

**ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes**

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.**

**1791 TULLIE CIRCLE, N.E./ATLANTA, GA 30329
404-636-8400**

TC/TG/TRG MINUTES COVER SHEET

(Minutes of all TC/TG/TRG Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/TRG NO	9.10	DATE	February 5, 2014
TC/TG/TRG TITLE	Laboratory Systems		
DATE OF MEETING	January 21, 2014	LOCATION	New York City

Members Present	Year Apptd	Members Absent	Year Apptd	Ex-officio members and additional attendance
Wade Conlan	2014	Kelley P Cramm	2017	Carol Ann Donovan
Roland Charneux	2017	Gerhard Knutson	2017	Robert H Weidner
Fred Lorch	2014	Gordon Sharp	2016	Guy Perreault
Gaylon Richardson	2014			Jim Coogan
So-Yen Chen	2016			Kenneth W Kuntz
John O Varley	2016			Lloyd Lee
Adam Bare	2015			Jason A Atkinson
John P Castelvechi	2017			Andy Bosscher
Brad C Cochran	2015			Patrick Carpenter
Carl A Crow	2017			Charles W Coward
Peter Gardner	2014			Mary Foutz
Traci Hanegan	2015			Jeffrey Hardin
Charles Henck	2017			Henry Hays
Ginger Scoggins	2015			Nathan Lewis Ho
Mitchel Swann	2014			Kishor Khankari
				William A. Kumpf
				Davor Novosel

**ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes**

				Michael Ratcliff
				David Rausch
				Wei Sun
				Ronald L. Wendorsky
				William Tschudi
				Glenn Friedman
				Andrew Wengerd
				Tim Walsh
				Christine Reinders
				Alexis T Gagnon
				Steven Snyder
				Jeff Ewin
				Jarvis Penner
				Lesley Hermann
				Timothy Walsh
				Takaharu Saegusa

DISTRIBUTION

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

<i>All Members of TC/TG/TRG plus the following:</i>	
TAC Section Head:	Thomas Lawrence
TAC Chair:	William F McQuade
All Committee Liaisons As Shown On TC/TG/TRG Rosters:	Donald L Brandt Jay D Cederberg
Standards liaison	Cecily M. Grzywacz
Manager of Research & Technical Services	Michael R. Vaughn
Research liaison	Kishor Khankari

**ASHRAE TC 9.10 Laboratory Systems
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Tuesday June 21, 2014
Meeting Minutes**

1. Call to order 3:30

Wade Conlan called the meeting to order and established a quorum with 15 voting members present out of 17 + 1 non quorum.

2. Introductions

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

3. Membership Update (Guy Perreault)

All interested to be corresponding members should give their card to Wade, Roland or Fred with their ASHRAE number.

As of 01 July 2014, the following voting members become corresponding: Wade Conlan, Fred Lorch, Gaylon Richardson, Pete Gardner, and Mitch Swann.

As of 01 July 2014, the following members become voting members: Jim Coogan, Bob Weidner, Carol Donovan, Charles Coward, Henry Hays, and Mark Hydeman.

As of 01 July 2014, the following visitors become corresponding members: Jake Edmonton, Christine Renders, Alexis Gagnon, Steve Snyder, Jarvis Penner and Ken Kuntz.

As of 01 July 2014, Roland Charneux will become Chair, Fred Lorch will become Vice-Chair, and Tracy Hanegan will become Secretary.

4. Approval of previous minutes (Fred Lorch)

Minutes from the Denver meeting were reviewed.

Email address problems are as follows: So-Yeng Chen, Ron Petersen, Jeff Beeden, Vitthal Shah, Kevin Sweeney and Carol Donovan. Carol Donovan and So-Yeng Chen have been resolved. Ron Petersen and Jeff Beeden will be dropped. Vitthal Shah and Kevin Sweeney remain to be resolved.

Gaylon Richardson moved to accept the minutes.

Roland Charneux seconded.

Motion passed. (14-0-0 CNV)

5. Announcements from Technical Activities Committee (Wade Conlan)

Society is seeking Hightower Award nominations

Outstanding TC award created for best TC in section. Scoring criteria developed. Will implement in 2015.

Members can request to become Provisional Corresponding Members by emailing Tara Thomas at TThomas@ashrae.org. Include your membership number in your email. New Provisional Corresponding Members can be added at any time.

ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes

Each TC chair shall request all members review the ASHRAE code of Ethics. Go to <https://www.ashrae.org/about-ashrae>

Updated TC/TG/MTG information continuously posted on ASHRAE website. Go to <https://www.ashrae.org/standards-research-technology/technical-committees>

ASHRAE meeting app for smartphones available on the app store

New MTG: MTG.HDCG. Hot Climate design guide development. Group is to publish Hot Climate Design Guide. Frank Mills of TC 9.6 to chair

TC members are encouraged to volunteer with the Conferences and Expositions committee to review papers for ASHRAE and sponsored conferences.

TC members need to update Bio's by July 1 with new Employment Discipline information. Email was sent to assist and remind TC members.

TC's are encouraged welcome guests and encourage more engagement in TC activities.

6. Program Subcommittee (Carol Donovan)

New York meeting – January 18 - 24, 2014

- | | | |
|--------------|---|-------------------------|
| Workshop 1 | Chemical Laboratories Classification | Roland Charneux chaired |
| Seminar 24 | Vital Information Input for your BAS to Make the Laboratory Environment Safer and More Energy Efficient | Jim Coogan chaired |
| Short Course | Laboratory Design: Basics and Beyond | John Varley chaired |

Seattle meeting: June 28 to July 2, 2014

Website: www.ashrae.org/seattle

Schedule:

- September 23, 2013 – Conference Paper abstracts due
- September 23, 2013 – Technical Papers due for review

Tracks:

1. Research Summit: Seeks papers that report on HVAC&R research with particular emphasis on high performance building design and its role in a clean energy economy, and brings together researchers to present and discuss the latest research. Papers describing ASHRAE related research are encouraged as well as papers from societies and associations worldwide.

ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes

2. The Indoor Environment – Health, Comfort and Productivity: This track seeks papers highlighting the state of knowledge of the balance of environmental health and energy efficiency in buildings and research directions. The complex relationship between indoor and outdoor environmental conditions, coupled with the impacts of climate change, requires buildings that are comfortable and healthy for the occupants yet also energy efficient..
3. Ground Source Heat Pumps State of the Art: Design, Performance and Research: This track requires papers addressing all aspects of design that lead to optimally performing systems in addition to avoiding common pitfalls that lead to poorly performing systems.
4. Installation, Commissioning, Operation and Maintenance of Existing Buildings: This track seeks papers focusing on lessons learned, improvement of process and team communications and efforts to improve the installation, startup, O&M, and commissioning of HVAC systems. With low energy and zero energy buildings becoming more prevalent, there are many issues that will arise with installation, startup, commissioning and operations and maintenance (O&M)
5. Refrigeration: This track has an emphasis on global perspectives on new refrigerants, variable refrigerant flow applications, magnetic bearing compressors and refrigerant management. Papers on non-comfort cooling applications in food preservation and medical cryogenics are sought also.
6. Standards, Guidelines and Codes: This track seeks papers highlighting the application of ASHRAE's standards to practice as well as European (CEN) and ISO standards that support building performance.
7. Professional Skills
8. HVAC&R Systems, Equipment, Fundamentals and Applications

Programs discussed:

Seminar, 2-3 speakers (Co-Sponsor with TC 5.6) Fire/Safety Shut-downs in labs and Resultant Pressurizations Reinhard Seidle to chair

Seminar, 2-3 speakers Fundamentals of Start-up and Commissioning of Laboratories
Carol Donovan to chair

Seminar, 2-3 speakers Laboratory Exhaust Stacks (Co-sponsor with 4.3) Brad Cochran to chair

Workshop/seminar (Co-Sponsor with TC 2.2) What are the air quality parameters relevant to a Demand Controlled Ventilation system for research animal holding space Carol Donovan to chair

ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes

Chicago meeting: January 24 to 28, 2015

Website: www.ashrae.org/chicago

Schedule:

March 15, 2014 – Conference Paper abstracts due

April 19, 2014 – Technical Papers due for review

May 5, 2014 – Conference Paper Abstract Accept/Reject Notifications

June 1, 2014 – Web Site opens for Seminar, Forum, TPS and CPS proposals.

July 9, 2014 - Final Conference Papers submitted for review (Approved abstracts only: please include learning objectives and Q&A)

August 13, 2014 – Seminar, Forum, TPPS and CPS program proposals due. August 12, 2014 - Technical Papers final review due.

September 14, 2014 - Conference Papers Accept/Reject Notifications and Notifications of Seminar and forums

December 7, 2014 – Upload of PPT's begin.

January 7, 2015 – All PPT's due online.

January 18, 2015 – Speaker's Lounge opens.

Tracks:

- 1 Systems and Equipment -The proper selection of HVAC for a job is critical. This track covers considerations for a proper functioning system.
- 2 Fundamentals and Applications - Basic HVAC principles are key in any project. Knowing what they are helps to apply in specific projects. This track covers a broad array of pertinent information.
- 3 Industrial Facilities -Manufacturing and processes can have some different requirements for HVAC. This track explores design and practices for industrial buildings.
- 4 Large Buildings: Mission Critical Facilities and Applications - Facilities like data centers have some different characteristics. This track will look at what is required for these unique applications.
- 5 Energy Efficiency - Energy efficiency is on everyone's mind as energy costs continue to rise. This track will cover an array of considerations to help drive towards net zero energy.

ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes

- 6 Life Safety - This encompasses egress, sprinklers, alarms, emergency lighting, smoke barriers, and special hazard protection. This track gives you the tools for all the factors to consider in life safety and lessons learned.
- 7 Design of Energy and Water efficient Systems -The trend is to green sustainable buildings. This track will look at what works and what doesn't to attain these efficient systems.
- 8 Hospital Design and Codes - Healthcare design takes into account some unique aspects. This track explores design and code requirements to ensure patient comfort.

Programs discussed:

Seminar, 2-3 speakers Fume Hood Controls: Case Studies Gaylon Richardson to chair

Short Course Laboratory Design: Basics and Beyond John Varley to chair

Seminar, 2-3 speakers Fume Hood Controls/VAV Jim Coogan to chair

Atlanta Meeting: June 27 to July 1, 2015

Website: www.ashrae.org/atlanta

Programs discussed:

Current Goal for Atlanta is to present a Mini-conference on Labs including seminars and forum. This will require approximately 10 presentations or 4 sessions (2-1.5 hour sessions and 2-1 hour sessions). Suggested topics are outlined below:

Laboratory Program Ideas:

- 1. Commissioning Research Facilities (with TC-2.2), Understanding hazard and risk, lab classification effort
- 2. Equipment Loads in Labs, Freezers, and refrigerators
- 3. Vivarium Design – TC 2.2
- 4. Lab Users, Safety and sustainability
- 5. Renovation and Retrofit
- 6. Rad Cooling and Chilled Beams
- 7. Lab Ventilation effectiveness
- 8. Exhaust Modeling, heat recovery

**ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes**

Seminar, 2-3 speakers	Lab Classification	Adam Bare to chair	
Seminar, 2-3 speakers	Cxing of BSL-3 laboratories	Pete Gardner to chair	
Seminar, 2-3 speakers	Lab Design/Fume Hood retrofits, Lab renovations		Need chair
Seminar, 2-3 speakers	Vivarium – ACH/environmental parameters, vented cage racks		Need chair
Seminar, 2-3 speakers	Codes/Standards/Guides/I2SL	Jim Coogan to chair	

7. Research (Bob Weidner)

RTAR 1540 Turbulence Intensity at the Fume Hood Face. John Varley found a professor in Taiwan who has done some great research on turbulence intensity at fume hood faces. New RTAR to be written. Work Statement being developed for submission before Seattle.

1573 Work Statement to Investigate a Replacement Gas for SF₆ is almost complete. Mark Hydeman has received a lot of interest from possible bidders, and potential donors. Target to complete work statement is before Seattle.

RTAR 1201 The Effect of Passive and Active Chilled Beams on the Performance of Fume Hoods is on hold pending the results of activity in TC 5.3 Room Air Distribution. RTAR is low priority.

An RTAR for Cross Contamination of Energy Recovery Devices in Laboratory Exhaust Systems is being developed by Roland Charneux and Chuck Coward for Seattle. May meet resistance from 62.1.

An RTAR for Certification of Ductless Fumehoods is being developed by Kelley Gramm and Tom Smith for Seattle. Should be high priority.

An RTAR for the Minimum Flow Rates for Dilution in Fumehoods is being developed by Jim Coogan and Tom Smith for Seattle.

A brainstorming idea for research will be conducted at the Seattle Research Subcommittee. Everyone is encouraged to bring ideas.

8. Handbook (Bob Weidner)

Bob reported for Lou Hartman. Many revisions have been received. Target is to present draft to TC in Seattle for vote.

9. Standards (Gaylon Richardson)

Gaylon Richardson reported for the standards subcommittee.

ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes

Standard 90.1 – A new amendment is being considered to not allow make-up air in kitchens and labs. Wade was contacted by the head of 90.1 Mechanical Subcommittee to form group to review this. Those voting members interested should contact Wade.

ASHRAE 110- Wade reported the public review is over and the committee is reviewing comments.

ASHRAE Std. 62.1 – Nathan Ho reported Addendum K is back out for public review, revised wording so that all laboratory exhaust shall be class 4 unless determined otherwise by an Environmental Health and Safety Professional responsible to the owner. The biggest impact is the change from laboratory exhaust back to laboratory hoods which changes the nature entirely.

Std. 189.2: Adam Bare talked with the 189.3 Chair to find out about the scope of labs.

Std. 90.1 Users Guide – We need to be active in review of next edition. Pat Carpenter will follow up.

New Business

What standard covers carbon filters and ductless hoods? It was noted that NFPA 45 does not allow ductless hoods. Jim Coogan thinks there might be one in France, John Varley will send copy to Gaylon.

Does OSHA have any minimum air change rates for labs? This may be covered in a non-mandatory section that refers to 4 to 8 or 8 to 12 ACH.

Tom Smith volunteered to write a TPS for a standard of test for balance hoods.

GPC-11 Testing HVAC Control Components is being revised contact Gaylon Richardson if you have any suggestions.

SPC-111 Testing and Balancing is being revised contact Gaylon Richardson if you have any suggestions.

10. TC 9.10 Honors One of Its Own.

George Sestak has retired. Wade presented discussion and has inscribed plaque to present to him. A scholarship fund in George's name will be established. A group photo was taken.

11.Design Guide (Henry Hays)

Approaching end of revision, all 18 chapters are on TC ftp site. Target is to have final version ready for approval in Seattle.

12.. Journal (Roland Charneux)

Roland Charneux reported 3 lab related articles (Cutting Edge Renovation of Laboratories on the University Campus, Energy Recovery in Lab Systems, and Botanical Research Lab), were published in the Journal within the last 6 months.

13.Laboratory Design Course (John Varley)

The Design Course was presented at the New York meeting. 49 in attendance.

ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes

14. Laboratory Classification (Adam Bare)

First workshop held in NYC. American Chemical Society has subcommittee working on similar standard. Regular on line meetings will be held.

15. Liaison Reports

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

New Standard (195) on Performance of VAV Terminal Unit Air Flow Controls

TC 2.2 Plant and Animal Environment (Henry Hays reported)

New research project to develop ventilation requirements for laboratory animals, would like input from TC 9.10.

TC 4.3 Ventilation Requirements and Infiltration (Brad Cochran reported)

Research program on separation between intakes and exhausts.

TC 4.10 Indoor Environmental Modeling (No Report)

TC 5.1 Fan Design and Application (Chuck Coward reported)

????

TC 5.3 Room Air Distribution (Fred Lorch reported)

Nothing to report related to TC-9.10.

TC 5.8 Industrial Ventilation (Bill Kumpf reported)

Nothing to report

TC 7.6 (Pat Carpenter reported)

Benchmarking Laboratory Energy Use

TC 7.7 Test and Balance (Gaylon Richardson reported)

Standard 111 being revised

Guideline 11 being revised

TC 7.9 Building Commissioning (No report)

TC 9.2 Industrial Air Conditioning (?? Reported)

?????

TC 9.6 Healthcare Facilities (Traci Hanegan reported)

ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes

Nothing to report related to TC-9.10.

TC 9.11 Clean Spaces (Kishor Khankari reported)

????

SSPC 62.1 Ventilation for Acceptable Indoor Air Quality (Wade Conlan reported)

Addendum K is out for public review in spring of 2014.

SSPC 90.1 (No Report)

SMACNA (No Report)

NFPA 45 (Dave Rausch reported)

First draft for NFPA 45 after public review is being reviewed

NSF (Frank Spevak reported)

Nothing to report related to TC-9.10. The steering Committee will meet at end of May

ISPE (Pete Gardner reported)

Nothing to report related to TC-9.10.

ASSE Z9.5 (Tom Smith)

All standards have switched to ASSE. New Z9.5 has new energy reduction requirements. Z9.14 Biological Safety Cabinets.

I2SL, EPA, DOE (Wade Conlan reported)

Setting up local chapters focusing on laboratories (Denver, Chicago, Boston exist)

Better Building Guidelines (Bill Tschudi reported)

16. Old business (Wade Conlan)

CEC is requesting volunteers for technical reviews of CEC papers. Two types of papers, double blind review for technical papers and single blind review for conference papers.

17. New business

None

18. Evaluation and Status of TC

Wade Conlan reported the TC is doing well.

Design Guide revision in on target.

ASHRAE TC 9.10 Laboratory Systems
New York City
Tuesday June 21, 2014
Meeting Minutes

Have presented and will continue to present short course on laboratory design.

Averaging two programs per meeting.

Standard 110 has gone out for public review, comments are being reviewed.

Work statement for replacement of SF₆ is being prepared.

19. Adjourn 4:46 pm