

# 2019

January

## Upcoming Event Excitement!

We have a lot of exciting  
events around the corner!

“Spring Research  
Promotion”

Captain’s Choice

Golf Tournament

Date TBD

Sustainability  
Activity

Date TBD



## Next Meeting Tuesday, January 8th

Harbor Breeze at Patriots Point, Mt. Pleasant

BOG Meeting 11:30-12:00

Chapter Meeting/Luncheon 12:00-1:00

\$25/person

[REGISTER ONLINE](#)

## January 8th Meeting—Luncheon

### The Coming Age of a Smart Grid and Smart Buildings

*Tom Lawrence, PhD*

#### Presentation Summary:

The smart grid is coming and in that future era buildings will be interacting even more with the electric utilities. The communication will be in both directions, with the utility working to balance the grid supply and demand through methods such as signaling requests for demand response measures, real-time price adjustments, etc. This is a new and evolving field and, while there are some differences in the need for and how a smart grid might function in the various regions of the world, there are some common factors as well. This seminar provides an overview of the smart grid particularly as it relates to buildings and their systems.

#### Speaker:

#### **Tom Lawrence, PhD**

Dr. Lawrence is the Mechanical Engineering program lead with the University of Georgia, and has 35 years of professional experience. He spent the first 18 years in industry and after going back for his PhD at Purdue he has been at UGA since January 2004. He is the past chair of ASHRAE Technical Committee 2.8 and is a member of the committee that wrote and maintains ASHRAE Standard 189.1 for High Performance Green Buildings. As an ASHRAE Distinguished Lecturer, he gives seminars on green building design at venues around the world. Dr. Lawrence was named an ASHRAE Fellow in 2016 and is a Director-at-Large on the Board of Directors for ASHRAE.

B.S. with Highest Distinction in Environmental Science from Purdue University (1978)

M.S. degree in Mechanical Engineering from Oregon State University (1982)

M.S. degree in Engineering Management from Washington University (1989)

Ph.D. in Mechanical Engineering from Purdue University (2004)



## ASHRAE Research Investors

Thank you for your sponsorship. If you would like to support the chapter, please contact the President.

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Jacob A. Yount

David Kauffman

Malcolm D. Knight, PE

Marcus Dee Googer

Philip Runyon

Steven A. Marek

Randy Jones



## CTTC Corner

For more information about this column, contact **Gene Brown** ([gene3380@gmail.com](mailto:gene3380@gmail.com)).

At our November meeting **Reece Barefoot** gave an excellent presentation:

### **“A Case for Steam: Steam vs. Hot Water”**

Steam is used to produce almost all products. One BTU is the heat required to raise one pound of water one degree Fahrenheit. There are no available BTU's in one pound of water at 32 degrees Fahrenheit. Add 180 BTU's and the water will be a 212 F. Add 971 more BTU's and the water will be converted to steam. There are 971 BTU's of latent heat available in the steam. Water can exist under pressure at 338F. Steam occupies 27 cubic feet/pound at atmospheric pressure. As steam travels through a pipe the pressure drops. At lower pressures the latent heat is greater. At higher pressures it is possible to pass more steam through a pipe. Water moves relatively slower in a pipe and steam moves faster. In industrial applications 12,000 feet per minute is a common steam velocity. Pipes will ring at this velocity. Steam provides BTU's and stays at the same temperature. Water temperature drops as it gives up BTU's.

There are basically **4 parts** for a steam system:

**1- boiler; 2- distribution system; 3- utilization area and 4- condensate return.**

Clean steam is required for hospital sterilization. Dirty steam is used in normal applications. Absorption chillers are normally powered by steam, not hot water. Heat from a steam coil evaporates the water from a lithium bromide solution. A coil with water from a cooling tower then condenses the water. The water is then transferred to a chamber where it is evaporated well below atmospheric pressure, producing a cold temperature. Lithium bromide absorbs the vapor in the lower pressure chamber. This mixture is then pumped to the higher pressure chamber where the cycle repeats. Many processes in a brewery are accomplished with steam. Hot water systems require larger pipes. Pumps are required in both directions. In a hospital it is required that a steam boiler and a hot water boiler be used. With steam, steam traps are required. With a condensing boiler the hot water must be returned at a lower temperature to take advantage of the condensing effect. Plan for a 25 year boiler life. With high-temperature-hot-water there is a lower maintenance cost.

*ASHRAE Insights publishes the names of each member, Society wide, who earns an ASHRAE Certification. All members are encouraged to earn a certification. Every area of certification is highly relevant to our industry.*



## Research Endowments Update:

**This year we have a new Endowment to fill**, one in honor of **Clarence Hamm**. The great benefit to our Chapter is that once this commitment as a group to this Endowment is filled, **the Chapter will receive 5% annually**. So, if you are thinking of contributing to research this year, please think about adding a little to this Endowment. Our other Endowments can be added to as well, as there is no limit as to how much is in the Endowment. The nice thing we get 5% annually on what is in these Endowments.

Did you know that RP also has a small part in scholarships? Last year Society scholarships went to 34 different people. As part of our RP goals this year our chapter has a goal of raising \$250 for scholarships. When donating online just fill in the amount you would like to donate under the ASH-RAE Scholarships line. Should we complete this goal by November 15<sup>th</sup> we will get additional PAOE Points!!!!!!!!!!!!

David Kauffman

RP Chair

## Government Affairs Committee Update:

We are planning on our legislative day at the SC Statehouse with the Greenville Chapter and the South Carolina Chapter. If you are interested in participating, or if you have a personal contact in the SC House or Senate, please contact me. We are currently looking at the late February – early March timeframe.

Pete Conroy

Government Affairs Committee Chair

## Presidential Corner:

For those interested, we will be joined at a future meeting (TBD) by David McDaniel where he will give a short presentation on next year's CRC in hopes of relieving any apprehension about travelling to Greece. Please stay tuned for the date and try to attend if interested.

Jacob A. Yount

Chapter President



## Chapter Officers

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Runyon, Pete Conroy

# 2019 Events

January 8th, 2019 **Lunch Meeting @ Harbor Breeze—**

***The Coming Age of the Smart Grid and Smart Buildings***

February 12th, 2019 **Meeting @ Harbor Breeze—**

***Critical Room Control***

March 12th, 2019 **Meeting @ Harbor Breeze—**

***TBD***

April 9th, 2019 **Meeting @ Harbor Breeze—**

***TBD***

May 14th, 2019 **Meeting @ Harbor Breeze—**

***TBD***

June 2019 **Summer Low Country Boil Social @ TBD**

## What is YEA?

To ensure a bright future for ASHRAE and the industry, the Young Engineers in ASHRAE (YEA) Committee was developed to create programs and develop a path for our young professional members. Any current ASHRAE Affiliate, Associate or Member who is 35 years of age or younger is considered a YEA member, and automatically has a wide variety of programs, events, and opportunities at their fingertips!

