Agenda - Internal (delete before presentation)

• Introductions
• Our institutional journeys here (5 min)
• Audience Interaction!!! (quick poll, nothing hard, its early) (2 min)
• What was the driver for starting? (5-10 min)
• Stages of development (different area examples at each stage)
  • Initial attempts/misfires (5 min)
  • Self-awareness, balancing momentum and adding structure (5 min)
  • Clearer recognition of scope and change required (5 min)
  • Staff expertise leads to comfort, and maturation (5 min)
• What drives you? (Poll and Word Cloud) (5 min)
• How to stay connected and leverage our community (2 min)
• Open discussion (---)
Agenda

• Introductions
• Our institutional journeys
• What was the driver for starting?
• Stages of development
• What drives you?
• How to stay connected and leverage our community
• Open discussion
What this talk is, and isn’t

Our goal: Discuss maturing the organization, its culture, and the processes around cloud infrastructure, not SaaS.

What we won’t do in this talk: Discuss the pros/cons of different providers or technologies.

Building Community: We will have resources and ways to connect to have those conversations at the end, this is just a starting point.
Our Journey

Who we are
Where our organizations are in terms of cloud maturity now
Who we are

• Mid size Public University in Maryland
• Founded in 1966, still a kid compared to many
• Built during civil rights movement, large commitment to DEI in our DNA
• 14,000 students
  • 11,500 Undergrad, 2,500 Masters and PhD
• STEM Focused, large programs in Computer Science, Information Systems, Biology, Physics ....
• 90 Million in Annual research
• Graduated more African Americans that went onto get MD-PhDs than any other university in the country since 2000.
Our Cloud Journey

- Focused mostly on Enterprise, migrations are complete for:
  - Peoplesoft Finance
  - Data warehouse
  - Campus portal
  - Campus ticketing system
  - Many more replicated into the cloud
- Several dozen AWS research accounts
- Recently deployed monitoring/automation
- Developed mechanisms to enhance security as we migrate
Who we are

• Public university founded in January 1820
• 9 campuses with core campuses in Bloomington and Indianapolis
• 115K students 35K fac/staff
• Largest medical school in US
• $680.2M in research FY 19
IU’s Cloud Journey

- SaaS – *Almost* Cloud First
- IaaS/PaaS
  - Enterprise – crawling
  - Teaching – toddling
  - Research – walking
- Cloud Security Working Group
Who we are

- Founded in 1865 by Ezra Cornell and Andrew Dickson White
- Private university with a public mission
- 1,679 Faculty
- 8,392 staff
- 23,600 students (including graduate and professional students)
- Cornell awarded the first degrees in the studies of journalism, veterinary medicine and industrial engineering
Our Cloud Journey

• Cornell is a Cloud First institution
• IaaS Cloud movement began in 2014
• Today we are around 60% in the Cloud and 40% still on prem
• Central IT continuously developing services to support campus’s cloud needs
• Cloud provides opportunity for agility. We strive to help where needed and avoid getting in the way if possible.
Mentimeter Poll (Remember, IaaS)

1. No AWS/GCP/Azure or the like
2. Just getting started
3. Some production services
4. Defined structures and processes
5. Proficient with one vendor
6. Multi-vendor proficiency
The Driver for Getting Started

- Very institution dependant
- How it fits into the culture is key
- May be driven by outside forces
Enterprise Drivers

Cornell
Realization of the inevitable.....This is where technology is going.
Agility and and services we could never provide on campus

UMBC
Driven by Leadership
Avoidance of capital purchase
Opportunistic timing for major upgrade
Research Drivers

Indiana
New tools, long queues, rigid windows, speed, data gravity, credits

Cornell
Autonomy and ability to use tools to increase agility - balanced with concern of un-secured environments

UMBC
Researcher based need
University concerns about sprawl and security compromises

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Teaching and Learning
Drivers

Indiana
Teach the cloud, teach in the cloud, leverage the cloud for teaching, employer demand vs vendor largess

Cornell
Apps on Demand for classroom software and labs

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Security and Network Drivers

UMBC

- Traffic shouldn’t go through campus
- Avoid firewall sprawl
- Integrate security up front
- Isolate all components of a system

Indiana

- Close the control gaps
- Raise the Cloud IQ
- Examine cloud-native tools
- Single-process solutions for multi-cloud reality
The Stages of Development
Stage 1: Initial Attempts/Misfires

When starting out, things go.... wrong

UMBC - Lift and Shift, no contract, no buy in from staff, orphaned accounts

Cornell - Realization that campus was ahead of central IT. Our Journey to catch up.

Indiana - enterprise denial, researcher push, under resourced
Stage 2: Self-awareness of Knowledge Gaps

You begin to know what you don’t know

Start balancing the momentum with the addition of structure

**Cornell** - standard account creation, automation and guard rails

**Indiana** - build the ship as you are sail

**UMBC** - stop making the same mistakes

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Stage 3: Recognition of Scope

Your organization understands what this change will require.
You can begin to plan effectively.

Indiana - Leadership buy-in Catch-22
UMBC - Spreading out the knowledge beyond early adopters
Cornell - Transitioning staff to new cloud focused roles

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Stage 4: Increased Comfort and Maturation

There is a good bit of staff expertise within the organization and processes are maturing

**Cornell** - reorganization creating common “front door” and consulting services to help campus customers select best fit services (on-prem or Cloud).

**Indiana** - late train, amnesty for the guerrilla warriors, and converts

**UMBC** - project planning, formal cloud architecture governance group

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What is Driving Your Organization?
Meltimeter Poll/Word Cloud
How to continue the discussion
Community’s to engage with

CCCG - Slack, Listserv, Meeting yesterday
Cornell Cloud Forum
Annual cloud networking event by UMich and Internet2
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