American Society of Heating, Refrigeration and Air Conditioning Engineers

Keeping it Cool with ASHRAE



Florida West Coast Chapter ASHRAE 3203 Queen Palm Drive Tampa, Florida 33619

From the Desk of the President



APRIL 2012

Volume X, Issue

Well spring is the air, and that means it turkey hunting time (hence the picture) it is that time of year again, time for warmer weather, higher humidity.....who am I kidding, we live in Florida we have warm weather and high humidity year round. But it is that time for the Florida West Coast Annual Shrimp Boil on April 13th again to be hosted at the Davis Island Garden Club. This is our end of the year celebration and just a good time to unwind and see what your fellow members have been up to since the last Shrimp Boil. Mike Costello has been working around the clock (sorry Mr. Wells, but it's true. Did you really think he had been working on projects?). So, shut down that computer, and head over to Davis Island Garden Club and enjoy a cold beverage or two, all the shrimp you can eat and a great New Orleans style Bluegrass live band.

Also in April, ASHRAE will be hosting a "FREE" (that's right, I said "FREE") Webcast on April 19th 2012 from 1pm to 4pm. The webcast program has been approved for three (3) continuing education credits by the American Institute of Architects (AIA) and the US Green Building Council (USGBC).

Hear leading experts discuss the role of Dedicated Outdoor Air Systems in the overall HVAC system and describe various DOAS equipment configurations, characteristics, and applications. This webcast will identify common design and operational pitfalls, and cover challenges unique to DOAS.

This free webcast is brought to you by the Chapter Technology Transfer Committee and sponsored by Valent Air Management Systems, Rotor Source, Inc., Engineered Air, Munters, and Heat Pipe Technology.

If you are interested and would like more information, or to register, please visit: www.ashrae.org/doaswebcast

For our May meeting we have some exciting news, Ron Jarnigan, ASHRAE President will be visiting our chapter as well as the USF Student Chapter and will be our main meeting speaker regarding *"Sustaining ASHRAE Through Leadership"*. This meeting will be on May 22nd so mark your calendars since this will be our last meeting of the year (until September). Mr. Jarnagin is a recipient of the Exceptional Service Award and the Distinguished Service Award. He received a bachelor's degree in mechanical engineering in 1978 and a master's degree in mechanical engineering from the University of Florida in 1980 and a bachelor's degree in accounting from Louisiana State University in 1971.

Shawn M. Jeffrey, Sr., FWC President (2011-2012)



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Research Promotion

The Florida West Coast Chapter has collected over \$ 12,300.00, please be sure to recognize and thank those investors that are listed in this newsletter.

Thank you to all of the participants and sponsors in the golf tournament. Thank you Isaac Crimm, with SSR, for running our Golf Tournament and all of our sponsors and participants who made this event one to remember. A very wet outing, but an event to remember.

We are entering the last quarter of the fiscal year of ASHRAE. With all of your support we will reach our goal of \$21,500.

If you have not yet donated to Research Promotion, please make your valued contribution to this worthy cause.

Please make your contributions early this year either by check 'Payable to ASHRAE Research' and turn them in to me or if you prefer you can make online donations at <u>https://www.ashrae.org/aboutus/resource_promotion.asp</u>. If you have questions please let us help, contact Philippe Jean at 813-879-0383.

If you make a donation online, please forward me a copy of the emailed invoice so I can ensure that proper credit is given at <u>pjean@stanweaver.com</u>.

Philippe Jean, PE, LEED AP, Research Promotion Chair (2011-2012)

2011-2012 ASHRAE FWC Sponsors and Donators

Free Dinner & Television from Membership Promotion

I'm happy to report that our MP promotion has resulted in 7 new members since January, and I look forward to seeing many new folks added to our roster by the May cut-off date for our TV promotion. Our stat's for the 2011/2012 ASHRAE year are as follows:

New Members -20, Transfer In -8, Cancelled Members -(37), Transfer Out -(9)Net for ASHRAE Year 2011/2012 - (18)

The MP committee is focusing our efforts on advancements this month. If you are a member at the Associate level with 12 years combined education and experience, you probably qualify for advancement to a full Member status.

Why Advance?

Prestige Chapter recognition through newsletter and at meeting To serve on a technical committee, chapter officer or regional role To qualify for ASHRAE Fellow and other Society awards You can add Member ASHRAE to your email tag Allows your chapter to shine among other chapters Society recognition in Insights



How?

Associates need only update their <u>member bio</u> online, and email <u>membership@ashrae.org</u> indicating an interest in advancement... it's that simple! Please don't hesitate to contact me with any questions, and a quick note advising that you've advanced would be appreciated.

The MP Committee is seeking volunteers to assist in our member retention efforts. It doesn't take a whole lot of time or effort, and it's a great way to assist the Florida West Coast Chapter.

I can be reached by cell at 813-309-2155 or jsouza@filtrine.com

Joe Souza, Membership Promotion Chair (2011-2012)

How to Contribute to ASHRAE Made Easy

2010-2011 ASHRAE RESEARCH

Florida West Coast Chapter

Contribution Form:

This industry gives all of us our livelihood. ASHRAE's research and educational programs are what keeps our industry and profession on the leading edge and assures its continued existence. Confident that you will recognize the benefits of this investment, I am asking you to help fund future HVAC&R research and development.

				_ Other (specify)	
Phone Number:	N	Member Numb	er (If know	n):	
Mail compl	leted form with yo	our check, pa	yable to A	SHRAE Research to:	
	Philippe Jean	, Stan Weave	er and Com	pany	
	4607 North Cor	rtez Avenue.	Tampa, FI	33614	

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Association of Energy Engineers

Next Meeting on April 18th:

ISO 50001:2011, "Energy Management Systems - Requirements with Guidance for Use," is a voluntary International Standard developed by ISO (International Organization for Standardization). ISO 50001 gives organizations the requirements for Energy Management Systems (EnMS)

Presenter:

Don Macdonald, Director of Sustainability & Energy Services, UL DQS, Inc.

Meeting Details:

Tampa Bay Trane, 902 N. Himes Avenue, Tampa, FL 33609 6:00 PM - 8:00 PM April 18, 2012 Wednesday Please RSVP to Joe Elovich - AEE - Tampa Chapter joseph@associationofenergyengineers.ccsend.com

There have been several e-newsletters offering ideas and discussing methods to save energy and reduce operational costs using the existing building automation system (BAS) in a facility. The gist of all the e-newsletters is that building automation / energy management systems for years have touted 'Energy Management' however the majority of these systems were nothing more than automation systems that reported on energy use. Today's BAS use more coherent and exacting analytics to help us visualize the opportunities for energy savings with our existing systems and as a result the possible energy and operational savings are finally making it up the chain to the executive level so that a master energy management plan can be implemented and supported.

BAS for years were deemed as low or no maintenance items however this is a fallacy perpetuated by our industry relationship with computers. Once you start a computer and have it programmed no further work is needed, right? Wrong for most BAS because set points change, HVAC equipment changes, HVAC control points are overridden or disconnected completely and all of this typically happens before the BAS is one year old. Following are some articles (quoted directly from the sources):

Smart Building News (March 2012) quotes "you find that it's the HVAC control system, not the HVAC equipment, which produces the most operational issues and is the leading cause of inefficient energy use". The article goes on to explain research at Lawrence Berkley Laboratories that discovered the control system had the highest frequency of problems in 60 buildings examined; and Texas A&M research indicated 77% of savings were from correcting control problems.

Groom Energy (January 25, 2012) reports: "for decades providing energy use information was an add-on to control systems. In response to the increased need for visibility of a company's carbon emissions and energy use...vendors have responded with a plethora of EMS solutions. These solutions are full-featured applications with multiple options for data capture, sophisticated data analytics, configurable alerting systems and best practice databases".

The U.S. Department of Energy introduced a free on-line training program to help building owners, contractors, engineers, consultants and operators re-tune their facility via their existing BAS. It is called the 'Commercial Building Re-Tuning Project' and can be viewed at the U.S. Department of Energy - Energy Efficiency and Renewable Energy web site. This basically teaches us how to retro-commission our existing BAS to achieve energy savings.

The Sustainable Facility e-news (February 1, 2012) speaks of the growing importance and impact of energy consumption to corporate executives: "as rising energy costs continue to take a larger part of the operating & maintenance budget, corporate executives must focus on the challenge of managing energy use...they realize the potential to deliver huge energy and cost savings across their total business operations thus strategic energy management is rising up the agenda".

<u>Realcomm.com</u> discusses at length how to bring together disparate and often proprietary protocols with new technologies to normalize and aggregate data with insightful analytics.

There are sophisticated analytical software solutions to help us retro-commission our control systems and contribute directly to bottom-line operational savings. The solutions can be provided on-site or off-site via the 'cloud'. Depending on your organizational needs a commissioning agent or other consultant may be the best solution as it provides speed to market for achieving the desired results.

Joe Elovich, C.E.M., C.S.D.P., C.E.A.

Updates on Standard 189.1

ATLANTA – The building industry now has greater flexibility in the design of high performance buildings through a change impacting application of the green building standard from ASHRAE, the U.S. Green Building Council (USGBC) and the Illuminating Engineering Society (IES) included in the International Green Construction Code (IgCC).

ANSI/ASHRAE/USGBC/IES Standard 189.1-2011, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings, provides a green building foundation for those who strive to design, build and operate high performance buildings. It covers key topic areas of site sustainability, water-use efficiency, energy efficiency, indoor environmental quality and the building's impact on the atmosphere, materials and resources.

Standard 189.1 now serves as a compliance option with the newly published IgCC, developed by the International Code Council (ICC) and endorsed by cooperating sponsors ASTM International and the American Institute of Architects. The change allows permit applicants – rather than the authorities having jurisdiction – the option to use Standard 189.1 as the path of compliance. In earlier versions of the IgCC, Standard 189.1 was deemed a "jurisdictional compliance option," meaning code jurisdictions had to choose between the provisions of Standard 189.1 and the IgCC in determining which compliance path to take.

"ASHRAE is pleased to see this change take place, allowing building designers, owners and contractors to choose to design to Standard 189.1, instead of the choice being made solely by the jurisdiction setting the code," Ron Jarnagin, ASHRAE president, said. "With today's release of the 2012 IgCC, jurisdictions now have a viable green code at their disposal. Standard 189.1 stands on equal footing within the IgCC to provide a more complete set of options for governments and project teams alike."

"IES also fully supports the change that removes the restriction," Rita Harrold, director of technology, said. "The resulting freedom of choice will benefit all segments of the construction industry involved in developing design criteria for high performance buildings."

The 2012 IgCC serves as a new model code for constructing and remodeling residential and commercial structures and is expected to increase sustainability, cost savings and job growth while providing direction for safe and sustainable building design and construction, according to the International Code Council.

"The IgCC adds to the strong foundation of guidance to move the industry forward in regards to high performance buildings," Jarnagin said. "The document brings together the code expertise of ICC with technical expertise of ASHRAE to create a comprehensive green building code to improve overall performance of buildings, including reduction of energy consumption."

"Today, the Code Council and its cooperating sponsors announce a new green construction code that will make a contribution toward healthier, lower impact and more sustainable building practices," Richard P. Weiland, CEO of the ICC, said. "The International Green Construction Code published today was developed during the last three years with input from code and construction industry professionals, environmental or-ganizations, policy makers and the public. Our community was diligent in developing a code that is not only adoptable, usable and enforceable, but also flexible and adaptable. We expect this new model code, like the family of other ICC Codes, to be adopted across the country and used globally."

Early versions of the IgCC released during the development of the code already have been put into use by states and jurisdictions demonstrating the need and demand for safe and sustainable construction.

The IgCC was developed at public hearings with input from experts in code development and enforcement, architecture, engineering, building science, environmental advocacy, government, business, and academia.

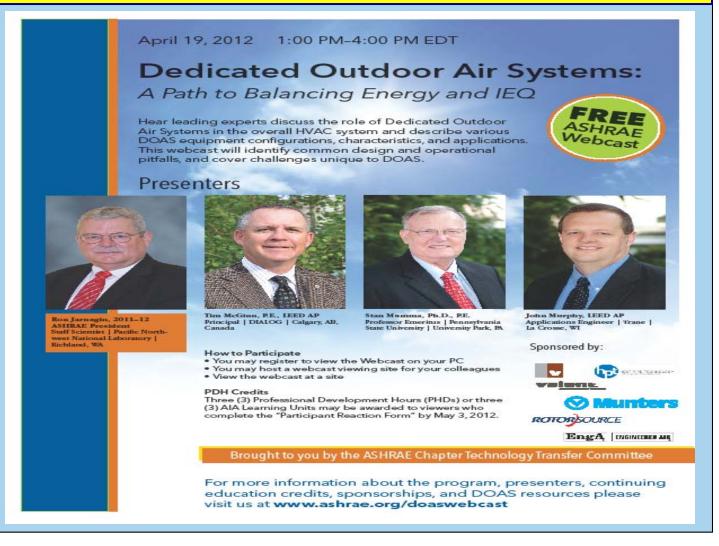
Updates on Standard 189.1 (Continued)

The IgCC is the first model code to include sustainability measures for an entire construction project and its site – from design, through construction, certificate of occupancy and beyond. It establishes minimum green requirements for buildings and complements voluntary rating systems. The IgCC offers flexibility to jurisdictions which adopt the code by establishing several levels of compliance, starting with the core provisions of the code, and then offering "jurisdictional requirement" options that can be customized to fit the needs of a local community. A jurisdiction can also require higher performance through the use of "project electives" provisions.

The code acts as an overlay to the existing set of International Codes, including provisions of the International Energy Conservation Code and ICC-700, the National Green Building Standard, and incorporates ASHRAE Standard 189.1 as an alternate path to compliance. The IgCC provides model code language that establishes a baseline for new and existing buildings related to energy conservation, water efficiency, site impacts, building waste, material resource efficiency and other sustainability measures. The IgCC will be updated alongside the other model codes developed through the Code Council's open, transparent and consensus-based code development process.

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.

Dedicated Outdoor Air Systems



Past Presidents

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1957-58 Karl K. Hickman 1958-59 Sam F. Graziano 1959-60 Julian Johnson 1960-61 Ken Whittington 1961-62 Mark E. Mooney 1962-63 James A. Hargan 1963-64 Daniel R. Manrique 1964-65 E. J. Bauerlien 1965-66 Henry Graham 1966-67 Richard Kohle 1967-68 Lamar King/Leland Menard 1968-69 Ed Fuller 1969-70 William A. Smith 1970-71 Fareed T. Ossi 1971-72 Lee Bendall 1972-73 John Degian 1973-74 Mark Chambers 1974-75 Charles "Stan" Weaver 1975-76 Charles D. Jacobs 1976-77 Peter Scott 1977-78 Ray Rinke 1978-79 Lloyd H. Biossoneault 1979-80 James H. Carroll, Jr. 1980-81 S. Michael Tappouni 1981-82 Alberto J. Sanchez 1982-83 James L. Repp 1983-84 Rodney C. Thomas

1984-85 Charles E. Langbein 1985-86 Thomas H. Williams 1986-87 Caire A. Boe 1987-88 Frank Grandinetti 1988-89 Carl B. Lawson 1989-90 Robert M. Little 1990-91 Edward C. Spivey 1991-92 Robert P. Sutton 1992-93 Roger B. Redman 1993-94 Stephen Chittenden 1994-95 William M. Slade 1995-96 Juan A. Soler 1996-97 Timothy J. Citek 1997-98 Mark Smith 1998-99 Joseph Griner. III 1999-00 Colleen Smith 2000-01 John W. Wells, III 2001-02 Gary Stenlund 2002-03 Bill Wright 2003-04 Don Crosby 2004-05 Ted S. Hansen, Sr. 2005-2006 P.J. Crespo 2006-2007 Dan Herrera 2007-2008 Jennifer Isenbeck 2008-2009 Debie Horsey 2009-2010 Drew Elsberry 2010-2011 Jeff Ross



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ASHRAE Florida West Coast Chapter

Board Members, Committee Chairs and Contact Info:

Shawn Jeffrey President 813-731-1062	Jason Proctor Pres. Elect/Programs 813-250-0488	Philippe Jean V.P./Research Promotion 813-541-3516	Joe Souza Membership 813-309-2155	Joe Cox Treasurer 813-763-9654	Mike Costello Secretary/Student 813-300-4662
YEA Chair/Governor 813-879-2749	Dan Herrera Historian 813-839-0506	Governor/ Golf Event 813-758-2749	Debie Horsey Refrigeration 813-748-9406	Malia Powers Government Affairs 813-220-0588	Michael Cowles Newsletter/Governor 813-241-6488
Nominating/Governo 813-250-0488	r <u>Technical Energy</u> Joe Souza 813-309-2155	Jacob Moberg Reception 813-448-0225	LAIR Services Cyber Chair 813-404-2955	Eric Viera Chapter Roster 813-448-0225	Could Be You? Publicity ???

American Society of Heating, Refrigeration and Air Conditioning Engineers

Keeping it Cool with ASHRAE

ASHRAE

Florida West Coast Chapter

Friday, April 13, 2012 6:00pm - 10:00pm Davis Islands Garden Club 81 Columbia Drive Tampa, FL 33606 813.251.3123 www.digclub.org



Pay Now!

(via PayPal)

Or mail checks to: ASHRAE-FWC Shrimp Boil c/o Mike Costello 8365 Gunn Highway Tampa, FL 33624 813.300.4662

APRIL 13, 2012 Annual Shrimp Boil



Davis Islands Garden Club, 6-10 p.m

Come mingle with your ASHRAE friends and enjoy live music, cold beverages and plenty of shrimp at the Garden Club's outdoor patio.

EVENT PRICES:

- \$30.00 Individual Advanced Payment via PayPal or Check (Includes all-you-can-eat shrimp & chicken, and unlimited beer & wine.)
- \$35.00 Individual Payment, Day of Event (Includes all-you-can-eat shrimp & chicken, and unlimited beer & wine.)

*150.00 - Corporate Sponsorship of Event (Includes Company logo/name on table display AND two Shrimp Boil individual entries.)

REGISTRATION:

Attendee Name:	
Company Name:	
Mailing Address:	
Mailing Address: City/State/ZIP:	
Phone:	
Email:	
ā.	

Additional Attendees:

Payment Type: _____ Number of Attendees _

____x \$____ Total:

Email me with questions at mcostello@cea-engineers.com or call (813)300-4662.

Mike Costello FWC Shrimp Boil Chair ASHRAE Florida West Coast Chapter

MAY 22, 2012 ASHRAE PRESIDENT, RON JARNAGIN COLUMBIA RESTAURANT, YBOR CITY

at the Columbia Restaurant in Ybor City about:

" Sustaining ASHRAE Through Leadership"

The Florida West Coast Chapter of ASHRAE is proud to have ASHRAE's current President Mr. Ronald Jarnagin coming to speak to our chapter on May 22, 2012

Ronald "Ron" Jarnagin is a staff scientist, Pacific Northwest National Laboratory, Richland, Wash. As ASHRAE's president, Jarnagin directs the Society's Board of Directors and oversees the Executive Committee. His presidential theme is Sustaining ASHRAE Through Leadership.

Past service includes all offices on the Executive Committee; chair of the President-Elect Advisory Committee, Members Council, the Advocacy Committee and the Building Energy Quotient Ad Hoc Committee; a consultant to the Standard 90.1 committee, Energy Standard for Buildings Except Low-Rise Residential Buildings. He formerly chaired the Standard 90.1 committee and chaired committees that wrote three Advanced Energy Design Guides on small offices, highway lodging and warehouses and storage units.

Jarnagin is a recipient of the Exceptional Service Award and the Distinguished Service Award. He received a bachelor's degree in mechanical engineering in 1978 and a master's degree in mechanical engineering from the University of Florida in 1980 and a bachelor's degree in accounting from Louisiana State University in 1971.

Please RSVP on the FWC website at: <u>http://www.ashrae-fwc.org/chapter_meetings.htm</u> Cost: \$35 thru Paypal or \$40 day of Event (It is still \$40 day of even if you RSVP but do not pay thru Paypal)

Email me with any questions or to RSVP @ jproctor@sladerossinc.com or call (813)250-0488. Jason Proctor, FWC Programs Chair

Meeting Schedule:

Board Meeting: Registration: Main Meeting: 4:15pm — 5:30pm 5:00pm — 6:00pm 6:00pm — 8:00pm

Columbia Restaurant 2117 East 7th Avenue Ybor City, Florida 33605



*l*olume X, Issue 7

Keeping it Cool with ASHRAE

ASHRAE Society Updates

Spring 2012



Do you have questions that we can answer in the next ASHRAE Society Update? Send an email to <u>kfulcher@ashrae.org</u> and your question will be forwarded on to staff.

New Changes to Members Council

During the 2011 fall meeting in Atlanta, a motion was approved to remove the Director and Regional Chairs (DRCs) as members of Members Council and to have them sit on the Board of Directors only. The DRCs will be replaced by a new position from each region called the Region Members Council Representative. Pending approval by the membership for an ASHRAE Bylaws change, this will become effective July 1, 2013.

New Insurance Coverage for Chapters

The Manual for Chapter Operations (MCO), Section 4.6 was updated to include a section for ASHRAE Chapter Event Insurance. This coverage is provided at the chapter's expense to cover sporting events such as racing, skiing, firearms, boating, mechanical bulls and other activities. See the MCO for full details or visit the ASHRAE website <u>http://www.ashrae.org/societygroups/chapters/Manual-for-Chapter-Operations</u> and click on the link under "MCO Bookmarked Sections and Appendices."

New Member Benefit

Beginning July 1, 2011, the decision was made to provide a complimentary 12-month subscription to ASHRAE Handbook Online to all new Members and Associates with an election date of July 1, 2011 and onward, since they will not receive their print or CD Handbook until June, 2012. The new members and associates will receive an email message with instructions on how to access their complimentary Handbook Online subscription. This is a one-time benefit for new members, and at the end of their subscription, they will be prompted to renew the Handbook Online at the \$49 member rate.

Two chapter Resources are available online:

Centralized Training for MP:

http://www.ashrae.org/society-

groups/committees/membership-promotion-centralizedtraining

Membership Promotion Blog

Visit our blog for training and resources - provide feedback as well! http://ashraemptraining.wordpress.com/

Airmail Only \$10 (USD)

Members outside the United States will be happy to learn Airmail delivery of the ASHRAE Journal is now only \$10. ASHRAE encourages all members outside the U.S. to select this option on their membership renewal to ensure faster delivery of the industry's leading magazine, ASHRAE Journal. Click here to renew your membership.



ASHRAE Society Updates

Spring 2012



Leadership U participants at the Chicago Winter meeting.

Leadership U - San Antonio

Have you ever wondered what ASHRAE Officers do at the ASHRAE Winter & Annual Conferences? Here is your chance to find out! Through Leadership U (offered by the YEA Institute), a handful of YEA members are selected for each conference to be matched up with Society Officers and participate in all of their events and board meetings, including social activities. Leadership U not only allows you to experience a conference like an Officer, but it is also a great opportunity to network and form connections with those active in ASHRAE.

If selected to participate in Leadership U, the costs of attending the Conference (transportation, lodging and registration) will be covered by ASHRAE. In addition, those selected will document their experiences and share them with the YEA Committee, their chapter and their region.

Submit your <u>application</u> today! All applications must be received by the close of business **April 16**, 2012. To learn more about this opportunity or if you have any questions, visit <u>www.ashrae.org/yea</u>.

HVAC Design Essentials Workshop Scholarship

Presented by the ASHRAE Learning Institute, the threeday <u>HVAC Design Essentials Workshop</u> allows attendees to focus on both the fundamental and technical aspects of HVAC design in commercial buildings, providing practical strategies for HVAC designers and others involved in delivery of HVAC services. The next HVAC Design Essential Workshop will be held May 21-23, 2012 at ASHRAE Headquarters, Foundation Learning Center.

To encourage attendance by young professional ASHRAE members, the YEA Institute offers one full scholarship for attendance to the HVAC Design Essentials Workshop (Level I of the workshop only). The full cost of registration to Level I of the workshop will be covered by ASHRAE.

If you have an interest in attending this workshop, this scholarship is the perfect opportunity for you. All applications must be received by the close of business April 9, 2012.

RP Chairs- Visit the RP Blog

Messages to donors, non-donors, reminders, graphics, and articles about Research are available at the RP blog (http://ashraerp.wordpress.com/)

CRCS Set For Spring 2012

Region VI - May 3 - 6

Minnesota Minneapolis, MN

Visit the website -

http://ashrae6.blogspot.com/

Region VIII - April 26 - 28

Northeastern Oklahoma Tulsa, OK

Visit the website http://region8.ashraeregions.org/crc.htm

Region XI - May 10 - 12

Manitoba Winnipeg, MB

Visit the website-

http://region11.ashraeregions.org/

Please contact Vickie Grant at ASHRAE Headquarters for questions or to request more information about CRCs.

ASHRAE Society Updates

Spring 2012

Registration Open for ASHRAE Dedicated Outdoor Air Systems Webcast!

Registration is now open at www.ashrae.org/doaswebcast for the April 19, 2012 Webcast, "Dedicated Outdoor Air Systems – A Path to Balancing Energy and IEQ." This free webcast is being brought to you by ASHRAE's Chapter Technology Transfer Committee with support from Valent Air Management Systems, Rotor Source, Inc., Engineered Air, Munters, and Heat Pipe Technology.

Webcast Archive Available!

If you are unable to participate in the live webcast, the program replay will be archived online until May 3, 2012. Registration will be necessary to view the archived program. The webcast presenters are:

Ron Jarnagin ASHRAE President 2011-12, Staff Scientist Pacific Northwest Laboratory Richland, WA

Tim McGinn, P.E., LEED AP, Principal DIALOG Calgary, AB, Canada

Stanley Mumma, Ph.D., P.E., Professor Emeritus Pennsylvania State University University Park, PA

John Murphy, LEED AP, Applications Engineer Trane, La Crosse, WI

There is no fee for registration. To register and learn about the webcast program, continuing education credits, and ASHRAE dedicated outdoor air systems resources, visit www.ashrae.org/doaswebcast. If you have questions about the webcast, call 678-539-1200 or email <u>ashrae-webcast@ashrae.org</u>

Modeling for a Sustainable Future

ASHRAE seeks to advance the industry's ability to more accurately model and simulate a building's energy use.

Building on the successful Energy Modeling Conference format in April 2011, this conference will begin with an interactive session with modeling software developers presenting common modeling scenarios on how their specific software can model a scenario, whether there are any limitations and what might be the best work around and exceptional modeling practices to obtain acceptable results when the tool cannot model the scenario "out-of-the-box".

Click here for the <u>Conference Announcement and</u> Call for Presenters



ASHRAE conferences provide great opportunities for knowledge sharing and networking.