



2017  
**TECHNOLOGY**  
exchange

SAN FRANCISCO CA OCTOBER 15-18

**CINC UP: COLLABORATIVE INNOVATION COMMUNITY OPEN HOUSE  
AND ON-DEMAND LIGHTNING TALKS**

**FLORENCE HUDSON**

SVP and Chief Innovation Officer, Internet2

**EMILY NICHOLS**

Innovation Program Manager, Internet2

## CINC UP: OPEN HOUSE AND ON-DEMAND LIGHTNING TALKS

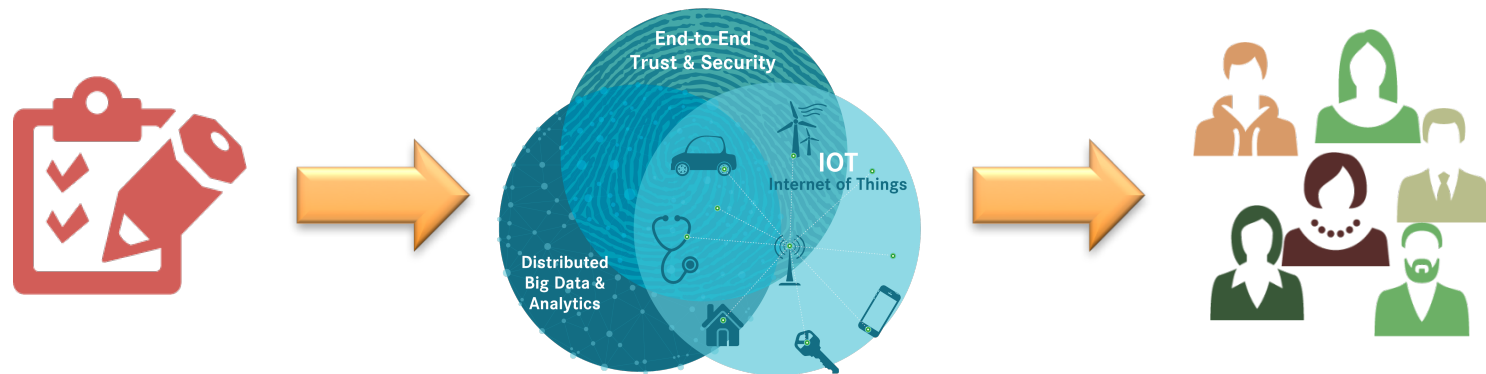
### AGENDA

- CINC UP Overview
- CINC UP Initiatives
- On-Demand Lightning Talks – JOIN IN!



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Internet2 Collaborative Innovation Community was created in 2015 based on a member survey of 8,800 individuals identifying their top areas of interest for **open, inclusive, collaborative innovation**.



- Three Innovation Working Groups launched at Global Summit in May 2015
- Now, 400+ Collaborative Innovation Community (CINC UP) participants, representing 170+ institutions (as of October 2017)

# Internet2 CINC UP combines three member-led innovation working groups, focused on areas brought forward by members, related to our top two priorities of advanced networking plus trust & identity.

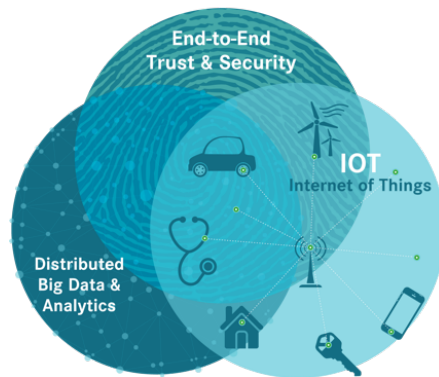
## E2E Trust & Security (E2ET&S)

- TIPPSS for IoT – Trust, Identity, Privacy, Protection, Safety, Security
- NSF EAGER Cybersecurity Transition to Practice Acceleration
- SDP (Software Defined Perimeter), Network Segmentation for IoT

Workshop  
Wednesday  
12:30-5:30PM

## Distributed Big Data & Analytics (DBDA)

- NSF Big Data Hub Collaboration
- Smart Campuses and Cities
- Health & Life Sciences / Genomics



## Internet of Things (IoT)

- IoT Sandbox
- Smart Campuses and Cities
- Smart Grid Testbed

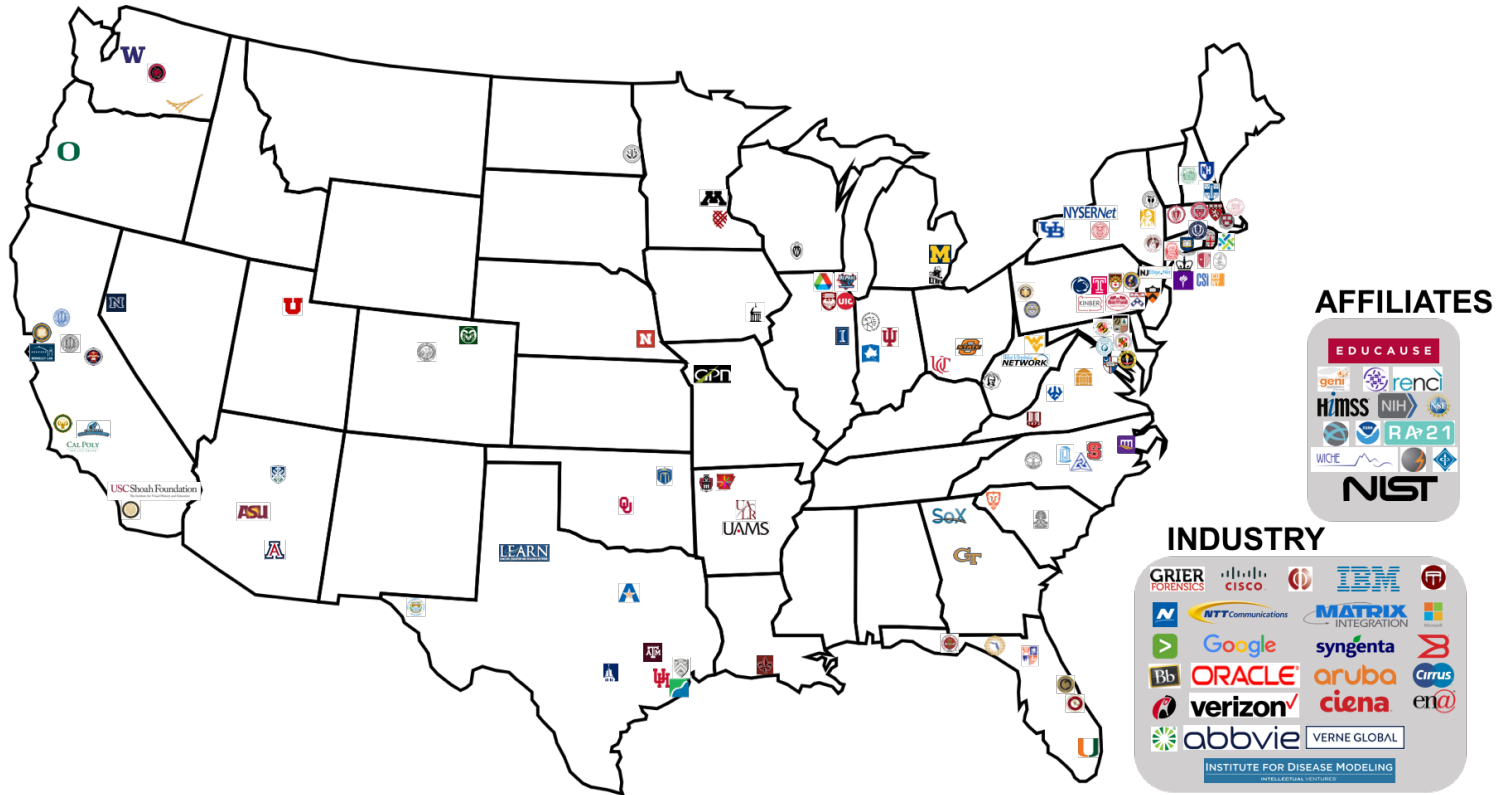
Join us! Email [CINO@Internet2.edu](mailto:CINO@Internet2.edu)



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Internet2 CINC UP in the US has grown to 380+ individuals, from 155+ organizations, representing 31% of Internet2 member institutions.



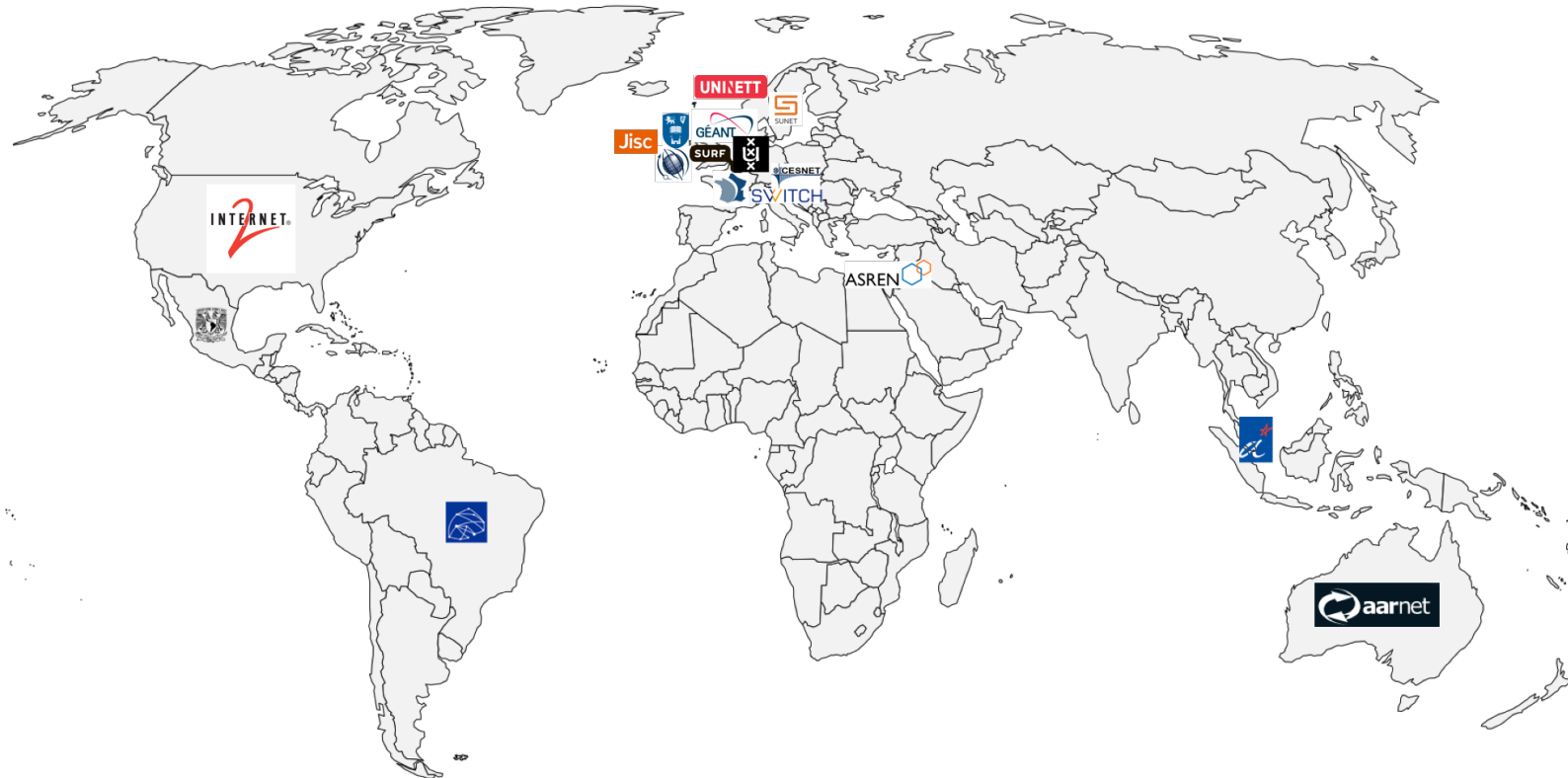
As of October 6, 2017



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Globally, the Internet2 Collaborative Innovation Community has grown to 400+ individuals, from 170+ organizations.



As of October 6, 2017



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## Bi-monthly CINC UP Calls are held on a variety of topics, universities, industry and affiliate member presentations welcome.

### IoT

- **Network Segmentation for IoT** presented by Cisco
- **OpenFog Consortium** presented by Princeton University
- **LoRa low-power WAN pilot for IoT research** presented by SURFnet (Netherlands)
- **Internet of Things Security and Blockchain** presented by IBM Blockchain Garage
- **AWS Greengrass: Unlocking the Promise of IoT** presented by Amazon Web Services
- **IoT Azure Suite** presented by Microsoft
- **IoT Pedagogy** presented by Marshall University, SUNY Cobleskill, Syracuse University
- **VR Environments for Evacuation Drills** presented by Bowie State University
- **Smart and Connected Digital Platform** presented by Cisco

Interested in participating?  
Email [CINO@Internet2.edu](mailto:CINO@Internet2.edu)

### E2ET&S

- **Privacy Decision Making in the Internet of Things** presented by Clemson University
- **CILogon 2.0 Service** presented by University of Illinois at Urbana-Champaign
- **Cyber-Physical Challenges in Wide-Area Control of Power Systems** presented by NCSU
- **Building a Global Network Reputation System** presented by University of Michigan
- **Security of Cyberphysical Systems** presented by Texas A&M University
- **Investigating Elderly Computer Users' Susceptibility to Phishing** presented by CO School of Mines

### DBDA

- **Supporting Digital Humanities** presented by UC Berkeley and UCLA



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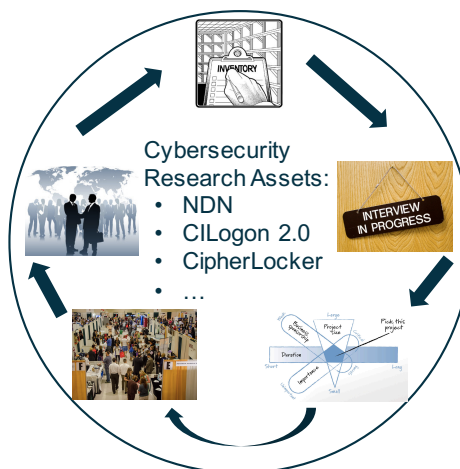
# NSF EARly-concept Grant for Exploratory Research (EAGER): Cybersecurity Transition To Practice (TTP) Acceleration

## Challenge

- **Accelerate Transition To Practice (TTP)** of NSF-funded later-stage cybersecurity research into **Research & Education environments**

## Solution

- Identify & assess NSF cybersecurity research **inventory**
- **Interview** researchers & practitioners for cybersecurity TTP needs, gaps and best practices
- **Leverage Internet2 community** to enable “matchmaking”
- Deploy webinars, portal, in-person **events for researcher/IT matchmaking**
  - San Francisco, Oct 18, 12:30-5:30pm



**Award Number:** 1650445  
**Internet2**  
**August 2016 – August 2018**  
 PI: Florence Hudson, SVP/Chief Innovation Officer  
 Team: Emily Nichols, Giselle Trent, Bruce Maas

## Scientific Impact

- **Increase awareness** of cybersecurity research & capabilities
- **Accelerate cybersecurity TTP** to make cyberspace safer
- **Identify cybersecurity needs** to inform future research

## Broader Impact

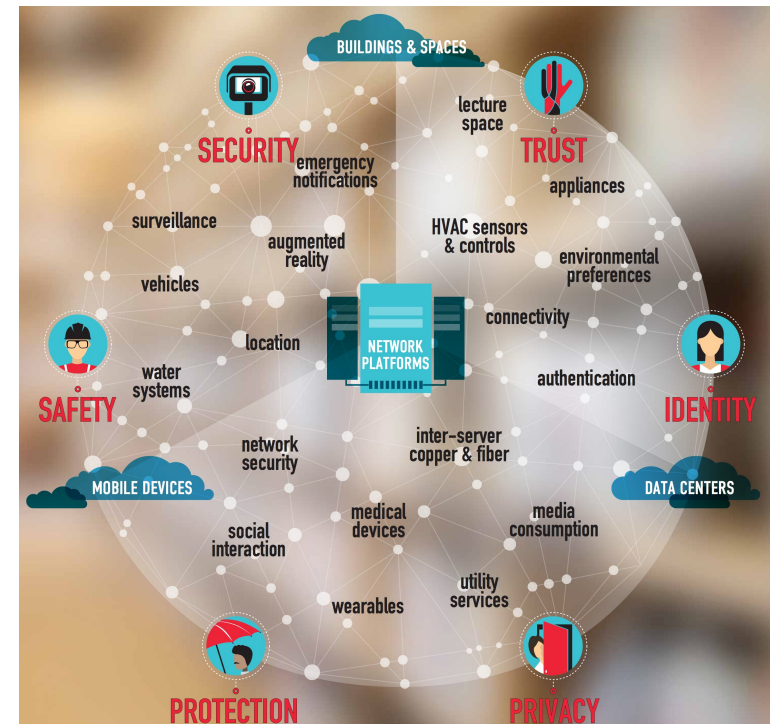
- Enable **partnership for NSF TTP with other Federal agency programs** to accelerate & streamline TTP pipeline
- **Enable more diverse R&E pipeline** partnering with Society of Women Engineers and others
- We need you in cybersecurity



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## TIPPSS for IoT is a growing need with device, data, & application growth. We need to design it into our systems and teach it.

- **Trust:** Allow only designated people/services to have device or data access
- **Identity:** Validate the identity of people, services, and “things”
- **Privacy:** Ensure device, personal & sensitive data is kept private
- **Protection:** Protect devices and users from harm – physical, financial, reputational
- **Safety:** Provide safety for devices, infrastructure and people
- **Security:** Maintain security of data, devices, people, etc.



## Initiatives to address TIPPSS challenges

- IoT Systems Risk Management Task Force – Deliverables 2017 Global Summit
  - “Finding IoT devices connected to your campus network using Shodan, Censys” brochure
  - “IoT Vendor Management Considerations for Higher Education” document
  - All on Internet2 CINO wiki
- Joint ITANA/Internet2 white paper “Internet-Of-Things – Preparing Campus for IoT”
- Microsoft Campus Connections Summit Identified Initiatives – Researcher Portal, IoT Lab Contest, Agile University, Cybersecurity Learning Hub
- U.S. National Telecommunications & Information Administration working groups
- Collaborative Innovation Community CINC UP activities
  - Monthly CINC UP calls on pertinent topics, e.g., Blockchain, network segmentation for IoT
- Cybersecurity Research Transition To Practice Acceleration workshops/matchmaking
  - US NSF Early Concept Grant for Exploratory Research



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## Smart Campus Initiative created based on member input & innovation working group use cases, with kickoff meeting at Global Summit 2016.

- Guided by a Smart Campus CIO Advisory Council
- Share best practices and recommendations to deploy Smart Campus capabilities
- Commissioned IoT Systems Risk Management Task Force
- Microsoft and Internet2 co-convened first annual Campus Connections Summit, Feb 2017, 140+ university “CIO + 1” attendees from around the world
- Internet2 developing a “Smart Campus e-book” with case studies and best practices: First Smart Campus Case Study available from Georgia Tech (<http://bit.ly/gtcasestudysc>)
- Princeton University hosted “Ethical Dilemmas of the Internet of Things on a Smart Campus” workshop, September 2017



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# Research & Education activities are growing in Smart Campus / Communities, IoT, end-to-end trust & security, big data & analytics, Smart Grid.

 <p>Smart Campus operations &amp; data analytics research</p>	 <p>Advanced Networking / Cybersecurity Research</p>	 <p>Smart Grid research</p>	<p>NC STATE UNIVERSITY</p> <p>Smart Grid research network testbed</p>
 <p>IoT Lab for Research and Pedagogy</p>	 <p>Smart transportation / IoT ethics <a href="#">research</a></p>	 <p>Cybersecurity Center of Excellence</p>	 <p>Smart Grid research and data sharing</p>
 <p>IoT Security, Privacy &amp; Ethics</p>	 <p>Trust, Identity, Protection, Privacy, Safety, Security</p>	 <p>IoT Systems Risk Management &amp; Security</p>	 <p><a href="#">Smart Campus operations</a>, trust and security</p>

- Blue - IoT research and pedagogy
- Green - IoT Smart grid research
- Orange - IoT security, privacy, ethics



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## Get involved in the Internet2 Collaborative Innovation Community!

- Join CINC UP Innovation Working Groups on Internet of Things, Distributed Big Data & Analytics, and End-to-End Trust & Security. Or, Special Interest Groups:
  - Cybersecurity Research Transition to Practice (TTP)
  - Health & Life Sciences / Genomics
  - IoT Ethics
  - Smart Campus
  - Smart Grid
  - TIPPSS (Trust, Identity, Privacy, Protection, Safety & Security) for IoT
- Join bi-monthly CINC UP calls on a variety of topics
- Participate in Internet2 hosted events like TechEx and Global Summit
- Email us! [CINO@Internet2.edu](mailto:CINO@Internet2.edu)



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## CINO Sponsored Schedule of Events at TechEx 2017

- **Monday, October 16, 1:30-2:20PM; Seacliff B: [CINC UP: NSF Big Data Innovation Hubs](#)**
  - Join Meredith Lee, the Executive Director of the @WestBigDataHub, as she discusses what the NSF sponsored Big Data Innovation Hub community is doing, from the hubs to the spokes, existing projects and collaboration, future opportunities, and how you can get involved
- **Monday, October 16, 2:30-3:20PM: [CINC UP: Collaborative Innovation Community Open House and On-Demand Lightning Talks](#); Seacliff B**
  - Join CINC UP Open House to learn about how you can engage in the CINC UP community, the topics discussed in our monthly CINC UP webinars, and peruse the deliverables and activities accomplished and planned
  - Bring an On-Demand Lightning Talk to share your own new ideas for collaborative innovation
- **Tuesday, October 17, 2:30-3:20PM: [CINC UP: Internet of Things Innovation Working Group and Smart Campus Initiative](#); Seacliff B**
  - Join this open session of the Internet of Things Innovation Working Group and Smart Campus Initiative to learn about key activities and deliverables available and planned to enhance your ability to lead your smart campus and IoT journey
  - Learn about the February 2017 Microsoft Campus Connections Summit initiatives
  - And share Smart Campus case studies like this one from [Georgia Tech](#)
- **Wednesday, October 18, 12:30-5:30PM: [CINC UP: Cyber Security Research Acceleration Workshop and Showcase](#); Pacific E**
  - *Separate registration is encouraged, but feel free to drop in*
  - 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
  - Cybersecurity Researcher Presentations on Network Security, Cybersecurity Learning, Identity & Access Management, and IoT



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