



Shaping Tomorrow's  
Built Environment Today

**MINUTES**

**RESEARCH ADMINISTRATION COMMITTEE**

**HILTON HOTEL  
HOUSTON, TX**

**JUNE 23 & JUNE 28, 2018**

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

**TABLE OF CONTENTS**  
**RESEARCH ADMINISTRATION COMMITTEE**  
**JUNE 23 & JUNE 28, 2018**

PRINCIPAL MOTIONS ..... iii

NEW ACTION ITEMS ..... iv

RECURRING ACTION ITEMS..... v

LIST OF ATTACHMENTS..... vii

A. CALL TO ORDER ..... 1

B. ASHRAE CODE OF ETHICS ..... 1

C. ADDITIONS AND/OR CHANGES TO THE AGENDA..... 1

D. NEW ACTION ITEM TRACKING ..... 1

E. APPROVAL OF MINUTES ..... 2

F. CHAIRS REPORT ..... 2

G. BOD EX-OFFICIO & COORD. OFFICER..... 2

H. REVIEW ACTION ITEMS & MBOs ..... 3

I. RTAR REVIEW..... 4

J. WORK STATEMENT REVIEW ..... 5

K. INNOVATIVE RESEARCH GRANT (IRG) ..... 5

L. UNSOLICITED RESEARCH PROPOSALS (URPs)..... 5

M. CONSULTANTS' REPORTS..... 5

N. RESEARCH SUBCOMMITTEE CHAIR'S BREAKFAST..... 5

O. PLANS FOR FY 18-19 SOCIETY YEAR..... 5

P. MORTS REPORT ..... 6

Q. UNFINISHED BUSINESS ..... 6

RECESS

R. TENTATIVE RESEARCH PROJECTS..... 6

S. CO-RP REQUESTS ..... 8

T. RESEARCH LIAISON SECTION REPORTS..... 8

U. UNFINISHED BUSINESS ..... 8

V. NEW BUSINESS ..... 8

W. REVIEW OF NEW ACTION ITEMS ..... 8

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**PRINCIPAL MOTIONS  
RESEARCH ADMINISTRATION COMMITTEE  
JUNE 23 & JUNE 28, 2018**

<b>NO.</b>	<b>PAGE</b>	<b>MOTION</b>
1	2	Draft minutes of the RAC 2018 spring meeting be approved as written
2	4	<u>1813-RTAR, Development of an Accuracy Test Method for Residential Attic Duct System Simulations in Whole-Building Energy Simulation Programs</u> ; sponsored by TC 4.7, (Energy Calculations), be <u>rejected</u> .
3	4	<u>1851-RTAR, Dielectric Properties of Lower GWP Refrigerants</u> ; sponsored by TC 3.1, (Refrigerants and Secondary Coolants), be <u>accepted with comments</u> .
4	4	<u>1852-RTAR, Develop performance metric, criteria, and process to measure and predict of speech privacy in High Performance Buildings</u> ; sponsored by TC 2.6, (Sound and Vibration Control) be <u>accepted</u> .
5	4	<u>1644-WS, Smoke Control in Long Atria</u> ; sponsored by TC 5.6, (Control of Fire and Smoke); be <u>conditionally accepted</u> .
6	4	<u>1816-WS, Reporting the Energy Use and Heat Gain from Imaging Equipment</u> ; sponsored by 9.6, (Healthcare Facilities); be <u>conditionally accepted</u>
7	4	<u>1836-WS, Developing a Standardized Categorization System for Energy Efficiency Measures</u> ; sponsored by TC 7.6, (Building Energy Performance); be <u>conditionally accepted</u> .
8	5	Dr. Craig Bradshaw of Oklahoma State University be the recipient of the 2018-2019 Innovative Research Award.
9	5	<u>1844-URP, "Estimating Internal Moisture Generation Rates in New, Occupied Homes"</u> , be awarded to the University of Central Florida, for a period of 29 months at a total cost to ASHRAE of \$142,378.
10	6	<u>1579-TRP, Testing and Evaluation of Ozone Removal Air Cleaning Devices for Improving IAQ</u> , be awarded to University of Texas-Austin, for a period of 18 months at a total cost to ASHRAE of \$168,617.
11	6	<u>1707-TRP, Annoyance Thresholds of Tones in Noise as Related to Building Services Equipment</u> , be awarded to Purdue University, for a period of 18 months at a total cost to ASHRAE of \$136,552.
12	6	<u>1720-TRP, Validation of Gas-phase Air-cleaner Performance Test Method (Standard 145.2) by Laboratory Testing of Commercially Available Filtration Devices</u> , be awarded to Owen Air Filtration Consulting, LLC, for a period of 24 months at a total cost to ASHRAE of \$140,000.
13	6	<u>1769-TRP, Experimental Evaluation of the Efficiency of Belt Drives for Fans</u> , be awarded to AMCA International, Inc., for a period of 24 months at a total cost to ASHRAE of \$124,200.
14	7	<u>1778-TRP, Heat and Moisture Load from Commercial Dishroom Appliances and Equipment</u> , be awarded to Frontier Energy, Inc., for a period of 18 months at a total cost to ASHRAE of \$198,940.
15	7	<u>1794-TRP, White Paper Investigation Relating to the use of Odorants in Flammable Refrigerants</u> , be awarded to Jensen Hughes, for a period of 4 months at a total cost to ASHRAE of \$35,000.
16	7	<u>1800-TRP, Spray Evaporation on Enhanced Tube Bundles with Low GWP pure Refrigerants and Refrigerant/Miscible Oil Mixture</u> , be awarded to Auburn University, for a period of 30 months at a total cost to ASHRAE of \$150,742.
17	7	<u>1801-TRP, Standardizing and Utilizing ASHRAE Online BIM Data Exchange Protocols</u> , be awarded to Hitchcock Consulting, for a period of 18 months at a total cost to ASHRAE of \$105,000.

**CONTINUED**  
**PRINCIPAL MOTIONS**  
**RESEARCH ADMINISTRATION COMMITTEE**  
**JUNE 23 & JUNE 28, 2018**

<b>NO.</b>	<b>PAGE</b>	<b>MOTION</b>
18	7	<u>1814-TRP</u> , <i>Actual Energy Performance of Secondary Schools and Medium Offices Designed to Comply with ASHRAE Standard 90.1-2010</i> , be awarded to Seventhwave, for a period of 20 months at a total cost to ASHRAE of \$144,288.
19	7	<u>1819-TRP</u> , <i>CO2 Demand Controlled Ventilation in Multiple Zone VAV Systems with Multiple Recirculation Paths</i> , be awarded to University of Alabama, for a period of 18 months at a total cost to ASHRAE of \$96,149.
20	7	<u>1823-TRP</u> , <i>Improved Exhaust-to-Intake Dilution (Concentration) Calculations</i> , be awarded to Ohio State University, for a period of 10 months at a total cost to ASHRAE of \$49,011.
21	8	<u>Co-RP 6</u> , <i>CO2 and VOCs requirements for aircraft cabins based on cognitive performance, comfort responses and physiological changes depending on pressure level</i> , be funded to Fraunhofer IBP, for a period of 36 months at a cost to ASHRAE of \$180,000.
22	8	<u>Co-RP-7</u> , <i>Assess Refrigerant Detector Characteristics for Use in HVACR Equipment (Phase 1)</i> , be funded to AHRTI, for a period of 7 months at a cost to ASHRAE of \$23,000

**New Action Items**  
**Research Administration Committee (RAC)**  
**Annual Meeting 2018**

<b>Action #</b>	<b>Responsibility</b>	<b>Summary of Action</b>	<b>Page</b>
1	Pouchak	Add plan English abstract to the work statement form.	
2	MORTS	Send doddle poll to RAC members to determine the best time for a fall meeting.	
3	Pouchak, Shonder, Khalifa	Develop and improve the cost estimating procedures.	

## RECURRING ACTION ITEMS

### (EACH MEETING)

<u>Responsibility</u>	<u>Summary of Action</u>
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 international URPs to RAS Chair in addition to the cognizant TC and Research Liaison.

## RECURRING ACTION ITEMS (ANNUAL MEETING)

<u>Responsibility</u>	<u>Summary of Action</u>
Chair	Invite new RAC members to meeting and any training sessions at meeting.
Incoming Chair	Finalize MBOs and roster assignments. Set date for fall meeting.

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

**Responsibility Summary of Action**

RPS	Plan workshop for new RAC members at the Annual meeting.
RPS	Review Grant-In-Aid Applications
RPS	Review New Investigator Award Nominations
RPS	Review Homer Addams Award Nominations
MORTS	Prepare semi-annual report to RAC by May 15.
RAC	Decide if spring meeting is needed and set date for spring meeting.

**RECURRING ACTION ITEMS**  
**(FALL MEETING)**

**Responsibility Summary of Action**

RAS	Plan Research Workshop for Winter Meeting
RLs	Review "Service to ASHRAE Research Award" nominations submitted TC chairs and select best nomination for RAC consideration.
MORTS	Prepare semi-annual report to RAC by December 15.

## **LIST OF ATTACHMENTS**

ATTACHMENT 1:	MORTS Report
ATTACHMENT 2:	1579-TRP Analysis Sheet
ATTACHMENT 3:	1707-TRP Analysis Sheet
ATTACHMENT 4:	1720-TRP Analysis Sheet
ATTACHMENT 5:	1769-TRP Analysis Sheet
ATTACHMENT 6:	1778-TRP Analysis Sheet
ATTACHMENT 7:	1794-TRP Analysis Sheet
ATTACHMENT 8:	1800-TRP Analysis Sheet
ATTACHMENT 9:	1801-TRP Analysis Sheet
ATTACHMENT 10:	1814-TRP Analysis Sheet
ATTACHMENT 11:	1819-TRP Analysis Sheet
ATTACHMENT 12:	1823-TRP Analysis Sheet

## **ATTACHMENTS NOT POSTED OR DISTRIBUTED OUTSIDE OF RAC**

ATTACHMENT 2:	1579-TRP Analysis Sheet
ATTACHMENT 3:	1707-TRP Analysis Sheet
ATTACHMENT 4:	1720-TRP Analysis Sheet
ATTACHMENT 5:	1769-TRP Analysis Sheet
ATTACHMENT 6:	1778-TRP Analysis Sheet
ATTACHMENT 7:	1794-TRP Analysis Sheet
ATTACHMENT 8:	1800-TRP Analysis Sheet
ATTACHMENT 9:	1801-TRP Analysis Sheet
ATTACHMENT 10:	1814-TRP Analysis Sheet
ATTACHMENT 11:	1819-TRP Analysis Sheet
ATTACHMENT 12:	1823-TRP Analysis Sheet



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## MINUTES

### RESEARCH ADMINISTRATION COMMITTEE JUNE 23 & JUNE 28, 2018

#### **MEMBERS PRESENT:**

Kishor Khankari, Chair  
John Shonder, *Vice-Chair*  
David Yashar, *Chair RPS*  
Shinsuke Kato, *RL Section 1.0*  
Pawel Wargocki, *RL Section 2.0*  
Stephen Kujak, *RL Section 3.0*  
Michael Pouchak, *RL Section 4.0*  
Dennis Loveday, *RL Section 5.0*  
Omar Abdelaziz, *RL Section 6.0*  
Christopher Wilkins, *RL Section 7.0*  
Curtis Eichelberger, *RL Section 8.0*  
Jeff Gatlin, *RL Section 9.0*  
Ezzat Khalifa, *RL Section 10.0*  
Paolo Tronville, *Incoming RL*  
William Murphy, *Incoming RL*  
Xudong Wang, *Consultant AHRTI*  
Hywel Davies, *Consultant CIBSE*  
Douglas Fick, *BOD Ex-Officio*

#### **GUESTS:**

Kelsey Pitschel, *TowerPinkster*  
Richard Fox, *TC 9.6*

#### **ASHRAE STAFF:**

Michael Vaughn, *MORTS*  
Donna Daniel, *COORD*

#### **MEMBERS ABSENT:**

Ian Cull, *Consultant IAQA*  
Ginger Scoggins, *Coordinating Officer*

#### **A. CALL TO ORDER**

Chair Khankari called the meeting of the committee to order on Saturday morning, June 23, 2018, at 8:00 a.m.

#### **B. ASHRAE CODE OF ETHICS**

The ASHRAE Code of Ethics is to be adhered to by those doing ASHRAE business whether or not they are an ASHRAE member. The link below will be provided on all agendas  
<https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>

#### **C. ADDITONS AND/OR CHANGES TO THE AGENDA**

None

#### **D. NEW ACTION ITEM TRACKING**

Kishor Khankari and staff volunteered to track new actions items.



## **E. APPROVAL OF MINUTES**

It was moved and seconded that,

- (1) Minutes for the RAC 2018 spring meeting be approved as drafted.

**MOTION PASSED:** 12-0-0 CNV (Unanimous voice vote)

## **F. CHAIR'S REPORT**

- a) Disposition of Motions requiring higher-level approval from Last Meeting – None.
- b) New & On-going Action Items Assigned by Tech. Council
  1. Better support Research Promotion in raising funds for ASHRAE research program.
  2. AI #4: W18 - Set up ad hoc to create a process to develop “Go Bags” for various disasters. Consider including; Members Council, GGAC, and IAQA. Markel (Chair), Modera, Kishor, Cramm.
  3. AI #5: W18 - Produce a menu of research topics that the Development Committee could use to solicit funding from sources outside of present funding channels.
- c) Briefing on Technology Council Pre-Meeting – June 1, 2018
- d) Development of procedures & forms for Technology Transfer projects AI#3 W18 – Wilkins & Yashar. Modify RTAR & WS forms to include Plain English abstract – AI#2 SPR18 - Wilkins & Yashar.
- e) New Information Items:
  1. Update on expedited A2L refrigerant research effort – Kujak & Wang
  2. Update on efforts to develop an on-line searchable database of ASHRAE research projects since 1960 – (Daniels). – 85% complete - finish by Dec.
  3. Feedback on new GIA program
  4. Request for TRP-1848 (Impact of ASHRAE Standards and Technology) to bid via a special solicitation this summer.
  5. Update on whether ASHRAE will sponsor research on Marijuana.
  6. Co-RP request from Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V., a non-profit organization. – MORTS Lead - Pawel has conflict
  7. Co-RP request from AHRTI for new LowGWP project titled - *Assess Refrigerant Detector Characteristics for Use in HVACR Equipment* – Wang Lead
  8. Request for URP liaison & Subc. review volunteers for new URP-1853
  9. Members Council Referral on Marijuana Research - NEW!

## **G. BOD EX-OFFICIO & COORD. OFFICER – FICKE & SCOGGINS**

Mr. Ficke gave a brief Powerpoint presentation. He thanked them for their work, leadership, and commitment to ASHRAE research. Coordinating Officio, Scoggins was not in attendance.

## H. REVIEW PAST MEETING ACTION ITEMS

### Pre-Houston Meeting 2018

Action #	Lead	Summary of Action	Status
1	Daniel	Send RAC Members link to new research database so they can try it.	Complete
2	Pouchak, Kato, Wargocki, Gatlin	Review URP-1853 to determine if proposal qualifies as a URP and for further review by a TC	Complete

### Spring Meeting 2018

Action #	Lead	Summary of Action	Status
1	Staff	Notify Life Member Club of the names of top two rated 18-19 Graduate Student Grant-in-Aid recipients.	Complete
2	Pouchak, Wilkins	Modify RTAR & WS forms to include Plain English abstract. Will post draft forms to Basecamp in 24 hrs.	On-going

### JANUARY 19, 20 & JANUARY 24, 2018

Action #	Responsibility	Summary of Action	Status
3	Wilkins, Yashar	Work on RTAR evaluation form for research projects resulting in publications. Have ready to review by spring.	On-going
4	Wilkins, Yashar	Work out mechanism to track 10% budget line for research to develop publications.	On-going
6	Abdelaziz, Gatlin, John, Eichelberger, Khankari	Review 1844-URP proposal. Deadline for the review is by the spring meeting.	Complete
7	Khankari	Review three years of history on TCs that submitted disposition forms. Combine with AI #9	On-going
9	David John, Pouchak, Shonder	Work with staff and report in the spring for ways to improve TCs submitting disposition forms. Add to Breakfast announcements for Houston. Mike P. has more info. on BaseCamp	On-going

## **I. RTAR REVIEW**

RAC reviewed a total of three RTARs submitted by TC/TGs for addition to the Society's Research Implementation Plan. One was accepted as-is, one was accepted with comments, and one was rejected. The status of the RTARs after RAC review is provided below.

It is moved and seconded that,

- (2) 1813-RTAR *Development of an Accuracy Test Method for Residential Attic Duct System Simulations in Whole-Building Energy Simulation Programs*; sponsored by TC 4.7, (Energy Calculations), be rejected.

**MOTION PASSED RPS:** 5-0-0, CNV

It is moved and seconded that,

- (3) 1851-RTAR, *Dielectric Properties of Lower GWP Refrigerants*; sponsored by TC 3.1, (Refrigerants and Secondary Coolants), be accepted with comments.

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

It is moved and seconded that,

- (4) 1852-RTAR, *Develop performance metric, criteria, and process to measure and predict of speech privacy in High Performance Buildings*; sponsored by TC 2.6, (Sound and Vibration Control) be accepted.

**MOTION PASSED:** 12-0-0 CNV

## **J. WORK STATEMENT REVIEW**

Three work statements were submitted to RAC. All three were conditionally approved.

It is moved and seconded that,

- (5) 1644-WS, *Smoke Control in Long Atria*; sponsored by TC 5.6, (Control of Fire and Smoke); be conditionally accepted.

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

It is moved and seconded that,

- (6) 1816-WS, *Reporting the Energy Use and Heat Gain from Imaging Equipment*; sponsored by 9.6, (Healthcare Facilities); be conditionally accepted.

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

It is moved and seconded that,

- (7) 1836-WS, *Developing a Standardized Categorization System for Energy Efficiency Measures*; sponsored by TC 7.6, (Building Energy Performance); be conditionally accepted.

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

**Action #1** < Pouchak>: Add plan English abstract to the work statement form.

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<sup>1</sup> Ezzat Khalifa abstained from voting because, it is not clear how obtaining additional data that may conflict with manufacturer's data can be used in the design of the imaging equipment thermal management systems.

## **K. INNOVATIVE RESEARCH GRANT (IRG) – FULL PROPOSALS**

Five full IRG proposals were reviewed.

It is moved and seconded that,

- (8) Dr. Craig Bradshaw of Oklahoma State University be the recipient of the 2018-2019 Innovative Research Award.

**MOTION PASSED:** 14-0-0, CV

## **L. UNSOLICITED RESEARCH PROPOSALS (URPS)**

It is moved and seconded that,

- (9) 1844-URP, “*Estimating Internal Moisture Generation Rates in New, Occupied Homes*”, be awarded to the University of Central Florida, for a period of 29 months at a total cost to ASHRAE of \$142,378. **Attachment #1**

**MOTION PASSED:** 10-0-0 CNV

## **STATUS OF OTHER UNSOLICITED RESEARCH PROJECT THAT WAS UP FOR FUNDING CONSIDERATION AT THIS MEETING:**

1853-URP, Building on an Existing HUD Residential Ventilation Project: Brushless Permanent Magnet (BPM) Motor Change-outs, Pollutant Emissions Characterizations, and Testing Multi-zone Ventilation System Effectiveness; Potential Responsible Committee: TC 4.3 (Ventilation and Infiltration); Potential Co-Sponsors: TC 2.4, SSPC 62.2; Estimated Duration: 18 months; Cost to ASHRAE: \$199,064 – Status: A subcommittee of RAC members reviewed URP-1853 and decided to assign it to TC 4.3 for further review and a possible funding recommendation.

## **M. CONSULTANTS REPORTS**

- a) AHRTI- see AHRTI report submitted by Xudong Wang – gave brief report
- b) CIBSE – Hywel Davies – gave brief report
- c) IAQA – Ian Cull- not in attendance

## **N. RESEARCH SUBCOMMITTEE CHAIR’S BREAKFAST**

- A. Research Subcommittee Chair’s Breakfast
- a) Time/Location: Mon., 6:30 to 8 a.m., BOA DEF room – 3rd Floor– Hilton Hotel
  - b) Proposed Announcements:
    1. New Tech. Transfer forms & Procedures for Projects resulting in an ASHRAE Special Publication
    2. New Research Marketing Effort
    3. New Procedures & Submission deadline for GIAs & SY 18-19 recipients
    4. *Service to ASHRAE Research Award* Nominations due September 1<sup>st</sup>.
    5. *Homer Addams Award* Nominations needed
    6. New Investigator Award Nominations needed
    7. Additional Announcements – Remind TCs the Disposition Forms must be completed and submitted to MORTS)
    8. Earlier submission dates for RTARs, WSs, TRP bids, New Investigator Award, and Homer Addams Awards due to January 12 start date for 2019 Winter meeting in Atlanta?
  - c) RL Reminders for TCs

## **O. PLANS FOR FY 18-19 SOCIETY YEAR**

- B. Plans for FY 18-19 Society Year – Shonder Lead
- a) Thank the chair and members rolling-off RAC (Khankari, John, Gatlin)
  - b) New Subcommittee Chairs:
    - a. Chris Wilkins, RAS chair
    - b. Curtis Eichelberger, RPS Chair
  - c) Introduce new members of RAC

1. Bill Murphy – RL Section 7 - RAS
  2. Peter Armstrong – RL Section 8 - RPS
  3. Paolo Tronville – RL Section 9 - RPS
  4. Mentors for new members – Bill Murphy – Chris Wilkins  
Peter Armstrong – Curt Eichelberger  
Paolo Tronville – Pawel Wargocki
- d) New RAC Member Training – early August Web session prior to fall meeting?
  - e) Review new assignments & positions for RAC members
  - f) Fall Meeting 2018 – Need to meet before TechC meets on September 28<sup>th</sup>, 2018.
  - g) Review SY 18-19 RAC MBOs

**Action #2** < Vaughn>: Send out a doodle poll to RAC members to determine the best time for the fall meeting.

**Action #3** < Pouchak, Shonder>: Develop and improve cost estimating procedures.

#### **P. MORTS REPORT**

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

#### **Q. UNFINISHED BUSINESS**

None

#### **R. TENTATIVE RESEARCH PROJECTS**

It is moved and seconded that,

- (10) 1579-TRP, *Testing and Evaluation of Ozone Removal Air Cleaning Devices for Improving IAQ*, be awarded to University of Texas-Austin, for a period of 18 months at a total cost to ASHRAE of \$168,617. **Attachment #2**

**MOTION PASSED:** 10-0-0 CNV

It is moved and seconded that,

- (11) 1707-TRP, *Annoyance Thresholds of Tones in Noise as Related to Building Services Equipment*, be awarded to Purdue University, for a period of 18 months at a total cost to ASHRAE of \$136,552. **Attachment #3**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (12) 1720-TRP, *Validation of Gas-phase Air-cleaner Performance Test Method (Standard 145.2) by Laboratory Testing of Commercially Available Filtration Devices*, be awarded to Owen Air Filtration Consulting, LLC, for a period of 24 months at a total cost to ASHRAE of \$140,000. **Attachment #4**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (13) 1769-TRP, *Experimental Evaluation of the Efficiency of Belt Drives for Fans*, be awarded to AMCA International, Inc., for a period of 24 months at a total cost to ASHRAE of \$124,200. **Attachment #5**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (14) 1778-TRP, *Heat and Moisture Load from Commercial Dishroom Appliances and Equipment*, be awarded to Frontier Energy, Inc., for a period of 18 months at a total cost to ASHRAE of \$198,940. **Attachment #6**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (15) 1794-TRP, *White Paper Investigation Relating to the use of Odorants in Flammable Refrigerants*, be awarded to Jensen Hughes, for a period of 4 months at a total cost to ASHRAE of \$35,000. **Attachment #7**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (16) 1800-TRP, *Spray Evaporation on Enhanced Tube Bundles with Low GWP pure Refrigerants and Refrigerant/Miscible Oil Mixture*, be awarded to Auburn University, for a period of 30 months at a total cost to ASHRAE of \$150,742. **Attachment #8**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (17) 1801-TRP, *Standardizing and Utilizing ASHRAE Online BIM Data Exchange Protocols*, be awarded to Hitchcock Consulting, for a period of 18 months at a total cost to ASHRAE of \$105,000. **Attachment #9**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (18) 1814-TRP, *Actual Energy Performance of Secondary Schools and Medium Offices Designed to Comply with ASHRAE Standard 90.1-2010*, be awarded to Seventhwave, for a period of 20 months at a total cost to ASHRAE of \$144,288. **Attachment #10**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (19) 1819-TRP, *CO2 Demand Controlled Ventilation in Multiple Zone VAV Systems with Multiple Recirculation Paths*, be awarded to University of Alabama, for a period of 18 months at a total cost to ASHRAE of \$96,149. **Attachment #11**

**MOTION PASSED:** 11-0-0 CNV

It is moved and seconded that,

- (20) 1823-TRP, *Improved Exhaust-to-Intake Dilution (Concentration) Calculations*, be awarded to Ohio State University, for a period of 10 months at a total cost to ASHRAE of \$49,011. **Attachment #12**

**MOTION PASSED:** 11-0-0 CNV

**STATUS OF OTHER TENTATIVE RESEARCH PROJECTS THAT WERE UP FOR FUNDING CONSIDERATION AT THIS MEETING:**

- 1740-TRP, Hydrogen Fluoride Capacity of Desiccants – (Re-bid); Responsible Committee: TC 3.3 (Contaminant Control in Refrigerant Systems); Potential Co-Sponsors: TC 3.2, Refrigerant System Chemistry; Estimated Duration: 12 months; Cost to ASHRAE: \$120,000 – Status: No bids received again for project after third bid solicitation.
- 1790-TRP, Water Solubility and the Distribution of Water between Vapor and Liquid Phases of Low GWP Refrigerants; Responsible Committee: TC 3.3 (Refrigerant Contaminant Control); Co-Sponsors: None; Estimated Duration: 12 months; Cost to ASHRAE: \$100,000 – Status: RAC did not approve the recommendation, instead the project will rebid with an expanded bidders list.

**S. CO-RP REQUESTS**

It was moved and seconded that,

- (21) Co-RP 6, CO2 and VOCs requirements for aircraft cabins based on cognitive performance, comfort responses and physiological changes depending on pressure level, be funded to Fraunhofer IBP, for a period of 36 months at a cost to ASHRAE of \$180,000.

**MOTION PASSED:** 10-0-0 CNV

It was moved and seconded that,

- (22) Co-RP-7, Assess Refrigerant Detector Characteristics for Use in HVACR Equipment (Phase 1), be funded to AHRTI, for a period of 7 months at a cost to ASHRAE of \$23,000.

**MOTION PASSED:** 10-0-0 CNV

**T. RESEARCH LIAISON SECTION REPORTS**

RL section reports are included as **Attachment #9**

**U. UNFINISHED BUSINESS**

None

**V. NEW BUSINESS**

None

**W. REVIEW OF NEW ACTION ITEMS**

**ADJOURNED**

The meeting of the Research Administration Committee adjourned at 10:00 AM, Wednesday, June 28, 2018.