

**Student Activities Report to Members Council**  
**From the meeting of January 20, 2018, Chicago 2018**

Members Present

**William Simpson, Chair**  
**Adam Davis, Vice-Chair**  
**Steve Still, Reg I**  
**Ben Oliver, Reg II**  
**James Piscopo, Reg III**  
**Adam Parker, Reg IV**  
**Janice Means, Reg V**  
**Eric Sturm, Reg VI**  
**Chris Ahne, Reg VIII**  
**Kevin Amende, Rex IX**  
**Buzz Wright, Reg X**  
**Jared Larson, Reg XI**  
**Gerardo Alfonso, Reg XII**  
**Zoltan Magyar, Reg XIV**  
**Michel Hayek, RAL**  
**Michael Brandemuehl, ABET BoD**  
**David Cassel, ABET EAC**  
**Mansour Zenouzi, ABET ETAC**  
**Joe Chin, Consultant**  
**Megan Tosh, Consultant**  
**Erich Binder, BoD Ex-O**

Guests

**Jason Maurer**  
**Sean Killarney**  
**Nathan Dills**  
**Delaine Deer**  
**Kevin Summers**  
**Mark Long**  
**Scott Sabol**  
**Jake Taylor**  
**Bradley Willis**  
**Doug Cochrane**  
**Atilla Biyrkoglu**  
**William Ryan**  
**Rachel Romero**  
**Carrie Kelty**  
**Jack Griffith**  
**Islam Mohamed Rihan**  
**Enrica Galasso**  
**Mahmoud El Torki**  
**Walid Chakroum**  
**Osama Asad**

Staff

**Katie Thomson**

## Motions

**Motion 1:** That the [attached](#) revised program criteria for accrediting HVAC&R engineering technology programs under ABET are approved.

**Background:** ASHRAE is one of thirty-five member professional societies that comprise ABET, which accredits over 3800 educational programs in 31 countries. Within ABET, ASHRAE is the lead society for HVAC&R engineering technology programs and is a cooperating society for architectural engineering and environmental engineering programs. (ASHRAE is also pursuing opportunities to partner with ASME as a cooperating society for mechanical engineering and mechanical engineering technology programs.) To be accredited by ABET, a program must comply with an overarching set of general criteria that apply to all program disciplines as well as discipline-specific program criteria. As lead society for HVAC&R engineering technology programs, ASHRAE is responsible for developing and maintaining the specific program criteria used in the accreditation of these programs.

ABET is currently revising the format and content of both the general and program criteria for all engineering technology programs. ABET has requested that all lead societies submit revised program criteria that identify the curriculum and faculty requirements specific to the program, using a template provided by ABET. The Accreditation Subcommittee of the Student Activities Committee has developed the revised program criteria.

The HVAC&R engineering technology program criteria have not been revised in over twenty years. To guide this revision, SAC organized a Forum at the 2017 Summer Meeting to raise awareness of accreditation and solicit input on the criteria. Drawing on this input, the Accreditation Subcommittee developed a draft set of criteria and distributed the draft to all ASHRAE Student Branch Advisors affiliated with engineering technology programs for further comment. Subsequent comments were incorporated into the proposed criteria.

Historically, designated ASHRAE ABET representatives and the Student Activities Committee have been fully empowered to make recommendations to ABET without further approvals. Given the historical nature of this criteria revisions, it was recommended by Executive Vice President Jeff Littleton that additional approvals be sought from Members Council and the Board of Directors.

**Vote:** 17-0-0, CNV

**Fiscal Impact:** None

PROGRAM CRITERIA FOR  
AIR CONDITIONING, REFRIGERATING, HEATING, AND VENTILATING  
ENGINEERING TECHNOLOGY AND SIMILARLY NAMED PROGRAMS

Lead Society: American Society of Heating, Refrigerating, and Air Conditioning Engineers

Applicability

These program criteria apply to engineering technology programs that include air conditioning, HVAC, refrigerating, heating, or ventilating, or similar modifiers in their titles. The programs

Objectives

~~An accredited program in Air Conditioning, Refrigerating, Heating and Ventilating Engineering Technology will prepare graduates with the technical and managerial skills necessary to enter careers in the design, application installation, manufacturing, operation, marketing and maintenance of heating, ventilating, air-conditioning, and refrigeration (HVAC&R) systems. Graduates of associate degree programs typically have competence in air-conditioning processes, heating/cooling load calculations, ventilation principles, pipe and duct design, system controls, system components, heating, refrigeration, economic analysis and computerized energy evaluation methods. Baccalaureate degree graduates are well prepared for design and development of complex systems complementing and expanding on lower division work.~~

Outcomes

~~Graduates of associate degree programs must demonstrate knowledge and hands-on competence appropriate to the goals of the program in:-~~

- ~~(a) utilizing air conditioning processes, heating and cooling load calculations, ventilation principles, pipe and duct design, system controls, system components, heating, refrigeration, economic analysis, and computerized energy evaluation methods in system design.-~~
- ~~(b) applying mathematics, physics or chemistry, thermodynamics, psychrometrics, and fluid mechanics to HVAC&R systems.-~~

~~Graduates of baccalaureate degree programs must demonstrate, in addition to outcomes expected of associate degree graduates, the ability to:-~~

- ~~(c) analyze and design complex HVAC&R systems.-~~
- ~~(d) apply project management to HVAC&R systems.-~~
- ~~(e) apply economic analysis and computerized energy evaluation methods to HVAC&R systems.-~~

I. PROGRAM CRITERIA FOR ASSOCIATE LEVEL PROGRAMS

## Curriculum

The curriculum must prepare associate degree graduates with the knowledge, techniques, skills, and ability to use modern equipment in HVAC&R engineering technology. The curriculum must prepare graduates to have competence in the following curricular areas as detailed in the following required curriculum topics:

- a. Basic HVAC&R principles, including heat transfer, fluid mechanics, combustion, air conditioning and refrigeration processes, heating and cooling load calculations, electrical circuits and controls.
- b. Application of HVAC&R principles for analysis of well-defined technical activities, including pipe and duct sizing, analysis of ladder logic diagrams, evaluation of equipment performance, and use of computerized tools for energy calculations and equipment selection.
- c. Application of HVAC&R principles for system operations, including troubleshooting, servicing, and maintenance tasks.

## II. PROGRAM CRITERIA FOR BACCALAUREATE LEVEL PROGRAMS

### Curriculum

The curriculum must prepare baccalaureate degree graduates with the knowledge, techniques, skills, and ability to use modern equipment in HVAC&R engineering technology. Baccalaureate degree graduates are well prepared for design and development of complex systems complementing and expanding on lower division work. The curriculum must prepare graduates to have competence in the following curricular areas as detailed in the following required curriculum topics:

- a. Basic HVAC&R engineering principles, including heat transfer, fluid mechanics, combustion, air conditioning and refrigeration processes, heating and cooling load calculations, electrical circuits and controls.
- b. Application of HVAC&R principles for broadly defined technical activities, including analysis of equipment and system performance, analysis of system controls, and computerized evaluation of system energy performance.
- c. Design and analysis of HVAC&R systems for commercial buildings, including pipe and duct design, HVAC&R equipment and system selection, building energy modeling, and economic analysis.
- d. Project management for design and installation of HVAC&R systems.

### Faculty

The program must demonstrate that a majority of faculty teaching courses that are primarily design in content are qualified to teach the subject matter by virtue of professional licensure or by education and design experience.

**Motion 2:** The Student Activities Committee moves that the Undergraduate Program Equipment Grant annual budget for SY2018/2019 be \$165,000.

**Background Information:** Each year the Student Activity Grant subcommittee funds about 25 grants with a maximum dollar amount of \$5,000 each. The Undergraduate Program Equipment Grant budget also funds the transportation to the winter meeting for the top two teams.

We've seen the number of Undergraduate Equipment Grants increase. The current grant is set at \$128,000 which includes costs for the top two groups to travel and attend the winter meeting. This amount has remained constant for the last two years. In this same period of time we have seen significant growth in the quantity of applicants. There are many success stories of the grant:

We are seeing tremendous growth. There were 39 applications in 2015, 46 applications in 2016, and 58 applications 2017. That's an increase of 48 % since the current funding was set, and a 26% increase in applicants since last year alone.

We are seeing new institutions applying for grants. 22 of the 58 applicants are applying for grants the first time.

There is a strong support for the student branch. This program recognizes ASHRAE student members and student branches. 49 of 58 applicants have active student branches.

We also see this as a mechanism to increase industry relationships by matching programs. 10 applicants were able to obtain additional industry funding.

The international growth of ASHRAE is also reflected the applications. This year 45% of the applications are from outside of North America.

These are great success stories, and have done well to promote ASHRAE to post-secondary students. Each year there are several quality grant applications which do not get funded. These projects promote the art and science of heating, ventilating, air conditioning and refrigeration to serve humanity and promote a sustainable world. The Student Activity Grant subcommittee would like to fund additional projects that promote ASHRAE and impact more lives throughout society.

**Vote:** 17-0-0, CNV

**Fiscal Impact:** \$37,000 annually.

## Referred Motions

### **Illinois Chapter – Motion 25 (06/27/2017):**

That Society Student Activities Committee research annual grade school or high school competitions that inspire and attract students to the art and science of HVAC&R and select one to partner with as a Society.

Background: ASHRAE has already invested money in organizations such as Solar Decathlon and DiscoverE, which serve a similar purpose but are oriented towards STEM in general. In an effort to more strongly champion HVAC&R and encourage the development of more student branches, the desire is for ASHRAE to bring HVAC&R specifically to the forefront through partnering with such groups. Awards could include scholarships or sponsorship to conferences funded at a regional or society level, and competitions judged by volunteers from the Society. The awards would be presented during National Engineers Week.

Fiscal Impact: \$7,500 for marketing material, prizes, and plaques/trophies/ribbons.

Response to Members Council: **MOTION Failed 17-0-0, CNV**

Committee Response: The motion requests the Student Activities committee to research K12 competitions that ASHRAE could partner with. The background information recognizes that the Student Activities Committee is partnering with DiscoverE and Solar Decathlon. In addition to these, we also have existing partnerships with Future City competition that is consistent with the motion request. The Student Activities Committee works with Race to Zero and more recently have begun working with STEM Scouts. To provide the necessary attention to our new partnership with STEM Scouts, we respectfully ask that the additional work associated with researching new areas for ASHRAE involvement be clarified in terms of suggested organizations that the Illinois chapter may have in mind. If a proposed partner organization had synergy with ASHRAE mission, we would happily consider the opportunity to increase ASHRAE's brand awareness in K12/STEM. At this time, the K12/STEM subcommittee has some concern that additional partner organizations beyond our current scope will tax Student Activities Committee volunteer and staff resources and thus we recommend that the motion be defeated.

### **Region I (Central New York Chapter) – CRC Motion 5:**

That Society create a Smart-Start Weekend Ad-Hoc Committee at the Society Level including members from the Student Activities, YEA, and Membership Promotions committees and provide \$75,000 in funding annually for the committee to distribute amongst the Regions who apply to receive the funding for a Student Focused Program at the Region's CRC (Smart-Start Weekend).

**Background:** For more details on the proposed program, please refer to the "Smart-Start Weekend Program Proposal" document attached. A short summary is provided below.

The goal of the Smart-Start Weekend Program is to increase ASHRAE's Student Membership retention rate. The current Student Membership retention rate is at 7% and Society has seen a decreasing trend in this metric in recent year. The objectives of the program are to:

- (1) Introduce students to career paths in the HVAC&R industry
- (2) Educate students about ASHRAE
- (3) Provide networking opportunities with professionals

- (4) Train students on how to run a successful student branch
- (5) Offer basic technical training and building tours

The CNY Chapter held a Smart-Start Weekend pilot event in April 2017 from funding received from the Chapter Opportunity Fund (\$4,750) and money raised from company sponsors (\$5,690). The intent of providing society level funding of \$75,000 annually to be divided between the 15 ASHRAE Regions is to incentivize Regions to include student focused programs at their annual CRC. Incentivizing Chapters will accelerate the program more rapidly throughout the Society. Based on expenses from the pilot event, it was determined that \$75,000 (\$5,000 for each Region) is appropriate funding.

The Smart-Start Weekend Ad-hoc Committees main objectives are to (1) maintain training information to provide to Region's on how to develop a Smart-Start Weekend event, and (2) to review the application process and distribute funding. The Central New York chapter has spoken with YEA, Student Activities, and Membership Promotion committees at the Annual Conference in Long Beach, and all the committees showed support of expanding the Smart-Start Weekend program. YEA and Student Activities have already nominated a representative on their committees at Long Beach to be their Smart-Start Weekend Program Liaison.

**Fiscal Impact:** \$75,000

Committee Response: We would like to defer this to Houston (Annual Meeting). This motion requires further discussion by our subcommittee. This would be a major undertaking, and we still have several questions / concerns that we'd like to further vet. We have a chair assigned MBO to address this. The fiscal impact of \$75,000 is quite significant and before moving forward we'd like to be sure that this would be something applicable to all regions. We will be discussing in our future conference calls and at the Annual Meeting. We will prepare our formal response to be reviewed at Members Council at the Annual Meeting.

Action Item Summary

EXCOM Action Items:

Action Item	Person(s) Responsible	Due Date
Start looking for successors in subcommittee chair positions and send the names to Bill	Subcommittee Chairs	June 2018
Develop RVC SA training and CRC training	Centralized Training Subcommittee/Joe Chin	June 2018
Each member (RVCs and Vice Chair) shall complete MBOs and then measure against their MBO at the winter meeting and by continuing reports	Student Activities Committee	June 2018

Grants Action Items:

Action Item	Person(s) Responsible	Due Date
Review application form and scoring rubric guidelines	Grants Subcommittee/Staff	June 2018
Develop guidelines for application and scoring rubric to provide clarity	Student Activities Committee/ Staff	December 2018
Investigate new opportunities to expand the Undergraduate Program Equipment Grant	Grants Subcommittee	June 2018

ABET Action Item

Action Item	Person(s) Responsible	Due Date
Collaborate with ASME as cooperating society on Mechanical Engineering and Mechanical Engineering Technology programs.	Brandemuehl	December 2018
If approved, communicate revised program criteria for accrediting HVAC&R engineering technology programs to ABET	ABET Subcommittee	June 2018

K-12/STEM Action Items:

Action Item	Person(s) Responsible	Due Date
Promote STEM kits to Chapters	K-12/STEM Subcommittee	Ongoing
Make improvements to Student Zone	K-12/STEM Subcommittee/Staff	June 2018
Raise awareness of ASHRAE's K-12/STEM activities and encourage chapters to complete activity report	Student Activities Committee/Staff	Ongoing
Continue to develop STEM kit ideas	K-12/STEM Subcommittee	Ongoing

Post High Action Items:

Action Item	Person(s) Responsible	Due Date
Gather feedback on revamped Student Program	Post-High Subcommittee/Staff	June 2018
Deactivate branches that do not submit annual report and circulate list of inactive branches	Staff	June 2018

Review post high material/website and make improvements	Post-High subcommittee/Staff	June 2018
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Design Competition Action Items:

Action Item	Person(s) Responsible	Due Date
Release the 2020 design competition information early	Design Competition Subcommittee	January 2020

1) Subcommittee Reports

a) Executive Committee:

Student Members

- The total number of student members as of Dec 31, 2017 is 7,938 (down 3.7%)
  - Dec 31, 2016 is 8,246
  - Dec 31, 2015 is 7,312
  - Dec 31, 2014 is 6,072
  - Dec 31, 2013 is 6,271
  - Dec 31, 2012 is 6,143
  - Dec 31, 2011 is 6,482
- Review of all subcommittees were made.
- The Chair reviewed the status of this year's MBOs – see attachment A.
- Centralized training will be held at the same location as MP CT on the Sunday of the Annual Meeting in Houston
- RVC training material is being developed along with CT and CRC materials.

b) Grants Subcommittee

- 58 applications have been submitted.
- Budget for this year is \$128,000. In that budget the top two schools travel expenses must be included.
- Seven judges scored the applications. The top 24 schools will receive a grant not exceeding \$5,000 for a total of \$ 113,733 out of \$250,225 requested.
- The grants will be announced in February and the subcommittee agreed to invite the two top schools to the next winter meeting to give presentations to the students attending.
- Funding will be offered to the two teams for travel to the 2019 Winter Meeting in Atlanta.

- Continuous improvement of the scoring rubric for grants and application form
- Implement strategies for raising the profile of grants, increasing the number of applications.

c) ABET Subcommittee Report

- Reports from the three ABET representatives were given.
- A revised set of program criteria was developed based on the feedback from Student Branch Advisors. A redlined version is given in the attachment highlighting the changes since our conference call in September.
- The attendees had a wide-ranging discussion of strategies to increase the number of ASHRAE PEVs. There seem to be two groups of prospective candidates: faculty members and practicing professionals. Faculty members include our Student Branch Advisors, who have demonstrated interested in undergraduate education. SBAs can be reached through email communication or directly at the SBA Congress. Practicing professionals could be reached through Insights, through it was suggested that such an article could wait until we have received a response from ASME on the next agenda item.
- The subcommittee discussed possible collaboration with ASME as cooperating society on Mechanical Engineering and Mechanical Engineering Technology programs. A draft letter is attached. It is suggested that the letter should be prepared for signature by Jeff Littleton.
- The subcommittee concluded that there seemed to be little incentive to develop criteria for Facilities Engineering or Facilities Engineering Technology programs. There is only one ABET accredited program in each discipline

d) K-12/STEM Subcommittee Report

- There were three nominations for the Youth Outreach Award. The K-12/STEM Subcommittee recommended an individual to Honors and Awards for the Youth Outreach Award. The award needs to be promoted by RVCs to ensure one nomination per region next year.
- Gamification STEM kit has been added to the website and new kits are being developed.
- Honorary Student Membership Cards have been developed for volunteers to leave with students after a school visit.
- Discussed website improvements for the Student Zone for ASHRAE members and K-12 students.
- Continuous improvement to promoting K-12/STEM activities at Regional and Chapter levels.

E. Post High Subcommittee Report

- The Student Program for the Winter Meeting is [Attachment A](#).
- There were two nominations for the Student Activities Achievement Award. The Post High Subcommittee recommended to Honors and Awards that one individual receive the Student Activities Achievement Award. The award needs to be promoted by RVCs to ensure one nomination per region next year.

- Student branch status and financial reports which are deemed mandatory for a branch to be considered “active” will be enforced again this year. This will improve the information of active/inactive branches. Which branches are inactive will be tracked. Report will be issued to RVC’s to send to their respective SA chairs.
- A proclamation has been created by Tim Wentz for 'sister' branches between NA schools and international schools

#### Student Membership

- Total Numbers – 7,938 (includes students in grace) as of Dec 31, 2017
- Branches – 14 New Branches

Region	Student Branch	School	Chapter	Location
XIV	DIT Student Branch	Dublin Insitute of Technology	Ireland	Dublin, Ireland
I	NYIT Student Branch	New York Institute of Technology	Long Island	New York, NY
RAL	ISB&M Student Branch	International School of Business and Media	Pune	Pune, India
RAL	IIT Bombay Student Branch	Indian Institute of Technology Bombay	ASHRAE Mumbai	Mumbai, India
RAL	FAMT Ratnagriri Student Branch	Finolex Academy of Management and Technology	ASHRAE Mumbai	Ratnagiri, India
RAL	COEP Student Branch	College of Engineering Pune	Pune	Pune, India
VIII	UCO Student Branch	University of Central Oklahoma	Central Oklahoma	Edmonton, OK
RAL	Akdeniz University Student Branch	Akdeniz University Student Branch	Turkish	Antalya, Turkey
RAL	IIIT Hyderabad Student Branch	International Institute of Information Technology, Hyderabad	ASHRAE Deccan	Hyderabad, India
RAL	ZCOER, Pune	Zeal College of Engineering and Research, Pune	Pune	Pune, India
II	Sherbrooke University	Université de Sherbrooke	Montreal	Sherbrooke, Canada
RAL	ABMSP - APCOER Parvati, Pune	Akhil Bhartiay Maratha Shikshan Parishad (ABMSP) - Anantrao Pawar College of Engineering and Research (APCOER)	Pune	Pune, India
XI	University of Regina Student Branch	University of Regina	Regina	Regina, Canada
RAL	D Y Patil College of Engineering, Akurdi, Pune 44 Student Branch	Dr. D.Y. Patil College of Engineering	Pune	Pune, India

## Design Competition Subcommittee Report

- Over 200 students have registered for the Design Competition with approximately 140 schools represented.
  - Design Calculations – 59
  - System Selection – 46
  - Integrated Sustainable Building Design – 40
  - Setty Family Foundation Applied Engineering Challenge - 58
- Representatives from the 14 winning teams attended the 2018 Winter Meeting Student Program to accept awards.
- The subcommittee reviewed the new judging criteria spreadsheet.
- The subcommittee reviewed the 2019 Design Competition and the Setty Family Foundation Applied Engineering Challenge which have been published to ASHRAE website.
- The subcommittee agreed to support the request from the Development Committee to pursue sponsorship of the three categories of the Design Competition.
- Future design competition ideas were discussed and the DC Matrix spreadsheet has been repurposed for future design competitions
- The subcommittee discussed the idea for an adaptive re-use of an existing building for the 2020 design competition with location in a climate with outdoor air quality concerns and hot/humid climate.

### **Other Business**

- A. The Chair reviewed the status of this year's MBO's ([attachment B](#)).
- B. The 2017-18 PAOE points were discussed by the committee and revisions are in [attachment C](#).

# Attachment A: 2018 Student Program

### STUDENT TOUR

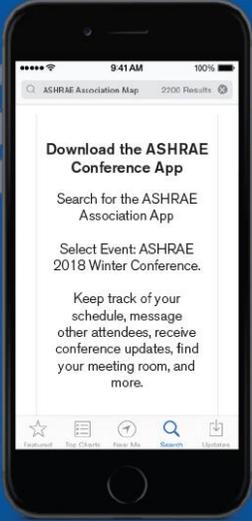
1:30 pm – 5:00 pm  
(\$25 Ticket)  
University of Chicago – William Eckhardt Research Center



Photo by Tom Rossler Photography  
Architect Hellmuth Obata & Kassabaum (HOK)

The University of Chicago William Eckhardt Research Center (WERC), is a 265,000 square foot high-performance research building which brings together several research groups within the world-renowned Physical Sciences Division (PSD), as well as the Institute for Molecular Engineering (IME), the university's first ever engineering program. The building includes five stories above grade and two below-grade levels. The latter were specifically designed to accommodate high-performance research laboratories by mitigating vibration and electromagnetic interference. Within the below-grade levels are a 10,000 square foot Class 100 nanofabrication clean room and 18,000 square feet of precision-controlled optics and laser laboratories, among other spaces.

## Get the 2018 ASHRAE Winter Conference App



Download the ASHRAE Conference App

Search for the ASHRAE Association App

Select Event: ASHRAE 2018 Winter Conference.

Keep track of your schedule, message other attendees, receive conference updates, find your meeting room, and more.





## #myashrae

Share what your ASHRAE life is like with **#myashrae**. Whether you're at the meeting, out with friends, or home on the couch...snap a pic and show us your **#myashrae**.

Questions?  
Katie Thomson  
Assistant Manager of Student Activities  
kthomson@ashrae.org



**2018 ASHRAE Winter Conference**  
Chicago, Illinois \*\*\* January 20–24  
AHR Expo \* McCormick Place \* January 22–24



## STUDENT PROGRAM

Saturday, January 20	Sunday, January 21	Monday, January 22	Tuesday, January 23
<p><b>1:00 pm – 3:00 pm</b> <b>STUDENT WELCOME</b> Palmer House, Red Lacquer Room</p> <p>Hear welcoming remarks from ASHRAE President Bjørn Olesen followed by presentations by recipients of last year's Grant program, an awards ceremony and a group activity.</p> <p><b>Grant Presentation 1:</b> Design and Prototyping of a Carbon Dioxide based Heat Pump Integrated Energy System, Ryerson University</p> <p><b>Grant Presentation 2:</b> A hot-gas bypass load stand to demonstrate compressor performance, Oklahoma State University</p> <p><b>3:15 PM – 5:00 PM</b> <b>PLENARY SESSION</b> Palmer House, Red Lacquer Room</p> <p>The Plenary will feature a keynote from Debbie Sterling, the Founder and CEO of GoldieBlox, an award winning company on a mission to 'disrupt the pink aisle' with toys, games, and media for girls. Debbie is an engineer, entrepreneur, and one of the leaders in the movement toward getting girls interested in science, technology, engineering, and math. The Plenary Session also features presentations from the Honors and Awards programs, including the First Place winners of the Student Design Competition.</p> <p><b>5:00 PM – 6:30 PM</b> <b>STUDENT/YEA MIXER</b> Palmer House, Red Lacquer Room</p> <p>Mix and mingle with ASHRAE YEA members, meet new friends, gain insight into life after college, and enjoy free food &amp; drinks.</p> <p><b>6:30 PM – 8:30 PM</b> <b>WELCOME PARTY</b> Chicago Cultural Center</p> <p>Students are encouraged to attend. (\$55 ticket)</p>	<p><b>ASHRAE STUDENT PROGRAM</b> Palmer House, Red Lacquer Room</p> <p><b>8:00 am – 9:15 am</b> <b>Design Competition Session</b></p> <p>Come out for an introduction to the 2019 Student Design Competition and a presentation with methods and approaches to help you write the best submission possible.</p> <p><b>9:45 am – 10:45 am</b> <b>Technical Session: Sustainable Cold Climate Construction</b></p> <p>Alpine facilities are typically located in cold climates and have additional design challenges because of their remote off-grid locations. This presentation reviews issues and design solutions for remote and cold climate construction and advances in building technologies and materials for improved design and sustainable construction.</p> <p><b>11:00 am – 12:30 pm</b> <b>Career Panel</b></p> <p>Learn about what jobs may await with a career related to ASHRAE! This is an open forum for you to ask questions to professionals spanning multiple industry sectors.</p> <p><b>12:30 pm – 1:30 pm</b> <b>Lunch</b></p> <p><b>1:30 pm – 5:00 pm</b> <b>Student Tour (details on back)</b></p>	<p><b>STUDENT BRANCH ACTIVITIES</b></p> <p><b>10:00 am – 12:00 pm</b> <b>STUDENT CONGRESS</b> <b>Salon 10</b></p> <p>A chance for student branch officers to provide guidance on future programs and events, and suggestions to improve membership benefits.</p> <p><b>10:00 am – 12:00 pm</b> <b>SBA CONGRESS</b> <b>Salon 12</b></p> <p>Student Branch Advisors are invited to discuss student activities with Regional Student Activities Chairs.</p> <p><b>RECOMMENDED TECHNICAL SESSIONS</b></p> <p><b>8:00 am – 9:30 am</b> <b>Seminar 18:</b> Building-Integrated Photovoltaic Systems: Enabling Net-Zero Energy Performance and Beyond</p> <p><b>9:45 am – 10:45 am</b> <b>Seminar 26:</b> Steam System Fundamentals and Applications</p> <p><b>11:00 am – 12:00 pm</b> <b>AHR Expo Session 1:</b> Senses and Cents: Reducing Sound, Improving Comfort and Enabling Energy Efficiency in Residential Buildings</p> <p><b>1:00 pm – 2:30 pm</b> <b>AHR Expo Session 3:</b> Real-World Experience Providing Residential Energy Excellence</p> <p><b>2:15 pm – 3:45 pm</b> <b>Forum 2:</b> The Future of Standards</p> <p><b>4:00 pm – 5:00 pm</b> <b>AHR Expo Session 7:</b> ASHRAE's Duct Size Calculator Tool for Easy, Reliable Residential Duct Sizing</p>	<p><b>RECOMMENDED TECHNICAL SESSIONS</b></p> <p><b>8:00 am – 9:30 am</b> <b>Seminar 34:</b> Net Zero Energy Buildings</p> <p><b>9:45 am – 10:45 am</b> <b>Seminar 38:</b> Climate Effects on Tall, Super-tall and Megatall Buildings</p> <p><b>11:00 am – 12:30 pm</b> <b>Seminar 44:</b> The Best of "Engineer's Notebook" 2nd Edition</p> <p><b>1:30 pm – 3:00 pm</b></p>

**Attachment B: MBO's**

<b>2017-2018 MBO's Student Activities Committee</b>			
<b>Bill Simpson, Chair</b>			
<b>MBO #</b>	<b>Description</b>	<b>Who</b>	<b>Due</b>
<b>1</b>	<b>Improve committee member involvement and committee operations</b>	All	
	a. Each member (RVCs and Vice Chair) shall complete MBOs and then measure against their MBO at the winter meeting and by continuing reports		October 2017
<b>2</b>	<b>Expedite publication of Design Competitions</b>	Design Comp and Consultant	
	a. Complete all 2019 design competitions in collaboration with incoming society president's theme and publish to website in time for southern hemisphere school year		Winter Meeting 2018
	b. Investigate feasibility of live, head to head competition possibly for AEC		Summer Meeting 2018
<b>3</b>	<b>Continue to grow the Grants program</b>	Grants	
	a. Increase number of grant applications by 5%		Winter Meeting 2018
	b. Investigate new opportunities to expand the Undergraduate Program Equipment Grant		Summer Meeting 2018
<b>4</b>	<b>Increase the number of K-12 school visits</b>	K-12/STEM	
	a. Continue the promotion of classroom visitations through the RVC (at CRCs) and local chapter SA Chairs to general membership. Illustrate to membership how important and easy it is to conduct a K-12 classroom visit by performing a hands-on activity		Ongoing
	b. Consider development of new STEM Kits		Summer Meeting 2018
	c. Clarify relationship with STEM Scouts		Winter Meeting 2018
	d. Increase number of K-12/STEM Leadership Award recipients to 14 chapters		Summer Meeting 2018
	e. Complete "gamification"		Winter Meeting 2018

<b>5</b>	<b>Increase collaboration with and exposure to our growing international student membership</b>	Post High and Consultant	
	a. Investigate opportunities to incorporate President Olesen’s initiative for collaboration between student branches in North America and beyond.		Summer Meeting 2018
	b. Investigate feasibility for international student program		Summer Meeting 2018
<b>6</b>	<b>Continue to engage students and grow student membership</b>	Post-High and Vice Chair	
	a. Increase the number of new student branches by 8%		Summer Meeting 2018
	b. In collaboration with MP and YEA, determine appropriate metrics for tracking student conversion and establish a growth goal		Summer Meeting 2018
	c. Maintain student branch status reporting at greater than 90% and review reports		Summer Meeting 2018
<b>7</b>	<b>Develop student-friendly area on ASHRAE’s Student Zone website</b>	K-12/STEM and Post-High	
	a. Develop K12/STEM area		Summer Meeting 2018
	b. Develop Post-High area		Summer Meeting 2018
<b>8</b>	<b>Increase understanding and exposure of ASHRAE accreditation program</b>	ABET	
	a. Increase ASHRAE PEVs		Summer Meeting 2018
	b. Review and develop new program criteria for college level HVAC programs		Summer Meeting 2018
<b>9</b>	<b>Provide more quality training for SA chairs</b>		
	a. Increase SA chair attendance at Centralized Training by 20% - Vice Chair	Vice Chair	Summer Meeting 2018
	b. Track SA chair attendance at CRC training – Vice Chair w/Consultant	Vice Chair w/ Consultant	Summer Meeting 2018
	c. Implement recently developed CRC training	Consultant	Summer Meeting 2018
	d. Investigate feasibility for international Centralized Training	Vice Chair w/ Consultant	Summer Meeting 2018

<b>10</b>	<b>Improve opportunities for Post-High students</b>	Post-High w/Vice Chair and Consultant	
	a. Remodel Student Program to integrate with general ASHRAE conference schedule with top quality programs and presenters		Winter Meeting 2018
	b. Review Central NY SmartStart Program and investigate expansion beyond Region I, II, III with possible integration to CRC		Winter Meeting 2018
	c. Monitor success of Adapt Building EQ pilot programs and promote to Student Branches		Summer Meeting 2018
<b>11</b>	<b>Develop relationships with synergistic societies</b>	Consultant	
	a. Pilot collaborative relationship with SMACNA		Winter Meeting 2018
<b>12</b>	<b>Improve recognition of ASHRAE volunteers</b>		
	a. Get at least 5 nominations for SBA of the Year	Post-High	Summer Meeting 2018
	b. Get at least 5 nominations for Youth Outreach – K12/STEM	K-12/STEM	Winter Meeting 2018
	c. Get at least 5 nominations for Student Activities Achievement Award	Post-High	Winter Meeting 2018

### **Attachment C: PAOE Recommendations**

- SA1 – Revise to be “For conducting a joint K-12 STEM activity with representatives of other societies (i.e. Boy Scouts, Girl Scouts, STEM Scouts, NAWIC, AIA, ACE, Mentorship, etc.)
- SA22 – Revise to be “For each student member attending the Winter Conference Student Program”