CONFERENCE AGENDA

ENERGY CODES BOOTCAMP & BUILDING TOURS Monday, July 17		
08:00 – 08:30a	Registration	
08:30 – 10:00a	**Energy Codes 101**	
10:00 – 10:15a	Break	
10:15 – 12:00n	**COM*check* Basics**	
12:00 – 01:00p	Lunch (on your own)	
01:00 – 02:30p	**RES*check* Basics**	**Building Tours**: Tower at PNC Plaza – 1:00pm Energy Innovation Center – 4:00pm
02:30 – 03:00p	Break	
03:00 – 03:30p	**What's New in the Codes?**	
03:30 – 04:00p	**Ask DOE!**	
05:30 – 06:30p	**Welcome Reception**	

ENERGY CODES BOOTCAMP: A full-day crash course in energy codes! The workshop will provide a sampling of code basics, compliance software training, and what's new in codes. Attendees will also get a chance to present their questions directly to DOE and PNNL staff.

BUILDING TOURS:

Tour the Tower at PNC Plaza:

Rising 33 stories near the confluence of the Allegheny and Monongahela rivers, the Tower at PNC Plaza opened in October 2015 as PNC's new corporate headquarters. The building, which hosts more than 2000 employees, incorporates many state-of-the-art technologies, including a double-skin façade and solar chimney. The tower was designed to exceed LEED Platinum certification and to be the greenest office building in the world.

Tour the Energy Innovation Center:

The Energy Innovation Center is a not-for-profit organization who engages community leaders, educates the workforce and incubates businesses to support clean energy markets. The Center recently transformed a vacant property in the City's Lower Hill District into a 200,000 square foot beacon for sustainable energy technologies. This LEED Platinum facility adheres to the highest standards of energy efficiency while preserving the historical character of the building--one of the few LEED Platinum buildings that is also on the National Register of Historic Place.

Day 01 Tuesday, July 18			
07:30 – 08:30a	Registration & Continental Breakfast		
08:30 – 09:00a	Welcome & Opening Remarks		
09:00 – 09:45a	Keynote Speaker – Paula R. Glover		
09:45 – 10:15a	Break		
10:15 – 11:45a	**[D1S1]** Top-10 Ways to Increase Code Compliance: Inspection edition	**[D1S2]** What's New in Codes? 2018 IECC, ASHRAE 90.1-2016 and More	**[D1S3]** Statewide Energy Policies & Levers
11:45 – 01:00p	Networking Lunch		
01:00 – 01:15p	Break		
01:15 – 02:45p	**[D1S4]** 206,000 Homes in 2016: Is the ERI a solution that will work in your state?	**[D1S5]** The Hoopla About Utilities Claiming Savings from Code Compliance	
02:45 – 03:15p	Break		
03:15 – 04:45p	**[D1S6]** Third Party Energy Professionals: Codes creating business opportunity	**[D1S7]** Measuring Compliance: A survey of different compliance studies	**[D1S8]** Existing Buildings: The gold mine exists

[D1S1] TOP-10 WAYS TO INCREASE CODE COMPLIANCE: INSPECTION EDITION

ICMA estimates that inspectors can effectively perform 15-20 inspections per day. Most building departments workloads are double that. When circumstances don't allow time for detailed energy code inspections, is there a "Top Ten" type of approach that can improve efficiency and limit the time spent on site? This session will look at the bigger picture for code compliance and then to energy code experts to discuss ways to expedite on-site code inspections.

[D1S2] WHAT'S NEW IN CODES? 2018 IECC, ASHRAE 90.1-2016 AND MORE

The new editions of ASHRAE 90.1 and the International Energy Conservation Code were finalized in October and will be available in 2017. Speakers experienced with the code development processes will discuss what has changed from the previous editions of those codes and how the requirements of the commercial chapter of the

IECC and ASHRAE 90.1 differ. Also covered will be IECC development process and an analysis of the voting that occurred.

[D1S3] STATEWIDE ENERGY POLICIES & LEVERS
Building energy codes are a critical policy lever whose responsibility falls to a number of state or local agencies. How can states support the model code development process? What roles do State Energy Offices play in code adoption as well as outreach to localities? What role can states take to develop and promote stretch codes?

[D1S4] 206,000 HOMES IN 2016: IS THE ERI A SOLUTION THAT WILL WORK IN YOUR STATE?
Starting in the 2015 IECC, the Energy Rating Index (ERI) pathway was added to the mix of compliance options. In the 2018 IECC, it was further defined by requiring the ERI to be in compliance with ANSI/RESNET/ICC Standards 301 & 380. What are the benefits to building departments promoting the ERI path? How do the ANSI/RESNET/ICC referenced standards support code compliance? These and other questions will be answered in this session, along with presentations of case studies of locations where the ERI path has been operating.

[D1S5] THE HOOPLA ABOUT UTILITIES CLAIMING SAVINGS FROM CODE COMPLIANCE
Utilities across the country help boost energy code compliance by funding trainings, tools, and other educational resources. Many can count the resulting energy savings towards their efficiency goals. But, how to tally the savings? That's a sticky question. We'll profile several leading utility code programs, how they built a strong program, how they count up the energy savings, and what they've learned along the way.

[D1S6] THIRD PARTY ENERGY PROFESSIONALS: CODES CREATING BUSINESS OPPORTUNITY
There is a strong business case that can be made for third party energy professionals in code implementation. This session looks at the direct third party ties to codes through real world examples of jurisdictions and residential and commercial professionals that have developed business based on ties to the energy code. Ground-breaking training on the business case for third party energy code professionals will be highlighted to kick off a discussion between a jurisdiction and residential and commercial third parties.

[D1S7] MEASURING COMPLIANCE: A SURVEY OF DIFFERENT COMPLIANCE STUDIES
Achieving compliance with the energy code is critical to realizing the energy savings potential to energy codes. But, finding out whether compliance is being achieved can be a costly and time-consuming task. This session will review various ways to measure compliance with an eye towards ultimately developing best practices for collecting accurate data and minimizing the cost of studies.

[D1S8] EXISTING BUILDINGS: THE GOLD MINE EXISTS
Average small commercial buildings use three times as much energy as the best performing buildings, but they don't have to. This session will offer insights, examples, and clear pathways for cost-effective large energy savings in small commercial buildings. These can be used to drive code development to ensure that future "existing buildings" are provided the best advantages for energy savings over time.

Day 02 Wednesday, July 19			
08:00 – 09:00a	Registration & Continental Breakfast		
09:00 – 10:00a	Keynote Speaker – Timothy McDonald		
10:00 – 10:30a	Break		
10:30 – 12:00n	**[D2S1]** No Humans in the Permit Office: Online tools for code compliance	**[D2S2]** Beyond Energy Codes: The Future of Building Performance	
12:00 – 01:30p	Networking Lunch		
01:30 – 03:00p	JOLT Session		
03:00 – 03:30p	Break		
03:30 – 05:00p	**[D2S3]** Scaling Up Codes Toward Multifamily Energy Efficiency	**[D2S4]** Top-10 Ways to Increase Code Compliance: Plan review edition	**[D2S5]** Do Cities Hold the Future of Code Advancement?

[D2S1] NO HUMANS IN THE PERMIT OFFICE: ONLINE TOOLS FOR CODE COMPLIANCE
Jurisdictions and programs across the country are using technology to improve the review, permitting and inspection process. Learn from three examples of technology making building departments more efficient and their customers better educated about the process and happier with the results.

[D2S2] BEYOND ENERGY CODES: THE FUTURE OF BUILDING PERFORMANCE
Given improving technologies and construction techniques and smaller incremental savings for most code requirements, it is fair to ask whether energy codes as presently conceived can realize maximum potential energy savings at a minimum cost. This session will explore different types of codes and policies to generate discussion on whether and/or how energy codes must evolve and the possible options for doing so.

[D2S3] SCALING UP CODES TOWARD MULTIFAMILY ENERGY EFFICIENCY
This session will provide information on current initiatives and emerging opportunities that affect the energy efficiency and livability of multifamily buildings. Topics will include evaluation studies, current code development efforts and best practice approaches to efficiency, health and comfort in both high and low-rise multifamily buildings.

[D2S4] TOP-10 WAYS TO INCREASE CODE COMPLIANCE: PLAN REVIEW EDITION
When there's not enough time to do a detailed energy code plan review, what should you focus on to maximize energy efficiency without slowing the plan review process? This session will look to energy code experts to discuss ways to expedite both plan reviews and compliance reports.

[D2S5] DO CITIES HOLD THE FUTURE OF CODE ADVANCEMENT?
With the current stagnation of the IECC, cities hold one key for more effective and progressive energy codes. In fact, much of the current innovation of building policy is coming out of city programs that either direct or incent more efficient building design and existing building renovation. Energy data is a big driver of the city approach, as

proof of value is the fuel that drives the city approach. This session will tell the story of nationwide city programs that have implemented a successful approach to efficient building policy.

Day 03 Thursday, July 20		
08:00 – 08:30a	Registration & Continental Breakfast	
08:30 – 10:00a	**[D3S1]** Behavioral Strategies for Code Adoption & Compliance	**[D3S2]** Commercial Buildings: Design vs. Reality – HVAC
10:00 – 10:15a	Break	
10:15 – 11:45a	**[D3S3]** Economics of Energy Codes	**[D3S4]** Commercial Buildings: Design vs. Reality – Lighting
11:45 – 12:00n	Closing Remarks	

[D3S1] BEHAVIORAL STRATEGIES FOR CODE ADOPTION & COMPLIANCE

Behavior-based strategies are growing in use to enhance policy uptake and program design to increase desired outcomes – including increased uptake and compliance with the energy code. This session will look at the behavioral tools behind effective approaches, feature real-world examples aimed at building awareness and adoption of energy code practices, and explore ways to use these tools in current and future efforts.

[D3S2] COMMERCIAL BUILDINGS: DESIGN VS. REALITY - HVAC

Commercial building HVAC systems can be quite complex. Many strategies are available for meeting HVAC requirements, including the use of energy modeling and performance-based approaches, such as those often used to incorporate sophisticated modern control systems. The commissioning and code enforcement perspectives will also be presented in order to understand how these requirements and strategies translate to proper installation in the field.

[D3S3] ECONOMICS OF ENERGY CODES

Have you ever heard people argue about whether something in the code is cost-effective? How do they know one way or the other? This session will first explain how costs are calculated (Hint: it's harder than you think!) and what methods are used to determine cost-effectiveness. Second, we will present research trying to answer the question, "Do energy codes impact construction activity?" This has been argued about since energy codes were first developed. Learn how to approach this kind of question and what the current data says. Finally, the methodology and results of Pacific Northwest National Laboratory's Impact of Building Energy Codes report will be presented.

[**D3S4] COMMERCIAL BUILDINGS: DESIGN VS. REALITY - LIGHTING**

Lighting power densities have been decreasing dramatically due to the exponential growth in LED technology, but there's more to lighting than luminaires and fixtures. Energy codes also consider daylighting requirements and controls, ranging from simple bi-level switching to complex whole-building systems. The speakers will discuss how energy modeling can be used in the design of lighting systems, how local building departments typically enforce lighting requirements, and how commissioning can support increased compliance with lighting requirements.