

**2013 ASHRAE Summer Conference  
Denver, Colorado, June 22-26, 2013**

**Agenda**

**TC 1.1 Thermodynamics and Psychrometrics  
Monday, June 24, 2013, 2:15-4:15pm, Plaza Court 7  
Plaza Building (Concourse Level)  
Sheraton Denver Downtown**

- |   |                        |
|---|------------------------|
| <b>1. Call to Order</b>                           | <b>S.A. Sherif</b>     |
| <b>2. Introductions of members</b>                | <b>All</b>             |
| <b>3. Determination of Quorum</b>                 | <b>S.A. Sherif</b>     |
| <b>4. Chairman's Report and Announcements</b>     | <b>S.A. Sherif</b>     |
| <b>5. Approval of Agenda</b>                      | <b>All</b>             |
| <b>6. Liaison Reports (As they show up)</b>       | <b>Liaisons</b>        |
| <b>7. Approval of minutes from Dallas Meeting</b> | <b>S.A. Sherif</b>     |
| <b>8. Membership/Roster</b>                       | <b>S.A. Sherif</b>     |
| <b>9. Subcommittee Reports:</b>                   |                        |
| <b>a. Research</b>                                | <b>Bill Fox</b>        |
| <b>b. Program</b>                                 | <b>Howard Cheung</b>   |
| <b>c. Handbook</b>                                | <b>Yongfang Zhong</b>  |
| <b>- MTG Low GWP</b>                              | <b>Omar Abdelaziz,</b> |
| <b>d. Standards</b>                               | <b>Roy Crawford</b>    |
| <b>e. Web Site</b>                                | <b>Vikrant C. Aute</b> |
| <b>10. Old Business</b>                           | <b>S.A. Sherif</b>     |
| <b>11. New Business</b>                           | <b>S.A. Sherif</b>     |

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 1.1 DATE January 2013

TC/TG/TRG TITLE: Thermodynamics and Psychrometrics

DATE OF MEETING 01/28/2013 LOCATION Dallas, Texas

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
S.A. Sherif (Chair)	12	Roy Crawford	11	Raymond Rite
James Schaefer	12	Vernon Peppers	12	Patrick Collins
Laura Schaefer	09			Christopher Halford
Bill Fox	11			Art Giesler (Research Liaison)
Hans-Joachim Kretzschmar	11			
		Corresponding members		
		Mark Ahlers	05	
		Chad Bowers	09	
<i>Corresponding members</i>		Robert Braun	05	
Omar Abdelaziz ( <i>Secretary</i> )	08	Ellen Franconi	99	
Howard Cheung	11	Jonathan Douglas	07	
Steven Brown	07	Don Gatley	01	
Stanislav Perencevic	09	Sivakumar Gopalnarayanan	06	
Vikrant Aute	11	Sebastian Herrmann	11	
Tony Jacobi	91	Anna Hueffed	09	
Tom Kuehn	96	Edwin Huestis	11	
		Jason Hugentroth	07	
		Omar Huzayyin	11	
		Edward Keuper	98	
		Sanford A. Klein	02	
		Ness Lakdawala	11	
		Jason LeRoy	99	
		Liping Liu	09	
		Pedro Mago	05	
		Thomas Meyer	07	
		Pavan Naicker	11	
		Nicole C Okamoto	04	
		Jose Perez-Galindo	04	
		Eric Ratts	01	
		Trilochan Singh	95	
		Robert Tozer	97	
		Florian Zink	09	
		Kurt Zoellick	09	

**Distribution**

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

TAC Section Head:	<a href="mailto:SH1@ashrae.net">SH1@ashrae.net</a>
TAC Chair:	<a href="mailto:TACchair@ashrae.net">TACchair@ashrae.net</a>
All Committee Liaisons As Shown on TC/TG/TRG Rosters:	
RAC Research:	<a href="mailto:RL1@ashrae.net">RL1@ashrae.net</a>
Program:	<a href="mailto:PL1@ashrae.net">PL1@ashrae.net</a>
Standards:	<a href="mailto:SL1@ashrae.net">SL1@ashrae.net</a>
Handbook:	<a href="mailto:hbf1@ashrae.net">hbf1@ashrae.net</a>
Chapter Technology Transfer:	<a href="mailto:CTTC1@ashrae.net">CTTC1@ashrae.net</a>

Special Pubs:	<a href="mailto:Mark.fly@ashrae.net">Mark.fly@ashrae.net</a>
Manager Of Standards:	Claire Ramspeck <a href="mailto:MOS@ashrae.net">MOS@ashrae.net</a>
Manager Of Research & Technical Services:	Mike Vaughn <a href="mailto:MORTS@ashrae.net">MORTS@ashrae.net</a>

**Unapproved Minutes**  
**TC 1.1 Thermodynamics and Psychrometrics**  
**Monday, January 28, 2013, 2:15-4:15pm, Majestic 2 (H37)**  
**37<sup>th</sup> Floor, Dallas Sheraton Hotel**  
**400 Olive Street, Dallas, Texas**

**1. Call to Order:**

S.A. Sherif called the meeting to order at 2:15 pm. The attendance sheet (current TC1.1 Roster) was distributed and attendees registered. Sherif asked attendees to introduce themselves. S.A. Sherif reviewed the quorum. Five out of the 7 voting members were present, thus quorum was established.

Laura Schaefer moved to approve the meeting agenda; the motion was seconded by James Schaefer and approved (5-0-0)

**2. Liaison Reports:**

Art Giesler (Research Liaison) indicated that the Board of Directors is developing a new Research Plan and that ASHRAE is soliciting input. He also indicated that the current number of RTARs and WS are low and requested that we submit any if possible.

Victor Penar (Section Head) requested that the TC update its roster and website. Vikrant Aute (Webmaster) was asked to populate the TC website with some content including minutes of meetings and previous activities.

**2. Chair Report and Announcements (see attached Chair's Breakfast notes):**

S.A. Sherif shared notes discussed during the Chair's Breakfast

- George Hightower Award
- YEA mixer on Sunday afternoon
- Roster update
- Training workshop on Sunday discussing MOP updates
- TCs to review ASHRAE's Code of Ethics
- Request TC members to update their biographical information to include the employment discipline
- Dallas meeting hosts the third beta test of electronic & present meeting
- Conference and Exhibit Committee (CEC)
  - New focus on research "Research Summit"
  - Specialty conferences
- Next ASHRAE summer conference will be held in Denver, CO from June 22 – 26<sup>th</sup>, 2013
- Seeking volunteers to expand technical content
- Please welcome new attendees; especially YEA members.

**3. Previous Minutes Approval:**

Laura Schaefer moved to approve San Antonio meeting minutes; the motion was seconded by Bill Fox and approved by the TC (5-0-0).

James Schaefer moved to approve Chicago minutes; the motion was seconded by Laura Schaefer and approved by the TC (5-0-0).

**4. Roster Updates (see attached roster):**

S.A. Sherif discussed the membership updates (starting July 1<sup>st</sup> 2013):

- New voting member: Tom Kuehn, Tony Jacobi, Omar Abdelaziz, Vikrant Aute, and Liping Liu.
- New voting non-quorum: Stanislav Perencevic.
- New Research Subcommittee Chair: Bill Fox.

The chair also indicated that Mr. M. Bruce Herbert has passed away and should be deleted from the roster.

**4. Subcommittee Reports:**

**Research Subcommittee**

Bill Fox discussed current ASHRAE research portfolio:

- ASHRAE is short on RTAR's and projects
- There is currently 62 active research projects
- ASHRAE has streamlined the procedures

- URPs have increased lately and ASHRAE would like to limit them.

**New Research Ideas:**

Howard Cheung discussed a new RTAR topic on studying mass diffusivity of refrigerant in oil. The topic was discussed and Tony Jacobi volunteered to lead the RTAR.

Bill Fox and Omar Abdelaziz are still interested in the Not-In-Kind Refrigeration Technologies; however no update on RTAR was presented.

The upcoming RTAR deadlines are May 15 and August 15 of 2013.

**Program Subcommittee (Howard Cheung)**

For Dallas, TC1.1 had an approved a seminar with the title: “Thermoelectric Cooling: New Applications for an Old Idea,” chaired by Steven Brown.

For Denver, TC1.1 will submit a forum with the title: “Psychrometric Applications in High Altitudes.”

Cheung suggested that we sponsor a “basic” seminar during the winter meetings and an “intermediate” or “advanced” program during the summer conferences.

For January 2014 in New York, TC1.1 will target a seminar about Second Law in HVAC systems from a design perspective. While for Seattle 2014; the TC will submit a program on Thermoacoustic Refrigeration to be chaired by Cheung.

Laura Schaefer moved to approve the current program; the motion was seconded by Bill Fox and approved by the TC (5-0-0).

**Standards Subcommittee (Roy Crawford)**

Roy, Vikrant and Bill will work on developing a new standard “Method of Calculation of Thermodynamic Properties of Moist Air.” One of the visitors indicated that this is important since standards can’t refer to *ASHRAE Handbook: Fundamentals*. Hans-Joachim Kretzschmar indicated that URP 1485 was complete and that ASHRAE is currently selling a library for moist air properties (Lib HU PROP).

Bill will forward the proposal to the TC and S.A. Sherif will ask the Standards Liaison regarding the status of the current standard.

**Handbook Subcommittee (Youngfang Zhong)**

There was nothing to report.

**Website:**

Omar Abdelaziz and S.A. Sherif will send the approved minutes to Vikrant to add more content to the TC website.

**7. Old Business:** None

**8. New Business:** None

**9. Adjournment:** S.A. Sherif adjourned the meeting at 3:37 pm.

Submitted by Omar Abdelaziz

**ASHRAE TC/TG/TRG ACTIVITIES SHEET TC/TG/TRG**

DATE June 2012

TC/TG/TRG NO 1.1 TC/TG/TRG TITLE: Thermodynamics and Psychrometrics

CHAIRMAN: Samuel Sami VICE CHAIRMAN: S. A. Sherif SECRETARY: Omar Abdelaziz

**TC/TG/TRG Meeting Schedule**

Location Past 24 months

- Montreal – June 25-29, 2011
- Chicago, IL – January 21-25, 2012
- San Antonio, TX – June 23-27, 2012
- Dallas, TX – January 27-31, 2013

Location next 24 months

- Winter 2014 – New York, New York; Jan. 18 – 22
- Annual 2014 – Seattle, Wash; June 28 – July 2
- Winter 2015 – Chicago, Illinois; Jan. 24 – 28
- Annual 2015 – Atlanta, Georgia; June 27 – July 1

**TC/TG/TRG Subcommittees**

- Function            Chairperson
- Standards         Roy Crawford
- Handbook         Youngfang Zhong
- Programs         Howard Cheung
- Research         Bill Fox
- Webmaster        Vikrant Aute

**RESEARCH PROJECTS – Current & Past**

<u>Project Title</u>	<u>Contractor</u>	<u>Monitoring Comm. Chair</u>	<u>Report Made</u>	<u>Reported by</u>
TRP – 1460				
URP – 1485	Don Gatley	Ron Nelson	June 2008	

**LONG RANGE RESEARCH PLAN**

<u>Rank</u>	<u>Title</u>	<u>W/S</u>	<u>Approved</u>	<u>To R&amp;T</u>

**HANDBOOK RESPONSIBILITIES**

<u>Year and Volume</u>	<u>Chapter and Title</u>	<u>No.</u>	<u>Deadline</u>	<u>Handbook Sub. Liaison</u>
2013 Fundamentals	1 Thermodynamics		2012	Youngfang Zhong
	6 Psychrometrics		2012	

**STANDARDS ACTIVITIES**

**TECHNICAL PAPERS from Sponsored Research – Title, when presented (past 10 yrs & planned)**

**TC/TG/TRG Sponsored Symposia – Title, when presented (past 10 yrs & planned)**

- Exergy Efficient Systems and Applications for Sustainable Buildings, Long Beach, CA – June 2007
- Exergy: A New Frontier in Green Building Simulation, Long Beach, CA – June 2007
- Psychrometrics at Extreme Conditions; Cincinnati, OH - June 2001
- Thermoeconomics and Second-Law Analysis of HVAC&R Systems; Atlanta, GA - January 2001
- Second-Law Studies of Systems and Processes; Chicago, IL - January 1999

**TC/TG/TRG Sponsored Conference – Title, when presented (past 10 yrs & planned)**

- Exergy as a Measure of Performance and Sustainability (planned), Albuquerque, NM – June 2010

**TC/TG/TRG Sponsored Seminars** – Title, when presented (past 10 yrs & planned)

Thermoelectric cooling new applications for an old idea, Dallas, TX – January 2013

Magneto-Caloric Refrigeration: Are You Attracted to Cool Ideas? Chicago, IL – January 2012

Thermodynamics of Advanced Cycles and Systems, Orlando, FL – January 2010

Thermoeconomics of Net Zero Design, New York, NY – January 2008

Exergy 101 for Beginners, Long Beach, CA - June 2007

Exergy 201 Use it or Lose it, Long Beach, CA - June 2007

Advanced Cycles and Systems, Dallas, TX – January 2007

Advanced Cycles and Systems for Air Conditioning, Refrigeration and Power, Quebec City, Canada – June 2006

Exergy Analysis and Sustainability, Part I: Fundamentals, Quebec City, Canada – June 2006

Soft Cake Yet Not Crusted: Humidity Control and Measurement Challenges and New Technologies at Room, Low, and High Temperature Ranges, Chicago, IL – January 2006

Second Law Analysis and Optimization: Orlando, FL – February 2005

How Second-Law Analysis Can Save You Money; Atlanta, GA - January 2001

**TC/TG/TRG Sponsored Forums** – Title, when presented (past 10 yrs & planned)

Thermodynamics of Biological Systems and Processes (planned); Orlando, FL – June 2009

Thermodynamics of Sustainable Urban Energy Systems; Chicago, IL – January 2009

Humidity Measurements at Extreme Temperatures; Denver, CO – June 2005

**JOURNAL PUBLICATIONS** – Title, when published (past 3 yrs & planned)

Submitted by: Omar Abdelaziz

**Announcements and Reminders for TC/TG/TRG & MTG Chairs  
Dallas 2013**

**1. 2012-2013 Hightower Award Recipient – Lucas Hyman, TC 1.10**

Lucas B. Hyman has provided technical leadership to TC 1.10 (Cogeneration Systems) for more than four years. He has also made very significant technical contributions to TC 6.2 (District Energy) and TC 6.9 (Thermal Storage). Mr. Hyman is the author and instructor of two 3-hour courses on Combined Heating & Power (CHP), both of which were approved by ASHRAE's Professional Development Committee (PDC). He is now developing an on-line course on the same subject. In the last four years Mr. Hyman has authored and co-authored two books, respectively: Thermal Storage Systems and Sustainable On-Site CHP Systems. In that time he has also published one ASHRAE paper and made 13 presentations at ASHRAE conferences, chapters or co-sponsored meetings on a broad range of topics including thermal energy storage, chilled water distribution, sustainability, campus master planning for energy conservation, and hybrid chiller systems.

Mr. Hyman's contributions to ASHRAE technical committees and especially to TC 1.10 in the last four years have been exemplary and make him a well deserving recipient of the George B. Hightower Award.

**2. YEA/TC Mixer Sunday Afternoon in Dallas**

Is your TC in search for new members? If so, please plan to attend the third Young Engineers of ASHRAE (YEA) / TC Mixer at the Dallas meeting on Sunday, 1/27, from 4 p.m. to 7 p.m. in the Sheraton Atrium on the 2nd floor of the Dallas Sheraton Hotel. Food and beverages will be available at this casual gathering as well as ice-breaker games to help get these young engineers of the Society talking with TC representatives at the event.

**3. 12-13 Roster update process and process for adding provisional CMs**

Remember, the current 2012-2013 roster for your TC, TG or MTG is in effect until after the June meeting this year. The new committee rosters for Society year 2013-2014 will be created based upon the update information that each TC, TG or MTG provides to their section head at **this meeting** by midnight, Tuesday, 1/29/13 and these new rosters will go into effect on July 1, 2013. Please see your section head for the 2013-2014 Roster Update form if you still need a copy.

By now, each TC, TG and MTG chair should have received a PDF & MS-Excel file of their current 2012-2013 roster from their Section Head for distribution to the committee. In addition, each member can view all of the rosters of their committees on the ASHRAE Website. Go to [www.ashrae.org](http://www.ashrae.org) <<http://www.ashrae.org>>, click on the "Membership" tab in the header, click on "Manage Your Membership" text in the left sidebar, and log in (if you have not logged in lately, you might need to set up a new username and password). Click on the "Biographical Record System" link. Now, you should see your current "bio info". Click on "My Committees" on the left sidebar; all of the committees you are a member of will appear. Click on the "blue" roster text at the left hand side of a committee to reveal the roster with linked contact information. Make sure everyone on your committee also knows how to access the roster.

The Provisional Corresponding Member position is a relatively new position on TC/TG/TRG rosters. This position allows potential new members to be added by staff to the committee roster any time a request for membership is made by an individual. The position has a 2-year term on the committee. Staff will notify the chair and reissue a new



roster to the committee any time a provisional member is added. The TC/TG/TRG chair has the option each year during the regular roster update process to convert provisional CMs that have been active participants on the committee the past year into regular CMs or voting members or drop them. If no action is taken, they will time expire from the roster and be removed by staff.

**4. TC/TG/TRG Chair's Training Workshop Reminder**

Sunday January 27 9:45-10:45a in the Dallas Ballroom A3 Room (1st floor) in the Sheraton Hotel convention center. As with the Breakfast meeting, both the Chair and Vice-Chair are expected to attend; attendance will be tracked so that we can assess who has been trained. Bring questions - if you need an answer, it's quite likely others also need the same answer. A main focus of this particular workshop will be the roster update process.

**5. Meeting Procedures updated in TC MOP**

Part 4 – Meetings of the Manual of Procedures (MOP) for ASHRAE technical committees (TCs/TGs/MTGs/TRGs) has been revised to clarify that attendance at technical committee meetings and subcommittee meetings must be open, except as allowed for by executive session procedures, and that an interim meeting is allowed with proper notification. See the following link for the latest version of the TC MOP: <https://www.ashrae.org/standards-research--technology/technical-committees>

**6. Request for each technical committee to review ASHRAE Code of Ethics**

See the following link for the latest version of the ASHRAE Code of Ethics: <https://www.ashrae.org/about-ashrae/> A hardcopy of the ethics is also attached to this document.

**7. New TAC Presentation template for TC members to use with local Chapter**

The new presentation template allows TC members, without a lot of effort, to give a presentation to their local chapter on TAC and the TCs in general and to also customize a few slides with information specific to their own TC or TCs. TAC hopes to roll-out this new presentation to the TCs in Dallas at the TC Chairs' Training Workshop briefly. The template will then be posted to the Technical Committee page of the ASHRAE website for download.

**8. 50% Draft Refrigeration Commissioning Guide Broad Peer Review Underway**

A broad peer review of the Refrigeration Commissioning Guide is underway for the 50% draft and is expected to run through February 6, 2013. The following groups have already been invited to participate in this review, but other groups are welcomed to participate if interested: TC 2.8, TC 7.1, TC 7.6, TC 7.9, TC 8.8, TC 10.1, TC 10.5, TC 10.7, TC 10.8, SGPC 0, and SPC 202. Please contact ASHRAE Special Projects Manager, Lilas Pratt ([lpratt@ashrae.org](mailto:lpratt@ashrae.org)), if your group wishes to participate in this review or future peer reviews of the document.

The Guide will provide how to information on how to apply the commissioning process to commercial refrigeration systems. The guide is targeted to designers, installers, and owners of refrigeration systems and will cover commissioning through all phases of a project: design and planning, construction and installation, start-up and first year operation. The peer review is conducted to help ensure that the information in the guide is useful and applicable to the targeted audience.

9. **Employment Discipline added to ASHRAE BIO Online Input Form**  
 A new input field titled Employment Discipline has been added to the ASHRAE online member (BIO) graphical input form and TAC would like all TC members to self-declare their employment discipline prior to the Annual meeting in Denver by going to the Members Only section  
<https://eweb.ashrae.org/eweb/DynamicPage.aspx?Site=ASHRAE&WebKey=8396a37a-9fc2-4f50-9332-5eebebe73494>) and enter their employment discipline information. The link should take you directly to the screen, which is located under demographics.

You will need your login and password to enter. Employment Discipline is located in the third section.

Employment Discipline	
category:	Government and Organizations ▼
discipline:	Not-for-Profit Organization (USGBC, Habitat, etc.) ▼

Once you have made the necessary updates, save the changes and logout.

**Employment Disciplines:**

Academic

- Academic - Professor/Staff
- Academic – Student

Government and Organizations

- Government - Federal (e.g., DOE, EPA, USDA)
- Government - National Lab (e.g., ORNL, NIST)
- Government - Local (e.g., city or state governments)
- Not-for-Profit Organization (USGBC, Habitat for Humanity, etc.)
- Trade Association (ACCA, SMACNA, etc.)

Building Industry

- Architect
- Building Owner / Management Firm
- Consultant
- Contractor
- Designer
- Facilities Manager/Operator

Manufacturing Industry

- Manufacturer
- Manufacturer
- Manufacturer – Sales
- Manufacturer’s Representative

Other

- Model Code Organization
- Retired
- Utility
- Other

**10. E&P Beta Test #3 TC meetings being Held in Dallas**

The 3<sup>rd</sup> beta test of Electronic and Present (E&P) meetings, which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Dallas and the following TCs have agreed to participate in this test: TCs 1.5, 1.8, 2.2, 5.8, 7.4, 7.9, and 8.8. The chairs of those TCs participating should provide to their Section Head feedback on their E&P meeting experience before TAC meets on Wednesday morning, 1/30.

**11. Opportunity to Comment on AIRAH's *Transition to Low Emission HVAC&R Issues and Solutions* – Public Comment Draft (1/21 to 2/8)**

TCs 2.5, 2.8, 3.1, 3.2, 3.8, and, MTG.LowGWP have been asked to comment on an Australian Institute of Refrigeration, Air-conditioning, and Heating (AIRAH) public comment draft of the above discussion paper. AIRAH has undertaken this project on behalf of the whole of industry to provide a forum or mechanism whereby the transition to low emission HVAC&R practices and technologies can be discussed. The topic is broad and the views are varied and often conflicting. The comment period runs between 1/21 to 2/8. If your TC would also like to comment on this draft document, please contact ASHRAE staff person DD Latham ([dlatham@ashrae.org](mailto:dlatham@ashrae.org)) for additional information and a copy of the paper.

**12. New TC Activity Form**

TAC has developed a new TC activity form that they would like all TCs to use at this meeting to report to their section head. Attached is a copy of this form for your use. Section heads can also provide an electronic copy of the form if requested.

**13. Location of Section Head Mailboxes at this Society meeting & Free WiFi Access at this Society meeting**

Mailboxes are located just outside ASHRAE Headquarters Office (Sheraton Hotel – Level 2 – Press Club Room).

Also, the wireless high speed internet service available in Club Lounge and in public areas of the Sheraton Hotel is complimentary.

**14. Useful TC/TG/TRG/MTG Chair Information and forms on ASHRAE website**

Information for TC/TG/TRG and MTG chairs can be found on the Technical Committee page of the ASHRAE website at the following link: <http://www.ashrae.org/standards-research--technology/technical-committees>

The TC/TG/TRG Manual of Procedures (MOP) has been revised to include a new committee type, Multidisciplinary Task Groups (MTGs). MTGs are different from TCs, TGs, and TRGs. The objective of the MTG is to first try to better coordinate and focus the activities of the affiliated TC and non-TC groups (EHC, REF, SSPCs, outside groups, etc) that make-up the MTG on the task for which the MTG was created without duplicating the functions of a TC or TG so that the task can be completed as efficiently as possible. In special cases, MTGs may also be authorized by TAC to assume some TC/TG functions, such as research, if it is deemed necessary to better complete their task assignment.

Since the need, purpose, and progress of each MTG is reassessed and reaffirmed by TAC each year, there are no term limits for the MTG Chair, Vice Chair, Members and Alternates.

**15. TC Master Calendar – Now Available through Google**

The Technical Committee Master Calendar is now available through Google. In order to access this calendar you need to have a Google account.

Once you log into your Google account, follow the instructions below:

To add a friend's calendar, just follow these steps:

1. At the bottom of the calendar list on the left, click Add and select Add a friend's calendar.
2. Enter the appropriate email address (techservices1791@gmail.com) in the field provided, then click Add.

This calendar is public and will appear under 'Other Calendars' in the left column.

To set up Google Calendar Sync to your Outlook:

1. Make sure you're using a supported operating system and Outlook version.
2. Download Google Calendar Sync (version 0.9.3.6) at [http://dl.google.com/googlecalendarsync/GoogleCalendarSync\\_Installer.exe](http://dl.google.com/googlecalendarsync/GoogleCalendarSync_Installer.exe)
3. Once a dialog box appears, click Save File. The downloaded file should open automatically. If it doesn't, manually open it from your browser's download window.
4. Click OK to confirm that you're aware this is an executable file.
5. Read through the Google Calendar Sync Terms of Service, and click I Agree.
6. Follow through the Installation Options and click Install to finish the set-up process.

Once Google Calendar Sync is installed on your computer, the Google Calendar Sync Settings window will appear:

In the Settings window, enter your email address and password and select the Sync Option you prefer. Read about each Sync Option.

You'll also be able to set the time interval for syncing to occur. Please keep in mind that 10 minutes is the minimum time interval allowed.

After the initial set-up, you can access the Google Calendar Sync Settings window again by double-clicking the calendar icon in your Windows System Tray.

**16. New MTGs that have been formed**

TAC approved the formation of the following new Multidisciplinary Task Group (MTG) at their fall meeting:

**MTG.CCDG – Cold Climate Design Guide Development**

Scope

MTG.CCDG will coordinate TC/TG/TRG technical activities to help support the technical basis, development, and publication of a "Cold Climate Design Guide" in conjunction with REHVA and SCANVAC. Responsibilities include the development of supporting research, presentations, and content for the "Cold Climate Design Guide" special publication.

The chair and vice chair of the MTG are Frank Mills and Bjarne Olesen, respectively.

For more information on this MTG and the six other MTGs, please go to the MTG section on the following web page: <http://www.ashrae.org/standards-research--technology/technical-committees>

If your TC would like to have a voting representative on a particular MTG, please contact the ASHRAE Manager of Research and Technical Services, Mike Vaughn, at [MORTS@ashrae.net](mailto:MORTS@ashrae.net).

**17. TC Volunteers willing to Support Content Development and Quality Control for Society Technical Program at Society Meetings**

Provide to your Section Head after each Society meeting a list of qualified volunteers from your TC that are potential Technical Session chairs and reviewers of session papers that are related to TC's scope for use by the Conferences & Expositions Committee (CEC) in developing technical content for future technical programs.

**18. CEC proposed or recently implemented technical program changes**

TC Program Subcommittee Chair Training in Dallas

Please notify your program subcommittee chair that CEC will be offering training to them as follows in Dallas: Tuesday, 1/29, 11:15 a.m. – Noon, State Room 3, (Third Floor) Sheraton Hotel convention center

Speaker Registration Fee

Beginning with the 2013 Winter Dallas Conference and moving forward for future conferences, a speaker registration fee is being implemented as a part of an overall Society evaluation of registration fees for the purpose of lowering registration fees for attendees at the winter and Annual Conferences. For the 2013 Winter Dallas Conference the following Speaker registration fees and policies will apply:  
\$95 Member/Non-member Speaker Registration Fee

Program Focus on Research Going Forward at Annual Meeting

The Denver Conference will have a special emphasis on research. Some 100 papers have been received for the conference, and seminar proposals on innovations in HVAC&R research are encouraged. Submit by Feb. 11 online at [www.ashrae.org/denver](http://www.ashrae.org/denver). Up-to 25% of the Denver program will be allocated to this effort.

**19. Report on TC/TG/TRG websites in Section (SHs need to report to TCs which sites are not up to date.)**

Is your committee website up to date? If not, please ask your webmaster to at least post the latest minutes and the Dallas meeting times and agenda. If your website has been neglected, add an action item for this meeting to appoint a responsible member of the TC/TG/TRG who will bring it back to life. This form of communication is critical to the efficient operation of your committee, and for attracting new members.

TAC and the Electronic Communications Committee (ECC) recently posted a webinar recording on how to set-up and maintain a basic TC website using the ASHRAE server and TC website template at the following link:

<http://media.ashrae.biz/webinar/TrainingWebinar.avi>

**20. Special effort to welcome new members, and visitors (potential members), particularly international members, to TC meetings**

Potential new members for your committee have been encouraged to drop-by your meeting in Dallas. As a result, please make a special effort to recognize and warmly welcome all visitors to your meeting – A TC can never have too many willing and able volunteers.

**21. 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 of Research and Technical Services, Mike Vaughn, at [mvaughn@ashrae.org](mailto:mvaughn@ashrae.org) or [MORTS@ashrae.net](mailto:MORTS@ashrae.net)

**22. Upcoming Program Dates**

**Denver Meeting - June 22-26, 2013**

- Conference Site Live: January 7, 2013
- Denver Seminar and Forum Session Proposals are due February 11, 2013
- Technical Papers Final Review Due – February 15, 2013
- Acceptance/Reject Notifications issued for Conference papers, Seminars and Forums – March 25, 2013
- All presentation files (PPT) due online – June 3, 2013
- Conference Website: <http://www.ashrae.org/denver/>

**New York Meeting – January 18-22, 2014**

- Conference Paper Abstracts due March 15, 2013
- Acceptance/Reject Notifications issued for Conference papers abstracts – April 5, 2013
- Technical Papers Due for Review – April 19, 2013
- Conference Site Live: June 3, 2013
- Web Site Opens for Seminar and Forum proposals – June 3, 2013
- Final Conference Papers Submitted for Review – July 3, 2013
- Technical Papers final review due August 12, 2013
- New York Seminar and Forum Session Proposals are due August 12, 2013
- All presentation files (PPT) due online – January 3, 2013
- Conference Website: <http://www.ashrae.org/newyork/>

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. To help keep a "pulse" on the technical issues facing professionals in the HVAC&R marketplace, the CEC seeks ideas for tracks for the Dallas and annual and winter conferences beyond as well as topics for specialty conferences from TC members.

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

### 23. Upcoming Workshops and Conferences:

- **ACREX India 2013**, March 7 – 9, Mumbai, India. Endorsored by ASHRAE. Contact [ishrae\\_m@vsnl.net](mailto:ishrae_m@vsnl.net) or [www.acrex.in](http://www.acrex.in).
- **HVACR & Mechanical Conference for Professional Educators**, March 11 – 13, Colorado Springs, CO. Endorsed by ASHRAE. Contact 703-600-0308 or [www.instructorworkshop.org](http://www.instructorworkshop.org)
- **2<sup>nd</sup> IIR International Conference on Sustainability and the Cold Chain**, April 2-4, 2013, Paris, France. [www.iccc2013.com](http://www.iccc2013.com).
- **Architectural Engineering (AEI) Conference**, April 3–5, State College, Pa. Endorsed by ASHRAE. Contact 814-865-6395, [njs1@psu.edu](mailto:njs1@psu.edu), or <http://tinyurl.com/AEI2013>.
- **China Refrigeration Expo**, April 8 – 10, Shanghai, China. Endorsed by ASHRAE. Contact [crexpo@biec.com.cn](mailto:crexpo@biec.com.cn) or [www.tinyurl.com/3us47qv](http://www.tinyurl.com/3us47qv)
- **ASHRAE Webcast, Assessing Building Energy Performance: From Principles to Practice**, April 18. Endorsed by ASHRAE. Contact (678)539-1200, [ashrae-webcast@ashrae.org](mailto:ashrae-webcast@ashrae.org), or [www.ashrae.org/ABEPwebcast](http://www.ashrae.org/ABEPwebcast)
- **International Workshop on Building and Ductwork Airtightness**, April 18 – 19, Washington. Endorsed by ASHRAE. Contact the Air Infiltration and Ventilation Centre at 32 2 655 77 11, [info@aivc.org](mailto:info@aivc.org), or <http://tinyurl.com/ay9owvz>.
- **5th International Conference Ammonia Refrigeration Technology**, May 9-11, 2013, Ohrid, R. Macedonia, <http://www.mf.edu.mk/en/>
- **CLIMA 2013**, June 16 – 19, Prague, Czech Republic. Endorsed by ASHRAE. Contact 420 284 001 444, fax 420 284 001 448, [clima2013@guarant.cz](mailto:clima2013@guarant.cz), or [www.clima2013.org](http://www.clima2013.org).
- **ECOS 2013**, July 16 – 19, Guilin, China. Endorsed by ASHRAE. Contact [ecos2013-china@iet.cn](mailto:ecos2013-china@iet.cn) or <http://tinyurl.com/d6s3gnk>.
- **CIAR XX**, July 22 – 23, Cartagena, Colombia. Endorsed by ASHRAE. Contact [ciar2013@acaire.org](mailto:ciar2013@acaire.org) or <http://tinyurl.com/CIAR2013>.
- **5<sup>th</sup> International Conference – Solar Air Conditioning**, Sep. 25-27, Black Forest, Bad Krozingen, Germany. Endorsed by ASHRAE. Contact: <http://solaircon.com/>
- **CLIMAMED**, Oct. 3 – 4, Istanbul. Endorsed by ASHRAE. Contact 90 3124194571, [ttmd@ttmd.org.tr](mailto:ttmd@ttmd.org.tr), or [www.climamed.org](http://www.climamed.org).
- **IAQ 2013: Environmental Health in Low Energy Buildings**, Oct. 15 – 18, Vancouver, BC, Canada. Contact ASHRAE at 800-527-4723, ext. 1158, [IAQ2013@ashrae.org](mailto:IAQ2013@ashrae.org), or [www.ashrae.org/IAQ2013](http://www.ashrae.org/IAQ2013).

- **11<sup>th</sup> International Energy Agency (IEA) – Heat Pump Conference, May 12-16, 2014, Montreal, Canada.** Contact: [www.iea-hpc2014.org](http://www.iea-hpc2014.org). See attached call for papers pamphlet. Paper Abstracts due April 15, 2013.

**24. NEW ASHRAE Terminology WIKI Launched**

Over 7,500 definitions for terms found in ASHRAE publications can now be seen in the new free ASHRAEwiki, a centralized resource for referencing terminology definitions. Visit [ASHRAEwiki.org](http://ASHRAEwiki.org) for numerous building terms focusing on mechanical, envelope, electrical, lighting, load calculations, design, water design/conservation and more.

<http://wiki.ashrae.org/index.php/ASHRAEwiki>



## **ASHRAE Code of Ethics**

(Approved by ASHRAE Board of Directors January 31, 2007)

As members of ASHRAE, we pledge to act with honesty, fairness, courtesy, competence, integrity and respect for others in our conduct.

Efforts of the Society, its members, and its bodies shall be directed at all times to enhancing the public health, safety and welfare.

Members and organized bodies of the Society shall be good stewards of the world's resources including energy, natural, human and financial resources

Our products and services shall be offered only in areas where our competence and expertise can satisfy the public need.

We shall act with care and competence in all activities, using and developing up to date knowledge and skills.

We shall avoid real or perceived conflicts of interest whenever possible, and disclose them to affected parties when they do exist.

The confidentiality of business affairs, proprietary information, intellectual property, procedures, and restricted Society discussions and materials shall be respected.

Each member is expected and encouraged to be committed to the code of ethics of his or her own professional or trade association in their nation and area of work.

Activities crossing national and cultural boundaries shall respect the ethical codes of the seat of the principal activity.

## THERMODYNAMICS &amp; PSYCHROMETRICS - T-TAC-TC01.01

## Chair

8029499 064 Voting  
Term in Position: 07/01/2013 to 06/30/2015

**Mr James T Schaefer, Jr**

5680 Stousland Rd  
College Station, TX 77845-4209

Phone: (979)595-6243 Fax:  
Email: jts@htri.net

## Vice Chair

8079187 161 Voting  
Term in Position: 07/01/2013 to 06/30/2017

**Dr Omar A Abdelaziz, Ph.D.**

10312 Strathmore Hall St Apt 301  
North Bethesda, MD 20852-6660  
Oak Ridge National Laboratory

Phone: (865)387-0725 Fax: (865)574-9329  
Email: abdelazizoa@ornl.gov

## Secretary

8044982 045 Voting  
Term in Position: 07/01/2013 to 06/30/2017

**Dr Liping Liu, PhD**

24800 Towne Rd Apt 406  
Southfield, MI 48033-3142

Phone: (248)204-2528 Fax:  
Email: lliu1@tu.edu

## Handbook Subcommittee Chair

8018038 050 Non-voting  
Term in Position: 07/01/2011 to

**Dr Yongfang Zhong**

5101 Jordan Rd  
Erie, PA 16563-4206

School of Engineering, Penn State Erie

Phone: (814)898-6798 Fax:  
Email: msyzhong@gmail.com

## Program Subcommittee Chair

8154164 999 Non-voting  
Term in Position: 07/01/2013 to

**Mr Howard Cheung**

Purdue University  
Rm. 32 Ray W. Herrick Laboratories  
140 S Martin Jischke Dr  
West Lafayette, IN 47907-2031

Phone: (765)418-9534 Fax:  
Email: cheung@purdue.edu

## Research Subcommittee Chair

5183572 115 Voting  
Term in Position: 07/01/2013 to 06/30/2015

**Dr William Burgess Fox**

N5882 Park Dr  
Onalaska, WI 54650-9306

The Trane Co

Phone: (608)787-2460 Fax: (608)787-2963  
Email: bfox@trane.com

## Standards Subcommittee Chair

1016897 091 Non-voting  
Term in Position: 07/01/2013 to

**Dr Roy R Crawford, PhD**

University of Texas at Tyler  
3900 University Blvd  
Tyler, TX 75799-6600

Phone: (903)565-5933 Fax: (903)565-9999  
Email: rcrawford@uttyler.edu

## MEMBER NON QUORUM

8102470 999 Voting  
Term in Position: 07/01/2013 to 06/30/2015

**Dr Hans-Joachim Kretzschmar**

Georlitz University of Applied Sciences  
Department of Technical Thermodynamics  
Prof. Hans-Joachim Kretzschmar  
Theodor-Koerner-Allee 16  
Zittau, Germany, D-02763 GERMANY

Phone: +49-3583-61-1846 Fax: +49-3583-61-1846  
Email: hj.kretzschmar@hs-zigr.de

## MEMBER NON QUORUM

8123426 503 Voting  
Term in Position: 07/01/2013 to 06/30/2017

**Mr Stanislav Perencevic**

Hans-Guentner-Strasse 2-6

Fuerstenfeldbruck, BY 82256 GERMANY

Phone: +498141242 (248) Fax: +498141242 (5248)  
Email: Stanislav.Perencevic@guentner.de

## Webmaster

8020971 026 Voting  
Term in Position: 07/01/2013 to 06/30/2017

**Dr Vikrant C Aute, PhD**

University of Maryland  
3151 Glenn Martin Hl  
Dept Of Mechanical Engineering  
College Park, MD 20742-0001

Phone: (301)405-8726 Fax: (301)405-2025  
Email: vikrant@umd.edu

## THERMODYNAMICS &amp; PSYCHROMETRICS - T-TAC-TC01.01

ALI Coordinator  
 83268 086 Non-voting  
 Term in Position: 07/01/2013 to  
**Mr Donald L Brandt**  
 Trane Company  
 7214 S 15th Pl  
 Phoenix, AZ 85042-5633  
 Phone: (602)558-1444 Fax: (602)253-3801  
 Email: dbrandtz@aol.com

Member  
 5019759 050 Voting  
 Term in Position: 07/01/2013 to 06/30/2017  
**Dr Anthony M Jacobi**  
 Univ Of Illinois at Urbana-Champaign  
 Dept Of Mech Sci And Engineering  
 1206 W Green St  
 Urbana, IL 61801-2906  
 Phone: (217)333-4108 Fax: (217)333-1942  
 Email: a-jacobi@illinois.edu

Member  
 408834 052 Voting  
 Term in Position: 07/01/2013 to 06/30/2017  
**Dr Thomas H Kuehn, PhD**  
 University of Minnesota  
 111 Church St SE  
 Mechanical Eng Dept  
 University of Minnesota  
 Minneapolis, MN 55455-0111  
 Phone: (612)625-4520 Fax: (612)625-6069  
 Email: kuehn001@umn.edu

Provisional Corresponding Member  
 8103644 010 Non-voting  
 Term in Position: 10/10/2012 to 10/09/2014  
**Dr Sunil Mehendale**  
 1400 Townsend Dr  
 323 Eerc Building  
 Houghton, MI 49931  
 Phone: (906)487-1663 Fax: (906)487-2583  
 Email: ssmehend@mtu.edu

CORRESPONDING MEMBER  
 8057779 079 Non-voting  
 Term in Position: 07/01/2005 to  
**Mr Mark F Ahlers**  
 802 151st Pl SW  
 Lynnwood, WA 98087-2618  
 Phone: (425)787-7871 Fax:  
 Email: mark.f.ahlers@boeing.com

Corresponding Member  
 8039091 049 Non-voting  
 Term in Position: 07/01/2009 to  
**Dr Chad D Bowers, PhD**  
 2708 Milford Dr  
 Urbana, IL 61802-7691  
 Phone: (217)621-5155 Fax:  
 Email: chad.bowers@creativethermalsolutions.com

CORRESPONDING MEMBER  
 5114504 Non-voting  
 Term in Position: 07/01/2005 to  
**Mr Robert J Braun**  
 United Technologies  
 411 Silver Ln  
 East Hartford, CT 06118-1127  
 Phone: (860)610-7020 Fax: (860)660-8329  
 Email:

Corresponding Member  
 5071762 026 Non-voting  
 Term in Position: 07/01/2011 to  
**Mr Steve Brown**  
 The Catholic Univ Of America  
 620 Michigan Ave NE  
 Dept OF Mechanical Engineering  
 Washington, DC 20064-0001  
 Phone: (202)319-4738 Fax: (202)319-5173  
 Email: brownjs@cua.edu

Corresponding Member  
 5153746 091 Non-voting  
 Term in Position: 07/01/2009 to  
**Mr Jonathan D Douglas**  
 Lennox International  
 1600 Metrocrest Dr  
 Carrollton, TX 75006-5729  
 Phone: Fax:  
 Email: jon.douglas@lennoxind.com

Corresponding Member  
 5135266 073 Non-voting  
 Term in Position: 07/01/1999 to  
**Ms Ellen M Franconi, PhD**  
 Rocky Mountain Institute  
 1820 Folsom St  
 Boulder, CO 80302-5703  
 Phone: (720)253-6104 Fax: (303)567-8609  
 Email: efranconi@rmi.org

## THERMODYNAMICS &amp; PSYCHROMETRICS - T-TAC-TC01.01

Corresponding Member  
 253422 032 Non-voting  
 Term in Position: 07/01/2008 to  
**Mr Donald P Gatley, PE**  
 Gatley & Assocs Inc  
 489 Westover Dr NW  
 Atlanta, GA 30305-3535  
 Phone: (404)355-2848 Fax:  
 Email: gatleyd@bellsouth.net

Corresponding Member  
 5080318 004 Non-voting  
 Term in Position: 07/01/2009 to  
**Dr Sivakumar Gopalnarayanan**  
 United Technologies Res Ctr  
 14651 Dallas Pkwy Ste 500  
 Dallas, TX 75254-8809  
 Phone: (972)983-2438 Fax: (860)353-2014  
 Email: sgopalna@chicagobooth.edu

Corresponding Member  
 8216606 099 Non-voting  
 Term in Position: 07/01/2013 to  
**Dr Christopher Kyle Halford**  
 Oak Ridge National Laboratory  
 180 Waterview Dr Apt 1011  
 Oak Ridge, TN 37830-9068  
 Phone: (865)576-5734 Fax:  
 Email: halfordck@ornl.gov

Corresponding Member  
 8096798 032 Non-voting  
 Term in Position: 07/01/2011 to  
**Mr Sebastian Herrmann**  
 Grosshennersdorfer Str. 5  
 OT Ruppertsdorf  
 Herrnhut, Oberlausitz, HE 02747 GERMANY  
 Universitat Rostock  
 Phone: +49 1725619222 Fax: 493587336716  
 Email: Herrms@web.de

Corresponding Member  
 8125084 056 Non-voting  
 Term in Position: 07/01/2009 to  
**Miss Anna K Hueffed**  
 7116 Trillium Ct  
 Owens Cross Roads, AL 35763-2300  
 Phone: Fax:  
 Email: anna.hueffed@gmail.com

Corresponding Member  
 8182809 999 Non-voting  
 Term in Position: 07/01/2011 to  
**Prof Edwin Michael Huestis**  
 PG&E  
 3400 Crow Canyon Rd Rm 116  
 San Ramon, CA 94583-1308  
 Phone: Fax:  
 Email: EMHk@pge.com

Corresponding Member  
 8004193 060 Non-voting  
 Term in Position: 07/01/2007 to  
**Dr Jason J Hugenroth**  
 Phone: (225)272-2869 Fax:  
 Email: jason.hugenroth@inventherm.com

Corresponding Member  
 8101141 999 Non-voting  
 Term in Position: 07/01/2011 to  
**Mr Omar A Huzayyin**  
 7120 Ruwes Oak Dr  
 Cincinnati, OH 45248-1073  
 University of Cincinnati  
 Phone: (513)556-4950 Fax:  
 Email: huzayyoo@mail.uc.edu

CORRESPONDING MEMBER  
 5059138 Non-voting  
 Term in Position: 07/01/2004 to  
**Mr Edward F Keuper**  
 Trane Company  
 3600 Pammel Creek Rd # 12  
 La Crosse, WI 54601-7511  
 Phone: (608)787-3053 Fax: (608)787-2669  
 Email: ekeuper@trane.com

CORRESPONDING MEMBER  
 2004725 095 Non-voting  
 Term in Position: 07/01/2002 to  
**Mr Sanford A Klein**  
 University Of Wisconsin  
 1500 Engineering Dr  
 Madison, WI 53706-1609  
 Phone: (608)263-5626 Fax: (608)262-8464  
 Email: klein@engr.wisc.edu

## THERMODYNAMICS &amp; PSYCHROMETRICS - T-TAC-TC01.01

Corresponding Member  
 414801 014 Non-voting  
 Term in Position: 07/01/2011 to  
**Mr Ness R Lakdawala**  
 Dectron Inc  
 4300 Poirier Blvd  
 Saint-Laurent, QC H4R 2C5 CANADA  
 Phone: 5143349609 Fax: 5143349184  
 Email: ness@dectron.com

CORRESPONDING MEMBER  
 5113322 091 Non-voting  
 Term in Position: 07/01/2003 to  
**Mr Jason T LeRoy**  
 Trane Co  
 6200 Troup Hwy  
 Tyler, TX 75707-1948  
 Phone: (903)509-7329 Fax: (903)581-3280  
 Email: jason.leroy@trane.com

Corresponding Member  
 7954980 056 Non-voting  
 Term in Position: 07/01/2009 to  
**Dr Pedro J Mago**  
 Mississippi State University  
 Department Of Mechanical Engineering  
 PO Box ME 210 Carpenter Engineering  
 Mississippi State, MS 39762-5925  
 Phone: (662)325-6602 Fax: (662)325-7223  
 Email: mago@me.msstate.edu

Corresponding Member  
 8026342 107 Non-voting  
 Term in Position: 07/01/2007 to  
**Mr Thomas R Meyer**  
 National Environmental Balancing Bureau (NEBB)  
 PO Box 854  
 Neenah, WI 54957-0854  
 Phone: (920)558-4473 Fax: (920)722-4463  
 Email: tom@nebb.org

Corresponding Member  
 8185274 112 Non-voting  
 Term in Position: 07/01/2011 to  
**Dr Pavan Naicker, PhD**  
 322 Wallace Dr  
 Newark, DE 19711-2036  
 DuPont  
 Phone: (302)999-2218 Fax:  
 Email: pavan.k.naicker@usa.dupont.com

Corresponding Member  
 534552 051 Non-voting  
 Term in Position: 07/01/2013 to  
**Dr Ron M Nelson**  
 Iowa State University  
 Black Engineering Bldg.  
 Mech Eng Dept  
 Ames, IA 50011-0001  
 Phone: (515)294-6886 Fax: (515)294-3261  
 Email: ronnn@iastate.edu

Corresponding Member  
 5204189 101 Non-voting  
 Term in Position: 07/01/2006 to  
**Dr Nicole C Okamoto**  
 San Jose State University  
 Mech & Aero Engineering Dept  
 1 Washington Sq  
 San Jose, CA 95192-0087  
 Phone: (408)924-4054 Fax: (408)924-3995  
 Email: nicole.okamoto@sjsu.edu

Corresponding Member  
 8022129 166 Non-voting  
 Term in Position: 07/01/2011 to  
**Mr Jose A Perez-Galindo**  
 Instituto Tecnologico de Durango  
 Felipe Pescador 1830 OTE  
 Durango, 34080 MEXICO  
 Phone: 6188185699 Fax:  
 Email: jose.perezgalindo@gmail.com

Corresponding Member  
 5109482 045 Non-voting  
 Term in Position: 07/01/2009 to  
**Dr Eric B Ratts**  
 Univ Of Michigan-Dearborn  
 Mechanical Engg  
 4901 Evergreen Rd  
 Dearborn, MI 48128-2406  
 Phone: (313)593-4969 Fax:  
 Email: ratts@umich.edu

Corresponding Member  
 5046108 091 Non-voting  
 Term in Position: 07/01/2013 to  
**Dr Raymond W Rite, PhD**  
 7613 Deer Ridge Ln  
 Tyler, TX 75703-5098  
 Ingersoll Rand – Trane  
 Phone: (903)730-4605 Fax:  
 Email: ray.rite@irco.com

## THERMODYNAMICS &amp; PSYCHROMETRICS - T-TAC-TC01.01

Corresponding Member  
 3029646 085 Non-voting  
 Term in Position: 07/01/2012 to  
**Mr S M Sami, PhD**  
 University Of Moncton  
 5650 El Camino Real Ste 225  
 Carlsbad, CA 92008-7147  
 Phone: (760)476-9256 Fax: (760)476-9257  
 Email: doctor.samuel.sami@gmail.com

Corresponding Member  
 5224135 024 Non-voting  
 Term in Position: 07/01/2013 to  
**Mrs Laura A Schaefer**  
 University of Pittsburgh  
 Mechanical Engineering Dept  
 643 Benedum Hall 3700 O'Hara St  
 Pittsburgh, PA 15261-0001  
 Phone: (412)624-9793 Fax: (412)624-4846  
 Email: laschaef@engr.pitt.edu

Corresponding Member  
 2043509 034 Non-voting  
 Term in Position: 07/01/2013 to  
**Dr S A Sherif**  
 University of Florida  
 Dept Of Mech & Aerospace Eng  
 PO Box 116300 232 Mae B Bldg  
 Gainesville, FL 32611-6300  
 Phone: (352)392-7821 Fax: (352)392-1071  
 Email: sasherif@ufl.edu

CORRESPONDING MEMBER  
 683046 Non-voting  
 Term in Position: 07/01/1999 to  
**Dr Trilochan Singh**  
 Wayne State University  
 Mech Engr Dept  
 Detroit, MI 48202  
 Phone: (313)577-3845 Fax: (313)577-8789  
 Email: tsingh@eng.wayne.edu

CORRESPONDING MEMBER  
 2021409 503 Non-voting  
 Term in Position: 07/01/2003 to  
**Dr Robert M Tozer, PhD**  
 HP Critical Facilities Services  
 74 Kelvedon Close  
 London, KT2 5LF UNITED KINGDOM  
 Phone: 447969161294 Fax: 442085472676  
 Email: RobertTozer@dc-oi.com

Corresponding Member  
 8092581 999 Non-voting  
 Term in Position: 07/01/2009 to  
**Mr Florian Zink**  
 University Of Pittsburgh  
 565 Benedum Hall  
 Pittsburgh, PA 15261-2205  
 Phone: (412)624-9766 Fax: (412)624-4846  
 Email: flz2@pitt.edu

Corresponding Member  
 8132429 999 Non-voting  
 Term in Position: 07/01/2009 to  
**Mr Kurt F Zoellick**  
 Phone: (708)502-4536 Fax:  
 Email: kurt.zoellick@gmail.com

TAC Chairman  
 281691 043 Non-voting  
 Term in Position: 07/01/2013 to 06/30/2014  
**Mr Walter T Grondzik**  
 Department Of Architecture  
 Ab 402  
 Ball State University  
 Muncie, IN 47306-0001  
 Phone: (850)322-8343 Fax: (850)893-7414  
 Email: gzik@polaris.net

Section Head  
 3031077 049 Non-voting  
 Term in Position: 07/01/2013 to 06/30/2017  
**Mr Mark C Hegberg**  
 165 N Clinton Ave  
 Elmhurst, IL 60126-2906  
 Phone: (630)306-3650 Fax:  
 Email: mhhegberg@comcast.net

ALI/PDC  
 488214 064 Non-voting  
 Term in Position: 07/01/2013 to 06/30/2014  
**Mr Hugh D McMillan, III**  
 20806 Durand Oak Ct  
 Cypress, TX 77433-5717  
 Becht Engineering  
 Phone: (713)410-4775 Fax:  
 Email: hugh\_mc@mail.ashrae.org

## THERMODYNAMICS &amp; PSYCHROMETRICS - T-TAC-TC01.01

## Chapter Technology Transfer Chair

5104481 008 Non-voting

Term in Position: 08/08/2012 to 06/30/2015

**Mr Alexander Weiss, PE**8 Bergen Beach Pl  
Brooklyn, NY 11234-5743

Alexander Weiss PE

Phone: (718)251-1154 Fax: (718)251-1154

Email: weisseng@gmail.com

## 2017 HANDBOOK FUNDAMENTALS

5187953 075 Non-voting

Term in Position: 07/01/2013 to 06/30/2017

**Mr David P Yuill, PE**3315 S 96th St  
Omaha, NE 68124-2714

Phone: (402)556-3382 Fax:

Email: david@bsiengineering.com

## Research Liaison

259862 070 Non-voting

Term in Position: 07/01/2011 to 06/30/2017

**Mr Arthur L Giesler**

PermAlert ESP

8190 Precinct Line Rd Ste 265  
Colleyville, TX 76034-7675

Phone: (817)239-2234 Fax: (817)503-8878

Email: art.giesler@att.net

## Standard Liaison

5138765 084 Non-voting

Term in Position: 07/01/2013 to 06/30/2014

**Ms Cecily M Grzywacz**2000B S Club Dr  
AFM-601S  
Landover, MD 20785-3228

National Gallery of Art

Phone: (202)842-6813 Fax: (202)842-6934

Email: c-grzywacz@nga.gov

## Standard Liaison

5180423 012 Non-voting

Term in Position: 07/01/2012 to 06/30/2016

**Ms Heather L Platt, PE**PO Box 1031  
Niagara Falls, NY 14304-7031

Seneca Construction Management

Phone: (716)903-3400 Fax:

Email: hplatt@Seneca-SCMCLLC.com

## Staff Liaison

7966801 650 Non-voting

Term in Position: 07/01/2001 to

**Mr Michael R Vaughn**ASHRAE  
1791 Tullie Cir NE

Atlanta, GA 30329-2305

Phone: (404)636-8400 Fax: (404)321-5478

Email: MORTS@ashrae.net