



2017
TECHNOLOGY
exchange

SAN FRANCISCO CA OCTOBER 15-18

CINC UP: INTERNET OF THINGS INNOVATION WORKING GROUP AND SMART CAMPUS INITIATIVE

FLORENCE HUDSON

SVP & Chief Innovation Officer, Internet2

KEN KLINGENSTEIN

Evangelist, Trust & Identity, Internet2

ROB CURTIN

Americas Regional Leader, Microsoft

CINC UP: IOT INNOVATION WORKING GROUP & SMART CAMPUS INITIATIVE

AGENDA

- Welcome and Introduction to IoT Innovation Working Group and Smart Campus Initiative, Florence Hudson
- ITANA/Internet2 Enterprise IoT Working Group, Ken Klingenstein
- Microsoft Campus Connections Summit Initiatives, Rob Curtin
- Closing, Florence Hudson



OCTOBER 15-18 · SAN FRANCISCO CA

Welcome and Introduction to IoT Innovation Working Group and Smart Campus Initiative

Florence Hudson

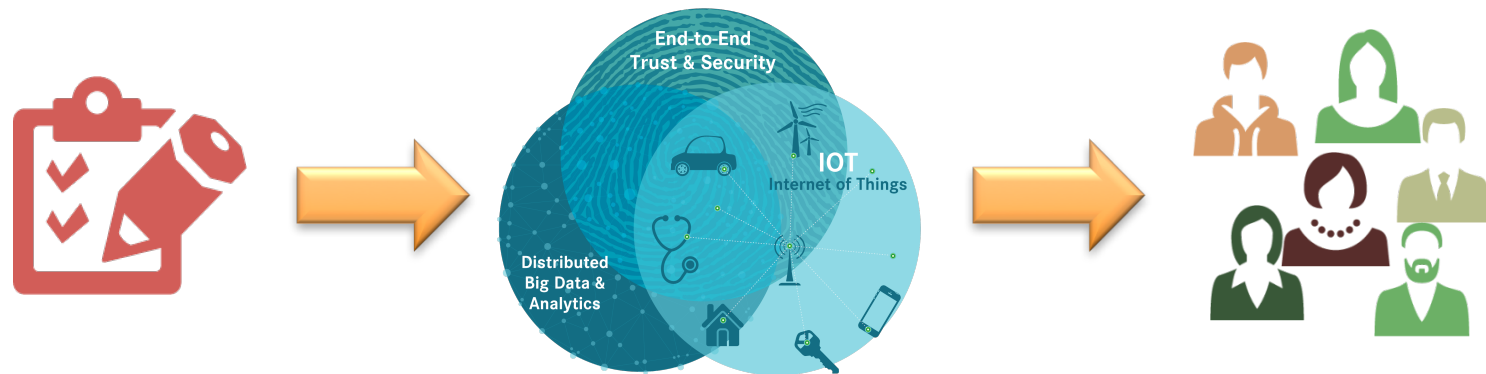
SVP and Chief Innovation Officer, Internet2



OCTOBER 15-18 · SAN FRANCISCO CA

[3]

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.

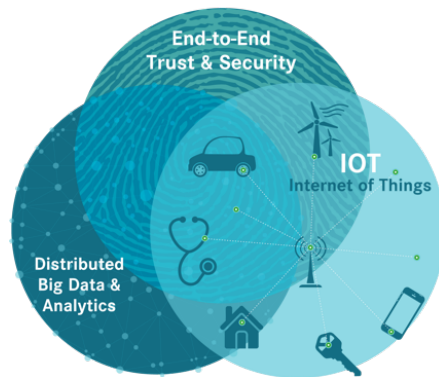
E2E Trust & Security (E2ET&S)

- TIPSS 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



2017
TECHNOLOGY
exchange

OCTOBER 15-18 SAN FRANCISCO CA

[5]

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



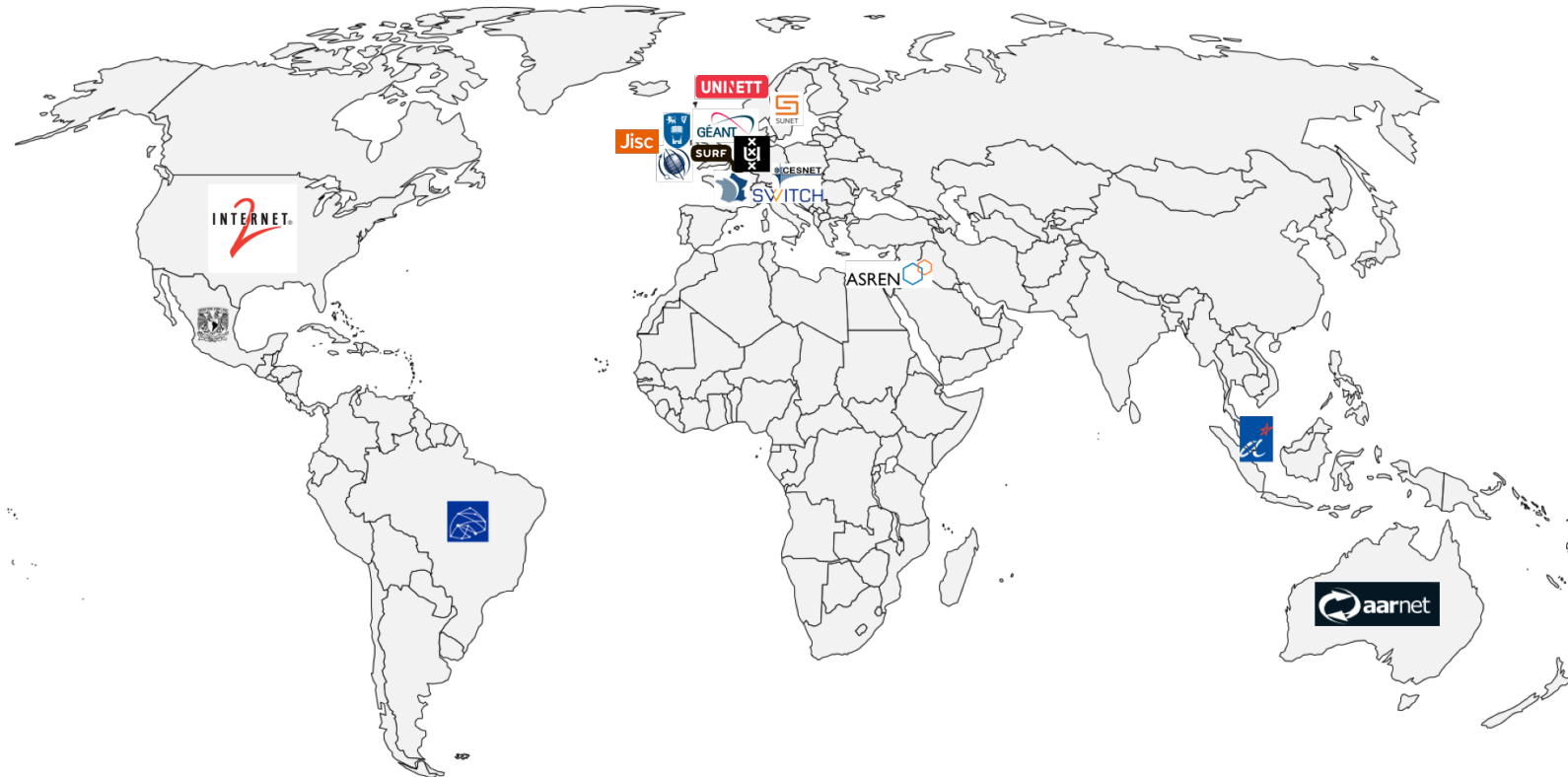
As of October 6, 2017



2017
TECHNOLOGY
exchange

OCTOBER 15-18 SAN FRANCISCO CA

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



As of October 6, 2017



2017
TECHNOLOGY
exchange

OCTOBER 15-18 SAN FRANCISCO CA

[7]

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

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

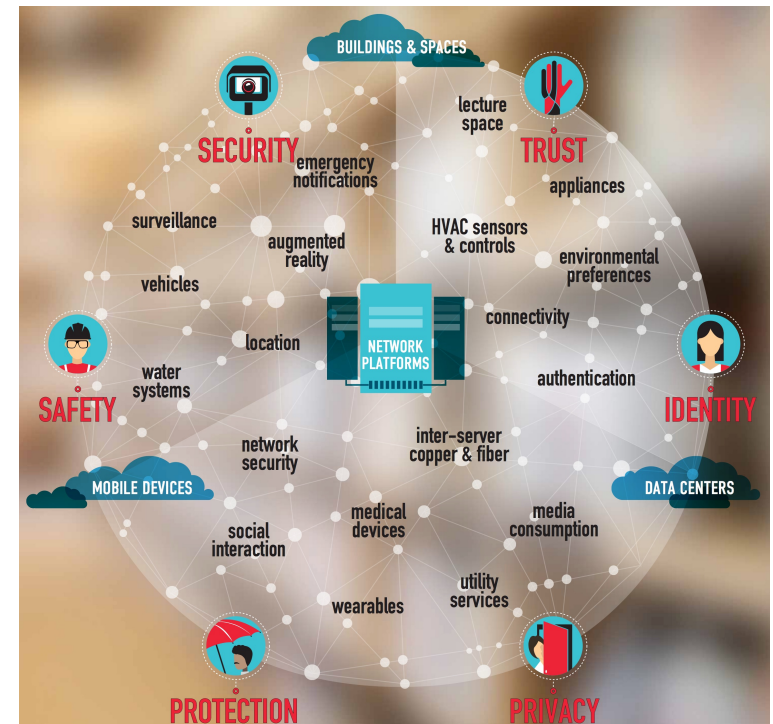


OCTOBER 15-18 SAN FRANCISCO CA

[8]

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



OCTOBER 15-18 SAN FRANCISCO CA

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

 <p>Smart Campus operations & 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 <u>research</u></p>	 <p>Cybersecurity Center of Excellence</p>	 <p>Smart Grid research and data sharing</p>
 <p>IoT Security, Privacy & Ethics</p>	 <p>Trust, Identity, Protection, Privacy, Safety, Security</p>	 <p>IoT Systems Risk Management & Security</p>	 <p><u>Smart Campus operations</u>, trust and security</p>

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

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



OCTOBER 15-18 SAN FRANCISCO CA

Internet2 IoT Systems Risk Management Task Force: Recommends Initial Exposure Baseline via Shodan & Censys.io tools.

How to Find IoT Devices Connected to Your Campus Network

Why is this important?

IoT devices on our campus networks may be vulnerable to malware and increase the risk for information security and privacy compromises. Yet, many of these devices show up on campus without the knowledge of central IT. So how can we find those devices that put us at risk? The Internet2 IoT Systems Risk Management Task Force found two tools, Censys and Shodan, to be easy enough for non-security experts to use to find IoT devices.

Tools: Shodan and Censys



Shodan and Censys are search engines that find servers and other devices connected to the Internet that use Internet protocols specifically associated with industrial control systems and, increasingly, IoT devices & systems. They retrieve metadata about the devices such as geographic location, operating system, device name and serial number.

Full document available:
<http://bit.ly/ShodanCensys>

How to get started

WARNING: Consult your CISO office before proceeding since prior notice and authorization may be required.

Anyone can run basic searches in Shodan and Censys for free, although advanced searching and reporting features may have a cost. Create accounts at:

shodan.io
censys.io

Try searches with IoT keywords, such as “camera.” Also, Shodan has a specific filter for finding Industrial Control System devices: the ics category and Censys syntax includes the “scada” tag for Supervisory control and data acquisition components of industrial control systems.

Internet2 IoT Systems Risk Management Task Force: Developed IoT Systems Vendor Management Considerations Document.

- This document is intended to provide different organizations within Higher Education institutions with items to consider as they engage with IoT systems vendors at the different phases of selection, procurement, deployment and management.
- IoT systems are selected, acquired and deployed by higher ed institutions through multiple paths.
- The historical acquisition approach of selection, acquisition, deployment and management of traditional enterprise IT systems through central IT is not sufficient for IoT systems.
- Questions to consider in organizational approaches to IoT systems and vendor management.
 - Who will monitor and manage the device?
 - Is there a data feed to the device? Who will create and support it? Who will secure it?
 - Are there trust, identity, privacy, protection, safety and/or security considerations?
 - Is there a patch and upgrade plan? Who will do the patching? Who manages the plan?
 - Are there interdependencies between any of these IoT systems? Who manages that?
 - Is there a separate network segment for the IoT devices? Is it air gapped?

Full document available:

<http://bit.ly/loTsysvendreq>

Join us November 17th at 12PM ET for webinar!

Email CINO@Internet2.edu



OCTOBER 15-18 SAN FRANCISCO CA

[14]

Internet2 developing a “Smart Campus e-book” with case studies and best practices.

- First Smart Campus Case Study available from Georgia Tech
 - Using technology to improve student health, well-being, and success
 - Full document available: <http://bit.ly/gtcasestudysc>
- ASU Gordon Wishon developing a case study on their smart campus journey
- Other content can include IoT Systems Risk Management document, smart campus definition, what else? Input please!
- Is your campus implementing a best of breed solution that can be shared as a best practice with the rest of the community? Do you have a researcher on campus investigating a topic related to Smart Campus? If so, let us know!
CINO@Internet2.edu



OCTOBER 15-18 SAN FRANCISCO CA

[15]

Princeton University hosted “Ethical Dilemmas of the Internet of Things on a Smart Campus” workshop, September 2017.

- Hosted by Princeton University CIO, Jay Dominick, and Center for Information Technology Policy (CITP) led by Ed Felten, former White House Office of Science & Technology Policy, and Nick Feamster
- 46 attendees from technology, provost, system, policy, industry, including 18 Internet2 member institutions
- Scenarios explored:
 - Use of data regarding student tracking, focused on student experience and success
 - Readiness of IRBs to handle issues related to data utilization in research
 - Trust, Identity, Privacy, Protection, Safety and Security (TIPPSS) challenges for IoT devices and data
 - Privacy & security of connected biomedical devices on campus and within Academic Medical Centers
- Full agenda and attendees available: <http://bit.ly/princetontippss>
- Paper to be developed by participants, led by Princeton University CITP, planned for YE2017



OCTOBER 15-18 SAN FRANCISCO CA

ITANA/Internet2 Enterprise IoT Working Group

Ken Klingenstein

Evangelist, Trust & Identity, Internet2



OCTOBER 15-18 · SAN FRANCISCO CA

[17]

Topics

- WG Background and Perspective
- Motivational Document
- Enterprise IoT Lifecycle Management Checklist
 - Checklist
 - Examples
- Next steps
- Deferred opportunities
- Participate!



OCTOBER 15-18 · SAN FRANCISCO CA

WG Background and Perspective

- Started as a fusion effort by Internet2 CINO, T&I and ITANA, a national group of IT architects in 2016
- Perspective is enterprise-centric – what can the institution do to leverage and manage IoT, whether the things are organizational or consumer owned.
- Perspective is constructionist, realistic goals
- Bi-weekly calls, active notes and document curation
- Two immediate activities
 - Motivational Document – intent is to get campus leadership attention via relevant use cases
 - Enterprise IoT Lifecycle Management Checklist
 - Some samples



OCTOBER 15-18 SAN FRANCISCO CA

Motivational Document and Risk Examples

- Intended for C-level leadership
- Presents both the opportunities and the risks associated with IoT on campus
 - Opportunities for research, institutional efficiencies, even improved student outcomes
 - Risks are financial, reputational, operational, and legion
- Set of examples to be inserted into the briefing doc, depending on institutional profile
 - Medical School, Engineering, Facilities, etc.
- Provides a list of lessons learned:
 - Pay attention
 - Understand that horses have left the barn
 - Look for gaps in responsibilities, lack of authority, etc.
 - New needs for data stewardship
 - A lifecycle approach is useful
- https://docs.google.com/document/d/1Gn_ULiRu5DgkZS5N98aUXvJ876Ty7wIWzsLDdkl_EXM/edit



OCTOBER 15-18 SAN FRANCISCO CA

Enterprise IoT Lifecycle Management Checklist

- An evolving set of questions to help direct the acquisition, deployment, and continuing management of IoT
- Intended to be useful across all types of institutional acquisitions, including research, health safety and security, operational, etc.
- Lifecycle phases include:
 - Discovery, Planning, Acquisition, Deployment, Maintenance and Decommissioning
 - Topics include network requirements, power requirements, security needs, privacy issues, data processing, etc.
- Intended to illuminate gaps, build connections, etc.
 - RACI analysis may be useful
- https://docs.google.com/document/d/15m6oMwQGBv1SNeVBO2SncpBNi9ZAd6w_JmYJw0QPeNo/edit



OCTOBER 15-18 SAN FRANCISCO CA

Three sample lifecycle checklists

- An emergency management system making extensive use of campus sensors, end-user devices, alarm and notification systems, etc.
- An acquisition of a IoT research system by an academic department
- An innovative student outcomes initiative that connects student schedules to sensors attached to preferred exercise devices in the Recreation Center, identifying exercise opportunities in real time
- https://docs.google.com/document/d/1C-M2Kq9E1E9K27UJTXPX2cVUNfnr4_DqTrML4F7PVvg/edit



OCTOBER 15-18 · SAN FRANCISCO CA

Deferred opportunities

- Fingerprinting devices
- Integrated IAM and IoT
 - Several basic ingredients are being formulated by IETF
- Virtual segmentation and the elastic network perimeter
- Tracking IoT cybersecurity legislation



OCTOBER 15-18 · SAN FRANCISCO CA

Resources

- Enterprise-IoT WG Home for call agenda, notes, pointers to docs
 - <https://docs.google.com/document/d/100mjiAu9k3Al6JEUhO-w1JEKx3pjuXnMq7sEWXLCYhk/edit?pli=1>
- Motivational Briefing Doc
 - https://docs.google.com/document/d/1Gn_ULiRu5DgkZS5N98aUXvJ876Ty7wIWzsLDdki_EXM/edit
- Use cases for motivational doc
 - https://docs.google.com/document/d/1FVKpeFXLWVGZRoKZst86E6cUPHghqr7sejRw_RT2sfwA/edit
- Enterprise Lifecycle IoT Management checklist
 - https://docs.google.com/document/d/15m6oMwQGBv1SNeVBO2SnepBNi9ZAd6w_JmYJw0QPENo/edit
- Sample checklist responses
 - https://docs.google.com/document/d/1C-M2Kq9E1E9K27UJTXPX2cVUNfnr4_DqTrML4F7PVvg/edit

Participate!

- WG Calls are currently every other Tuesday at 1:30 pm ET
- Follow the notes and docs
- Use the outputs



OCTOBER 15-18 · SAN FRANCISCO CA

Microsoft Campus Connections Summit Initiatives

Rob Curtin

Americas Regional Leader, Microsoft



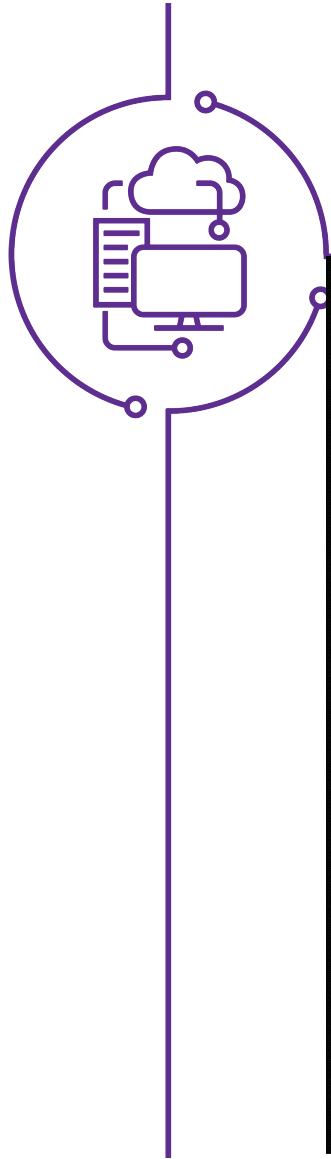
OCTOBER 15-18 · SAN FRANCISCO CA

[26]



Campus Connections Summit





Redmond, WA February 14-16, 2017





Collaborative Initiatives

Agile University



Success & Analytics

IoT Lab Contest
the Carbon Neutral Initiative



Energy & Sustainability

Cybersecurity
Learning Hub



Safety & Security

Researcher Portal



Collaborative Research



Agile University



Christine M. Kiely



Associate Vice Dean,
Fox School of Business,
Temple University



Cliff Ashford



Director,
Software Development



Alan Ritacco



Dean, School of Design and
Technology

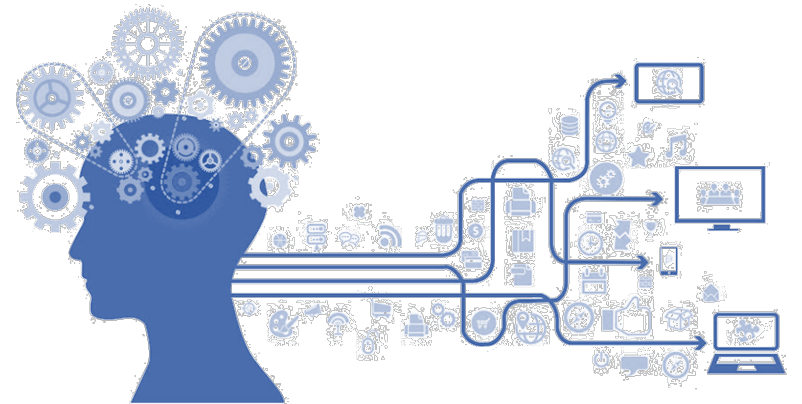




Agile University

Transformational model for Higher Education:

- Modern Curriculum & Student Mindset
- Competency-based Progression
- Intelligent, personalized guidance





Announcing

Microsoft to announce LaaS offering at Educause

- Microsoft Professional Program curriculum
- Analytics harness
- Certificates
- Deploy to OpenEdx on Azure

Learning as a Service

Components



STANDARDIZED PLATFORM



MODERN CONTENT



COMPLETION CERTIFICATES

STANDARDIZED PLATFORM

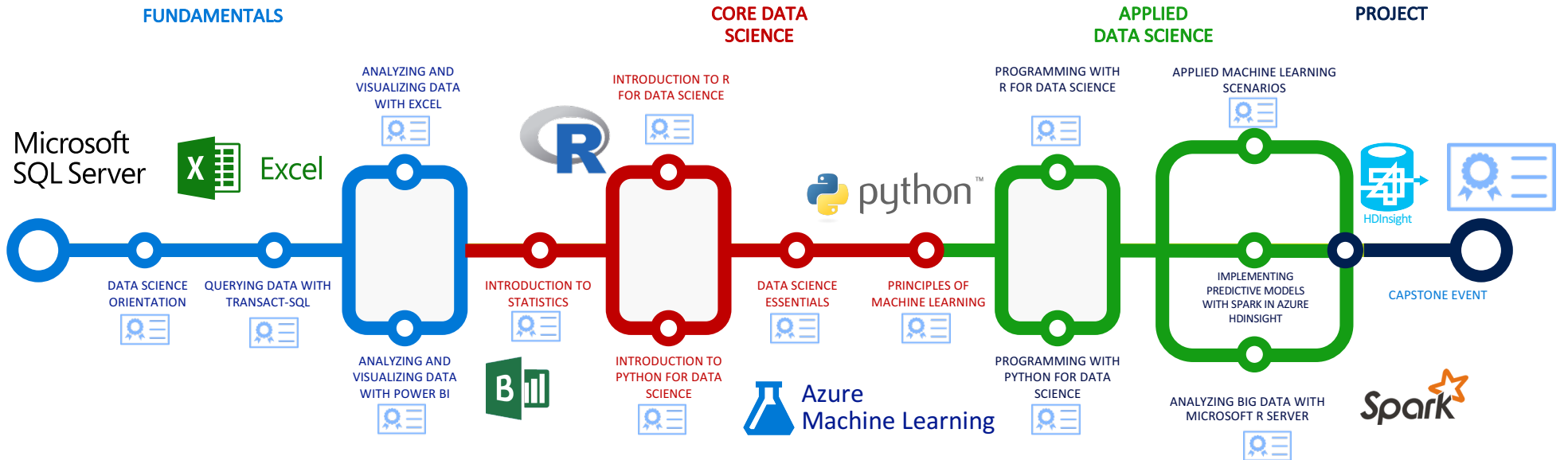
Open edX on Azure



- MOOC-based learning platform jointly developed by MIT and Harvard
- Designed for building, hosting, streaming, and tracking online learning
- Combines the power of the leading open source course management platform with the leading cloud platform
- Microsoft is a leading contributor to the Open edX ecosystem



MPP Data Science Track



Domain / Functional

How the Microsoft Data Science program works

RDBMS Database Design DDL, DML

Transform Data Mashup Data Data Modelling Data Visualization

Data Classification Bayesian Model Linear Regression

R for Data Analysis Data Structures Custom Plots Data Frames Control Flow

Data Science Process Probability and Statistics Machine Learning

Classification Regression Clustering Modelling

Control Flow Creating Visualizations Predictive Analysis

Time Series and Forecasting Spatial Data Text Analytics

Technical

Data exploration and visualization techniques

Statistics with the Excel Data Analysis Pack

T-SQL Language Data Manipulation In SQL Server Azure SQL

Excel Data Tools DAX Engine Power BI Cloud Service Dashboards Natural Language

Data Visualization Condition Probability using Tools

Python Language R Syntax Visualization

Azure ML Data Visualization and Exploration with R / Python and Azure ML

Azure ML R / Python

Python Language SciKit-Learn Visualizations with ggplot2

SQL Azure Python / R



Nuventive acquires rights to Roadmap®



- Nuventive commits to
- Commercial Support
- Migrate to SaaS
- Integrate with multiple LMS

- So that Institutions can
- Add Competency-based capabilities To legacy SIS/LMS environments
- Bring detailed Student Learning Outcomes data to program review
- Engage Students in Modern ways





Intelligent Guidance

Predictive Analytics

- Mindset focused
- “Think Alike” clusters
- Personalize engagement based on mindset

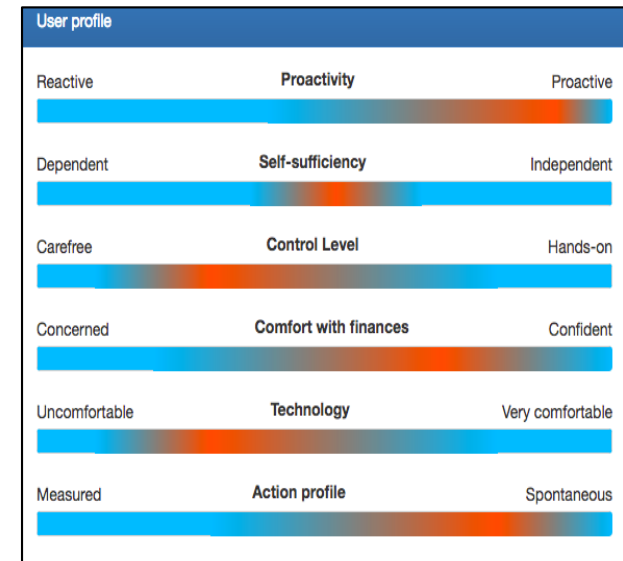
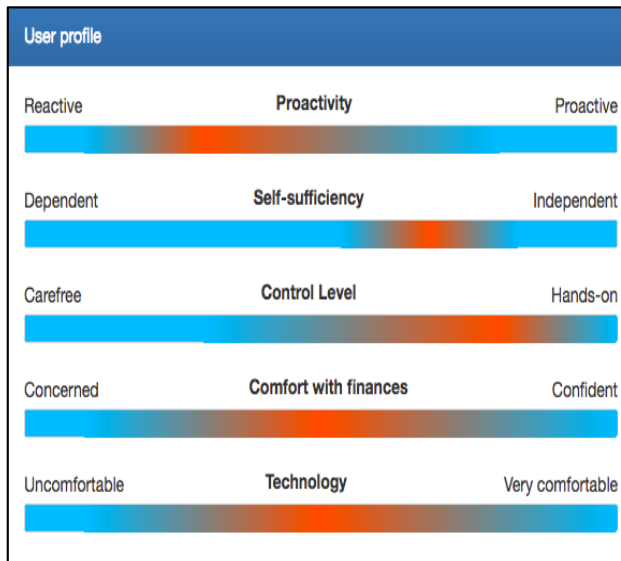
Prescriptive Analytics

- Monitor actions
- Identify best course of action



Mindsets Not Demographics Drives Behaviors

Different Mindsets, Different Attitudes





Discourse Engagement with ICETEX in Colombia

The screenshot shows the ICETEX CRM interface for a student named Lance Olson. The interface is in Spanish and includes a navigation bar with options like 'NUEVO', 'DESACTIVAR', 'CONECTAR', 'AGREGAR A LA LISTA DE...', 'ASIGNAR', 'ENVIAR UN VÍNCULO POR...', 'ELIMINAR', 'FORMULARIO', and 'PROCESO'. The main content area displays the student's profile, including contact information, personal details, and a 'Perfil del Estudiante' section with four horizontal bar charts for Motivation, Open-Mindedness, Self-Awareness, and Self-Discipline. The 'Panel Social' section is currently empty, showing 'No se encontraron registros de actividades.'

Perfil del Estudiante	Low	High
Motivation	Low	High
Open-Mindedness	Low	High
Self-Awareness	Low	High
Self-Discipline	Low	High

Indefinido	
Total Ingresos	8.000.000
Total Egresos	5.000.000
Total Activos	150000000
Total Pasivos	60.000.000



Researcher Portal

Landing page
Thursday, February 16, 2017
4:17 PM



Mash page

Thursday, February 16, 2017 4:21 PM

STOP! IS YOUR DATASET OK WITH COMPLIANCE?
 YES NO

UPLOAD

CLASSIFY

SET PERMISSIONS

← PRIVATE? SECURE

← WHO'S IP?



Graph api is being used on this page to help surface things that match keywords across Articles, People, Provisioning Templates, etc.

UNIVERSITY OF CALIFORNIA

Catalog of Services ▾ Funding ▾ Resources ▾

Home > Cloud Computing & Research Hub

Cloud Computing & Research Hub

Tools and discussion on research in the cloud

Discover articles, templates and resources below. To get started visit our quick start guides to see what you can learn & contribute.

For researchers For facilitators

Refine

Search...

Predictive Analytics High Performance Compute Machine Learning IOT Storage Genomics

Articles

- Funding
Discover articles, templates and resources below To get started visit our quick start guides to see what you can learn & contribute
Showcase User
- For Researchers
Check out some quick pointers and links for common actions below to get the most out of your portal
Showcase User
- For Facilitators
Check out some quick pointers and links for common actions below to get the most out of your portal
Showcase User
- Sample Page

People

- Resolute Mining
View Profile
- Serge
View Profile
- Shehan Wijayasinghe
View Profile

Provisioning Templates

- Datalake Analytics
azuredeploy.json
Showcase User

Share

What are you working on?

All Company

richemont – 13 hours ago has #joined the LiveTiles network. Take a moment to welcome .

LIKE VIEW CONVERSATION

#Joined

All Company

Showcase User – June 27 at 12:54pm
<https://www.youtube.com/watch?v=qVRk6UWhQxg>

Cloud computing helps researchers predict traffic jams

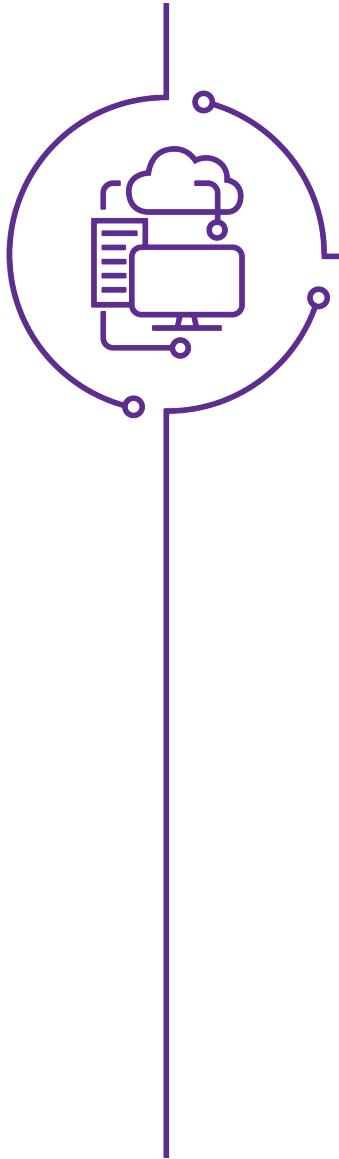
Portal Front-ends cloud Services



The screenshot shows a web portal for the University of California. At the top, it says "UNIVERSITY OF CALIFORNIA" and "Home > Cloud Computing & Research Hub". The main heading is "Cloud Computing & Research Hub" with a subtitle "Tools and discussion on research in the cloud". Below this, there are buttons for "For researchers" and "For facilitators". A video player is embedded with the title "Cloud computing helps researchers predict traffic jams". The page is organized into sections: "Articles" (Funding, For Researchers, For Facilitators, Sample Page), "People" (Resolute Mining, Serge, Shehan Wijayasinghe), "Provisioning Templates" (DataLake Analytics), and "Share" (What are you working on?). A "Refine" section at the top includes a search bar and filters for Predictive Analytics, High Performance Compute, Machine Learning, IOT, Storage, and Genomics.

The screenshot shows the Microsoft Azure dashboard. The top navigation bar includes "Dashboard", "New dashboard", "Edit dashboard", "Share", "Fullscreen", "Clone", and "Delete". The main content area is divided into several sections: "All resources" (No resources to display), "Quickstart tutorials" (Windows Virtual Machines, Linux Virtual Machines, App Service, Functions, SQL Database), "Service Health" (Personalized guidance and support when issues in Azure services affect you), and "Marketplace". A left-hand navigation menu lists various services: New, Dashboard, All resources, Resource groups, App Services, SQL databases, SQL data warehouses, Azure Cosmos DB, Virtual machines, Load balancers, Storage accounts, Virtual networks, Azure Active Directory, Monitor, Advisor, Security Center, and Billing.

<https://trylivelives.sharepoint.com/sites/workplace2992/sitepages/Home.aspx>



Questions?



Campus Connections Summit





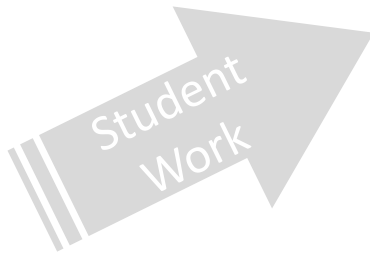
IoT Campus Labs: Student Competition

May 2017

Competition Committee

December 2017

January 2018



- Student Clubs or Class
- 3-6 per team
- Guidance and Mentors

This Photo by Unknown Author is licensed under CC BY-NC

**Faculty Sponsor
Registers School**

from MS ++
Fall Term 2017
Sep through Dec

Final Submissions

1 Team Per Campus

"The Varsity"



CANCELLED

Final Four Selection

Fly to
Redmond

FINAL FOUR

4 Campus Teams
winning projects to
MS IoT Insiders Lab
January 8-19, 2018



Cybersecurity Learning Hub

- Personal & professional purpose
- Promote general awareness and understanding
- Increase the number of cybersecurity professionals



Mark Cather



Chief Information Security
Officer



Closing

Florence Hudson

SVP and Chief Innovation Officer, Internet2



OCTOBER 15-18 · SAN FRANCISCO CA

[46]

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



OCTOBER 15-18 SAN FRANCISCO CA

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



OCTOBER 15-18 SAN FRANCISCO CA

[48]



2017
TECHNOLOGY
exchange

SAN FRANCISCO CA OCTOBER 15-18

CINC UP: INTERNET OF THINGS INNOVATION WORKING GROUP AND SMART CAMPUS INITIATIVE

FLORENCE HUDSON

SVP and Chief Innovation Officer, Internet2

KEN KLINGENSTEIN

Evangelist, Trust & Identity, Internet2

ROB CURTIN

Regional Leader, Microsoft