

TC 2.3 Program Subcommittee Meeting Minutes – Long Beach

Tuesday, 27-June-2017, 12-12:45p

202C

Attendees: Chris Muller, David Schaaf, Gemma Kerr, Charlene Bayer, Kevin Kwong, Ashish Mathur, Sanjeev Hingoranz, Vivekanand Gaur, Scott Sherwood, Nick Agopian, Paula Levasseur, Kathleen Owen, Matt Middlebrooks, Marilyn Listvan, B Krafthefer, Dara Feddersen, K-J Choi

Conference Paper Due July 7, 2017

Seminar, Forum, Workshop, Debate and Panel Proposals Due Aug 1, 2017

Technical Papers and paper session requests are due August 28, 2017 for Houston

Chicago, Jan 20-24, 2018, www.ashrae.org/chicago, Houston, June 23-27, 2018, www.ashrae.org/houston

Atlanta, Jan 12-16, 2019, Kansas City, June 22-26, 2019, Orlando, FL, Feb. 1-5, 2020, Austin TX, June 27-July 1, 2020

Program statistics for Long Beach; for a total of 107 available slots: *Conferences Papers: 71/151, Technical Papers: 19/27, Seminars: 61/121, Workshops: 9/13, Forums: 4/11, Debates: 3/4, Panels: 2/5*

11 speakers from Las Vegas had speaker ratings below 3.5 out of 5.0. These speakers were sent letters indicating that if they receive two additional low ratings they will be required to provide proof that they have received speaker training before they will be permitted to speak again.

Seminar	Do you know what you are breathing - Indoor Air Contaminants	TC2.4	KJ Choi	Long Beach	Accepted
Seminar	Development of low-cost multi-use sensors for buildings that can detect possible hazardous biological or chemical agents	TC 2.4	Russ Taylor	Long Beach	Accepted
Panel	The Effectiveness of Electronic Air Cleaners Against VOCs and Other Gaseous Chemical Contaminants	SSPC145, TRG4, TC2.9, SSPC 62.1	Chris Muller	Chicago	Aug 1
Seminar	Assessment of the Potential Impacts of Vent-Free Gas Products on Indoor Air Quality		Dave Delaquila	Chicago	Aug 1
SSPC62.1Co-sponsoring Workshop	Misapplication of IAQ Procedure (Hoy, Marwa and Charlene)	TC 2.3, EHC, SSPC62.1	Erica Stewart	Chicago	Aug 1
Seminar	Sensors in filtration	TC2.4	Krafthefer	Chicago	Aug 1
Seminar	Don't Gamble with IAQ: Guidance on Estimating and Monitoring the Performance of Gas-Phase Air Filters		Chris Muller	Houston	TBS
Workshop	Occupant related indoor air pollution (Chang Seo)	TC2.4	Charlene	Houston and beyond	TBS
Seminar	Back to basics, how to choose a carbon filter	TRG4, 62.1, SSPC 145	Ashish	Houston	TBS
Seminar	Combo filters	TC2.4, TC2.9, GPC35, SSPC62	KJ	Houston	TBS
Seminar	Cannabis Indoors	TC2.4	Charlene	Atlanta	TBS
Workshop	Review and Evaluation of Standard 145.2 Test Data				

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Conference Paper Sessions. These sessions present papers on current applications or procedures, as well as papers reporting on research in process. These papers differ from technical papers in that they are shorter in length and undergo a much less stringent peer review. PowerPoint presentations with audio descriptions of the presentations are posted online in the Virtual Conference. Preprints of conference papers and an online papers collection are available for purchase in the ASHRAE Bookstore.

Debates. Debates highlight hot-button issues. Experts, either on teams or as individuals, present different sides of an issue in debate format. Each participant presents evidence for or against a specific statement or question such as ‘Is Sustainability Really Sustainable?’

Forums. Forums are “off-the-record” discussions held to promote a free exchange of ideas. Reporting of forums is limited to allow individuals to speak confidentially without concern of criticism. There are no papers attached to these forums.

Panels. Panel discussions can feature a broad range of subjects and explore different perspectives on issues in the industry. A panel may feature discussions about integrated project delivery among designers, builders and facility management professionals.

Seminars. Seminars feature presentations on subjects of current interest. Papers are not available from the Society; however, seminar PowerPoint presentations with audio descriptions of the presentations are posted online in the Virtual Conference. Access is free for attendees who purchase a conference registration, and access will also be available for purchase. Orders can be taken in the ASHRAE Bookstore.

Technical Paper Sessions. These sessions present papers on current applications or procedures, as well as papers resulting from research on fundamental concepts and basic theory. Papers presented in these sessions have successfully completed a rigorous peer review. You are invited to comment on these papers. Forms for written comment are available at each session. PowerPoint presentations with audio descriptions of the presentations are posted online in the Virtual Conference. Preprints of papers and an online papers collection are available for purchase in the ASHRAE bookstore.

Workshops. Workshops enable technical committees and other ASHRAE committees to provide a series of short presentations on a topic requiring specific expertise. These short presentations are provided with an increased emphasis on audience participation and training in a specific set of skills. PowerPoint presentations with audio descriptions are posted online in the Virtual Conference.

Tracks for Chicago:

Track 1: Systems and Equipment, Track Chair

Selection of equipment and systems is paramount to HVAC&R design. Papers and programs in this track will assist designers, engineers, and operators in the design, selection, and operation of HVAC&R systems and equipment.

Track 2: Fundamentals and Applications, Track Chair: Kevin Marple Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid and mass flow, IAQ, and building envelope. This track provides opportunities for papers and presentations of varying levels across a large topic base. Concepts, design elements and shared experiences for theoretical and applied concepts of HVAC&R design are included.

Track 3: Standards, Guidelines and Codes, Track Chair: Corey Metzger ASHRAE is known for its standards and design guidelines – and they are constantly evolving with the intent on improving the built environment and its systems. Designers, Contractors, Architects and Owners must be able to keep up with the continuing changes in the current cycle but to also be prepared for the future changes. In addition, there is a large interaction of ASHRAE with the code authorities and government to incorporate these standards and guidelines. The series of sessions in this track highlight the changes to the standards and guidelines, their projected path and optimum design techniques to meet or exceed the standards.

Track 4: Earth, Wind & Fire, Track Chair: Ashish Rakheja Designing for natural elements and other possible disasters often requires specific elements of building design and construction. From materials to stabilizing elements and simulations to specifications, these options must be incorporated. This track will deliver on modern strategies to address all of these conditions. Be prepared to be blown away by industry practices to prevent disastrous results.

Track 5: Transportation IAQ and Air Conditioning, Track Chair: Dimitris Charalambopoulos Often considered boutique engineering, both enclosed vehicular facilities and transportation design, construction, operation, and maintenance needs to be elevated to equal status with other HVAC applications. These systems require the same design approach as other system designed but usually have special technical requirements that mandate close velocity capture/control, air quality control, etc. that can be overlooked but the more traditional building system design engineer. This track will seek case studies and trouble-shooting projects highlighting the opportunities and pitfalls associated with these unique applications.

Track 6: Tall Buildings, Track Chair: Leticia Neves Chicago is home to one of the tallest buildings in the world. One that stood the tallest in the world for nearly 25 years. However, today, more and more tall buildings are being designed and constructed. This track will draw upon “larger than life” case studies, as well as large building HVAC systems that can be classified as “innovative and/or 21st century” that highlight the opportunities presented and achieved by the designer, builder, and operator for facility HVAC systems throughout the world.

Track 7: Modeling Throughout the Building Life Cycle, Track Chair: Joseph Firrantello,

Modeling was originally concerned primarily with building and system design specifications. The demands of energy efficient operation brought about the need for modeling of part-load operation for a variety of off-design conditions. The explosion of computational capacity and data collection capability is rapidly expanding the scope, complexity and practical applications of

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modeling both during design, but even more so for fault detection, diagnostics and operational optimization. Thirty years ago, people were dreaming of doing some of the things that Building Information Modeling is now bringing to reality. Presentations and papers are solicited related to all aspects of building modeling, with a particular interest in successful applications that have extended modeling into operational phases of the building life cycle.

Track 8: Heat Exchange Equipment, Track Chair: Vikrant Aute' Given the critical importance of energy efficiencies and reliability of HVAC systems, new heat and mass transfer HVAC & R equipment and advanced systems have been developed. Bringing non-traditional technologies to the actual field is not trivial task and how to design the equipment and characterize the performance of new HVAC &R technologies under real field type conditions are still open questions. The papers and programs in this track will inform designers, engineers, building energy simulation modelers, and energy consultants and practitioners in the use of non-traditional heat exchange equipment and advanced HVAC &R systems under real field type conditions. The track will focus on fundamentals and applied aspects, on current challenges and recent advancements for managing frost growth, water condensate, fouling, corrosion, and mitigation of mold growth and bacteria that are often encountered in heat exchange equipment when working under real field type conditions.

Track 9: Refrigerant Mini Track @ Expo*, Track Chair: Gary C. Debes,

*Section will determine topics, speakers, session types, etc.

Track 10: Residential Mini Track @ Expo*, Track Chair: Gary C. Debes,

*Topics, speakers, session types, etc. will be determined by the cognizant committee.

Conference Program Chair: Michael Collarin,

Tracks for Houston, TX, June 23-27, 2018.

Track 1: HVAC&R Systems and Equipment, Track Chair: Frank Schambach

Selection of equipment and systems is paramount to HVAC&R design. Papers and programs in this track will assist designers, engineers, and operators in the design, selection, and operation of HVAC&R systems and equipment.

Track 2: Fundamentals and Applications, Track Chair: Dennis Alejandro,

Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid and mass flow. This track provides opportunities for papers and presentations of varying levels across a large topic base. Concepts, design elements and shared experiences for theoretical and applied concepts of HVAC&R design are included.

Track 3: District Energy and Cogeneration Plants, Track Chair: Kimberly Pierson,

As our world resources become more and more sparse there is an industry-wide movement toward efficiency and sustainability. One of the ways in which we can look to minimize our carbon footprint is to combine our resources. District energy systems and cogeneration plants do just that and are quite popular in some locales but have yet to gain traction in other developed cities. We will look at the advantages and limitations, do's and don'ts and best practices of utilizing this type of shared system.

Track 4: Safeguarding your HVAC&R System, Track Chair: Rich Rose

From seismic events to power outages and human error, how secure is your HVAC&R System? Mechanical, plumbing, electrical, and control systems all work together to create our living buildings, so it is imperative that designers and operators take into account the reactivity and interaction of these systems in response to natural disasters, human interference and other catastrophic events. Topics in this track include considering your design layout and accessibility, backup systems, supports and bracing, and more.

Track 5: Residential - Modern Buildings in Hot and Humid Climates, Track Chair: Dimitris Charalambopoulos,

Residential dwellings require designers to consider a different scope of building functions, occupant use, and comfort. With increasing utility rates and a movement toward net zero housing, the traditional residential design models are continuously diversifying and evolving. This track will discuss how we can integrate modern residential design and building practices into hot and/or humid climates with specific challenges ranging from indoor comfort to ventilation and mold.

Track 6: Professional Skills, Track Chair: Kevin Marple

This track is designed to provide professionals an opportunity to develop in the areas of presentation skills, leadership, teambuilding, understanding various business operations, interpersonal skills, etc. In short, the Professional Skills Track can cover all aspects of business outside of engineering/technical applications and lends itself to interactive session types such as workshops and forums.

Track 7: Research Summit, Track Chair: Melanie Derby,

Active research, and the exchange of those research findings are critical to the development of our HVAC&R industry and environment. The sixth annual research summit invites researchers to share those results; and this year we announce an exciting collaboration with ASHRAE's archival research publication, *Science and Technology for the Built Environment (STBE)*. Researchers are invited to present papers, seminars, forums or participate in panel discussions. Authors may also pursue an opportunity to further develop their submissions for later publication in STBE. A Research Summit is planned for the 2018 Annual Conference in Houston, TX. This track is designed to highlight ASHRAE-sponsored research and other research of interest to the ASHRAE community. New for the Conference, we are collaborating with ASHRAE's archival research journal, *Science and Technology for the Built Environment (STBE)*, to advance opportunities for research publication.

Track 8: HVAC&R Control Freaks, Track Chair: Gary C. Debes, Email: gcodebes@verizon.net

This track will focus on all things controls (note: please see track 9 "MiniTrack" as well). We invite you to join this exchange addressing one of the most dynamic areas in HVAC&R. Topics may range from design innovations spreading through our industry to

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the latest in building integration and observation, or even troubleshooting the most common issues occurring in building management systems.

Track 9: HVAC&R Analytics, Track Chair: Vikrant Aute,

This track will focus on the application of analytics algorithms/tools to automate systems. The tools and data are readily available, but the challenge is in using them in a timely and effective manner to add value to our HVAC&R Systems. By discussing the basics of analytics, methods, case studies and lessons learned we can consider if machine learning is ready to replace conventional controls.

Conference Program Chair: Cindy Moreno, Staff Support: Tiffany D. Cox, Assistant Manager of Conference Programs,

Email: tcox@ashrae.org

Programs for Long Beach

Monday June 26, 8:00 AM – 9:30 AM, Seminar 22, Room: 101B, What Is the Prospect for Low-Cost Chemical and Biological Threat Detection and Response in Commercial Buildings?

Sponsor: 2.3 & 2.4, Chair: Russell Taylor, Ph.D., Member, United Technologies, Research Center, East Hartford, CT

1. Biological and Chemical Threat Detection in Commercial Buildings: A DHS Perspective *Matthew Davenport, Department of Homeland Security, Washington, DC*

2. The Need for Low Cost Biological Agent Detection in Buildings: A DOD Perspective *Patricia Buckley, US Army ECBC (Edgewood Chemical Biological*

Center), Parkville, MD

3. A Decision Support Framework for Automated Building Systems Response to Mitigate Occupant and Facility Impacts from Chemical and Biological Agents, *Angela Waterworth, Pacific Northwest National Labs, Richland, WA*

4. A Study of Hazardous Agent Propagation in an Office Building to Evaluate HVAC Threat Mitigation Strategies, *Russell Taylor, Ph.D., BEMP, Member, United Technologies Research Center, East Hartford, CT*

Tuesday June 27, 11:00 AM – 12:30 PM, Seminar 45, Room: 201A, The Use of Pollution Control Units and Technologies to Control Grease, Smoke and Odor from Commercial Kitchens, Sponsor: 5.10 Kitchen Ventilation, 5.4 Industrial Process Air Cleaning (Air Pollution Control)

Chair: Derek Schrock, Member, Halton Company, Scottsville, KY

1. Safety Requirements of Pollution Control Units: The Timely Release of New UL8782, *Dwayne Sloan, UL LLC, Research Triangle Park, NC*

2. Pollution Control Technologies: Rising to the Challenge, *Chris Lowell, Member, Air Scrubbers, Sanford, NC*

3. Electrostatic Pollution Controls: Performance and Maintenance Considerations, *Russ Robison, Member, Gaylord Industries, Tualatin, OR*

4. The Use of Ozone Generators in CKV Exhaust, *Mark Tilles, Associate Member, AirMaid/Interzon, Stockholm, Sweden*

Wednesday, June 28, 11:00 AM – 12:30 PM, Seminar 61, Room: 201A, Do You Know What You Are Breathing? Indoor Air Contaminants, Sponsor: 2.3 & 2.4, Chair: Kyung-Ju Choi, Ph.D., Member, Clean & Science, Louisville, KY

1. Fate and Transport of Phthalates in Indoor Environments and the Influence of Temperature: A Case Study, *Chenyang Bi, Associate Member, The University of Texas at Austin, Austin, TX*

2. Impact of Residential HVAC Filters on Indoor Air Quality, *John Zhang, Ph.D., Member, 3M Personal Care Division, St. Paul, MN*

3. Effectiveness of Residential Air Cleaning Devices in Removal of Particulate and Gaseous Pollutants: A Review *Thad Ptak, Ph.D., Member, A. O. Smith Corporation, Milwaukee WI*