



VOLUME 8, ISSUE 1

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Join the Conversation

ASHRAExCHANGE.org



ASHRAExCHANGESM The Built Environment Community

About

ASHRAExCHANGESM provides an online platform for information exchange for design, construction, operation and support of the built environment.



ASHRAExCHANGE Statistics:

Threads: 386
Posts: 618
Members: 455
Active Members: 112

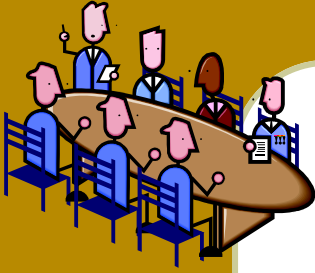
Discussions

Here are just a few discussions that you may be interested in:

- Indoor Air Quality
- High Performing Buildings
- Data Centers
- BIM
- Ground Source Heat Pumps vs. VRF

Need Assistance?

For assistance with ASHRAExCHANGESM, call 1-800-5-ASHRAE (1-800-527-4723) or (404) 636-8400 Worldwide or contact us online at <https://www.ashraexchange.org/sendmessage.php>



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ASHRAE 2013-2014 Preliminary Meeting Schedule				
Date	Event	pdh / Theme	Location	Schedule
09/09/13	"Geothermal Heating & Cooling advancement in technologies Mr. John Piskunov, PE - Piskunov Systems, LLC. Piskunov Systems, Inc.	Available	Burgundy Basin	5:00 PM
10/09/13	Renewable Energy in Hydronic Heating Ten Trends in Modern Hydronic Heating Mr. John Siegenthaler, PE Joint Meeting with ACCA	Pending	Burgundy Basin	6:00 PM
11/11/13	Mr. Nick Gangemi Current State of Data Center Industry and Overview of TC 9.9 ASHRAE Technical Committee for Datacom Facilities	Available	Mario's	12:00 PM
12/09/13	VRF "ASHRAE 15" - Variable Refrigerant Flow Systems & ASHRAE 15 Mr. Ed Ferrier, PE LG Commercial Air Conditioning	Available	Mario's	12:00 PM
01/13/14	NYS Building Department - NYS Code Updates and Changes NYS Energy Conservation Code/ NYS Mechanical Code		Mario's	12:00 PM
TBD	Annual ASHRAE Valentines Dinner Dance	---	Inn on Broadway	7:00 PM
02/10/14	Joint Meeting with AEE	Available	Mario's	12:00 PM
03/10/14	John M. Sipes, Ph.D., P.E. Fundamentals of Displacement Ventilation	Available	Mario's	12:00 PM
04/07/14	Refrigeration Tour Allied Frozen Foods in Brockport, NY		TBD	TBD
05/12/14	Annual ASHRAE Golf Outing and Picnic	---	Ravenwood Golf Club	9:30 AM Golf 4:30 - 8:00 Picnic

Mission Statement

ASHRAE will advance the arts and sciences of heating, ventilation, air conditioning, refrigeration and related human factors to serve the evolving needs of the public and ASHRAE members.



Shaping Tomorrow's
Built Environment Today

Vision Statement

- will be the global leader in the arts and sciences of heating, ventilation, air conditioning and refrigeration.
- will be the foremost, authoritative, timely and responsive source of technical and educational information, standards and guidelines.
- will be the primary provider of opportunity for professional growth, recognizing and adapting to changing demographics, and embracing diversity.

President's Message

First of all, thanks for reading this article in the newsletter. I have two items directed to ASHRAE members this month. Both of these items came directly down from society and were disseminated to the chapters at the Region I CRC in Vermont in August of this year.

The first item is something that has not gotten a lot of attention but is a wonderful add to the membership benefits. Many people are getting familiar with LinkedIn®. Society has a similar platform called ASHRAExCHANGE. This platform is dedicated to topics specific to ASHRAE and the industry we all love. Additionally, the society level officers are participating in this program and so this gives the members direct access to the society level. It also allows members to participate in discussions about topics. Even if you don't have a desire to post anything, take a look and you will find a wealth of information on the site. It can be accessed at www.ashraexchange.org.

The second item is a publication that has been made free to ASHRAE members. The ASHRAE Advanced Energy Design Guide can be downloaded from the ASHRAE website for free. The 50% and 30% guides were designed to promote building energy efficiency. The 50% and 30% designations indicate the energy savings over a building designed per standard 90.1-2004. The link for these downloads is <https://www.ashrae.org/standards-research--technology/advanced-energy-design-guides>.

Rob Wind, PE, 2013-2014 President

Piekunka Receives Lynn Bellenger Scholarship at September ASHRAE Meeting

Sara Piekunka, a mechanical engineering technology student at Rochester Institute of Technology, was presented with the first ever Lynn G. Bellenger Engineering Technology Scholarship for the 2013-2014 academic year during the annual ASHRAE Rochester Chapter clambake, which was held

at Burgundy Basin Inn on September 9th. The one-year \$3,000 scholarship is awarded based on a student's scholastic and leadership abilities, character, potential service to the HVAC&R profession, and financial need. Sarah was chosen by the ASHRAE Scholarship Trustees at the Society's 2013 An-

nual Conference. Congratulations to Sara on this accomplishment! For more information on the Society's Scholarship Program & criteria, visit ASHRAE's website at www.ashrae.org/scholarships.



The Rochester Chapter's annual clambake was held on Monday night, September 9th at the Burgandy Basin Inn in Pittsford. After the welcoming remarks from this year's current president Robert Wind, many awards were bestowed to our Chapter's members. The Past President Ring was given to last year's president Michelle Sommerman; The Student Activities RVC "Top Dog" Award was presented to Al Rogers; Honor Roll and Special Citation was given to the Rochester Chapter; and the Thomas S. Brown Membership Award and the Blue Ribbon Award,

which is 1st place for membership growth, was handed out to Bill Clark. Jake Hall spoke about Membership Promotion, and Ed Burns introduced Tom Piekunka, the presenter for the evening. The evening's topic was on **"Geothermal Heating & Cooling advancement in technologies"**. Various types of ground coupled heat exchangers and ground loops were discussed, as well as design aspects and considerations in designing GSHP systems and some recent changes in technology that is affecting current designs.

Please join us for October's dinner meeting on "Renewable Energy in Hydronic Heating". The presenter is by John Siegenthaler and will be held again at the Burgundy Basin Inn on October 9th. Stayed tuned for more information.

Job Postings & Help Wanted



This section of the newsletter is reserved for those firms wishing to advertise their desires to hire from the Chapters Membership.

If you are interested in utilizing this FREE service provided by the Rochester Chapter, please contact our Chapter President, Rob Wind (585.341.3172) or by email rwind@ibceng.com.

This service is available to ASHRAE members for any local firm in our industry looking for knowledgeable persons in the HVAC&R industry.

CORNING

Corning is the world leader in specialty glass and ceramics, creating and manufacturing keystone components that enable high-technology systems.

We are in search of an HVAC design engineer/Facilities Engineer to oversee our expansion projects worldwide. In this role you will provide project leadership for heating, ventilating and air conditioning construction and capital projects on a domestic and international level. You will manage the development and implementation of HVAC technology to meet required regulations in accordance with the geographic location.

Requirements:

- BS Mechanical or Chemical Engineering, MS or MBA preferred
- Professional Engineering registration or PMI certification desired
- 5 to 15 years overall experience and 5 years in HVAC design

Please contact Pat Harper at harperpa@corning.com or if you wish, you can apply directly to:

https://careers.corning.com/psp/PDPAHRPRER/CNG_MYCAREER_SITE/PDGLHRPRER/c/HRS_HRAM.HRS_CE.GBL?Page=HRS_CE_JOB_DTL&JobOpeningId=171647&SiteId=1&PostingSeq=1



A talent for design—A sense for people

Mechanical Drafter

Turner Engineering is a multi-disciplined consulting engineering company based in East Rochester, NY. We provide HVAC, plumbing, fire protection, electrical, and communications engineering services for the construction industry. www.TurnerEngineering.com. We design the systems that make health care, institutional, commercial, educational, municipal, and mission-critical facilities efficient, comfortable, and safe.

We are a growing firm and require an entry level Mechanical Drafter. Ideal candidates must show ability to draft drawings with Microstation, AutoDesk and REVIT MEP (industry 3-D modeling). Responsibilities include, but are not limited to: design drafting of projects under the supervision of an Engineer. A detailed job description can be found at www.turnerengineering.com.

Rochester Chapter

Committee Chairs Updates

Membership

ASHRAE Rochester Chapter- Membership Promotion

Please remember to take a few minutes to make sure that your profile is up to date at www.ASHRAE.org. Maybe you've changed jobs? email address? or would like to advance your membership (i.e. Associate Member to Member). Keeping this information current ensures that you get the most value out of ASHRAE.

There is also a lot of emphasis this year to attempt to do as much of our Membership Renewals and New Member Applications online to decrease the amount of paperwork for the Society and make the process "Greener." If you have any questions or need assistance with any Membership Issues, please let me know.

Thank you, and as always, thank you for your support for ASHRAE.

Sincerely,
Jake Hall

Membership Promotion Chair

2013-2014 Presidential Award of Excellence Summary

Chapter #	Chapter Name	Chapter Members	Member Promotion	Student Activities	Research Promotion	Chapter Technology Transfer	History	Chapter Operations	Chapter PAOE Totals
11	Rochester	239	200	0	0	0	0	0	200

Young Engineers in ASHRAE



New Faces of Engineering



It's Not Too Late. Apply by October 7!

Are you a hard-working young engineer just getting started in the field? Or maybe you've already proven yourself through dedication and challenging projects. Gain recognition and encouragement to continue on your path to changing the world, apply to be ASHRAE's New Face of Engineering!

Represent ASHRAE Around the World!

The individual selected as ASHRAE's New Face of Engineering 2014 will receive the following recognition:

Trip to the 2014 CIBSE Technical Symposium, held April 3–4, 2014 in Dublin, Ireland

Featured along with the other New Faces in a USA Today print ad during National Engineers Week



"ASHRAE's New Face of Engineering program provided a great networking opportunity both in the U.S. and internationally. I encourage all young engineers to put together an application this year and take advantage of this great opportunity."

—Ian Metzger, ASHRAE's 2013 New Face of Engineering, engineer, U.S. Department of Energy's National Renewable Energy Laboratory (NREL), Golden, CO.

Metzger was selected for his dedication to increasing the speed and scale of energy/water efficiency and renewable energy deployment. He served as an energy audit trainer, training over 200 people around the world; provided commissioning oversight for two NREL high performance buildings; and is a data center efficiency expert, providing energy assessments and training for federal data center managers.

Student Activities

STUDENT ACTIVITIES



Do you know the benefits of being an ASHRAE Student Member?

- **Monthly ASHRAE Journal** exploring issues such as indoor air quality, energy management, solar developments, and more.
- **ASHRAE Insights** monthly newspaper devoted to news and information about the Society at every level including news of special interest to students.
- **The HVAC&R Industry eNewsletter** for weekly industry news and information.
- **SmartStart Program** to ease into full membership dues over a three year period after graduation.
- **Opportunities** to participate in the Student Design Project Competition, Grants-in-Aid, Society and Local Scholarships, and Student Branch Activities.
- Access to **The Student Zone** web page which offers valuable career and educational resources.
- **ASHRAE Publication Discounts** at the ASHRAE Student Store including ASHRAE books, standards, reports, charts, and more.

Do you know anyone that could benefit from being an ASHRAE Student Member?

- Join over 5,000 other students taking advantage of ASHRAE benefits today at <https://ashrae.org/membership--conferences/join-now>.

Visit the Student Zone at <https://ashrae.org/membership--conferences/student-zone> to learn about:

- Design Competition
- Scholarships and Grants
- New Faces of Engineering – College Edition
- K-12 Activities
- Membership Benefits and Meetings
- Educational Resources
- Student Activities
- Student News
- Student Branches
- ASHRAE's SmartStart Program



ASHRAE Student Membership Application

What You'll Get With Your ASHRAE Student Membership!

What's "Cool" In ASHRAE

- ASHRAE promotes energy efficiency, savings and recovery
- ASHRAE reports on building controls, automation and integration
- ASHRAE focuses on green building issues and green technology
- ASHRAE maintains standards for indoor air quality
- ASHRAE promotes solar and other alternative energy sources
- ASHRAE offers certification programs, online learning opportunities and courses and seminars at ASHRAE Conferences

How Can ASHRAE Help You?

- Provide access to new technology
- Offer professional development opportunities
- Create opportunities for networking
- Offer online continuing education programs and eLearning programs

Student Member Benefits

- Access to members-only web pages
- Discounts on ASHRAE Handbooks
- Monthly ASHRAE Journal - print and digital
- HVAC&R Industry and Society Connections eNewsletters
- Complimentary ASHRAE Annual and Winter Conference registration (AHR Expo, Student Program, Technical Sessions)
- Virtual online HVAC&R resume posting, job and internship searching program

ASHRAE Student Member Opportunities

- Society and chapter-level scholarships for both undergraduate and graduate engineering students
- Discounts for student members on select publications, go to www.ashrae.org/bookstore for more information
- Student Design Competition
- Networking with local ASHRAE Chapters
- Senior Undergraduate Project Grant Program
- At the student branch level, you'll enjoy meeting other students with similar interests - if your school hasn't yet started a student branch, take charge and contact a faculty member and ask for help on getting started!

You can continue your student membership after college with the ASHRAE SmartStart Program. After you graduate, you pay \$20 for the first year, \$50 for the second and the third years before advancing to regular member dues!

**Join ASHRAE students on Facebook
Visit www.ashrae.org/students to join!**



FIRST NAME:

LAST NAME:

DATE OF BIRTH (mm/dd/yyyy)

Current Mailing Address: (this will be where all correspondence will be sent unless otherwise specified)

Street Address: _____ Apt. # _____ City: _____

State/Province: _____ Postal Code: _____ Country: _____

Email: _____ Alternate email: _____ Phone: _____

Permanant Mailing Address: (during the Summer Months and after graduation)

Check if Current Address is the same as Permanent Address

Street Address: _____ Apt. # _____ City: _____

State/Province: _____ Postal Code: _____ Country: _____

Email: _____ Alternate email: _____ Phone: _____

ASHRAE protects contact information provided by its members and customers. To view ASHRAE's privacy policy visit www.ashrae.org/privacy-policy.

All student applicants must have the name and member number of an ASHRAE member serving as their student sponsor. If your Student Branch Advisor is an active Associate or Full member, he/she can serve as your sponsor. If you need assistance locating a sponsor, please email students@ashrae.org or call 678-539-1212. Also, you must list the name, phone and email address of your faculty advisor or course instructor.

Sponsor Name: _____ ASHRAE Member #: _____

Advisor/Instructor: _____ Phone: _____

Email: _____

To receive your subscription to the ASHRAE Journal, please answer the following questions by entering the appropriate codes in the spaces provided.

Which best describes your firm? _____

- 11. Consulting Engineering
- 12. Architect/Architectural & Eng Services
- 15. Design/Build
- 21. Contractor
- 26. Property Mgmt & Dev
- 31. Industrial Facility
- 41. Commercial Facility
- 42. Government, Healthcare, Education
- 43. Utility
- 51. Manufacturer/HVAC&R Equipment
- 61. Manufacturer's Representative
- 62. Sales Engineering
- 71. Wholesaler or Distributor
- 83. Library
- 84. Technical, Professional or Trade Association
- 86. Student ***
- 91. Other (Please Specify) _____

Which best describes your title? _____

- B. President
- C. Partner
- D. Associate
- E. Owner
- F. Vice President
- G. Vice President Eng, Chief Engineer
- K. Design Engineer
- L. Project/Application Engineer
- O. Facility Engineer/Manager
- P. Research/Development Engineer
- R. Sales Engineer, Sales
- S. Purchasing Agent
- T. Draftsperson
- U. Estimator
- W. Technician
- X. Instructor, Professor
- Y. Student ***
- Z. Librarian
- ZZ. Other (Please Specify) _____

ASHRAE Society Dues include \$6.00 for ASHRAE Journal. This amount is not deductible from Membership dues.

I would like to participate in the activities of the _____ ASHRAE Chapter.

School Name: _____

Street Address: _____ City _____ State: _____

Country: _____ Postal Code _____

Expected Graduation Date: _____

Full time: Part time: Degree: _____

*Classification: Freshman Sophmore Junior Senior Masters/PhD.

ASHRAE Student Membership \$20.00 USD

ASHRAE Handbook - Fundamentals IP SI

(you will receive the most current edition of Fundamentals)

More than 900 pages of HVAC&R technical information and it includes the CD! (List Price \$195)

Student Member Price: \$49.00 USD \$ _____ USD

Total \$ _____ USD

*Additional books are available at ashrae.org/studentbookstore

*Please allow up to 30 days to receive new member packets. For U.S. book orders, allow 3-5 business days from processing. For international locations and Canada, allow 7-10 business days from processing.

Please complete the ENTIRE application to ensure accuracy. Incomplete applications will NOT be processed.

Method of payment: VISA / Master Card American Express Diner's Club Check or money order enclosed*

Card Number: _____ Expiration Date _____ CW No: _____ Amount: _____

Signature: _____ Date: _____

Print Name (as it appears on card): _____

*Checks will be accepted in U.S and Canadian funds. Credit Card payments will be accepted in U.S. funds only.

Board of Governors Meeting Minutes



BOARD OF GOVERNORS MEETING MINUTES

Meeting Date: Friday, September 6, 2013
Location: IBC Engineering, Rochester, NY

President / CRC Alternate	Rob Wind	X
President Elect / Program	Ed Burns	X
Vice President /Tech Session	Christina Walter	X
Secretary	Jeff Close	X
Treasurer	Bill Clark	X
Immediate Past President / CRC Delegate	Michelle Sommerman	
Board of Gov. (1)	Mike Benedict	X
Board of Gov. (1)	Scott Edwards	X
Board of Gov. (2)	Eric Smith	X
Board of Gov. (2)	Paul Kenna	X
Board of Gov. (3)	Jim Browe	X
Board of Gov. (3)	Michelle Sommerman	
Attendance	Tim Duprey	
Historian	Lee Loomis	X
Membership Promotion	Jake Hall	X
Newsletter Editor	Scott Edwards	X
Research Promotion	Paul Kenna	X
Awards	Al Rodgers	
CTTC	Jeff Wiedrick	
Education	Bill Murray	X
Publicity	Mark Kukla	
Website	Kevin Wind	
YEA Chair	Matt Kremers	
Student Activities	Chris Lukasiewicz	
Nominating (2 nd Past President)	Jeff Ellis	
Picnic/Golf Chair	Jim Browe	X
Buyers Guide	Stephanie Dempsey	
Valentine's Dinner Dance	Jody M. McGarry	
Refrigeration	Mike Nohle	

Board of Governors Meeting Minutes

Roll Call: The above noted individuals were present.

Call to Order: 12:10 pm

Minutes:

- **Previous Meeting Minutes** – No minutes to approve. Future minutes will be submitted via email only. No copies will be available at the BOG meetings.
- **Treasurer's Report** : Bill Clark
 - See attached Treasurer's report dated 9/6/13.
 - Jim Browe has checks to be deposited from last year's golf outing ~\$1,750.
 - Online access for checking and paypal accounts has been requested.
 - Signature card is up to date and been delivered.
 - Bill to investigate bill pay option.
 - Bill to send out ASHRAE – Rochester Expense Report template.
 - New address has been updated with the bank.
- **Program/ Tech Session:** Ed Burns
 - See attached Preliminary Meeting Schedule dated 9/6/13.
 - Still firming up "TBD" meetings to complete schedule.
 - Looking at potential for joint meetings with AEE and others.
- **Refrigeration:** Mike Nohle (not present) – no report.
 - Rob / Ed to get in contact with Mike in regards to a refrigeration meeting. Bill suggested Allied Frozen Foods in Brockport.
- **Tech Awards:** Jeff Wiedrick (not present) – no report.
 - No submissions for the Society level awards which were due September 3, 2013. There were no Regional level awards last year to move up to Society level this year.
 - Regional level tech award submissions for this year will be due in May 2014.
- **Membership:** Jake Hall
 - Current membership: 240, Student members: ~5
 - Clambake = Membership Promotion Night
 - (3) new members joined
 - Jake to send personal invite to new members for free meal at the next standard meeting.
- **Attendance:** Tim Duprey (not present)
 - September Clambake = 94 RSVP / 181 dozen clams
- **Awards:** Al Rodgers (not present) – no report
- **Student Activities:** Chris Lukasiewicz (not present)
 - Need to evaluate scholarship options further. Re-surface Bills scholarship agreement draft from last year. Potential for an annuity or 1-year trail.
- **YEA:** Matt Kremers (not present)
 - Announce Leadership University at Clambake to evaluate interest.
 - Looking for nominations for new faces in engineering.
 - Evaluating topics for group learning program
- **Research:** Paul Kenna

Board of Governors Meeting Minutes

- Centralized Research Training next week in Chicago.
 - Full Circle due = TBD
 - Research Promotion Night(s) = TBD
- **Newsletter:** Scott Edwards
 - RES deadline = 9/10/13
 - Electronic Newsletter deadline = 18th of each month
 - Request for book corner recommendations to be sent out to members.
 - **Buyer's Guide:** Stephanie Dempsey / Chuck White (not present) – no report
 - **Historian:** Lee Loomis
 - History display from the CRC to be shown at the Clambake.
 - Interested people who want to participate on a RES sponsored tutoring team for school #10 – Walter Cooper should contact Lee.
 - **Website:** Kevin Wind (not present) – no report.
 - **Nominating:** Jim Browe – no report.
 - **Publicity:** Mark Kukla (not present) – no report.
 - **Valentine's Dinner Dance:** Jody McGarry (not present) – no report
 - **Old Business:**
 - None
 - **New Business:**
 - Jim Browe agreed to be the CRC2016 committee chair (Rob Wind, Lee Loomis, Bill Clark, Paul Kenna, Michelle Sommerman and Jeff Close to support).
 - Nomination passed at CRC for Lynn Bellenger to be inducted into the ASHRAE Hall of Fame.
 - Nomination passed at CRC for Al Rodgers to be on the Society Scholarship Committee.
 - CRC2012 – awards will be handed out at Clambake
 - RES address – Bill to go to post office and fill out forwarding address form.
 - PAOE points – each officer & committee chair to review and input monthly.
 - Michelle will facilitate audit committee to include; Jeff Bidell, Barb Herl, and Steve Maybeck to meet with Jeff Close and Bill Clark.
 - Ed to take the lead on speaker gifts.
 - **Next Meeting:** Tuesday, October 8th @ 7:30am - IBC Engineering
 - The meeting was adjourned at 1.28 pm

Bellenger Book Corner

WELCOME TO THE BELLENGER BOOK CORNER



Mrs. Lynn G. Bellenger was an avid reader and supporter of continuing education. She encouraged local firms to create internship opportunities for aspiring engineers in order for them to gain more experience.

Lynn had an extensive library collection of books ranging from introductory HVAC and hydronic systems to controls and energy efficiency manuals written by colleagues and friends that she had met through ASHRAE.

This section is dedicated in Lynn's honor to provide additional reading materials relevant to the ever-changing technology in the HVAC field. We hope this will be an especially valuable section for young engineers who are just starting their careers.

IN THIS ISSUE: GEOTHERMAL ENERGY

Geothermal Energy Systems are described in more detail in many publications, including the latest handbook from 2011 HVAC Applications.

Chapter 34, Geothermal Energy, has updated tables and graphs, with new, step-by-step design guidance on vertical systems, and expanded content on hybrid systems, ISO rating, and system efficiency.

The ASHRAE Handbook is published in a series of four volumes, one of which is revised each year, ensuring that no volume is older than four years. Each volume is available in I-P (Inch-Pound) or SI (System International) units of measurement



The 2011 ASHRAE Handbook—HVAC Applications comprises over 60 chapters covering a broad range of facilities and topics, and is written to help engineers design and use equipment and systems described in other Handbook volumes. Main sections cover comfort, industrial, energy-related, and general applications, as well as building operations and management. ASHRAE Technical Committees have revised nearly every chapter to cover current requirements, technology, and design practice.

If you know of a good manual that you would like to share with us, please send it to the newsletter editor Scott Edwards at scott.edwards@trane.com. In order to keep with ASHRAE's goal of supporting continuing education without commercialization, we ask all reading materials recommended for this section be either ASHRAE sponsored or non-vendor specific.

The appearance of any technical data, editorial material or advertisement in ASHRAE.org or any of its electronic publications does not constitute endorsement, warranty or guarantee by ASHRAE of any product, service, process, procedure, design or the like. ASHRAE does not warrant that this information is free of errors and ASHRAE does not necessarily agree with any statement or opinion contained therein.



Tips for ASHRAE Scholarship Applicants

Make sure ...

- You meet all applicable criteria
- You read the application carefully and answer all questions completely and honestly.
- The application and all required documents are submitted or postmarked on or before the applicable deadline.
- Your application is NEAT, legible (typed or handwritten clearly), and proper English (correct grammar and spelling) is used when responding to essay questions.
- To take time to submit a brief, non-required introductory cover letter
- You are clear and thorough when stating goals and financial need.
- You contact the nearest ASHRAE chapter for an interview with the Student Activities Chair or other officer to learn more about the Society.
- You find out if your school hosts an ASHRAE student branch.
- You contact ASHRAE headquarters if you have any questions and to ensure your application has been completed and submitted properly.

More information on the scholarship and details on how to apply can be found at www.ashrae.org/scholarships.

ASHRAE Region I 2013-2014

Executive Committee & Society Contacts

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Students Showcase Sustainable, Innovative Practices as Part of Design Competition

ATLANTA—This year, in addition to the Student Design Competition, ASHRAE asked students to think outside the box with the new Applied Engineering Challenge, which invited students to design a portable refrigeration unit.

The Applied Engineering Challenge is part of the charge from Presidential Member Tom Watson, who put forth that ASHRAE broaden its horizons by making accessible technology for use in any country, by any person.

The Engineering Challenge stipulated that students design a refrigeration unit with a holding volume of 1 ft.³ that could transport small essential cargo, such as food or medicine. The temperature inside the box must be maintained at 25 F without an external power supply and the device must be able to be assembled anywhere in the world.

The first place Applied Engineering Challenge winners are Brian Kaufman, Nick Leeburg, Tony Lin and Micah Reich of San Jose University, Calif. Their faculty advisor is Nicole Okamoto, Ph.D.

The team chose a simple wooden frame for their freezer unit due to the simplicity of fabrication and availability of the material. As refrigerant, HFC-134a was used for its less detrimental impact to the environment compared to chlorofluorocarbons (CFCs). The freezer utilizes a swing motor compressor which allows the device to work while in transit, making the freezer more durable and able to handle vibration and changes in orientation. At just 65 lbs, the freezer can easily be carried between two people.

Also critical to the freezer's design is the solar panel and self-adjustable rack that allows a user to gather the maximum amount of sunlight. The solar panel powers an absorbed glass mat battery, which was chosen for its reliable track record in the solar industry and relative lower cost in relation to cycling life. The battery requires little maintenance and provides increased safety to the user—safety such as drop protection and no spilling of acid if broken.

ASHRAE also announces the winners of the 2013 Student Design Competition, which recognizes outstanding student design projects, encourages undergraduate students to become involved in the profession, promotes teamwork and allows students to apply their knowledge of practical design.

This year's competition featured a mock design of a high rise residential building, with retail space on the lower floors, in Dallas, Texas.

Among the 41 entries from eight different countries, three were awarded first place in the three categories that the competition offers.

First place in HVAC Design Calculations is awarded to Jayson Bursill, Natasha Palmer, Angela Walton and Gavin Wong of the University of British Columbia, Vancouver, B.C., Canada. Their faculty advisors are Nima Atabaki, Ph.D., Geoff McDonnell and Steven Rogak, Ph.D.

Limited mechanical space available for large plant equipment and exhaust ducting resulted in the team selecting an air-cooled heat recovery chiller for the roof and high efficiency condensing boilers for heating. Heat recovery was implemented via air-to-air heat pipes, which provide minimal leakage and are a passive technology, and allow for washroom exhaust recovery. Hydronic radiant panels were used for skin heating in the first floor retail space to lower the room air temperature and maintain occupant comfort.

The team used Ottawa, Ontario's climate when considering weather conditions and found, when compared to the Standard 90.1-2010, *Energy Standard for Buildings except Low-Rise Residential Buildings*, baseline, the design is 8 percent more efficient given the constraints on mechanical space and terminal unit selection for the Ottawa climate.

Students Showcase Sustainable, Innovative Practices as Part of Design Competition, *continued*

Analysis of the cost of installing the necessary equipment for the heat recovery chiller gave a payback period of 13 years and a net present value of \$3,358 over the life of the building. This is with the consideration of additional piping costs and the fuel (natural gas) savings for when the chiller waste heat production was equal or greater than the building heating load so the boiler could be turned down.

As an alternative energy conservation measure, the team chose triple-paned windows. The energy savings from adding an additional inert space between the environment and the conditioned space are undeniable. It was found that the use of moderately tinted triple-paned windows would reduce heating and cooling equipment size by 14 and 25 percent respectively.

First place in HVAC System Selection is awarded to Garrett Elder, Nathan Love and Nick Theimer of Kansas State University, Manhattan, Kan. Their faculty advisors are Fred Hasler, P.E., and Julia Keen, Ph.D., P.E., ASHRAE-Certified High-Performance Building Design Professional.

After considering several systems, the team chose a water source heat pump (WSHP) with sewage heat exchanger (SHX) for the building. A water source heat pump allows for load sharing between spaces within the building via a common water loop; it is an extra benefit that helps to improve the efficiency of the entire building's heating and cooling system. The system also has the potential to be self-balancing due to the fact that simultaneous heating and cooling will occur during the year.

The addition of the SHX to the water loop provides conditioning to the loop prior to activating the boiler and fluid cooler. The system takes advantage of the fairly consistent effluent (i.e., wastewater) temperature range between 52 and 75 F. This range allows the effluent to be used as a heat source or heat sink for the building's central water loop. The SHX also consumes the lowest amount of energy when compared to other systems.

Ultimately, the students based their decision on the Triple Bottom Line (TBL): profit, people and planet. Though the WSHP with SHX has a higher initial cost (profit) than other suggested alternatives, the cost did not prove to be a deterrent when the students considered the many other requirements for the systems, such as low impact on energy and water usage and strict acoustic criteria. For the second factor, "people," the team found that the innovative SHX allows the building and its owner to ultimately be an example and leader for sustainable energy in its region. Finally, when considering "planet," the students explain how the system affects the environment: "the fact that the SHX can provide the required capacity acting as a heat sink or heat source from a renewable energy source sets this system apart."

First place in Integrated Sustainable Building Design is awarded to Jiayi Qiu, Dalin Si, Yukai Wu, Zhongzhe Wu, Ruijun Zhang, Zhiang Zhang and Xuyang Zhong of the University of Nottingham, Ningbo, China. Their advisor is Ed Cooper.

The students redesigned the building and relocated it to Ningbo, China, on a greenfield close to basic services as stipulated by Standard 189.1, *Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings*. They considered passive cooling strategies such as shading in summer and natural ventilation in May, June and September. The students also explained that increasing solar heat gain and use of high thermal mass material will also contribute to thermal comfort in winter time.

For shading on residential areas, the students suggested photovoltaic devices and a double-skin façade. The façade would have one panel each and generate 22,468 KWH/year. Similar panels on the retail portion of the building would generate 7,270 KWH/year.

A closed vertical loop system was selected for the ground side circulation. Due to the space restriction, the W-type of buried pipe was chosen to increase the area of heat exchanger with ground soil in per borehole, with 240 bore holes in total. The projects are shared at the 2014 Winter Conference in New York City, Jan. 18-22.

ASHRAE Seeks Presenters, Posters for HPB 2014 Conference

ATLANTA – Presenters and posters are being sought for ASHRAE's High Performance Buildings Conference will take place April 7-8, 2014, Hyatt Fisherman's Wharf, San Francisco, Calif.

Abstracts for presentations are due Oct. 25, 2013, while poster PDFs are due Feb. 21, 2014. Additional information can be found at www.hpbmagazine.org/hpb2014.

The Conference program will have a mix of invited speakers and a call for presenters. In addition, there will be a poster session on "Measured Building Performance" and "Modeled Building Performance."

"We would like to see a balance of presentations showing innovation, proven methods for improving building operation resulting in deep energy efficiency and indoor environmental quality, measured performance and HPB case studies demonstrating new technologies," Kent Peterson, conference chair, said. "We are seeking posters of designed or built buildings that balance high performance building attributes of energy efficiency, water savings and indoor environmental quality."

Building upon the 2012 High Performance Buildings Conference and 2009 Net-Zero Energy Conference, the conference seeks to advance the industry's efforts to accomplish a true high-performance built environment.

The conference topics provide a comprehensive overview of high performance building design with a focus on strategies in several areas, Peterson said. New subject areas include water efficiency, building occupant behavior, new building technologies and indoor environmental quality. In addition, there is increased emphasis on lighting/daylighting and the building envelope.

Presentations and Posters are being sought for the following tracks:

- Building Envelope
- Building Occupant Behavior
- Building Performance Modeling
- Building Performance Measurement
- Case Studies and Lesson Learned
- Daylighting
- Indoor Environmental Quality Strategies
- Low Energy Techniques
- Market Value (Return on Investment)
- New Building Technologies
- Operating for High Performance
- Plug Load Reduction Strategies
- Policy/Benchmarking
- Water Efficiency Strategies

The conference is being presented by ASHRAE's High Performing Buildings magazine, the industry's premier source for measured performance of practices and technologies to promote better buildings.

New Opportunity for Professional Development from ASHRAE at IDEX Canada



In conjunction with IDEX Canada, ASHRAE is offering the *Fundamental Requirements of Standard 62.1-2010* training course on Friday, September 27, 2013 in Toronto. This half-day, instructor-led training course offers real-world applications based on the standard's requirements.

Fundamental Requirements of Standard 62.1-2010 (Course F19)

Course Summary

This introductory course focuses on the basic requirements of *ASHRAE/ANSI Standard 62.1-2010, Ventilation for Acceptable Indoor Air Quality*. The course covers the scope, applications and multiple compliance paths available in the standard. Ventilation rate procedure, indoor air quality procedure and natural ventilation procedure are discussed.

Many of the Standard's general requirements apply regardless of the procedure used. In the 2010 version, the IAQ procedure is rewritten and the natural ventilation procedure is updated. Different application conditions for the ventilation rate procedure are also described.

Date:

Friday, September 27, 2013

Time:

1:00 p.m.– 4:00 p.m.

Registration Fee:

Includes FREE access to the Expo

CAD \$125 (by September 12th)

CAD \$135 (after September 12th)

Location:

The Direct Energy Centre Exhibition Place
100 Princes' Boulevard
Toronto, ON M6K 3C3, Canada



Instructor:

Hoy Bohanon, P.E., Member ASHRAE, BEAP, LEED® AP (WorkingBuildings)

ASHRAE Announces New High Performance Building Conference

ATLANTA – ASHRAE has announced its next High Performance Buildings Conference will take place April 7-8, 2014, Hyatt Fisherman's Wharf, San Francisco, Calif.

Building upon the 2012 High Performance Buildings Conference and 2009 Net-Zero Energy Conference, the Conference seeks to advance the industry's efforts to accomplish a true high-performance built environment.

"The 2014 HPB Conference provides a unique opportunity for dialog among attendees to facilitate understanding of current indoor environmental quality and energy saving efforts and to share best practices for achieving high-performance buildings," Kent Peterson, Conference chair, said.

The conference topics provide a comprehensive overview of high performance building design with a focus on strategies in several areas, Peterson said. New subject areas include water efficiency, building occupant behavior, new building technologies and indoor environmental quality. In addition, there is increased emphasis on lighting/daylighting and the building envelope.

A case study-type poster session on "Measured Performance" and "Modeled Performance" is presented.

The conference format will include invited speakers as well as a call for presenters and a call for posters, which will be announced in the fall. Additional information can be found at www.hpbmagazine.org/hpb2014.

Attendees will be able to realize the synergy required between indoor environmental quality and energy savings through advanced HPB design through the conference as well as network with other HPB professionals, Peterson said.

The conference is being presented by ASHRAE's High Performing Buildings magazine, the industry's premier source for measured performance of practices and technologies to promote better buildings.



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Industry Reaps the benefits of ASHRAE Scholarships

ATLANTA—"The ASHRAE scholarship program is making a difference in the lives of the outstanding students that it touches." That's according to David Meredith, chair of the ASHRAE Scholarship Trustees on awarding \$106,000 in scholarship money for the 2013-2014 academic year. "When I look at the global leadership that past scholarship recipients have demonstrated throughout their professional career, I am proud of what the ASHRAE Scholarship Program has been able to accomplish," Meredith said. "I can't wait to see how this year's recipients help shape our future." The recipients of ASHRAE's scholarship assistance include the following:

- **Reuben Trane Scholarship:** \$10,000 to be awarded over two years, Richard Melo, Wentworth Institute of Technology, mechanical engineering. The scholarship was established by the Trane Co. in memory of its founder, an innovative engineer, inventor and business executive.
- **Willis H. Carrier Scholarships:** \$10,000 for one year, Breeann Foran, Montana State University, mechanical engineering; and Nicholas Rekstad, Pennsylvania State University, architectural engineering. The scholarship was established by the Carrier Corp. in memory of its founder, who installed the world's first scientifically designed air-conditioning system.
- **Lynn G. Bellenger Engineering Scholarship:** \$5,000 for one year, Tiffany Williams, North Carolina A&T State University, architectural engineering. The scholarship, which is being awarded for the first time this year, recognizes a female undergraduate engineering student. It is named in memory of the Presidential Member Lynn G. Bellenger, the Society's first female president.
- **Frank M. Coda Scholarship:** \$5,000 for one year, Travis Norris, East Carolina University, mechanical engineering. The scholarship was created in memory of ASHRAE's former executive vice president, who served from 1981-2004.
- **David C.J. Peters Scholarship:** \$5,000 for one year, Mei Yung Wong, Oklahoma State University, mechanical engineering. The scholarship is awarded to a third-year student in a four-year undergraduate mechanical engineering program or a fourth-year student in a five-year undergraduate mechanical engineering program at Pennsylvania State University, Virginia Tech, California State University, Oklahoma State University, University of Texas, Clemson University, North Carolina State University, University of Nebraska, Cal Poly State University and University of Nevada. The scholarship was created by Southland Industries to honor Peters, an advocate of recruiting quality.
- **General Scholarships:** \$5,000 for one year, Mitchell Hoelsing, South Dakota State University, mechanical engineering; and Peter Kohler, University of North Carolina, mechanical engineering.
- **Memorial Scholarship:** \$5,000 for one year, Nathan Stoltzfus, Ohio State University, agricultural engineering.

The following awards provide one-year \$3,000 scholarships:

- **Lynn G. Bellenger Engineering Technology Scholarship:** Sara Piekunka, Rochester Institute of Technology, mechanical engineering technology. The scholarship recognizes female engineering technology students and is named in memory of Presidential Member Bellenger. This is the first year that the scholarship is being awarded.
- **Region III Boggram S. Setty Scholarship:** Hunter Bachman, University of Delaware, mechanical engineering. This scholarship is awarded to an undergraduate engineering student attending an institution within ASHRAE Region III, which covers Delaware, Maryland, Pennsylvania, Virginia and Washington, D.C., and is named after Boggram Setty, Fellow ASHRAE, Life Member.
- **Duane Hanson Scholarship:** Kim Rogers, Kettering University, mechanical engineering. The scholarship was established by Gayner Engineers and is named for the company's former president.

(See Next Page for Continuation)

Industry Reaps the benefits of ASHRAE Scholarships (continued)

(From Previous Page)

- **Alwin B. Newton Scholarship:** Man Sze Chan, The University of Hong Kong, building services engineering. The scholarship is named for an industry pioneer and ASHRAE Fellow who was granted 219 patents.
- **Henry Adams Scholarship:** Mahmoud Mohammed, University of Illinois, mechanical engineering. The scholarship was established by Henry Adams, Inc. in memory of its founder, a Charter Member and sixth president of ASHRAE'S predecessor society, ASHVE, established in 1899.
- **Region VIII Scholarship:** Gaizka Lasa, University of Oklahoma, industrial engineering. The scholarship is awarded to students attending schools within the geographic boundaries of ASHRAE Region VIII, which includes Arkansas, Oklahoma, Mexico and parts of Louisiana and Texas.
- **Donald E. Nichols Scholarship:** Anthony Taylor, Tennessee Technological University, mechanical engineering. The scholarship is awarded to an undergraduate engineering student attending Tennessee Technological University. It is named for a former ASHRAE vice president and graduate of Tennessee Technological University.
- **Bachelor of Engineering Technology Scholarship:** Yoginder Rana, Ferris State University, HVAC&R technology.
- **Associate of Engineering Technology Scholarship:** Cody Bomers, Grand Rapids Community College, HVAC&R Technology.
- **High School Senior Scholarships:** Elizabeth Lynch, Iowa State University, engineering; Jacquelyn Sommers, Kansas State University, architectural engineering; Joshua Roper, University of Wisconsin, mechanical engineering; and Kali Rosendo, Massachusetts Institute of Technology, environmental engineering. The scholarships were established in 2010 for high school seniors entering their freshman year of college in an engineering or engineering technology program. Over the course of 24 years ASHRAE has awarded over \$1.3 million to approximately 275 deserving undergraduate and graduate students. For more information on ASHRAE scholarships, visit www.ashrae.org/scholarships. Applications are now being accepted for the 2014-15 undergraduate, regional/chapter and university-specific scholarships. The deadline is Dec. 1, 2013.

ASHRAE Announces 2013-2014 Conference Lineup

ATLANTA—Mark your calendars now because ASHRAE's conference schedule for 2013-2014 is widespread in both dates and global reach.

ASHRAE conferences present the latest developments in the industry and fundamental tried and true practices. Topics range from high performance buildings to buildings that have combustion with low-grade fuels.

- Oct. 15-18, [ASHRAE IAQ 2013: Environmental Health in Low Energy Buildings](#), Vancouver, British Columbia
- Jan. 18-22, 2014, [ASHRAE Winter Conference](#); Jan. 20-23, AHR Expo, New York, New York
- Feb. 24-26, 2014, [First International Conference on Energy and Indoor Environment for Hot Climates](#), Doha, Qatar
- April 7-8, 2014, [High Performance Buildings Conference](#), San Francisco, Calif.
- April 24-25, 2014, [Efficient, High Performance Buildings for Developing Economies](#), Manila, Philippines
- June 28-July 2, 2014, [ASHRAE Annual Conference](#), Seattle, Wash.
- September 10-12, 2014, [ASHRAE/IBPSA-USA Building Simulation Conference](#), Atlanta, Ga.

The conferences feature peer-reviewed papers, presentations with hands-on information presented in a non-commercial format, Professional Development Hours and networking opportunities.

ASHRAE IAQ 2013 in October 2013 reviews the state of knowledge on the balance between environmental health and energy efficiency in the pursuit of low energy buildings and covers a range of topics: residential and commercial buildings, new construction and retrofit, active and passive approaches, design and operation.

What better city than New York for ASHRAE to host a **Winter Conference** in January 2014 with a Technical Program focused on buildings? The Conference has a building-oriented theme with papers and presentations related to building information systems; environmental health; international design; HVAC&R applications and systems; and, of course, tall building performance.

The First International Conference on Energy and Indoor Environment for Hot Climates in February 2014 tackles energy and indoor environmental quality issues in humid and arid hot climates, providing a forum for discussion of the latest research and developments.

Building upon its 2012 High Performance Buildings Conference and 2009 Net Zero Conference, the **High Performance Buildings Conference** in April 2014 seeks to advance the industry's efforts to accomplish a true high-performance built environment. The tracks include building performance modeling, envelope strategies, lighting/daylighting strategies, indoor environmental quality strategies, building occupant behavior, market value, new building technologies and case studies and lessons learned.

The design, construction and operation of energy efficient, high performance buildings in developing economies have been identified by the building industry and policymakers as key areas where technology, standards and investments are needed. The **Efficient, High Performance Buildings for Developing Economies Conference** in April 2014 will address a number of themes on this topic.

The **2014 ASHRAE Annual Conference** takes place in Seattle, Wash., June 2014. The Conference addresses broad topics in the application of technology to practice, specific applications in ground source heat pumps, operations and maintenance and indoor environmental quality as well as new reports on research taking place worldwide.

Finally, ASHRAE and IBPSA-USA have created a new jointly co-sponsored **Building Simulation Conference** taking place in September 2014 that encompasses the ASHRAE Energy Modeling and IBPSA-USA SimBuild Conferences. The conference is a first for the industry and focuses on "BIM, BEM and SIM – Integrated Building Design and Modeling," addressing building information modeling, building energy modeling and building simulation.

Society News

ASHRAE / IES Publish First Standard Focused on Commissioning Process

ATLANTA – A newly published standard focused on the commissioning process will help ensure a fully functional, fine-tuned facility.

ANSI/ASHRAE/IES Standard 202, *Commissioning Process for Buildings and Systems*, identifies the minimum acceptable commissioning process for buildings and systems as described in ASHRAE's Guideline 0-2005, *The Commissioning Process*. Standard 202 is ASHRAE's first standard focused on the commissioning process. The commissioning process as detailed in Standard 202 applies to all construction projects and systems and is an industry consensus document.

"Given the integration and interdependency of facility systems, a performance deficiency in one system can result in less than optimal performance by other systems," Gerald Kettler, P.E., chair of the committee that wrote the standard, said. "Implementing the Commissioning Process is intended to reduce the project capital cost through the warranty period and also reduce the life-cycle cost of the facility. Using this integrated process results in a fully functional, fine-tuned facility, with complete documentation of its systems and assemblies and trained operations and maintenance personnel."

The commissioning process assumes that owners, programmers, designers, contractors and operations and maintenance entities are fully accountable for the quality of their work. The process begins at project inception and continues for the life of a facility. The process includes specific tasks to be conducted to verify that design, construction, verification, testing, documentation and training meet the owner's project requirements, according to Kettler.

The standard defines the commissioning process through 13 functional steps, each of which contains deliverables. The commissioning activities and deliverable are as follows:

- Initiate the Commissioning Process, including defining roles and responsibilities
- Define the project requirements, which results in the Owner's Project Requirements (OPR) document
- Develop commissioning plan – produces a written Commissioning Process Plan
- Plan design approach to Owners Project Requirements – defines the basis of design
- Set contractor commissioning requirement, which are included in the commissioning specifications
- Design review by the commissioning authority provides feedback and a design review report
- Submittals review verifies compliance with the OPR in a submittal review report
- Observation & Testing verifies system performance with results documented in construction checklists and reports
- Issues resolution coordination is done with an issues and resolution log
- Systems manual assembly results in a systems manual for building operation
- Conduct training for building operations with training plans and records
- Post occupancy operation commissioning provides an end of warranty commissioning report
- Assembly of a commissioning report captures all the project commissioning documentation

Other commissioning guidance from ASHRAE includes Guideline 0-2005, *The Commissioning Process*; Guideline 1.1-2007, *HVAC&R Technical Requirements for the Commissioning Process*; and Guideline 1.5-2012, *The Commissioning Process for Smoke Control Systems*.

ASHRAE also is working on several other guidelines related to commissioning: Guideline 0.2P, *The Commissioning Process for Existing Systems and Assemblies*; Guideline 1.2P, *The Commissioning Process for Existing HVAC&R Systems*; Guideline 1.3P, *Building Operation and Maintenance Training for the HVAC&R Commissioning Process*; and Guideline 1.4P, *Procedures for Preparing Facility Systems Manuals*.

The cost of ANSI/ASHRAE/IES Standard 202-2013, *Commissioning Process for Buildings and Systems*, is \$72 (\$61, ASHRAE members). To order, contact ASHRAE Customer Contact Center at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 678-539-2129, or visit www.ashrae.org/bookstore.



ASHRAE IAQ 2013

Environmental Health in Low Energy Buildings

October 15–18, 2013

www.ashrae.org/iaq2013



Renaissance Vancouver Hotel Harbourside | Vancouver, British Columbia, Canada

IAQ 2013 reviews the state of knowledge on the balance between environmental health and energy efficiency in the pursuit of low energy buildings.

The conference covers a broad range of topics including residential and commercial buildings, new construction and retrofit, active and passive approaches, design and operation.

IAQ 2013 will help define future design, education, policy and research directions to re-emphasize the importance of environmental health in buildings.



Some 145 conference papers and extended abstracts have been invited. Tracks are as follows:

- Track 1 - Environmental Health in Low Energy Buildings
- Track 2 - Moisture and Health
- Track 3 - Sources and Chemistry
- Track 4 - IEQ Factor Interactions
- Track 5 - Residential Buildings
- Track 6 - Commercial and Institutional Buildings
- Track 7 - Air Cleaning and Filtration
- Track 8 - Microorganisms and Infection
- Track 9 - Tools (models, measurements and more)

A complete listing of accepted conference papers and extended abstracts can be found at www.ashrae.org/iaq2013.

Plenary Lectures will be given by four distinguished international authorities:

- William Bahnfleth, Ph.D., P.E., Fellow ASHRAE, ASME Fellow, Pennsylvania State University, 2013–14 ASHRAE president, “Are We Putting Enough Energy into Making Buildings Healthy?”
- Richard Corsi, Ph.D., P.E. University of Texas, Austin, Indoor Air 2011 president, “Building Energy and Reactivity.”
- Mark J. Mendell, Ph.D., Lawrence Berkeley National Laboratory and California Department of Public Health, “Do We Know Much about Low Energy Buildings and Health?”
- Pawel Wargocki, Ph.D., Danish Technical University, ISIAQ president, “What Can Europe Teach Us?”

Registration	Member	Non-member	Speaker
Early bird through Aug. 30	\$550	\$600	\$400
Regular fee through Sept. 30	\$600	\$650	\$400
Onsite fee beginning Oct. 1	\$650	\$700	\$400

Conference proceedings and breaks, lunches and a reception included in registration fee.

Co-organized by ISIAQ.

IAQ2013 is the 17th in the ASHRAE IAQ conference series.

Surrounded by water on three sides and nestled alongside the Coast Mountain Range, Vancouver is the largest city in the province of British Columbia with over half a million residents and one of the mildest climates in Canada. Home to spectacular natural scenery and a bustling metropolitan core, Vancouver was Host City to the Olympic and Paralympic Winter Games in 2010.



www.ashrae.org/iaq2013

ASHRAE Announces Fall Online Courses

The 13 ASHRAE Learning Institute courses provide professional development through in-depth information that is timely, practical and targeted to provide engineers in consulting practices, facility management or supplier support with instruction on applying ASHRAE standards and employing new technologies essential for advanced building performance. The online courses allow attendees to learn from anywhere with an Internet connection. Course participants earn continuing education credits and qualify for Professional Development Hours for each course completed. Courses are instructor-led, drawing upon professional knowledge of leading practitioners. The courses are:

- ~~Introduction to BACnet®, Sept. 9~~
- ~~NEW! Troubleshooting Humidity Control Problems, Sept. 11~~
- Complying with Standard 90.1-2010: HVAC/Mechanical, **Sept. 30**
- Energy Management Best Practices (formerly Energy Management in New and Existing Buildings, **Oct. 2**
- High-Performance Building Design: Applications and Future Trends, **Oct. 9**
- Commissioning for High-Performance Buildings, **Oct. 16**
- Fundamental Requirements of Standard 62.1-2010, **Oct. 21**
- Air-to-Air Energy Recovery Fundamentals, **Oct. 23**
- Energy Efficiency in Data Centers, **Oct. 28**
- Air-to-Air Energy Recovery Applications: Best Practices, **Oct. 30**
- IAQ Best Practices for Design, Construction, and Commissioning, **Nov. 13**
- Energy Modeling: Best Practices and Applications: Parts 1 and 2, **Sept. 16**
- **NEW!** Commercial Building Energy Audits - Parts 1 and 2, **Nov. 4**

For registration costs and to register, visit www.ashrae.org/onlinecourses. Site licenses are available to organizations that have five or more course participants. For more information, e-mail edu@ashrae.org or call 678-539-1146.