

**American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.**

**MINUTES**

**RESEARCH ADMINISTRATION COMMITTEE**

**HILTON HOTEL  
LAS VEGAS, NEVADA**

**JANUARY 28, 29 & FEBRUARY 2, 2011**

Note: These draft minutes have not been approved and not the official, approved record until approved by the Research Administration Committee.

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**PRINCIPAL MOTIONS  
RESEARCH ADMINISTRATION COMMITTEE  
JANUARY 28 - 29, 2011 & FEBRUARY 2, 2011**

NO.	PAGE	MOTION
1	1	It was moved and seconded that, the draft minutes of the RAC 2010 Tech. Weekend meeting be approved as written.
2	4	The Research Manual be revised as indicated by the suggested edits from John House
3	4	1520-RTAR, “ <i>Literature Search for Current HVAC Design Guidelines for Justice Facilities and/or Standards Worldwide as well as at Federal, State, County, and Local Levels,</i> ” sponsored by TG9.JF, Justice Facilities be <u>rejected</u> .
4	4	1619-RTAR, “ <i>Data Center Gaseous Contamination Limits and Means of Monitoring;</i> ” sponsored by TC 9.9, Mission Critical Facilities, Technology Spaces, & Electrical Equipment be <u>conditionally accepted</u> .
5	4	1630-RTAR, “ <i>Update the Scientific Evidence for Specifying Lower Limit Relative Humidity Levels for Comfort, Health and IEQ in Occupied Spaces,</i> ” sponsored by TC 5.11, Humidifying Equipment be <u>returned</u> .
6	4	1634-RTAR, “ <i>Guide for Sustainable Refrigerated Facilities and Refrigeration Systems,</i> ” sponsored by the Refrigeration Committee be <u>conditionally accepted</u> .
7	5	1635-RTAR, “ <i>Simplified Procedure for Calculating Exhaust/Intake Separation Distances,</i> ” sponsored by TC 4.3, Ventilation Requirements and Filtration be <u>conditionally accepted</u> .
8	5	1636-RTAR, “ <i>Design Evaluation of High Accuracy Relative Humidity (RH) Sensors for Psychrometric Testing,</i> ” sponsored by TC 1.2, Instruments and Measurements be <u>returned</u> .
9	5	1638-RTAR, “ <i>Absorption Refrigeration Cycle Training Simulator for Sustainable Resource Use,</i> ” sponsored by TC 8.3, Absorption and Heat Operated Machines be <u>returned</u> .
10	5	1450-WS, “ <i>Transport of Contaminants from Garages Attached or Integral to Low-rise Residential Buildings;</i> ” sponsored by Standards Special Project Committee SSPC 62.2 - Ventilation and Acceptable Indoor Air Quality in Low Rise Residential Buildings be <u>returned</u> .
11	5	1491-WS, “ <i>Literature and Product Review and Cost Benefit Analysis of Commercially Available Ozone Air Cleaning for HVAC Systems;</i> ” sponsored by Environmental Health Committee EHC be <u>accepted</u> .
12	5	1513-WS, “ <i>Liquid/Vapor Separating Velocities for Industrial Refrigeration Systems;</i> ” sponsored by TC 10.3 - Refrigerant Piping be <u>returned</u> .
13	6	1514-WS, “ <i>Development of a Design Guide for System Integration of Thermal Energy Recovery in Industrial Refrigeration Systems;</i> ” sponsored by TC 10.1 – Custom Engineered Refrigeration Systems be <u>returned</u> .

14	6	1535-WS, “ <i>A Heat Transfer and Friction Factor Correlation for Low Air-side Reynolds Number Applications of Compact Heat Exchangers;</i> ” sponsored by TC 8.4 - Air-to-Refrigerant Heat Transfer Equipment be <u>conditionally accepted</u> .
15	6	1546-WS, “ <i>Expansion and Updating of the Air Diffuser Performance Index Method;</i> ” sponsored by TC 5.3 - Room Air Distribution be <u>conditionally accepted</u> .
16	6	1579-WS, “ <i>Testing and Evaluation of Ozone Filters for Improving IAQ;</i> ” sponsored by TC 2.3 - Gaseous Air Contaminants and Gas Contaminant Removal Equipment be <u>returned</u> .
17	6	1624-WS, “ <i>Effective Energy-efficient School Classroom Ventilation;</i> ” sponsored by TC 2.1 - Physiology and Human Requirements be <u>returned</u> .
18	6	The following 21 students are each the recipient of a Graduate Student Grant-in-Aid grant for the 2011-2012 academic year:
19	7	Grant-in-aid replace ineligible applicants (already graduated) be replaced with next eligible Grant-in-aid applicant on ranked list.
20	7	Dr. Athanasios Tzempelikos of Purdue University is the recipient of the 2011-2012 New Investigator Award.
21	8	Sebastian Herrman is the recipient of the 2011-2012 Homer Addams Award.
22	8	The following 18 top ranked TRPs be released for bid in spring 2011: 1413, 1581, 1584, 1502, 1458, 1565, 1504, 1410, 1499, 1592, 1564, 1603, 1399, 1550, 1495, 1604, 1606, and 1557
23	10	Tentative research project 1580-TRP, “ <i>Study of input Parameters for Risk Assessment of 2L Flammable Refrigerants in Residential Air Conditioning and Small Commercial Refrigeration Applications,</i> ” be awarded to Navigant Consulting, Inc for a period of 12 months at a total cost to ASHRAE of \$250,000.
24	10	Tentative research project 1613-TRP, “ <i>Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals,</i> ” be awarded to Numerical Logistics for a period of 18 months at a total cost to ASHRAE of \$138,477.
25	10	Unsolicited research proposal 1633-URP, “ <i>Data and Interfaces for Advanced Building Maintenance and Operation,</i> ” be awarded to KGS Buildings LLC for a period of 24 months at a total cost to ASHRAE of \$266,570.

**ACTION ITEMS**  
**RESEARCH ADMINISTRATION COMMITTEE (RAC)**  
Winter Meeting January 2011

<b>Action #</b>	<b>Responsibility</b>	<b>Summary of Action</b>	<b>Status</b>
1	House	Implement John's framework for Cross-Cutting, High-Risk, Exploratory research into MOP, Ref. Manual & Research Manual	New
2	Braun/ Vaughn	Implement proposed new RAP/RSP update cycle in ROB, MOP, and Res. Manual using Braun/Spitler framework presented in Las Vegas.	New
3	Henderson, Elmahdy, Domanski	Implement Hakim Elmahdy's framework for reporting application of research results into the Research Manual for consideration and possible approval in Montreal.	New
4	Braun/ Vaughn	Develop proposed ROB/MOP changes to move Model Research agreement to RAC MOP	New
5	House	Email approved Research Manual changes from Las Vegas to staff for web posting and for distribution to all RAC members	Complete
6	Hermans	Forward to AHRI the modified WS 1535 prior to their co-funding commitment withdrawal deadline of June 1, 2011	New
7	House	Review the GIA forms and selection process to determine how student involvement in ASHRAE should be considered and tracked.	New
8	House	Review GIA application and recommend changes if deemed appropriate	New
9	House / Walker	Review NIA scoring criteria and consider implementing a minimum score to ensure a deserving recipient. If implemented, propose procedure changes to incorporate this minimum score into the RAC Reference Manual.	New
10	House/RPS	Review scoring and criteria for NIA and recommend changes if deemed appropriate to focus more weight and attention on candidate's research plan, relationship to ASHRAE, etc..	New
11	Henderson	Forward draft letter of notification that was sent to non-winners of NIA last year to RPS chair so that a similar letter can be sent to this year's applicants.	New
12	Sriram	Consider and possibly propose procedure changes to the Homer Adams award to require all nominations to include an official copy of the student's most recent transcript and to require the student nominee to be the first author on at least one paper that is submitted with or referenced in the nomination package	New
13	Henderson/ Braun	Review TRP ranking system to determine if changes to the procedure, ranking criteria, importance of submission date, point weighting, etc. are warranted.	New

14	Braun	Consider feasibility and implementation of a new contract requirement for ASHRAE research projects to disseminate their results internationally in addition to ASHRAE publications. Options for dissemination could include presentation at a conference outside the U.S. and Canada or publication in an international journal.	New
15	RL's	Update RL reminder spreadsheet based on TC feedback and send to staff prior to March 1, 2011.	Complete

**RECURRING ACTION ITEMS  
(EACH MEETING)**

<b><u>Responsibility</u></b>	<b><u>Summary of Action</u></b>
Chair	Report to Technology Council on RAC's MBO Status.
Research Liaisons	Remind all TC chairs and research subcommittee chairs in section that a draft of all Work Statement and RTARs, and all later versions should be sent to their Research Liaison for review before information is passed on to the Manager of Research.
RPS (Primary) RAS (Secondary)	Review RTARs
RAS (Primary) RPS (Secondary)	Review Work Statements
RAS (Primary) RPS (Secondary)	Review TRPs and URPs
RPS (Primary) (Secondary)	Review and revise the Society's Research Implementation Plan based upon accepted RTARs.
Subcommittee Chairs	Report Status of assigned MBOs.
Staff	Distribute copies of Technology Council's Action Items and Motions affecting RAC.
BOD ExO	Report to the RAC Chair BOD's Actions and Motions affecting RAC.
Staff	Forward URPs to RAS Chair to help identify a champion for the URP on RAC based on members background and experience. The RAC URP Champion will either help select a cognizant TC to review the URP or return the URP with a recommendation that it not be reviewed further as a possible ASHRAE research project.

**RECURRING ACTION ITEMS  
(FALL MEETING)**

<b><u>Responsibility</u></b>	<b><u>Summary of Action</u></b>
RLs	Review "Service to ASHRAE Research Award" nominations submitted by TC chairs and select the best nomination for RAC consideration.

**RECURRING ACTION ITEMS**  
**(WINTER MEETING)**

<b><u>Responsibility</u></b>	<b><u>Summary of Action</u></b>
RAS	Plan TC Research Subcommittee chair Training Workshop for Winter Meeting
RPS	Review Grant-In-Aid Applications
RPS	Review New Investigator Award Nominations
RPS	Review Homer Addams Award Nominations
Chair	Present Service to ASHRAE Research Award to this year's recipient
RAC	Decide if spring meeting is needed and set date for spring meeting.
MORTS	Prepare semi-annual report to RAC by December 15.

**RECURRING ACTION ITEMS**  
**(ANNUAL MEETING)**

<b><u>Responsibility</u></b>	<b><u>Summary of Action</u></b>
RPS	Plan training workshop for new RAC members at the Annual meeting
Research Liaisons	Request nominations from TCs for Service to ASHRAE Research Award
Chair	Invite new members of RAC to the workshop for new RAC members scheduled for the Annual meeting.
MORTS	Prepare semi-annual report to RAC by May 15.

## **LIST OF ATTACHMENTS**

ATTACHMENT 1:	MBOs
ATTACHMENT 2:	Draft Framework Procedure for High Risk & Exploratory Research
ATTACHMENT 3:	A Process for Updating the ASHRAE Research Strategic Plan handout
ATTACHMENT 4:	Draft Framework Procedure for reporting applications of ASHRAE research
ATTACHMENT 5:	Procedure Impact from Model Research Agreement Move from ROB to MOP
ATTACHMENT 6:	Proposed edits to Service to ASHRAE Research Award documentation
ATTACHMENT 7:	Research Manual Mark-up per John House
ATTACHMENT 8:	ARTI Consultant report
ATTACHMENT 9:	USGBC Consultant report
ATTACHMENT 10:	MORTS Semi annual report
ATTACHMENT 11:	1580-TRP Analysis Sheet
ATTACHMENT 12:	1613-TRP Analysis Sheet
ATTACHMENT 13:	1633-URP Analysis Sheet
ATTACHMENT 14:	RL Section Reports

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

MINUTES

RESEARCH ADMINISTRATION COMMITTEE  
JANUARY 28, 29 & FEBRUARY 2, 2011

**MEMBERS PRESENT:**

James Braun, *Chair*  
Hugh Henderson, *Vice-chair*  
Hakim Elmahdy, *Chair RAS*  
John House, *Chair RPS*  
Sriram Somasundaram, *RL Section 1.0*  
Iain Walker, *RL Section 2.0*  
Raymond Cohen, *RL Section 3.0*  
Agami Reddy, *RL Section 4.0*  
Piotr Domanski, *RL Section 5.0*  
Jaap Hogeling, *RL Section 6.0*  
George Jackins, *RL Section 7.0*  
Richard Hermans, *RL Section 8.0*  
Carl Huber, *RL Section 9.0*  
Roberto Aguilo, *RL Section 10.0*  
Timothy Dwyer, *BOD Ex-Officio*  
William Bahnfleth, *Coordinating Officer*  
Hywel Davies, *Consultant CIBSE*  
Chris Pyke, *Consultant USGBC*  
Xudong Wang, *Consultant AHRI*

**GUESTS:**

Cynthia Cage, *REF*  
Larry Markel  
Nancy McNabb, *NIST*

**ASHRAE STAFF:**

Claire Ramspeck, *DOT*  
Mike Vaughn, *MORTS*  
Steve Hammerling, *AMORTS*

**MEMBER ABSENT:**

Chris Scruton, *Consultant CEC-Pier*

**A. CALL TO ORDER**

Chair Braun called the meeting of the committee to order at 3:00 PM.

**B. REVIEW OF AGENDA**

No changes were proposed to the agenda..

**C. STATUS REVIEW OF ACTION ITEMS**

**ACTION ITEMS**

Fall Meeting – Sept. 29 & Oct. 4, 2010

Action #	Responsibility	Summary of Action	Status
1	Braun/Hermans	Integrate 2010-2015 Strategic Research Plan with Society Strategic Plan and new continuous maintenance process – See RAC MBO #3	Complete
2	Braun	Develop a draft plan for leveraging the 2010-2015 RSP to solicit and manage large grants and outside collaborative efforts for research.	Complete

3	Hermans/Staff	Work with TC 8.4 ad TC 8.8 to expedite revisions to WS-1535 and RTAR-1549, respectively, so that AHRTI co-funding commitments for these projects do not expire in June 2011.	Complete
4	House	Review and possibly suggest edits to the Service to ASHRAE Research Award nomination form and instructions which clarify that the award is for TC/TG research activities only and that a tabulation of eligibility points is also required with each nomination	Complete

**CARRY-OVER ACTION ITEMS**

Annual Meeting – June 25, 26 & 30, 2010

<b>Action #</b>	<b>Responsibility</b>	<b>Summary of Action</b>	<b>Status</b>
3	Braun	Draft revision text for consideration at Tech Weekend meeting on proposed move of Model Research Agreement from ROB to MOP.	Closed See AI#7 LV

**D. APPROVAL OF MINUTES**

It was moved and seconded that,

- (1) The draft minutes of the RAC 2010 Tech. Weekend meeting be approved as written.

**MOTION #1 PASSED:** 14-0-0, CNV (Unanimous voice vote)

**E. CHAIR’S REPORT**

The following items were presented by the chair and discussed:

- a. Disposition of Motions from Last Meeting – none presented.
- b. New & On-going Action Items Assigned by Tech. Council
  1. AI#2 TW’10 – Coordinate with REF regarding rebuilding a strong relationship with IAR  
Status: AI complete. Coordination started at chair-level. Section 10 RL will assist REF with their research topics. On-going discussions as to who could serve as the liaison to RAC on Refrigeration related topics.
  2. AI# TW’10 – Provide committee input for Members’ First Newsletter  
Status: Complete. RAC input focused on results from our fall meeting and how research funds are also spent on student grants and awards.
  3. AI# TW’10 – Start development of new processes and procedures for leveraging 2010-2015 RSP for outside funding  
Status: AI complete. Chair started effort by discussing current opportunities for interface with outside groups such as the new DOE Hubs, and the White House Office of Science and Technology. The new Multidisciplinary Task Group (MTG) committee type that is being developed by TAC is also an option now for attracting outside funds to the research program. One or more MTGs could be formed to focus attention and attract outside support for one or more of the eleven goals from the 2010-2015 RSP.
- c. New Information Items
  1. A one-page “Dashboard” report with graphics is being developed by Mr Herman and the BOD Finance Committee to better illustrate and spot multi-year trends in research contributions and expenditures for better decision-making purposes at the BOD, Finance, RAC, RP and staff levels.

2. DOE Forum on next generation of low GWP refrigerants is scheduled for Tuesday at meeting but forum is not listed in meeting program. The chair asked RLs to get the word out about the forum at Monday's breakfast meeting with TC research subcommittee chairs.

d. MBO Status Reports

Chair reviewed MBOs with committee, discussed progress, and assigned new action items related to MBO progress to date (**Attachment #1**):

1. Incorporate new Research Strategic Plan (RSP) into RTAR and WS Process.  
Status: Complete. Research Manual and related forms have been updated.
2. High-Risk Research Process  
Status: A draft framework of the process was presented to RAC for discussion by Mr. House. (**See Attachment #2**)

**Action #1**

< House >: Implement John House's framework for Cross-Cutting, High-Risk, Exploratory Research into MOP, Ref. Manual & Research Manual.

3. Update Process for Next RSP  
Status: A proposed process for updating the ASHRAE Research Strategic Plan was developed by Mr. Braun and Mr. Spittler (past RAP Chair) and distributed to RAC for discussion. (**See Attachment #3**)

**Action #2**

< Braun, Vaughn >: Implement proposed new RAP/RSP update cycle in ROB, MOP, and Res. Manual using Braun/Spittler framework presented in Las Vegas.

4. Update Research Manual for Latest RSP  
Status: See Motion #2 below to accept changes to Research Manual
5. Procedure for Reporting Application of Research Results.  
Status: A draft framework procedure for reporting applications of ASHRAE research results was developed by Mr. Elmahdy and presented for discussion. (**See Attachment #4**)

**Action #3**

< Henderson, Elmahdy, and Domanski >: Implement Hakim Elmahdy's framework for reporting application of research results into the Research Manual for consideration and possible approval in Montreal.

**F. BOD EX-OFFICIO & COORDINATING OFFICER REPORTS**

Mr. Bahnfleth thanked RAC for their hard work, and recognized the large workload. He also recognized that the budget is looking good for bidding many research projects this spring. Mr. Bahnfleth also thanked RAC members for connecting with sponsors to review the research strategic plan and find projects that can be co-funded. He also recognized RACs involvement in support of energy targets, BEQ, DOE energy hub in a presentation to ExCom.

Timothy Dwyer thanked members and consultants of RAC for their efforts and accomplishments this year. He also presented a Power Point presentation highlighting major Society activities and accomplishments since the last Society meeting for information purposes.

**G. PROPOSED & POSSIBLE ROB, MOP, REFERENCE MANUAL, OR RESEARCH MANUAL CHANGE**

1. AI#3 ABQ'10 – Proposed move of Model Research Agreement from ROB to RAC MOP:  
Status: Complete. A document which identifies the extent of the required changes to the ROB and MOP that must be addressed to effect this change was prepared and discussed. (**See Attachment #5**)

**Action #4** < Braun, Vaughn >: Develop detailed proposed procedures changes to move Model Research agreement from ROB to RAC MOP

2. AI#4 TW'10 – Review possible edits to Service to ASHRAE Research Award Nomination form and instructions:  
Status: Complete. Minor clarification edits were made to the award documentation (see **Attachment #6**)

It was moved and seconded that,

- (2) The Research Manual be revised as indicated by the suggested edits from John House (see **Attachment #7**)

**MOTION #2 PASSED:** 11-0-0, CNV

**Action #5** < House >: Email approved Research Manual changes from Las Vegas to staff for web posting and for distribution to all RAC members.

#### **H. RTAR REVIEW**

RAC reviewed seven RTARs submitted by TC/TGs for addition to the Society's Research Implementation Plan and three were conditionally accepted, three were returned, and one was rejected. The status of the RTARS after RAC review is provided below.

It is moved and seconded that,

- (3) 1520-RTAR, "*Literature Search for Current HVAC Design Guidelines for Justice Facilities and/or Standards Worldwide as well as at Federal, State, County, and Local Levels.*" sponsored by TG9.JF, Justice Facilities be rejected.

**MOTION #3 PASSED RPS:** 6-0-0, CV

It is moved and seconded that,

- (4) 1619-RTAR, "*Data Center Gaseous Contamination Limits and Means of Monitoring;*" sponsored by TC 9.9, Mission Critical Facilities, Technology Spaces, & Electrical Equipment be conditionally accepted.

**MOTION #4 PASSED:** 12-0-1<sup>1</sup>, CNV

It is moved and seconded that,

- (5) 1630-RTAR, "*Update the Scientific Evidence for Specifying Lower Limit Relative Humidity Levels for Comfort, Health and IEQ in Occupied Spaces,*" sponsored by TC 5.11, Humidifying Equipment be returned.

**MOTION #5 PASSED RPS:** 6-0-0, CV

It is moved and seconded that,

- (6) 1634-RTAR, "*Guide for Sustainable Refrigerated Facilities and Refrigeration Systems,*" sponsored by the Refrigeration Committee be conditionally accepted.

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<sup>1</sup> Agami Reddy abstained.

**MOTION #6 PASSED:** 12-1<sup>2</sup>-0, CNV

It is moved and seconded that,

- (7) 1635-RTAR, “*Simplified Procedure for Calculating Exhaust/Intake Separation Distances,*” sponsored by TC 4.3, Ventilation Requirements and Filtration be conditionally accepted.

**MOTION #7 PASSED:** 12-1<sup>3</sup>-0, CNV

It is moved and seconded that,

- (8) 1636-RTAR, “*Design Evaluation of High Accuracy Relative Humidity (RH) Sensors for Psychrometric Testing,*” sponsored by TC 1.2, Instruments and Measurements be returned.

**MOTION #8 PASSED RPS:** 4-2<sup>4</sup>-0, CV

It is moved and seconded that,

- (9) 1638-RTAR, “*Absorption Refrigeration Cycle Training Simulator for Sustainable Resource Use,*” sponsored by TC 8.3, Absorption and Heat Operated Machines be returned.

**MOTION #9 PASSED RPS:** 5-1<sup>5</sup>-0, CV

#### **I. WORK STATEMENT REVIEW**

Eight work statements were submitted by the TCs for review.

It is moved and seconded that,

- (10) 1450-WS, “*Transport of Contaminants from Garages Attached or Integral to Low-rise Residential Buildings;*” sponsored by Standards Special Project Committee SSPC 62.2 - Ventilation and Acceptable Indoor Air Quality in Low Rise Residential Buildings be returned.

**MOTION #10 PASSED RAS:** 4-2<sup>6</sup>-0, CV

It is moved and seconded that,

- (11) 1491-WS, “*Literature and Product Review and Cost Benefit Analysis of Commercially Available Ozone Air Cleaning for HVAC Systems;*” sponsored by Environmental Health Committee EHC be accepted.

**MOTION #11 PASSED:** 13-0-0, CNV

It is moved and seconded that,

- (12) 1513-WS, “*Liquid/Vapor Separating Velocities for Industrial Refrigeration Systems;*” sponsored by TC 10.3 - Refrigerant Piping be returned.

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<sup>2</sup> Piotr Domanski voted against RTAR because emphasize issues raised in comments must be addressed.

<sup>3</sup> Rich Hermans voted against the RTAR because he prefers the current procedure in Handbook.

<sup>4</sup> Iain Walker voted against motion because he believed the RTAR was acceptable as-is. Roberto Aguilo voted against motion because he wished to reject the RTAR outright.

<sup>5</sup> Iain Walker voted against motion because he believed RTAR was acceptable as-is.

<sup>6</sup> Hakim Elmahdy and Piotr Domanski voted against the motion because they believed WS was acceptable for at least conditional approval

**MOTION #12 PASSED RAS: 5-1<sup>7</sup>-0, CV**

It is moved and seconded that,

- (13) 1514-WS, “*Development of a Design Guide for System Integration of Thermal Energy Recovery in Industrial Refrigeration Systems;*” sponsored by TC 10.1 – Custom Engineered Refrigeration Systems be returned.

**MOTION #13 PASSED RAS: 6-0-0, CV**

It is moved and seconded that,

- (14) 1535-WS, “*A Heat Transfer and Friction Factor Correlation for Low Air-side Reynolds Number Applications of Compact Heat Exchangers;*” sponsored by TC 8.4 - Air-to-Refrigerant Heat Transfer Equipment be conditionally accepted.

**MOTION #14 PASSED: 13-0-0, CNV**

It is moved and seconded that,

- (15) 1546-WS, “*Expansion and Updating of the Air Diffuser Performance Index Method;*” sponsored by TC 5.3 - Room Air Distribution be conditionally accepted.

**MOTION #15 PASSED: 13-0-0, CNV**

It is moved and seconded that,

- (16) 1579-WS, “*Testing and Evaluation of Ozone Filters for Improving IAQ;*” sponsored by TC 2.3 - Gaseous Air Contaminants and Gas Contaminant Removal Equipment be returned.

**MOTION #16 PASSED RAS: 6-0-0, CV**

It is moved and seconded that,

- (17) 1624-WS, “*Effective Energy-efficient School Classroom Ventilation;*” sponsored by TC 2.1 - Physiology and Human Requirements be returned.

**MOTION #17 PASSED RAS: 6-0-0, CV**

**Action #6** < Hermans >: Forward to AHRI the modified WS 1535 prior to their co-funding commitment withdrawal deadline of June 1, 2011.

**J. GRADUATE GRANT-IN-AID AWARD**

A total of 66 applications were considered for the 2011-2012 Graduate Student Grant-in-Aid program. Each grant recipient receives \$10,000.

It was moved and seconded that,

- (18) The following ~~22~~ 21 students are each the recipient of a Graduate Student Grant-in-Aid grant for the 2011-2012 academic year:

<u>Name</u>	<u>University</u>
Bikash Acharya	University of Maryland

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<sup>7</sup> George Jackins voted against motion because he believed the WS was acceptable for bid as-is.

Aleksandar Anđelković	<b>LCM #1</b>	Technical Science Novi Sad
Simge Andolsun		Texas A&M University
Stephen Bourne		University of Texas
Howard Cheung		Purdue University
Jordan Clark		University of Texas
Brian Fronk		Georgia Institute of Technology
Caroline Hachem		Concordia University
Vibhas Jha		University of Maryland
Kyle Konis		University of California-Berkeley
Abhinav Krishna		Purdue University
Ki Sup Lee		Purdue University
Shichao Liu		University of Texas
Wei Liu		Tianjin University
Raphael Mandel		University of Maryland
Peter May-Ostendorp		Georgia Institute of Technology
Ananda Nagavarapu	<b>LCM #2</b>	Georgia Institute of Technology
Kashif Nawaz		University of Illinois
Amanda Pertzborn		University of Wisconsin Madison
Sugirdhalakshmi Ramaraj		Purdue University
<del>Miao Wang</del>		<del>Purdue University</del> - See Secretary's Note below
Feini Zhang		University of Illinois

Aleksandar Anđelković and Ananda Nagavarapu hold the added distinction of being named the 2011-2012 Life Member Club grant recipients as the top one and two rated applicants, respectively. These two grants are supported by a financial contribution from the club.

**MOTION #18 PASSED:** 11-0-0, CV

It was moved and seconded that,

- (19) Grant-in-aid replace ineligible applicants (already graduated) be replaced with next eligible Grant-in-aid applicant on ranked list.

**MOTION #19 PASSED:** 11-0-0, CV

**Secretary's Note:**

Miao Wang was disqualified for a 2011-2012 academic year GIA grant once it was determined he will be graduating and leaving school on May 20, 2011. Since two candidates were tied for the next highest ranking, a replacement candidate was not chosen due to the tie, budget constraints, and a large drop in ranking point totals after Miao Wang.

**Action #7** <House>: Review the GIA forms and selection process to determine how student involvement in ASHRAE should be considered and tracked.

**Action #8** <House>: Review GIA application and recommend changes if deemed appropriate.

**K. NEW INVESTIGATOR AWARD**

Five nominations were received for the 2011-2012 New Investigator Award.

It was moved and seconded that,

- (20) Dr. Athanasios Tzempelikos of Purdue University is the recipient of the 2011-2012 New Investigator Award.

**MOTION #20 PASSED:** 10-2<sup>8</sup>-0, CNV

**Action #9** <House, Walker>: Review NIA scoring criteria and consider implementing a minimum score to ensure a deserving recipient. If implemented, propose procedure changes to incorporate this minimum score into the RAC Reference Manual.

**Action #10** < House/RPS >: Review scoring and criteria for NIA and recommend changes if deemed appropriate to focus more weight and attention on candidate's research plan, relationship to ASHRAE, etc..

**Action #11** <Henderson>: Forward draft letter of notification that was sent to non-winners of NIA last year to RPS chair so that a similar letter can be sent to this year's applicants.

**L. HOMER ADDAMS AWARD**

Three nominations were received for the 2010-2011 Homer Addams Award.

It was moved and seconded that,

(21) Sebastian Herrman is the recipient of the 2010-2011 Homer Addams Award.

**MOTION #21 PASSED:** 12-0-0, CV

**Action #12** <Somasundaram>: Consider and possibly propose procedure changes to the Homer Adams award to require all nominations to include an official copy of the student's most recent transcript and to require the student nominee to be the first author on at least one paper that is submitted with or referenced in the nomination package

**M. CONSULTANT REPORTS**

1. ARTI –see ARTI report submitted by Xudong Wang – **Attachment #8**
2. CIBSE- verbal report on recent activities in UK and EU
3. CEC-PIER/BERG – no report
4. USGBC – see report submitted by Chris Pyke – **Attachment #9**

**N. RESEARCH SUBCOMMITTEE CHAIRS' BREAKFAST**

1. Proposed Announcements
  - a. Service to ASHRAE Research Award presentation to Steve Taylor.
2. RL Reminders for TCs  
See Meeting CD & FTP site for list of specific TC reminders to discuss at breakfast.

**O. MORTS' REPORT**

1. MORTS Semi-Annual report  
Highlights from the report were discussed and the full report is included as **Attachment #10**

**P. TENTATIVE RESEARCH PROJECTS TO POTENTIALLY BID SPRING 2011**

It is moved and seconded that,

(22) The following 48 17 top ranked TRPs be released for bid in spring 2011:

- **1399**, “*Survey of Particle Production Rates from Process Activities in Pharmaceutical and Biological Cleanrooms*” sponsored by TC 9.11 –Clean Spaces. ASHRAE Strategic Research Plan Goal: A1, A6, A7, B2, C1, C2, C6, D1, D7.

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<sup>8</sup> Iain Walker voted against the motion because he believed the research plan could have been written better. Roberto Aguilo voted against the motion because he believed there was a stronger candidate this year.

- **1410**, “*Effect of System Chemicals towards the Breakdown of Lubricants and Refrigerants*” sponsored by 3.2 - Refrigeration System Chemistry. ASHRAE Strategic Research Plan Goal: D1, D2, D3.
- **1413**, “*Developing Standard Procedures for Filling Weather Data-Gaps during Analysis of Measured Building Energy*” sponsored by TC 4.2 – Climatic Information. ASHRAE Strategic Research Plan Goal: A7, C1, C4.
- **1458**, “*Modeling Person-to-Person Contaminant Transport in a Mechanical Ventilation Space*” sponsored by TC 4.10 - Indoor Environmental Modeling. ASHRAE Strategic Research Plan Goal: B3.
- **1495**, “*Effect of Lubricant on Distribution of Water between Vapor and Liquid Phases of Refrigerants*” sponsored by TC 3.3 - ASHRAE Strategic Research Plan Goal: D1.
- **1499**, “*The Effect of Humidity on the Reliability of ICT Equipment in Data Centers*” sponsored by TC 9.9 – Mission Critical Facilities, Technology Spaces & Electrical Equipment. ASHRAE Strategic Research Plan Goal: A1, D7.
- ~~**1502**, “*User Interface Design for Advanced System Operation*”, sponsored by TC 1.4 Control Theory and Application. ASHRAE Strategic Research Plan Goal: A7, B2, C6~~
- **1504**, “*Extension of the Clothing Insulation Database for Standard 55 and ISO 7730 to Provide Data for Non-Western Clothing Ensembles, including Data on the Effect of Posture and Air Movement on that Insulation*” sponsored by TC 2.1- Physiology & Human Environment. . ASHRAE Strategic Research Plan Goal:
- **1550**, “*Thermal Performance of Insulating Coatings on Piping and Ductwork*” sponsored by TC 1.8 - Mechanical Insulation Systems. ASHRAE Strategic Research Plan Goal: A7, C6.
- **1557**, “*Lab Comparison of Relative Performance of Gas Phase Filtration Media at High and Low Challenge Concentrations*” sponsored by TC 2.3 - Gaseous Air Contaminants and Gas Contaminant Removal Equipment. ASHRAE Strategic Research Plan Goal: A2, A5, BA, B2.
- **1564**, “*Measurement of Oil Retention in the Microchannel Heat Exchanger*” sponsored by TC 8.4 - Air to Refrigerant Heat Transfer Equipment. ASHRAE Strategic Research Plan Goal: A6, C6, D1.
- **1565**, “*Development of the ASHRAE Design Guide for Dedicated Outdoor-Air Systems*” sponsored by TC 8.10 - Mechanical Dehumidification Equipment and Heat Pipes. ASHRAE Strategic Research Plan Goal: A1, A5, A6, B1, C1.
- **1581**, “*Develop alternate setup guidelines for Unitary Air Conditioner Test Configurations which cannot Adhere to ASHRAE 37/ASHRAE 116 Specified Duct Dimensions and External Pressure Tap Locations*” sponsored by TC 8.11 - Unitary and Room Air Conditioners and Heat Pumps. ASHRAE Strategic Research Plan Goal:
- **1584**, “*Assessment of Alternative Approaches to Predicting the Burning Velocity of a Refrigerant*,” sponsored by TC 3.1 - Refrigerants and Secondary Coolants. ASHRAE Strategic Research Plan Goal: D2, D3.
- **1592**, CHP Design Guide – Update to the Cogeneration Design Guide (1996)” sponsored by TC 1.10 – Cogeneration Systems. ASHRAE Strategic Research Plan Goal: C6.
- **1603**, “*Role of HVAC Systems in the Transmission of Infectious Agents in Buildings and Intermodal Transportation*” sponsored by TC 9.3 – Transportation Air Conditioning. ASHRAE Strategic Research Plan Goal: A5, A6, A7, B1, B2, B3.
- **1604**, “*Demand Controlled Filtration For Clean Rooms*” sponsored by TC 9.11 – Clean Spaces. ASHRAE Strategic Research Plan Goal:
- **1606**, “*Laboratory Testing of Flat Oval Transitions to Determine Loss Coefficients*” sponsored by TC 5.2 – Duct Design. ASHRAE Strategic Research Plan Goal: D1.

**MOTION #22 PASSED:** 11-0-0, CNV

Five other projects remain in the on-hold category until additional funds can be made available.

TRP -1502 was dropped from the list of projects to bid and as an ASHRAE project when RAC approved a project funding recommendation later in the meeting for URP-1633, which is a direct adaptation of a previous ASHRAE RFP for TRP-1502 and which received no bids when it was previously circulated for bids in spring 2010.

## **Q. TENTATIVE RESEARCH PROJECTS**

It is moved and seconded that,

- (23) Tentative research project 1580-TRP, “*Study of input Parameters for Risk Assessment of 2L Flammable Refrigerants in Residential Air Conditioning and Small Commercial Refrigeration Applications,*” be awarded to Navigant Consulting, Inc for a period of 12 months at a total cost to ASHRAE of \$250,000. (**Attachment #11**)

**MOTION #23 PASSED:** 11-0-0, CNV

It is moved and seconded that,

- (24) Tentative research project 1613-TRP, “*Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals,*” be awarded to Numerical Logistics for a period of 18 months at a total cost to ASHRAE of \$138,477. (**Attachment #12**)

**MOTION #24 PASSED:** 11-0-1<sup>9</sup>, CNV

It is moved and seconded that,

**Action #13** < Henderson, Braun >: Review TRP ranking system to determine if changes to the procedure, ranking criteria, importance of submission date, point weighting, etc. are warranted.

**Action #14** < Braun >: Consider feasibility and implementation of a new contract requirement for ASHRAE research projects to disseminate their results internationally in addition to ASHRAE publications. Options for dissemination could include presentation at a conference outside the U.S. and Canada or publication in an international journal.

## **R. UNSOLICITED RESEARCH PROPOSALS**

It is moved and seconded that,

- (25) Unsolicited research proposal 1633-URP, “*Data and Interfaces for Advanced Building Maintenance and Operation,*” be awarded to KGS Buildings LLC for a period of 24 months at a total cost to ASHRAE of \$266,570. (**Attachment #13**)

**MOTION #25 PASSED:** 12-0-0, CNV

No action was taken on the following URPs for the reason listed or until more information was obtained from the sponsoring TCs:

1. 1632-URP *Prediction Control PMC for Optimization and Control of HVAC Systems,*” Responsible Committee: TC 1.4 - Control Theory and Application  
Status: TC did not provide a recommendation reason given was that it needed more time to evaluate the proposal.

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<sup>9</sup> Member abstained because he was out of the room for part of the discussion

**Secretary's Note:**

TC 1.4 has recommended since the Las Vegas meeting that ASHRAE not fund this URP. Staff will consult with RAC Chair to see if the URP proposer should be notified of this decision prior to the next RAC meeting.

2. 1637-URP, "Development of an Energy and Exergy-Based Model of Data Center HVAC Systems," Responsible Committee: TC 4.7- Energy Calculations  
Status: TC did not provide a recommendation reason given was that it needed more time to evaluate the proposal.

**Secretary's Note:**

TC 4.7 has recommended since the Las Vegas meeting that ASHRAE not fund this URP. Staff will consult with RAC Chair to see if the URP proposer should be notified of this decision prior to the next RAC meeting.

**S. FUNDED EXTENSION REQUESTS**

No action was taken on the following RP for the reason listed or until more information was obtained from the sponsoring TCs:

1. A funded extension to active research project 1478-RP, "*Measuring Air-tightness of Mid- and High-Rise Non-residential Buildings.*"

Status: PI and PMS working on new co-funding source after losing \$150k in funding from DOE-ORNL. This project may need a funded extension from ASHRAE to salvage project results. TC did not provide a funded extension request at this meeting. The research liaison, Iain Walker, will work with TC to develop a formal extension request, if necessary, for RAC consideration.

**T. RESEARCH LIAISON SECTION REPORTS**

RL section reports are included as **Attachment #14**

**Action #15** <RLs>: Update RL reminder spreadsheet based on TC feedback and send to staff prior to March 1, 2011.

**U. UNFINISHED BUSINESS**

RAC Chair will confer with Mike Vaughn after the meeting and then decide if a follow up conference call is needed.

**V. NEW BUSINESS**

None

**W. NEXT MEETING**

The next meeting of the Research Administration Committee will start Friday, June 24<sup>th</sup>, at 3pm EDT in Montreal, Canada

**ADJOURNED**

The meeting of the Research Administration Committee adjourned at 9:00 AM, Wednesday, February 2, 2011.