



				H. Sheinman
				E. Ballachey
				K. Sweeney
				T. Mathson
				T. Wheeler
				K. Shifflet
				L. Brown
				Gordon Sharp
				Brad Cochran
				John Varley
				Lou Hartman
				B. Fullerton
				G. Isherwood
				K. Khankari
				G. Sestak
				B. Valbracht
				K. Monteiro
				M. Malkin
				R. Seidl
				G. Shamshoian

**DISTRIBUTION**

*All Members of TC/TG/TRG plus the following:*

<i>All Members of TC/TG/TRG plus the following:</i>	
TAC Section Head:	
TAC Chair:	
All Committee Liaisons As Shown On TC/TG/TRG Rosters:	
Standards liaison	
Manager of Research & Technical Services	

Research liaison	
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### **1. Call to order 3:30**

Traci Hanegan called the meeting to order. Quorum is met, 15 of 18 members are present.

### **2. Introductions**

All present introduced themselves and were invited to sign the attendance sheet.

### **3. Membership Update (Guy Perreault)**

All interested in becoming a corresponding member should give their card to, Traci, Guy or Brad Cochran with their ASHRAE number or go directly online and enter their name to become provisional corresponding member.

### **4. Approval of previous minutes**

Minutes from the St-Louis meeting were emailed previously.

Minutes from the St-Louis meeting were reviewed.

Kelley Cramm moves to approve the minutes. Robert Weidner seconds

Minutes approved 12 for, 0 against, 0 Abstain (Some voting members arrived later this is why there are not 15 votes total)

### **5. Section Head Report (Traci Hanegan)**

- A column should be added to the sign-up sheets for TCs, asking if members are registered for the conference or not.
- Look for mentorship opportunities for YEA members
- The Air Change Rate MTG has been formed. Kishor Khankari is the chair.
- Free access online to ASHRAE's *Science and Technology for the Built Environment* research publication. Log into ashrae.org and use the blue bar drop-down menu *Resources & Publications*.

## **6. Program Subcommittee (Carol Donovan)**

- See report in the attachments (see attached minutes)

## **7. Research Subcommittee (Bob Weidner)**

See attached subcommittee minutes.

## **8. Handbook Subcommittee (Lou Hartman)**

## **9. Standards (Gaylon Richardson)**

See attached subcommittee minutes.

George Sestak mentions that Standard 100 should be included because it addresses certain types of labs.

## **10. Lab Classification Subcommittee (Adam Bare)**

See attached subcommittee minutes. Documents in progress from the committee are available on the TC9.10 Website

## **11. Laboratory Energy Efficiency (Eric Ballachey)**

See attached sub-committee minutes.

## **12. Journal (Roland Charneux)**

- No specific articles in the last few months relative to laboratories.
- Roland mentions that he can help if anyone wants to publish something in the ASHRAE Journal.

## **13. Laboratory Design Course ( John Varley)**

- John mentions that there were 62 participants for the course
- There is a webinar scheduled for October.
- There are requests for other courses related to labs
- Charles Henck mentions that PBC can help to prepare a new course. There is financial support to prepare the course as well as for giving the course.

## 14. Liaison Reports

TC 1.4 Control Theory and Applications – (Jim Coogan reported)

- The Standard 195 MOT for Air Terminal Unit Controls, is being revised. We need some more members to participate. Especially designers, commissioning people or people who own buildings.

TC 2.2 Plant and Animal Environment (Henry Hays - absent)

- No report

TC 4.3 Ventilation Requirements and Infiltration (Martin Stangl reported)

- RTAR on demand based ventilation, not necessarily specific to labs.
- RTAR on dispersion modeling related to plume rise
- RTAR on entrained flow

TC 4.10 Indoor Environmental Modeling (no Report)

- Need for liaison

TC 5.1 Fan Design and Application

- DOE for fan efficiencies

TC 5.3 Room Air Distribution (Gaylon Richardson reported)

- Standard 113 – testing to be done in a mock up or manufacturer's lab.

TC 5.8 Industrial Ventilation

- TC 5.8 will become a subcommittee TC 9.2
- Discussions of renaming TC 9.2

TC 7.6 Building Energy Performance (Patrick Carpenter reported)

- Nexus of water performance . There are discussion to include water with the energy consumption. Considering that labs are high energy and water users.

-

#### TC 7.7 Test and Balance (Gaylon Richardson)

- Standard 111 for review

#### TC 7.9 Building Commissioning (Wade Conlan)

- Commissioning track in Long beach to be considered

#### TC 9.2 Industrial Air Conditioning

- See TC 5.8 report

#### TC 9.6 Healthcare Facilities (Traci Hanegan reported)

- EHC reaffirmed the airborne infectious diseases position document
- To help contact Erica Stewart
- Look at requirements in std 170, specific to labs.
- They will provide a report in LongBeach
- They are looking for models that support ventilation rates, they have a google doc to share information. The link will be on the TC9.6 website.
- Gaylon R. asks if the 0.01 is still the threshold . Traci mentions that the design is more than 0.01 but the alarm is set at 0.01

#### TC 9.11 Clean Spaces (Wei Sun reported)

- The Clean Space Design Guide will be in the bookstore for Apri;
  - The document is about 500 pages

#### MTG on Air change rates

- TCs are the members of MTG not individuals. Kishor is chair, Adam Bare and Roland Charneux are also involved.

#### SSPC 62.1 Ventilation for Acceptable Indoor Air Quality (Nathan Ho reported)

- New working group for animal facilities for human occupants.
- Animal shelters,
- Vet clinic

SSPC 90.1 (Jason Atkinson reporting)

- 90.1 admits that labs are not the type of buildings modeled but they still issue requirements for labs. E.g. energy recovery

SMACNA (no report)

NFPA 45 (David Raush)

- Comments are due on February 25<sup>th</sup> . Review due in April

NSF (no report)

ISPE (no report)

AIHA Z9.5 (Jim Coogan reported)

- Z.95 is due to be released this year. They will try to do a quick revision.

I2SL (Gordon Sharp reported)

- Lab accelerator program (Better Building Alliance – typically for other building types ) to reduce the energy consumption. They want to include labs. Federal Program to recognize the efforts of energy reduction. I2SL will be in Boston, October 15-18<sup>th</sup>.

## **15. Old business (Roland Charneux)**

- No old business

## **16. New business**

- Future main meeting time
  - It is proposed the Lab – energy Efficiency 1 :00 pm
  - Std
- Std. 110 subcommittee meeting
- Design Guide – 3<sup>rd</sup> Edition
  - The target is to get a new revision within 3 years.
- Guest speaker – Vince Sakrida on Resiliency.
- George Sestak – Awards chair for TC9.10.
  - George Sestak is willing to coordinate and present recommendations for awards for recognition for the work done in the committee. (Distinguished Service, Exceptional Service, Fellow...)
  - Guy Perreault to send the latest roster to George

- beQ request. – Wade Conlan
  - Building eQ is teaming with APA to build a database of information that can be used to evaluate energy performance of various types of labs.
  - TC 9.7 volunteered for their type of buildings.
  - (G Sharp) Labs21 has bench marking by type of labs presently.
- WES 1573 in Executive Session
- TAC want to know how many people attend TC and are not registered.

## **17. Main Meeting adjourn at 5:25.**

- **Executive session meeting to discuss and vote WES 1573**
  - No minutes
- **Executive session adjourn at 6:10**

# ASHRAE TC 9.10 Program Subcommittee

Las Vegas

Tuesday, 3:30 – 5:30

Verona (PRO)

## Program Updates

CEC is implementing the 3 strike rule for Summer 2017 at Long Beach. If presentations, etc are uploaded after the deadline the speaker will automatically get a strike. 3 strikes and the speaker will not be allowed to speak for 2 years at ASHRAE.

Debate and Panel Discussion are new to Long Beach. Similar to a seminar or forum and will have the same timeline. No formal presentation or learning objectives are required. Hot topics or issues, can be 60 or 90 minutes.

Over half of the programs submitted to Vegas got rejected. Very competitive program.

## 2017 Winter Conference - Las Vegas

No.	Type	Title	Chair/Back-up	Abstract Submitted
1	Short Course Sunday 3:30-6:30	Laboratory Design: The Basics and Beyond	John Varley	

2	Seminar 15	Do the Users Follow the Model	Guy Perreault
	Sunday	TC-9.10	
	1:30-3:00		
3	Seminar 70	New Lab Ventilation Design Guide	Roland Charneux
	Wednesday		
	9:45-10:45		

**2017 Summer Conference, June 24-28, Hyatt Regency, Long Beach, CA.**

Long Beach Deadlines

- 2/6/17 Seminar, Forum, Debate, Panel Abstracts are due
- 2/10/17 Revised Conference Papers are due
- 2/28/17 Program slots are finalized
- 3/20/17 Program notifications are sent acceptance/rejection
- 5/1/17 Presentations are open for uploading
- 6/2/17 Deadline for all presentations
- 6/24/17 Conference begins

**Speaker Registration Fee**

For the 2017 Annual Conference in St. Louis, Speaker registration fees and policies will apply. Speakers will receive a 75% discount off the regular conference registration. Authors are required to attend the conference to present their papers in order for their papers to be published.

**Long Beach, CA TRACKS:**

- **Track 1: Fundamentals and Applications**

**Track Chair: Frank Schambach**

**Email: [frankschambach@mindspring.com](mailto:frankschambach@mindspring.com)**

It's back to the basics! This track provides the foundation for design and construction of HVAC&R components and their application. This track seeks papers and programs of varying levels to provide

discussion on theories, models, designs and shared experiences. Topics may range from fan laws and psychometrics to room air distribution and heat transfer and much more.

- **Track 2: HVAC&R Systems and Equipment**

**Track Chair: Jennifer E. Leach**

**Email:** [pennst8jen@yahoo.com](mailto:pennst8jen@yahoo.com)

What system and equipment are best for my building? Selection of equipment and design of systems is critical for effective HVAC&R operation and usually has more than one right answer. This track will provide engineers, designers, contractors, owners and building operators the tools to properly design, select and operate traditional, non-traditional and hybrid equipment and systems. The papers and programs within this track may range from basic concept to the technical analysis of system performance.

- **Track 3: Refrigeration**

**Track Chair: Vikrant Aute**

**Email:** [vikrant@umd.edu](mailto:vikrant@umd.edu)

The refrigeration cycle is a key component to our daily needs, as it is used for thermal comfort, food storage, creating ice and medicinal needs. There have been numerous improvements and changes to refrigeration systems and refrigerants to accommodate the increased system efficiency and reduce environmental impact. This track seeks papers and programs that address the wide range of developments and applications of refrigerants, including alternative lower-GWP refrigerants, variable refrigerant flow applications, refrigerant management and food storage.

- **Track 4: Building Life Safety Systems**

**Track Chair: Robert Alan Neely**

**Email:** [alan\\_neely@pghcorning.com](mailto:alan_neely@pghcorning.com)

Building life safety systems are critical in commercial facilities to protect building occupants from fires and power outages. This track focuses on building egress, fire protection systems, fire alarms, emergency lighting, fire and smoke barriers, and special hazard protection and describes key factors to consider when designing these life safety systems. Papers and programs are sought to evaluate design strategies for the life safety systems noted above along with building specific life safety systems, such as gas detection systems, kitchen ventilation and smoke evacuation systems, etc.

- **Track 5: Controls**

**Track Chair: Melanie Derby**

**Email:** [derbym@ksu.edu](mailto:derbym@ksu.edu)

This track will explore smart building systems and how they can be incorporated into commercial facilities to help reduce energy consumption and improve occupant comfort. As owners and designers incorporate more controls systems with web and cloud access into buildings, there is a concern that this allows more opportunities for hackers to gain access into sensitive and confidential databases. The

track will include programs about effective building controls, integration of multiple building systems (ie HVAC, lighting, security, water consumption, etc), along with measures to keep this information safe, while maintaining the flexibility of remote control/access of building systems.

- **Track 6: Commissioning: Optimizing New and Existing Buildings and their Operation**

**Track Chair: Dennis Alejandro**

**Email:** [denzjac@yahoo.com](mailto:denzjac@yahoo.com)

High efficiency building systems come at a cost, and after the owner's initial investment it is important to verify that the system components are operating as the designer intended. Secondly, the systems need

to be operated properly to reach and maintain the system efficiency levels. This track seeks papers and programs providing lessons learned and recommendations for successful commissioning projects. This track also seeks case studies of existing buildings with a retro-commissioning plan to reduce energy consumption and evaluate the payback of these modifications.

- **Track 7: Net Zero Energy Buildings: The International Race to 2030**

**Track Chair: Jason DeGraw**

**Email:** [jason.degraw@nrel.gov](mailto:jason.degraw@nrel.gov)

Title 24 and Architecture 2030 have ambitious goals for all commercial buildings in California to be Net Zero Energy (NZE) by the year 2030. This track will assist the design team and owners to evaluate various systems (including HVAC, building envelope, lighting, domestic water and renewable energy system), design strategies, construction measures and building operation to achieve NZE. The programs within the track will also explore the advancing code and regulations that countries around the world are implementing to reduce building energy consumption.

- **Track 8: Residential Buildings: Standards Guidelines and Codes**

**Track Chair: Kimberly Pierson**

**Email:** [kdpwildcat@gmail.com](mailto:kdpwildcat@gmail.com)

ASHRAE is known for its standards and design guidelines and their evolution to improving the built environment and its systems. This track will inform designers, contractors and owners of the current requirements and upcoming changes to ASHRAE's low-rise residential guidelines: Standard 90.2, Standard 62.2 and Guideline 24. This track also seeks papers and programs for cutting-edge residential systems and the incorporation of ASHRAE standards in the design.

- **Track 9: Research Summit**

**Track Chair: Ann Peratt**

**Email:** [ann.peratt@gmail.com](mailto:ann.peratt@gmail.com)

The fifth annual Research Summit brings together distinguished researchers to present the latest research results. Papers are requested on the following topics: 1) building science research that

address the performance of buildings systems and occupant usage and 2) renewable energy research and its impact as we move towards net zero energy buildings.

**Conference Program Chair: Ann Peratt**

Email: [ann.peratt@gmail.com](mailto:ann.peratt@gmail.com)

**Long Beach Program Ideas**

No.	Type	Title	Chair/Back-up	Abstract Submitted
1	Seminar	Laboratory Commissioning CO-sponsor with TC 7.9	Wade/Carol	
2	Seminar	Controls – Standard 195	Jim Coogan/	
3	Seminar	Smart Labs – UCI / Labs21 / DOE	Gordon Sharp	
4	Seminar, 2-3 speakers	Labs – Air Change Effectiveness (TC 5.3 – Std 129)	Tom Smith	
5	Paper Session, 2-3 speakers	Test Procedures for Lab Controls Results from Manufacturers	Gaylon Richardson	
6	Forum	Mandated Variable Volume Exhaust	Victor Neuman	

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## **Chicago – Winter 2018 TRACKS:**

### Chicago Deadlines

- 3/1/17 Conference Paper Abstracts due
- 7/2/17 Program Submission opens - Seminar, Forum, Debate, Panel
- 7/7/17 Conference Papers are due
- 8/1/17 Program abstracts due – Seminar, Forum, Debate, Panel finalized
- 8/28/17 Program time slots are finalized
- 9/6/17 Program notifications are sent acceptance/rejection
- 12/1/17 Presentations are open for uploading

- **Track 1: Systems and Equipment**

**Track Chair: Carrie Anne Crawford**

**Email:** [carriecrawford@eeace.com](mailto:carriecrawford@eeace.com)

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**

**Email:** [kmarple@benzco.com](mailto:kmarple@benzco.com)

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**

**Email:** [corey.metzger@resourcece.com](mailto:corey.metzger@resourcece.com)

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**

**Email:** [ashish.rakheja@aeonconsultants.in](mailto:ashish.rakheja@aeonconsultants.in)

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**

**Email:** [dimitris@ashrae.gr](mailto:dimitris@ashrae.gr)

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**

**Email:** [leneves@gmail.com](mailto:leneves@gmail.com)

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 Furrantello**

**Email:** [j.furrantello@gmail.com](mailto:j.furrantello@gmail.com)

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 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**

**Email:** [vikrant@umd.edu](mailto:vikrant@umd.edu)

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**

**Email:** [gcdebes@verizon.net](mailto:gcdebes@verizon.net)

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

**Conference Program Chair: Michael Collarin**

**Email:** [Michael.Collarin@parsons.com](mailto:Michael.Collarin@parsons.com)

**Future ASHRAE CONFERENCES**

<b>Year</b>	<b>Winter</b>	<b>Annual</b>
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<b>2017</b>	Jan 28-Feb 1 – Las Vegas, NV	Jun 24-28 – Long Beach, CA
<b>2018</b>	Jan 20-Jan 24 – Chicago, IL	Jun 23-27 – Houston, TX
<b>2019</b>	Jan 12-16 – Atlanta, GA	Jun 22-26 – Kansas City, MO

DRAFT

## TC 9.10 Research Subcommittee – 1-29-17 Meeting in Las Vegas - AGENDA

1. Introductions/List of Attendees
2. Work Statement Status:
  - a. RP 1573 – SF6 Replacement Gas – Bob W.
3. RTAR Status:
  - a. RTAR 1780 (Test Method to develop a Methodology to Evaluate Cross Contamination of Gaseous Contaminants within Total Energy Recovery Devices) – Roland C.
4. New RTARS to be pursued:
  - a. Survey of sources of contamination in existing labs – Roland – looking for an RTAR Champion
  - b. Future RTAR - Defining and characterization of air-change effectiveness in labs – On Hold – Tom Smith; IH Funding
  - c. New RTAR Topics that need to be written:
    - i. What types of exhaust devices should be used based on capture effectiveness and/or capture efficiency for personnel safety: Fume Hoods, Snorkels, BSC's, Canopy's, Etc. – Literature search or research? How to test risk factors?
    - ii. Determination of minimum flows for capture of contaminants within hood and ducts.

## TC 9.10 Handbook Subcommittee – 1-31-17 Meeting in Las Vegas - Minutes

### 5. Attendees

Brook Stout  
So-Yeng Chen  
John Garret Neubauer  
Roland Charneux  
George Isherwood  
Wade Conlan  
Jarvis Penner  
John Castelvechi  
Bob Weidner  
Brad Cochran  
Ken Kuntz  
Matt Gaedtke  
George Sestak  
Gordon Sharp  
Traci Hanegan  
Eric Ballachey  
Guy Perreault  
Martin Stangl  
Kevin Sweeny  
Alex Gagnon  
Brendan Dingman  
Gary Shamshoan

### 6. The publication schedule was reviewed

- a. Early TC approval Winter meeting 2018
- b. Late approval Summer meeting 2018

It was generally agreed that we will plan on having an approvable chapter available for the Summer 2018 meeting

### 7. The use of the on-line editing tool was discussed and it was agreed that handling the chapter revision process thru email was preferred.

### 8. A general discussion of chapter issues occurred and the following comments were collected

- a. Consider including Lab Classification material
- b. Dilution vs. displacement ventilation
- c. Energy reduction opportunities
- d. Life safety/fire dampening of exhaust systems
- e. Design guide coordination
- f. When is a scrubber required
- g. High temperature & humidity sensitive labs

DRAFT

TC STANDARDS SUBCOMMITTEE MINUTES

TC9.10 – Laboratory Systems

January 29, 2017

3:00 PM, Caesar's Convention Center, Las Vegas, Nevada

In Attendance: 28 persons were present. Gaylon Richardson chair.

Adam Bare	Eric Ballachey	Ken Kuntz
Brad Cochran	Traci Hanegan	Bredon Dingman
Brendon Burley	Victor Neuman	George Sestak
Gordon Sharp	Harris Sheinman	Jason Atkisson
Peter Gardner	So Yeng Chen	Roland Charneux
Carol Donovan	Kevin Sweeney	Vincent Sakraida
Jarvis Penner	Jim Coogan	Stefan Bangarts
Kelley Cramm	Bob Weidner	Jeff Gatlin
Gary Shamshoian	Patrick Carpenter	Martin Stangle

**Standard 90.1**

No report. Suggested a standard 90.5 be developed for labs

**ASHRAE 110**

No Report

**Standard 62.1**

No Report

**ASSE Z-9.5**

Under revision. Next publication in 2017. Tom Smith, Brad Cochran, Gordon Sharp and Victor Newman are part of the committee. Jim Coogan reported a lot of nothing has been done. Dee Crocks is the new chair. Due 2017

**I2SL**

Following a survey on the knowledge of HVAC maintenance and operation personnel it seems that

complexity of systems outpaced the competence of maintenance people. I2SL is in the process of developing 4 levels training : High level executive, Stakeholders, Maintenance personnel and Operating personnel.

### **European EN-178**

ASHRAE should look to harmonize standard 110 with European Fume Hood testing standard. Nothing done since the last meeting.

### **SEFA**

No Report

### **Lab Exhaust Standard 24**

Developed by Victor Neuman and has requested TC 9.10 members review the document.

### **New MTG developed to Establish Air Change Rates**

DRAFT

**ASHRAE TC 9.10**  
**Lab Classification Subcommittee Meeting**  
Las Vegas Winter Conference  
Sunday, January 29<sup>th</sup>, 2017  
5:15 – 6:00 p.m.

Meeting Minutes:

Attendees:

Adam Bare Martin Stangl  
Brooks Stout  
Brad Cochran Carol  
Donovan Roland Charneux  
Sharp Gary Shamshoian

Eric Ballachey Harris  
Sheinman John Garrett  
Neubauer  
Gaylon Richardson Gordon

Victor Neuman Margaret  
Peterson Patrick Carpenter  
Jeff Bethke So-Yeng Chen  
Jarvis Penner

1. Recap of recent activities:

- Continued Laboratory Classifications subcommittee online meetings: attendees include members from ASHRAE, AIHA EH&S, and ACS CCS
- A smaller sub-group is working on the proposed guideline
- A draft of the proposed guideline is close to ready for subcommittee review
- The current guideline title: “Classification of Ventilation Safety Design Levels for Laboratories”; this is still being evaluated

2. Discussed how the proposed guideline is intended to be applied: ☐

- The proposed guideline will describe how the lab will be designed
- An EH&S professional must perform a laboratory safety risk analysis to determine what VSDL applies to each space, AND what air change rates are appropriate

3. Tom Smith is chairing an AIHA committee that is tasked with developing a guideline for performing risk assessments for laboratories. The goal is for the AIHA & ASHRAE guidelines to complement each other, and be used hand-in-hand.

4. Next steps ☐ Continue monthly online meetings

- The smaller editing group will continue to revise/refine the proposed guideline, to produce a draft that is ready for subcommittee review, and then the larger TC 9.10 committee.

Coordinate with ASHRAE regarding the steps needed to proceed with publication

**ASHRAE TC 9.10 Laboratory Systems  
Las Vegas  
Tuesday February 1<sup>st</sup>, 2017  
Meeting Minutes**

**ENERGY EFFICIENCY SUB-COMMITTEE MEETING MINUTES**

ASHRAE TC 9.10 – Laboratory Systems

ASHRAE Winter Conference – Las Vegas, Nevada,

Caesar’s Palace - Verona – January 31<sup>st</sup>, 2017 - 1:30 pm to 2:30 pm

Sub-Committee Chair: Eric Ballachey    18 Attendees

Martin Stangl	Lou Harmon	Brooks Stout
So-Yeng Chen	John Garnett Neubauer	Wade Conlan
Mary Foutz	Brad Cochran	Ken Kuntz
Gordon Sharp	Matt Gaedtke	George Sestak
Traci Hanegan	Brendon Dingman	Guy Perreault
Nathan Ho	Jarvis Penner	David Surminski

- Review of mission statement from St. Louis: No comments. Adopted as is until further notice.

*The ASHRAE TC 9.10 Laboratory Energy Efficiency Subcommittee promotes existing energy efficient measures and provides guidance and resources on new and innovative methods of designing energy-efficient laboratories while maintaining safety. The subcommittee will be a forum for providing energy efficiency strategies for laboratories and liaise with other groups within and outside of ASHRAE regarding energy efficiency issues. These strategies will be delivered in the form of articles, short guidelines, design tools, or other.*

- Lab Energy Efficiency Design Guidelines: No further submissions since St. Louis. Asked and received renewed commitments from various potential contributors, including Brad Cochran, Gordon Sharp, Guy Perreault, Ken Kuntz, Nathan Ho, Martin Stangl, and Roland Charneux. Asked sub-committee on opinions on how to maintain engagement between Conferences - will set up some version of a Go-To meeting scheduled for the first few days of March and another in mid-May for group participation. I am willing to take care of editing and formatting if individuals already have papers or presentations. Still looking for support for graphics, if anyone has libraries of graphics that they or their company can allow us to use. (Jarvis Penner and Ken Kuntz have offered thus far).

***Current suggested topics:***

Enthalpy wheels vs DX Loops – Intermediate - Energy Recovery

Occupancy Sensors in Labs – Intermediate – Strategies

Laboratory Air Change Rates – Basic/Intermediate/Advanced – Strategies

Using Fume Hood Diversity – Basic – Strategies

**ASHRAE TC 9.10 Laboratory Systems**  
**Las Vegas**  
**Tuesday February 1<sup>st</sup>, 2017**  
**Meeting Minutes**

Static Pressure Setpoint Reset – Intermediate - Controls  
Exhaust fan type and selection for best efficiency – basic/intermediate –hardware  
Fume hood retrofit (T. Smith)  
Decoupling heat loads and ventilation loads (N. Ho)  
Evaluation of plug loads  
Lower face velocity/pressure in air handlers (specific requirements for labs (N. Ho)  
VAV System sensitivity in large systems (T. Smith)  
Pressure set point reset (G. Perreault)  
Trim and response strategy  
Retro-commissioning specific to laboratories  
Open sash alarms and sash closers  
Combination sashes  
High efficiency mixed flow fans (N. Ho)  
Use the chilled water return to cool high load rooms with fan coils  
Higher delta T (R. Charneux)  
What would be the best typical lab (P. Carpenter)  
Liquid heat recovery dessicant

- Mark Hyndman has requested someone replace him as Standard 90.1 liaison. Jason Atkinson has accepted to become the new liaison.