2016 RESNET Building Performance Conference
Breakout Session Nominations

Advanced Building Science

ABS-1- A Picture's Worth a Thousand Retrofits
Group participants will challenge workshop facilitators and building science mentors for explanations to bizarre, unusual, and thought provoking building science failures. Raters early in their careers will gain years of experience during this workshop as groups explore and explain the causes on decades worth of building performance failures shown in pictures, and compile them into an advanced building science presentation. These aren't your average failures, so open your minds and enjoy the fun as we navigate, narrate, and discuss these building performance blunders via a series of vivid photos captured by experts across the industry.

Presenters: Peter Vargo, Nu-Tech Energy Solutions and Ethan MacCormick, Performance Systems Development

ABS-2- A Review of Airflow Measurements
Learn a wide variety of airflow measurement methods and the pluses and minuses of each. We will uncover the science behind good airflow measurement, on a live training unit as well as picking the correct tool for the purpose.

Presenters: Bill Spohn, TruTech Tools, LTD and James Jackson, ICFI

ABS-3- A Zero Net Energy Code in 2019: low and high rise construction
Redwood Energy is the lead Energy Analysts for the 2019 Zero Net Energy Multifamily Code for California's Title 24 and the International Energy Conservation Code (IECC). Come learn what the prescriptive code will look like for low and high rise construction as we show draft-stage construction packages and cost-benefit analysis for the various climate types, explain fuel switching with heat pumps to take advantage of the lower-carbon electric grid, advanced design like vertically integrated PV wall panels for high rise residential construction and simple strategies like building laundromats to reduce laundry use by 40%.

Presenters: Sean Armstrong, Redwood Energy and Amy Dryden, Build It Green

ABS-4- Accounting for Radon in a High Performance Home
When building a high performance home, HERS Raters understand the importance of taking a comprehensive approach. We make considerations regarding ventilation requirements, moisture, proper exhaust and make-up air for combustion appliances, as well as off-gassing of VOC's. Radon is a known Class A carcinogen and accounts for an estimated 21,000 deaths per year, according to the EPA. When building a High Performance Home it is critical that one of the top sources of poor indoor air quality (Radon) be built out. The course would address the importance of accounting for radon in buildings, the sources of radon entry, the testing and reporting process, inexpensive methods for pre-construction radon reduction systems, as well as costs and methods for retrofits.

Presenters: David Goulding, Enisgn Building Solutions

ABS-5- Achieving a High Performance Air Barrier System
This presentation will identify the key air barrier materials characteristics, acceptable and unacceptable installation of air barrier materials and how to assess the various quantitative and qualitative test processes and procedures using sample tests to verify the quality of an air barrier installation.

Presenters: Laverne Dalgleish, Air Barrier Association of America

ABS-6- Advanced Duct Leakage Testing
This session will go beyond the basics and help give you a better understanding of what is being measured. We will cover where to measure duct pressure, where to set up the duct testing fan and talk about why it matters. We will demonstrate how pressures in unconditioned zones are affected during the test to stress the importance of setting up the building properly. Methods of performing the Duct Leakage to the Outside test will be discussed in detail including issues associated with testing homes with conditioned crawlspaces. Zone dampers will also be discussed.

Presenters: Paul Morin, The Energy Conservatory

ABS-7- ASHRAE 62.2-2016: What's New
Every three years the ASHRAE 62.2 residential ventilation standard is revised, the next full revision will be the 2016 edition. Significant changes are coming for this new edition and you should be ready. As a member of the ASHRAE 62.2 committee since 2007, Rick will explain the changes and how they will impact your work. Sharpen your pencils and bring your questions.

Presenters: Rick Karg, Residential Energy Dynamics

ABS-8- Attic Performance Showdown: Conditioned vs. Unconditioned Attics
This session will use the latest performance results from field testing, advanced simulation and predictive hygrothermal modeling and building science research to explore performance strengths and weaknesses of both unvented and vented attics in residential building. New data will also be shared addressing sustainability, durability, moisture control and affordability of both attics across several climate zones. Attendees will leave this session with actionable best practices to create high performance attics that can be applied on the job site across specific regions and climate zones throughout the country.

Presenters: Dr. Achilles Karagiozis, Owens Corning

ABS-9- Bang for Buck Sustainability Strategies in Small Commercial
Advanced Commercial Buildings Initiative (ACBI) at Southface: when it comes to small commercial green buildings, which high-performance design and construction strategies are working well? Which need improvement?

Staff at Southface has studied small commercial buildings constructed within a regional, prescriptive green building program. By factoring in measured data—energy models, utility bills, and infiltration testing—they'll paint a complete picture for various building types. They'll also review the data-driven process of updating the green building program to achieve certain energy-efficiency metrics.

Get data, case studies, and other information that will help you make high-impact design decisions in your practice. Plus, improve your ability to articulate to building owners/developers the impact of various energy and water conservations measures on overall building performance. You'll even learn about the impact of climate zone-specific differences to consider when implementing a green-building approach.

Presenters: Laura Capps, Southface

ABS-10- Building America's Lessons Learned- Staged Upgrades
Deep energy retrofits are only one way to radically improve the energy performance of our nations millions of existing homes. Building America recognizes this, and is working with DOE’s deployment programs to create technical and market solutions that can allow builders and homeowners to improve energy efficiency one step at a time. This session will explore four years of lessons learned from Building America and our research teams, including whole-house and staged strategies developed by Lawrence Berkeley National Laboratory and Florida Solar Energy Center.

Presenters: Eric Werling and additional speakers TBD, US Department of Energy

ABS-11- Building Science as a Game
SimBuilding, a National Science Foundation grant to develop innovative ways to learn building science through playing games, is in its final year of development. Several new games have been completed in this last year including a detective style infrared, moisture and thermal bypass game. Come and learn about the new games that are freely available to all to use. These games include hygrothermal and location specific data and are science-based. Amanda Hatherly is a Principle Investigator on the grant and runs the EnergySmart Academy at Santa Fe Community College.

Presenters: Amanda Hatherly, Santa Fe Community College

ABS-12- Cooking, range hoods and kitchen ventilation
High performance homes need to have good indoor air quality as well as being low energy users. Cooking has a major impact on IAQ and is a significant source of pollutants in a home. There are the obvious odors, not so obvious moisture related issues and, of increasing significance, pollutants with health impacts, such as particles, CO and NOx. This session will discuss the pollutant sources related to cooking and the efficacy of control methods, with a strong focus on range hood performance that includes the results of many laboratory tests as well as field measurements in homes. We will talk about the development of a new capture efficiency testing standard and look in detail at the experimental data used in the creation of the standard. We will learn that just specifying air flows is not enough and that improved design is critical. We will look to the future to talk about what is coming next in kitchen range hoods, including ratings, specifications in standards (such as ASHRAE 62.2), and improvements in design and operation (including automation).

Presenters: Iain Walker, LBNL; Brett Singer, LBNL

ABS-13- Do more with the equipment you have!
What else can I do with the equipment I have?

This will be a “think out outside of the fan” session and feature the best of the MacGyver solutions.

Duct Testers have many applications besides testing ducts! They can be a powered flow hood testing exhaust fans, duct supply flow, total system flow, test Air Leakage in installed exterior windows/doors (ASTM Std) and …

Many auditors have IR cameras and do not use it with the blower door to see the effects of infiltration.
The blower door can be used as a powered flow hood to measure total system flow.

A cardboard box - used to test exhaust fans. Make your own pressure pan and flow hoods. We will also demonstrate some common how to measure flow with a pitot tube.

I have several professionals that will collaborate live (present a single concept) or send me their “invention“.

Some professionals I will coordinate with are Bill Spohn, Paul Raymer, Rick Karg, … I will create a discussion on linkedin and home energy pros to get some unique ideas and create some discussion. This could be “Mr. Science” type of class.
ingenuity
creative solutions
think on your feet
use what you have

Bring your cool device and share with the group.
1. How to use duct testers for multiple testing applications. like a powered flow hood.
2. Understanding the testing principles can provide creative solutions to the testing requirements like using a cardboard box to test exhaust fans.
3. Necessity is the mother of invention. There are multiple testing methods that we can use to expand our existing business model. These solutions can also be used in training.

This would be a fun presentation and could be converted into a hands-on workshop of converting duct testers into powered flow hoods and some of the other hands-on applications. It can also expand to a pressure vs flow workshop.

Presenters: Joe Medosch, Energy & Environmental Consulting llc

ABS-14- Durability, Resilience and Energy Efficiency: Working together to make sustainable building envelopes.
As building, energy and green codes become more stringent, new building technologies and innovations are being incorporated into the building envelope. When incorporating new technologies into building assemblies traditional construction practices need to be adapted. However, as these adaptations of construction practices take place they still need to maintain adherence to basic principles of water management to prevent moisture accumulation in building assemblies. This presentation will describe some of the water management challenges and choices that arise when increasing the thermal performance of building. The presentation will include a review of the progress of industry standard practice and guideline development on the development of details to maintain air, water and thermal barrier continuity and integrity.

Presenters: Theresa Weston, DuPont Building Innovations

ABS-15- Failure Modes for Unvented Attics
This educational session will unveil and dissect field data from a new study conducted by Oakridge National Laboratory exploring the performance of residential attics sealed using open-cell spray polyurethane foam (ocSPF) and with closed-cell spray polyurethane foam (ccSPF) insulation. Building science-driven findings from the 2015 Florida-based field research will be applied to help the audience gain a broader understanding of failure modes for unvented attics. This presentation will also review data results in context of existing codes to help builders navigate product decisions that impact code compliance, occupant comfort and overall performance.

Presenters: Dr. William Miller, Oak Ridge National Laboratory

ABS-16- Getting it Tight: Successful Air Sealing and Compartmentalization Design and Execution
By now we all know tighter is better – more comfortable, more energy efficient, more resilient. LEED for Homes, LEED Multifamily High Rise, and utility incentive programs all have tough unit compartmentalization requirements for multifamily housing. Building codes and standards are becoming more rigorous and have begun to mandate testing for some building types. With so many buildings and units achieving and even surpassing their goals, so why then are so many still so leaky, in spite of the best intentions of architects and builders?

With combined experience on over 250 multifamily projects, the panelists have seen what works and what doesn't. We will review the best practices of top performing projects: what details work, what to include in the specifications, and what to pay attention to on the job site so that code and design requirements are successfully met.

Presenters: Kristen Simmons, AIA, NCARB, ICF International and Michael Schofield, Conservation Services Group

ABS-17- HVAC 101
In this session, you'll learn the basics of HVAC systems and combustion, the differences between furnaces and boilers, and the different types of distribution systems. In addition to the technical aspects of HVAC, you'll also hear about the factors to consider when upgrading to new high efficiency systems. Round out your whole house and building science knowledge with a better understanding of how HVAC systems work and affect other areas of the house.

By Attending This Session, Participants Will:
Develop an understanding of the interconnected components of HVAC systems
Understand the different types of distribution systems and the basics of the combustion process
Learn how HVAC plays an important role in creating comfortable, energy efficient homes

Presenters: Bill Spohn, TruTech Tools, LTD

ABS-18- HVAC Design Applied
Recognizing poor HVAC design elements in the field may not always be as obvious as the entertaining photos we see all over building science blogs. So how can HERS Raters equip themselves with the knowledge to diagnose more comprehensive design concerns? During this session we will break down the fundamental elements of proper HVAC design & airflow and discuss how they relate to performance and comfort. Unfortunately the jokes of improper sizing, poor duct design and erroneous equipment selection are far from over. So how do we overcome these hurdles and make progress with familiar industries? When and how will we know if designers are truly considering all of the various sources of heat generation in the home? And are there new tools to help? These questions will be thoroughly covered during this session of proper HVAC design applied.

Presenters: Frank Wickstead, ICF International and James Jackson, ICF International

ABS-19- IAQ, Ventilation, and Airtightness in High Performance Homes
Stringent ventilation and airtightness requirements are becoming commonplace in the high performance homes industry, and green building rating systems are starting to encourage and sometimes require aggressive IAQ provisions, including use of low-emitting materials, chemical avoidance, and enhanced air filtration. But do these challenging requirements result in better indoor air quality for home occupants? Some recent studies at LBNL have investigated this question by field measurements of pollutants in new and existing high performance homes. In this session, learn how air pollutants found in these homes compare with health-relevant guidelines, and how they compare to those measured in conventional new California homes. Most importantly, learn what factors contribute to IAQ in high performance homes, such as kitchen exhaust fans, commissioning and source control, as well as how raters, contractors and designers can improve what they promise and deliver to homeowners.

Presenters: Brennan Less, LBNL and Iain Walker, LBNL

ABS-20- Indoor Air Quality Basics
As homes become tighter, indoor air quality (IAQ) becomes more of a concern. In this session, we will address the essential elements of IAQ, including controlling pollutant sources and reducing contaminants with ventilation (ASHRAE 62.2). Additionally, we will discuss the important topics of combustion sources of pollution and moisture control.

Presenters: Rick Karg, Residential Energy Dynamics

ABS-21- Infrared Thermography Certification for HERS Raters
This session presents an update on the implementation of the ASNT Level II Certification for infrared thermography for building diagnostics for RESNET Raters. The 2016 edition of ASNT's SNT-TC-1A guideline on personnel certification officially introduces the new certification based on the MOU between RESNET and ASNT.

Presenters: L. Terry Clausing, ASNT

ABS-22- Model Calibration: introduction, benefits, and standardization.
Model calibration can improve the accuracy of software predictions of retrofit energy savings under a home's actual operating conditions. Typically, about a year's worth of historical monthly utility billing data are used to "true-up" up or "tune" the baseline model for the home. Model inputs are adjusted within their ranges of uncertainty until a required level of agreement is achieved between predicted and metered baseline energy use. This session will provide an introduction to the topic of model calibration, present analysis results that demonstrate the benefits and challenges of model calibration, and describe how NREL, RESNET, and many residential software developers are working together to standardize a method to test and improve model calibration approaches.

Presenters: Ben Polly, NREL

ABS-23- Moisture Loads in Encapsulated Attics
Open cell spray polyurethane foam (SPF) is often applied to roof decking in new construction and retrofits as an energy conservation measure. If done well, this measure increases building air tightness and encloses attic HVAC and ductwork

within a semi-conditioned space, eliminating duct leakage to outside and reducing temperature differences between duct and attic air. However, recent research indicates open cell SPF-encapsulated attics are subject to high humidity levels during both the summer and winter seasons. Measured data from Climate Zones 2-4 demonstrates a diurnal "sponge" effect of the roof assembly. When the sun warms the exterior roof surface, it causes the moisture vapor within the assembly to expand beyond the volumetric capacity releasing moisture into the attic and causing the relative humidity to consistently reach 70% or higher. As the roof cools during the evening, the moisture volume decreases creating a void, or thirst, within the foam to absorb moisture from the attic air. The presenters will discuss measured data in a variety of housing types across Southeastern climate zones, WUFI hygrothermal modeling, potential solutions for mitigating moisture loads in low load homes, and impacts on structural durability and HVAC energy consumption.

Presenters: Sydney G. Roberts, Southface; Philip Boudreaux, Oak Ridge National Lab; Simon Pallin, Oak Ridge National Lab and Roderick Jackson, Oak Ridge National Lab

ABS-24- Moisture Performance of Frame Walls: The Physics and Design Priorities
In residential construction, moisture and energy control are critically important in order to achieve the desired energy efficiency and structural integrity and durability, as well as occupant health and comfort. Understanding the dynamics of moisture movement is essential to minimize moisture issues through proper design and to properly diagnose any issues that may occur. How moisture is transported, why and how much, and under what conditions is covered in this presentation. The basic science controlling moisture dynamics in frame construction is presented to give the audience an understanding of what governs the speed and direction of moisture diffusion, how the amount of moisture movement via diffusion compares to the amount of moisture moving via air infiltration, and the role of sorption/desorption of framing materials in determining the moisture tolerance of the wall structure. During the presentation, the audience participates in an exercise, using appropriate tools and techniques, allowing them to understand both the direction and amount of moisture vapor flow at specific conditions and how it relates to the overall vapor drive and vapor retarder properties. Moisture and energy performance are so inter-related, developing a good understanding of moisture performance is essential to all energy professionals.

Presenters: James R. Wells PhD., Tremco Barrier Solutions

ABS-25- Multi-fan Blower Door Testing Lessons Learned
Want to attract new clients through blower door testing whole buildings using multiple fans? What are the key items to consider when putting together your contracts and planning your tests? Learn what we got right and what we've changed after infiltration testing over 40 small commercial buildings. We'll discuss how to find the business, what to include in your proposals and contracts, and how to perform a reputable test with minimal man-hours and equipment.

Presenters: Laura Capps, Southface

ABS-26- Real World R-values for Wood-frame Walls: the role of air movement and temperature
This session will report the results of a eight-year long research program into the thermal performance of wood frame walls. A new state-of-the-art large scale test chamber was designed and built to allow for testing under a full range of real world temperatures and air pressure differences. Precise measurements of heat flow and air leakage were taken of walls insulated with fiber glass, cellulose, and spray foam as well as some with exterior insulating sheathing. The significant effect of temperature differences, the complexity of air leaks through flaws in the air barrier system, and thermal bridging were shown. Results of numerous wall designs will be presented along with practical advice for selecting, installing, and inspecting insulation to achieve the best performance. Implications for computer modeling and rating systems will be discussed. While some of the results reinforce existing understanding, there were many surprises, and useful new knowledge.

Presenters: Chris Schumacher, Building Science Labs

ABS-27- RESNET - International Code Council ANSI Consensus Standard on Blower Door and Duct Leakage Testing
The 2009 and 2012 IECCs required performance building envelope and duct leakage testing. The code, however, does not specify the procedures to conduct the testing. RESNET and the International Code Council are in the final stages of

adopting an ANSI consensus standard on conducting blower door and duct leakage testing. RESNET has proposed that the 2018 IECC refer to the ANSI standard. This session will explain the provisions of the standard.

Presenters: Iain S. Walker, Lawrence Berkeley National Laboratory and Gary Nelson, The Energy Conservatory

ABS-28- Selecting air & weather resistive barriers and ventilated cladding systems to prevent moisture failures in walls

New energy efficient construction requirements are requiring higher levels of insulation. Enhanced thermal performance means less energy or heat loss through the wall system which significantly increases the drying times of wall components. Less drying leads higher moisture content of building materials thus greater potential for expensive moisture related wall defects. Steve Easley uses pictures from his forensic experience to examine failures of synthetic stone, stucco and siding problems and provides simple, cost effective solutions for using air/weather barriers and ventilated cladding systems to prevent water related damage. This class will also site current research that supports the value for ventilated cladding systems. Attendees will understand the building science behind how walls get wet and the factors that most affect their ability to dry.

Objectives:
Walk away with the knowledge to select and properly install air/weather barriers and rain screen systems to create ventilated cladding system for lap siding, synthetic stone and stucco wall claddings.
Understand how properly detailed and installed air barriers can reduce moisture related problems and reduce energy use.
Understand how to properly integrate air/weather barriers with flashings for drainable and rain screen wall systems.
Identify the construction mistakes that lead to water related failures, costly call backs litigation and affordable, reliable solutions.

Presenters: Steve Easley, Steve Easley & Associates

ABS-29- The Changing Rules On Home Energy Savings

Recent studies by the Federal Government and others surprised many industry professionals with findings that indicate the single biggest contributor to energy loss in residential homes to be leaky ductwork. The DOE estimates that 80% of U.S. homes today lose 20% to 60% of treated air through these leaks. Unfortunately, the problem has been all but ignored for decades due to the ineffectiveness of current duct sealing methods. To address this problem, the U.S. Department of Energy sponsored research that led to the development of an innovative approach to duct sealing that works from the inside of the ductwork to locate and seal leaks. The introduction of aerosol-based duct sealing technology is changing the rules on energy saving strategies for both new construction and renovation projects across the globe.

Presenters: Scott Mueller, Comfort Institute

ABS-30- The New Normal: Mechanical Systems for Moisture Control

As tightly air-sealed, well-insulated building envelopes become mainstream and code required, dealing effectively with indoor humidity becomes a priority. The established strategy of relying on space cooling to control indoor moisture load is becoming increasingly unrealistic. This seminar focuses on the challenging issue of part load conditions and the growing need for energy efficient dedicated moisture control systems.

Key relationships between relative humidity, air temperature and dew point temperature, as they relate to air movement through a house and the impacts on the building materials, energy bills and IAQ will be covered. The basic operating principles of dedicated moisture control systems will be explained and put into context with variable refrigerant flow (VRF) mechanical systems, which are able to continuously and incrementally adjust delivered capacity, and enthalpy recovery ventilators (ERVs).

Presenters: Kimberly Llewellyn, Positive Energy and Nikki Krueger, Ultra-Aire Whole House Ventilating Dehumidifiers

ABS-31- You already own the tools. Use them!
Basics to our business, like blower doors, comprehensive modeling and occupant experience get taught as part of training. We think we've got these things down, but in fact most of us are leaving some of our best tools in the truck. PSD has been supporting many Raters who have missed opportunities to deliver more value to their customers. Examples include simple Zonal Pressure Diagnostics and the Occupant Interview. There are real reasons these fundamentals get missed, but even more reasons to go back to them. Participants in this session will be encouraged to bring their own experience, and to discuss why they make choices about which tools to apply and when

Presenters: Ethan MacCormick, Performance Systems Development and Jim Phelps, Performance Systems Development

Cost Effective Ways to Lower the HERS Index

CEW-1- A New Low Hanging Fruit - Innovation In Duct Sealing
Until recently, the single biggest contributor to home energy loss – duct leakage - was ignored for one simple reason: until recently, there was no effective solution to the problem. Traditional manual sealing methods such as tape and mastic are only effective on easily accessible leaks – leaving 90 percent of ductwork untreatable. As a result of research from the U.S. Department of Energy, however, a new aerosol-based sealing technology was recently introduced making duct sealing the single most effective – and cost-effective – strategy available to homeowners looking to save energy. The DOE has called aerosol-based duct sealing one of the most significant innovations made available to homeowners since the agency was first established. This presentation will look at the technology, its implications and the energy-saving results obtained by real-world applications.

Presenters: Scott Mueller, Comfort Institute

CEW-2- High Performance Attics and Walls with Spray Polyurethane Foam
Designing a home's envelope with high-performance spray polyurethane foam (SPF) can help builders maximize the energy savings in two critical areas – the attic and walls. Panelist will explain how SPF can be used to transform traditional attic and walls designs to add strength, durability, and energy efficiency to the envelope. Attendees will receive information on modeling the energy savings benefits of attic and wall designs with common software tools. Attendees will also have the opportunity to learn more about SPF products from several of the industry's leading experts.

Presenters: Rick Duncan, Technical Director, SPFA; Technical Representative, BASF; C.R. Herro, Meritage Homes and Stephen Davis, SPF Consultant

CEW-3- How to Build Better Homes for Less Money - applying lessons from NASA and Major League Baseball
What do NASA, the MLB, and the Home Building Industry have in common? Not much, actually. But there are things we can learn from leading engineers in those industries. This session will teach builders techniques and methodologies, proven successful in many other industries that can help builders design more energy efficient homes AND reduce construction costs. Attendees will learn how to properly choose an energy spec level that maximizes profit and gives them an edge over their competition. The session will also disprove myths about cost effective energy improvements that have been assumed true in the building industry for decades.

Presenters: Cy Kilbourn, Ekotrope

CEW-4- Implementing the Hot Water Provisions in the RESNET ANSI standard
2015-16 is the year of water for RESNET. This session will discuss the changes to the standard to account for measures that reduce the consumption and waste of hot water and the changes that adjust the amount of hot water and the associated energy in the energy budget by climate zone. We will go into depth on the various measures that can now get credit for hot water use efficiency. These measures are some of the most cost effective ways to improve a HERS score. Perhaps more importantly, several of them improve customer satisfaction. We plan to divide the time between explaining the measures and getting participant feedback on their early experience in implementing the provisions.

Presenters: Gary Klein, Gary Klein and Associates and Philip Fairey, Florida Solar Energy Center

CEW-5- Opt, Opt, and Away: Identifying Cost-Optimal HERS Index Scores
The BEopt™ (Building Energy Optimization) software provides capabilities to evaluate residential building designs and identify cost-optimal efficiency packages at various levels of whole-house energy savings along the path to zero net energy. The National Renewable Energy Laboratory (NREL) recently added the Energy Rating Index to the BEopt software. Using this new capability, engineers at NREL conducted analysis to identify cost-optimal ERI values for various cities and housing types throughout the country. This session will provide a quick overview of BEopt capabilities and present the Index scores and associated efficiency packages identified in the analysis.

Presenters: Dave Roberts, NREL

CEW-6- RESNET JobWerks User Accomplishments
Accelerate learning through on the job mentorship with RESNET JobWerks, a cost effective, easy to use cloud software application for communication and tracking team performance. JobWerks represents a revolution in home performance education by facilitating a learning environment where it most counts, on-the-job. This session will include an overview of this solution, demonstration of new features and user case studies. Other presenters TBD.

Presenters: Rob Moody, Organic Think

CEW-7- RESNET New ANSI Standard on Rating the Hot Water Use in a Home
RESNET has adopted procedures to incorporate additional water heating e energy use as ab addendum to its ANSI standard 301-2014, This addendum gives credit in the HERS Index for shorter pipe runs, drain water heat recovery systems and higher performance appliances such as clothes and dish washers.

Phillip Fairey of the Florida Solar Energy Center has calculated that depending on the climate zone these new procedures can providers up to a 3 point reduction of the HERS Index Score of a home.

This session will explain the new procedures and explore the potential effects on home's HERS Index Scores.
HERS Raters and builders will not want to miss this opportunity to learn new cost effective ways to lower a home's HERS Index Score.

Presenters: Philip Fairey, Florida Solar Energy Center and Gary Klein, Gary Klein and Associates

CEW-8- What we can learn about Passive House Air Tightness Methods
MainStream Corporation, an academic-based performance building company, set out 5 years ago to build uber performance buildings. Completing one of the tightest known buildings in 2012 at .23ach50, Passivista Passive House has also become known for performing as modeled on the EPA's website. Not only was Passivista driven by the owners, it was an affordable simple building costing only $99/SQFT. Join Cody Farmer as he showcases real budgets, real projects, with real results measured by RESNET raters, that clearly show how to build ultra-tight buildings.

Presenters: Cody Farmer, LiveUtilityFree.com

Energy Policy & Programs

EPP-1- "A Look behind the Curtain of Utility Programs" Modeling for kWh and How Savings are Calculated and Achieved
Have you ever wondered how HERS Ratings fit into the Utility Program savings equation and how programs actually claim energy savings? It might not be as simple as it appears. Join us for a look behind the curtain and what happens after you submit a home to a utility program and how rule making by utility commissions, energy code baselines and

EM&V Contractors fit in to the savings equation. The development behind the New Homes Utility Programs and how HERS Raters can play a more meaningful role.

Presenters: Maci McDaniel, ICF International

EPP-2- A Federal Tax Credit for Energy Efficient Homes that Builders Can Depend On
The current $2,000 tax credit for builders to construct energy efficient homes have been marred by the every two years the credit having expired and then at the last minute being extended by Congress.

RESNET, the Leading Builders of America and the Natural Resources Defense Council have drafted proposed legislation that would base the credit on the Energy Rating Index compliance Option of the 2015 IECC and exist for at least five years.

This session will explore this proposed legislation and determine the odds of it and other energy efficiency legislation passing in this Congress.

Presenters: Carl Chidlow, Winning Strategies Washington; David Goldstein, NRDC and Clayton Traylor, Leading Builders of America

EPP-3- Bridging the Gap: Leveraging Energy Efficiency, Financing, & Utility Incentives for Moderate Rehab Projects
Over the past several years, energy efficiency programs in Massachusetts have experienced a decline in affordable housing project enrollment. This has been due to several factors including - but not limited to - the lack of program design tailored to capture projects undergoing partial renovation and rehabilitation measures. The Massachusetts affordable housing agencies, plan to finance 7,000 housing units per year over the next three years with about 5,000 of those being refinance and moderate rehab of an existing development. This snapshot illustrates the potential to capture energy savings from an underserved market. Bridging energy efficiency programs to partner with the housing agencies and target properties at a financing milestone, will enable additional energy savings and accommodate an underserved market where opportunities are currently being missed. This sector pays into the ratepayer pool for energy efficiency programs and due to either limited funding or unique rehab projects, the benefits and services from existing programs are very limited. This session will examine an initiative which will lay the foundation to address this need, increase participation and capture energy savings while also providing a boost for inevitable market transformation.

Presenters: Mark Pignatelli, ICF International; Elizabeth Glynn, Center for Sustainable Energy and Ian Buba, ICF International

EPP-4- Case Study: Four Major Utilities- Territories in Texas Baseline Study Findings and Impacts in New Residential Construction
Historically, the State of Texas has been the largest producer of energy efficient homes in the utility programs as well as the EPA's ENERGY STAR Program at a national level. Baseline Study findings will be presented along with factors that impact the baselines and the disparities between the major metro areas and the border cities and their economies. Learn how code enforcement or lack thereof impacts the utility program baselines and why. What drives builders to follow stringent building codes and remain competitive in the market, adding value to customers? Are we missing savings opportunities? Are builders leveraging program incentives or too busy meeting demand and supply?

Presenters: Maci McDaniel, ICF International and Travis Michalke, ICF International

EPP-5- Enabling Transparency, Efficiency, and Value in ENERGY STAR New Homes Programs
The EPA award-winning APS ENERGY STAR Homes residential new construction program has been intentionally designed to enable value for its program participants while meeting regulatory requirements. This session will highlight how utilities can minimize program implementation costs, enable transparency for program stakeholders, and maximize the value of participation in their energy efficiency program by leveraging the data collected during the energy rating process. Through an innovative implementation approach, APS has enabled operational efficiencies for program administrators and participants - home builders, HERS Raters, and HERS Providers - by deploying a single online data

collection, storage, and sharing solution. By centralizing program and incentive data, true transparency is achieved while communication and participant workflows are streamlined. Using this solution, builders enroll subdivisions online, track home inspection and incentive payment status, and perform reconciliation of homes. HERS Raters upload homes and energy rating data, and following review and certification of program homes by HERS Providers, APS uses the online portal to review homes, process incentive payments, and create marketing brochures for the builder. The same database is also used for program evaluation and regular QA reviews. Enhancements are also being planned to support auto-generation of appraisal forms and Energy Efficient Mortgages documentation to help enable the proper valuation of energy efficient homes and reward the builders for their commitment to energy efficient building.

Presenters: DeeDee Hessler, Arizona Public Service (APS); Thomas Cochran, Energy Inspectors Corporation and Bob Burns, Pivotal Energy Solutions

EPP-6- Expand Your Business- Non-Profit Outreach and Project Development
Helping a non-profit organization can lead to large scale project development. We'll be reviewing the recipe for outreach, funding, relationship building, resource integration and partner collaboration. To demonstrate the process, this session will focus on a specific Efficiency First Arizona and SRP collaboration project with The House of Refuge in Mesa, AZ, an 88 home community with common areas that assists with families in transition. In addition to finding partners, creating project plans and timelines for physical building performance enhancements, discover how to incorporate education related to home energy management and related workforce training. Most importantly, learn how to help fund these projects through energy programs, foundations, grants and other opportunities.

Presenters: Kirsten Shaw, Advanced Energy Efficiency & Environmental Quality; Heather Szymanski, Efficiency First Arizona; Bobby Liles, House of Refuge and Terry Rother, Salt River Project SRP

EPP-7- Expand Your Business- Why and How to Market the Health and Safety of Buildings
Learn why and how to market the health and safety of buildings to expand your business. Tremendous opportunity exists to incorporate healthy home features in retrofit work, especially in relation to asthma and other respiratory issues. Prescriptions for home assessments and even home improvements can be covered by medical insurance in some cases. There are innovative energy & financing programs that now link building performance improvements more directly with health improvements. Discover how our industry and energy programs can collaborate with the healthcare industry to help people live better, while building your business. Walk away with templates for marketing plans, justifying research, and possible verbiage you can utilize for your business. Specific examples of what is working in Arizona will be shared with time for Q&A.

Presenters: Heather Szymanski, Efficiency First Arizona; TBD - Stacey Mortenson or other Representative, American Lung Association of Arizona and Kirsten Shaw, Advanced Energy Efficiency & Environmental Quality

EPP-8- Implementing Legit QA - How is this possible??
ENERGY STAR checklists, Local Efficiency Program, RESNET Standards, home occupants, and multiple duct systems! There is TON of information to attempt to verify during an onsite quality assurance visit, and often with very little time. This session will discuss best practices for not only capturing the required data, but documenting it and using it as a tool to educate all parties involved, and create better practices going forward.

Presenters: Jim Phelps, Performance Systems Development and Emelie Cuppernell, Performance Systems Development

EPP-9- Indoor airPLUS Sales Training Kit: Empowering Your Sales Staff to Sell Improved Indoor Air Quality
As energy efficiency and improved indoor air quality become increasingly important to buyers looking for a new home, articulating the benefits of such improvements can be difficult. The Indoor airPLUS Program has developed a Sales Training Kit that provides sales staff with the tools to speak about indoor air quality and the Indoor airPLUS Program that resonates with various types of clients.

As a companion training to the ENERGY STAR Certified Homes Sales Training Kit, the Indoor airPLUS module provides the sales team an overview of the features and benefits of Indoor airPLUS and how to identify an ideal Indoor airPLUS client.

Additionally, the training covers a variety of value propositions and uses videos and collateral, interactive activities, and group role play to work through the application of those value propositions. This ensures that sales staff are engaging interested clients with features and benefits that align with their values.

Included in the Sales Training Kit is a Participant Guide, a Trainer's Guide, a PowerPoint presentation, and supplemental documents to guide your Sales Manager and team in capitalizing on the Indoor airPLUS messaging and brand. Attend this session to learn about the Indoor airPLUS Sales Training Kit and how to tailor it to your organization's needs to best reach your client base.

Presenters: Nick Hurst, ICF International and CR Herro, Meritage Homes

EPP-10- Making the Grade: Developing a Contractor Ranking System for Energy Efficiency Programs
Our session will highlight the successes of the contractor ranking system in the Central Hudson energy efficiency program with over 300 participating trade allies, why a contractor ranking system should be utilized, how to implement this system in new and existing programs, and what challenges exist. Discussion also includes lessons learned from implementation efforts in a Massachusetts residential new construction program, as this up-and-coming program tool is used to increase participation of contractors looking to leverage incentives and remain competitive in the marketplace by providing additional value to customers. A well-designed ranking system allows program administrators to recognize and support contractors vested in the success of the program and guarantee higher levels of participant satisfaction.

Presenters: Frank Nitti, ICF International

EPP-11- Market Transformation in the Pacific Northwest: A Regional Approach to Enabling Transparency, Efficiency, and Value in New Homes Energy Efficiency Programs
Over the last several years, the Northwest Energy Efficiency Alliance and the Energy Trust of Oregon have been working with regulatory agencies and utility partners in the Pacific Northwest to transform the energy efficiency market in the region. 2016 will see more market transformation in the region as NEEA transitions existing energy efficiency programs to new, innovative programs with added value for HERS Rater, Providers, and utility partners while Energy Trust of Oregon expands the reach of its successful EPS program. Attend this session and learn how the Pacific Northwest can be a model for the country by transforming markets through progressive energy efficiency programs and centralization and sharing of program data with utility partners, program sponsors, and the real estate industry.

Presenters: Neil Grigsby, NEEA and Scott Leonard, CLEAResult

EPP-12- New and Updated BPI Standards: What They Mean for You
At the individual project level, the program level and as an industry, raising standards in home performance contracting is at a critical juncture. Large scale government funds, such as ARRA grants, are spent, and our young industry is now expected to mature in the private home performance marketplace. During this session participants will learn about new energy auditing standards BPI released this year (ANSI/BPI-1200 and ANSI/BPI-1100), how they present opportunities for flexibility not found in the current Building Analyst standard, how they will be rolled out in the marketplace over coming months, and how they can impact home performance professionals and contractors, program administrators and implementers.

This session will also provide updates on BPI's standards for uniform data collection and transfer (HPXML) in home performance (BPI-2200 and BPI-2100), and on the opportunities these standards hold for energy efficiency programs to streamline, transfer and use data productively.
Attend this session as we dive in to the core components of BPI's new and revised standards. Tune in to find out how these updates will influence your company's operations, and what you can do in your business to keep up to speed.

Presenters: John Jones, Building Performance Institute, Inc.

EPP-13- Policies and Programs to Deliver Cost Effective Water and Energy Use Efficiency
This session provides an overview of the water-energy-carbon footprint relationship with an eye to how to apply this relationship to the buildings we work on. Attendees will learn how to calculate the ratio and magnitude of the water-energy-carbon footprint connection for their buildings and communities and see how these compare to local and national benchmarks. We will discuss indoor and outdoor water use and advanced systems such as greywater and rainwater. The key metrics we will present also provide context for water rating systems. The session will help participants learn how to plan system improvements to be more resilient to increasing levels of water use efficiency. In addition, the discussion will explore the potential unintended consequences to water and waste water distribution systems as water use continues to be reduced.

Presenters: Gary Klein, Gary Klein and Associates

EPP-14- Program Efficiency
Utility-sponsored energy efficiency programs remain critical to rating businesses in many markets, and their data collection requirements are not always efficient for participating Raters or for the program's own reporting and evaluation needs. This session will look at opportunities for innovation in the way data is delivered to programs; including what utilities need from Raters and why they need it, and how innovation in this space can benefit programs as well as Raters and Builders.

Presenters: Clinton Heyn, Pivotal Energy Solutions and Brett Dillon, IBS Advisors, LLC

EPP-15- Projecting total energy usage- how good are we?
An update on last year's presentation looking at 12 months of actual energy usage compared with projections in large numbers of rated new homes. This time with additional evaluation and demographic data to provide additional perspective.

Presenters: Ben Adams, MaGrann Associates

EPP-16- Residential Energy Guarantee - Don't Just Say Its Energy Efficient - Guarantee It!
Energy efficiency in new construction is on everyone's mind. And promising to build an energy efficient home is great. Guaranteeing it is even better. This session will introduce you to the revolutionary new product that has taken the HERS rating to new heights and is providing new opportunities to raters to rate more homes and builders to sell more homes.

Presenters: Roger Lange, Bonded Builders Warranty Group

EPP-17- Successful Energy Efficiency Programs without Rebates or Incentives
Rebates and incentives are the driving force behind the majority of energy efficiency programs. Selling the homeowner on recommendations becomes less of a struggle when there is money available to help pay for these improvements. But what happens if none of that financial aid is available? Will the homeowner still see the benefit of making the energy efficient improvements? North Little Rock Electric Department faced this problem in 2006 when they established their Home Energy Audit Program. Being a City owned municipality, NLRED was not allowed, by Arkansas law, to give any customer funded rebates or incentives. Find out how they made their educational energy evaluation program, with over 1,000 completed evaluations to date, successful with only a clipboard and a smile.

Presenters: Keith Allen McCourt, North Little Rock Electric Department and Jill Ponder, North Little Rock Electric Department

EPP-18- The Clean Power Plan: Why Do I Care?
On August 3, 2015 the United States Environmental Protection Agency (EPA) released the final version of the Clean Power Plan, requiring states to develop plans that will achieve greenhouse gas emissions reductions. The EPA anticipates that demand-side energy efficiency will play a significant role in state plans under the Clean Power Plan. This session will discuss the Clean Power Plan and how it will impact the residential energy sector as state plans begin to take shape.

Potential impacts of the Clean Power Plan include more stringent building energy codes, increased use of renewables, and updated utility incentive programs, among many others.

Presenters: Alec Danaher, ICF International

EPP-19- The Role of Natural Gas in Zero Net Energy
As the concept of Zero-Net Energy gains momentum, the number of stakeholders who believe that the path to ZNE is electrification grows as well. In order to achieve the desired result of obtaining the status of ZNE, we must be realistic and practical in our efforts to get there and electrification without guaranteed full renewable sources is not realistic. Natural gas is a clean, abundant and affordable solution that must be considered equal in the future of ZNE. Policy-makers must consider this when implementing policy, builders must consider this when constructing their developments and all stakeholders must consider the consumer preference when moving toward ZNE. These presentations will give the audience the information required to make an informed decision regarding the use of natural gas in ZNE by showing that natural gas is favorable based on metrics used in California and revealing research that indicates a mixed-fuel ZNE home is more efficient and economical than an all-electric home in many cases.

Presenters: Sue Kristjansson, SoCalGas; Jim Young, Navigant; Steve Easley, Steve Easley & Associates Inc. and Neil Leslie, Gas Technology Institute

EPP-20- Zero Net Energy Innovations in USDA's Multifamily Housing
USDA continues to push the envelope on achievements within the sphere of Zero Net Energy (ZNE) Multifamily Housing. Projects completed using USDA's funding have achieved ZNE and Net Positive performance due in large part to the competitive scoring point system for energy-efficiency and energy generation. This presentation will give participants an insight into the various sources of funding available at USDA's Rural Housing service and their connection to energy-efficiency. It will focus in detail on several exemplary, innovative projects that have achieved Zero Net Energy and better performance. Some of the projects have achieved Zero Net Electric, a very rare achievement within the realm of ZNE. It will engage the audience in discussions of future possibilities for achieving Zero Net Water, and even deeper environmentally robust efforts to create buildings that not only do the least harm but do the most good for people and the environment. Serving the most economically vulnerable populations, USDA's Multifamily Housing Direct Loan program focuses on very low income tenants with a national mean income of just $9800/year. These efforts to decrease utility costs and improve the health of buildings are at the heart of the agency's mission.

Presenters: Meghan Walsh, AIA, LEED AP, USDA; Sean Armstrong, Redwood Energy and Judy Moran, RA, LEED AP, USDA

Enhanced Quality Assurance Standard

QA-1- Calibration - When & Where
This session will explain the manufacturer calibration process / requirements and how it relates to the Standards in Chapter 8.

Ever wonder what the manufacturer does before you receive your equipment or when you send it back to be calibrated? We'll take you behind the scenes to see the process.

We will differentiate between a manufacturer calibration and a field calibration check. We'll explain what a field calibration check is, how often should it be completed and by who. How do you document the field check process, or do you? We will cover different procedures by each manufacturer to make sure you understand what must be completed vs just good QA procedures.

This session will cover more than the actual requirements of the gauge & fans but explain pressure calibration vs flow calibration. We will show why flow calibration is a more difficult process. Do you know which will cause a greater error - a gauge off by 10% or a fan off by 10%? Find out the reality of accuracy and repeatability in this session.

This session will cover what every Rater and QA must know and document.

Presenters: Joe Medosch, Energy & Environmental Consulting llc

QA-2- Ethics and Bias: How to Ensure Consistency in the HERS Index Through a Code of Ethics
A code of ethics is a required element of a profession, and adherence to the code of ethics helps ensure consistent quality of services by professionals. Brett looks at ethical foundations, bias, and codes of ethics as a way to resolve or reduce bias, a critical factor involved in quality assurance processes.

Presenters: Brett Dillon, The Dillon Group, Inc.

QA-3- Path to Professionalism
The best way to ensure consistency in any industry requires professionals to do the work. In this presentation, a model path for ensuring professionalism in the HERS Industry is outlined and the audience will participate in a lively discussion about the implications of each component.

Presenters: Brett Dillon, The Dillon Group, Inc.

QA-4- QA Your Own Rating File - What the Warning Messages Don't Know
Several new warning messages have been incorporated into RESNET HERS Rating software tools, however, there are several 'reasonability tests' you can perform on your own HERS Rating file that no software program can emulate. Attend this session to learn more about what the new warning messages mean, but more importantly, how to check your rating file to go beyond what the system is able to check and assure yourself your file is accurate.

Presenters: Sharla Riead, Accurate Rater Network

QA-5- Remote Field QA: is it possible?
We examine the possibility of remote field quality assurance using state of the shelf technology. Is it possible? Can it be cost-effective? How could it be implemented? These questions will be answered in this session...which will include footage and lessons learned from remote quality assurance field experiments.

Presenters: Brett Dillon, The Dillon Group, Inc.

QA-6- Shedding Light on Blind QA
There are multiple ways to go about doing site QA as a QAD (Quality Assurance Designee). Sometimes blind QA can help a QAD gain trust in their raters. Other times this blind QA leaves the QAD “in the dark” as to “why” the rater’s results were different. So long as the QAD has the raters results ahead of time, a QAD is allowed to ask the rater to replicate their results. This method allows for the QAD to mentor the rater with direct and immediate feedback, but also allows the QAD to get independent results for comparison in accordance with the RESNET Standard. Along the same lines, EnergyLogic has implemented the Proctored QA Event into our annual QA process with great success in providing effective QA. Not only is this event cost effective for raters and providers, but it is very effective in shedding light on inconsistencies in a rater’s process compared to their peers. This is allowable only once a year per rater and can’t be the only site QA for a rater. EnergyLogic will discuss the pros and cons of using these methods of site QA along with lessons learned in the process.

Presenters: Glenn Pease, Tom Flanagan and Scott Doyle, EnergyLogic

QA-7- Shelter from the Storm: How Your QAD can Help
You get the dreaded call where a builder questions the validity of your rating. It usually sounds something like “I built these two homes on the same block, they are the same model, with the same trades. Why did they score differently?” In this session we will discuss a few scenarios on why this can happen, how to get to the bottom of it, and what we can do as an industry to get in front of this topic of consistency. This issue is very impactful on the perceived credibility of

the rating system and sometimes (more often than not) the rater is accurate. Don't be left exposed and join us for this lively discussion.

Presenters: Glenn Pease, Tom Flanagan and Scott Doyle, EnergyLogic

QA-8- Virtual QA- Timely Feedback in a Long Distance Partnership
Access to homes is an issue that impedes on meeting the intent of the RESNET QA Standards. Limited accessibility requires careful planning and often means there is less room for random selection and "credible discovery" in the QA process. Changes to the RESNET Quality Assurance Standards, which require that QA be carried out by a third-party external to the Rating Quality Assurance Provider, may compound the issue of accessibility. Some Providers potentially will need to hire outside their market for QA services. In this case, the Provider often times has to schedule QA with the QAD weeks in advance in order to accommodate travel schedules and access to homes. While site QA will still be required in the proposed model, using video conferencing in virtual QA can help strengthen a quality assurance program by making it more efficient, cost effective, easier to accommodate geographic distances, and provide more regular feedback to Raters and their Providers. Come see what we learned from developing and testing out this new protocol for RESNET QA.

Presenters: Daran Wastchak, D.R. Wastchak, LLC; Glenn Pease, EnergyLogic; Aaron Gary, US-EcoLogic and Paul Gay, US-EcoLogic

Home Energy Ratings

HERS-1- A Statewide HERS Providership to Enable Efficiency, Transparency, and Value - Is North Carolina's Nonprofit Providership the National Model of the Future?
In the fall of 2014, the North Carolina Building Performance Association (NCBPA) launched a nonprofit Providership to: 1) consolidate the state's 10 existing Providerships, 2) establish a nonprofit program offering high service at low costs, 3) lead efforts to green the state's MLS directories and 4) develop a model that is positioned to serve all Raters in the state ahead of RESNET's next major changes to QA requirements. After 18 months in operation, NCBPA's "co-opetition" model now serves the majority of more than 50 rating companies based in the state that deliver the third highest number of HERS ratings in the country. Currently serving both individual and production Raters and RFIs at the lowest costs in the market, NCBPA's model leverages technology (including a cloud-hosted database platform for certification and QA processing) and "working togetherness" to support Raters with high customer satisfaction. Is NCBPA's Providership the model for the future? Attend this session to learn and comment on why it may, or may not be!

Presenters: Ryan Miller, North Carolina Building Performance Association

HERS-2- Basic Combustion Analysis
Learn about basic combustion science measurement, and some key factors to consider when selecting your equipment.

Presenters: Bill Spohn, TruTech Tools, LTD

HERS-3- Beyond the HERS Index: Exploring Data and Marketing Opportunities
Significant data exists beyond the HERS Index, and the opportunities for research are endless. This session will explore exciting opportunities for research and marketing, particularly focusing on extracting predicted energy and emissions data from REM/Rate into a usable database. HERS Raters and/or Providers can work with builders to determine overall predicted energy and emissions savings compared to IECC code reference homes. This will result in the ability to identify trends, answer research questions, and market the enhanced performance of homes in conjunction with the HERS index. In this session, we will explore examples of this research and how it can be used.

Presenters: Jenna Grygier, Southface Energy Institute

HERS-4- Bricks, Sticks, and HERS Ratings: Fighting Commoditization of the HERS Industry
Commoditization occurs when there is no clear differentiation in the quality of service or product in a market. In some cases this forces a race to the bottom where a HERS Rating service is devalued to just be an official piece of paper to push. Cost-cutting pressures from builders are a large part of the issue of commoditization of our industry, but Raters are culpable as well. Let's explore the reasons why our industry is being commodified and how we can work together to fight this trend.

Presenters: Robby Schwarz and Steve Byers, EnergyLogic

HERS-5- Business Models in the Rating Industry
Brett examines the three types of business models and applies them to the HERS Rating Industry. The business model you choose impacts everything- and in order to be successful and profitable, you must choose the right business model to fit your market. We will provide you tools to help you figure out what business model you should be using and how you can get your organization aligned with its purpose through the business model.

Presenters: Brett Dillon, The Dillon Group, Inc.

HERS-6- Career Opportunities of Being Certified as a RESNET Quality Agent
RESNET is in the final process for adopting enhancements of RESNET quality assurance oversight procedures. One of the most significant changes is that quality assurance over Rating Quality Assurance Providers will be conducted by RESNET certified Quality Agents that are financially independent from a HERS Rating company. This session will explain the new classification and discuss the career opportunities it presents.

Presenters: Daran Wastchak, DR Wastchak, LLC and Steve Byers, EnergyLogic

HERS-7- Classrooms are for Coffee Breaks
When does the lightbulb come on? For Rater candidates, or any Building Science student, the understanding of a topic finally connects at the intersection of theory and experience. Whatever kind of learner: auditory, kinesthetic or visual, you don't really _get_ it until you connect all of it, repeatedly. That doesn't happen in the classroom. RESNET's new Jobwerks tool, PSD's integrated mentoring strategy, and the growing use of simulation training and testing are all hints at the useful move away from the classroom to encourage effective and lasting learning. This session will use real results, anecdotal and quantified, to identify which kind of learning benefits from which kind of setting.

Presenters: Ethan MacCormick and Jim Phelps, Performance Systems Development

HERS-8- Credential Inflation
Is there value to adding more credentials to the HERS Industry? Does adding credentials improve workflow? In this session, Brett looks at what happens to the complexity and consistency of an industry when additional credentials are thrown in the mix...

Presenters: Brett Dillon, The Dillon Group, Inc.

HERS-9- Designed Job Training
To ensure consistency across the industry, it is imperative that job-training of Raters, Quality Assurance Designees, and Rater Instructors is consistent. In this session, you will discover the evidence-based principles that lead to well-designed job training programs, a hallmark of professionalism in any industry. How can an industry achieve any level of consistency when the job-training of the individuals in that industry is wildly inconsistent?

Presenters: Brett Dillon, The Dillon Group, Inc.

HERS-10- Don't Put Your Business at Risk - The Importance of Proper Insurance Coverage
It is vital that HERS Rating Companies cover themselves through insurance. RESNET has worked with Lockton Affinitiy to provide affordable insurance coverage customized for raters. The coverage includes:

- General Liability
- Professional Liability
- Property Insurance

The policy will also cover HERS Raters completing energy code inspections.
This session will explain why insurance is critical and the details of the coverage

Presenters: Jeff Hewitt, Lockton Affinity, LLC

HERS-11- Enhancing the Quality Assurance Oversight of HERS Ratings
For the past two years RESNET has been embarked on an effort to enhance the national consistency of HERS Index Scores. The RESNET Board of Directors adopted a series of policies to enhance the quality assurance oversight of ratings. RESNET recently submitted a set of quality assurance amendments to the consensus based RESNET standard amendment public review and comment process. This session will explain the changes and present a timeline of the implementation of the new quality assurance oversight procedures.

Presenters: Andy Gordan, Washington State University Energy Program and Laurel Elam, RESNET

HERS-12- Getting Real with HVAC Performance
RESNET standards currently rates the quality if the installation of insulation. For HVAC systems it relies on name plate data. It is well know that sizing and proper installation of a HVAC system can dramatically affect the systems performance. In California the HERS standards degrades the HVAC performance and awards credit for third party verification of its installation and performance. This session will offer a discussion of what RESNET needs to do to get real on HVAC performance.

Presenters: Philip Fairey, Florida Solar Energy Center; Wes Davis, ACCA and Dave Roberts, NREL

HERS-13- How do HERS-rated Homes Perform Compared to non-HERS-rated Homes?
The US Department of Energy is collecting data on new residential construction in eight states as part of the Residential Energy Code Field Study.[1] The goal of the three-phase study is to determine whether an investment in building energy code education, training and outreach can produce a significant change in residential building energy savings. Pacific Northwest national Laboratory (PNNL) is analyzing this data to identify areas where education and training activities can improve energy performance of homes. Related to this study, field teams in Texas are collecting data for HERS-rated homes separately from homes not rated by HERS. While splitting the sample in this manner results in a loss of statistical validity, the two sets can still be used to provide a general comparison of the energy performance of HERS-rated homes with that of non-HERS-rated homes. This session provides an overview of the data collection effort, the analysis methodology and the overall results of the comparison.
[1] https://www.energycodes.gov/residential-energy-code-field-study

Presenters: Vrushali Mendon, Pacific Northwest National Laboratory; Jeremiah Williams, US Department of Energy and Eric Makela (Optional), Cadmus Group

HERS-14- How the US Army Is Using the HERS Score to Incentivize Energy Reduction
Reducing energy consumption is very important to the Army, because lower consumption results in lower costs. With 90,000 existing residential homes across the United States on Army posts, the Army is beginning to focus on how these homes can be more efficient and more comfortable for the residents. With the current system, the Army pays for all of the energy consumption in these homes, so they have a huge incentive to improve the quality in order to reduce their overall costs. The Army is reducing its energy consumption in two different ways: 1) creating an incentive program to drive down usage 2) assessing and improving homes with cost effective, energy upgrades to greatly reduce overall costs. In this presentation, I will explain the new program that the Army is rolling out that includes a HERS score so that raters near military installations can have a better idea about this program. This will allow raters to feel much more comfortable about submitting a quality, competitive bid to rate these homes.

Presenters: Patrick Sullivan, US Army

HERS-15- Importance of Professional Development
This session discusses the empirical evidence supporting the importance of on-going professional development and how critical it is for businesses to enhance their competitive advantage in their market.

Presenters: Brett Dillon, The Dillon Group, Inc.

HERS-16- Infrared Camera Skills for the Building Thermographer
Infrared Camera Skills for the Building Thermographer attendees will learn about the qualities of a good image and how to manipulate the camera settings to obtain good images, including basic camera operation and what the camera settings mean. This workshop will cover common thermal signatures that building thermographers will encounter and how to interpret these signatures. We will also cover the conditions and equipment required to perform a successful and effective building inspection.

Presenters: Wyatt Nease, The Snell Group; Ron Conner, The Snell Group and Don Thurmond, The Snell Group

HERS-17- Is the HERS Rating Industry a Profession?
Does the HERS Industry qualify as a profession? In this session, we will look at the 5 elements of a profession and compare/contrast the requirements of the HERS Industry. Are raters, quality assurance designees, and rater instructors professionals? After this session, you will know...

Presenters: Brett Dillon, The Dillon Group, Inc.

HERS-18- Learning Myths
In this session, Brett goes over common myths about how adults learn. It is critical that everyone who designs or develops job training programs understand what is fact and what is fallacy when it comes to learning. How much information do we retain after learning? Are there different learning styles? What role does motivation play? How can we enhance our job training so we can ensure consistency across the industry?

Presenters: Brett Dillon, The Dillon Group, Inc.

HERS-19- Making the Grade: What the Insulation Grading Process Isn't Telling You About Installation
RESNET Grade One rating is based on a visual inspection of the installed insulation product. With batt insulation, it’s easy to see if there are gaps, voids, compressions or other issues that may impact the thermal performance of the product and, therefore, could result instead in a Grade Two or Grade Three rating. However, with certain insulation types, there can be gaps or voids on the interior of the installation which are not noticeable from a visual inspection alone. Come to learn about recently published research which suggests we may need to challenge the current approach of assessing insulation installation quality only by visual inspection.

Presenters: Charles Cottrell, NAIMA

HERS-20- Multi-Family Certifications: In the Trenches
This session will highlight field proven techniques that manage the process of multi-family testing & inspections, while providing insight into additional opportunities to integrate RESNET-based protocols and HERS rater services. Example projects will include Energy Star Multi-Family High-rise, LEED for Homes Mid-rise, the National Green Building Standard (ANSI-700), and IECC compliance.

The panel will consist of a HERS rater/provider and a HERS rater/architect.

Presenters: Barb Yankie, Green Building Consulting / Homes + and Laureen Blissard, Green BuilderÂ® Coalition

HERS-21- Now you know Combustion Safety, what's next?
As RESNET equips the HERS industry to enter the existing home space, now is a great time to get familiar with the differences between the new and existing markets. In this session we'll discuss the opportunities for HERS Raters in the existing homes market and how they can take advantage of their Combustion Safety and Work Scope Development training. We will focus on some of the important elements of being a successful existing homes assessor, like conducting thorough homeowner interviews and identifying comfort and health concerns in the home. We'll also discuss various business models and strategies seen from HERS raters in the Southeast who have already approached the existing market. We'll share their success stories and find out what really took their business to the next level.

Presenters: Frank Wickstead, ICF International and Jamie McKenzie, ICF International

HERS-22- OSHA- Understanding & Outreach for the new "Confined Space in Construction"? Rule
Raters in Attics and Crawl Spaces, on May 4, 2015, OSHA issued a new standard for construction work in confined spaces. Learn about the rule that requires employers to determine what kinds of spaces their workers are in, what hazards could be there, how those hazards should be made safe, related liability, and what training workers should receive. The 5 key differences from the construction rule, and several areas where OSHA has clarified existing requirements will be discussed. The rule makes the controlling contractor, rather than the host employer, the primary point of contact for information about permit spaces at the work site. In addition to the overview on the rule, we'll discuss how to inform others and make it relevant to them using examples of what is working in Arizona.

Presenters: Jenny Mandeville, ADOSH (Arizona Division of Occupational Safety & Health) and Heather Szymanski, Efficiency First Arizona

HERS-23- Pilot Project Discussions on Projected HERS New Construction Rating Variability Assessments
Variability assessments (VA) identify discrepancies in results from multiple raters on a single home, for either projected or confirmed ratings. The assessments can be used as a training tool to identify areas of concern, or for quality assurance to assess areas where raters may be consistently missing key components of a rating. The quality assurance element can be conducted at the provider level, or as part of RESNET's overall quality assurance efforts. Guidelines for conducting VA also referred to as "round robins" were developed under a grant from the National Institute of Standards and Technology. These guidelines have been employed in a pilot research effort by WSU researchers working with a RESNET VA task group. The VA goal is to assess the variability of the HERS index, and improve the consistency of information to builders, efficiency program providers and code officials using the HERS index. The objectives included; 1) developing and implementing a variability assessment research pilot project, focused on proposed HERS ratings (for new construction), and 2) identify the key factors that impact variability in IECC level and high performance homes voluntary energy efficiency programs. The pilot project is "proof of concept" demonstration where VA procedures can be used by RESNET on a broader scale to focus on the following research questions:

- What is the variability in HER score when all raters are given the same info?
- What are the reasons found that help explain the HER score variability?
- What feedback can RESNET and the pilot provide to USDOE who is interested in soliciting RESNET in support of DOE VA research?

The session will provide a forum for members of the task group and stakeholder to discuss share the results and perspectives for on-going RESNET potential efforts in this area.

Presenters: Michael Lubliner, WSU Ext. Energy Program; David Hales, WSU Ext. Energy Program and David Cohan, USDOE

HERS-24- Practical mechanics under the new RESNET Multifamily Guidelines
Design and installation of high efficiency HVAC systems (including ventilation!) that play nicely with the rating methodologies required by the new RESNET multifamily rating guidelines… pros, cons and pitfalls in engineering, performance and testing.

Presenters: Doug McCleery, MaGrann Associates

HERS-25- Remote Quality Assurance – An Idea Time Whose Come?
Remote review of homes is fast becoming a reality. It is already possible to do for blower door and duct leakage testing. The County of Pima, Arizona is experimenting with remote code inspections.

If this can be applied to the quality assurance oversight of HERS Ratings it would represent an opportunity to reduce the cost of quality assurance oversight of HERS Ratings and expand HERS Ratings to more remote areas of the nation.

The proposed enhancement of RESNET quality assurance standard contains the option of remote quality assurance. Is this a technology whose time has come?

This session will represent a panel of experts who has explored this opportunity.

Presenters: Daran Wastchak, DR Wastchak, LLC; Steve Saunders, Tempo Inc and Steve Byers, EnergyLogic

HERS-26- RESNET Pilot Quality Assurance Oversight
RESNET is in the final process of adopting new procedures for enhancing the quality assurance oversight for HERS Ratings. Before implementing the new changes RESNET will be testing the procedures with a pilot project using a number of HERS Rating Quality Assurance Providers. This session will explain the pilot program and how the providers will be selected.

Presenters: Laurel Elam, RESNET and Daran Wastchak, LLC, DR Wastchak

HERS-27- RESNET's Future as a Facilitated Network: Opportunities for Disruptive Innovation
HERS Raters and Providers, Utilities, Builders, and RESNET would realize benefits from streamlining the data and processes in the rating industry. With RESNET acting as a facilitated network and creating opportunities for innovation, stakeholders within the community could more easily improve quality, transparency, and efficiency. This session will discuss the authors' proposal and opportunities to strengthen the delivery and legitimacy of HERS through policy and innovation. http://skaldicmedia.com/wp-content/uploads/2015/02/RESNETs-Future-as-a-Facilitated-Network-Opportunities-for-Disruptive-Innovation.pdf

Presenters: Brett Dillon, IBS Advisors, LLC and Clinton Heyn, Pivotal Energy Solutions

HERS-28- RESNET's New Instruction, Assessment and Certification Standards for HERS Raters and Rating Field Inspectors
Certified RESNET HERS Raters and Rating Field Inspectors are where the industry's "rubber meets the road". The entire HERS industry system's credibility is determined by qualifications of the professional who conduct the field inspections, testing and modeling of homes.

While RESNET has long had an online written cognitive test, there was no replicable practical test to demonstrate a candidate's application of the HERS rating concepts. To offer valid, replicable tests RESNET has invested in the latest technology for testing the practical knowledge of RESNET certified professionals. These new tests will level the field and increase the credibility of HERS Raters and Rating Field Inspectors to the housing industry, code officials and utilities. RESNET is also in the final process of rationalizing and streamlining its instruction, assessment and certified procedures.

This session will explain the reasons for these changes and what the proposed changes are.

Presenters: Kathy Spigarelli, RESNET and Rob Moody, Organic Think

HERS-29- SEO in 2016: What's Critical for Raters, Auditors, & Home Performance Companies
2015 was another big year in the SEO realm. In this session you'll learn about the most significant changes and how they are starting to affect Raters, Auditors, and other Building Efficiency companies. Industry expert Peter Troast will address how important each of these changes actually are, how they're weighted in Google's eyes, address several

misconceptions about SEO and call out “black hat” practices to avoid. We’ll also cover how to steer your marketing efforts and what to consider as you develop a 2016 marketing strategy that works for search.

Learning Objectives:
1. Understand how recent changes to Google's search will impact this industry.
2. Learn about the importance of content and how the content landscape is changing along with Google’s search algorithms.
3. Tactics to stay on the leading edge of Search Engine Optimization in this changing landscape.
4. Learn the elements of an effective SEO strategy

Presenters: Peter Troast, Energy Circle

HERS-30- Solar Energy and the HERS Index
Power from renewable energy sources such as PV are accounted for in the HERS Rating. But to what extent and what are they limitations? RESNET contracted with Brett Dillon of IBS Advisors to research this.
At this session Mr. Dillon will present the results of his research. In additions the session will feature large national production builders who have pursued the solar strategy for improving the HERS Index Score.

Presenters: Brett Dillon, IBS Advisors; Jacob Atalla, KB Home and Jim Petersen, Lennar

HERS-31- Testing Air Removal Installations 101
Removing air in the home is a requirement almost everywhere. V - the letter between Heating & Air conditioning has finally got equal billing (HVAC). This is not a ventilation debate - but just how to test the installations!

Most of the ventilation installations include or are solely based on removing air. Many jurisdictions require supply and exhaust while better builders are installing a “balanced” system.

No matter what the system - they need to be tested. This session will cover the various methods (approved or not) that are use to measure the flow.

Power flow hood is required - did you know your duct tester is a powered flow hood, did you know you do not need and expensive accessories to use your duct tester to measure exhaust or supply flows.

Many Raters have powered flow hood accessories or a passive hoods, we will cover some of the limitations of each device.

Sometimes there are conditions that require a pitot tube or alternative test methods - we’ll cover that also.
1200 CFM kitchen exhaust hood - any make up air required? Where should it be installed to be the most effective?
Watt draw - we have some solutions.

This session will cover how to test and balance many of the common ERVs and HRvs. How to test supply ventilation when installed in the return or supply duct.

Coming soon- how to measure kitchen exhaust fan capture hood efficiency - are you ready?

Presenters: Joe Medosch, Energy & Environmental Consulting llc

HERS-32- The Most Important Measure of Your Website: Does it Convert?
Before a single user visits your website the process of building an experience that will convert them into customers has already begun. A lack of trustworthy reviews, 'security signals', or poor communication around your products and/or services can all lead to conversion problems. Supporting SEO by creating internal links to your most dedicated service pages and maximizing the amount of earned, quality links to related websites will support stronger conversions. Developing pages with concise yet compelling contextual calls-to-action increases your chances of converting your leads

into sales. During this session Peter Troast will discuss the essential components of a home performance website that is optimized to convert. From a/b testing to dedicated landing pages, you'll learn about the strategy behind building stronger conversions.

Learning Objectives:
1. What is conversion, why it matters & how to measure it.
2. Optimize your website for conversion: learn best practices and specific ways to improve your conversion rates.
3. The key principles behind a/b testing and how to track your progress using Google Analytics.

Presenters: Peter Troast, Energy Circle

HERS-33- The Quest for Smarter Performance Measurement
What research and technology developments are needed for more cost effective, accurate, and consistent home performance measurement and assessment? This session will explore these critical advanced technology needs. Learn about the latest strategies and share your ideas about the most important technology investments for home performance assessment.

Presenters: Eric Werling and additional speakers TBD, US Department of Energy

HERS-34- There is an app for that. - They do what?
WiFi devices are standard in most of the equipment we use and the apps that access the data are growing and becoming part of the testing procedures.

This session will uncover some of the best apps for testing and performing many of the required measurements for a Rating.

Measurements? See the latest in laser measurement devices that can send the readings to your phone/tablet - and provide an Excel sheet. Nice!

IR cameras have eliminated the challenge of 2-3 people trying to see what's on the camera - without moving it. Show the IR image on an iPad while the client sits on the couch and you go through the house explaining the findings. Even go where your client will not, like the attic and show them the same image that is on your IR camera. Cool!
How about duct testing on the fly or trying to find the leaks in the attic or crawl space and turning on/off the duct tester as you go. Handy!

While standing in the living room, turn off the blower door fan so you can explain to your clients the conditions, then turn it back on and let them feel the air moving through the switch plate. These apps can do that.
Imagine an app that will geo-locate and time date stamp the test, confirm the altitude, go to the local weather station and get the temperature and wind conditions, check on Zillow if there is any existing information, connect to the gauge and fan and automatically perform a single or multi-point test and of course create an easy to read report that can be sent immediately. Did I mention the data can be shared with providers or utility programs. Yes, there are apps that do all that and more.

But wait there is more... but you have to come to the session to see.

If you want to see what's out there now and coming up next - this session is must for those who are on top of their game.

Presenters: Joe Medosch, eEnergy & Environmental Consulting llc

HERS-35- Toward a Uniform HERS Index Score
RESNET is working with the U.S. Department of Energy and National Renewable Energy Laboratory to develop an open source platform that provides a uniform HERS Index Score leveraging the advanced capabilities of the EnergyPlus

simulation engine. The expected outcome of this multi-year effort will be a single source for the HERS Index Score that private-sector software vendors can utilize and make available to their customers. Developed under the auspices of a RESNET-led stakeholder group in an open-source collaborative environment, this effort will deliver greater capability, transparency, and consistency to the HERS Index Score. This session will provide an overview of the development plan and schedule, and a preview of expected capabilities and benefits to the HERS industry.

Presenters: Dave Roberts, National Renewable Energy Laboratory and Rob Salcido, Salcido Consulting

HERS-36- Ventilation Options
You will learn why ventilation is important, when it is needed and when it isn't, and the different ways it can be modeled. You'll also learn some of the secrets of the software tools- and why some are better than others!

Presenters: Brett Dillon, The Dillon Group, Inc.

HERS-37- What's the Value of Your Value Proposition?
What is a value proposition and what value does it have? In this session, Brett looks at the process of developing value propositions and how the value is different for each stakeholder in a HERS rating. The value established by your value proposition drives tactical decision-making in the field by Raters and Rating Field Inspectors and impacts a rating company's bottom line.

Presenters: Brett Dillon, The Dillon Group, Inc.

HERS-38- Zero Energy Homes and Home Energy Rating
This session would focus on the details of testing and rating homes with PV systems and discuss the nuances and difficulties involved in ratings. Rating a PV home can involve some details that need very attentive raters and involve some detail such as if the home has a pool and if the PV system uses microinverters. Additionally, PV system verification needs to be included in every rating which involves the verification of system certification not only through the FSEC database but also through interpretation of stamped drawings and verification of engineering details.

Presenters: Kevin Schleith, Home Audit Technologies

Opportunities for HERS Raters with the International Energy Conservation Code

ICC-1- Air Leakage Verification and Code Compliance
Energy Codes are moving towards requiring tighter building envelopes and ducts as well as performance verification. To more effectively meet these evolving code requirements, test methods and specifications for building and duct air leakage testing are also evolving. This presentation will review code requirements for air barrier and air leakage testing in the 2009 IECC, 2012 IECC and 2015 IECC and how they have been modified during state code adoption. This presentation will also review recent progress in standard test method development and the incorporation of verification practices in industry standards and specifications.

Presenters: Theresa Weston, DuPont Building Innovations

ICC-2- Aligning HERS Indices for Energy Code Adoption - Panel Discussion on methodologies and practices in the field
States and municipalities have been including HERS scores as a compliance path when adopting newer energy codes. Raters have been involved in this process and have found when presenting HERS index scores for energy code adoption there are differences between different organizations proposed HERS scores. What drives the score differences and how to align the scores, what methodologies (assumptions) were made during the process. A panel discussion will share actual practices and published methodologies used for the calculating HERS scores.

Presenters: Vrushali Mendon, PNNL; Eric Makela, CADMUS; Rater Representative and Jim Meyers, SWEEP

ICC-3- Alternate Means and Materials for Code Compliance
HERS practitioners and RESNET are becoming increasingly involved in determining energy code compliance. Understanding how to determine whether new materials and systems meet code is critical to this activity. The primary mechanism for approval of innovative materials and systems is through their evaluation as Alternate Materials and Methods:
"The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. The code official shall be permitted to approve an alternative material, design or method of construction where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code."

This program will provide basics of material and system code approval. Describe the role of evaluation service agencies and the process of obtaining a code evaluation report. The presentation will also describe how these reports are used in field approvals of new products and systems.

Presenters: Theresa Weston, DuPont Building Innovations

ICC-4- Balancing Energy and Structure
Home building is viewed differently by the individual trades and subcontractors associated with the process. Designers and framers commonly neglect energy efficiency in design and practice, while Home Energy Raters (HERS) often neglect the structural requirements of the building. This session will drill down into the structural requirements of the International Residential Code (IRC) and assist in identifying a balance between the structural ability of the framing and energy efficiency. Both are critical in the overall performance of the house. There will be real life scenarios and solutions presented to commonly found issues.

Presenters: Matthew Brown, APA-The Engineered Wood Association

ICC-5- Building Codes vs Building Science
Do Building Codes really incorporate Building Science or does adoption and enforcement bastardize the code's intent? The perception is that the Building code, including the energy code, is the legally worst standard available to build a house to. We don't believe the problem is within the code itself. Let's look more closely at how the International Energy Conservation Code, in particular, is structured. We will discover how Building Science is steeped in the code and has transformed it into a platform to build a high performance home. Then we will look at how adoption and enforcement often blows it all up.

Presenters: Robby Schwarz, EnergyLogic

ICC-6- Carrier Opportunities of HERS Raters Becoming ICC Certified Energy Code Inspectors
Across the nation the HERS Index is fast becoming seen as a viable energy code option. The 2015 IECC has an Energy Rating Index option. HERS Raters have an even bigger role than producing a HERS Index. They can become third party energy code inspectors for jurisdictions that have adopted an Energy Rating Index compliance option.

RESNET has entered into a partnership with the International Code Council that allows HERS Raters to become energy code inspectors.

This session will explore the carrier opportunities of being an ICC certified energy code inspector and what are the requirements.

Presenters: Mark Johnson, International Code Council

ICC-7- Characteristics of Homes that Meet R406
The Dillon Group, Inc. has conducted a statistically significant analysis of 2 years' worth of ratings across the United States, looking at the characteristics of homes built to meet the Energy Rating Index values found in R406 of the 2015 IECC. We share that information in this session, based on rigorous statistical analysis. This information is very useful to builders and raters who are looking at energy code compliance through the energy rating index option found in the 2015 IECC.

Presenters: Brett Dillon, The Dillon Group

ICC-8- Complete IECC Code Compliance Lifecycle for New Construction Homes
The use of building information modeling software such as REM to demonstrate code compliance for permit issuance in lieu of REScheck is the first step in a comprehensive process of how the successful HERS Rating provider can contribute and participate in the complete lifecycle of the construction of a new home. Attendees of this session will participate in an interactive discussion and best practices step-by-step program that will give them the tools they need to successfully integrate themselves into the cradle to grave design, permitting, construction and certification of a new construction single family home. Only by bringing these skills to the new construction builder can the value engineering and cost savings benefits afforded by this approach be clearly demonstrated and executed in a manner that lets the builder SEE the value of having the HERS Rater/Building Science Professional become an integral part of their operation. Learn how to be a mandatory part of your builders' process as well as how to take these deliverables to the local code official/building department and be able to comprehensively demonstrate alternative code compliance that will satisfy all stakeholders in the construction of today's new construction single family homes.

Presenters: Matthew Cooper, PEG; Peter Seckinger, P.E., PEG and Scott Atkinson, QAD, PEG

ICC-9- Decoding the next building code: IECC 2015 and what it means to you
With current building codes in place today, development has shifted from a typical drafty home to something just a bit more efficient. This is a step in the right direction but clearly more work needs to be done. Car manufacturers, sporting equipment, health care products, and appliance makers have been committed to improving their product and adhering to safety regulations. Code drives builders to construct safer more efficient homes. Codes have proven to increase resiliency, comfort, and most importantly, indoor air quality. We have electrical, plumbing, and fire inspectors. Why not have an efficiency inspector? We'll give you the important details of the next building code and critical information to decipher how this affects you.

Presenters: William D'Arrigo, ICF International and Alec Danaher, ICF International

ICC-10- Don't stop at code- the incremental value of completing a HERS rating
Many raters are being called upon to perform code inspections and testing without completing a full HERS rating. This session would look at the how and why of moving builders to a full HERS rating or the ERI path of the 2015 code, even when they are reluctant to do so at first.

Presenters: Doug McCleery, MaGrann Associates

ICC-11- Energy Code Field Study Results- How Are We Doing?
The recent excitement surrounding HERS Raters getting involved in code compliance documentation begs the question: How are builders actually doing? With funding from the U.S. Department of Energy, seven project teams across eight states have performed residential Energy Code Field Studies to help answer that question. Under these studies, project teams performed inspections and performance testing on hundreds of randomly selected homes yielding an unrivaled source of data used to assess average envelope and duct leakage rates, installed R-values and insulation grade, window U-factor and SHGC, lighting efficacy, and more. Attend this session to hear a summary of findings from several states, and learn about Phase 2 of the program, which is bringing a variety of training, education, and outreach to builders, code officials, raters and other residential construction industry professionals. One state's efforts include a pilot program that provides energy code training and incentives for Raters who perform energy code consultations to

builders. Additional presenters may include DOE/EERE staff and/or DOE Field Study principle investigators from other states.

Presenters: Mike Turns, Performance Systems Development

ICC-12- Enhance Your Value to Builders: Provide Cost-effective Energy-efficient Energy Designs
Builders fear that building to the 2012, 2015 and or other advanced energy codes is cost prohibitive, but this fear is unwarranted. In most cases, they can meet the advanced energy codes at little additional or even reduced construction cost. The importance of three items in meeting the energy codes at the lowest cost are stressed: 1) using the performance path to show compliance with the energy code, 2) use the cost-effective performance trade-offs enabled by reduced air infiltration to lower construction cost, and 3) use more effective means of air sealing than have been used traditionally to reduce the level of infiltration. Specific examples of how lowering air infiltration compares to other alternatives for lowering energy use are given, including increased insulation values and reduced window U-values. The presentation also discusses the impact of reduced air infiltration on moisture performance as well as energy use. The question of whether the dwelling is "too tight" is specifically addressed and clarified, giving the audience an understanding of the relative importance between the movement of moisture by vapor diffusion and the movement of moisture by air infiltration. Specific examples are given to aid understanding.

Presenters: James R. Wells PhD., Tremco Barrier Solutions

ICC-13- Expand Your Business - Wrightsoft Software Makes IECC Code Compliance and Load Calculations Easier
Experience a demo of Wrightsoft heating ventilation air conditioning software, a fully integrated residential and commercial software solution designed to save time. Whether you are a HERS Rater or other professional doing residential or commercial duct, hydronic, radiant, or geothermal loop system design, Wrightsoft can help to properly calculate loads, accurately design and size systems, produce parts takeoff lists and proposals according to parts and pricing, and prepare professional documentation and reports. In addition to an overview of the program that is approved for IECC 2009, 2012, 2015 code compliance, find out how Wrightsoft can partner with organizations and building officials to assist directly with your needs. Specific examples will be provided of how Wrightsoft has partnered with Arizona professionals and building officials help them be better and more efficient with their workloads. Building officials that attend are eligible for a free copy of the software.

Presenters: Michael Moreno, Wrightsoft Corporation and Heather Szymanski, Efficiency First Arizona

ICC-14- Expand Your Business- Tips for IECC adoption and HERS alternative path compliance
The adoption of the IECC in your community supports the expansion of your potential business market. In addition to required 3rd party testing, it opens the door to communicating the benefits of whole home evaluations when permits are pulled for additions or remodels. Learn methods to communicate the benefits of IECC adoption to the community, home-owners and politicians. It's not just a green thing; it's a money saving, health benefitting, resilient structures building thing!

Presenters: Sharon Bonesteel AIA, CBO, HERS, Salt River Project

ICC-15- Expanding Rater Services to Include Light Commercial
Energy codes are beginning to require commercial building blower door testing. With over 90% of the commercial building stock under 50,000 sq. ft. and consuming more than 40% of the energy used in U.S. commercial buildings, light commercial buildings offer huge opportunities for energy and water savings. HERS Raters are well equipped to support small commercial owners and tenants through assessments, testing and upgrades, taking advantage of utility incentives and local programs. This session will review research results from Southface's Advanced Commercial Buildings Initiative and provide participants with tools for expanding their Rater business to include light commercial services.

Presenters: Laura Capps, Southface

ICC-16- Getting on the same page- working with code officials (panel)
Many HERS raters and programs are finally speaking directly with code officials and beginning to act as technical and training resources so that the role of the rater is better understood and valued. This panel would share some of the experiences, challenges and successes of these efforts.
Note, we suggest this is a panel discussion

Presenters: Terry Smith, MaGrann Associates and panel members TBA

ICC-17- HERS Raters and Code Officials Working Together (It's not all about ERI)
Many builders aren't ready to commit to having all their homes HERS rated, but to get a certificate of occupancy and limit liability all their homes need to pass code. The latest buzz among Raters has been the Energy Rating Index (ERI) path of the 2015 International Energy Conservation Code (IECC), but even if your state hasn't adopted the latest version of the IECC, the energy code presents abundant opportunities for HERS Raters to grow their businesses. From the above-code programs provision in Chapter 1 to blower door and duct blaster testing to air barrier and insulation inspections to HVAC load calculations to the Simulated Performance Alternative and "stretch" codes, Raters are some of the only housing industry professionals with the skills necessary to verify a variety of IECC requirements. But just having those skills doesn't automatically mean you will thrive in the arena of energy code compliance verification. It is important to know how (and if) your local code officials are enforcing the energy code and what types of compliance documentation they are looking for. This session will explain how to introduce yourself to and get to know your local code officials, educate them about the energy code, and explain how your skills as a trained energy professional can help assure energy code compliance in their jurisdiction. The session will also discuss how to become a certified energy inspector through the International Code Council or your state's code certification body. You may even consider becoming a certified third party inspection agency and possibly be hired by your local municipality or added to a referral list of approved energy inspectors.

Presenters: Mike Turns, Performance Systems Development and Emelie Cuppernell, Performance Systems Development

ICC-18- IECC 2015 Significant Changes
IECC 2015 Significant Changes will be reviewed in comparison to the 2012 and the 2009 IECC. Suggestions on working with Building Officials and Inspectors will be discussed. The adoption of the IECC in your community supports the expansion of your potential business market. Copies of the 2015 IECC Pocket Pal electronic version will be provided to attendees; Add your company's logo, contact info and develop a business card people won't want to lose.

Presenters: Sharon Bonesteel AIA, CBO, HERS, Salt River Project

ICC-19- It's a Party! - Compartmentalization and Air Sealing Party Walls
For years, builders and contractors have been struggling to meet the 3 ACH50 blower door requirements in townhomes and other multi-family buildings. They're small, often sit on top of garages, and have party wall details not found in their detached-built brethren. Party walls have proven to be a major connection to outdoors and adjacent units. Air sealing these assemblies is confounded as code officials are hesitant to allow the use of additional materials that may compromise the UL fire rating of the assembly. This session will review the issues that make air sealing party walls complex and field data on getting to 3 ACH50.

Presenters: Brett Welch, Knauf Insulation

ICC-20- Merging Energy Code Compliance and HERS Index Scores
What business opportunities have you been missing out on? Are you doing any Code Compliance services without HERS Ratings? Have you been doing HERS Ratings without Code Compliance? What does Energy Code compliance mean? What are the different pathways through the code? How does the HERS Index interact with the Energy Code Now? What does Section 406 of the 2015 IECC "Energy Rating Index alternative" mean for a Rating company? This session will address these questions and more to help your business become more sustainable and profitable.

Presenters: Robby Schwarz, EnergyLogic

ICC-21- Prescriptive, Performance and ERI; Expanding opportunities for Raters in energy code compliance.
HERS and Raters have long had a role as third party inspectors or above code certifiers for energy code compliance but that role is growing exponentially since the introduction of required duct testing in the 2009 code and now with ERI in the 2015 code. Understand the business case for making code work an integral part of your operation and how to use your skills to help code officials keep up with the changing world of energy codes.

Presenters: Jim Meyers, SWEEP; Richard Morgan, SPEER and Amy Dzura, SEEA

ICC-22- Strategies for Adopting the Energy Rating Index Option of the 2015 IECC
The 2015 IECC has an Energy Rating Index compliance option. This is only the beginning of the battle. State and local jurisdictions now have to adopt the option for their energy codes. Already Maryland, Texas and Vermont have adopted the Energy Rating Index option of the 2015 IECC.
How can you do to have your jurisdiction adopt the Energy Rating Index option?
RESNET and the International Code Council have teamed up to give HERS Raters and the tools to advocate at the local level. These tools include:

- A series of factsheets aimed at code officials explaining the Energy Rating Index option and its benefits
- Canned PowerPoint presentations to present to code officials and code hearings
- Video production aimed at code officials explaining the HERS Index

This session will help to be more effective advocating to your code jurisdiction.

Presenters: Mark Johnson, International Code Council; Steve Baden, RESNET and Chris McTaggert, The BER

ICC-23- The "Poison Pill" of the 2012 and 2015 IECC
3 ACH50 or 5 ACH50, depending on your climate, has been called the poison pill of the 2012 and 2015 IECC. However this level of house tightness is more than achievable for a single family home. We will share techniques to ensure it will be achieved in multifamily project. In fact the IECC tells you exactly how to do it. Follow the bread crumbs and help your builders achieve not only a code compliant house but a house that performs well.

Presenters: Robby Schwarz, EnergyLogic

ICC-24- The business case for third party inspections - How a Rater fits into the energy code equation.
The International codes first brought air infiltration testing and duct leakage testing into the codes with the 2009 IECC over six years ago. Fast forward to the 2015 IECC which now has a HERS path, the ERI path, as one of four compliance paths in the energy code. Should the ERI path and the traditional performance compliance paths be viewed as other building code third party inspections? This session will discuss the business case for Raters as third party inspectors and discuss how third party inspections are viewed by building officials. A not to miss session.

Presenters: Isaac Elnecave, MEEA; Shaunna Mozingo, Colorado Code Consulting and A Rater Representative

ICC-25- What's In Store for the 2018 International Energy Conservation Code?
In 2017 the International Code Council will be shaping the 2018 International Energy Conservation Code. In January proposals for the 2018 IECC were due and in November the code cycle hearings will take place. RESNET has submitted three proposed changes. This session will review the main proposals that will shape the new version of the IECC.

Presenters: Eric Makela, Britt-Makela Group; David Cohen, U.S. Department of Energy and William Fay, Energy Efficient Codes Coalition

Race to High Performance Homes

RHP-1- Back to the Future: Cutting edge technology, energy efficiency & healthy homes
Technological advances, growing energy awareness, and lucrative incentive programs in energy efficiency drive increasing numbers of existing and prospective homeowners to desire "green" homes. Wi-Fi thermostats used to remotely control comfort levels are being embraced by a new tech-savvy generation keen on home performance. Integrating behavior based strategies such as smart circuits and advanced energy monitoring are gaining traction and provide both an educational component and quantifiable dollar savings. Just like the home of the future, interconnectivity between builders, Realtors, Appraisers and energy efficiency programs is vital to influence this ongoing market transformation. This session will assist you in developing, educating, and leveraging strategic partnerships in the housing market and also examine how technology can not only save money but provide a healthier and safer environment to live. The home of the future is already knocking on the door.

Presenters: Mark Pignatelli, ICF International and Clarke Doody, CLEAResult

RHP-2- Battlebots: A case study of learning thermostats
As codes and above code programs continue on hyper-drive for energy efficiency, one of the main contributors to energy efficiency is being left out in the cold; occupant behavior. Rather than put the high costs on builders to capture smaller incremental savings, addressing occupant behavior should be the next step in energy efficiency programs. In the summer of 2015, The Southern Maryland Electric Coop (SMECO) has piloted a study of over 700 learning thermostats installed in existing homes as well as a subset of ENERGY STAR Version 3 certified homes. The presentation will highlight the savings captured by the learning thermostats, as well as how learning thermostats should be integrated into energy efficient homes moving forward and program design for utilities.

Presenters: Rick Gazica, ICF International and Justin Mackovyak, ICF International

RHP-3- Blazing the trail: Proven success and a model to follow
Progressive building codes combined with innovation and technology continue to challenge construction practices and drive energy efficiency program design. The Mass Save Program has been ahead of the curve, fostering cutting edge technology by incentivizing energy conservation measures such as Wi-Fi thermostats, LED lighting, and ECM's. This session will examine the Mass Save Program as a national model and how to integrate concepts like smart homes and home automation to support ongoing market transformation.

Presenters: Mark Pignatelli, ICF International and Will D'Arrigo, ICF International

RHP-4- Breaking Good: How Home Builders in New Mexico continue to push the High Performance Envelope
As home builders in Southern New Mexico build regionally unique homes in the Desert Southwest, they continue to integrate products and practices that improve their homes' overall energy, health and safety performance. As we move closer to 2020, this presentation will accentuate various examples of how home builders and HERS Raters in the Southwest can work together to continuously improve new residential structures.

Presenters: Steve Ellison, ICF International

RHP-5- Building America's Top 3 Building Science Challenges to Delivering High Performance Homes
Advancements in building codes and voluntary standards are improving the performance of new homes. That's what we're after at the Energy Department. But, as we improve homes, new challenges arise. The Building America RD&D Program has identified the top three building science issues associated with increasing home performance - Moisture Managed Envelope Solutions, Optimal Comfort Systems, and Optimal Ventilation and IAQ Solutions.

Moisture Managed Envelope Solutions
High performance building envelopes face susceptibility to moisture issues – and consequently potential durability and occupant health issues - without effective moisture management.

Optimal Comfort Systems
As heating and cooling loads decrease in high performance homes, conventional HVAC systems may not function as well as they should, and occupant comfort and health can be sacrificed without deliberate attention to humidity control and airflows. Lower loads require increased attention to distribution system design, humidity control, and smart sensors and controls.

Optimal Ventilation and IAQ Solutions
In the US, people spend up to 90% of their time indoors. Tighter building envelopes mean an increased need to properly address indoor air quality with proven IAQ solutions.
This session will explore these 3 major building science challenges to high performance in homes and present Building America's strategy to develop technical and market solutions that manage risk and overcome barriers to implementation.

Presenters: Eric Werling, US Department of Energy

RHP-6- Building Science Behavior: the value of convenience
This session will cover the seven tenets of Building Science as an introduction. Once we define the house as a system we can take a deeper dive into how we build and the performance, material and cost tradeoffs. The larger vision in this presentation is the value of good behavior. If we look at energy consumption vs. the 2009 census data, 45% of energy used on average is consumed by MELs. The most compelling variables in energy use are the humans using the energy. We will conclude with the exploration of simple strategies to improve energy and water consumption by making the building more convenient to occupy.

Presenters: Aaron Davenport, GreenFiber

RHP-7- Comparing the Energy Requirements of Hot Water Circulation System Control Strategies
For any given floor plan, the waste of water and time while waiting for hot water to arrive will be the same a given layout of hot water circulation system. The difference will be the energy requirements of control strategies on the loop. This session will present data on the performance of several control strategies. We will also discuss the advantages and disadvantages of each strategy.

Presenters: Gary Klein, Gary Klein and Associates

RHP-8- Connectivity and New Construction: Opportunities for Greater Energy Savings
Communicating technologies, interactive systems, and smart equipment are becoming increasingly prevalent in the residential market. These devices and features have the potential to drive greater energy savings within a home while also providing customers with non-energy benefits. Connected capabilities can help transform the performance of a home through features like automation, dynamic interaction, mobile energy management, and real-time diagnostics. By incorporating state of the art technologies and features, homes can obtain energy savings opportunities that go beyond the individual end measures. This session will explore the application of these technologies and articulate specific strategies for incorporating connectivity into new construction programs.

Presenters: Alice Rosenberg, CEE and TBD, Utility or Energy Efficiency Program

RHP-9- Connectivity and New Construction: Opportunities for Greater Energy Savings
Communicating technologies, interactive systems, and smart equipment are becoming increasingly prevalent in the residential market. These devices and features have the potential to drive greater energy savings within a home while also providing customers with non-energy benefits. Connected capabilities can help transform the performance of a home through features like automation, dynamic interaction, mobile energy management, and real-time diagnostics. By incorporating state of the art technologies and features, homes can obtain energy savings opportunities that go beyond the individual end measures. This session will explore the application of these technologies and articulate specific strategies for incorporating connectivity into new construction programs.

Presenters: Alice Rosenberg, CEE and TBD, Utility or Energy Efficiency Program

RHP-10- Do Improved Hot Water Systems Result in Efficient Consumer Behaviors?
Improvements in domestic hot water systems have not kept pace with the efficiency gains of building envelopes and HVAC systems. Hot water energy consumption is becoming a larger proportion of home energy use. In some climates, it has surpassed space conditioning to become the #1 consumer of energy. Today's homes are 56% larger and require higher volume plumbing runs to distribute hot water. The use of low flow fixtures escalates consumption by increasing thermal losses and the time it takes hot water to reach fixtures. Wait times for hot water have become unreasonably long (structural waste) and have spawned wasteful behaviors (behavioral waste).

This session explores challenges with generating and delivering hot water and presents technologies and practices for reducing both structural and behavioral waste.

Presenters: Gary Klein, Gary Klein and Associates and Troy Sherman, Evolve Technologies

RHP-11- EE Programs- Walking Stick for the Path to Net Zero Homes
Leveraging Utility Incentive Programs to Promote Top Tier Homes – this session demonstrates how energy efficiency programs tied to advanced certification standards creates a path to success for utilities, program implementers, raters and builders. Performance based residential new construction programs can achieve deeper energy savings and higher incentives by following the Certification Continuum from HERS Index to Passive House. Take advantage of the brand recognition and quality assurance associated with each standard, and pick up a utility-sponsored technical training along the way. With roughly half of all states currently implementing energy efficiency resource standards (EERS), the industry is getting greener in more ways than one.

Presenters: Jim Phelps, Performance Systems Development and Michael Arblaster, Performance Systems Development

RHP-12- Emerging Technology and Energy Savings: The Crossroads of the Comfort and Conservation
Emerging Technology and home automation is a largely untapped market with tremendous growth potential. Utility and Energy Efficiency Program Administrators can be influential in pioneering energy savings methodologies, market transformation, and supporting the growth of small businesses and startups. The goal of this presentation is to examine new trends in emerging technology and home automation to evaluate products that have quantifiable energy savings opportunities resulting in increased homeowner satisfaction, callback reduction, and minimize payment default through lower utility costs for the lifetime of the home. The presentation will also review new product scenarios such as providing both comfort and energy cost reduction, comfort only and no energy savings, and comfort at the cost of increasing energy use.

Presenters: Frank Nitti, ICF International and William D'Arrigo, ICF International

RHP-13- Field Verification of the New HERS Hot Water Provisions
As of 2015, there are new provisions in the hot water portion of the HERS score. These provisions adjust the volume of hot water per home based on climate zone and allow builders to take credit for measures that increase the efficiency of hot water use. These measures include reducing the volume of water in the piping between the source of hot water and the plumbing fixtures and appliances, pipe insulation, lower flow rate plumbing fixtures, smaller volume plumbing appliances, operational controls that reduce behavioral waste, drain water heat recovery. Once the daily hot water volume has been determined, the provisions then calculate the energy it takes to heat this water. This session will explain how to specify the measures before construction and verify their installation during construction and at final inspection. We will use RESNET JobWerks as the tool to support this educational and compliance effort. JobWerks is an on the job, cost effective, and easy to use mentorship and performance assessment tool for the construction industry.

Presenters: Rob Moody, Organic Think Inc and Gary Klein, Gary Klein and Associates

RHP-14- HERS Scores- a Stepping Stone Toward Green Certification
Homes and buildings achieving good HERS scores are well-positioned to seek third-party green building certifications, including certification to the rigorous and cost-effective National Green Building Standard (NGBS). Market research reveals that homebuyers and renters now value green features, like healthy indoor environment and durable products, over energy efficiency, and appraisers are increasingly valuating green homes for higher amounts. The ability to offer green verification services in addition to energy testing/rating can help a RESNET rater stay profitable in a changing market. Join this workshop to learn more and hear from accredited NGBS Green Verifiers who have helped clients transition to seek both HERS scores and third-party NGBS Green Certification.

Presenters: Cindy Wasser, Home Innovation Research Labs; Jamie Hager, Southern Energy Management and John Ritterpusch, National Association of Home Builders

RHP-15- How to get your political jurisdiction to embrace a residential water measuring tool as code
The City of Santa Fe New Mexico pioneered the adoption of a specific HERS number to pass an energy section of its green building code in 2008. It is now in the process of doing the same for a water measurement tool, similar to HERS, for new and existing residential construction. The presentation will show how community partners that included local Home Builders Association, local community college, water conservation experts, and city code officials worked together to develop a code with specific numerical measurements for predictive efficiencies that go beyond baseline codes. Santa Fe can serve as a model for other jurisdiction contemplating how to use third-party services to achieve code compliance. This panel will explain how it can be done.

Presenters: Kim Shanahan, Santa Fe Area Home Builders Association; Amanda Hatherly, Santa Fe Community College; David Dunla, Tierra Concepts LLC and Doug Pushard, Harvest H2O

RHP-16- How to provide & prove how optional upgrades add value and to your bottom line
We've all made purchasing decisions based solely on the initial cost of goods and services without considering their long term value. The power of adding value to construction projects - by incorporating sustainable materials, methods and systems is substantial. Value can be added to any construction project but the pressures to do otherwise are great. The common approach among builders is to produce the lowest estimate or bid possible to persuade up front acceptance. Building scientists, energy geeks and home performance professionals have struggled for years to convince the construction industry to move in the direction of greater performance and sustainability. What has been missing is the link showing how the cost of optional front-end investments can substantially add to the value of the building and to the bottom of the entire construction team many times over. It's time to demonstrate to builders and contractors how sustainable, high performance homes can add to the bottom line for themselves, their subs, owners, real estate professionals and others. This presentation will provide real world examples of how to incorporate and promote upgradable options in proposals, bids and estimates without any up-front investment other than the time it takes to put the option on paper.

Presenters: Rick Blumenthal, Knauf Insulation

RHP-17- HVAC for Raters
You will learn the difference between AHRI capacity and design capacity, how Manual S works with Manuals J and D, and why installation is just as important as design. You will also learn how to review Manuals J, S, and D.

Presenters: Brett Dillon, The Dillon Group, Inc.

RHP-18- Inverted Demand Compliant Construction -- A Key to a Sustainable Energy Future
Inverted Demand Compliant Construction. IDCC
Almost all buildings connected to the grid have much the same Demand vs Time graph: namely peaking near mid-day in the summer to much more than 2 times its demand in the middle of the night... Since the utilities' response to this demand is an economically-appropriate, weighted strategy weighing the fact that cheaper to operate plants generally cost more to build and, conversely, more expensive to operate electricity generating plants cost less to build, it is not surprising that the most efficient operate almost all of the time and the least efficient are operated only at the peak

times. The energy wasted on the other side of the meter (from the ultimate consumer) because of the demand for peaking energy can be very large. Conserving this energy is the goal.
Buildings with adequate battery back-up to collect all of the energy needed for a whole day from the grid between 2 and 6 PM can not only invert their load from what is standard but:

1. Have the ability to withstand extended power outages in emergency mode... probably on the order of 7 days.
2. Save energy otherwise wasted on the other side of the meter.
3. Potentially (given needed changes in utility pricing and regulation) make a profit on sales of energy back to the grid at whole prices if those sales were focused on peak consumption times and they were allowed to buy the cheapest power available at retail prices in the wee hours of the day.
4. Can allow the flow back to the grid to be utility-controlled with either Smart Meters or Smart Inverters... and thereby generate more savings for the utility which can then generate more potential income to such a building owner.
5. Can be coupled with a PV system to completely remove the "non-dispatachable" nature from much/most renewable energy.

Moreover, the cost of this equipment is surprisingly less expensive than what is widely believed.

New paradigms presented include:
Energy Conservation independent of Energy Efficiency.
Proper sizing of battery backup for grid-connected homes.
Three ways to economically justify battery backup.
Proposed Utility rate structures.
IDCC is missing but could racially augment the economics and environmental benefits of Net-Zero, LEED, Energy Star, and RESNET's HERS standard.

Presenters: Myron Katz, Building Science Innovators

RHP-19- Is it time for an IAQ Score?
All of you here at RESNET are familiar with the idea of scoring a home for energy use. However, we can't really call a home high performance unless it also has good indoor air quality. At the moment there is no standardized way to account for IAQ in homes so it is difficult to know if one home is better than another, if we are meeting IAQ targets, or if we are meting client/customer expectations. We propose to create a scoring tool that, like a HERS Rating, provides an IAQ score for a home. This IAQ score could be used by builders and contractors in marketing high IAQ score homes, used by codes or standards bodies to set minimum IAQ performance levels or used in voluntary programs (such as EPA Indoor Air PLUS or LEED for homes) to set higher IAQ targets. This session will outline our current thinking on how to create a scoring system and look at current IAQ assessments that might provide insight for an overall IAQ Score. We want to have a discussion with RESNET community on how a scoring tool might be developed, what to include, what not to include, what level of effort might be acceptable when creating a score for a home, what diagnostics might be used, do raters think they could do an IAQ Score at the same time as a HERS Rating?, etc. Be prepared to bring constructive ideas and help us make this happen.

Presenters: Iain Walker, LBNL; Brennan Less, LBNL and Jenny Logue, LBNL

RHP-20- Multi-Family and Single-Family Homes: A Comparison of Building Code Requirements and Building Science Considerations
Discussions of residential energy efficiency are usually centered on new construction, single-family houses. However, multifamily housing represents a growing sector of the market fueled by regionally high single-family housing costs, and growing desire to live in walkable, transit-accessible downtown neighborhoods. As focus moves from single family to multi-family construction there are changes in codes, exposures, and construction practices. This presentation will describe some of the building science and construction challenges involved in multi-family construction. And specifically focus on a comparison of the code requirements between single family and multi-family wood frame construction.

Presenters: Theresa Weston, DuPont Building Innovations

RHP-21- New Tools for Builders to Market Their Homes with HERS Index
RESNET has developed new marketing tools for builders to gain a competitive edge in the housing market. These tools allow a builder to demonstrate that their homes was HERS Rated and issued a HERS Index Score.
The customizable tools include:

- Yard signs
- Consumer brochures
- Video productions for the model home

Learn how you can grow your business through the new HERS Index marketing tools.

Presenters: Kathy Spigarelli, RESNET

RHP-22- Pre-Construction Services- Incorporating scope reviews, design charrettes, and pre-construction meetings into Integrated Design with builders
"But it's not in my scope of work!" Sound familiar? Raters are taking an increasingly important role with builders in achieving high performance homes. Spending the time to work with builders, designers, purchasers, and trades before construction begins has become the lowest hanging fruit in getting homes to perform both well and efficiently. In this session, Dan Wildenhaus and Preston Kuckuck will discuss with attendees the various types of pre-construction support Raters can bring to the table beyond the modeling of a home, and engage with attendees on the value propositions to both Raters and builders for taking on this type of work. The session is intended to be very interactive and allow Raters to share experiences from the field.

Presenters: Dan Wildenhaus, CLEAResult and Preston Kuckuck, Performance Insulation

RHP-23- RESNET/Insulate America Pilot National Quality Insulation Installer Mentoring and Assessment Program
Insulate America is working with RESNET on a pilot program on the mentoring and assessment of insulation installers. The pilot program is based on a joint development effort led by RESNET and Garland Insulating in the Dallas, Texas housing market. The program features practical instruction, field mentoring and assessment to make insulators high quality professionals. The foundation of the program is tablet-based program, JobWerks Insulation Installer developed by RESNET and Organic Think. This session will provide an introduction to JobWerks Insulation Installer and its applications and ramifications for the insulation insulation industry.

Presenters: Cardice Howard, Garland Insulating and David Beam, Insulate America

RHP-24- Retrofitting a Single Family Home Targeting Net Zero Water
Whirlpool Corporation is retrofitting a 1920's vintage bungalow in West Lafayette, Indiana to achieve Net Zero Energy, Water and Waste performance. Called the ReNEWW house - for Retrofitted Net-zero Energy, Water and Waste - the structure will showcase technologies that promote resource efficiency. The first phase of the work, targeting net zero energy, was completed in 2014. In 2015, Whirlpool Corporation partnered with the Kohler Company to focus on the water systems in the home. The systems that are implemented include a greywater recycling system, low flow toilets and faucets, a rainwater catchment and filtration system, and a complete house re-plumb. The goal of this phase was to use only the water that was available onsite or collected from within the home. Whirlpool and Kohler will discuss the goals of the project, the equipment used for this phase in the home, the challenges involved with the project, and the results of the water retrofit to date.

Presenters: Eric Bowler, Whirlpool Corporation

RHP-25- Space Heating & Cooling Systems for Very Low Load Homes
Present equipment that can effectively meet heating and cooling loads of homes with very low loads. Is there equipment some new equipment or technology other than 'typical' ductless mini-split systems? Is there some equipment that clients will not back away from just because of the aesthetics of the units? Is there some equipment that may satisfy heating and cooling loads while also dealing with minimum ventilation requirements and filtration of air for homes with low loads and low cfm requirements?

Presenters: TBD

RHP-26- Spray Foam Insulation: An Inconvenient Truth
Spray foam insulation has recently been bashed in print, blogs, and even at trade shows/conferences such as IBS, RESNET, and others. While I understand the forces behind these activities, the amount of misinformation being spread on spray foam is staggering. What I would like to do is to set the record straight and have an open and intellectually honest conversation/discussion/education on spray foam insulation.
NOTE: This is not intended to be the session intro or overview rather a concept of the talk I would like to give. When needed, I will be able to give a better and more concise overview.

Presenters: Stephen Davis, Sustainable Consulting Group, LLC

RHP-27- Two Hour Fire Resistance Rated Walls
Provides an overview of two hour fire-resistance rated walls used in townhome construction; the options available in today's marketplace; and, firewall installation requirements and considerations. Included are discussions regarding risk management and fire resistance testing, options available in today's marketplace; and, firewall installation requirements and considerations.

Included are discussions regarding risk management and fire resistance testing.

Presenters: Aaron Davenport, GreenFiber

RHP-28- Want to sell energy efficiency? Stop selling energy efficiency.
Most home performance folks are absolutely passionate about energy efficiency – and can pontificate ad nauseum about tighter building envelopes, house-as-a-system thinking and the overall superiority of the importance of properly installed insulation vs. granite countertops. The problem is that nobody cares. The vast majority of American homeowners thinks they're doing just fine when it comes to energy efficiency…or they've done a few things to be more efficient, haven't seen a drop in their utility bill and now they're just done/off the train. Comfort, health and safety are the real drivers for what we'd consider to be EE upgrades…the trick is how to talk about that in a way that resonates. How can you target the homeowner likely to buy, deliver the right message and position yourself to sell through more retrofits? Suzanne Shelton will reveal insights that answer all of these questions from her firm's latest polling of Americans and latest consumer campaigns related to engaging Americans in EE home improvements.

Presenters: Suzanne Shelton, Shelton Group

RHP-29- Whole House Air Sealing study results in New Construction
This study scope provides a venue to test the combination of sealing wall cavities with latex sealant, latex sealant at the baseplate to the subfloor connection, the individual wall cavities and to form a gasket at the top plate. These homes will also receive attic plane air sealing treatment. This combination of measures is hereby referred to as Whole House Air Sealing for the purpose of the study. This study provides the method to measure the efficacy of Whole House Air Sealing in new construction as well as the impact and market acceptance of this air sealing strategy. Insulation installations will be completed and inspected in 40 homes representing the size and construction type typically found within the Energy Trust of Oregon territory, with inspections at rough-in and construction completion. The final report will incorporate findings from previous research in new home air sealing practices.

The suburbs we traveled
On roads asphalt and graveled
With our trusted blower door
To defeat dogma and lore
We measured, we tested
Only to, once again, be bested
Be it blue goo or pink slime

We learn this every time
In order to make a house tight
Somebody has to things right

Presenters: Dan Wildenhaus, CLEAResult

RHP-30- Who's Buying High Performance Homes and How Can You Target Them?
Understanding the market for high performance homes (or green or Net Zero or whatever you like) is critical to business success whether you are a custom builder, rater or home performance contractor. 'High Performance Home' can mean many things to a consumer looking to build or retrofit an existing home. We'll review the current research on who is buying high performance homes, including those with a HERS index, & discuss how to reach buyers in the sustainable building arena. We'll discuss the foundations of building a overall marketing program to reach and convert these prospects.

Learning Objectives:
1. Hear about how consumers view the most recognizable high performance home brands.
2. Learn about the top buyer personas in the sustainable building arena and how to target them.
3. Discover tactics to elevate your high performance projects for a shorter sales cycle.
4. Lessons from sustainable builders who are successfully reaching their audience.

Presenters: Peter Troast, Energy Circle

RHP-31- Wrapping it Up: Air Barrier Detailing of Mechanically Attached Air Barrier Materials
Whether it is verification of energy code compliance, green building certification, or enhanced quality assurance programs, the visual inspection of air barrier details is becoming a more frequent occurrence. Using building wraps as an example air barrier material, this presentation will present critical air barrier details, how variation from prescribed details can reduce air barrier performance, and key items to look for when doing a visual air barrier inspection.

Presenters: Theresa Weston, DuPont Building Innovations and Dana Perry, DuPont Building Innovations

Tapping the Appraisal and Real Estate Market

TAP-1- ...And Ratings for All
Arguably, the most important function of any performance rating is to clearly convey to owners, buyers, and renters, how the rated product should be expected to perform for an average user, relative to others like it. So, imagine if about 1% of automobiles on the road carried MPG ratings… Could we realistically expect the car-buying public to accept or understand this? Imagine further that the only place you could see the MPG rating for one of these rare cars was on a sticker on the fuse panel under the dashboard… In this session, we'll explore a startup that is seeking to challenge this status quo and disrupt the real estate and home performance worlds.

EnerScore is a new web service with "A" ~ "F" energy ratings and cost projections for homes in the US and soon in Canada. The software estimates the energy performance of homes using a combination of public record and building department data. This segmentation methodology was proven to be fundamentally sound in a 2012 DOE funded study of approximately 400,000 homes in the Chicago area. EnerScore builds upon the study's core findings. Enerscore's growing knowledge base of existing homes of various vintages, types, sizes and degree of upgrades is cross referenced with the subject property for the necessary inputs into HERS modeling software. An alphabetical rating system that correlates to respective ranges within the HERS index is used to project relative performance ratings and energy costs embedded into online real estate listings that are easy to comprehend at a glance.

Presenters: Brian Butler, EnerScore

TAP-2- Appraisal Bootcamp
Learn how real estate appraisers determine a home's value and how they can assign value to energy efficient improvements. Energy professionals can play an integral role in identifying and quantifying the energy saving performance of a home and help builders and home buyers with appraisal challenges and potentially increase borrowing power based on the value of the energy efficiency improvements. Using real data from a high-performance home case study, participants will calculate a home's net present value.

Presenters: Michael Hobbs, PahRoo Appraisal & Consultancy and Jason LaFleur, Eco Achievers

TAP-3- Asset Ratings, Labels, and Listings
Asset Ratings, such as the HERS Index and the DOE Home Energy Score, are becoming more and more popular in home performance programs and state policies. This session will review current industry trends incorporating asset scores with labeling, home performance, the MLS, and home sales including a case study on developing a Home Energy Rating and Disclosure in upstate New York.

Presenters: Emelie Cuppernell, Performance Systems Development; Ethan MacCormick, Performance Systems Development and Greg Thomas, Performance Systems Development

TAP-4- Better Buildings, Better Sales, Better Business
Education is the key to change, but sales drive the decisions. Learn how to convert your builder and Realtor clients to high performance leveraging the EnergySmart® Builder designation. Historically, HERS Raters and performance contractors have been coming through the back door when working with builders. In today's market, working through a builder's superintendent or purchasing manager isn't enough. The key to becoming part of the builder's process and product is educating the people who sell the homes … the Sales Team. Converting the Sales and Marketing Team, the Realtor network, and the appraisers is the best way to demonstrate real value in your services. Demonstrating how to SELL the EnergySmart ® Builder program and high performance homes throughout your market gives you access through the front door!

Key Objectives:
1. Increase value and relevancy in your products and services
2. Show value in the EnergySmart® Builder Program
3. Create and demonstrate additional value in your services (HERS Rater and/or Contractor).
4. Create relationships throughout the client's organization (Builders, Realtors, Appraisers)
5. Become the resource for information for your clients and generate additional consulting opportunities.
6. Generate additional revenue streams for your business.

Presenters: Todd Gamboa, Building Trust LLC / New Home Solutions USA

TAP-5- Communicating HERS to Appraisers and Real Estate Sales Agents
The key to educating the public on HERS is through investing in appraiser and real estate sales professionals. This session will reveal some tips to more efficiently communicate with the real estate sales agents and appraisers. Sales agents that can articulate the importance of a HERS report is an agent that will educate the buyers. The definition of market value includes a knowledgeable buyer and seller. If they have the knowledge of HERS, they have the power to make more informed decisions. More informed decisions usually results in higher prices for better products. Come to this session for power tips to increase the importance of your product.

Presenters: J. Scott Robinson, MAI, SRA, AI-GRS, Appraisal Institute and Sandra K. Adomatis, SRA, LEED Green Associate, Adomatis Appraisal Service

TAP-6- Effective Methods to Generate a Meaningful Market Edge with HERS Ratings
One important function of the HERS Index is to serve as a market differentiator for high efficiency homes. This session will address the state of the HERS Index as a marketing tool and some powerful concepts and sales tactics that can dial

up the marketing power of Home Energy Ratings. The data behind the insights comes from a wide swath of interviews and surveys of builders, sales representatives, and homebuyers across the country.

Presenters: Cy Kilbourn, Ekotrope

TAP-7- Expand Your Business - Making the Realtor your NEW BEST FRIEND
Understand how to form relationships with realtors to expand the use of the HERS in the existing home market. The use the HERS in qualifying for Energy Efficient Mortgages is a path to selling additional services. Creating a team with a realtor and loan officer creates a win-win-win. You can become their expert on identifying and creating value in the existing home sales market.

Presenters: Sharon Bonesteel AIA, CBO, HERS, Salt River Project; Jan Green, REALTOR, GREEN, SFR, EcoBroker, RE/MAX Excalibur; Brian Andrews, Education & Marketing Director-Ar, Arizona Going Green and Matthew Thorne, Nova Home Loans - Senior Home Loan Officer

TAP-8- Expand Your Business- Energy Efficiency Project Financing
Finding the money to perform energy efficiency upgrades is a barrier to your business success. Understanding the available options for Energy Efficiency Project Financing will make you more valuable to your customers. From Rebate programs to HUD requirements; help homeowners find the money to fund their projects and increase your business.

Presenters: Sharon Bonesteel AIA, CBO, HERS, Salt River Project and Matt Thorne, Salt River Project

TAP-9- How Green Real Estate Improves Your Business
How can you ensure that your homeowner and builder clients are getting the financial savings promised to them? With an increasing number of international studies speaking about home weatherization program failures and overstated energy efficiency returns, how can we, in the residential energy services network, prevent this from damaging our business? The answer lies in home valuation and real estate transactions. In this session, come learn from new research and see residential green building data broken down comparing conventional home sales to “green building” sales. You will learn where your expertise is needed most, what matters most to buyers of all ages, and what provides the greatest ROI to you and your clients.

Presenters: Jason LaFleur, Eco Achievers and Michael Hobbs, PahRoo Appraisal & Consultancy

TAP-10- Mainstreaming the HERS Index in the Housing Market - The RESNET - Appraisal Institute Partnership
Appraisers are the key to having high energy performance homes receiving market value. To provide appraisers with the tools to consider the value of energy efficient homes RESNET and the Appraisal Institute has entered into a partnership. The partnership provides:

- The ability of appraisers to access targeted data on a home's HERS Rating real time
- Conducting an analysis to determine if there is a correlation between HERS Index Scores and market appraised value.
- The Appraisal Institute and RESNET conducting a joint education effort aimed at appraisers, builders and HERS Raters on the HERS Index, its benefits and how they need to work together.

This session will explore the exciting opportunities this presents to the rating industry and builders.

Presenters: Steve Baden, RESNET and Lance Coyle, Appraisal Institute

TAP-11- Rating The Realtor®
How can HERS raters protect their clients from inexperienced realtors that under value green properties? Learn what to look for and methods of communicating the value of the HERS Index and a project's green features. Our panel, which will include an appraiser, a HERS rater/architect, and a builder representative will provide guidance to attendees on how HERS raters can provide valuable services to their clients.

Presenters: Michael Hobbs, PahRoo Appraisal & Consultancy; Laureen Blissard, Green BuilderÂ® Coalition and Kim Shanahan, Santa Fe Area Home Builders Association

TAP-12- Realizing the Market Value for High Performance Homes: Reports from the Field
The energy efficiency components of a home are often invisible to the key parties involved in a home sale – buyer, broker, appraiser, and lender. Using Elevate Energy's 7-Step "Visible Value Blueprint" as a framework, this session reviews recent progress in making energy efficiency features and their benefits visible throughout the entire real estate transaction chain.

Steps 1 & 2: Document and report energy efficient home inventories. Colorado is documenting its growing inventory of high performance homes using RESNET data to identify progress and opportunities

Step 3: Provide education and training. California is leading the nation in training and certifying real estate professionals to the National Association of Realtors Green Designation

Step 4: Reflect energy efficiency improvements in for-sale listings. Chicago now requires utility bill disclosures at time-of-sale, with intriguing implications for sale prices and time on market.

Step 5: Incorporate data into appraisal process. The Pacific Northwest has completed new valuation studies that can be replicated around the country. Both RESNET and California's GreenPoint Rated program have developed hands-on experience populating the Green and Energy Efficiency Addendum as part of the HERS rating

Step 6: Develop standardized IT solutions. Colorado offers a leading example for developing IT solutions to populate MLS systems with home performance data, building on US DOE's Standard Energy Efficiency Data (SEED) platform

Step 7: Work with partner financial institutions. Vermont Green Homes Alliance offers a leading example of how the appraiser assignment process can be recalibrated to better ensure a competency match, triggered by a completed Green and Energy Efficiency Addendum. Colorado's mortgage incentive program engages lenders and appraisers in valuing high performance homes.

Presenters: Peter Rusin, Colorado Energy Office; Pamela Brookstein, Elevate Energy; Anthony Roy, Earth Advantage and Jeffrey Gephart, Vermontwise Energy Services, Inc.

TAP-13- The nexus between Home Energy Rating System, Home Inspections, Green Appraisals and the NAR Green Designation
Come learn from various experts in the field on how they use home performance and the home energy rating system to differentiate themselves in the residential real estate market. Can the HERS rating be used as an appraisal tool? Does home performance translate into enhanced resale value in the residential market? How does each of these professionals use the home energy rating system to inform, educate and sell their clients on the value of a green home? What is the nexus of the HERS with each of these real estate professionals? As a Rater, understand the roles and barriers of each of these market actors and how they can be engaged to help you expand your residential rating business.

Experts include Will John, a Home Inspector who uses HERS as an integral part of his home inspection process; Jan Shomaker, a CG-REP and NAR green designation realtor, who uses home performance as the benchmark for her real estate practice, and was key to helping OCAR green their MLS; and Sandra Adomatis, an expert in green residential appraisals and expert on the nexus been appraisals and the green real estate market.

Presenters: Will Johnson, Inspection Perfection; Sandra Adomatis, Adomatis Appraisal Service; Jan Shomaker, SPS Realty and Susan Davison, CalCERTS, Inc.

TAP-14- What is the Value of a HERS Rating ... a stakeholders perspective
What is the Value of HERS Rating / Certificate?

Like many things in our complex world ... the answer often lies in the person that you are asking.
From the perspective of the HERS Rater, the value should be based on common sense business principals, and in most cases is a function of labor costs, return on invested capital, costs of goods sold, intellectual property or proprietary systems/techniques, overhead and profit margin ... all tempered by the limitations of "what the market will bear".

From the perspective of a homebuilder or the purchaser of the HERS Rating ... the value is most often based on "what the market will accept", so price is also a driver for this group of stakeholders too. The quality of the report and the customer service delivered by the HERS Rater also comes into play and can impact the price that the builder / buyer is willing to pay, especially if there is a need for the HERS Rating to pass some additional level of secondary review to qualify for a rebate or third party designation.

From the perspective of the new homebuyer (and dare I say, the most important stakeholder of the three) ... the value is most impactful ... but also most misunderstood.

In this session, we will explore the value of the HERS Rating / Certificate to the home buyer from a holistic point of view, by answering three simple questions … (1) how does having a HERS rating impact my life when I apply for mortgage financing and purchase my new home, and (2) how does having a HERS rating impact my life when I pay for my new home, and finally (3) how does having a HERS rating impact my life when I ultimately sell my home.
Utilizing the proprietary software program (High Performance Lending™) developed by mortgage lending pioneer Kerry Langley, this session will explore these question by focusing on the of Total Cost of Ownership (TCO) for homes which fall at various points along the HERS scale.

In today's world, a home buyer can have a difficult time comparing a $350,000 home with a HERS 65, to a $400,000 home with a HERS of 45 … this session will answer this question and explore this in detail

In today's world, a home builder can have a difficult time knowing if it makes more sense to build homes which meet Energy Star® standards, or if they should turn up the heat and shoot for Zero Net Energy … this session will answer this question and explore this in detail

And in today's world, a HERS rater is often put in a position to be the "low bidder" to win the business … this session will empower them to add more value to their business relationships and assume the role of trusted advisor (not just vendor) … this session will explore this in detail as well.

Most home buyers have no idea what a HERS rating is … most have no idea what building science is … most have no idea why owning a High Performance Home is important … but they all know what it means to write a check each month for their mortgage and their utility bills. To answer the question posed by the title of this session, and to truly determine what the value of a HERS rating is … this session explores immediately executable solutions that HERS raters and RESNET Energy Smart builders can use to make sure that we are focused on the stakeholder that the HERS rating will impact the most … the prospective home buyer / home owner.

Presenters: Kerry Langley, PrimeLending

Water Rating Index

WER-1- Accounting for Water - The New RESNET Water Efficiency Rating Index
Water is the new frontier for RESNET and the HERS Industry. In many parts of the nation water is fast becoming a scarce and expensive commodity. There is clearly a need for a system to rate a home's water efficiency in the same manner as the HERS Index rates a home's energy performance. This will allow consumers to know the water efficiency of the homes they are considering to purchase and provides builders an opportunity to monetize the water efficiency of their homes. It is the goal of RESNET and the International Code Council to adopt an ANSI consensus standard on the rating of

a home's water efficiency. This session will feature the co-chairmen of RESNET efforts to develop a Water Efficiency Rating Index who will report on the progress on developing the standard.

Presenters: Jacob Atalla, KB Home; Ed Osann, Natural Resources Defense Council and Jonah Schein, EPA WaterSense Program

WER-2- Effective Use of Water and the Energy Used to Heat it for Builders...The Next Frontier
The effective use of water and the energy used to heat it in homes is the next conservation strategy builders need to pay attention to. Many energy efficient production builders have done a great job improving their envelope, heating and air conditioning to increase the energy efficiency of their homes. Now it's time to address water and the associated energy used in the home as it becomes a more costly resource in many building jurisdictions.

One innovative national RESNET Energy Smart builder that has begun addressing this issue is KB Home. In this session, different water / energy conservation solutions in different locations across the country will be presented by KB Home. KB will show how drain/grey water heat recovery (DWHR) and its related HERS benefit has helped lower their HERS scores along with the implementation of grey water recovery in their ZeroHouse offering. The RESNET WERS program will also be discussed and how KB Home plans to utilize the new water measurement index.

Presenters: Jacob Atalla, KB Home and Rod Buchalter, Renewability Energy Inc.

WER-3- Optimizing the energy and water interaction
There many ways in which raters can work with builders to maximize energy savings through water related measures – as well as maximizing water efficiency that will ultimately be reflected in the RESNET water rating index. This session will examine these interactions and opportunities.
Note, we suggest this is a panel discussion

Presenters: Doug McCleery, MaGrann Associates and Panel TBD

WER-4- Panel on WERS
RESNET is developing a water rating system. IAPMO has announced something similar. One is being piloted in New Mexico. The proposal for this session is to have a panel with representatives of up to 4 such systems so that they can explain the features, advantages and benefits of each method.
The names for presenters are for two such systems.
(Note- There could be a separate session for each method, so that there is more time to get into more detail)

Presenters: Jacob Atalla, KB Homes and Pete DeMarco, IAPMO