

# ASHRAE MONITOR

www.hamptonroads.ashraechapters.org



The Discussion Topics:  
**“ASHRAE’s Building Energy Labeling Program”**

**Place: ITT Tech Auditorium**  
863 Glenrock Road  
Norfolk, Virginia 23502

**Cost:** Members \$20, Guests \$25 & Students \$10

**Signup:**  
See page 3 for details

**Reservations:** R.S.V.P. at  
<http://hamptonroads.ashraechapters.org>

## Mission Statement

“To advance the arts and sciences of heating, ventilation, air conditioning, and refrigerating to serve humanity and promote a sustainable world.”

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## Publish an Article about Your Project

Do you have a unique, challenging, or otherwise interesting project that you’d like to share? If so, please send a write-up and photos (if applicable) to [rainsley@enviromechanicalsales.com](mailto:rainsley@enviromechanicalsales.com)

We will include one article per month in the ASHRAE Monitor. Preference will be given to local projects exhibiting sustainable design/construction practices.

*President - Rob Ainsley - [RAinsley@enviromechanicalsales.com](mailto:RAinsley@enviromechanicalsales.com)  
President Elect - Paul Butler - [PaulB@aceshvac.com](mailto:PaulB@aceshvac.com)  
Vice President - Richard Roberts- [Richard.w.Roberts@jci.com](mailto:Richard.w.Roberts@jci.com)  
Secretary - Daniel Johnston - [Daniel\\_Johnston@siemens.com](mailto:Daniel_Johnston@siemens.com)  
Treasurer - Scott Almond - [scott@mail.ashrae.org](mailto:scott@mail.ashrae.org)*

*Chapter cannot act on behalf of the Society.*

## *Committee Participation is Needed and Welcomed*

If anyone has an interest in becoming involved with ASHRAE we welcome people to serve in various ways. Please feel free to contact any of the board members to get more information. You can also visit the ASHRAE web site to find out more about getting involved. It is a great way to plug in to your local community of peers and grow personally and professionally. For those of you who have served before, we welcome your participation also. Every effort helps to enrich our local community.

## **Your Feedback Matters**

Are there things that you would like to see happening in ASHRAE? Please feel free to contact us with suggestions for improvement and with ideas on how you would like to see the local ASHRAE chapter change or improve. We welcome and value your feedback. Again, you can contact us utilizing the email addresses on Page 1.

Thanks!

## From the Presidents Pen

From the President's Pen:

Dear Members,

I hope this message finds everyone doing well. As this is the last newsletter of the 2011-2012 season, I wanted to take a moment to reflect on what we have achieved throughout the year and say my goodbyes as president.

Let me start by thanking my fellow board and committee members for their hard work and dedication in making this year a tremendous success. I would also like to thank our sponsors and chapter members for their continued support for all of our chapter events and meetings. I appreciate having the opportunity to work with all of you and thank you for the guidance and encouragement you provided me during my tenure/dynasty (just kidding, I'm the only one that calls it a dynasty).

We started this year off with two strong, successful ASHRAE events with our Research Promotion "Family Night at Harbor Park" and our "Energy 4 Kids Pig and Oyster Roast". Our Research Promotion event supports and creates awareness for raising funds to advance research projects in the HVAC&R industry. Our E4K event generated funds to support a renovation to install a more energy efficient return air system and window replacement for a YWCA facility in the south Hampton Roads area.

We continued this momentum throughout the year by hosting a lecture series where top industry leading experts shared their experience and knowledge on a variety of ASHRAE hot topics. Our ODU student chapter hit the ground running and restored their prominence as an official ASHRAE and ODU student organization. We celebrated our partnership at our Student Activities event at The Ted where we saw the ODU men's basketball team take on VCU.

All of our hard work and commitment has increased our membership by over 10% and increased our monthly meeting attendance by nearly 100% this year. Our event sponsorships have increased as well as our fundraising support for this year's events. We also had more members step up to our leadership challenge and accept roles as board members, committee chairs, and volunteers.

We are finishing the year strong with our last Distinguished Lecturer program and our Student Scholarship Golf Tournament. Penn State University's Dr. Bill Bahnfleth will be presenting on the ASHRAE Building Energy Labeling program which is a growing trend worldwide. We are also partnering with IFMA again this year for our 2012 Spring Student Scholarship Golf Tournament at Sleepy Hole on Wednesday, May 16<sup>th</sup>.

So as our season is coming to an end, I could not be happier on where the chapter stands. I'm also very pleased with the outlook for the chapter with a very talented and dedicated team of leaders taking over. I feel confident we are in good hands and our best years as the Hampton Roads Chapter are still ahead. I look forward to seeing you all at our next event and thank you again for everything!

Peace, I'm out! (dropping the microphone on stage)

Rob Ainsley - Hampton Roads Chapter President

**Tuesday, May 8, 2012**

**“ASHRAE’s Building Energy Labeling Program”**



**Distinguished Lecturer – William Bahnfleth** is Professor and Director of the Indoor Environment Center in the Department of Architectural Engineering at Penn State University, where he has been employed since 1994. Previously, he was a Senior Consultant for ZBA, Inc. in Cincinnati, OH and a Principal Investigator at the U.S. Army Construction Engineering Research Laboratory in Champaign, IL. He holds BS, MS, and PhD degrees in Mechanical Engineering from the University of Illinois, where he also earned an undergraduate degree in music (pipe organ performance), and is a registered professional engineer.

At Penn State, Dr. Bahnfleth teaches undergraduate courses in HVAC fundamentals and controls and graduate courses in chilled water systems, hot water and steam systems, and indoor air quality. His research interests cover a wide variety of indoor environmental control topics, including chilled water pumping systems, stratified thermal energy storage, protection of building occupants from indoor bioaerosol releases, ultraviolet germicidal irradiation systems, and others

Dr. Bahnfleth has served ASHRAE in a variety of capacities, including Student Branch Advisor, Chapter Governor, Technical Committee and Standing Committee Chair, and as a Director-at-Large and is currently Society Vice President. He is the recipient of a 1st place ASHRAE Technology Award, Transactions Paper Award, and Distinguished Service and Exceptional Service Awards.

**Topic: ASHRAE’s Building Energy Labeling Program** – Whether voluntary or mandatory, the rating of the energy use and indoor environmental quality of buildings is a growing trend worldwide. This presentation will provide an overview of the BEQ program, describe its relationship to other building certification programs in the US and elsewhere, identify the potential benefits of certification, and summarize the current state of implementation of the program and plans for the future.

***Earn 1 hour of Professional Development Hours at this meeting.***

**\*\*\*\*Please note venue change.**

**Date: \*\*\*TUESDAY\*\* May 8, 2012**

**Location: ITT TECH Auditorium, 863 Glenrock Road, Norfolk, VA 23502**

**Time: Meet and Greet/Lunch at 11:45am and Tech Session begins at 12:00 pm**

**Payment: Members = \$20.00 Non-Members = \$25.00 Students = \$10.00**

**For reservations go to <http://hamptonroads.ashraechapters.org/>**





## ASHRAE Society Press Release “Shack”

ATLANTA: April 2, 2012

### ASHRAE Funds 22 Undergraduate Projects; Creation of “Shack” to Study Energy Efficiency:

Design and construction of a “shack” to demonstrate renewable and HVAC technologies, including solar thermal heating, photovoltaic power generation, high efficiency and green insulation options and wood pellet stoves, is being developed by undergraduate students in an ASHRAE Undergraduate Senior Project Grant.

This year, 22 schools from around the world were awarded grants. The grants, totaling some \$100,000, are awarded by ASHRAE to colleges and universities worldwide to promote the study and teaching of HVAC&R, encouraging senior undergraduate students to pursue related careers.

The grants are used to design and construct projects, such as Minnesota State University – Mankato’s proposal to design and construct a renewable and HVAC technologies test-bed “shack.”

“In the spirit of the Solar Decathlon and the movement toward ‘tiny homes,’ this project aims to design and build a structure of some 24 square feet that can be used to demonstrate renewable and HVAC technologies,” Patrick Tebbe, faculty advisor at Minnesota State University – Mankato, said. “The ‘shack’ will be designed to accommodate a range of technologies for demonstration and testing in the classroom and research projects.”

Given the university is located in the heart of ice fishing territory, the shack design will be loosely based on typical ice fishing huts or shacks. The inclusion of ice fishing creates an immediate engagement for both students and the public, according to Tebbe. He said the students hope this will generate interest in energy efficiency and sustainable design topics beyond upper level engineering courses. The shack also will be portable (most likely constructed on a sled) so it could be moved to test sites, high schools, open houses, etc., constructed on a sled) so it could be moved to test sites, high schools, open houses, etc., allowing for greater demonstration. It also could be adapted for summer applications.

The project will incorporate a flat plate solar collector to supplement interior heating, testing of various wood and pellet fueled stoves and weather stations from previous solar research. The construction materials likely will be supplemented with recycled and reused materials found locally.

Other ASHRAE grant recipients are:

- Purdue University – Calumet (Hammond, Ind.) – was deemed the top grant award winner for its project, Refrigeration and Heat Pump Teaching System. Two students from the university are invited to present their project as part of the Student Program at the 2013 ASHRAE Winter Conference in Dallas
- American University of Beirut (Lebanon) – Test and Optimize a Zonal Air Distribution System to Inactivate Airborne Microorganisms using Upper-Room Ultraviolet Germicidal Irradiation
- Carleton University (Ottawa, Ontario, Canada) – Measurement of Indoor Air/Environmental Quality in Arctic Housing and University Campus Buildings
- North Carolina A& T State University (Greensboro, N.C.) – Impacts of Air Filters on Energy Consumption in Typical HVAC Systems
- Sinclair Community College (Dayton, Ohio) – Primary – Secondary Hot Water and Chilled Water System Design and Installation
- Transylvania University of Brasov – Testing Laboratory Using Renewable Sources for Radiant vs. Convective Heating and Cooling
- Universidad Pontificia Bolivariana (Colombia, South America) – Clima Emulator Using Chilled Water HVAC System as Energy Sourced
- Universiti Teknologi Malaysia (Johor) – Effect of Ejector Geometric Parameter on the Unitary Air Conditioner as an Expansion Device
- University of Alaska Anchorage – Air Duct Simulator
- University of Alberta (Edmonton, Canada) – Undergraduate Boiler Performance Laboratory
- University of Urbana-Champaign (Illinois) – Design and Construction of an Energy Recovery Ventilation Demonstration Unit Using Heat Pump for Laboratory Use
- University of Indonesia (Kampus UI Depok) – Development of Smoke Venting Demonstration Apparatus
- University of Lagos (Nigeria) – Design and Fabrication of a Biogas-Powered Water Refrigeration Heating System
- University of Maryland (College Park) – Energy Consumption Analysis and Optimum Cooling Solutions for a Medium Size Data Center
- University of Minnesota (Minneapolis) – Desiccant Dehumidification Test Facility
- University of Windsor (Ontario, Canada) – Underwater Compressed Air Energy Storage System Model
- Western Kentucky University (Bowling Green) – Air Flow Visualization System Using Infrared Thermography
- Wright State University (Dayton, Ohio) – Heat Powered Demonstration Chiller
- California State Polytechnic University (Pomona) – Moisture Control for Carbon Dioxide Sensor Applied in a Residential Furnace
- Jimei University (Xiamen, China) – Design and Construction of an Experimental Facility for Fresh Air Ventilator with Exhaust Air Heat Recovery Systems
- University of Algarve (Faro, Portugal) – Development of Sensors for HVAC Systems Control Based in the Human Thermal-Physiology



## **ASHRAE Society Press Release** ***“Changes for ASHRAE/IES Standard”***

**ATLANTA: April 9, 2012**

### **Changes Related to Data Centers, Lighting, Space Heating Energy Source Proposed for ASHRAE/IES Energy Standard:**

A proposed change to the ASHRAE/IES energy standard regarding data centers recognizes the role that system efficiencies – vs. only equipment – can play in reducing energy consumption.

“This change regarding data centers represents a building block as we work to build on the foundation of energy conservation in the standard,” Drake Erbe, 90.1 vice chair, said. “We recognize that equipment used in buildings is reaching maximum capabilities in energy efficiency. We now must examine the role that system efficiencies play in saving energy. Inclusion of data centers in the standard was a step in that direction.”

With publication of the 2010 standard, ANSI/ASHRAE/IES Standard 90.1-2010, Energy Standard for Buildings Except Low-Rise Residential Buildings, data centers were included within its scope for the first time. Most data centers were required to have economizers, but some in the data center industry disagreed with the requirement, maintaining that economizers are subject to static discharge due to low humidity, gaseous contaminants and reliability.

Erbe said the 90.1 committee worked with the data center industry and ASHRAE’s technical committee on mission control facilities, technology spaces and electronic equipment to develop an alternative path known as power usage effectiveness (PUE) to allow use of developing technologies for which there are no energy modeling tools available. The path is addressed in proposed addendum ap, which is currently open for public comment.

“This is a significant issue to design professionals in that without a simulation program available to model these systems they have to receive approval from the authority having

jurisdiction for an exceptional calculation method, which, in most cases, is beyond the jurisdiction's knowledge level," Erbe said. "The PUE values were developed using water cooled chillers with water size economizers and air cooled chillers with air side economizers, using prescriptive requirements currently in the standard. The PUE values for all climate zones are able to be achieved by both of these conventional system types."

In total, 15 proposed addenda to Standard 90.1 are open for public review. For more information, visit [www.ashrae.org/publicreviews](http://www.ashrae.org/publicreviews).

Also open for public comment is addendum ao, which offers an alternative compliance path for lighting requirements aimed at the large number of smaller, simpler buildings that make up a majority of new construction and retrofit activity, according to Eric Richman, chair of the standard's lighting subcommittee. It provides a less complicated set of requirements that should be easier to apply to these types of facilities, and also includes more stringent Lighting Power Density (LPD) limits that may restrict the application of more lavish space lighting designs not commonly found in these facilities. This compliance path will replace the current whole building LPD table and only applies to a subset of building types that encompass many of the smaller, simpler buildings. The use of this method is optional and the full space-by-space method used by most designers for larger more complex facilities still remains for application to any building type, Richman said.

In addition, addendum al is open for public review. Users of Appendix G of the standard have noted that the baseline energy budget is different depending on whether electricity or natural gas is chosen for either space heating and water heating, according to Don Brundage, a member of the Energy Cost Budget subcommittee. In some cases, this can provide greater energy savings estimates from Appendix G when using one fuel versus another, and provides a strong incentive to specify the fuel that will provide the greatest energy savings using Appendix G.

"Proposed addendum al would make the baseline building energy budget (the minimum code baseline for determining energy savings) the same regardless of the choice of fuel in the proposed building, eliminating this bias," Brundage said. "This is done by setting rules to determine the fuel to be used in the baseline building for space and water heating. These rules are based on climate zones for space heating and type of building usage for water heating. This would make energy savings estimates using Appendix G more consistent and fair than under the current version of the standard."

In addition to addendum al, ao and ap, eight other addenda are open for public review from March 23 until May 7. They are addenda af, ag, ai, am, an, aq, ar and at.

Four addenda are open for public review from March 23 until April 22. They are addenda ad, ah, aj and as.





## **ASHRAE Society Press Release “Refrigerants Conference”**

**ATLANTA: April 24, 2012**

### **ASHRAE, NIST to Host Conference on Refrigerants:**

A joint conference focused on refrigerants and hosted by ASHRAE and the National Institute of Standards and Technology (NIST) has been announced for October 2012.

The ASHRAE/NIST 2012 Refrigerants Conference: “Moving toward Sustainability” takes place Oct. 29 -30, 2012, at NIST in Gaithersburg, Md.

“This conference addresses international concerns about the impact of refrigerants on climate change, which inevitably lead to increased focus on refrigerants with a low global warming potential (GWP) applied in high-efficiency systems,” Piotr Domanski, conference co- chair, said. “This includes new generations of unsaturated fluorochemicals and expanded use of ‘natural’ refrigerants.”

This is the fourth jointly sponsored refrigerants conference sponsored by ASHRAE and NIST. Past conferences provided information and updates on the phase-out of chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants, which were implicated in destruction of the stratospheric ozone layer.

The conference provides the latest information on alternative refrigerants, likely time schedules, transition requirements, environmental effects of refrigerants, new refrigerant performance considerations and what will be required to phase-out the use of high-GWP refrigerants with other refrigerant alternatives and technologies.

All those involved in the different aspects of refrigerants and refrigeration technology – policymakers, manufacturers, researchers and government officials – will receive an opportunity to learn about the latest developments and directions going forward.

The conference features invited papers from leading global experts who will cover a broad range of topics, including:

- Status of current environmental, scientific and regulatory activities
- Potential applications of “natural” refrigerants
- Technical developments on new low GWP fluorochemical refrigerants
- Equipment applications using low GWP alternatives
- The opportunities for reducing refrigerant emissions
- Panel discussions by industry experts at the end of each day.

The focus of the conference is on technical issues and the longer term opportunities for success from a global perspective. Experts of every facet of the issues to be covered in the conference are going to be available during the two days of the sessions for an information exchange with an evening dinner on Monday for more informal discussions.

Registration is slated to open in June 2012. The cost is \$390 (\$340, ASHRAE members). For more information, visit [www.ashrae.org/refrigerants2012](http://www.ashrae.org/refrigerants2012).

Contact: Jodi Scott  
Public Relations  
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***ASHRAE, founded in 1894, is a building technology society with more than 50,000 members worldwide. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability within the industry. Through research, standards writing, publishing and continuing education, ASHRAE shapes tomorrow's built environment today.***

# Member News

## Welcome New Members!

### MEMBERS:

Thomas Adams  
John Banschenbach  
Edward Bennett  
Antwain Chatman, Sr  
Daniel Richard Crosby  
Michael Gelardi  
Guy Jeffrey Hall  
Hugh Matt Hinson  
Tom Leitch  
J David Loewus  
John T. McLaughlin, PE  
Richard A O'Berry  
Mike Pfeil  
Patrick Propst, PE  
Kraig Sarver  
Charles Andrew Slye, Jr.  
William W Warwick IV

### STUDENTS:

Joshua D Buchanan  
Robert Browning  
Daniel Broznak  
John B Edelin  
Stephen Germano  
Richard Hartman, III  
Eric Keen  
Karl Meister  
Dillon Tinsley  
Hung Duc Vien  
Nathaniel L Whitlow  
Zachary A Wissen  
Thomas G Work

## Employment Opportunities

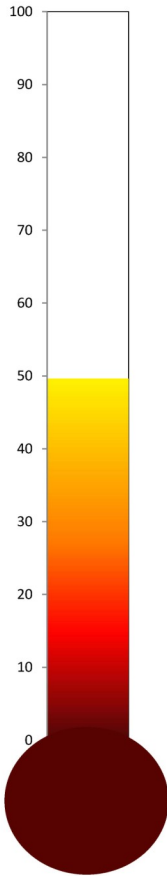
Hampton Roads ASHRAE will publish employment opportunities in the Newsletter at a cost of \$50/month. The Newsletter is distributed each month to approximately 250 ASHRAE Members. Please contact: **Daniel\_Johnston@siemens.com** to have employment opportunities included in the Newsletter

HRC: 2011-2012  
Research Promotion Goal



As of: 12/13/11

Goal	\$4,100.00
To Date	\$2,035.00



49.6% of Goal!

## Committee Chairs

**Membership:** Douglas Henderson  
**Student Activities:** Gary Hayden  
**Historian:** Joe Hahn  
**Refrigeration:** Open  
**Research Promotion:** Forrest Morgan  
**Technology Transfer:** Steve Lowe  
**Website Editor:** Scott Almond  
**Young Engineers in ASHRAE:**  
 Marc Robillard  
**Chair Volunteer:** Jeremy Hollands  
**Chair Volunteer:** Jeremy Thomas

**Board of Governors:**  
 Nancy Mitchell Veeck, Dan Pettway,  
 Al Veeck

ITT TECH Auditorium  
 863 Glenrock Road, Norfolk, VA 23502



## ASHRAE Meeting Schedule

<p><b>ASHRAE Building Labeling Program</b>                  Dr. William Bahnfleth                  May 8</p>	<p><b>Spring Golf Outing</b>                  Sleepy Hole                  May 16</p>