

REFERENCE MANUAL

for

**RESEARCH ADMINISTRATION
COMMITTEE**

REVISED: 11-07-01

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RAC Reference Manual

This reference manual describes the present operations of RAC. It may be modified by a majority vote of RAC.

SECTION A - SUBCOMMITTEES

Part 1 Subcommittee Organization

A1.1 Standing Subcommittees of RAC are determined by the Chair. Current subcommittees are:

- Research Activities (RAS)
- Research Planning (RPS)

A1.2 Ad hoc subcommittees may be appointed by the Chair of the Committee.

A1.3 The Chair shall appoint the members of each subcommittee. Subcommittee members should be members of RAC, but the Chair may appoint additional subcommittee members who are not members of RAC when there is a need for members who have experience in areas that are of immediate importance to RAC.

A1.4 Subcommittee members are appointed for the Society year. If a member's term of service on RAC continues into the next Society year, he/she may be reappointed to the same subcommittee or be appointed to a different subcommittee by the incoming Chair.

Part 2 Research Activities Subcommittee (RAS)

A2.1 Responsibilities

A2.1.1 RAS shall act for the RAC in reviewing and approving Work Statements (WS) for inclusion in requests for proposals (RFPs). Research Planning Subcommittee (RPS) members and RAC consultants shall also be encouraged to review WS and provide their comments to RAS. Appendix J provides the current form used to evaluate WS.

A2.1.2 RAS shall review solicited and unsolicited proposals approved by TC/TGs and provide a recommendation to RAC on each in accordance with procedures of the RAC Research Manual.

A2.1.3 RAS shall be responsible for maintenance of the Research Manual.

A2.1.4 RAS shall review and recommend to the RAC procedures relating to establishing, conducting, monitoring, and completing ASHRAE research. The forms used in conjunction with such procedures are also the initial responsibility of RAS. These forms will be included in the Research Manual.

A2.1.5 RAS shall encourage innovative research through the ASHRAE Innovative Research Grant Program by reviewing invited full proposals once per year (See Appendix F).

A2.1.6 RAS shall be responsible for maintenance of the standard RP final report cover (See Appendix L).

A2.2 Membership

- A2.2.1 The Research Activities Subcommittee (RAS) shall consist of at least six (6) members of the RAC appointed by the Chair of the RAC for one-year terms.
- A2.2.2 The Chair of the RAC shall designate one member as Chair of RAS who shall serve as a member of the RAC Executive Committee.
- A2.2.3 Ex-officio members of RAS shall be the vice Chair of the RAC (voting), the Manager of Research & Technical Services (non-voting), and RAC consultants (non-voting) as designated by the Chair of the RAC.

A2.3 Meetings

- A2.3.1 In addition to RAC meetings, the Research Activities Subcommittee may meet by conference call or e-mail ballot at the discretion of the RAS Chair. A quorum shall consist of a majority of the RAS voting members.
- A2.3.2 The Chair of RAS is responsible for ensuring that a written notice of a meeting, including an agenda with support materials, be sent not less than fifteen (15) days before the date of the meeting to all members, Chair of the RAC, and the MORTS.
- A2.3.3 The RAS Chair shall report RAS activities at the appropriate point in the agenda of the RAC meeting.

A.2.4 Other Procedures

- A2.4.1 The MORTS shall assign a sequential project number to each project (research project, tentative research project, special project, unsolicited proposal, Work Statement) coming before RAS. The item shall retain the same number throughout its consideration and administration by RAC. If a Work Statement is the result of an approved RTAR, the RTAR's sequence number shall be used by RAS.
- A2.4.2 To support RAS activities the MORTS shall:
- maintain and provide research budget information,
 - number the projects,
 - maintain and provide appropriate files on each project
 - develop and provide the ASHRAE Research Project Analysis for TRPs (Appendix B.)
 - report research administration problems to RAS,
 - recommend improvements in policy and procedures to RAS,
 - provide a complete report on all active and pending research projects at least twice a year,
 - provide RAS with information on the potential for funding by outside agencies,
 - monitor progress being made toward the timely completion of projects and alert Research Liaisons, TC/TG/MTG Chairs, PMS Chairs, and Principal Investigators when projects fall behind schedule.
 - assign each project to a research classification, related to the goals of the current Strategic Plan for ASHRAE Research.

Part 3 Research Planning Subcommittee (RPS)

A.3.1 Responsibilities

- A3.1.1 RPS shall strive to increase the dissemination of the results of ASHRAE sponsored research in the international community.
- A3.1.2 RPS shall consider and rank all grant-in-aid (GIA) applications at the Winter Meeting and provide recommendations for funding to RAC based on the procedures, criteria, and scoring shown in Appendix C. The MORTS shall identify and report to the most appropriate TC/TG/MTGs the research project of each GIA.
- A3.1.3 RPS shall recommend the recipient of the Homer Addams Award to the RAC. An approved recommendation from RAC will be forwarded to the Honors and Awards Committee for their approval. (See Appendix D)
- A3.1.4 RPS shall recommend the recipient of the New Investigator Award to RAC. (See Appendix E)
- A3.1.5 RPS will annually review all eligible nominations received and make a recommendation to the RAC for its consideration on the “Service to ASHRAE Research Award” recipient based on the procedures in Appendix H.
- A3.1.6 RPS will as required view for consistency all RAC sponsored awards against Honors and Awards Committee’s Guidelines for Awards (see Appendix G).
- A3.1.7 RPS shall recommend to RAC changes in the descriptions, procedure, and applications for the GIA, Homer Addams, NIA, and Service to ASHRAE Research Awards (Appendices C, D, E, and H). RAC in turn would pass on to the Society Honors and Awards Committee for approval any proposed changes to the criteria and evaluation procedures of the Service to ASHRAE Research Award and Homer Addams Award; Both of these awards are Society level awards administered by the Honors and Awards Committee and are handled as pass-through awards through RAC for the recipient selection.
- A3.1.8 At each meeting, all submitted RTARs will be reviewed by RPS and either approved, returned, or rejected. RTARs approved by RPS will be submitted to RAC for full committee approval. Research Activities Subcommittee (RAS) members and RAC consultants shall also be encouraged to review RTARs and provide their comments to RPS. Appendix I provides the current form used to evaluate RTARs.
- A3.1.9 RPS shall review, evaluate, and develop recommendations for RAC action in any area specifically assigned to RPS by the RAC.
- A3.1.10 RPS shall encourage innovative research through the ASHRAE Innovative Research Grant Program by reviewing submitted pre-proposals once per year (See Appendix F).

A3.2 Membership

- A3.2.1 The Research Planning Subcommittee (RPS) shall consist of at least four (4) members of the RAC appointed by the Chair of the RAC for one-year terms.
- A3.2.2 The Chair of the RAC shall designate one member as Chair of RPS who shall serve as a member of the RAC Executive Committee.

A3.3 Meetings

- A3.3.1 In addition to RAC meetings, the RPS may meet by conference call or e-mail ballot at the discretion of the RPS Chair. A quorum shall consist of a majority of the RPS.
- A3.3.2 The Chair of RPS is responsible for ensuring that a written notice of a meeting, including an agenda with support materials, be sent not less than fifteen (15) days before the date of the meeting to all members, Chair of the RAC, and the MORTS.
- A3.3.3 The RPS Chair shall report RPS activities at the appropriate point in the agenda of the RAC meeting.

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SECTION B - RESEARCH LIAISONS

Part 1 Selection

- B1.1 A Research Liaison shall be a member of the RAC who has been designated by the Chair to liaise on research matters with TCs, TGs, and MTGs w/ research authority which are assigned to a Section, as well as SSPCs, and other committees authorized to sponsor research projects.

Part 2 Organization

- B2.1 Sections are groups of TCs, TGs, MTGs and TRGs, which have been formed and assigned by the RAC according to fields of interest or for administrative purposes.

- B2.2 The programs of the RAC are divided into ten (11) Sections as follows:

SECTION 1.0 - FUNDAMENTALS AND GENERAL

SECTION 2.0 - ENVIRONMENTAL QUALITY

SECTION 3.0 - MATERIALS AND PROCESSES

SECTION 4.0 - LOAD CALCULATIONS AND ENERGY REQUIREMENTS

SECTION 5.0 - VENTILATION AND AIR DISTRIBUTION

SECTION 6.0 - HEATING EQUIPMENT, HEATING AND COOLING SYSTEMS AND APPLICATIONS

SECTION 7.0 - BUILDING PERFORMANCE

SECTION 8.0 - AIR-CONDITIONING AND REFRIGERATION SYSTEM COMPONENTS

SECTION 9.0 - BUILDING APPLICATIONS

SECTION 10.0 - REFRIGERATION SYSTEMS

SECTION MTG – MULTIDISCIPLINARY TASK GROUPS

Part 3 General Responsibilities

- B3.1 Each Research Liaison shall be responsible for the coordination of the research activities of the TCs, TGs and MTGs w/ research authority within his/her Section and shall provide liaison between them and the RAC.

B3.1.1 He/she shall keep abreast of all active and proposed research projects within his/her section and advise the Section Head, the TC, TG or MTG w/ research authority Chair and/or MORTS of any anticipated problems or delays.

B3.1.2 The Research Liaison shall ensure that the TC/TG/MTG Chair nominates a Project Monitoring Subcommittee (PMS) when the Work Statement is submitted. The PMS is responsible for contractor evaluations and to provide guidance and direction to each research project contractor. (Also see Research Manual.)

B3.1.3 He/she shall represent the interest of his/her Section to the RAC and shall be responsible for ensuring that their opinions and views are made known.

B3.1.4 He/she shall arrange for spokesmen, when requested, to represent TC/TG/MTGs before the RAC.

Part 4 Specific Responsibilities

- B4.1 The Research Liaison is responsible for communicating with TC/TG/MTGs where there are research coordination issues. Where these coordination issues require face-to-face

communications, he/she should attend TC/TG/MTGs meetings and TC/TG/MTGs Research Subcommittee meetings.

B4.2 The Research Liaison shall attend the Research Subcommittee Chair's meeting at each Annual and Winter meeting.

B4.3 Tasks Expected of Research Liaisons

1. Keep TC/TG/MTG members in your Section informed of the status of the ASHRAE Research Strategic Plan (RSP) and Research Implementation Plan (RIP). Recommend action to the TC/TG in response to the RSP and RIP. Assist TC/TG/MTGs in submitting potential research projects, which are appropriate for ASHRAE to fund.
2. Guide TC/TG/MTG research subcommittees in preparation of Work Statements as early as possible to prevent wasted effort by TC members. The Research Liaison should know how to prepare a successful Work Statement.
3. Approve the TC/TG/MTG PES & PMS recommended by the TC/TG/MTG. This occurs as soon as the Work Statement is approved since this subcommittee evaluates the proposals in addition to monitoring the progress of research.
4. Research Liaisons shall evaluate and score each proposal submitted to TC/TG/MTGs in their section, or other proposals as assigned, for comparison by RAC to the PES evaluations. They shall guide TC/TG/MTG members in evaluating proposals sent in response to the Work Statement and particularly their report of recommendations to the RAC per the guidance provided in the Summary Sheet for Reporting Evaluation of Proposals (See Research Manual for form). Have they included the vote of the full TC/TG/MTG? If other than the low bidder is recommended, is the written justification clear and strong?
5. After research is underway, follow progress and take appropriate action if the research lags, reports are not completed on time, etc. Ensure that the chair of the PMS turns in a Research Project Performance Evaluation Form before or at each Annual and Winter Meeting. Work closely with the MORTS since all official correspondence on research projects goes through the MORTS.
6. At the completion of the research project, ensure that the sponsoring TC/TG/MTG acts promptly on the approval of the final report and technical paper. If the research is of particular interest to a wide range of ASHRAE members, encourage the TC/TG/MTG to obtain an article for the ASHRAE Journal. Make sure that the TC/TG/MTG completes the Disposition of ASHRAE Research Form (see Research Manual) and submits it to the MORTS.
7. The Research Liaison will strive to assure that international interests are considered in the development of Work Statements, and in the composition of the PMS, for ASHRAE-sponsored research projects.
8. At the completion of the research project, the Research Liaison will remind and encourage the sponsoring TC/TG/MTG and project principal investigator (PI) to consider taking advantage of the ASHRAE Research – International Dissemination Travel Grant Program (see Appendix K) to help promote and disseminate the project results to a world-wide audience.

SECTION C - REVISIONS TO RULES AND PROCEDURES

Part 1 Submission Timing for Proposed Changes

- C1.1 Proposed RAC MOP and ROB changes shall normally only be presented to Technology Council for approval once a year for consideration at their fall meeting. Proposed changes that RAC believes require more immediate attention shall first be presented to the chair of Technology Council for permission to submit to Technology Council.

Part 2 Revisions to Rules of the Board (ROBs)

- C2.1 Proposed changes to Rules of the Board (ROBs) may be submitted by committees, councils and Board members. Changes proposed by a committee shall be submitted through the body to which it reports; councils and Board members may submit proposed changes directly to the Board of Directors.

- C2.2 To propose a change to an existing ROB:

Present a two-column comparison showing the current ROB number and wording and the proposed ROB wording. A proposed change, as a minimum, shall include the ROB number, the proposed change, and the reason for the change.

- C2.3 To propose a new ROB:

Present the wording for the new rule and include a statement indicating a recommended placement of the new rule within the ROB framework. Examples:

It is recommended that this rule be placed in ROB Book II, Technology Council ROB.

It is recommended that this rule be placed in ROB Book I, section 300, Meetings of Members.

- C2.4 To propose rescinding an existing ROB, include in the recommendation the ROB book in which the rule is located, the rule number or other identification code, and the wording of the rule.
- C2.5 Proposed changes to Society-wide policies and procedures (e.g., Travel Reimbursement Policy, Election and Appointment Procedures) shall follow the same procedure as for changes to ROBs.

Part 3 Revisions to Manual of Procedures (MOPs)

- C3.1 Revisions to this Manual of Procedures must be approved by Technology Council or designated council subcommittee.

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SECTION D – MANAGEMENT BY OBJECTIVES (MBO)**Part 1 Initial Development, Objective Structure & Status Reporting**

- D1.1 Prior to the Society Annual meeting, the individual who will be the next year's chair will prepare objectives for the RAC for the next year and present these objectives to the RAC for review at the committee meeting held during the Society Annual Meeting. The objectives will be included in the RAC's report to Technology Council at the Annual Meeting as an information item, and a copy of the objectives will be sent to headquarters staff (Assistant to the BOD).

Each objective should be measurable if possible and should include a projected completion date, fiscal impact (if any) and other information that would clarify the intent of the objective. If an objective is to be assigned to a specific member or subcommittee of the committee, this should also be included. See Appendix A for a suggested MBO format.

A status report of the objectives will be included in the committee report submitted to the council at the Society winter meeting, and a copy of the objectives will be sent to headquarters staff (Assistant to the BOD).

Part 2 Final Reporting

- D2.1 A final report of the objectives will be included in the committee report submitted to the council at the Society annual meeting, and a copy of the objectives will be sent to headquarters staff (Assistant to the BOD). The objectives prepared by the committee vice chair for the next year (or by the individual who will be the next year's chair) will also be included in this report.

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SECTION E – MENTORING OF NEW MEMBERS

- E1.1 During the final meeting of the Fiscal Year, the RAC Chair shall appoint an incumbent to be the mentor for each incoming member. Specifics of the Society mentoring program are provided in ROB 3.400 – MOP for Officers & Directors – Appendix E

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APPENDIX A

SUGGESTED MBO FORMAT

OBJECTIVES

Research Administration Committee

Chair: _____

Society Year: 20____ - 20____

Date: _____

Objective	Planned Completion Date	Fiscal Impact	Responsibility	Program Approved	Cost Budgeted	Status

- List objectives, not action items or ongoing committee activities such as updating the committee’s MOP.
- State objectives in clear, concise, measurable language. If necessary, cite sub-tasks and interim steps as a means of measuring objective completion.
- Cite both the completion dates for the overall objective as well as individual sub-tasks.
- State fiscal impact in dollars, man-hours, or man-trips. State whether the program has been approved by the council and whether its cost has been included in the budget.
- State the primary responsible individual, subcommittee, or body.
- Report a brief but complete statement of status. Cite completion date if objective is fulfilled.

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APPENDIX B

ASHRAE RESEARCH PROJECT ANALYSIS

(Completed by Staff [Month Year])

Project Number & Title: (Project # same as RTAR and WS assigned by MORTS)

Responsible TC/TG/MTG/SSPC:

Justification of Need:

Work Statement Authors:

Research Strategic Plan Goals Applicable to this Research:

RTAR Submitted

Position on Implementation Plan:

Coordinated with TC/TG/MTG/SSPC:

Relates to Previous Project:

Vote of TC/TG/MTG/SSPC:

Vote of RAC:

Vote of RAS:

Vote of Tech Council:

Allocation of ASHRAE Funds Per Fiscal Year

	<u>20XX-20XX</u>	<u>20XX-20XX</u>	<u>20XX-20XX</u>
	\$	\$	\$

Best Value for ASHRAE:

Lowest cost **responsive** bid selected? **TBD** If no,

- Did 2/3 of the PES score the selected bid the highest of all **responsive** bids? **TBD**
- Was the average score of the PES 5 or more points higher than the lowest priced **responsive** bid? **TBD**
- Was the \$/point ratio of selected bid less than all lower priced **responsive** bids? **TBD**

Actual or Perceived Conflicts of Interest:

The contractor selected was **not** a WS author? **TBD** If no,

- The selected bid was **not** chosen for unique reason not outlined in WS? **TBD**

ESTIMATED

XXM

\$XXX,XXX

SCORE

\$/POINT

RAC/Tech Council Conflicts-of-Interest:

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APPENDIX C

**ASHRAE GRADUATE STUDENT GRANT-IN-AID DESCRIPTION,
APPLICATION REQUIREMENTS, AND SELECTION CRITERIA**Overview of Award

A Grant-in-Aid is a grant of funds to a full-time graduate student of ASHRAE-related technologies. It is awarded once each year for use in the following academic year. Multiple awards (typically 10 to 25) are made each year in the amount of \$10,000. The awards are administered by the students' University but are meant solely for the students' personal use while pursuing an HVAC&R related education. The grant-in-aid recipient will also be granted a one-year fully paid student membership. Graduate grant-in-aid recipients shall be awarded a \$1,500.00 honorarium if they author and present a peer-reviewed paper at an ASHRAE annual or winter meeting or submit an article that is published in the ASHRAE HVAC&R Research Journal; the presentation or publication must be based on the research supported by the grant-in-aid. The honorarium will be paid by the Manager of Research and Technical Services (MORTS) to the GIA recipient upon confirmation of presentation or publication of the paper.

The goal of the Grant-In-Aid program is to encourage outstanding graduate students to become involved in ASHRAE research and establish careers that include active engagement within and continued contributions to Society activities. The evaluation criteria for candidates include academic performance, quality of the student's research plan, the advisors' recommendation, and an overall assessment of the likelihood for future involvement of the student within ASHRAE.

In order to be eligible for an award, the applicant must be a full-time graduate student who is either currently working on or proposing to work on a research project that has relevance to ASHRAE. The student must also have a faculty advisor who will supervise the research. Applicants from all ASHRAE regions worldwide are eligible. While membership in ASHRAE is not a requirement for the award, all applicants are strongly encouraged to become student members and to participate in the activities of the Society.

Application Requirements

Applications shall be made to the MORTS on the student's behalf by the faculty advisor and will be reviewed and selected by the Research Administration Committee at the ASHRAE Winter meeting. Applications must be received at ASHRAE Headquarters by DECEMBER 15 to be considered.

Applicants will be notified of the results of the competitive evaluation by April 1. Funds will be available to the grant recipients shortly after July 1.

The student shall complete pages 1-3 of the application and submit it to his/her advisor.

1. Student History: Name, address, post-secondary education including current degree program, grade point average, rank in class, membership in professional societies, previous work experience, (transcript to be attached), other financial aid being received.
2. Description of Research Project: Significance of research, outline of plan of procedure, plans for publication of research results.

The advisor will then supply the following data on page 4 prior to submission to ASHRAE:

3. Information on Institution and Faculty Advisor: Is the Faculty Advisor an ASHRAE member, and if so, for how long and at what grade? Indicate nature of activity in Society affairs. Faculty Advisor's assessment of applicant.

Application forms and additional information can be obtained from the ASHRAE website (www.ashrae.org) or the MORTS at ASHRAE headquarters. Requests may be made via mail, fax (404-321-5478) or e-mail (MORTS@ashrae.net). Application forms should be returned to:

MORTS
ASHRAE
1791 Tullie Circle, NE
Atlanta, GA 30329-2305
404-636-8400

Selection Criteria

The goal in the selection process is to choose candidates who have the greatest potential for involvement in ASHRAE and contributions to the ASHRAE membership. The information submitted on the application form is reviewed and scored by the Research Administration Committee (RAC) in the following manner with a maximum score of 100:

1. Academic Performance: Overall Grade Point Averages (GPA) should be reported on a scale of 1.0 to 4.0 basis with Excellent = A = 4.0; Average = C = 2.0. Students who attend or have attended institutions that use a different grading system should, with the help of their faculty advisor, attempt to translate their grades to a base having a maximum value of 4. Both undergraduate and graduate GPAs should be reported along with the number of credits associated with each GPA. (See explanation below for guidance on determining number of credits and GPA.) Students who attended academic institutions outside of North America may be unable to calculate their GPA and number of credits and may not know where they rank in relation to other students in their class. If this is the case, a brief explanation of the system used to evaluate student performance in their academic institution(s) should be provided. As an example, if a student's academic institution uses a classification system as a basis for designating academic achievement, each of the classifications should be described and the student should indicate the classification they received. For academic institutions from the United Kingdom, a "First" is equivalent to a 4.0, an "Upper Second" to a 3.0, a "Lower Second" to a 2.0, and a "Third" to a 1.0. Up to 25 points are awarded for academic performance. The quality of the undergraduate and graduate program may be used as part of the criteria for awarding the **25 points**.
1. Research Plan: Significance of research, outline of plan of procedure, and plans for publication of research results should be described. A maximum of **25 points** are awarded for this element of the application.
2. Faculty Advisor Recommendation: The Faculty Advisor should make a recommendation based upon student involvement related to ASHRAE or other related society activity, academic achievements, ability to carry out the research project. Up to **25 points** are awarded based upon these recommendations.
3. Potential for Future ASHRAE Involvement: The evaluation of this criterion is based on the student and faculty involvement within ASHRAE, the relevance of the research project to ASHRAE, the history of ASHRAE involvement of the institution. The student is strongly encouraged to be a student member within ASHRAE and participate in ASHRAE activities such as an ASHRAE student chapter and local chapter. The faculty advisor is expected to be an ASHRAE member and should demonstrate a history of and/or future potential for involvement within ASHRAE activities. For students and faculty residing outside of North America, membership in the appropriate ASHRAE associate society will be considered to be equivalent. **25 points** are awarded for the potential for future involvement by the nominee.

Determining Grade Point Averages and Credits

Academic courses in North American colleges and universities are generally assigned a number of credits according to the workload of the course. A 3-credit course generally implies that there are three hours of lectures associated with the course each week. Students are assigned letter grades in each course (e.g., an “A” denotes excellent performance, a “C” denotes average performance, etc.) A letter grade is sometimes followed by a “+” or a “-“, where, for example, a “C+” denotes performance slightly above average, and a “C-“ denotes performance slightly below average. Letter grades are then translated to a number on a point scale from 0.0 to 4.0, as shown in the example table below.

Letter Grade	Points on the Point Scale
A	4.000
A-	3.667
B+	3.333
B	3.000
B-	2.667
C+	2.333
C	2.000
C-	1.667
D+	1.333
D	1.000
D-	0.667
F	0.000

Note that this table is intended to be illustrative and may not match a particular academic institution’s grading and/or point scale. For instance, some academic institutions award grades of “A+” for exceptional performance and translate this grade to a value of 4.33 on the point scale.

To calculate a grade point average (GPA) for a number of courses, the number of points on the point scale achieved in each course is multiplied by the number of credits assigned to that particular course. The GPA is then calculated by adding the product of “points × credits” for each course and dividing by the total number of credits for those courses. The example below shows the calculation of a GPA based on five individual course grades.

Course	Grade	Points	Credits	Points × Credits	GPA
Thermodynamics I	A-	3.667	3	11.000	
Heat Transfer	A	4.000	3	12.000	
Calculus III	B+	3.333	4	13.333	
Classical Physics	A-	3.667	3	11.000	
Electrical Circuits	B	3.000	3	9.000	
		Total	16	56.333	56.33/16 = 3.52

** ASHRAE must be notified if an applicant or awardee leaves school, changes projects or changes faculty advisors.

APPENDIX C

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

**APPLICATION FOR GRANT-IN-AID
FOR GRADUATE STUDENTS**

Date _____

Information on Applicant (to be filled out by applicant)

List information requested on this form; no attachment except Transcript

Name _____

Institution where grant-in-aid will be utilized _____

Campus Address _____

Email _____

Home Address _____

Education _____ / _____ / _____

(College) (Degree¹) (Date of Degree²) (Credits³) (Class Ranking⁴) GPA⁵

Transcript(s) enclosed: Yes No

If no explain:

ASHRAE member: Yes No

Membership in other technical/professional societies: _____

Scholastic achievements (scholarships, fellowships, honors) _____

¹ Degree completed or working towards

² Date of actual or expected completion of degree

³ Provide total number credits used as a basis for the GPA provided

⁴ Provide rank and number of graduating students within department or program

⁵ Overall GPA to be reported on a scale of 1.0 to 4.0 basis with Excellent = A = 4.0; Average = C = 2.0

Professional Data (List previous work and research experience)

Job title	Duties	Dates of Employment

Research Publications

Papers already published⁶

Papers in review⁷

Plans for publication or research results⁸

Information on Institution

Name of Institution

Department in which research will be conducted

Facilities available for your research project:

⁶ Provide detailed references to the papers
⁷ Provide titles and journal names for the submission
⁸ Provide a title for the expected publication and where it will be submitted

Information on your research project:

Title

Research Project (Brief description of Research Plan) Keep to space allocated below. No Attachments Please)

Applicant's Signature

Information on Faculty Advisor (to be filled out by Advisor)

Name E-mail

Address

Education

Current Position

ASHRAE Member: Yes No

Grade: Length of Membership
ASHRAE positions held

Involvement with ASHRAE related research:

Advisor's assessment of applicant's qualifications: (Keep to space allocated below)

Mail completed application to: Mike Vaughn – MORTS
ASHRAE, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329
404-636-8400 ext. 1211

Advisor's Signature

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**EVALUATION FORM
20XX-20XX ASHRAE Grant-In-Aid Applicants**

#	Nominee	University	Advisor Name	Research Topic	Academic Performance	Research Plan	Faculty Advisor Comments	Potential for Future ASHRAE Involvement	Total Score	Rank
Available Points					0 to 25	0 to 25	0 to 25	0 to 25	0 to 100	

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APPENDIX D**HOMER ADDAMS AWARD**

This award is named for Homer Addams, a founder and past president of ASHVE, which is a predecessor of ASHRAE. His bequest makes possible the annual award of \$5000 and a certificate to a current or former graduate student who has been engaged in an ASHRAE research project within the past two years. The basis for the award will be an evaluation of ASHRAE Transactions and HVAC&R Research papers that have been published within the prior ASHRAE Society year (July 1 to June 30) and that were deliverables from ASHRAE sponsored research projects.

In August of each year the ASHRAE Manager of Research & Technical Services (MORTS) identifies papers published within the previous society year that were deliverables from ASHRAE research projects and where the primary contributing author was a graduate student who was supported through ASHRAE funds within the past two Society years. In September, MORTS contacts the advisors for each of the graduate students and requests a letter of recommendation. The letter should confirm the student's prominent role in the paper and provide an assessment of the overall quality of the research and performance (including submitting an official copy of the most recent academic transcripts from the University) of the student, as well as the student's potential for contributing to ASHRAE in the future. Prior to the winter meeting, the MORTS forwards the papers, recommendations, and names of the graduate students to the Research Planning Subcommittee (RPS) of the Research Administration Committee (RAC).

At the ASHRAE Winter Meeting, the RPS recommends the name of the recipient to RAC. Following approval by RAC, the name is submitted to the Honors and Award Committee (HAC) for final approval. The recipient is notified and the award of \$5000 is made at the following Annual Meeting. Funding for the award is provided by funds administered by both HAC (\$1500) and RAC (\$3500).

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APPENDIX E**ASHRAE NEW INVESTIGATOR AWARD**

ASHRAE is pleased to announce the establishment of the "ASHRAE New Investigator Award".

PURPOSE

The purpose of the award is to:

- 1) Enhance the academic careers of recent Ph.D. recipients by providing support for research activities.
- 2) Promote research related to the goals of ASHRAE in universities and colleges.
- 3) Promote educational efforts related to the goals of ASHRAE in universities and colleges.

ELIGIBILITYNominee:

Nominees shall be nominated by their Department Head or Chair. Nominees must be within 5 years of receiving a Ph.D. or an equivalent degree and be within 5 years of the start of their first full-time tenure-track or tenured faculty position or equivalent at their nominating institution.

Institution:

Any university that awards degrees in engineering, science, or architecture is eligible. It is expected that the nominee's institution will waive all indirect costs to accept the New Investigator Award based on the fact that there are no contractually required deliverables and all intellectual property generated by the faculty is retained by the institution.

SELECTION

The selection of the recipient will be based on the nominee's ability and potential, as a researcher, for contributing to the viability of ASHRAE's engineering effort. The selection of awardee will be made by the ASHRAE Research Administration Committee with advice of members of the society. The review criteria include:

- 1) Competence in engineering - as evidenced by the nominees' achievements to date, particularly the quality of research and publications, teaching accomplishments, and references.
- 2) Potential for continued professional growth as a research engineer - as evidenced by the quality of the nominee's research plan, the currency and significance of the long-range research and the appropriateness of the research to ASHRAE and to the academic setting.
- 3) Potential for significant development as an educator and academic leader in the training of future engineers in ASHRAE's area of interest as evidenced by the nominee's teaching plan and the narrative statements describing the nominee's qualifications for this award with regard to the nominee's development as an academic leader in an ASHRAE related interest area.

Applicants are required to achieve an average score of 75 points or higher to qualify for possible award of the NIA.

Support and Commitments:

An ASHRAE New Investigator Award carries a base grant of 50k per year in the first two years with an additional award of \$25K available in the 3rd year if it is matched by an industrial contributor. The maximum award from ASHRAE would be \$125K and the maximum available to the recipient would be \$150K. It should be noted that the university should not use the award for overhead/indirect costs. The award should only be used for direct costs associated with the NIA recipient research. The industrial support must be from industries engaged in activities related to ASHRAE's areas of interest. New Investigators who transfer at any time, prior to or during the period of their grant, to institutions that do not meet the institutional eligibility criterion must resign their awards.

The research project undertaken by the award is assigned to an ASHRAE Technical Committee or Task Group (TC or TG). The awardee is expected to attend the annual and winter ASHRAE meetings for the first year of the award and to present an informal report at the sponsoring TC or TG meeting. In addition, the research resulting from this award will be presented at ASHRAE meetings as a Technical paper. The research may also be presented and published elsewhere later as appropriate.

Nomination Items

The following items shall constitute a complete nomination package:

ITEM 1: Cover Sheet - listing name of nominee, institution and nominator.

ITEM 2: Nominator's narrative statement.

One-page statement that describes:

- a) The nominee's demonstrated ability and qualifications as a researcher and teacher.
- b) The nominee's future potential as a researcher and teacher.
- c) How the ASHRAE New Investigator Award would enhance the institution in its research and teaching mission.

ITEM 3: Nominee's research and teaching qualifications.

One-page statement that describes:

- a) A summary of research accomplishments to date and future research objectives.
- b) A summary of teaching accomplishments to date.
- c) How the ASHRAE New Investigator Award would enhance the nominee's development as an academic leader.

ITEM 4: Nominee's teaching plan.

One-page statement that describes the nominee's teaching plan as to course development, textbooks, etc.

ITEM 5: Nominee's research plan.

Two-page statement that describes the nominee's research interests and research project that the nominee proposes to do during the period of the award. This should include the research objectives, background, experimental plan, techniques to be used and bibliography.

ITEM 6: Nominee's biographical sketch.

Curriculum vitae including education, positions held, teaching record, and publications.

ITEM 7: At least three letters of personal and/or professional reference.

APPLICATION

Nominations, together with all support documents should be submitted to the ASHRAE Manager of Research & Technical Services, 1791 Tullie Circle, NE, Atlanta, GA 30329, prior to December 1. Six copies of the nomination should be submitted. The selections of the winning nominee will be made at the ASHRAE winter meeting and the selection will be announced in February. Initial grant funds will be available shortly thereafter.

New Investigator Award Application Evaluation Form

20XX-XX ASHRAE New Investigator Award

	Research Subject	Nominee Educational Background	Nominee Publication Background	Nominee Practical Background	Nominee ASHRAE Background	Teaching Plan	Research Relevance to Industry	Research Technical Difficulty	Total	Rank
Weight Score		1	1	0.5	0.5	2	2.5	2.5		
		0 to 10	0 to 10	0 to 10	0 to 10	0 to 10	0 to 10	0 to 10		

Nominee

									0	
1									0	
2									0	
3									0	
4									0	

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APPENDIX F**ASHRAE Innovative Research Grant****Purpose:**

The ASHRAE Innovative Research Grant was established to provide seed funding for novel research deemed to have the potential to significantly advance the state-of-the-art in heating, ventilating, air-conditioning and refrigeration engineering. The idea is to encourage out-of-the-box research to complement the research proposed and guided by technical committees.

Description of the Grant:

The award carries a base grant of \$50,000 per year for two years, with an additional \$25,000 available in the third year if it is matched by an industrial contributor. The maximum award from ASHRAE would be \$125,000 and the maximum available to the recipient would be \$150,000. The industrial support must be from industries engaged in activities related to ASHRAE's areas of interest.

The intent is to fund one (1) award each year subject the following conditions:

- Suitability of Proposals - A competitive process will be used to evaluate research proposals. If, in a given year, there are no proposals that meet the criteria for the award, an award will not be made.
- Funding Constraints - The amount of research funding available for initiating new research projects is highly variable from one year to the next. When research funds are limited, ASHRAE's Research Administration Committee (RAC) may opt to forego requesting proposals for this grant.

If, in a given year, there is sufficient funding available and more than one outstanding proposal is received, the RAC has the discretion to fund a second award carrying the same value of \$50,000 per year for two years, with an additional \$25,000 available in the third year if it is matched by an industrial contributor.

The grant will have very little oversight from ASHRAE and is intended to enable the investigator to perform enough work to complete an initial evaluation of the feasibility of a new concept, process, methodology, technology, etc. Projects producing promising results could lead to additional research on a larger scale through a URP or a TC-sponsored RTAR and work statement.

Selection Process:

A two-phase process managed by RAC will be used to select grant awardees. The initial phase will entail the evaluation of pre-proposals consisting of a two-page whitepaper and a two-page curriculum vitae for the principal investigator. Pre-proposals will be invited once a year when funding is adequate to support the award. The evaluation of pre-proposals will be organized through RAC's Research Planning Subcommittee and will be performed in conjunction with the RAC Fall meeting held each year. Full proposals will be invited from five or fewer individuals each year, and the possibility exists that there will be no invited full proposals if the pre-proposals fail to identify a project of sufficient novelty and merit. Evaluation of the full proposals will be organized through RAC's Research Activities Subcommittee and will be performed in conjunction with the RAC Spring meeting each year. As in the case of the pre-proposals, the possibility exists that all of the invited full proposals could be rejected, in which case there would be no grant awarded in that particular year.

Evaluation Criteria:

Proposals will be evaluated using the following equally-weighted criteria: 1) novelty of the research; 2) importance of the problem; 3) potential for success; 4) student involvement; and 5) cost sharing.

Schedule:

Pre-proposals are due August 15 and should be submitted to ASHRAE's Manager of Research & Technical Services, 1791 Tullie Circle, NE, Atlanta, GA 30329. Full proposals are due March 15.

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APPENDIX G**GUIDELINES FOR AWARDS**

All requests or suggestions for new awards, revisions to current awards, or award deletions shall be forwarded to the Honors and Awards Committee for review and recommendation before being forwarded to the BOD for review and approval.

ASHRAE awards are grouped into the following categories, each of which has their defined forms of award:

1. Personal Honors
2. Personal Awards for General Society Activities
3. Personal Awards for Specific Society Activities
4. Paper Awards
5. Society Awards to Groups or Chapters

Awards will normally carry the name of an ASHRAE activity (e.g., Distinguished Service Award, Fellow, Journal Papers Award, etc.) No business, product, or commercial name shall be used for an award. Only in very exceptional instances may consideration be given to naming the award for an individual member.

Proposers of awards shall submit a detailed description, including the name of the award, the suggested category for the award, the reason for establishing the award, and the proposed selection and awarding process to the Honors and Awards Committee.

Proliferation of awards that would tend to detract from the worth of existing awards must be avoided. The award must first be considered as applying to an important field of ASHRAE related activity; the name of the award would then add prestige.

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APPENDIX H**PROCEDURE FOR SERVICE TO ASHRAE RESEARCH AWARD****1. PURPOSE.**

The purpose of the “Service to ASHRAE Research Award” is to recognize an individual for his/her excellence in volunteer service to the area of Society research. The award will serve to heighten general membership awareness of, and interest in, research activities at the TC/TG level.

2. AWARD.

The “Service to ASHRAE Research Award” shall be presented annually provided a suitable candidate is identified. The award will consist of an acrylic trophy with the recipients name and the year of the award etched into the face of the trophy. The fiscal impact for the trophy is negligible (< \$100) and the cost for it will be covered under the Research Administration Committee annual budget. It would require truly unusual service for the award to go to a past recipient.

3. ELIGIBILITY REQUIREMENTS.

The award is open to ASHRAE members who have demonstrated exceptional service in the area of ASHRAE research which includes planning, authoring of work statements, proposal evaluation, project monitoring and/or administration. Research Administration Committee and Technology Council members or TC/TG chairs are not eligible for receipt of the Award during the terms they serve on the respective committees. Researchers are not eligible for service performed in connection with a project for which they are under contract.

4. NOMINATION.

TC/TG chairs may nominate either a voting or corresponding member of the TC using the form attached to this procedure. Multiple TC/TG chairs may co-nominate an individual whose exceptional research service spans their TC/TGs. A typical award nomination should contain a summary outlining the nominee’s exceptional research service across the beneficiary TC/TGs over the previous five years. The nominating (or co-nominating) TC/TG chair(s) submits the form to their Section’s Research Liaison (RL) by September 30. TC/TG chairs may nominate a candidate again in subsequent years if the candidate has not yet received the award.

5. JUDGING.

Each RL of RAC will review all nominations or co-nominations received from their Section and recommend a single eligible nominee from that Section to the RAC Research Planning Subcommittee (RPS) for its consideration at the Technology Weekend Meeting in October. To be considered by RPS, candidates co-nominated by TC/TGs in multiple Sections must be the top choice of at least one of the Section RLs. The Research Administration Committee prior to the ASHRAE Winter Meeting will nominate a candidate to the Honors and Awards Committee. The recommended candidate will be chosen from all nominations that meet a 10-point minimum requirement as outlined under the below Item 7 Criteria for Selecting Recipients by RPS and approved by RAC. The Honors and Awards Committee shall consider award points and the explanation provided by the nominating or co-nominating TC/TGs to RAC in its deliberations.

6. PRESENTATION.

The RAC chair presents the “Service to ASHRAE Research Award” at the Research Subcommittee Chair’s Breakfast Meeting during the ASHRAE Annual Meeting.

7. CRITERIA FOR RECIPIENTS.

A. Work Statement (WS) Author	1 point per WS
B. Project Evaluation Subcommittee Service	
1. Member	1 point per RP
2. Chair	1 point per RP
C. Project Monitoring Subcommittee Service	
1. Member	2 points per RP
2. Chair	2 points per RP
D. Research Subcommittee Chair Service	1 point per year
E. Research Advisory Panel Service	
1. Member	1 point per tour
2. Chair	2 points per tour
F. Research Administration Committee Service	
1. Member	1 point per tour
2. Subcommittee Chair	2 points per tour
3. Chair	3 points per tour (Max. 6 pts./tour)

Note: A tour is a 4-year appointed term.

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**SERVICE TO ASHRAE RESEARCH AWARD
NOMINATION FORM**

In recognition of exceptional service to the ASHRAE Research Program.

Nominating TC/TG or Co-Nominating TC/TGs_____

Nominee's Name

Nominee's Current Committee Position

TC/TG Chair Name Signature (All Chairs if Co-Nominating)

Eligibility Points:

- A. Work Statement (WS) Author Points:_____
 - B. Project Evaluation Subcommittee Service
 - 1. Member Points: _____
 - 2. Chair Points: _____
 - C. Project Monitoring Subcommittee Service
 - 1. Member Points: _____
 - 2. Chair Points: _____
 - D. Research Subcommittee Chair Service Points: _____
 - E. Research Advisory Panel Service
 - 1. Member Points: _____
 - 2. Chair Points: _____
 - F. Research Administration Committee Service
 - 1. Member Points: _____
 - 2. Subcommittee Chair Points: _____
 - 3. Chair Points: _____
- Total:

Describe the nominee's outstanding service, accomplishments, and/or contributions during the past five Society years. Be specific. (Max. 250 words.)

Describe how the nominee's outstanding service, accomplishments, and/or contributions during the past five Society years benefited ASHRAE. (Max. 250 words.)

Summarize the nominee's lifetime service, accomplishments, and/or contributions to ASHRAE research at the TC/TG/MTG level. (Max. 100 words).

RTAR Evaluation Form

Project ID	1608	
Project Title	Comprehensive Performance Rating (CPR) for Light Commercial Unitary HVAC, Phase 1	
Sponsoring TC	TC 8.11	
Cost	\$185K	
Submission History	1st Submission	
Classification: Research or Technology Transfer	Applied Research	
Tech Weekend 2009 Meeting Review	INSERT YOUR NAME HERE	
Check List Criteria	Satisfied?	Comments & Suggestions
Is there a well-established need? The RTAR should include some level of literature review that documents the importance/magnitude of a problem. If not, then the RTAR should be returned for revision.		
Is this appropriate for ASHRAE funding? If not, then the RTAR should be rejected. Examples of projects that are not appropriate for ASHRAE funding would include: 1) research that is more appropriately performed by industry, 2) topics outside the scope of ASHRAE activities.		
Is there an adequate description of the approach in order for RAC to be able to evaluate the appropriateness of the budget? If not, then the RTAR should be returned for revision.		
Is the budget reasonable for the project scope? If not, then RTAR could be returned for revision or conditionally accepted with a note that the budget should be revised for the WS.		
Have the proper administrative procedures been followed? This includes recording of the TC vote, coordination with other TCs, proper citing of the Research Strategic Plan, etc. If not, then the RTAR could be returned for revision or possibly conditionally accepted based on adequately resolving these issues.		
Decision Options	Decision?	Additional Comments or Approval Conditions
ACCEPT		
COND. ACCEPT		
RETURN		
REJECT		

ACCEPT Vote - Topic is ready for development into a work statement (WS).

COND. ACCEPT Vote - Minor Revision Required - RL can approve RTAR for development into WS without going back to RAC once TC satisfies RAC's approval condition(s)

RETURN Vote - Topic is probably acceptable for ASHRAE research, but RTAR is not quite ready.

REJECT Vote - Topic is not acceptable for the ASHRAE Research Program

Work Statement (WS) Evaluation Form

Project ID	1608	
Project Title	Comprehensive Performance Rating (CPR) for Light Commercial Unitary HVAC, Phase 1	
Sponsoring TC	TC 8.11	
Cost	\$185K	
Submission History	1st Submission	
Classification: Research or Technology Transfer	Applied Research	
Tech Weekend 2009 Meeting Review	INSERT YOUR NAME HERE	
Check List Criteria	Satisfied?	Comments & Suggestions
Adequate Intermediate Deliverables? The project should include the review of intermediate results by the PMS at logical milestone points during the project. Before project work continues, the PMS must approve the intermediate results.		
Time and Cost Estimate Reasonable? The time duration and total cost of the project should be reasonable so that the project can be as it is described in the WS.		
Detailed Bidders List Provided? The contact information in the bidder list should be complete so that each potential bidder can be contacted without difficulty.		
Proposed Project Doable? Can the project as described in the WS be accomplished? If difficulties exist in the project's WS that prevent a successful conclusion of the project, then the project is not doable. In this situation, major revision of the WS is needed to resolve the issues that cause the difficulty.		
Proposed Project Description Correct? Are there technical errors and/or technical omissions that the WS has that prevents it from correctly describing the project? If there are, then the WS needs major revision.		
Task Breakdown Reasonable? Is the project divided into tasks that make technical and practical sense? Are the results of each task such that the results of the former naturally flow into the latter? If not, then major revisions are needed to the WS that would include: adding tasks, removing tasks, and re-structuring tasks among others.		
Proposed Project Biddable? Examining the WS as a whole, is the project described in the WS of sufficient clarity and detail such a potential bidder can actually understand and develop a proposal for the project? This criterion combines the previous three criteria into an overall question concerning the usefulness of the WS. If the WS is considered to not be biddable, then either major revisions are in order or the WS should be rejected.		

Decision Options	Decision?	Additional Comments or Approval Conditions
ACCEPT		
COND. ACCEPT		
RETURN		
REJECT		

ACCEPT Vote - Work statement(W.S) ready to bid as-is

CONDITIONAL ACCEPT Vote - Minor Revision Required - RL can approve WS for bid without going back to RAC once TC

RETURN Vote - WS requires major revision before it can bid

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APPENDIX K**ASHRAE RESEARCH - INTERNATIONAL DISSEMINATION TRAVEL GRANT PROGRAM**

During the course of the project or within one year of the completion of the project, the principal investigator (PI) for an ASHRAE sponsored research project has the option of applying for an International Travel Grant to support travel expenses to a conference outside of North America to present a paper that is related to their ASHRAE research project. The maximum amount of the award shall be \$2500. In order to apply for this travel grant, the PI should submit a letter to the chair of ASHRAE Project Monitoring Subcommittee (PMS) for the project. The PMS chair should forward the letter to MORTS along with a recommendation in support of the International Travel Grant. The letter from the PI should provide documentation on the conference, the paper that will be presented, and a breakdown of the estimated travel expenses, which may include travel, conference fees, hotel and reasonable meal costs in line with normal ASHRAE procedures. If the International Travel Grant is approved by MORTS, then the PI will be reimbursed for the actual travel expenses up to the approved amount after submission of travel receipts.

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APPENDIX L

STANDARD RESEARCH PROJECT FINAL REPORT COVER

See next page for cover.

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ASHRAE Research Project Report

RP-1390

Short-Term Curtailment of HVAC Loads in Buildings

Submission: February 15, 2011
Approval: April 8, 2011

Contractor: The University of Augusta
1234 Magnolia Lane
Augusta, GA 99999

Principal Investigator: Dr. A. Mackenzie

Authors: I.M. Author1
U.R. Author2

Author Affiliations

Sponsoring Committee: TC 7.5 Smart Building Systems

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