & assess inventory of NSF cybersecurity research assets ready for applied research pilot phase
• Interview researchers & practitioners for needs/learnings/best practices
• Leverage Internet2 community (300+ universities, 40+regional network) to enable “matchmaking” between researchers and academia IT/NW operations for pilots/testing
• Deploy webinars, portal, in person events for researcher/IT matchmaking
• Identify cybersecurity needs/gaps

Scientific Impact:
• Increase awareness of cybersecurity research & capabilities
• Accelerate cybersecurity transition to practice in the near to mid term to make cyberspace safer
• Identify cybersecurity needs to inform future NSF solicitations

Broader Impact:
• Enable partnership for NSF TTP with other Federal agency programs, including DHS, SBIR, etc. to accelerate and streamline the TTP pipeline
• Enable a more diverse research and education pipeline partnering with Society of Women Engineers and others

Award Number: 1650445
Internet2
PI: Florence Hudson, SVP/Chief Innovation Officer
# Cybersecurity TTP Acceleration Project Plan

Start Date August 2016

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<th>Step</th>
<th>Project Activities</th>
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<td>1</td>
<td>Project team in place</td>
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<td>Develop NSF Research Asset Inventory</td>
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<td>Interview NSF, researchers, practitioners, universities, industry, labs, DHS, other agencies</td>
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<td>Develop researcher/practitioner match-making showcase -online, events</td>
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<td>Develop TTP R&amp;D showcase and technical workshops</td>
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<td>Deploy workshops</td>
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<td>Design, develop NSF TTP Portal</td>
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<td>Develop materials for NSF TTP Portal</td>
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<td>9</td>
<td>Deploy NSF TTP Portal</td>
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<td>Assess TTP program and develop recommendations</td>
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SME Interview insights regarding TTP acceleration

**Cybersecurity Researchers**
- Key needs for TTP identified: Funding from NSF and others, early user feedback
- User feedback from pilot deployments critical to accelerate TTP
- Opportunity for acceleration of the TTP process at multiple steps
- Researchers like opportunity to leverage NSF TTP, DHS TTP, I-CORPS multiple agency support
- NSF TTP dollars sometimes perceived as small & cumbersome to capture, prefer working with VCs
- TTP not a priority for some researchers – looking to solve complex problems, not start a business

**Practitioners for Pilot Deployments**
- Practitioners need to know operational requirements for pilot use of TTP assets
- All size universities and regional networks interested in potential to test out / pilot cyber research early
- Smaller universities requested to participate in TTP as they have simpler approval processes
- Some universities unwilling to deploy unproven, non-production tested cybersecurity code

**Agencies**
- Interested in cross-agency collaboration opportunities for NSF and DHS to accelerate cyber TTP
CYBERSECURITY RESEARCHER PRESENTATIONS

- **Identity & Access Management and Network Security**
  - Jim Basney, University of Illinois at Urbana-Champaign
  - Roberto Perdisci, University of Georgia
  - Ted Allen, Ohio State University
  - Christian Collberg, University of Arizona

- **Smart Grid** – Aranya Chakrabortty, North Carolina State University

- **Cloud Security & Storage** – Radu Sion, Stony Brook University

- **Data Analytics & Security**
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- **Internet of Things**
  - Fareena Saqib, Florida Institute of Technology
  - Michael Anderson, University of Hartford, Susan Anderson, University of Connecticut
CINO Sponsored Schedule of Events at GS17

- **Sunday, April 23, 4:15-5:30pm**: CINC UP: CINO Program Advisory Group Meeting (Open), Meeting Room 15
- **Tuesday, April 25, 8-10am**: CINC UP: Collaborative Innovation Community Meeting: IoT, E2ET&S, Smart Campus, Renaissance Ballroom West B
  - Collaborative Innovation Community & Innovation Working Groups Update: IoT, E2ET&S, DBDA
    - Smart Campus Initiatives Update and invitation to participate
    - TIPPSS for IoT: ITANA Collaboration and White Paper
  - Smart Campus-themed Cybersecurity Transition to Practice Researcher Presentations
  - IoT Pedagogy
- **Wednesday, April 26, 7:30-8:30am**: CINC UP: NSF Big Data Innovation Hubs, Meeting Room 10/11
  - NSF Big Data Hubs and Spokes Overview by Fen Zhao, NSF, and René Bastón Northeast Big Data Innovation Hub ED
  - How to get involved, connections for researchers, regional networks, and IT
- **Wednesday, April 26, 12:30-5:30pm**: CINC UP: Cybersecurity Research Acceleration Transition To Practice (TTP) Workshop and Showcase (NSF #1650445), Meeting Room 8/9
  - Join us for an interactive discussion to determine how – working together – we can accelerate Transition To Practice (TTP) of cybersecurity research into operational environments. Regional networks, IT, industry, labs, students: everyone is invited.
  - University CIO Perspective on Leveraging Cybersecurity Research
  - Discussion, Pilot Opportunities, and Feedback, tell us what cybersecurity assets you need
  - Poster Session & Networking at breaks. Additional poster sessions on Monday and Tuesday: breakfast, lunch, breaks.
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