



**AGENDA**  
**ASHRAE TC 4.7 ENERGY CALCULATIONS – MAIN MEETING**  
**KCCC ROOM 2215A**  
**KANSAS CITY, MO**  
**TUESDAY, JUNE 25 2019, 6:00 PM – 8:30 PM**

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1. **Reciting of Code of Ethics Commitment and Introductions** (5 minutes) Balbach

Commitment to the ASHRAE Code of Ethics: In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interest.

2. **Call of Voting Members** (2 min) Muehleisen

3. **Accept agenda & approve minutes of previous meeting** (8 minutes) Balbach

4. **Announcements/Liaisons** (5 minutes) Balbach

- Dennis Wessel (Section 4 Liaison)
- Mike Pouchak (Research Liaison)
- Bass Abushakra (Handbook Liaison)
- Nominating ASHRAE Fellows: Haberl

5. **Membership** (5 minutes) Balbach

- Currently have 11 Voting members (up to 18 is allowed)
- Jeff Haberl and Dru Crawley to roll off Jun 30
- Neal Kruis and Alamelu Brooks to roll on on July 1st.
- Provisional Corresponding Members should go to:  
Onebuilding.org, to Subscribe to the TC4.7 Mailing List (TC47-L). Once subscribed, PCM, will stay up-to-date with the TC4.7 business.

6. **TC/TG/MTG/TRG Reorganization** (10 minutes) Balbach

7. **Subcommittee Reports**

7.1 Multiscale Building Energy Modeling (10 minutes) Judkoff

7.2 Data-Driven Modeling (10 minutes) Fontanini

7.3 Simulation and Component Models (10 minutes) Huang / Lee

7.4 Research (15 minutes) Haberl

7.4.1. Research Projects

- Upcoming RTAR's and WS's submission to RAC dates:
  - August 15: for RAC Fall meeting consideration
  - December 15: for RAC Winter meeting consideration
- Completed Projects
- Awarded Projects
- Approved RTAR
- Approved WS
- Returned WS with Comments

- Rejected RTAR to be Revisited
- WS, RTAR, Requests for Co-sponsorship
- New RTAR

7.5 Handbook (10 minutes)	Pruett
7.6 Program (15 minutes)	Kastl
7.7 Historical (5 minutes)	Haberl
7.8 Standards (15 minutes)	Neymark
7.9 Web Site (5 minutes) ( <a href="https://tc0407.ashraetcs.org/">https://tc0407.ashraetcs.org/</a> )	New

**8. Related activities reports (10 minutes)**

SPC 191 Standard for the Efficient Use of Water in Building and Mechanical Systems

MTG IAST, Impact of ASHRAE Standards And Technology On Energy Savings/ Performance

MTG OBB Occupant Behavior in Buildings

MTG.BIM Building Information Modeling

MTG ACR Air Change Rates (Contact Dennis Knight to join this MTG)

TC 1.5 Emerging Technology Applications

TC 2.8 Building Environmental Impacts and Sustainability

TC 4.1 Load Calculation Data and Procedures

TC 4.2 Climatic Information

TC 4.3 Infiltration & Ventilation Requirements

TC 4.5 Fenestration

TC 6.5 Radiant Heating and Cooling

TC 7.5 Smart Building Systems

TC 7.6 Building Energy Performance

TC 9.12 Tall Buildings

Guideline 14

90.1

BuildingSMART (formerly IAI International Alliance for Interoperability)

IBPSA: USA, Canada, World

IEA Annex 66 Occupant Patterns

9. Awards Nomination (5 min)	Balbach
10. New business	Balbach
11. Adjourn	Balbach

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## RESOURCES

### 2020 ASHRAE Winter Conference in Orlando

#### Deadlines/Dates:

**Friday June 7<sup>th</sup>, 2019 - Website Opens for Seminar, workshop, Forum, Debate and Panel Proposals**

**Monday March 18<sup>th</sup> 2019 - Program (Seminar, Forum, Workshop, Debate and Panel) Proposals Due**

**Monday April 22<sup>nd</sup> 2019 - Conference Paper Abstract Accept/Reject Notifications**

**Monday, July 8, 2019 - Revised Conference Papers/Final Technical Papers Due**

**Friday, July 26<sup>th</sup> 2019 - Conference and Technical Paper Final Accept/Reject Notifications**

**Friday August 26<sup>th</sup> 2019 -- Conference and Technical Paper Final Accept/Reject Notifications**

**Friday October 4<sup>th</sup> 2019 - Seminar, Workshop, Forum, Debate, and Panel Accept/Reject Notifications**

**1. HVAC&R Fundamentals and Applications:** 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 Chair: Maggie Moninski - [maggie.moninski@gmail.com](mailto:maggie.moninski@gmail.com)**

**2. Systems and Equipment:** HVAC&R Systems and Equipment are constantly evolving to address the changing requirements of the built environment. Papers and programs in this track will focus on the development of new systems and equipment, improvements to existing systems and equipment and the proper application and operation of systems and equipment.

**Track Chair: Sonya Pouncy - [sonya.pouncy@gmail.com](mailto:sonya.pouncy@gmail.com)**

**3. Refrigeration and Refrigerants:** Refrigeration is a critical element of modern life, from preserving food and medicine to maintaining comfort. With significant changes on the horizon for refrigerant regulations, along with new applications for refrigeration systems being frequently applied, there is more need than ever to understand both the fundamental and advanced concepts and issues related to refrigeration. Papers and programs in this track will focus on refrigerants, refrigerant regulation, refrigeration cycles and refrigeration applications.

**Track Chair: Stephen Idem - [sidem@ntech.edu](mailto:sidem@ntech.edu)**

**4. Cutting Edge Approaches:** This track focuses on novel approaches to HVAC&R systems and buildings due to changing energy, economic, and environmental concerns. Papers and programs will focus on emerging approaches such as the critical Water-Energy nexus, natural/emerging refrigerants and other cutting edge approaches pertaining to HVAC&R systems and buildings.

**Track Chair: Marianna Vallejo - [marianna.vallejo@jacobs.com](mailto:marianna.vallejo@jacobs.com)**

**5. High Efficiency Design and Operation:** Submissions are requested regarding high efficiency design and operation of commercial and residential buildings, including specialty building types.

**Track Chair: Ryan MacGillivray - [ryan.macgillivray@dwel.com](mailto:ryan.macgillivray@dwel.com)**

**6. Big Data and Smart Controls:** This track examines the use of big data, advanced algorithms, occupancy-based control strategies, data mining and other analytical techniques to economically automate buildings. Given the intersection with the larger world of IT, cybersecurity is also a topic of interest in this track.

**Track Chair: Leticia De Oliveira Neves - [leneves@gmail.com](mailto:leneves@gmail.com)**

**7. Ventilation, IAQ and Air Distribution Systems:** This track solicits submissions pertaining to the design, operation and study of ventilation and air distribution systems in residential and commercial buildings. The intersection of these systems with respect to indoor air quality and health effects are also of significant interest for this track.

**Track Chair: Robert Cox - [bob.cox@jacobs.com](mailto:bob.cox@jacobs.com)**

**8. Standards, Guidelines and Codes:** ASHRAE is a leader in the development of standards and guidelines pertaining to the indoor environment; these standards and guidelines are used to shape codes. This track invites submissions pertaining to standards for buildings, HVAC&R systems and IAQ

**Track Chair: Lee Riback - [lee.riback@gmail.com](mailto:lee.riback@gmail.com)**

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## 2020 Summer meeting will be in Austin Texas June 27<sup>th</sup>, 2020 - July 1<sup>st</sup>, 2020.

[Monday, August 12, 2019 Conference Paper Abstracts, Technical Papers and Paper Session Requests Due](#)

[Friday, August 30, 2019 Conference Paper Abstract Accept/Reject Notifications](#)

Monday, December 2, 2019 Conference Papers Due - Submitted for Review Friday, December 20, 2019 Conference Paper Accept/Revise/Reject Notifications

Wednesday, January 8, 2020 Website Opens for Seminar, Workshop, Panel, Debate, Forum and Extended Abstract Proposals

Monday, January 13, 2020 Revised Conference Papers/Final Technical Papers Due

Monday, February 10, 2020 Program (Seminar, Forum, Workshop, Debate and Panel) and Extended Abstract Paper Due

Tuesday, February 18, 2020 Conference and Technical Paper Final Accept/Reject Notifications

Monday, March 2, 2020 Extended Abstracts Accept/Reject Notifications

Monday, March 16, 2020 Debate, Panel, Seminar, Forum, Workshop Accept/Reject Notifications

Friday, May 1, 2020 Upload of presentation open for review

Monday, June 1, 2020 Presentation submissions due

### **CONFERENCE TRACKS FOR AUSTIN SUMMER MEETING**

**Fundamentals and Applications:** Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychometrics, 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. *Rupesh Iyengar Rupesh\_iyengar@yahoo.com*

**HVAC&R Systems and Equipment:** HVAC&R Systems and Equipment are constantly evolving to address the changing requirements of the built environment. Papers and programs in this track will focus on the development of new systems and equipment, improvements to existing systems and equipment and the proper application and operation of systems and equipment. *Ashu Gupta Ashu.energy@gmail.com*

**Research Summit:** Active research, and the exchange of those research findings, are critical to the development of our HVAC&R industry and built environment. The 8th annual research summit invites researchers to share those results, including ASHRAE-sponsored research and research of interest to the ASHRAE community. Researchers are invited to present papers, extended abstracts, seminars, forums or participate in panel discussions. The Research Summit includes a partnership with ASHRAE's archival journal, Science and Technology for the Built Environment. *Kristen Cetin kcerin@iastate.edu*

**Professional Development:** As members of a professional organization, we not only participate for the great value of technical exchange, but also the interpersonal exchange. We recognize that the single greatest strength of our organization is its membership. This track is designed to allow those professionals an opportunity to develop in the areas of presentation skills, leadership, team-building, understanding various business operations, interpersonal skills, etc. In short, the Professional Development Track will cover all aspects of business outside of engineering/technical applications and lends itself to interactive session types such as workshops and forums. **Devin Abellon devin.abellon@yahoo.com**

**Grid-Interactive Efficient Built Environment:** This new track focuses on the effects of industry trends (grid-enabled buildings, demand response, decarbonization, etc.) on system, building and community design practices. Topics include smart building, grid-enabled equipment and appliance, and HVAC design and operation for load flexibility. Topic can also include energy storage (thermal, battery, building mass, etc.), energy recovery (from condenser water or air), time-of-day practices, utility programs, etc. **Vikrant C Aute vikrant@umd.edu**

**Multifamily and Residential Buildings:** Multifamily is one of the fast growth building sectors but has been underserved. Multifamily buildings present challenges and opportunities on energy codes requirements, energy efficiency opportunities, ventilation and air tightness balance, and equality to address low-income multifamily buildings. This track covers programs and papers on best practices, utility and above-code incentive programs, field studies, and codes and standards requirements. This track also welcomes programs and papers for single family housing and other residential buildings. *Sonya Pouncy sonyapouncy@gmail.com*

**Resilient Buildings and Communities:** The cycle of building development, design and construction is moving more rapidly than ever. Key stakeholders in the design and construction process face new challenges of responding to a range of environmental, market and consumer-driven pressures. Increasingly, it is being recognized that "smart" buildings and integrated systems are central to successfully addressing challenges posed by climate change, natural disasters, accidents, disease, and terrorism. Papers and program in this track focus on innovation and exploration related to these challenges and best practices that enable adaptability, resilience and recovery of buildings and communities. **Christine Reinders-Caron christinereinders@gmail.com**

**Zero Energy Buildings and Communities:** Opportunities and Challenges. To address the climate change challenges and carbon reduction needs, zero energy buildings and communities have proven concept in many cases. However these case studies remain a very minor portion of the building stock. This track provides an opportunity to address the challenges and demonstrate opportunities

in a wide range of perspectives. Topics in this track includes integrated design approach, tools and resources to make it easier on zero energy design and operation, innovative and state-of-art technologies and strategies; balance between energy efficiency measures and on-site renewable generation, aggregated scale to achieve zero energy communities and campuses. This track will also cover the topics on policies and regulations, codes and standards and utility programs for adoption and scale up of zero energy buildings and communities .**Raul Simonetti raul.simonetti@carel.com**

**Building Myths:** It is often difficult to present or publish “negative” results where there was no successful outcome of an experiment or study. This often leads to people conducting similar experiments to discover what others knew but never published. This min-track is designated to share the lessons learned from these precious experiences. This mini-track will also identify and test unquestioned assumptions related to the built environment and its efficient operation. **Kimberly Pierson kdpwildcat@gmail.com**