

# 2017 IoT Forum

Energy  
Big Data  
Analytics

Energy, Big Data & Analytics are coming together in the Internet of Things

**May 3, 2017**

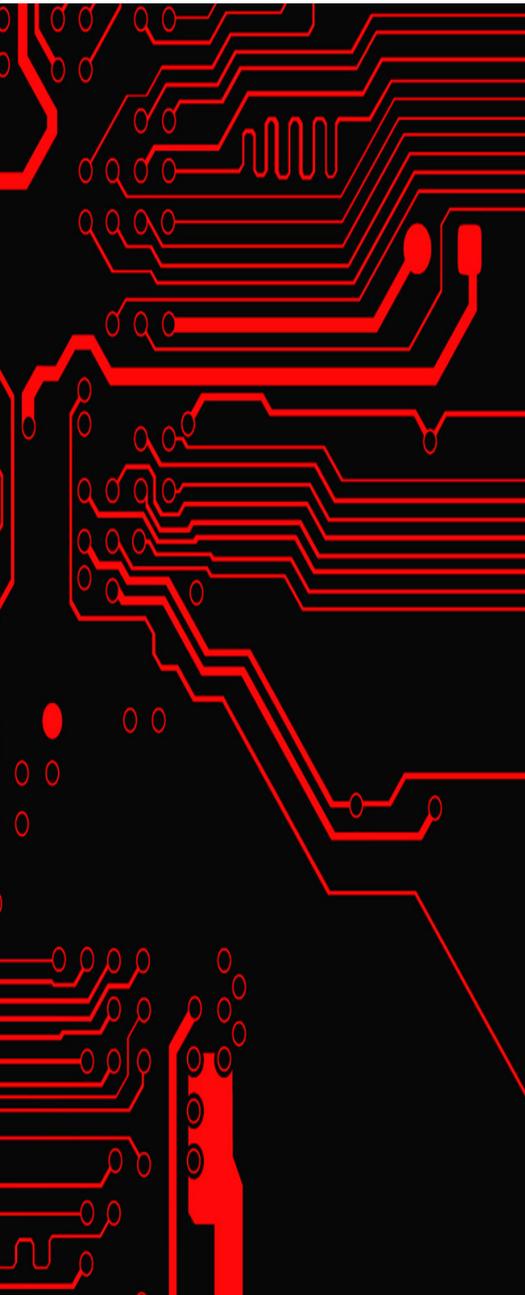
**8 AM - 5 PM**

University of North Carolina at Charlotte  
Center City Building  
320 E. 9th Street  
Charlotte, NC 28203



North Carolina  
Piedmont Chapter  
[www.aee-ncpc.org](http://www.aee-ncpc.org)

## SCHEDULE



7 - 8 AM	Registration & Breakfast		
8 - 9 AM	<b>Opening Keynote Presentation</b> <i>A New Vision: Using IoT to Drive Business and Reduce Cost</i>		
	<b><u>TRACK 1</u></b> <b><u>IoT - Intro Sessions</u></b>	<b><u>TRACK 2</u></b> <b><u>IoT - Building Perspective</u></b>	<b><u>TRACK 3</u></b> <b><u>IoT - IT Perspective</u></b>
9:15 - 10:15 AM	<i>How to Understand the Lingo of IoT</i>	<i>Why We Must Change the Way We Build Buildings</i>	<i>Data Capture, Verification and Analysis Using a Standard Database</i>
10:15 - 10:45 AM	Break		
10:45 - NOON	<i>The Business Case for Cybersecurity</i>	<i>Smart Building Technology - "A Day in the Life of the Facilities Manager"</i>	<i>Using Data Analytics to Improve Energy Efficiency</i>
NOON - 1 PM	Lunch		
1 - 2 PM	<i>IoT and Distributed Database Technology</i>	<i>The IoT is Making our Buildings Operate more Efficiently</i>	
2:15 - 3:15 PM	<i>Power Over Ethernet: What the Heck is it?</i>	<i>Planning for IoT Projects to Maximize Value</i>	
3:15 - 3:45 PM	Break		
3:45 - 5 PM	<b>Closing Keynote Presentation</b> <i>IoT is the Future - What our Built Environment will look like in 20 Years</i>		

# KEYNOTE PRESENTATIONS

## Opening Keynote Presentation

### *A New Vision: Using IoT to Drive Business and Reduce Cost*

Most operations whether they be commercial facilities, industrial manufacturing plants, campus utilities or universities have fragmented infrastructure, assets and siloed IT systems that lead to poor performance and inefficiencies throughout the organization. Manual paper based systems result in a lack of timely, contextual information and prevent real time responses to operational issues, customers and opportunities. Tearing out current equipment or systems may not seem worth the risk in the near term risk to productivity. Today, many building owners and factories have installed sensors that generate tons of data but pure connectivity does not create value. This presentation will discuss applicable concepts for taking the IoT digital thread of operations, engineering and energy data through the facility, manufacturing plant/building and field services for increased operational efficiency, product/services quality and profitability. How do you expose and consume Big data in a way to become more prescriptive in the process? IoT Data is a key enabler to get at, transport, store and analyze data to improve business outcomes. The convergence of OT and IT is a transformational process for developing tangible use cases to make information available for the decision making process to deliver asset and operations optimization.

## Closing Keynote Presentation

### *IoT is the Future - What our Built Environment will look like in 20 Years*

The Internet of Things will affect us all in ways we cannot imagine. Most of us have trouble remembering what life was like before our smartphones. The IoT will have the same effect on us, except more dramatically. The vast majority of us are not ready for this future, but as practitioners of the built environment, we need to start planning now for the possibilities of the future. Our plants and buildings are designed for 50 years or more: we need to understand what changes are possible so that we can incorporate the infrastructure into our world so that it can more easily adjust to it as the future of IoT becomes a reality. The closing presentation "IoT is the Future" will give us a peek at the near future. See just some of the things that will be coming our way, whether we are ready for them or not!

### ***How to Understand the Lingo of IoT***

The IoT (Internet of Things) brings more acronyms to our world. Analytics and Data Collection are not the same thing. Understanding the differences and concepts for collecting Big Data and applying Analytics. This presentation will discuss the following concepts: Big data and unstructured data analytics can give you deeper, richer, and more accurate insight into your business. This brief covers why big data matters, the impact on IT, emerging technologies (Hadoop\*), and how to get started. To realize its full potential to the organization, big data analytics requires a new approach to capturing, storing, and analyzing data.

### ***The Business Case for Cybersecurity***

High-profile cyberattacks and security breaches have become so commonplace they might be viewed as an unavoidable cost of living in the digital age — despite the tremendous cost and adverse effect on consumers and businesses. More alarming, the intended purpose of cyberattacks now includes extortion and destruction of intellectual property. In addition to the current cyber-threat environment, there is growing awareness of an even greater concern – the potential for a cyber-attack on critical infrastructure within the United States. The presentation “The Business Case for Cybersecurity” will emphasize the necessity of a business case that justifies the commitment of resources needed to manage cyber-risks for critical infrastructure.

### ***IoT and Distributed Database Technology***

With affinities for high availability, linear scaling, and predictable performance, the correct software is needed to make sense out of the deluge of data created by the Internet of things. Learn how companies like Honeywell Connected Homes, Nest, and British Gas solved their Internet of Things / Sensor Data challenges.

### ***Power Over Ethernet: What the Heck is it?***

The term PoE is used a lot within the IoT lexicon. The hot topic right now is powering lighting with PoE. However, if you ask 10 people in the industry what PoE lighting is, you get at least 5 different answers. Come learn what PoE is, how it can be used to power and control items that have traditionally used 120V AC power with additional control wiring, and the pros and cons of this upcoming technology. Is it all that it is cracked up to be? Not since the “War of the Currents” between Tesla (AC) and Edison (DC), has there been such discussion between the AC and DC world. Come learn, and then decide for yourself if this is something that your company or your clients can take advantage of.

### ***Why We Must Change the Way We Build Buildings***

We have followed decades-old processes for building buildings that must be changed in order to realize the full value of the IoT age. The way building owners, developers and occupants define requirements, identify stakeholders, assemble contractors and sub-contractors and design critical infrastructure is stuck in the past and must be disrupted to keep pace with advances in technology and today's intelligent building capabilities. Attend this session to learn about Tech Charrettes, Converged Networks, Technology Contractors, Systems Integration and how these concepts must change, will change and are changing the Design and Construction process.

### ***Smart Building Technology - "A Day in the Life of the Facilities Manager"***

Integrating business rules and analytics into an intelligent facility/building and chiller plant BMS for increased facilities utilization and reduced energy expenses. Analyze building conditions, prioritize investments and assess return on investment for smarter facilities decisions. Identify under-utilized and poor-performing facilities, assets, processes and resources.

### ***The IoT is Making our Buildings operate More Efficiently***

This presentation will look at the trends and relevant topics in Building Automation related to IoT, including the following: Maximizing the investment in Building Automation through Total Room Automation, Integral systems with HVAC, lighting controls and Security systems, Network security, Predictive maintenance through Fault Detection and Diagnostics, Central connectivity, Dashboards for large property portfolios, and Advanced analytics for high tech buildings.

### ***Planning for IoT Projects to Maximize Value***

The challenge of collecting massive amounts of data from systems – be they energy management systems, industrial controls, building management systems, or business intelligence systems – is knowing how to visualize that data in a way that simplifies the process of making decisions. Having too much data isn't always better, but having the right data is typically the best way to realize the ROI of investing in a system. The prevalence of data collection and the availability of contextual information with IoT devices has really increased our ability to collect a tremendous amount of data. Knowing how to visualize this data, and connecting seemingly disparate areas of your control and information systems, into one unified intelligent platform allows you to harness the connected enterprise and begin leveraging these systems to reduce costs. These cost reductions can come in the form of preventative maintenance, reduced usage, cost avoidance (predictive analysis), waste reduction, and even capital investment to defer future costs. The presentation "Planning for IoT Projects to Maximize Value" will discuss systems we have put in place to empower users to make the most of their Internet of Things, as well as the planning process necessary to build a system that provides value immediately.

### ***Data Capture, Verification and Analysis Using a Standard Database***

Dealing with the onslaught of new data using the tools most practitioners already have in their company is a common problem. The typical internal IT group is very accustomed to dealing with email, file storage, desktops and usually a generic database of some type. They often have little experience in the software tools and methods unique to the business's product and service's needs. The IT group usually needs help coherently connecting the various components and software packages to the myriad of data sources and large diverse dataset storage needed to perform advanced analytics. The presentation "Data Capture, Verification and Analysis" will explain a simple technique to tackle the problem for big data that allows non-homogenous data to coexist in a single relational data model—a process used with great success by some of the largest utility providers in the country.

### ***Using Data Analytics to Improve Energy Efficiency***

Today, the data from building automation systems, sensors and equipment has become a tangible resource which can be directly utilized to improve facility operations, reduce energy costs, and enhance overall operational efficiency. Access to this data is only the first step to improving operational efficiency however. In order to derive benefit from this data we need to be able to effectively analyze the data to find issues of importance. Analytics directly help building owners and operators accomplish these goals. They are also a critical tool in validating investments in energy savings measures. The presentation "Using Data Analytics to Improve Energy Efficiency" will provide real world examples demonstrating how analytics is being used to drive improvements in energy efficiency in buildings of all types.

# REGISTRATION INFORMATION

## CONFERENCE FEES

AEE Member	\$200
Non-Member	\$250
Student	\$65

**Continuing Education approved credits for PDH(6), AIA-LU/HSW(6), GBCI(6)**

For information on AEE NC Piedmont Chapter Membership, please visit [www.aee-ncpc.org](http://www.aee-ncpc.org)

Fees include Forum registration, continental breakfast and lunch.

**[REGISTER HERE](#)**

### **Cancellation / Changes and Refund Policy**

All fees are non-refundable. Attendee substitutions are allowed at no additional charge.

Please direct all questions to Katie Stanley at [kstanley@optimaengineering.com](mailto:kstanley@optimaengineering.com) or call 704.941.3750