THE RESEARCH & TECHNICAL ACTIVITIES REPORT
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FOR TC/TG/MTG/SSPC CHAIRS, VICE CHAIRS & RESEARCH SUBCOMMITTEE CHAIRS

2019 FALL MEETING
The fall meetings of the Research Administration Committee (RAC), Technical Activities Committee (TAC), Technology Council, and the Board were recently completed with the results below. This report also includes information for RAC's and TAC's upcoming winter meetings.

NEW PROJECTS AWARDED

- **RP-1816**, *Reporting the Energy Use and Heat Gain from Imaging Equipment*; Responsible Committee: **TC 9.6** (Healthcare Facilities); Co-Sponsors: TC 4.1(Load Calculation Data and Procedures) & TC 4.7 (Energy Calculations); Co-Funding: None; Recommended Contractor: Mazzetti; Duration: 18 months; Cost to ASHRAE: $126,200.

- **RP-1838**, *Emerging gas-phase electronic filtration technologies and ASHRAE 145.2 test standard*; Responsible Committee: **TC 2.3** (Gaseous Air Contaminants/Removal Equipment); Co-Sponsors: SSPC 62.1(Ventilation for Acceptable Indoor Air Quality) and SSPC 145.2 (Efficiency and Capacity Test Results for Five Gas-Phase Air Cleaners); Co-Funding: None; Recommended Contractor: Air Chemistry Laboratory Duration: 6 months; Cost to ASHRAE: $31,922.

- **RP-1855**, *Determination of the Impact of Combustion Byproducts on the Safe Use of Flammable Fluorinated Refrigerants;* Responsible Committee: **MTG.LowGWP** (Alternative Lower GWP Refrigerants); Co-Sponsors: MTG member committees; Co-funding: None; Recommended Contractor: Gradient LLC; Duration: 4.5 months; Cost to ASHRAE: $41,000

FUNDED PROJECT EXTENSIONS APPROVED

- **RP-1760** *Update of Clothing Database for Existing and new Western Clothing Ensemble, including Effects of Body Posture and Air Movement;* Responsible Committee: **TC 2.1** (Physiology and Human Environment). Contractor: Loughborough University, U.K.; Original cost to ASHRAE: $168,669; Scope Increase: Project scope increased by $18,400 to include medical garb at request of TC 9.6 (Healthcare Facilities) while test fixture was still in place. New cost to ASHRAE: $187,069.

PROJECTS BIDDING FALL 2019

- **1683-TRP-R** (Re-bid), *Experimental Evaluation of Two-Phase Pressure Drop and Flow Pattern in U-bends with Ammonia - Rebid*; Responsible Committee: **TC 1.3** (Heat Transfer and Fluid Flow); Co-Sponsors: TC 8.4 (Air-to-Refrigerant Heat Transfer Equipment); Co-funding: None; Estimated Duration: 30 months; Estimated Cost to ASHRAE: $150,000; Status: **Re-Bidding now.**

- **1780-TRP-R** (Re-bid), *Test Method to Evaluate Cross-Contamination of Gaseous Contaminant within Total Energy Recovery Wheels;* Responsible Committee: **TC 9.10** (Laboratory Systems); Co-Sponsors: TC 2.3 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment); TC 9.6, Healthcare Facilities; SSPC 62.1, Ventilation for Acceptable Indoor Air Quality; Estimated Duration: 15 months; Estimated Cost to ASHRAE: $200,000; Status: **Re-Bidding now.**

- **1799-TRP**, *Validation of Extrapolation of Performance Rating Test Results for Small Energy Recovery*; Responsible Committee: **TC 5.5**, (Air-to-Air Energy Recovery); Co-Sponsors: None; Co-funding: None; Estimated Duration: 24 months; Estimated Cost to ASHRAE: $200,000; Status: **Bidding now.**

- **1817-TRP**, *Long-term Temperature Change of Ground Heat Exchangers*; Responsible Committee: **TC 6.8** (Geothermal Heat Pump and Energy Recovery Applications) Co-Sponsors: None; Co-funding: None; Estimated Duration: 24 months; Estimated Cost to ASHRAE: $210,000; Status: **Bidding now.**

- **1824-TRP**, *Accounting for the Barometric Pressure Impacts on Psychrometric Performance Testing of Unitary Air-Conditioning and Heat Pump Equipment;* Responsible Committee: **TC 8.11** (Unitary and Room Air Conditioners and Heat Pumps); Co-Sponsors: SSPC 41 (Standard Methods for Measurement); Co-funding: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: $150,000; Status: **Bidding now**

- **1830-TRP-R** (Re-bid), *Experimental Characterization of Aircraft Bleed Air Particulate Contamination;* Responsible Committee: **TC 9.3** (Transportation Air Conditioning); Co-Sponsors: SSPC 161 (Air Quality within Commercial Aircraft); Co-funding: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: $150,000; Status: **Re-Bidding now.**

- **1852-TRP** *Develop Performance Metric, Criteria, and Process to Measure and Predict Speech Privacy in High Performance Buildings;* Responsible Committee: **TC 2.6** (Transportation Air-Conditioning); Co-Sponsors: TC 2.1 (Physiology and Human Environment), TC 4.4 (Building Materials and Building Envelope Performance), TC 9.6 (Healthcare Facilities); Co-funding: None; Estimated Duration: 24 months; Estimated Cost to ASHRAE: $187,000; Status: **Bidding now.**

- **1865-TRP** *Optimizing Supply Air Temperature Control for Dedicated Outdoor Air Systems;* Responsible Committee: **TC 1.4**, (Control Theory and Application); Co-Sponsors: TC 8.10, (Mechanical Dehumidification Equipment and Heat Pipes); Co-funding: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: $180,000; Status: **Bidding now.**

POTENTIAL PROJECTS FOR POSSIBLE BID IN SPRING 2020
A portion of the following twelve tentative research projects (TRPs) will be considered at RAC's Spring meeting for possible bid or re-bid. Bids for all projects released in Spring 2020 are due Friday, May 15th:

Potential Projects to Release for Bid in spring 2020 if ready:

- **1566-TRP-C**, *Equations to Estimate Evaporation Rates from Heated Water Pools in Indoor Recreational Aquatic Facilities;* Responsible Committee: **TC 8.10** (Mechanical Dehumidification Equipment and Heat Pipes); Co-Sponsors: TC 9.8 (Large Building Air-Conditioning Applications); Co-funding: None; Estimated Duration: 24 months; Estimated Cost to ASHRAE: $150,000; Status: **Conditionally Accepted**. Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1703-TRP-C**, *Performance of Vapor Retarder Systems Used on Mechanical Insulation* – Responsible Committee: **TC 1.8** (Mechanical Systems Insulation) – Co-sponsors: TC 10.3 (Refrigerant Piping, Controls and Accessories) and TC 4.4 (Building Materials and Building Envelope Performance); Co-funding: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: $150,000; Status: **Conditionally Accepted**. Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1716-TRP-C**, *Oil Concentration of Field-Installed Liquid Chillers with Flooded Type Evaporators*; Responsible Committee: **TC 8.2** (Centrifugal Machines); Co-Sponsors: None; Co-funding: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: $135,000; Status: **Conditionally Accepted**. Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1718-TRP-C**, *Development of a Method to Determine the Moisture Transport through Roof Shingle System Under Real Conditions;* Responsible Committee: **TC 4.4** (Building Materials and Building Envelope Performance); Co-Sponsors: TC 1.12 (Moisture Management in Buildings), SSPC 160; Co-funding: None; Estimated Duration: 24 months; Estimated Cost to ASHRAE:

$160,000; Status: **Conditionally Accepted**. Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1740-TRP-R** (Re-bid), *Hydrogen Fluoride Capacity of Desiccants;* Responsible Committee: **TC 3.3** (Refrigerant Contaminant Control); Co-Sponsors: TC 3.2 (Refrigerant System Chemistry); Estimated Duration: 9 months; Estimated Cost to ASHRAE: $120,000; Status: **Rebid with revised WS and expanded recommended bidders list.** Zero bids received last time project bid.

- **1789-TRP-R** (Re-bid), *Optical and Thermal Performance of Hollow Glass Block Units*; Responsible Committee: **TC 4.5** (Fenestration); Co-Sponsors: None; Co-funding: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: $197,000; Status: **Rebid with revised WS and expanded recommended bidders list.**

- **1790-TRP-R** (Re-bid), *Distribution of Water Between Vapor and Liquid Phases of Low GWP Refrigerants*; Responsible Committee: **TC 3.3** (Refrigerant Contaminant Control); Co-Sponsors: None; Co-funding: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: $100,000; Status: **Rebid with revised WS and expanded recommended bidders list.**

- **1797-TRP-C** *Assessment of the A/B Toxicity Classification Used in Standard 34;* Responsible Committee: **TC 3.1** (Refrigerants and Secondary Coolants); Co-Sponsors: None; Co-funding: None; Estimated Duration: 10 months; Estimated Cost to ASHRAE: $75,000; Status: **Conditionally Accepted**. Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1831-TRP-C** *Validation of a Test Method for Applying a Standardized Frost Load on a Test Evaporator in a Test Chamber with an Operating Conditioning System* **–** Responsible Committee: **TC 10.7** (Commercial Food and Beverage Refrigeration Equipment) - Co-sponsor: None; Co-funding: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: $170,000; Status: **Conditionally Accepted.** Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1835-TRP**, *Characterizing the Performance of Entrained Flow Stacks* **–** Responsible Committee: **TC 9.10** (Laboratory Systems) - Co-sponsor: TC 4.3 (Ventilation Requirements and Infiltration) and TC 5.1 (Fans); Co-funding: None; Estimated Duration: 24-36 months; Estimated Cost to ASHRAE: $245,000; Status: **Accepted-as-is.** Work with ASHRAE Staff to finalize RFP for bid.

- **1850-TRP-C**, *Evaluation of ASHRAE's Design Day Procedure Against Recorded Weather Data* – Responsible Committee: **TC 4.2** (Climatic Information) – Co-Sponsors: TC 4.1 (Load Calculation Data and Procedures; TC 6.5 (Radiant Heating and Cooling); Co-funding: None; Estimated Duration: 9 months; Estimated Cost to ASHRAE: $60,000; Status: **Conditionally Accepted.**

- **1879-TRP-C**, *Formability Properties of LGWP Refrigerant and Oil Mixtures*; Responsible Committee: **TC 3.4** (Occupant Behavior In Buildings); Co-Sponsors: TC 8.1 (Positive Displacement Compressors); Co-funding: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: $100,000; Status: **Conditionally Accepted -** Clear RAC Approval conditions with RL so project can be considered for bid.

WORK STATEMENTS REVIEWED AND APPROVED OR RETURNED WITH COMMENTS
A total of four work statements were submitted by the TCs for review at the RAC fall meeting. One was accepted-as-is, and Three were conditionally accepted, Zero were returned with comments, Zero were carried-over to the next RAC meeting due to time constraints, and Zero work statements were rejected. See below for the status of each project after this review.

Approved Work Statements:

- **1703-TRP-C**, *Performance of Vapor Retarder Systems Used on Mechanical Insulation* – Responsible Committee: **TC 1.8** (Mechanical Systems Insulation) – Co-sponsors: TC 10.3

(Refrigerant Piping, Controls and Accessories) and TC 4.4 (Building Materials and Building Envelope Performance); Co-funding: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: $150,000; Status: **Conditionally Accepted**. Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1831-TRP-C**, *Validation of a Test Method for Applying a Standardized Frost Load on a Test Evaporator in a Test Chamber with an Operating Conditioning System* – Responsible Committee: **TC 10.7** (Commercial Food and Beverage Refrigeration Equipment) - Co-sponsor: None; Co-funding: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: $170,000; Status: **Conditionally Accepted.** Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1835-TRP**, *Characterizing the Performance of Entrained Flow Stacks* **–** Responsible Committee: **TC 9.10** (Laboratory Systems) - Co-sponsor: TC 4.3 (Ventilation Requirements and Infiltration) and TC 5.1 (Fans); Co-funding: None; Estimated Duration: 24-36 months; Estimated Cost to ASHRAE: $245,000; Status: **Accepted-as-is.** Work with Research Liaison (RL) to clear RAC's conditions so project can bid.

- **1850-TRP-C**, *Evaluation of ASHRAE's Design Day Procedure Against Recorded Weather Data* – Responsible Committee: **TC 4.2** (Climatic Information) – Co-Sponsors: TC 4.1 (Load Calculation Data and Procedures; TC 6.5 (Radiant Heating and Cooling); Co-funding: None; Estimated Duration: 9 months; Estimated Cost to ASHRAE: $60,000; Status: **Conditionally Accepted.**

Work Statements Returned with Comments: **None**

WORK STATEMENTS PREVIOUSLY RETURNED TO TCs
TC/TGs should work with their Research Liaison to respond to written comments on the work statement provided by RAC via letter and revise the work statement appropriately. You can find a copy of the last draft submitted to RAC along with RAC's comments by clicking on the links in the Society's Research Implementation Plan posted on the "Research" page of the ASHRAE website. Please note that topics will be dropped from this plan if the work statement is not approved for bid after four years on the plan. The work statement forms that are now in use by RAC for Society year 2019-2020 can also be found on the "Research" page at **www.ashrae.org/research**

REVIEW OF RESEARCH TOPIC ACCEPTANCE REQUESTS (RTARs)
A total of nine Research Topic Acceptance Requests (RTARs) were submitted by the TCs for review at the RAC Fall meeting. Below is review status on each of the six RTARs.

RTARs Approved:

- **1856-RTAR**, *Moisture Tolerance and Effects in CO2 Refrigeration systems.* – TC 3.3 (Refrigerant Contaminant Control); Co-sponsor: TC 10.6 (Transport Refrigeration); Status: **Accepted with Comments**

- **1858-RTAR**, *Evaluation of HVAC ventilation effectiveness in reducing semi-volatile organic compounds (SVOCs) in indoor spaces*– TC 2.3 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment); Status: **Accepted with Comments** – work with RL to address comments and obtain RL approval to submit WS.

- **1885-RTAR**, *Solar PV Design Guide for the Building Professional Including HVAC and Building Interactions* – TC 6.7 (Solar and Other Renewable Energies); Co-Sponsored by TC 1.9 (Electrical Systems); Status: **Accepted with Comments**– work with RL to address comments and obtain RL approval to submit WS.

- **1886-RTAR**, *Kinetic and Mechanistic Study of the Breakdown and Interactions of HFO Refrigerants*– TC 3.2 (System Chemistry); Status: **Accepted-as-is** – Proceed with drafting WS in coordination with RL.

- **1887-RTAR**, *Energy Use in Indoor Plant Environments* - TC 2.2 (Plant and Animal Environment); Status: **Accepted with Comments** – work with RL to address comments and obtain RL approval to submit WS.

- **1888-RTAR**, *Maximizing efficiency of energy conversion technologies of buildings via exergy-based analysis.* – TC 7.4 (Exergy Analysis for Sustainable Buildings); Status: **Accepted with Comments**; Status: **Accepted with Comments** – work with RL to address comments and obtain RL approval to submit WS.

- **1889-RTAR**, *Graywater use in Healthcare Facilities; determining risk and appropriate design responses* – TC 9.6 (Health Care Facilities); Status: **Accepted with Comments** – work with RL to address comments and obtain RL approval to submit WS.

- **1890-RTAR**, *Minimum flow velocities for purging air and debris from hydronic piping systems* – TC 6.8 (Geothermal Heat Pump and Energy); Status: **Accepted with Comments** – work with RL to address comments and obtain RL approval to submit WS.

RTARs Rejected:

- **1863-RTAR**, *A software-based toolkit for the evaluation of the life cycle energy and greenhouse gas emissions for buildings, building components and equipment* – TC 2.8 (Building Environmental Impacts and Sustainability); Status: **Rejected** – RAC recommends dropping the topic based upon latest draft.

The RTAR form that is now in use by RAC for Society year 2019-2020 can be found on the "Research" page of the ASHRAE website at **www.ashrae.org/research**.

The next submission date for RTARs and WSs is December 15, 2019. The standing RAC submission dates for new and revised RTARs and WSs are as follows each year:

March 15 – RAC Spring meeting consideration in April
May 15 – RAC Annual meeting consideration in June
August 15 – RAC Fall meeting consideration in Sept. or Oct.
December 15 – RAC Winter meeting consideration in January

Therefore, if you get **MMAD** each year, you won't be as frustrated with RAC.

SOCIETY RESEARCH IMPLEMENTATION PLAN
The Society Research Implementation Plan is now being updated following the fall meeting of RAC. New RTARs will be added and tentative research project RFPs will be added or dropped depending upon their bid status. This change to the way the implementation plan is updated necessitated that time limits be placed on how long a topic can remain on the plan without being approved for bid. The fall updates to the plan should be in place by **December 1, 2019** or sooner. Please review the latest draft of the Implementation Plan posted on the ASHRAE "Research" page to see if any topics your TC is sponsoring are in danger of being dropped from the plan.

DEADLINES
The following deadlines apply for the next several months. Please recognize that they are not arbitrarily set but are set to meet subsequent events. So, if you miss them, your input may be delayed for six months or in some cases, for a year. All research submissions should be sent to the Manager of Research and Technical Services (MORTS), Mike Vaughn, (morts@ashrae.net).

December 1, 2019	Applications for the SY 20-21 *ASHRAE New Investigator Award* are due to MORTS.
December 3, 2019	Innovative Research Grant (IRG) Pre-proposals are due to MORTS for RAC consideration at the 2020 winter meeting.

December 15, 2019	Nominations for the ASHRAE SY 19-20 *Homer Addams Award*, which is given to graduate students assisting in current or recently completed ASHRAE sponsored research projects, are due to MORTS. Award includes $5,000 honorarium.
December 18, 2019	TC/TG/MTG/TRG Chairs receive SY 20-21 roster update web portal link information for roster update completion.
February 1, 2020	ASHRAE 2020 winter conference begins in Orlando, FL

OTHER NEWS:

A. ANNOUNCEMENTS

1. **Research Project Funding Approval Limits Increased for RAC and TechC**
RAC can now approve on their own research projects up to $150,000 instead of $100,000. Technology Council can now approve on their own research projects up to $250,000 instead of $200,000. Any projects over $250,000 will now require ASHRAE Board approval. This change not only accounts for inflation over the last 10 plus years, but also help to address Initiative #3 Organizational Streaming of the new 2019-2024 ASHRAE Strategic Plan.

2. **2019-2020 Innovative Research Grant (IRG)**
RAC reviewed at the annual meeting in KC a total of four full proposals for the 2019-2020 *Innovative Research Grant* and the grant was awarded to Dr. W. Travis Horton from the Purdue University Dr. Horton will use the IRG grant funds to further develop a *Surface De-Icing in Heat Pump Fins by Local Morphing concept*. Potential funding from ASHRAE for this grant is $125,000 spread over a three-year period.

   To learn more about the IRG program, please go to the ASHRAE Research page www.ashrae.org/research – Pre-proposals for the SY 20-21 IRG are due December 3, 2019.

4. **TAC Approved the formation of the following new Committees in Kansas City:**

   - **Title: MTG – CEA (**Controlled Environment Agriculture) – **NEW!**
   Scope: MTG.CEA will coordinate TC/TG/TRG technical activities related to the design of indoor plant production facilities and their HVAC&R systems. The priority of the MTG will be coordinating communication and opportunities between and through each of the involved committees to align and provide an ASHRAE society stance and direction for the development of plant production facilities. There is an ASABE standard in development, X653, which focuses on environmental conditions for indoor plant production facilities. This ASHRAE MTG will help guide designers, engineers and owners on how to best design and select the HVAC&R systems and equipment given the conditions in that standard. The MTG would ensure that aspects related to energy efficiency, efficacy, and selection of optimum HVAC&R systems are well understood within ASHRAE.

     MTG.CEA will bring together expertise from various ASHRAE groups and from other non-ASHRAE organizations (see below) to work in close collaboration to achieve the following objectives:
     - ✓ Consolidate existing and newly issued scholarly and non-scholarly literature related to indoor plant production facility design, equipment and systems with specific impact and specification of HVAC&R;
     - ✓ Ensure vetted research and developments are integrated into existing ASHRAE publications such as handbooks, guidelines, guides and standards;
     - ✓ Develop and maintain technical online resources on ASHRAE's website regarding indoor plant production facility design, equipment and systems;
     - ✓ Provide opportunities for new, potentially co-funded, research and development on how to design and select systems and equipment in an indoor plant production facility; and
     - ✓ Communicate the tangible and non-tangible benefits of including indoor plant production facility design, equipment, and system criteria and requirements to ASHRAE's current design, construction and operational and maintenance practices.

   - **Title: MTG – RAC** (Refrigeration and Air Conditioning Plant Assessment Guide) – **NEW!**
   Scope: The MTG.RAC will coordinate and oversee the creation of an ASHRAE/UNEP Guide for Refrigeration and Air-Conditioning (RAC) Plant Assessments. The Guide aims to be an international reference for the safe and sustainable operation and maintenance of air-conditioning and refrigeration plants, with special focus on developing markets. The Guide is to form the basis of tools that will verify compliance to recommended practices that can be

verified through a point-based qualification or verification scheme. The work will be a cooperative effort with United Nations Environment due to the critical need for such guidance in the developing world with availability of UNEP funding to offset authoring expenses.

The work of this MTG will be to oversee the compiling best practices related to the following areas for the operation and management of air-conditioning and refrigeration systems/plants:

- ✓ Safe storage and proper handling of refrigerants
- ✓ Periodic leak checking and proper documentation
- ✓ Checklists for maintaining equipment to extend life and ensure energy efficient operation
- ✓ Fault detection and preventative maintenance (PM)
- ✓ Proper commissioning and recommissioning practices to optimize system performance
- ✓ Minimum required servicing equipment and tools
- ✓ Proper disposal of equipment and reclamation of refrigerant at end of product life.
- ✓ Competencies of personnel/companies responsible for operating and/or maintaining the refrigeration and air-conditioning plants.

5. TAC Approved the Following TC Title and Scope Changes in Kansas City

- **Title: TC 1.10, Combined Heat and Power Systems, change their scope as shown below:**

  Scope: TC 1.10 is concerned with combined heat and power (CHP) systems, their cycles and components including heat recovery, combustion turbine inlet cooling (CTIC), energy conversion and system integration. The systems provide both electrical/mechanical power ~~(electric and/or mechanical)~~ and cooling/heating thermal energy ~~(heating and/or cooling)~~ and are ~~variously~~ also known as cogeneration systems; trigeneration systems; ~~combined heat and power (CHP);~~ and combined cooling heating and power ~~(CCHP)~~ systems.

- **Title: TC 6.10, Fuel and Combustion, change their scope as shown below:**

  Scope: TC 6.10 is concerned with the properties of conventional, alternative and waste product fuels and the characteristics important to their utilization for heating, refrigeration and air conditioning. These characteristics are the combustion process, including combustion air supply and venting combustion products, ~~pollution~~ emissions from the combustion of fuels, and the operation of fuel burning equipment.

A few other committees are discussing merges or changes to their structure including TC's 3.1, 3.2, 3.3, 3.8, 5.4, 6.3. 6.10, 8.8, 9.4, 9.8, 10.3 & MTG.OBB.

6. 19-20 Society Year TC Email Position Aliases

The SY 19-20 Email Alias list is accessible on the TC webpage under the heading Procedures, Forms & Information for TCs/TGs/MTGs and TRGs. The list includes the position holder's name and position e-mail aliases for all required TC positions on all TCs plus position e-mail aliases for most standing committees and ASHRAE staff liaisons.
https://www.ashrae.org/communities/committees/technical-committees

B. REMINDERS & REQUESTS

1. 19-20 Roster Access & Distribution

By now, each TC, TG and MTG chair should have received a PDF of their new 2019-2020 roster from their Section Head or staff for distribution to the committee. In addition, each member can view all the rosters of their committees on the ASHRAE Website. Log-in to the ASHRAE website at http://www.ashrae.org/myactivecommittees, (if you have not logged in lately, you might need to set up a new username and password). Click on the "blue" "roster" text on the right side of the

committee page to reveal the roster in various file formats. Make sure everyone on your committee also knows how to access the roster online

2. **Option for TC Subcommittee Meetings via Conference Calls and Web Meetings**
More and more TCs are taking advantage of a new Society service that allows TCs to hold subcommittee meetings by phone and/or web. Many TCs are finding this to be a more efficient way for them to conduct subcommittee business and it also allows TC members that can't travel to meetings on a regular basis a way to still contribute to the TC. Such a change can also eliminate potential conflicts with the TC's program sessions at Society meetings. Please pass your conference call/web meeting/webinar requests on to the Manager Technical Services, Steve Hammerling, at shammerling@ashrae.org or MOTS@ashrae.net .

3. **CEC Standing Request for Program Track Suggestions for Future Society Meetings**
The Conferences and Expositions Committee (CEC) oversees ASHRAE's annual and winter conferences and other specialty conferences and expositions globally. The CEC continually works to improve the conference experience for all attendees.

   Please submit your suggestions to ASHRAE Staff member Tony Giometti (Giometti@ashrae.org).

   Program Focus at Orlando Winter Conference – February 1-5, 2020

   - **Track 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

   - **Track 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

   - **Track 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

   - **Track 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

   - **Track 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

- **Track 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

- **Track 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

- **Track 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

Program Focus at Austin, TX Annual Conference – June 27 – July 1, 2020

- **Track 1. 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.
  Track Chair: Rupesh Iyengar

- **Track 2. 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.
  Track Chair: Ashu Gupta

- **Track 3. 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.
  Track Chair: Kristen Cetin

- **Track 4. 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.
  Track Chair: Devin Abellon

- **Track 5. 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.
  Track Chair: Vikrant C Aute

- **Track 6. 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.
  Track Chair: Sonya Pouncy

- **Track 7. 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.
  Track Chair: Christine Reinders-Caron

- **Track 8. 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.
  Track Chair: Raul Simonetti

- **Track 9 Mini-Track. 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.
  Track Chair: Kimberly Pierson

C. UPCOMING WORKSHOPS, CONFERENCES AND EVENTS – 2019

1. **7th International Conference on Energy Research and Development** – Nov. 19 to 21, State of KUWAIT - https://www.ashrae.org/conferences/topical-conferences/7th-international-conference-on-energy-research-development

2. **2019 Buildings XIV International Conference** – Dec. 9 to 12, 2019 at the Sheraton Sand Key in Clearwater, FL USA - https://www.ashrae.org/conferences/topical-conferences/2019-buildings-xiv-international-conference

3. **Indoor Environmental Quality Performance Approaches** – September 14-16, 2020 - Athens, GREECE - https://www.ashrae.org/conferences/topical-conferences/indoor-environmental-quality-performance-approaches

D. AWARDS TO RECOGNIZE TC VOLUNTEERS FOR THEIR TC WORK

2019-2020 Hightower Award Nomination Process and Deadline
Nominations for the 2019-2020 George B. Hightower Technical Achievement Award were due to your Section Head by September 1, 2019. The award recognizes outstanding technical leadership and contributions on a TC/TG/TRG during the past four years, excluding research and standards activities. Please go to the Technical Committee page of the ASHRAE website at the following link under the "Procedures and Forms…" heading: http://www.ashrae.org/tcs Status: **One nomination submitted this year for this award. Award will now be presented at Annual Meeting.**

2019-2020 Service to ASHRAE Research Award Nomination Process and Deadline
Nominations for the 2019-2020 Service to ASHRAE Research Award for TC volunteer efforts in research are due to RAC research liaison by September 1, 2019. Please go to the Research page of the ASHRAE website at the following link under the "Research Grants and Awards" heading: http://www.ashrae.org/research; Status: **No nominations submitted this year for this award.**

TC Chairs - please review your roster in the coming months to see if any names jump out that are deserving of recognition for their volunteer efforts on the TC and work towards submitting their names as a nominee for one of these two awards next September 1st.

Please let us know if we can be of any other assistance.

Sincerely,
Mike Vaughn & Steve Hammerling