

INTERNET²
2017 global
SUMMIT

**CINC UP: CHIEF INNOVATION OFFICE (CINO)
PROGRAM ADVISORY GROUP OPEN MEETING**

April 23, 2017



CINC UP: CINO PROGRAM ADVISORY GROUP OPEN MEETING

AGENDA

- Welcome and Introductions
- Chief Innovation Office Goal and Process
- Collaborative Innovation Community (CINC UP) Evolution
- Open Discussion & Next Steps

Chief Innovation Office (CINO) Program Advisory Group Members

- Ed Aractingi, Marshall University, Interim Associate Vice President & CIO
- Mark Cather, UMBC, Chief Information Security Officer
- Alex Feltus, Clemson University, Associate Professor
- Sam Gustman, University of Southern California, Shoah Foundation, CTO
- Marc Hoit, NCSU, Vice Chancellor, Information Technology & CIO
- Ken Miller, Penn State, Network Engineer
- Scot Ransbottom, Virginia Tech, Chief of Staff and Deputy CIO
- Brian Stengel, University of Pittsburgh, IT Service Owner for Research
- Donna Tatro, Princeton University, Associate CIO, Enterprise Infrastructure Services
- Raj Veeramani, University of Wisconsin-Madison, Robert Ratner Chair Professor and Executive Director, UW IoT Systems Research Center

Chief Innovation Office (CINO) Goal

- To enable and increase member value from member-led innovation initiatives that focus on Internet2's top two priorities: advanced networking and trust & identity.
 - Enable the CINC UP Community and Innovation Working Groups to identify, support, and collaborate on pertinent innovation areas for the future needs of the Internet2 community
 - Develop repeatable model and framework for innovation identification and Innovation Working Group collaboration
 - Increase CINC UP participation to broaden value proposition for the Internet2 community

CINO PAG Goal

- The CINO PAG is the group of leaders of the Innovation Working Groups in the Collaborative Innovation Community sponsored by the Chief Innovation Office.
- These Innovation Working Groups include Distributed Big Data & Analytics, End-to-End Trust and Security, and the Internet of Things.
- Together the CINO PAG guides the focus areas, events, member communication, open collaborative innovation and Collaborative Innovation Community development in partnership with the Chief Innovation Office.

CINO Process and Value

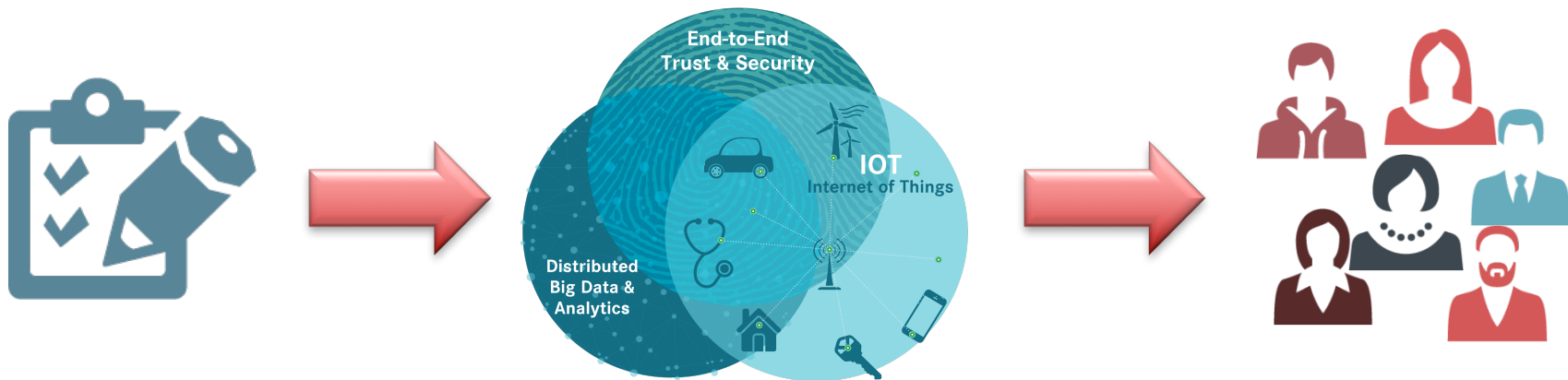
- **Identify** future innovation opportunities with our members
- Members **collaborate** to explore identified innovation areas
- Create **broad** member-led collaborative innovation community to explore identified innovation areas
- **Deepen** community collaboration and knowledge in pertinent innovation areas
- Develop **insights** and recommendations to support R&E community needs





Collaborative Innovation Program

Internet2 Collaborative Innovation Community Created in May 2015
Based on March 2015 Member Survey of 8,800 individuals in 300 institutions.
CULTURE: Inclusive membership, Open meetings, Open source results with
Universities, industry, networks, agencies, labs, international partners



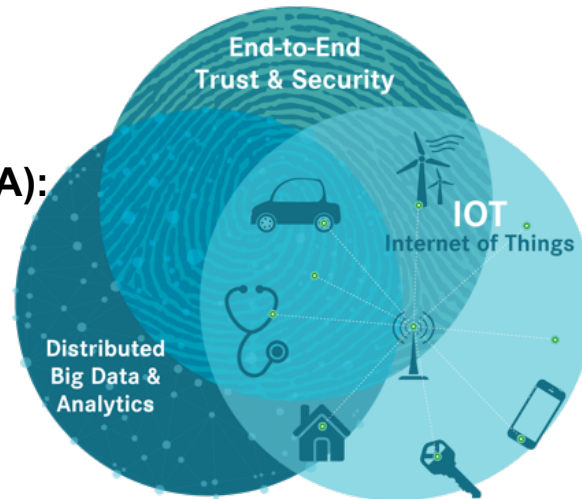
Collaborative Innovation Community is the combination of three member-led innovation working groups, focused on areas related to our top two priorities of advanced networking plus trust & identity.

E2E Trust & Security (E2ET&S):

- TIPSS 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

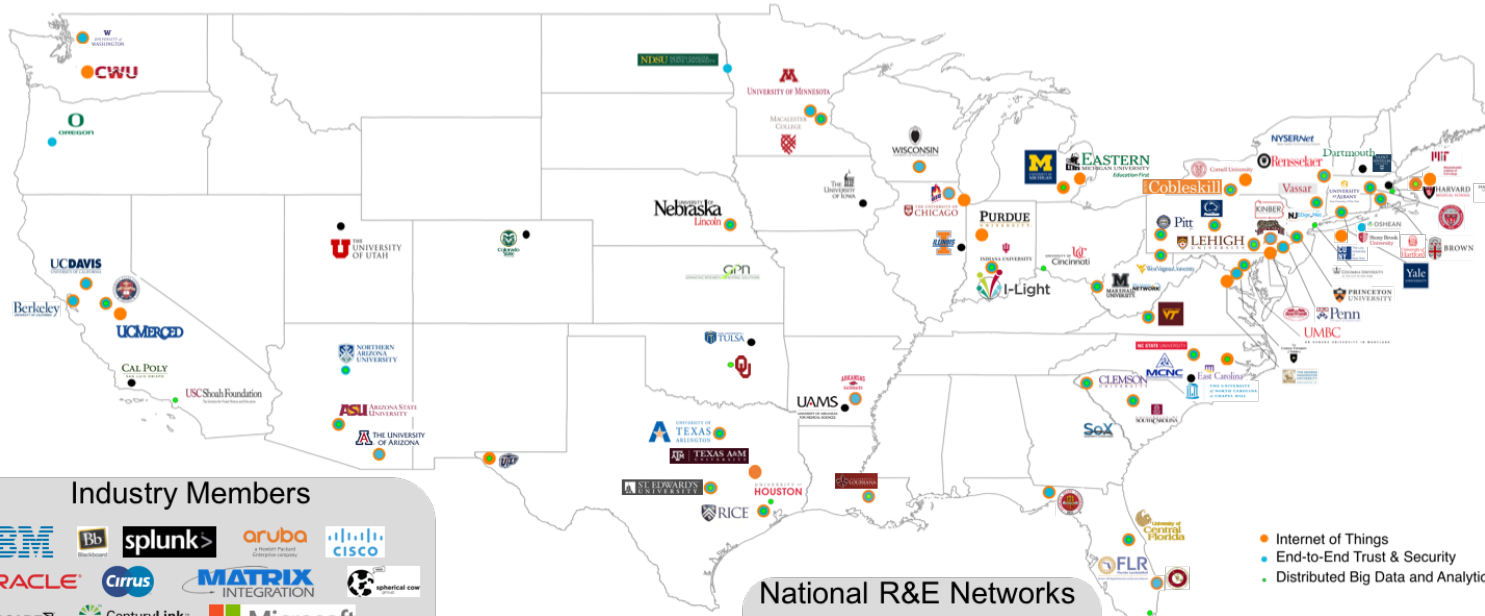
Collaborative Innovation Community (CINC UP) includes Special Interest Groups pertinent to use cases identified by members.

- Healthcare & Life Sciences / Genomics
- Smart Campus
- Smart Grid
- IoT Ethics
- Cybersecurity TTP

Join us! Email CINO@Internet2.edu



Internet2 Collaborative Innovation Community has grown to 335+ individuals representing 135 institutions.



Industry Members

IBM, Oracle, Microsoft, Cisco, Splunk, Aruba, Matrix Integration, Brocade, CenturyLink, Northrop Grumman, Intellect, Phylbridge, Ciena, Rackspace, Abbvie, Education Networks of America, etc.

National R&E Networks

aarnet, HEAnet, GEANT, UNINETT, SWITCH, NORDUnet, ASREN, etc.

Additional Organizations

HIMSS, Argonne, NIST, Internet Society, rencia, Trinity College, Universidad Nacional Autónoma de México, ESnet, IEEE, National Institute of Standards and Technology, WICHE, usignite, EDUCAUSE, etc.

As of April 12, 2017

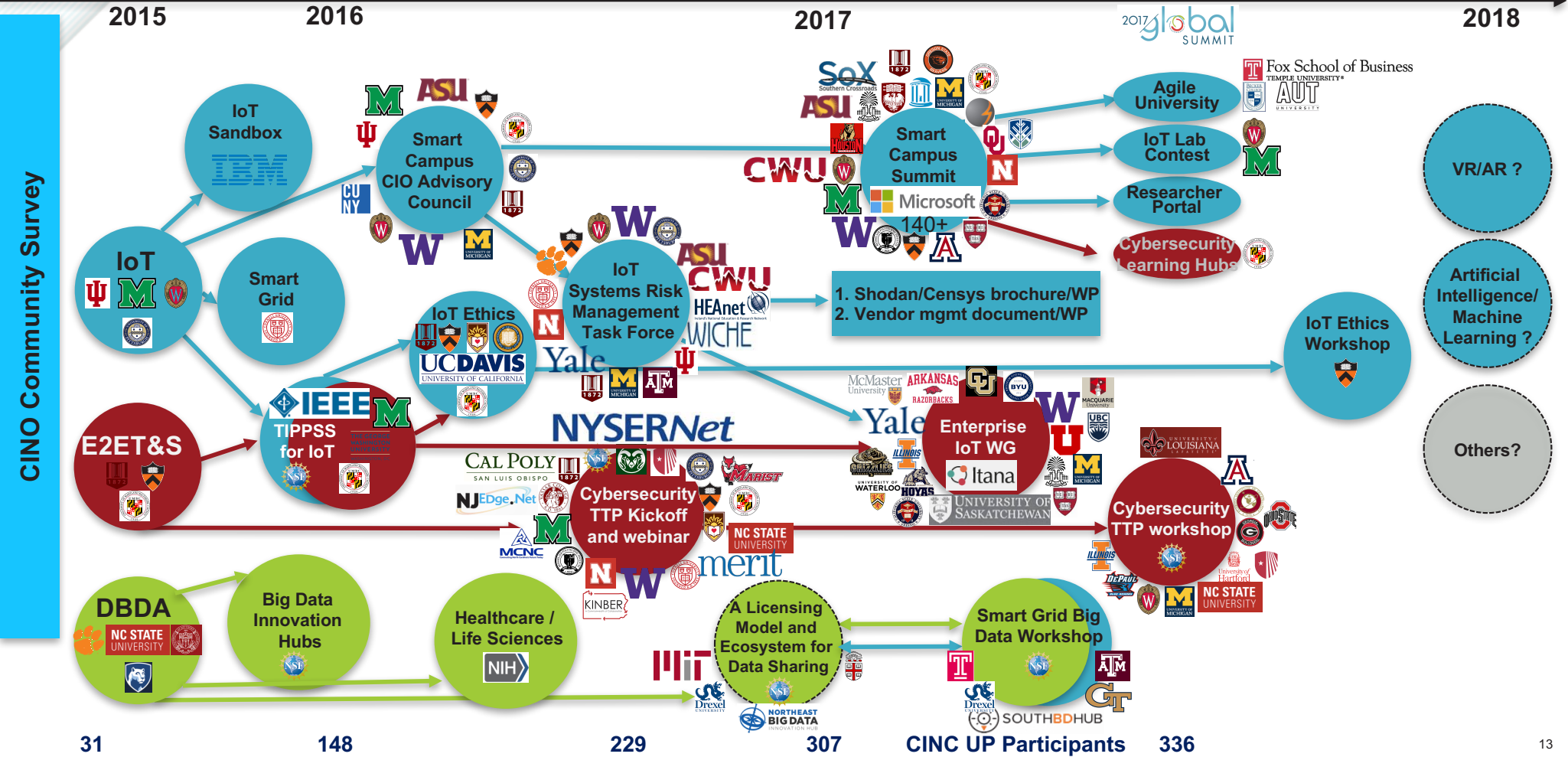
There are 336 participants in the CINC UP Community, representing 135 total unique organizations and 25% of total Internet2 Membership Organizations.

Member Category	# Member Organizations	% Member Category	# Total Individuals
Higher Ed	81	25%	195
Industry	19	25%	51
US Regional Networks	9	21%	17
Federal Affiliates	7	21%	9
Affiliates	6	21%	10
NREN	10	NA	16
International Higher Ed	2	NA	2
Internet2			36
TOTAL	135		336

CINC UP Community and CINO Deliverables

- **Collaborative Innovation Community / Innovative Working Group Monthly CINC UP Calls**
 - Presentations & discussions from members, SMEs on topics of interest to CINC UP Community
- **Cybersecurity Research Transition to Practice Acceleration Matchmaking**
 - 2016: TechEx 2016 kickoff, Matchmaking Webinar November with cyber researchers and practitioners
 - 2017: Workshop and Showcase at Global Summit, Regional Workshops, more webinars
- **Develop & Communicate Key Information Communications & Technology Trends for R&E**
 - Present broadly – 30 times across regional and university meetings
- **Internet2 Smart Campus Initiative**
 - Share best practices and recommendations to deploy IoT and Smart Campus capabilities
 - Global Summit and TechEx meetings
 - Engage industry members in collaboration with universities/regionals: IBM, Microsoft, Cisco
 - Microsoft Campus Connections Summit enabling new smart campus initiatives with Internet2 members
- **IoT Systems Risk Management Task Force**
 - Goal is to increase IoT systems risk awareness and provide deliverables to address risks, including:
 - Brochure on leveraging Shodan and Censys.io
 - IoT Systems Vendor Requirements Document
- **Member-led Thought Leadership**
 - ITANA / Internet2 led Enterprise IoT working group and TIPSS for IoT whitepaper effort
 - Enable collaboration across R&E in focal areas. e.g., Smart Grid and Smart Campus/Communities
- **Connect member-led innovation initiatives to Internet2 services organizations to inform future services**

CINC UP Evolution – Where to Next?



CINO Community Survey

Open Discussion & Next Steps

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
 - Smart Campus: IoT Systems Risk Management Task Force Update. Shodan & Censys.io demonstrations 4/24 & 4/25
 - TIPSS 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
 - 12 Researcher Presentations on Identity & Access Management, Network Security, Smart Grid, Cloud Security & Storage, Data Analytics & Security, and IoT
 - 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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There are 131 participants in the DBDA Working Group, representing 69 total unique organizations and 13% of total Internet2 Membership Organizations.

Member Category	# Member Organizations	% Member Category	# Total Individuals
Higher Ed	40	13%	66
Industry	13	17%	18
US Regional Networks	5	12%	9
Federal Affiliates	2	6%	2
Affiliates	3	10%	3
NREN	5	NA	9
Internet2			24
TOTAL	69		131

There are 150 participants in the E2ET&S Working Group, representing 79 total unique organizations and 15% of total Internet2 Membership Organizations.

Member Category	# Member Organizations	% Member Category	# Total Individuals
Higher Ed	46	14%	70
Industry	14	18%	20
US Regional Networks	7	16%	10
Federal Affiliates	5	15%	7
Affiliates	3	10%	5
NREN	3	NA	6
Internet2			32
TOTAL	79		150

There are 218 participants in the IoT Working Group, representing 99 total unique organizations and 18% of total Internet2 Membership Organizations.

Member Category	# Member Organizations	% Member Category	# Total Individuals
Higher Ed	58	18%	117
Industry	15	19%	37
US Regional Networks	8	19%	13
Federal Affiliates	3	9%	4
Affiliates	5	17%	6
NREN	7	NA	10
International Higher Ed	2	NA	2
Internet2			29
TOTAL	99		218