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FROM THE PRESIDENT'S DESK



Ryan Burke
Chapter President

Happy New Year! I hope everyone had a wonderful break with family, at least enough to get recharged for the upcoming year.

It is Ethics Month. Due to COVID, we aren't able to bring the Texas Board of Professional Engineers (PELS) to you, but we are bringing you to the PELS. This month we are offering a FREE meeting! We will meet prior to go through announcements and then all join on the PELS Ethics link for our 1 hour Ethics credit. There isn't a better time than now to get your Ethics credit in!

Similar to last month, there isn't a lot of report due to COVID. However, look forward to some great events upcoming in the fall such as bowling tournament, spring golf tournament and top golf tournament.

Thanks for all your support and we look forward to seeing you on Thursday!

Cheers!

Ryan Burke
Austin ASHRAE Chapter President 2020—2021

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Quote of the Day

"Once you replace negative thoughts with positive ones, you'll start having positive results"

— Willie Nelson

UPCOMING EVENTS

Chapter Meeting:

- January 7: 9:30am-10am



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GET TO KNOW YOUR ASHRAE: MONTHLY INTERVIEW

Each month throughout this Chapter year I will be interviewing one of our many volunteers who make our Chapter what it is. Not only will this give you an opportunity to get to know them better (especially while we have virtual meetings), it will give you the opportunity to learn a little bit more about what each person is involved in within our Chapter.

This month's interview was with Gayle Davis, who is our current Research Promotion Chair, and past president. My questions are in black, and his responses are in *blue*.

What is your current role with ASHRAE and what does that entail on a monthly basis? *I'm the Research Promotion (RP) Chair and member of the Chapter Board of Governors. My tasks including encouraging members to contribute to the Chapter's annual research promotion drive and tracking / reporting the RP contributions.*

Where did you grow up, and what is one fun fact about your childhood? *I'm an Army brat so I grew up all over the place including Fort Stewart, Georgia; Bad Kissiggen, Germany; Fort Knox Kentucky; and Fort Riley, Kansas. But I spent most of my life growing up in rural South Dakota.*

How long have you been in Austin and what do you like to do in your spare time? *I moved to Austin in 2013. My hobbies include reading books from science fiction, historical non-fiction, and military thrillers. I also go on hikes with my family around the Austin metro area. Our favorite hiking location is the Tejas Trail at Lake Georgetown.*

How long have you been in the industry and what experience do you have? *I've worked in the industry for 13 years. I've worked for GeoPro, Inc as a lab technician and Stanley Consultants, Inc as an engineer & project manager.*

What do you enjoy most about your current job? *Connecting with people and completing the challenges present in each project engagement.*

What is your favorite thing about being involved in ASHRAE? *Meeting people and making connections in the Austin HVAC industry.*



Stuart Bloomquist

President Elect





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JANUARY MEETING:

Austin ASHRAE! We have focused the beginning of the year on COVID topics, but are transitioning to more traditional topics for ASHRAE meetings. The board has decided to make all future meetings through May VIRTUAL. Since January is typically ethics month, but were unable to have in person ethics meeting. The PE Ethics is available through a free webinar. Link below and if you are unable to make this, they are offering one every month.

Our Speaker:

This meeting will be quite a bit different than past meetings. We will be sending out a meeting link for a brief update meeting from 9:30-9:55 that will be ASHRAE Meeting, then will have a separate link for people to register for and jump into at 10:00 a.m. for the FREE virtual Ethics Meeting offered directly from TBPELS-Professional Engineering & Surveying Practice Update/Ethics. This will be completely FREE and encourage as many PE Engineers to attend.

Course Description: **TBPELS Ethics Webinar**

Thursday, January 7, 2021, 10-11 a.m. CST

The Board is offering these free ethics webinars to assist license holders with meeting their ethics requirement. Each webinar provides an up-to-date overview of agency activities, case studies, and a review of professional ethics topics.

<https://register.gotowebinar.com/register/4252914686132213259>



David Payne
VP—Programs



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Membership Promotion:

Dear Austin ASHRAE Members:

Reference: Unpaid Society Dues and Member Count

Dear Austin ASHRAE Members:

Reference: Unpaid Society Dues & Lapsed Memberships

Happy New Year!

Hope everyone has had a good start to 2021 and are doing well and staying safe. As we start our new year, we ask that you reach out to your friends and coworkers to join ASHRAE. ASHRAE is our non-profit organization helping us research and establish our regulations and standards for our industry. As such, we need as many members as we can get, and we are currently in need of some more people. To give you an idea, we started out the year with **367 members**. Our ASHRAE goals have us trying to attain a total of **374 members** and we are actually down **12 members net**. We would appreciate referrals and some help by reminding your fellow members to renew.

Remember that PAID members have the greatest impact on both Society's and the local Chapter's financial bottom line. **By renewing YOU are making a big impact for our local chapter!** To all of you that have renewed, thank you!!

Please also remember that Society membership is a prerequisite to local membership. Local membership in Austin's Chapter helps support our local efforts. You can pay your local dues of \$40 at the same time you pay your Society dues, or simply bring your dues payment to a monthly meeting. This will allow us to keep you informed on all local activities. If you have any questions, please feel free to contact me at 512-472-6721 during the day, or via email at rsoto@pagethink.com. If you find that you have not paid your dues, you can go to the ASHRAE website and pay your dues online at www.ashrae.org. Should you have any questions regarding this effort, do not hesitate to contact ASHRAE headquarters at 1-800-5ASHRAE.

Happy New Year!

Ricardo Soto, Membership Promotion Chair



Ricardo Soto

MP Chair

Jeff Miller

MP Co-Chair

Join ASHRAE





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Research Promotion:

ASHRAE's research program, established in 1912, supports 140 research projects with a combined value of more than \$15 million. Research focus includes energy and resource efficiency, indoor environmental quality, design and operation and management tools, alternative technologies and materials and equipment. Through scholarships, grants and awards, the Society supports engineering education for undergraduate students and research projects for graduate engineering students and new post-doctoral scholars.

Currently, we are at **\$13,040** or **46.6%** of our Chapter goal of **\$28,000**.

You can donate at any time by accessing this link. <https://xp20.ashrae.org/secure/researchpromotion/rp.html>



Gayle Davis
RP Chair

2020-21 Research Promotion (RP) Campaign





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UPCOMING RP EVENTS



March 5, 2021 — Skeet Shoot

(Subject to COA Covid Restrictions)



TBD — Bowling Tournament

(Subject to COA Covid Restrictions)



April 2021 — Annual Golf Tournament



May 14, 2021 — TopGolf Tournament



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YEA Activities

January:

Due to COVID -19 we were unable to host our Annual Build-A-Bike event. However, we were still able to sponsor 4 bikes through the Austin ASHRAE Chapter and other sponsors to raise a total of \$550. Thank you for your generous donations!

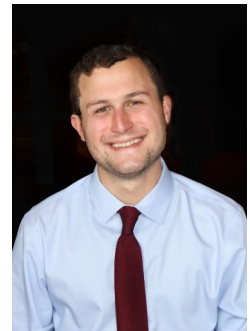
With Austin at a Stage 5 level restrictions we are putting in person events on hold, until further notice. We hope you all stay safe and healthy in the New Year!

For Future Events Contact:

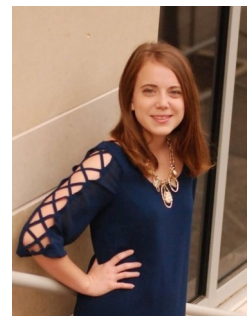
Cody Wisenbaker -

cody.wisenbaker@hts.com

Maesan Carley - CarleyMaesan@stanleygroup.com



Cody Wisenbaker
YEA Co-Chair



Maesan Carley
YEA Co-Chair



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Student Activities

Austin Regional Science Festival - Elementary Division Judge

We'll kick off student activities with the annual volunteering opportunity to judge the elementary division at the regional science festival. Judges will hear 4 presentations, see the visual aids, and review the posters from 1 to 3 students per team. Judges will meet to discuss whether teams followed the scientific process to conduct their experiment to test their hypothesis and reach conclusions, then each judge will rank the teams to determine which of the 4 teams advances to the finals. You may also judge the finals to determine which team advances to state.

<http://sciencefest.org/volunteers> and click the green "complete registration form" and later click the blue "Judge only Elementary." If you are qualified to judge junior or senior division, go ahead!

Judges Orientation: Tues, Jan 26, 5:30 - 7:00 PM

Science Festival: Tues, Feb 2 thru Thurs, Feb 4



Nick Prisco
 Student Activities Chair



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TREASURER'S REPORT



LORENZO GONZALEZ
Treasurer

CATEGORY	Actual	BUDGET	Difference
INCOME		\$ 78,400.00	
ASHRAE University Income		\$ 3,750.00	\$ 3,750.00
Austin Chapter Dues Income	\$ 1,669.00	\$ 10,400.00	\$ 8,731.00
Fall Bowling Tournament Income		\$ -	\$ -
SpringBowling Tournament Income		\$ 3,500.00	\$ 3,500.00
Top Golf Income		\$ 8,000.00	\$ 8,000.00
Golf Tournament Income	\$ 18,100.00	\$ 27,000.00	\$ 8,900.00
Meeting Income	\$ 1,400.03	\$ 7,750.00	\$ 6,349.97
Sporting Clay Income		\$ 12,000.00	\$ 12,000.00
Sponsorships		\$ 6,000.00	\$ 6,000.00
Misc	\$ 100.00	\$ -	\$ (100.00)
TOTAL	\$ 21,269.03		
EXPENSES		\$ 78,400.00	\$ 78,400.00
Accountant (Taxes)		\$ 600.00	\$ 600.00
ASHRAE University Expenses		\$ 2,125.00	\$ 2,125.00
Fall Bowling Tournament Expenses		\$ -	\$ -
Spring Bowling Tournament		\$ 1,300.00	\$ 1,300.00
Chapter Expenses	\$ 417.35	\$ 700.00	\$ 282.65
CRC Reimbursement Expenses		\$ 3,000.00	\$ 3,000.00
2024 Austin CRC Host Fund		\$ 1,200.00	\$ 1,200.00
Top Golf Expenses		\$ 4,750.00	\$ 4,750.00
Golf Tournament Expenses	\$ 7,884.18	\$ 18,000.00	\$ 10,115.82
Guest Speaker Expenses		\$ 600.00	\$ 600.00
Sponsorships			
Meeting Expenses		\$ 7,500.00	\$ 7,500.00
Region VIII Membership Expenses		\$ 1,800.00	\$ 1,800.00
Research Contribution - Endowments	\$ 11,000.00	\$ 20,000.00	\$ 9,000.00
Research Contribution - General		\$ 2,475.00	\$ 2,475.00
Sporting Clay Expenses		\$ 8,500.00	\$ 8,500.00
StarChapter Expenses	\$ 600.00	\$ 1,200.00	\$ 600.00
Student Activities Expenses		\$ 225.00	\$ 225.00
Student Dinners		\$ 175.00	\$ 175.00
Student Scholarships & Conferences		\$ 3,000.00	\$ 3,000.00
YEA Expenses	\$ 250.00	\$ 1,250.00	\$ 1,000.00
TOTAL	\$ 1,017.50		\$ -

BUSINESS CHECKING ...1632 Available balance \$4,367.98 ...

Order business checks today

BUSINESS MARKET RATE SAVINGS ...3471 Available balance \$13,438.56 ...

PayPal Balance :

\$832.06 USD

Available



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MEETING MINUTES

September 2020 ASHRAE Board of Governors Meeting via Zoom

12/14/2020, 4:00 PM

Meeting Opened – 4:05 PM

- Attendees: Katie, Andy, Cody, David, Lorenzo, Maesan, Mark, Randy, Ricardo, Ryan, Stuart, Wyatt, Ricardo, Vanessa
- Chapter Meetings (Dates and Times)- David Payne
 - NEXT MONTH 'S THICS MEETING WILL BE VIRTUAL. THERE WILL BE TWO LINKS! Be on the look out for details about this meeting.
- President– Ryan Burke
 - Review MBOs by next BOG
 - Review budget for approval
 - Provide RVC update with MBOs \
- President Elect– Stuart Bloomquist
 - Send in your news letters
 - RVC is taken care of
- CTTC– David Payne
 - This months topic is about the Digital Transformation with Chuck Gullledge.
- Treasurer– Lorenzo
 - Build-A-Bike Sponsorship added to items to add to next years budget.
 - PayPal vs StarChapter is still up for discussion
- YEA– Maesan Carley and Cody Wisenbaker
 - No December event
- Research Promotions—Gayle Davis
 - Skeet shooting is TBD, but look forward to golf in the spring.
 - Met all POAE point requirements
- Student Activities
 - No new news.
- Electronic Communications—Wyatt
 - Add history to our Austin website.

Meeting Adjourned at 4:53 PM

Next BOG Meeting 1/18/2021 at 4:00 pm

Katie Klassen

Secretary





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Refrigeration Committee Updates:

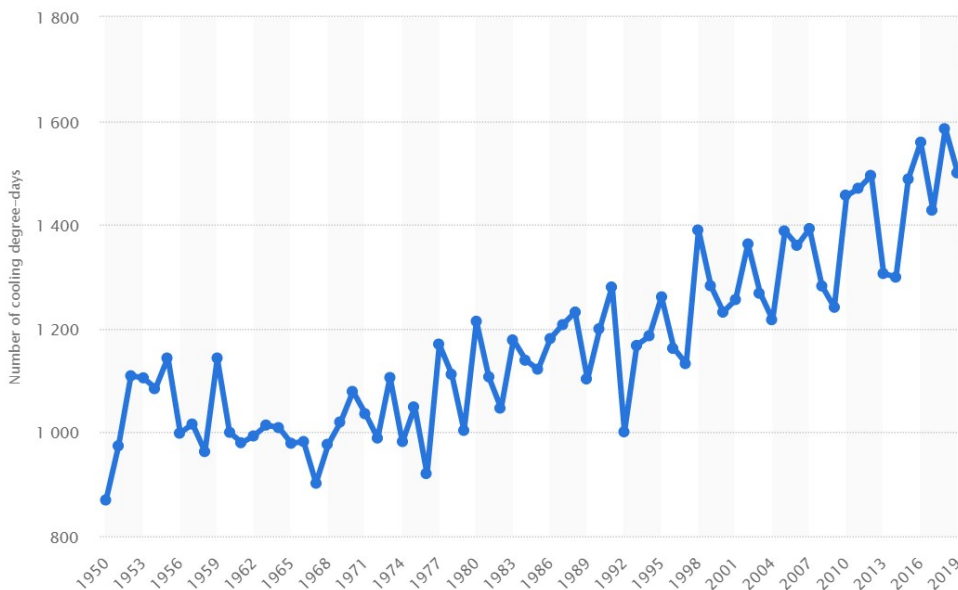
The refrigeration committee for Austin ASHRAE is looking into activities for the 2021 year. Let us know if there is anything you would like to learn more about in this upcoming year!

Refrigeration Fun Fact:

Below is a chart outlining the number of cooling degree days in the United States from 1950 to 2019. These have increased from approx. 1,000 degree days of cooling in the 1950s to 1,500 degree days of cooling in the year 2019. For reference, cooling degree days are calculated by finding the mean daily temperature, and calculating the difference to 65 degrees F. For example, a day with a mean temperature of 67 degrees would be counted as 2 degree days. Also note heating days do not subtract from this



Lorenzo Gonzalez
Refrigeration Chair



amount. This only counts cooling days.



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ASHRAE AUSTIN WEBMASTER

In this continuing COVID-19 era that we are navigating, electronic communications have become increasingly more important. We in the Electronic Communications Committee (ECC) want to make sure that you get the information you need about our Chapter operations in a timely manner. To that end, you can get your information in many different places. You can find them on our website (austinashrae.starchapter.com), through your email (make sure you are subscribed, and if you don't think you are, reach out to us!), or through social media (go follow our accounts now!)

As we start the year, we are making some upgrades to our website. One such upgrade is the ability for you to get more involved in the chapter! In the ["Get Involved" page](#) on our website, you can suggest a meeting topic, volunteer to help our chapter, or make a general inquiry! Austin ASHRAE is all about its members, and as such, we always welcome your input!

If you haven't already, follow us on social media to discover more ways to stay connected in everything that is happening in Austin ASHRAE!



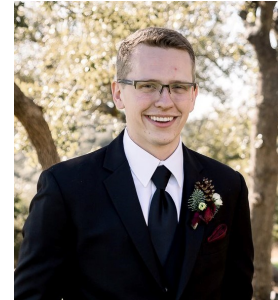
<https://www.linkedin.com/company/austinashrae/>



<https://www.facebook.com/austinASHRAE/>



[@austinASHRAE](https://www.instagram.com/austinASHRAE)



Wyatt Hahn

Electronic Communications Chair



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CHAPTER ROSTER

OFFICERS

President	Ryan Burke	Johnson Controls, Inc.	512.914.8799	ryan.burke@jci.com
President Elect / Newsletter Editor	Stuart Bloomquist	Mechanical Reps Inc	512.698.8175	stuartb@mechreps.com
Vice President / Programs CTTC	David Payne	TAP	512-639-9562	Dpayne@txap.com
Treasurer / Finance Committee	Lorenzo Gonzalez	EEA Consulting Engineers	512.744.4400	lorenzogonzalez@eeace.com
Secretary	Katie Klassen	Heat Transfer Solutions	512.466.0140	katie.klassen@hts.com

BOARD OF GOVERNORS

BOG-1 Research Promotion s	Gayle Davis	Stanley Consultants, Inc.	512.427.3639	davisgayle@stanleygroup.com
BOG-2 Nomination Chair	Vanessa Freidberg	Siemens Industry, Inc.	512.461.0404	vanessa.freidberg@siemens.com
BOG-3	Mark Merriman	Texas Air Systems	512.801.2986	mark.merriman@texasairsystems.com
BOG-4	Wyatt Hahn	Tom Green & Company Engineers	512.897.5098	wyatth@tgce.com
BOG-5	Andy Collier	Texas Air Products	512.294.4415	acollier@txap.com

CHAPTER COMMITTEE CHAIRS

Auditing/Nominating	Vanessa Freidberg	Siemens Industry, Inc.	512.461.0404	vanessa.freidberg@siemens.com
CRC Delegate (President)	Ryan Burke	Johnson Controls, Inc.	512.914.8799	ryan.burke@johnson.com
CRC Alternate (Pres-Elect)	Stuart Bloomquist	Mechanical Reps Inc	512.698.8175	stuartb@mechreps.com
Electronic Communications / StarChapter	Wyatt Hahn	Tom Green & Company Engineers	512.897.5098	wyatth@tgce.com
Grassroots Govt. Advocacy Chair	Jon-Erik Johnson	Texas Air Systems	210-842-2329	jon-erik.johnson@texasairsystems.com
Grassroots Govt. Advocacy Co-Chair	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS
Honors & Awards	Bill Klock	EEA Consulting Engineers	512.423.2820	billklock@eeace.com
History	Randy Schrecengost	Stanley Consultants, Inc.	512.427.3623	schrecengostrand@stanleygroup.com
Membership Promotions Chair	Ricardo Soto	Page Southerland Page, Inc.	972.971.0974	rsoto@pagethink.com
Membership Promotions Co-Chair	Jeff Miller	Texas Air Products	210-391-7931	jmiller@txap.com
Reception/Attendance Chair	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS
Refrigeration	Lorenzo Gonzalez	EEA Consulting Engineers	512.744.4400	lorenzogonzalez@eeace.com
Student Activities Chair	Nick Prisco	Freese & Nichols, Inc.	817-372-3608	Nick.Prisco@freese.com
Student Activities Co-Chair	Scott Brown	Garver	512-539-1950	SCBrown@GarverUSA.com
Sustainability Chair	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS	SEEKING VOLUNTEERS
Young Eng. in ASHRAE (YEA) Chair	Cody Wisenbaker	HTS	281-787-6010	Cody.Wisenbaker@hts.com
Young Eng. in ASHRAE (YEA) Co-Chair	Maesan Carley	Stanley Consultants, Inc.	512-427-3600	carleymaesan@stanleygroup.com

CHAPTER COMMITTEE MEMBERS

History Committee	Maesan Carley	Stanley Consultants, Inc.	512-427-3600	carleymaesan@stanleygroup.com
History Committee	Trevor Crampton	Robert Madden Industries	512.923.8751	trevor.crampton@rmadden.com
Elec Communication Committee	Brenna Bolton	Trane	512.712.6745	brenna.bolton@trane.com
Elec Communication Committee	John Knauss	Johnson Controls, Inc.	512.289.8146	john.knauss@jci.com
Membership Promotion Committee	Ryan McLagan	Texas Air Systems	512-217-4781	ryan.mclagan@texasairsystems.com
Reception/Attendance Committee	Maile Guieb	Mechanical Reps Inc	512-444-1835	maileg@mechreps.com



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Industry History—The Comfort Makers—Part 15

As we continue with brief articles about “The Comfort Makers”, we need to finish our story from last month regarding the **Ventilator Reverend Stephen Hales (1677-1761)**. Reverend Hales was a scientist, botanist, inventor, and ventilation engineer, who applied a wide range of scientific interests to investigations and problem solving. Hales is best known for his *Statical Essays*, the first volume (*Vegetable Staticks* 1727) of which contains an account of experiments in plant physiology and chemistry.

Did you know?

Hales second volume or work, *Haemastaticks* (1733), describes experiments on animal physiology including the measurement of the “force of the blood”, i.e. blood pressure. He was the first person to measure blood pressure, making measurements of blood pressure in different animal species by inserting fine tubes into arteries and measuring the height to which the column of blood rose. Hales took wax casts of the ventricles of several animal hearts and estimated how much blood was pumped by the heart. He also correctly described the roles of the both the mitral and aortic valves during systole and diastole (the two phases of the cardiac cycle that occur as the heart beats, Systole when the heart contracts and diastole when the heart relaxes). He also explained the pulsations of arteries in terms of their elasticity and attributed the resistance to blood flow to friction due to the passage of blood through small blood vessels. **At right:** Botanist Hales, Portrait drawing by Robert Austin RA.

Hales described a diverse range of work in *Haemastaticks* including his attempts to find substances that could be used to dissolve bladder stones or calculi. This aim was unsuccessful but as part of this work he developed a double lumen bladder catheter and devised special forceps to enable the removal of urinary stones. Hales' also completed work on the growth pattern of long bones, and spinal reflexes in the frog. He postulated that electricity played a role in allowing nerves to control muscle function

Hales also experimented with ways of distilling fresh water from sea water; preserving water and meat on sea-voyages; measuring depths at sea; measuring high



**Randy Schrecengost,
Historian**

Industry History—The Comfort Makers—Part 15 (Continued)

temperatures; and wrote on a range of subjects including earthquakes; methods of preventing the spread of fires; and comparative mortality rates in relationship to rural and urban parishes.

In 1720 Stephen Hales married Mary Newce, but she died the following year and he never remarried. After the death of his wife, he became more involved in philanthropic causes, and in 1722 and soon became a corresponding member and a trustee of the Society for Promoting Christian Knowledge, founded by Thomas Bray. Hales was also appointed to assist in establishing parochial libraries in the American colonies. These charities became incorporated into a scheme led by James Oglethorpe to establish a charitable colony for the poor, 'honest industrious debtors' and persecuted (Protestant) foreigners in the new areas called America. Hales was interested in this idea as his brothers had been imprisoned for debt following the failure of the South Sea Company with one brother, William, dying of Gaol Fever in Newgate Prison

In 1732 King George II granted a Charter for the foundation of the colony of Georgia. Hales was one of the twenty-one members of the Board of Trustees, and the colony of Georgia was notable for its prohibition of slavery and rum. Because of his involvements with the colony of Georgia, Hales soon found out about the problems resulting from overcrowding of ships to Georgia and this spurred him to invent a ship ventilator and undertake experiments to distil fresh water from sea water and to use salt to preserve meat on board ship.



At right: Stephen Hales standing on the extreme left, behind chair, and the Trustees of the colony of Georgia receiving the Indians, <https://commons.wikimedia.org/w/index.php?curid=35945136>

This is what makes Stephen Hales a “Ventilator” for his work on correcting the cause of ill-health and deaths in the 18th century from “bad air”. Within crowded ships and prisons, disease and deaths were both high. Several other early ventilator inventors worked on this problem as well including John **Theophilus Desaguliers 1683-1744** (another Comfort Maker), Mårten Triewald and Samuel Sutton, all who developed forms of ventilators to improve air quality. Just like today, these ventilators were used for the intentional introduction of outdoor air into a space and used primarily to control indoor air quality by diluting and displacing indoor pollutants; and, to some extent control indoor temperature, humidity, and air motion to benefit thermal comfort. Hales' ventilators were large bellows, usually worked by hand, but larger versions were powered by windmills. They were widely installed in ships, prisons and mines and were successful in reducing disease, and aerating the lower decks of Royal Navy vessels to combat dry rot in the hulls. Hales' ventilators were also used in preserving foods and drying grain. **At right:** Image of a Ventilation Bellows devised by Stephen Hales, https://en.wikipedia.org/wiki/Stephen_Hales#/media/File:Ventilation_bellows_Wellcome_L0040396.jpg



Hales died January 4, 1761 at the age of 83 after a short illness. At his own request he was buried under the tower of the church where he had worked for so many years.

Please note: information excerpted https://en.wikipedia.org/wiki/Stephen_Hales, and “The Comfort Makers” by Brian Roberts, page 25.

Respectfully Submitted, Randy Schrecengost, Historian

Vintage HVAC Advertisements, 1938

During this year, the Thousand Islands Bridge, connecting the United States with Canada, is dedicated by U.S. President Franklin D. Roosevelt. The 1938 New England hurricane strikes Long Island and southern New England, killing over 300 along the Rhode Island shoreline and 600 altogether.



UNIFORMITY
AN IMPORTANT CHARACTERISTIC OF ALL
MIDWEST WELDING ELLS

As the column of cadets sweeps by . . . alike to the last button . . . precise in angle of chin and rifle . . . the impression is one of perfect uniformity. Exact uniformity characterizes all Midwest Welding Ells. Every Midwest Ell of a given size and type is exactly like all its fellows. Midwest well knows the value of absolute uniformity in welding ell . . . knows it saves time (and money) in lining up pipe and fitting, and in the actual welding . . . knows it assures more uniform welds. This exceptional uniformity of Midwest Welding Ells results from the special manufacturing process developed and patented by Midwest. Every Midwest Ell is reduced to accurate size and shape by a final working of the metal in compression at a forging heat . . . it is not extruded or stretched. This positive control provides (1) true circular cross section, (2) uniform wall thickness, and (3) accurate radius, included arc and tangents. Unique fixtures used to machine bevel the ends assure an included angle of exactly 90° or 45°.

Write for Bulletin 36 which explains the many other features of Midwest Welding Ells.

MIDWEST PIPING & SUPPLY CO., INC.
Main Office: 1450 So. Second St., St. Louis, Mo.
Plants: St. Louis, Passaic (N. J.) and Los Angeles • Sales Offices: Chicago—946 Marquette Bldg. • Houston—1716 Second National Bank Bldg. • Los Angeles—320 Anderson St. • New York—(Eastern Division) 30 Church St. • Tulsa—533 Mayo Bldg.

MIDWEST WELDING FITTINGS IMPROVE DESIGN AND REDUCE COSTS

HEATING, PIPING AND AIR CONDITIONING, AUGUST, 1938

25

Midwest Piping & Supply Co. Inc.—ad from July 1938 issue of Heating Piping and Air Conditioning.

Please note: information excerpted from: HPAC Engineering Magazine, Edited by Ashley M. Doles, 08-19-2015, <https://en.wikipedia.org/wiki/1938>

Respectfully Submitted, Randy Schrecengost, Historian =>

