2017 RESNET Building Performance Conference Schedule

Sunday, February 26, 2017

8 AM-Noon

Ekotrope RATER - Orientation, Training, and Product Feedback Session
Presenter: Cy Kilbourn, Ekotrope
Room: Arizona II

All types of attendees are welcome, whether just hearing about Ekotrope or already ramped up and using the tool. The first part of this session will feature a demo and product walkthrough, highlighting both basic functionality and advanced features. The session will then move to question and answer format to answer users' questions about the product, and finally end with an interactive discussion about users' needs and potential product improvements.

Energy Gauge - An Introduction
Presenters: Tei Kucharski and Jeff Myron, Florida Solar Energy Center
Room: Pueblo II

Venture outside the "hum-drum software the everyone uses".....look at something different! This introductory course is designed to educate the rater to Energy Gauge rating software and its versatile uses.

Energy Rating Data Collection, Storage, and Sharing using Axis
Presenters: Clinton Heyn and Bob Burn, Pivotal Energy
Room: Arizona III

This session will provide an overview of Axis, a cloud-hosted database solution specifically designed for the collection, storage, and sharing of energy rating data. Axis is used by leading energy efficiency program sponsors and utilities to administer residential new construction energy efficiency programs and can also be used by HERS Raters/Providers and home builders to centralize energy rating data and program-specific data. The Axis platform can also be used for QA purposes, incentive payment processing, and general workflow and data management. Axis can benefit program sponsors, utilities, home builders, HERS Raters, HERS Providers, HVAC organizations, QA agents, program evaluators, appraisers, real estate agents, and more!

The session will also cover integrations between Axis and other technology solutions serving the energy efficiency market and will provide an opportunity to meet with the Axis development team and support personnel face-to-face to learn more about Axis and affect future product enhancements.

Conference Registration Open
12-5 PM Hotel Lobby

1-5 PM

Everything Is Going Virtual Including The Marketing of HERS Ratings Through 3D Virtual Tradeshows
Presenter: Ken Riead, Accurate Rater Network
Room: Arizona III

Becoming a certified home energy auditor or rater is not easy nor is it inexpensive. Staying the course means continually learning about new construction products and techniques, evolving energy codes, updated green program guidelines and much more. One aspect that is generally not taught in energy courses is how to market your services, which can be especially hard since much of what we do requires extensive explanation before the sale can be made.

What if you could be instantly connected to potential new clients who already have some knowledge about what you do and the value of your services by using a virtual online 3D tradeshow? What if the person developing these tradeshows has extensive experience in developing and offering Energy Expositions with documented attendance numbers in excess of 55,000 attendees? Isn't this the type of exposure you need to help sell your services and showcase your credentials?

Attend this session to learn more about EGMConnect.com (Energy Green Mortgage Connect) and how you can be connected with private sector financing of deep energy retrofits, plus learn the latest about Fannie Mae's Homestyle Energy Mortgage Program and the National P.A.C.E. financing roll-out. The speaker for this session is Ken Riead, who is a "Legend in Energy" with the Assn. of Energy Engineers (AEE) and also has a BS in Functional Public Relations from the University of Central Missouri (UCM). Bring your laptop or mobile device and get connected while attending this session.

SketchUp for Energy Professionals- Quick, Accurate, Powerful Takeoffs (PRE-REGISTATION REQUIRED)
Presenter: Glenn Pease
Room: Arizona II

SketchUp is a powerful graphic modeling tool developed by Google and now owned by Trimble. EnergyLogic has successfully adopted SketchUp to streamline the take-off process for all of our builder clients. With its 3-D depiction of the thermal envelope, it has also proven to be a strong tool when reviewing probationary ratings, performing quality assurance, and field verifying a house was built to the original model. This training is designed to provide an overview of SketchUp and provide you with practice designing a 3-D model. Then we will use the scripts developed by EnergyLogic to generate a report designed for easy input into REM/Rate. Using SketchUp by itself will improve your speed and accuracy in performing take-offs, but with EnergyLogic's custom reporting script designed for easy input into REM/Rate, you'll find this method is not only fun, but cuts takeoff time in half! This course is designed for HERS Raters or other energy professionals with equivalent experience with energy modeling. It has been specifically designed to help complete accurate take-offs with quick from-plans rating data collection.

RESNET Advanced REM/Rate Training Session
Presenters: Brian Christensen & Amber Wood, NORESCO
Room: Arizona I

In this pre-conference session, you will learn to increase your proficiency and confidence using new and advanced features in REM/Rate. You will discover how to increase the precision of data inputs and deal with multiple files to create the most useful energy efficiency analysis for RESNET ratings, energy code compliance, and design optimization. Learn directly from NORESCO's REM/Rate team.
In this half-day session, you will:
1. Understand how REM/Rate features can be used to make your job easier and expand the types of services you provide to your customers.
2. Find out about the new features in the latest version of REM/Rate.
3. Learn about the changes in REM/Rate regarding implementing the ANSI/RESNET/ICC 301-2014 requirements.
4. Discover how to model hot water distribution in detail.
5. Maximize library usability by creating components that are reusable, easily recognized, and can be shared.
6. Reduce the burden of data entry and repetitive tasks, particularly with multiple files.
7. Learn about upcoming solutions in REM/Rate.

1:30-5 PM

RESNET Board of Directors Meeting
Room: Papago

5-6:30 PM

Complimentary Reception Sponsored by NAIMA and Insulate America
Location: Sunset Plaza

Monday, February 27, 2017

Conference Registration Open
7 AM-5 PM Hotel Lobby

Opening General Session
8:30-10 AM- Maricopa

"All In" Welcome from RESNET
RESNET Board President

The "Why" of Sustainable Buildings
CR Herro, Meritage Homes

What it is to Live in a Water Constrained World
Jacob Atalla, KB Homes and Jonah Schein, EPA

RESNET Best Ideas in the HERS Industry Competition
David Beam and Amy Goforth, Insulate America

Cross Border Challenge Awards Presentations
John Godden, CRESNET

Monday- Session 1
10:30 AM-Noon

How to Measure Airflow (External Static Pressure)
Presenter: Wes Davis, ACCA
Room: Pueblo I

Installing a heating and cooling system requires proper airflow through the equipment. Measuring airflow, and evaluating it, is one of the key skills that Raters perform to confirm that a heating and cooling system is installed properly. This session will discuss the importance of measuring airflow, it will cover the basics of how to measure airflow, discuss typical equipment configurations, and discuss how to measure airflow in each of those configurations.

Compartmentalization and Air Sealing Party Walls
Presenters: Clint Shireman, Rick Blumenthal & Jonathan Lang, Knauf Insulation & Tom Balderston, Balderston Associates
Room: Pueblo II

Builders and contractors are still struggling to meet the 3 ACH50 blower door requirement in townhomes. They're small, often sit on top of garages, and have party wall details not found in their detached-built counterparts. Party walls have proven to be a major connection to outdoors and adjacent units, and 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 information & data on getting to 3ACH50.

Into the Great Wide Open – Kicking HERS Into Notches Unknown
Panelists: John Gillett, Energy Inspectors; David Goldstein, NRDC; CR Herro, Meritage Homes & Frank O'Brien-Bernini, Owens Corning
Moderator: Steve Baden, RESNET
Room: Arizona I

Imagine setting a goal of tripling the number of homes HERS rated three times over five years. This panel will feature forward thinking representatives of the HERS industry, homebuilders, manufacturers and efficiency advocates to vision how the HERS industry can jump start the tipping point to having HERS being in the mainstream of the housing market.

ENERGY STAR: The Year Ahead
Presenter: Dean Gamble, EPA
Room: Arizona II

Come be the first to learn what's in store for the ENERGY STAR residential programs. Hear how Rev. 08 for homes is increasing participation; which states have a v3.1 implementation date for 2017; and how key investments in software, HVAC, and the multi-family high-rise sector will help our partners be even more successful in the years ahead.

Software Persistence and How It Will Affect Your Business
Presenters: Robby Schwarz, EnergyLogic and Daran Wastchak, DR Waschak
Room: Arizona III

Section 103.2.2 of the RESNET standard currently deal with the notion of software persistence. "Once a Projected Rating has been made on a property, the version of the rating software that was used initially may be used for the Confirmed Rating on that property." What if the software is updated and the new software calculates the HERS index differently? By the time we see each other at the conference in February of 2017, this section will have changed. How will the changes in this section of the Standard affect you and your business and why is it important for all raters to be utilizing the same software versions? Let's understand how this section of the standard has been changed and discuss the issue so we all understand its relevance to the industry.

A Breath of (Measurable) Fresh Air: An IAQ Scoring Methodology and Tool
Presenters: Iain Walker, Lawrence Berkeley National Laboratory & Eric Werling, U.S. Department of Energy
Room: Papago I

Healthy indoor environments are valued by homeowners and buyers but there is currently no way to effectively indicate or value the IAQ performance of a home. Lawrence Berkeley National Laboratory and Building America are helping to solve this problem by developing an IAQ scoring methodology and tool – an asset rating similar to existing ratings for energy use. Ratings will be based on observable and measurable quantities assessed by inspection and diagnostic tests. This session will present an outline of the score and a summary of the attributes of the home included in the rating. Comments and questions to help shape future development of the score are welcome.

The When and Where of Vapor Retarders
Presenter: Theresa Weston, DuPont Building Innovations
Room: Papago II

Code provisions on the use and placement vapor retarders and becoming more detailed and can be confusing. Additionally, building assembly components such as water-resistive barriers, air barriers and sheathings are available as either vapor retarding or vapor permeable products. In 2015 the concept of using hygrothermal modeling to determine the use and placement of vapor retarders was introduced into the International Building

Code (IBC). This presentation will review changes to the vapor retarder requirements in the IBC and the IRC from 2009 to 2015. It will introduce hygrothermal modeling and provide guidance on the key considerations when conducting or reviewing a hygrothermal analysis.

Energy Code Compliance: Opportunities for Raters and Program Administrators
Presenters: Mike Turns, Performance Systems Development, Amy Dzura, Southeast Energy Efficiency Alliance & Mike Barcik, Southface
Room: Apache I

An increasing number of states and utilities are including energy code compliance enhancement programs in their energy efficiency program portfolios, but for these programs to become widespread, regulators need evidence that these programs work and are cost effective. To determine if intensive targeted education and outreach efforts can have a measurable impact with energy savings, the Department of Energy is funding Residential Energy Code Field Studies in eight states to establish baseline energy efficiency practices in new single family construction. With the initial baseline data analysis now available, this session will present the results from Georgia and Pennsylvania and discuss the education and outreach strategies currently in use. These field studies may set the stage for state or utility sponsored energy code compliance enhancement programs that will provide opportunities for raters. In this interactive session, presenters and audience members will share perspectives on how the rating industry has influenced energy efficiency programs and code compliance in their states.

2017 Cross Border Builder Challenge Lowest HERS Score Awards Presentation
Presenters: John Godden, Canadian Residential Energy Services & Rod Buchalter, RenewABILITY Energy Inc
Room: Apache II

The 2017 awards for the lowest HERS scores for production and custom builders along with net zero awards for both the U.S. and Canada will be presented by John Godden of the Canadian Residential Energy Services along with some honorable mentions from this year's competition.

Noon-1:30 Lunch
Location: Vista Verde Dining Room and Courtyard

Monday- Session 2
1:30-3 PM

Building a Neighborhood of Data: A HERS-Rated Home Market Update
Presenters: Jason La Fleur, Eco Achievers & Michael Hobbs, PahRoo Appraisal & Consultancy
Room: Pueblo I

Green MLS Data has existed for years in some markets but the analysis of that data is scarce. In this panel discussion session, presenters will analyze national trends in green and sustainable homes in comparison to the local Chicago market. Learn how one market of green homes and HERS-rated homes are performing in the urban core and the surrounding suburban metro market. What features of a HERS-rated home are driving the value? Which energy efficiency upgrades are homeowners investing in and who is benefiting from the investment? Hear from all perspectives: What are builders including in their new construction homes? Does it cost more, less or the same as conventional construction? Attendees to this session will learn what homeowners are asking for, and how is it driving up real estate property value.

How the HERS and Appraisal Industries Can Work Together to Improve Home Energy Performance
Presenter: Jim Amorin, MAI, SRA, AI-GRS, Appraisal Institute
Room: Pueblo II

The Appraisal Institute and RESNET has entered into a partnership with the Appraisal Institute to provide residential real estate appraisers with the tools to recognize the value of high energy performance homes in the appraisal process. The partnership will give residential real estate appraisers an education campaign on what the

HERS Index and the value of HERS rated homes. It will also provide appraisers tools to find HERS rated homes in their market.

This session will be presented by Jim Amorin of the Appraisal Institute. The Appraisal Institute represents over 21,000 real estate appraisers.

The ANSI/RESNET Roadmap - A Guided Tour Through Standards Updates and How You Can Effect Change
Presenters: Robby Schwarz & Glenn Pease, EnergyLogic, Inc.; Emelie Cuppernell & Ethan MacCormick, Performance Systems Development
Moderator: Rick Dixon, RESNET
Room: Arizona I

The RESNET Standards have changed significantly over the last few years. With changes to field diagnostic testing procedures, certification requirements, and software modeling requirements to name a few, the world of HERS Ratings are not what they used to be. Have you been able to keep up? Let us guide you! Join Performance Systems Development and EnergyLogic as we provide a guided tour through the last few years and point out the significant updates and changes. We will help you understand how to get involved and have your voice heard. From asking for an interpretation, to amending a standard, learn how to effect change in the standards development system and how to shepherd those changes through the ANSI and RESNET process. Enjoy some interesting history, battles, and commentary along the way.

A Better High-Performance Home Doesn't Mean Anything if Consumers Don't Buy It: 7 Proven Strategies for Behavior Change
Presenter: Sam Rashkin, DOE
Room: Arizona II

There are seven tried-and-true principles for changing behavior, yet it's surprising how often we neglect them for promoting high-performance buildings. It's like throwing away a critical business asset. The Zero Energy Ready Home Program has rigorously applied all seven strategies to push a very heavy 'zero' up a very steep hill. Learn the how to effectively promote high-performance homes more effectively with these seven strategies.

Smart Thermostats, Building Science, and the Connected Home
Presenters: Chris Carradine, Ecobee; Justin Mackovyak & Rick Gazica, ICF International
Room: Arizona III

Smart thermostats are quickly becoming recognized as the smart home hub and have the potential to provide significant energy savings. These devices blend technology with building science, weather data, and occupant behavior and offer a unique opportunity for builders and energy efficiency programs. This session will provide an overview of smart thermostat technology, various case studies in regards to energy savings, and general information how the devices could potentially impact a home's comfort and energy modeling.

There is an App for That is Back. – Now They do What?
Presenter: Joe Medosch, Energy & Environmental Consulting LLC
Room: Maricopa II

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 / devices for testing and performing many of the required measurements for a Rating.

Measurements? Scan the room with your device and measure the room. 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!

Creating a sketchup model of the home and export the surface area and volume. EnergyLogic has a solution and a training module. We'll demonstrate this in the session.

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. Last year this presentation had a catastrophic failure - technical meltdown! I have recovered and expanded the content. Here is an example of some of the apps and devices. https://db.tt/wJblkhq1

Role of a Rater: Unhappy Homeowners of a New ENERGY STAR Home
Presenter: Les Lazareck, Home Energy Connection, LLC
Room: Maricopa III

Homeowners of ENERGY STAR homes are becoming more conscious of their home's performance and when not happy with the builder's customer service are calling local Raters for second opinions. Their common complaints or concerns include: comfort issues (hot/cold, dusty room); higher than expected gas and electric bills; and noise, purpose and operation of mechanical ventilation. What protocol should a Rater take when called by a new homeowner to verify that their home was accurately verified to meet ENERGY STAR by another rating company? What items can be verified after final? What procedure should the Rater take if some items do not comply with ENERGY STAR Checklists?

What Are the Goals with Energy Codes
Presenters: Clayton Traylor, Leading Builders of America; David Goldstein, Natural Resources Defense Council & Bill Fay, Energy Efficient Code Coalition
Room: Apache I

Currently there is no central goal for building energy codes in the U.S. The State of California has set a policy goal that beginning in 2010 all new homes must be net zero energy. The European Union has set a similar goal.

Codes in the U.S. do not follow a consistent pattern. Sometimes the codes stringency significant increases other times they remain stable.

This discussion will look into the question of what should be goal of energy codes.

The panel will represent a divergence of opinion from builders and code advocates. Come join this lively discussion.

Multifamily Guidelines are Becoming a Standard!
Presenters: Thiel Butner, Pando Alliance; Brian Christensen, NORESCO; Gayathri Vijayakumar, Steven Winter and Rebecca Hudson, EPA

Room: Apache II

Law and order is coming to the Wild West of multifamily ratings! Come to hear the latest and ask questions. Session is presented by members of RESNET's Multifamily Subcommittee, who are building on the existing Multifamily Guidelines in support of developing a Standard dedicated to Multifamily. In addition to getting your feedback on issues encountered while using the existing Guidelines, we will discuss:

1. The transformation of existing Guidance into a new distinct but related Standard for MF.
2. How Standards 301 & 380 will adjust to eliminate areas of conflict & overlap with this MF Standard.
3. The ongoing maintenance the MF Standard will be subjected to, in order to be amended as needed to better support the multifamily sector as more data and experience come available.

Utilities and HERS Software Programs – A Dialog
Panelists: Dave Roberts, National Renewable Energy Laboratory; Cy Kilbourn, Ekotrope & Christopher Dymond, Northwest Energy Efficiency Alliance
Moderators: Matthew Christie, TRC & Nancy St. Hilaire, RESNET Board of Directors
Room: Papago I

Utility energy efficient homes programs are increasingly using HERS raters for verification of the performance of homes. A recent report published by the Consortium for Energy Efficiency (CEE) found that a majority of utility new homes programs rely on HERS ratings for compliance verification. It is critical to utility new homes programs that the calculated savings meet public utility commission criteria. Utilities require that the energy savings calculations are accurate and consistent

A trend in the HERS industry is that new HERS software programs are being accredited by RESNET. Utility program managers have been hesitant in approving the new software programs accredited by RESNET.

This issue is critical to resolve as the demand for HERS ratings increase and to maintain the credibility with program sponsors.

This session will be an open forum for utility program sponsors, HERS software developers and HERS rater to discuss the issues and explore possible solutions.

3-3:30 PM- Afternoon Break (Sponsored by MaGrann Associates)
Location: Grand Coronado/Expo Hall

Monday- Session 3
3:30-5 PM

Affordable Zero Energy Ready Homes
Presenters: Rob Howard, Mitsubishi Electric Cooling, Nikki Krueger, Therma-Stor & David Treleven, Advanced Energy
Room: Pueblo I

Habitat for Humanity of Catawba Valley recently completed construction on the first certified DOE Zero Energy Ready Home in North Carolina. The home also qualifies for a two-year comfort and energy use guarantee through the Advanced Energy SystemVision program. This workshop will take an in depth look at the construction technologies and techniques involved in building an affordable Zero Energy Ready Home, including a super-insulated building envelope, as well as high performance heating, cooling, and ventilation systems. Preliminary data will be shared from monitoring of energy use, temperature and relative humidity.

The Million Dollar Question
Presenter: Kerry M. Langley, PrimeLending
Room: Pueblo II

Would your builder clients pay attention if you showed them an opportunity to generate $100,000, $200,000 or even $1,000,000 + in additional Gross Profit Margin?

High Performance Homes are the way!!

We all know the story … builders today typically fall into one of three categories that I often refer to as …

1. Bob the Builder, also known as "we build barely code" and are best described as those who have no idea what a HERS rating is …
2. Tom the Builder, also known as "what number do I need to hit" and these folks know what a HERS rating is, but typically think of it as a way to earn a couple hundred extra bucks per home in the form or some form of rebate or tax credit …
3. And then finally, Bill the High Performance Builder, also known as the "how low can I get the HERS score" builders, these folks completely embrace building science & high performance homes.

Unfortunately, in most markets, the builders that fall into the first two categories greatly out number the third category … and these are the folks that need to win over to if we are going to expand market acceptance of third party certified high performance homes.

So, how are we going to do this, and where the heck is the $1,000,000+ going to come from …check this out … First of all … How the Heck are we going to do this? … the session that I propose to present at the 2017 RESNET conference will be based on the results of a pilot marketing program that we will be rolling to the new home builder community in the late summer and fall of 2016. The pilot will be based on a program that we have developed to help the builders and their marketing teams sell more high performance homes. The pilot will provide participating builders with a suite of proprietary tools which reinforce the value proposition that they communicate to their prospective home buyers. The tools contain the following components … (1) FHA Energy Efficient Mortgage's and strategically designed Conventional Mortgages to expand buyer purchasing power and address potential appraisal shortfalls, (2) each enhanced with the TCO® (Total Cost of Ownership®) financial optimization program to assure buyers that buying a high performance is a great investment, (3) a 2yr Residential Energy Guarantee® (REG) program from Bonded Builder Warranty Group to provide financial security for buyers, and (4) a complementary Neurio (Home Energy Monitoring Device) and smartphone/tablet app access so the buyers can see, share and monitor the performance of their new high performance home in real time, 24/7, from anywhere in the world.

And what about the $1,000,000 … this is where it gets really fun. In a recent review of a quarterly financial report for one of the largest publically owned builders in the USA. Their Gross Profit Margin on sales was right at 20% and their average home sold for approx. $300,000. Speaking with one of the HERS raters that works with this builder … he estimated that this builder could enhance the standard EnergyStar homes that they build today into a HERS 50-60 home for approx. $10-$12,500. If this builder made the choice to step up their game to these higher performing homes, using our program, it is logical to believe that the builder should be able to maintain the same Gross Profit Margin on this $10-$12,500 in energy performance upgrades as they do on the total home today. So if you do the math on the lower end of the range, and say that $10,000 x 20% = $2,000 in additional Gross Profit Margin … and then take the $2,000 x 500 homes = $1,000,000. My proposed session will also review the enhanced financial performance achieved by the builders who participate in the pilot program.

If all goes according to plans, our goal is to complete the pilot program just prior to the 2017 RESNET conference, and ideally, we will be in a position to announce a national rollout of the program to builders all across the country.

Rater Trainer Roundtable- RaterPRO Preview
Presenters: Dean Gamble, EPA ENERGY STAR Certified Homes and Rick Gazica, ICF
Room: Arizona I

Over the past year and a half, the ENERGY STAR team has been working collaboratively with RESNET, top providers, raters, builders and software vendors to create RaterPRO - an app that will reduce the time to complete high-quality field inspections for ENERGY STAR certifications and HERS ratings. Come see a preview of RaterPRO, including key features to streamline and automate the inspection process. Learn about the schedule for RaterPRO's

development and initial release. Finally, understand how and why the ENERGY STAR program is investing in RaterPRO to help Raters succeed.
**This session counts for the annually required rater trainer roundtable*

How Does the 2016 Election Impact Residential Energy Efficiency
Presenters: Carl Chidlow, Winning Strategies Washington; Jay Murdoch, Owens Corning & David Goldstein, Natural Resources Defense Council
Room: Arizona II

With the 2016 elections the U.S. will have a new presidential administration and congress. How will this impact residential energy efficiency? Take an inside Washington peak what can be expected from Congress and the White House. The session will also look into the leadership of the U.S. Department of Energy and Environmental Protection Agency

Decoding Unvented Attics: From Concept to Simulation to Inspection
Presenters: Rick Duncan, Spray Foam Coalition & John Broniek, Icynene
Room: Arizona III

Across the U.S. builders are being asked to build tighter and more energy-efficient homes. Accomplishing these goals under the pressures of today's market is not always any easy task. High-performance attics like unvented attics offer builders an opportunity to transform an often ignored space into a significant energy-saver. These designs can provide homeowners with more a comfortable living space, while offering builders a cost-effective option for complying with building energy codes.
It's important for home energy raters to understand the material technologies and building practices required for successful unvented attic constructions. Learning objectives for this session include:

1. Identify applicable building and energy code requirements for unvented attics.
2. Understand the building science concepts behind successful unvented attic designs for various climate zones.
3. Understand how to properly model energy-efficiency performance of unvented attics using home energy rating tools.
4. Learn how to incorporate unvented attics into existing home designs.
5. Understand inspection techniques for verifying unvented attic performance.

Finally, The Truth About Condensation
Presenters: Dan Tempas & Brian Lieburn, The Dow Chemical Company
Room: Maricopa II

You think that walls need to "breathe"? You think that you can solve potential condensation issues with some fancy new "smart" vapor retarder? Think again! A lot of ink has been spilled in describing the movement, condensation, and evaporation of water vapor through a building envelope. Unfortunately, all too much of it has been incomplete or even downright wrong. In this presentation, the physics of water vapor transport will be described in detail. Some sacred cows will be slain and fundamental concepts regarding more robust envelope designs will be described. Also, a look at the strengths and drawbacks of various calculation methods including the humble Dewpoint/Glaser method and the vaunted WUFI. Not for the faint of heart or slow of wit, be ready get re-acquainted with Dihydrogen Oxide on both the molecular and macroscopic scales.

Introducing RESNET's New Water Efficiency Rating Index
Presenters: Jacob Atalla, KB Home; Ed Osann, Natural Resources Defense Council & Jonah Schein, EPA WaterSense
Room: Maricopa III

For the past two years a group of water and energy efficiency professionals have been developing the RESNET Water Efficiency Rating (WER) Index.
The RESNET WER Index will work with water efficiency of a home in the manner that the HERS Index works for energy efficiency.
The RESNET WER Index is based on the following policies:

- The WER Index Reference Home tracks with the reference home of the HERS Index (the water use applications that represent standard new home construction in 2006)
- Modeling produces a WER Index that will be a quantitative assessment of the relative efficiency of two buildings (reference and rated home) that produces a numeric scale. The reference home will be assigned a WER Index Score of 100. The relative departure of the rated home from the Reference Home will be either added or subtracted from the 100 score. The more efficient the rated home, the lower its score.
- The WER Index score will be based on calculations of potable water use.

The near term goal is to create a water efficiency rating index that the HERS infrastructure can readily and timely adopt – Vision is that the 165,000 new homes that are rated and issued a HERS Index annually can also be cost effectively assigned a WER Index score at affordable cost to builders.

The WER Index will be submitted to the ANSI process to develop an American Consensus Standard and be co-published by RESNET and the International Code Council.

What Are the Big Changes with the 2018 International Energy Conservation Code
Presenter: Eric Makela, Cadmus, Energy Services Division
Room: Apache I

The International Code Council will soon formally adopt the 2018 International Energy Conservation Code (IECC). This session will highlight the major changes affecting the Energy Rating Index, performance path and the testing of air and duct leakage

How To Effectively Sell Your Services to Homebuilders - From A Builder's Perspective
Presenter: Todd Gamboa, Building Trust LLC
Room: Apache II

How would you like to substantially increase your builder business? HERS raters and performance contractors can have a significant impact on how new homes are designed, built, and sold. Building high performance homes requires building science knowledge, qualified trade partners, improved products, and training. HERS raters can be the link to all of it, if they can properly demonstrate their value as a resource to prospective customers and builder clients. Learn how to deliver an effective message, sell your services, and be the "Most Valuable Player" to the homebuilder ... from their perspective. Grow your business, your brand, and your bottom-line!

5-6:30 PM
SDC 300 Committee Meeting
Room: Papago

5:30-7:30 PM- Opening Reception
Location: Grand Coronado/Expo Hall

Tuesday, February 28, 2017

Conference Registration Open
7:30 AM- 5 PM- Hotel Lobby

<u>Tuesday- Session 4</u>
8:30-10 AM

Residential Energy Guarantee - Don't Just Say It's Energy Efficient - Guarantee It!
Presenter: Roger Lange, Bonded Builders Warranty Group
Room: Pueblo I

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 product that pioneered taking the HERS rating and your energy efficient construction to a whole new level and is providing new opportunities to raters to rate more homes and builders to sell more homes.

The HERS-Rated Real Estate Appraisal Bootcamp
Presenters: Jason La Fleur, Eco Achievers & Michael Hobbs, PahRoo Appraisal & Consultancy
Room: Pueblo II

If you've ever experienced the frustration around the valuation of energy efficient and green real estate, then this session is for you. Learn how to speak to real estate appraisers in the language of determining value of important energy efficient improvements and home energy ratings. This session will highlight how you as a HERS Rater play an integral role in identifying and quantifying energy-saving home performance and your role as an advocate for the project. Using real data from a HERS rated home, attendees will learn and apply the tools familiar to appraisers to rate your projects. An appraisal case study and its supporting Green and Energy Efficient Addendum from RemRate will be analyzed to develop attendees' knowledge and resources necessary to support their builder clients, homeowners and potential homebuyers. With this knowledge, HERS raters can address appraisal challenges and potentially increase borrowing power based on energy efficiency's value. Attendees will depart with a tangible credible report they can complete and give to any lender or real estate appraiser to enhance the lending process. The information provided by this session is important for anyone hoping to see increases in the market penetration of HERS-rated and energy efficient homes.

Energy Rating for "High-Volume" Builders
Presenters: Matthew Cooper, PEG; Dave Bell, TopBuild & Tommy Spain, SkyeTec
Room: Arizona I

In this four part mini-track, hear from industry experts on ways to more effectively serve what are typically categorized as "High-Volume" production and regional builders. Hear real-world advice and anecdotal evidence to help you understand and respond to the unique needs of the builder who offers dozens of home types and options and that builds hundreds or even thousands of homes per year. This category of builder demands consistency, collaboration and continuous improvement from energy raters. Attend this session to see how your business can benefit from experience gained from leading high-volume Rating companies.

One ENERGY STAR for Multifamily New Construction
Presenters: Rebecca Hudson, EPA & Gayathri Vijayakumar, Steven Winter
Room: Arizona II

Multifamily new construction projects of all sizes—from two-over-two condos to high-rise buildings—currently get certified through either the ENERGY STAR Certified Homes program or the ENERGY STAR Multifamily High Rise program. Having two programs address the new construction multifamily sector has created some unintended challenges. As a result, EPA plans to pull the best from each program to create a single unified multifamily program that better serves this sector. Join this session to learn how new multifamily buildings of all types can be certified today, EPA's vision for the future, and how you can help us to get from here to there.

A Suite of Policies for Energy Efficiency in Buildings: Maximizing Synergies
Presenter: David Goldstein, NRDC
Room: Arizona III

Policies to increase energy efficiency in buildings over the long term must combine a number of objectives: 1) acquiring all cost-effective efficiency currently available; 2) continually improving the level of efficiency that will be available in the future; and 3) making markets function better so that energy goals are met in the most economically efficient way possible. These broad goals are mutually reinforcing: more effective policies that make markets work will tend to promote continual improvement and make the achievement of energy efficiency easier and more straightforward.

This session proposes a suite of policies aimed both at promoting continual improvement and also at providing the market infrastructure needed to accelerate the uptake of energy efficiency. The primary examples of the policies that promote continual improvement are: 1) codes and standards; 2) normative labels, such as LEED and Energy Star; 3) informative labels; 4) managed incentives, such as those offered by utilities; 5) market transformation, defined herein as harmonized specifications for highly-efficiency products that are incentivized; 6) tax incentives to get over the valley of death from research and development (R&D) to commercialization; and 7) targeted public R&D.

Examples of policies that provide market infrastructure include appraisal and financing standards that recognize energy efficiency, utility regulations that reward energy efficiency and define the methods for evaluating energy and cost savings appropriately, labeling and rating protocols that measure efficiency reproducibly, incentive programs that establish the business infrastructure for widespread deep retrofits, and communications strategies that encourage efficient construction.

This session establishes a structure for analyzing these approaches, noting that no jurisdiction utilizes all of these approaches to date.

A Changing Home Performance Market - Beating the Odds with Building Science (EEBA Track)
Presenter: Eric Werling, U.S. Department of Energy
Room: Maricopa II

Codes are changing. Materials are changing. Houses are getting tighter. Consumers are getting more educated, and more demanding. At Building America, our work is focused on researching and developing solutions to advance the market for high performance homes. Our solutions are designed to help builders succeed in the changing market - and to help home energy raters grow their businesses by staying ahead of technical trends. Our research projects result in tried-and-true technical and business solutions that can help weather changes and deliver high performance homes. In this session, we will discuss progress on Building America's Research-to-Market Plan and associated Technology-to-Market Roadmaps, walk through all of the new and cool projects being undertaken by the labs and our industry teams, and highlight Building America resources that that can be used today.

Changing Training for Changing Times
Presenters: Ethan MacCormick & Emelie Cuppernell, PSD
Room: Maricopa III

The Northeast HERS Alliance has been training HERS Raters since the 1990s, long before a national exam, let alone 4 tests. Increasing need for consistency on a national level has led to increasing expectations for trainers and students. The NEHERS Alliance has evolved its core training from a 4 or 5 day class, to a multi-week, hybrid online/classroom/field class to prepare the students for written, practical, and simulation exams, as well as for the demands of an evolving HERS industry. We will include the perspectives of other Accredited Trainers, for example Southface, EnergyLogic, and the BER.

ERI- More Than a HERS Rating
Presenter: Robby Schwarz, EnergyLogic
Room: Apache I

The relationship between the Energy Rating Index and the other pathway through the IECC is crucial to understand. What is prescriptive, what is mandatory, what is simulated performance, and what truly does the ERI pathway require? In order to partner with the code jurisdiction and the builder to demonstrate code compliance with the IECC, all of this needs to be understood. This session will reveal the mysteries behind the IECC so you can successfully add implementation of code compliance into your rating business.

Practically Speaking: Applying the 380 Standard for Measuring Airflow of Mechanical Ventilation Systems
Presenter: Paul H. Raymer, Heyoka Solutions, LLC
Room: Apache II

Measuring the airflow through a ventilation system has challenges for installed system testing. The 380 Standard requires results that have an accuracy of ± 5% or 5 cfm which is interesting since the most commonly used device (the TEC EXH) specifies an accuracy of ± 10%. How "accurate" are the testing devices? Bristol Community College in Fall River, Massachusetts has created a test cabin and training laboratory that compares the tests described by the 380 Standard from a Duct Tester to a Garbage Bag. This session will describe and compare the results of the testing classes that have been held there. It will also elaborate on the set up protocols from the differences in the performance of bathroom fan with the bathroom door open or closed to the exhaust flow from a dryer running with and without the range hood operating simultaneously

Tuesday- Session 5

10:30-Noon

The Shape of Things to Come - The Future of HERS Ratings
Presenters: Joe Medosch, Independent Trainer & John Gillett, Energy Inspectors
Room: Pueblo I

There has been a veritable revolution in how a home's energy performance can be tested and inspected. This session will take a futuristic look into what emerging technologies are coming that hold promise for HERS ratings to be more consistent and less timely.

Are you up to Date on the OSHA Confined Space Rule?
Presenter: Bill Spohn, TruTech Tools, LTD
Room: Pueblo II

Although raters always try to practice safe work habits, a recent ruling by OSHA requires many contractors working in the home to comply with the Confined Space Entry Rule for construction. This session will focus in on atmospheric and temperature hazards.

LEARNING OBJECTIVES:
Who is affected by the rule and when the rule comes into play. Learn what can happen in a confined space, see what type of products are needed to comply with the rule, understand how these products work and need to be maintained.

What Builders Really Think of HERS Raters: New Market Research
Presenter: Jordan Doria, NAIMA
Room: Arizona I

In 2016, NAIMA conducted two rounds of qualitative research with a diverse set of builders. This research revealed important details about why builders choose to work with raters, what they expect, what frustrates them and examples of raters who have exceeded expectations and delivered unique value. These insights will be useful for raters as they seek to differentiate themselves and deliver value to their builder customers.

Rating the Performance of HVAC Systems in a HERS Rating
Presenters: Dean Gamble, EPA; Wes Davis, ACCA and Iain Walker, LBNL
Room: Arizona II

With current HERS ratings, one of the largest influences of a home's energy performance - the HVAC system - is still rated based upon nameplate information. RESNET and EPA are leading a working group to change this, by rewarding high-quality HVAC design and installation with HERS points. If done right, the new standard can empower Raters to verify these key components and provide a powerful new incentive for builders to invest in this area. Come hear the latest progress of the working group and what we hope to accomplish in the year ahead.

The Pacific Northwest's Regional Approach to Enabling Transparency, Efficiency, and Value in New Homes Energy Efficiency Programs
Presenters: Neil Grigsby, NEEA; Mark Wyman, Energy Trust of Oregon & Bob Burns, Pivotal Energy Solutions

Room: Arizona III

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. 2017 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.

Blind faith: Understanding IAQ with Low-Cost Monitors (EEBA Track)
Presenters: Brett Singer, Lawrence Berkeley National Lab & Sydney Roberts, Southface
Room: Maricopa II

Advances in low-cost sensors have enabled the development of air quality monitors that are affordable to home performance professionals and even consumers. Devices such as the Air Quality Egg, Foobot, Speck, and Awair are making indoor air quality data accessible to the masses. The era when we will all routinely measure air pollutant concentrations just as we now measure temperature in our homes is just around the corner! Or is it? How reliable are the low-cost air quality monitors? Perhaps they are good for some pollutants, but not others? And even if they are not perfect, are they good enough for at least some pollutants? This session will present results of controlled studies that have evaluated the accuracy and other performance characteristics of low-cost sensors and monitors, and address the questions of what can we learn from these devices and how can we use them to advance home performance.

New RESNET Designation—The HERS Associate
Presenters: Frank O'Brien-Bernini, Owens Corning and Steve Byers, EnergyLogic
Room: Maricopa III

In this session we plan to discuss a new designation, HERS Associate.

At the February 2016 RESNET Board of Directors meeting, a new RESNET designation was approved—the HERS Associate. This new RESNET certification level is essential for anyone needing or wanting a working understanding of RESNET and HERS for uses other than conducting ratings.

HERS Raters are playing a larger role in the residential construction industry. As the Rater's role in the residential construction industry grows so does the need for a wider understanding of their qualifications. The HERS Associate designation is designed to educate architects, engineers, builders, estimators, code officials and industry consultants about RESNET and the role of the HERS Rater.

After completing approved training and testing professionals in the home building industry can receive the HERS Associate designation.

The Training and Certification Committee of the Suppliers Advisory Board developed learning objectives that must be met for an individual to earn the RESNET HERS Associate Certificate.

Expand Your Business Opportunity: HERS Raters Becoming ICC Certified Energy Code Inspectors
Presenter: Mark Johnson, International Code Council
Room: Apache I

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 to play 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 career opportunities of being an ICC certified energy code inspector and what are the requirements.

HERS Index Adjustment Factor Proposal Assessment
Presenters: Linda Jeng, Dow Building Solutions, Philip Fairey, FSEC & David Roberts, NREL
Room: Apache II

Recent studies and experience with the HERS Index as an Energy Rating Index (ERI) performance metric have shown that home geometry and operating assumptions can play a significant role in resulting Index. An Index Adjustment Factor (IAF) was proposed to adjust ERI / HERS Index scores such that the variations arising from differences in conditioned area, number of bedrooms, and number of stories, are minimized. The proposed IAF will reduce the variation between rated homes based on geometry with minimal impact on the average reported Index. The RESNET Calculation Sub-Committee also evaluated the effect of different software tools used for ERI with the proposed IAF methodology, and found similar reduction in the variation of ERI regardless of software used.

Noon-1 PM Lunch
Location: Vista Verde Dining Room and Courtyard

Special Session
1-2 PM

Best Ideas of the HERS Industry – Insulate America and RESNET Awards Program
Room: Arizona II

What would you pay to take home 30-40 successful ideas from your peers? Our price is $20 and it is a steal. All HERS Rating companies are encouraged to share their best ideas with the group, something that was innovative or made a difference in your company. The top three ideas, as judged by the attendees will split the entire proceeds. Everyone is welcome at $20 per attendee.

Tuesday- Session 6
2:15-3:45 PM

Cultivating a New Generation of Leadership in the HERS Industry
Presenters: Matt Gingrich, Energy Diagnostics; Stephanie DeZee, RESNET
Room: Pueblo I

To remain sustainable the HERS Industry needs to cultivate leadership from the new generation. X generation and Millennials communicate in different form than Baby Boomers who have birth for the industry. In order to remain relevant the industry must recruit, mentor and nurture the next generation of leaders.
This session will be a forum led by and aimed at the next generation of leaders.

Exciting New Opportunities with LEED for Homes and Production Builders
Presenters: Asa Foss, USGBC & Tom Flanagan, EnergyLogic
Room: Pueblo II

While finding outstanding success in many market sectors, LEED for Homes has struggled to gain market share with national production builders. In short, the certification process has proven too cumbersome and time intensive to dovetail with a production schedule. USGBC has taken the upcoming switch to LEED v4 for Homes as an opportunity to rectify this. The new LEED for Homes V4 rating system will have a certification pathway specifically optimized for a production builder. Join Asa Foss, Technical Director of LEED for Homes, and Tom Flanagan , QAD and LEED Specialist of EnergyLogic to learn how the new process overcomes the three major

hurdles to making LEED digestible in a production environment: cost, timeline, and administration. (If you're following along – that's basically the whole process!)

What's Missing in HERS?
Presenters: Susan Reilly, Group14 Engineering; Allison Bygott, Group14 Engineering; Brad Smith, Fort Collins Utilities & Robby Schwarz, EnergyLogic, Inc.
Room: Arizona I

As we push to higher performance buildings and work within the confines of building energy codes and rating software, we uncover limitations with both. This session will discuss the following: 1) Skylights are typically treated as energy losers; however, they can prove to be more effective than a window. 2) Residential lighting is not regulated by the energy codes; however, this creates a lost opportunity to significantly reduce energy consumption in multifamily buildings. 3) Air leakage testing is not designed to compartmentalize apartments; however, the City of Fort Collins has successfully changed the approach to address this. 4) If designing a Passive House it is important to be able to rely on the software to guide you to the right solutions. With HERS, it's difficult to get below a rating of 40 with a super-insulated and state-of-the-art mechanical system which is inconsistent with the Passive House rating.

The presenters are experts in their fields with over 60 years of combined experience in energy modeling, research and design, and field testing.

Critical Differentiation is Easier than you Think: The Easy Lift from ENERGY STAR to DOE Zero Energy Ready Home
Presenter: Jamie Lyons, Newport Partners
Room: Arizona II

ENERGY STAR builders are good. And you can make them better. By "better" we mean a cost effective, market-differentiating, risk-reducing strategy for building: Zero Energy Ready Homes. We love having the conversation about what it takes to move beyond ENERGY STAR to a Zero Energy Ready Home, because most above-code builders are surprised that they're so close. In this session we'll walk you through simple steps and specs to move up to DOE Zero Energy Ready Home.

3 Secrets to Tap the Real Estate Market with Energy Ratings
Presenters: Jim Amorin, MAI, SRA, AI-GRS, Appraisal Institute & Sandra K. Adomatis, SRA, LEED Green Associate, Adomatis Appraisal Service
Room: Arizona III

What does it take to tap the appraisal and real estate market with HERS? How do you make the HERS Index a household word? How do HERS Raters gain credibility with appraisers, lenders, sales agents and the public? What is the value of a HERS Index in a transaction? If these questions are ones you often ask yourself, this session is for you. Appraisers are value scientists, real estate agents are inventory scientists and HERS raters are energy scientists. Allow these value scientists to walk through the answers to these questions by showing the parallel of our industry with yours. We'll analyze your industry with facts and figures that show you how far appraisers have come in understanding energy and HERS. All three scientists must work in harmony to revolutionize the housing industry. You'll leave this session with tools and tips to allow you to tap the real estate industry in a more meaningful way. Come to this session to identify the ways to tap the real estate market with HERS, list ways to gain credibility in the real estate transaction and explain the value HERS brings to all stakeholders in a transaction.

Understanding the Cost of Quality (EEBA Track)
Presenters: Theresa Weston, DuPont Building Innovations & Glenn Cottrell, IBACOS
Room: Maricopa II

As builders are increasingly building high performance homes, the costs and paybacks of the higher performance are under critical review. Sometimes over-looked are the cost benefits which can be achieved by improving the quality of the building process and of the installed performance of building assemblies. The program will consist of

two presentations. The first presentation will focus on an analysis of the overall costs associated with construction defects and warranty claims. The second will introduce a methodology for profiling your organization's overall spend on quality. It will highlight 8 cost savings opportunities that result from improved home quality and performance and demonstrate (through a case study) how investing in quality can return savings six times the investment. Builder benchmark data across these 8 opportunities will be shared. See how your company compares.

Introducing the ANSI/RESNET/ICC Standard 380 - The American Consensus Standard for Conducting Air and Duct Leakage Tests
Presenter: Iain Walker, Lawrence Berkeley National Laboratory
Room: Maricopa III

RESNET and the International Code Council (ICC) have jointly published the ANSI/RESNET/ICC Standard 380. This is the first national consensus standard on conditioning air and duct leakage testing.

The 2018 IECC includes this standard for meeting the IECC duct and air leakage tests.

New Option to Compliance to Energy Codes: The Energy Rating Index Performance Option of the IECC
Presenters: Shawna Cuan, Utah Governor's Office of Energy Development; Clayton Traylor, Leading Builders of America & Nate Kleist, Energy Diagnostics
Room: Apache I

Performance compliance options to the International Energy Conservation Code (IECC) are becoming increasing compliance option for home builders. Performance compliance sets a target and allows the builder the flexibility to choose how to meet the targets. There are now two performance options in the IECC: Performance Option and the Energy Rating Index Option. Ten states have already adopted the Energy Rating Index Option. This session will feature a homebuilder, state energy office representative and a HERS rating company to describe how the Energy Rating Index was adopted in Illinois, Michigan, Texas and Utah and the benefits of compliance option to the energy code.

The HERS Score Impact of Insulation Installation Grades
Presenter: Jordan Doria, NAIMA
Room: Apache II

It is crucial for raters and builders to understand how different products and practices impact HERS scores. One area of impact that is not well understood is how insulation installation quality, assessed by assigning grades 1-3, actually impacts HERS scores. This is important because expectations on delivered quality can impact specification decisions, and ultimately cost. Many experienced raters may have an intuitive sense of this subject but, to our knowledge, a detailed analysis of this question has not taken place. In late 2016, NAIMA contracted with Ekotrope, a RESNET approved rating software provider, to conduct this modeling. Ekotrope modeled two homes across eight climate zones (two locations in each), 4 wall R-value levels, two different ACH 50 levels and the three installation grade levels to generate a population of 768 homes across the US. This robust new data set shows the actual impact insulation installation quality has on HERS scores across the country, and the results may be surprising.

3:45-4 PM- Afternoon Break
Location: Grand Coronado/Expo Hall

<u>Tuesday- Session 7</u>
4-5:30 PM

Model Calibration: Introduction, Benefits, and Standardization
Presenter: Dave Roberts, NREL
Room: Pueblo I

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" 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. RESNET issued this as ANSI American Consensus Standard 1201-2016, Standard Method of Test for the Evaluation of Model Calibration Methods, in October 2016.

Rater Support from ACCA
Presenter: Wes Davis, ACCA
Room: Pueblo II

Installing heating and cooling (HVAC) systems requires skill, special tools, and is enhanced by experience. Raters evaluating an HVAC system installation also benefit from experience, especially if unpleasant feedback must be delivered.

ACCA is here to assist those Raters who a pre-check on the HVAC Contractor (Designer, Installer, or both), or to address a concern with an installation. ACCA has a new mobile app, free to accredited contractors that will review equipment sizing, equipment efficiency, and installation metrics related to the ENERGY STAR HVAC Contractor Checklists. Additionally, Raters are welcome to ask questions about an HVAC system installation, or about accepted industry practices, or whether and installation is in compliance to the ACCA 5 QI Standard.

HVAC system installation is becoming a larger part of the Energy Rating Index, and ACCA is here to help.

QA Genie Goes Live!
Presenter: Steve Byers, EnergyLogic
Room: Arizona I

The developers of QA Genie will present the functions of the tool, the reasons for its development and the implications of its implementation, particularly for QA and the future of RESNET.
**this counts for the annually required QAD Roundtable*

What do Leading Raters Know that You Don't: How to Upserve Builders with Lower Risk and Greater Differentiation
Presenters: Justin Erickson, E3 Energy; Robby Schwarz, EnergyLogic; Peter Harding, Home Energy Technologies; Pasquale Strocchia, Integral Building & Design & Sam Rashkin, U.S. DOE as Moderator
Room: Arizona II

Raters and their builder clients have a lot of options: HERS, ERI, ENERGY STAR, green, water, IAQ, and of course….Zero. So why have a select group of leading raters worked with their builders to design, build, and sell Zero Energy Ready Homes? What convinced the builder to get on board? What process helped builders climb the learning curve? What were the key builder objections and how were they addressed? In this panel discussion we'll talk about the business motivations, technical factors, and marketing solutions that were most effective getting builders to Zero Energy Ready Home.

Construction Fix: Conquering Home Performance Errors
Presenters: Brent Jacobs, Dow Building Solutions; Brian Lieburn, Dow Building Solutions
Room: Arizona III
What's your pain point? Many times in construction certain problem areas get overlooked because they can be a nuisance. However, not addressing them up front can cause issues later on in the home's life cycle. This presentation will discuss current problem areas and provide insights to easy, proven techniques and insulation solutions in locations such as vaulted ceilings where space is extremely limited, slowing inward vapor drive behind stone claddings, insulating cantilevered floors, and numerous other applications. Real life issues will be looked at

and addressed from both a remediation and proper initial construction standpoint. After completion of the presentation you will have the knowledge to overcome common insulation and air sealing errors made during the construction process.

Got Gas? Low-load Home Solutions with Combustion Equipment (EEBA Track)
Presenters: Preston Kuckuck, Performance Insulation & Dan Wildenhaus, CLEAResult
Room: Maricopa II

Over half the homes in America heat with natural gas (or propane), yet much of the advancement in space heating and cooling strategies have been targeted at electrically heated homes. Consultant Dan Wildenhaus and Contractor Preston Kuckuck will discuss the opportunities in low-load homes for advanced gas technologies. We'll look at real world experience and studies performed on micro-gas furnaces, condensing gas fireplaces, combination gas boiler applications, and possibly even residential combined heat and power. We'll discuss savings opportunities, integration of cooling, installation applications, and impact to HERs scoring when properly applied.

Diving In to the Water/Energy Nexus
Presenters: Jonah Schein, US EPA Office of Water
Room: Maricopa III

Meeting energy efficiency standards, complying with new water efficiency regulations, and addressing the needs of evolving homebuyer preferences—these are all key concerns for competitive homebuilders. Fortunately, there are labeling programs such as ENERGY STAR and WaterSense Labeled Homes to help builders exceed code minimums and offer homebuyers superior performance, convenience, and utility savings in their new home. Additionally, the connection between water efficiency and energy efficiency is becoming increasingly important, not just to the home building industry, but also to municipalities and utilities. When accounting for the energy intensity of water delivery, programs such as WaterSense Labeled Homes could also deliver important energy savings for utilities, which magnifies their value beyond just reduced water consumption. This is incredibly important for states such as California, who have not only suffered from drought in recent years, but also continue to see housing growth in metropolitan areas and a need to achieve reductions in both water and energy demand. Attend this session to explore the water/energy nexus, recent industry trends, and how these might impact future of the WaterSense program.

California HERS Ratings and RESNET HERS Ratings- Finding Common Ground (Opportunities)
Presenter: Charlie Bachand, CalCERTS Inc
Room: Apache I

HERS Ratings performed in California follow a methodology distinctly different from RESNET HERS Ratings, and use a different set of energy standards, generally referred to as Title 24. Despite these differences there is significant overlap between Title 24 and the IECC codes, and many similarities between RESNET Ratings and California HERS Ratings. This presentation will highlight some of the key differences between California Ratings and RESNET Ratings for Raters that would like to expand their business to serve both markets.

Realtors - The Client You've Never Called On
Presenter: Todd Gamboa, Building Trust LLC
Room: Apache II

Realtors represent buyers in over 90% of new homes transactions. So how is it that they know nothing about building science, changes in codes, and high performance homes? Effective HERS Raters have great influence on builders and contractors. But who is educating the people responsible for guiding the Buyer through the transaction? Realtor education is key to converting prospective buyers. Builders and performance contractors rely heavily on their Broker network to generate leads, promote referrals, and increase sales to drive business. However, they fail to include the Realtor as part of their Sales Team. It's time to stop whining about Realtors not making it past the granite countertops and start inviting them into the Mechanical Room! Improve your sales, build your brand, promote efficiencies, and capture additional business by demonstrating high performance and "Why Buy New". Convert a buyer and you have a deal, ...convert a Realtor and they'll bring you 10 great deals!

5:30-7:30 PM- Reception
Location: Grand Coronado/Expo Hall

Wednesday, March 1, 2017

Wednesday- Session 8
8:30-10 AM

Why the Smart Money Lenders & Investors Who Finance New & Existing Residential Projects Are Seeking EnergySmart Teams & Contractors
Presenter: Sharla Riead, Accurate Rater Network / EnergySmart Institute
Room: Pueblo I

It is no secret that private sector lenders and investors are risk averse when making loans and mortgages. However, to survive they also must constantly seek opportunities to invest the trillions of dollars in pent-up capital that they control into what they consider to be reasonably safe investments. Loans for new construction depend on the income and credit-worthiness of the buyers. Utility savings that can be expected from properly installed energy efficiency features are seldom considered. Loans for energy upgrades on existing homes depend on homeowner income and credit-worthiness as well as the abilities of those performing the upgrades to get the job done in a professional and timely manner. However, lenders are aware of the chaotic and undisciplined nature of the energy retrofit industries are justifiably reluctant to offer any project funding.

This is highly unfortunate because those of us in the energy efficiency, green/sustainable, renewable energy industries have documented proof that well executed and properly installed energy efficiency and renewable energy systems can more than pay for themselves. It is not unusual for a deep energy retrofit to provide a quick payback and ongoing abundant Return-On-Investment (ROI). Energy Efficient Mortgages (EEMs) and Energy Improvement Mortgages (EIMs) use calculated utility savings to boost the income side of the loan decision, increase the value of the property, and support the safety of the investment. In short; the home owner or buyer qualifies for the mortgage; the house qualifies for the energy mortgage.

What appears to be lacking is a controlled, systematic approach to making sure that the trade contractors, energy professionals, HVAC companies and others involved in energy efficiency and renewable energy industries are trained and certified, that the project schedule is professionally overseen, and that the results of the energy improvements are verified and documented. This session will cover energy mortgages, EnergySmart contractors and EnergySmart teams. The mechanics of energy mortgages will be explained as well as how EnergySmart builders, contractors and teams lessen risk for mortgage companies. Also discussed is how EnergySmart teams bring the design/build discipline of new construction to the energy improvement marketplace for existing homes. As a HERS Rater; you are already qualified to verify projects for energy mortgages. Come to this session to learn how to speak to builders, contractors and lenders about this incredible financing tool.

HVAC Equipment Sizing - Bigger is NOT Better
Presenter: Wes Davis, ACCA
Room: Pueblo II

Selecting the correct size heating and cooling equipment has a large impact on the price the customer pays, the comfort they will experience, and the "life" of the equipment.

Many times when a home is uncomfortable, the solution is to install a unit with more capacity... to provide more comfort. However, many times a larger unit fails to provide the expected improvements. The reasons for this failure to deliver are myriad.

This session will discuss the reasons why incorrectly "sized" heating and cooling equipment fail to provide comfort, why equipment with excess capacity generally fails sooner, how to avoid these problems, what to look for when evaluating the capacity of the selected equipment, and provide better support to your customer.

The Great HERS Rater Debate
Presenters: Robby Schwarz, Energy Logic; Chris Urbanus, Burgess Construction Consultants, Inc.; Jon Girod, Quail Homes & Eric Werling, U.S. Department of Energy
Room: Arizona I

Building professionals, including HERS Raters, must address evolving homebuyer demands and increasingly stringent code compliance. This session brings together three different perspectives from building professionals, including HERS Raters, in a moderated debate session to address the top issues facing this industry. Through engaging and interactive debate-style exchanges, we will explore pros and cons of different energy-focused construction techniques and solutions to meet today's marketplace needs. From cost-effective solutions that achieve code compliance to managing increasing homebuyer demands and addressing the growing trend of sustainable and efficient "healthy homes," The Great Debate will provide real, on-the-job insights and data to support their respective positions and approach on each of the issues. Incorporating real-time audience interaction, the moderator will ask both prepared questions as well as those provided by the audience via text and Twitter using #GreatDebate. At the conclusion of this presentation, attendees will gain insights from across the country that can help shape energy strategies that work best for their climate zone and performance targets.

Making ENERGY STAR Appeal to the Builders' Bottom-Line
Presenters: Elliot Seibert, EPA; Hillary Tipton & Michelle Yuan, ICF
Room: Arizona II

Home Energy Raters can help ensure that ENERGY STAR is an easy business decision for builder clients by working with them throughout the life-cycle of the project to reduce costs and add value. This presentation will first cover front-end design strategies that cut costs while maintaining ENERGY STAR certification. Next, the presentation will focus on how, in some markets, ENERGY STAR certified homes are earning a price-premium over conventional construction and the marketing and appraisal tips that can help ensure that money isn't being "left on the table".

Metrics for Energy Efficient Buildings: How Do We Measure Efficiency?
Presenters: Philip Fairey, Florida Solar Energy Center and David Goldstein, NRDC
Room: Arizona III

Several mutually incommensurate metrics have been used to rate building energy efficiency. Metrics are constructed with two different goals: a broad goal of comparing different buildings with respect to their efficiency and the narrow goals of comparing all-electric buildings with those using two or more fuels. This session discusses the comparative usefulness of broad measures of energy efficiency such as energy use per unit of conditioned floor space (Energy Use Index or EUI), the HERS Index and its commercial analogue the zEPI Index, and percent better-than-a reference-code. This comparison is performed in a policy context of how efficiency in buildings is defined. It then looks at four possible ways of comparing fuels: normalized modified loads (used in the HERS Index and in the International Energy Conservation Code), site energy, source energy, emissions-weighted energy, and cost-weighted energy. It finds that the simpler methods of EUI and site energy provide the least useful information. The other methods offer useful answers to different questions, and therefore the user may need more than one of them in order to make justified decisions on energy efficiency.

IAQ in High Performance Homes (EEBA Track)
Presenters: Brett Singer & Iain Walker, Lawrence Berkeley National Lab
Room: Maricopa II

Stringent ventilation and airtightness requirements are becoming commonplace in the high performance homes industry, and green building rating systems are encouraging and sometimes requiring aggressive IAQ provisions. But do these challenging requirements result in better or acceptable indoor air quality for home occupants? Are some high performance specifications contributing to poor IAQ? How important are pollutant source control,

occupant education, cooking, or commissioning? This session will answer these questions by presenting summaries of field studies including results from two recent field studies of air pollutant levels in high performance homes in California and New Mexico. We will also present laboratory and field test results from assessments of kitchen range hoods.

Don't Put Your HERS Business at Risk – The Importance of Being Properly Insured
Presenter: Jeff Hewitt, Lockton Affinity, LLC
Room: Maricopa III

There are tremendous legal and financial liabilities to businesses that are not properly insured. Fortunately for RESNET member HERS Companies there are affordable general liability and professional liability policies tailored to the HERS industry. This session will explore the risks to HERS Companies, what coverage is needed and introduce the RESNET HERS insurance coverage.

What's New with Codes and Standards
Presenter: Theresa Weston, DuPont Building Innovations
Room: Apache I

RESNET entered the standards world with the introduction of Standards 301 and 380 and their likely reference in the IECC. But several hundred other standards are also referenced in the I-codes, many of which are important to the rating industry. This presentation will review new and upcoming developments in standards which intersect with RESNET and I-codes, including those from ASTM and ASHRAE.

Insulation Misconceptions: There are More Than you Think
Presenter: Charles Cottrell, NAIMA
Room: Apache II

Despite all the data and literature on insulation, there is a surprising amount of misinformation in the market. This misinformation is not unique to any market segment or product category. In this session, we plan to use 3rd party data and literature to dispel some common misconceptions relating to insulation, including:

- What R-value includes and what it doesn't
- The reality of convection in wall cavities
- Product settling
- Lifetime performance of products
- Performance across temperature ranges
- How installation quality really affects performance

Understanding the facts relating to these issues, among others, is critical to ensure HERS raters can help builders deliver the high performance envelopes their customers expect.

Wednesday- Session 9

10:30 AM-Noon

High Performance, Moisture Managed Envelope Systems for the Masses
Presenters: Eric Werling, U.S. Department of Energy
Room: Pueblo I

Wall system design today is more challenging than ever. Performance expectations have changed. Materials and methods have changed. And cost competition is tougher than ever. Selecting a low-risk, moisture managed high performance wall system design today often involves consultation from expert building scientists. But, if high performance homes are going to be commonplace, we need a more scalable solution to get this expert knowledge into the hands of all industry professionals. Scientists from Oak Ridge National Laboratory and some of the world's top experts on durable high performance wall system design are developing an online "expert system" tool that can help builders through moisture-managed high performance envelope design decisions. The tool will draw from

Building America research projects, lab and field test measurements of high performance wall systems, computer aided risk analysis, and the expert judgment needed to make sense out of all the data. This session will introduce this tool, provide real-world examples of the research informing envelope best practices, and provide an opportunity for feedback.

RESNET HERS: Putting the ˜EE" in Green
Presenter: Matt Christie, TRC Energy Services
Room: Pueblo II

Green certifications are used to label a home as sustainable, durable, and environmentally sound, attracting the eco-conscious and adding value to the building. As a HERS Rater, delivering green labeling support services likewise increases your value and your business. However, the complex patchwork of green labels available can make it difficult to know how to take advantage of this opportunity.

This session will break down the patchwork of US regional and national green programs and provide advice for RESNET HERS Raters interested in tapping into this growing market of sustainability certifications. As one example, the session will address how HERS Ratings or software models for Ratings can be used to demonstrate compliance with the energy component of broader green certification programs.

Net Zero Energy Homes - Here Today
Presenters: Jacob Atalla, KB Homes & CR Herro, Meritage Homes
Room: Arizona I

Across the nation builders are constructed homes that produce homes that produce as much energy as they consumer (net zero energy homes). Always in the past this concept has been seen as only a dream. This is no longer the case.

This session will feature two large production builders, KB Home and Meritage Homes that are building and selling net zero energy homes. The session will explore the motivations for this and what has been consumer response.

Moving from ENERGY STAR to Indoor airPLUS – Builder and Rater Perspectives
Presenters: Thomas Cochran, Energy Inspectors; Justin Erickson, E3 Energy; Geoff Ferrell, Mandalay Homes; Nick Hurst, EPA & Dennis Webb, Fulton Homes
Room: Arizona II

Indoor air quality continues to grow as an important factor for new homebuyers, and it is now a focal point in the high performance home building industry. The ENERGY STAR Certified Homes Program provides solid footing for energy efficiency and durability. But how do you take the next step as a homebuilder? Join this panel discussion to hear how award winning builders have moved from ENERGY STAR to Indoor airPLUS with just a few simple steps—and then gone “all in” to earn the 100% Commitment designation. Raters will share how to overcome some of the common questions, and Indoor airPLUS Leader Award winners will discuss how they’ve capitalized on their partnership and new Indoor airPLUS marketing tools.

Making the Case for a Preliminary HERS Rating
Presenter: Sandra K Adomatis, SRA, LEED Green Assoc, Adomatis Appraisal Service
Room: Arizona III

Are you typically only asked to provide final HERS Ratings? Aren't those ratings well after the appraisal is completed? How is an appraiser expected to acknowledge the efficiency without a Preliminary HERS Rating? Appraisers are valuation experts but they must have the proper documentation to understand the efficiency of new construction. Making the case for the Preliminary HERS Rating to assist the appraiser in a more accurate value is the key. Do you want power tips to make the case for a Preliminary HERS Rating? It may result in increased business for you AND more accurate valuations for the builder.

Residential Frost-Protected Shallow Foundations (EEBA Track)

Presenters: Brian Lieburn & Dan Tempas, The Dow Chemical Company
Room: Maricopa II

Residential building foundations in cold climates must be supported on solid soil and their footing located below the local frost penetration depth to prevent heaving and other frost-related damage. Frost-protected foundations allow much shallower installation of foundation walls and footings while still protecting the foundations from frost damage. The installation of the proper level of thermal insulation in specific configurations at the outside perimeter of the building accomplishes this. This presentation will address the building science and engineering principles behind Frost-Protected Shallow Foundations (FPSF), summarize Code acceptance of this design concept and outline the proper insulation choices/placement for FPSF in accordance with ASCE 32.01 "Design and Construction of Frost-Protected Shallow Foundations". Case studies will be discussed, demonstrating the construction savings of FPSF relative to standard full-depth foundation construction. Design decisions as well as advantages and disadvantages of FPSF's will be discussed.

Raters' Perspectives on New Homes Programs: Designs that Drive Participation
Presenters: Kathleen Greely & Emelie Cuppernell, Performance Systems Development
Room: Maricopa III

As a designer and implementer of residential new construction programs, manager of a HERS providership, and president of the Northeast Home Energy Rating System Alliance, the authors interact with HERS raters working in a variety of residential new construction programs across many states. Comments shared by dozens of raters made it clear that some programs presented a high "barrier to participation", through difficult qualification criteria, challenging submission requirements, or hard to track down program staff, while participation in other programs was relatively easy. However, the viewpoints shared by raters were purely anecdotal. Despite the informality, it was clear that there was valuable feedback for program designers and administrators in the perspectives of these key trade allies.

Therefore, the authors designed a survey to be administered to the 370 raters that are members of the Northeast Home Energy Rating System Alliance, which covers ten states. Included in these programs are the Massachusetts stretch codes and the evolution of New York State's programs as changes associated with "Reforming the Energy Vision" are rolled out. Survey questions included topics such as: how important are utility programs to the raters' business; how many different programs do they participate in; how do programs support raters via marketing, technical assistance, and quality assurance; which forms of support are most valuable to the raters; what do programs require for submissions beyond a standard HERS rating; what factors if any limit your participation in utility programs. The survey also addresses variables such as the size of the raters' business, and the level of incentives made available through programs they participate in.

Build Your Business and Bring Builders More Value Using the HERS Index Path to Green Certification
Presenters: Michelle Foster, Home Innovation Research Labs & Matthew Cooper, PEG
Room: Apache I

The National Green Building Standard ICC/ASHRAE 700-2015 now includes a streamlined HERS Index Path toward NGBS Green certification. Builders looking to gain even more value from their IECC ERI HERS rating can leverage it to take advantage of a simple and affordable process to earn NGBS Green Certification and capitalize on all of the marketing, valuation, and quality control benefits that accompany a third-party green certification. Come learn about the HERS Index Target Path in the 2015 NGBS and how NGBS Green certification can boost the services and value you provide to your builder clients; single family and multifamily alike.

Conducting Quality Assurance Oversight Remotely- Timely Feedback in a Long Distance Partnership
Presenters: Daran Wastchak, DR Wastchak; Paul Gay, US-EcoLogic and Glenn Pease, EnergyLogic & Aaron Gary, US-EcoLogic; Joe Medosch, Energy & Environmental Consulting llc. & Frank Spevak, Energy Conservatory
Room: Apache II

RESNET is striving the make the quality assurance of HERS Ratings more consistent and affordable. An exciting opportunity is being able monitor air and duct leakage testing in the field over the internet.

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.

Noon-1:30 PM Lunch
Location: Vista Verde Dining Room and Courtyard

Wednesday- Session 10
1:30-3 PM

Understanding the energy efficiency of Advanced Frame and Raised Heel Truss Systems
Presenter: Matthew Brown, APA-The Engineered Wood Association
Room: Pueblo I

Builders often rely on raters to help answer questions about detailing and the energy savings of advanced framing and raised heel truss systems. This session will further the rater's understanding of raised heel truss and advanced framing details, the energy savings that can be attained by using them and the use of the correct software entries. Raised heel truss use is increasing in areas of the country and many advanced framing details are becoming standard practice in today's construction. This presentation will cover the "how to", where the systems are permitted by the International Residential Code (IRC) and how to properly enter assemblies into the software in order to obtain appropriate credit. Raters will also learn how to dispel common myths about the structural integrity of these systems and how to overcome customer perception issues.
Attendees will learn:

- Advanced framing details and options for maximizing cavity insulation
- Raised heel truss energy savings, and energy code allowances
- Energy savings that can be earned by implementing advanced framing details
- Where the IRC permits the use of raised heel trusses and how they can actually reduce costs of meeting some IRC structural requirements
- How the structural performance of raised heel trusses and advanced frame construction compare to standard construction
- Proper software entries to obtain the appropriate credit for the each system

Communicating HERS to Appraisers and Real Estate Sales Agents
Presenters: Jim Amorin, MAI, SRA, AI-GRS, Appraisal Institute & Sandra K. Adomatis, SRA, LEED Green Associate, Adomatis Appraisal Service
Room: Pueblo II

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.

Getting Zero to Stick: ZERH Marketing Tools 101
Presenters: Sam Bowles, Newport Partners & TBD
Room: Arizona II

It's always obvious to us which DOE Zero Energy Ready Home builders have really strong marketing. Their social media attracts enormous attention. Their websites are compelling. Their Tour of Zero homes get the most hits. But high impact, low cost ZERH marketing can easily be a reality for ALL of our partners! In this session you'll hear from the marketing gurus at both DOE ZERH as well as a few of our builder partners about the extensive ZERH marketing resources and the best ways to use them.

Understanding the Impacts of Enhanced Energy Efficiency and Elevated Levels of Airtightness and the need for enhanced Moisture Management
Presenters: Ted Winslow & Lucas Hamilton, CertainTeed Corporation
Room: Arizona III

The use of continuous insulation on building exteriors and the air tightening of building envelopes only increases the need for the elevated drying potential of fiber glass insulation in the framing cavity. We seem to keep finding ways to add more layers and new materials to our building envelopes. While these additional layers have helped reduce energy losses they have not managed to keep water out of our walls. We are human and people make mistakes, like occasionally tucking their raincoat into their rain pants, but we also suffer a disconnect between expected material performance and practice. Hey here's shocking news: in the US "self-flashing" residential windows are allowed to leak from "the nailing flange out". Consider now how you are integrating the wrapping of the rough opening with the water resistive barrier and the continuous insulation to ensure that the water which will come on the face of that window nailing flange is going to be re-directed to the exterior. Will it wind up in front of or behind vapor resistive layers? If it is behind resistive layers, chances are very good the direction of the highest potential rate of drying is actually towards the interior. The vapor open nature of fiber glass, combined with an adaptive "smart" vapor retarder where needed, provides the assembly with the maximum potential for drying moisture that may intrude in these scenarios. It's a little ironic that with regard to moisture management what had been considered fiber glasses Achilles heel, being so vapor open, may actually be one of its best benefits. While working to reduce our consumption of energy, we must always keep durability as a principle concern for there is nothing sustainable about a building that can't last.

In this session, we will explore these concepts and practices and dig into a thorough understanding of what impacts we can expect in the future due to increasing the energy efficiency of the building envelope and increasing the airtightness levels of today's homes. Here is a hint--we can expect the drying potential to be reduced; whereas, our buildings are still getting wet (and may in fact get more wet...). Managing this moisture will be the key to successfully building the sustainable homes of the future.

Heat Recovery Ventilators (HRVs) and Central Air Handler Integration (EEBA Track)
Presenters: Bruce Manclark & Dan Wildenhaus, CLEAResult
Room: Maricopa II

Why should Builders care about integrated HRVs? HRVs are a smart way to ventilate that you can sell at a higher profit margin and avoid call backs with negative comfort issues. In contrast to simple exhaust fans or holes in the home, HRV allow for heat recovery, health through fresh, filtered air. Codes dictate ventilation, yet HRVs allow for both meeting code and adding value to the customer through IAQ controlled with the least economic impact or comfort impact. What are the benefits of integrated vs. two stand-alone systems? With integrated systems builders are required to install fewer ducts, requires less room and few holes cut into the buildings. An HRV adds the V back into the HVAC system.

Why should Raters care about integrated HRVs? More energy savings in the model (SRE and fan wattage), adding value as a consultant to the builder and designers, future proofing given RESNET is going the direction of grading HVAC systems.

Why should HVAC designers care about integrated HRVs? Fewer design challenges, better chance at success (the thing works), and a clear process to install/better guidance.

Airflow Measurements: 2017 edition

Presenter: Bill Spohn, TruTech Tools, LTD
Room: Maricopa III

Learn the wide variety of measurement methods and the pluses and minuses of each. Dig into the science behind good airflow measurement, as well as the importance of considering air density corrections. We will also cover the ins and outs of picking the correct tool for the measurement task or application.

Every major airflow measurement tool and technique will be explored and explained, especially those impacting RESNET ratings.

Home Energy Rating Index Studies - How Does The Energy Code Stack Up to Currently Rated Homes
Presenters: Isaac Elnecave, Midwest Energy Efficiency Alliance (MEEA) & Jim Meyers, Southwest Energy Efficiency Project (SWEEP)
Room: Apache I

With the energy code advancing efficiency and the ERI path included in the 2015 IECC there is a lot of unknowns as to how the IECC aligns with current construction practices across a spectrum of HERS scores. Learn how Raters can leverage this knowledge to support energy code adoption, energy code compliance work, support builders to meet code and exceed energy efficiency program requirements.

3-3:30 PM- Afternoon Break
Location: Grand Coronado/Expo Hall

<u>Wednesday- Session 11</u>
3:30-5 PM

Rating the market: How one rater increases HERS Adaption and Awareness through Real Estate Market Research
Presenters: Michael Hobbs, PahRoo Appraisal & Consultancy & Jason La Fleur, Eco Achievers
Room: Pueblo II

In order to grow the number of HERS-rated homes, homeowners want to see the statistical data proving its value in the real estate market. While the HERS Index and energy certifications are "yes or no" options in various local multiple listing services (MLS), homeowners and real estate brokers both have trouble understanding the meaning and value behind them. As third-party certifications become more of an industry standard in residential and commercial projects, raters are becoming increasingly important to this education component and therefore have less time on their hands. This panel discussion will walk through the steps of creating a local rater-driven market research project and emphasize the power of collaboration in breaking down barriers to providing the marketable green real estate data necessary for market transformation. How can we collaborate and share information without threatening the trust and relationships built with clients? Hear how a rater, appraiser, real estate broker and local builders partnered up to transform their local green real estate market and in turn, grow their HERS-Rater business.

Designing Zero Energy Ready Homes Right…the First Time: 10 Steps to a Durable, Efficient, and Comfortable Home
Presenters: Sam Rashkin, U.S. DOE & Jamie Lyons, Newport Partners
Room: Arizona II

"Whole building design" is a phrase we all hear a lot. So what does it really mean to apply this concept in new homes…or worse - what goes wrong in the absence of whole building design? In this session you'll learn through a series of new home case studies where things didn't go so well – how to avoid costly missteps in your own projects. The takeaways are 10 key steps for designing and building Zero Energy Ready Homes.

Expand your Business; Breaking into the Existing Homes Market
Presenters: William Anderson & Luke Bertram, ICF International

Room: Arizona III

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 go in depth to determine what drives a buying decision, why people purchase, and techniques that can help you position your business to the average homeowner. 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.

Building Better Homes Challenge Finds Moisture in Commonly Built Homes (EEBA Track)
Presenters: Brian Lieburn, The Dow Chemical Company & Brent Jacobs, The Dow Chemical Company
Room: Maricopa II

Dow's Building Better Homes Challenge is a multi-home, 5 year research project partnership between Dow Building Solutions and Cobblestone Homes to investigate the performance of building enclosures designed to meet and exceed energy code requirements. Twelve case study single family research houses were constructed in Midland, MI (CZ 5) with four building energy efficiency strategies. Data will be presented on the cost to build, energy use and hygrothermal performance of the various strategies. Bi-annual occupant surveys provide qualitative insight to the value of High Performance Homes.

Can the RESNET's HERS Index and U.S. Department of Energy's Home Energy Score Be Harmonized?
Presenters: Richard Faesy, Energy Futures Group, Inc.; Roger Kainu, Oregon Department of Energy; Andy Popp, Missouri Department of Economic Development/Division of Energy Anthony Roy, Earth Advantage & Todd Sims, National Association of Energy Officials
Room: Maricopa III

There are many questions about comparisons between the RESNET HERS Index and DOE's Home Energy Score regarding similarities, differences, applications, interchangeability and consistency. Find out about a new effort to investigate whether it is possible to better align these two "rating" efforts.