May 2020
Volume 64
No. 9

Newsletter for the Southern California Chapter of ASHRAE

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For ASHRAE news and society headlines, please check:
ashrae.org/about/news

MAY MEETING

Tuesday, May 5, 2020  11:45 - 1:15 PM

Theme: Research Promotion
HVAC Noise Control and Best Practices

Speaker:
Brandon Lee Wallace - BRD Noise and Vibration Control, Inc.

AGENDA:
11:45 - Announcements
12:00 - Main Program
1:15 - Adjourn

LOCATION:
Webinar
Webex

COST:
Research Contributor: $25
Students: Free!

STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

Avoid close contact with people who are sick.

Cover your cough or sneeze with a tissue, then throw the tissue in the trash.

Clean and disinfect frequently touched objects and surfaces.

Avoid touching your eyes, nose, and mouth.

Stay home when you are sick, except to get medical care.

Wash your hands often with soap and water for at least 20 seconds.

For more information:
cdc.gov/COVID19
Brandon Lee Wallace
Southwest Regional Sales Manager - BRD Noise and Vibration Control, Inc.

Brandon Lee Wallace, Southwest Regional Sales Manager of BRD Noise and Vibration Control, Inc. is a graduate of Kansas State University with a B.S. in Chemical Engineering.

Brandon started with the Trane Company in 1999 at their Screw and Scroll Chiller Business Unit as a Marketing Engineer after successfully completing the Trane Co.’s Graduate Training Program. During his 7 years at Trane, Brandon held multiple positions in both Domestic and International market segments with responsibilities for executing domestic price/volume/share goals, product support, and management. In 2006, Brandon joined BRD as their Southwest Regional Sales Manager responsible for acoustical design and sales. Brandon lives outside of Wichita, KS with his wife and six children and enjoys outdoor activities and spending time with his family.

BRD Noise and Vibration Control, Inc., is a recognized leader and has been at the forefront of noise control systems for HVAC equipment. Brandon’s knowledge and experience of HVAC equipment helps enhance BRD’s leadership and understanding of this market. BRD is a frequent presenter at ASHRAE Chapter meetings.
Meeting Description

This presentation will help you to understand basic acoustic terminology used in the HVAC industry (db vs dBA, sound power vs pressure, etc.) and to apply noise and vibration control best practices to specifications and HVAC equipment, such as indoor/outdoor chillers, roof mounted equipment, and terminal units.

ASHRAE Meeting Calendar

All our pictures from the chapter meetings are located on our social media!

https://www.facebook.com/ASHRAEESOCAL/

https://twitter.com/ashraesocal

https://www.linkedin.com/in/ashrae-southern-california-chapter-1a9a5015b/

Pictures of the May 1st Spring Technical Seminar are posted on the Facebook event page!

2020 - 2021 ASHRAE Society Scholarship Recipients in the SoCal ASHRAE Chapter

Kylene Landenberger – California Polytechnic State University- San Luis Obispo. – Willis H. Carrier $10,000

William Welch - University of California – Los Angeles – Reuben Trane - $10,000

Christina Adams - California Polytechnic State University- San Luis Obispo. – Lynn G. Bellenger Engineering - $5,000

See the total list of recipients here.
President’s Message

Dear ASHRAE SoCal,

On May 1st, the ASHRAE Spring Technical Seminar on Zero Carbon Building Design was hosted virtually. I would like to recognize the efforts of our CTTC Chapter Director Rafi Karim, Sustainability Chair Amanda Khury, and CTTC Chair Roman Verba in setting up this program. I’d also like to thank our panelists Greg Collins, Avideh Haghighi, Erin McConahey, Stefani Szczechowski, Aravind Batra, and Jeff Landreth for sharing their technical expertise with our chapter. Our panelists emphasized the importance of a green awakening and sustainability. Indeed, our ASHRAE vision is “A healthy and sustainable built environment for all.”

I am inspired by your continued support and passion for ASHRAE and the HVACR industry. ASHRAE SoCal online programs continue to have strong participation. On May 5th, the last meeting of our ASHRAE 2019-2020 year will be held as a lunch webinar. Proceeds from our May 5th webinar will go towards ASHRAE Research Promotion. Our May 5th presentation will be on HVAC Noise and Vibration Control Best Practices. Brandon Lee Wallace, Southwest Regional Manager of BRD Noise and Vibration Control, Inc., will discuss the basics of noise and vibration control and best practices. Results from our board-election ballot 2020-2021 and scholarship recipients will be announced at the May 5th meeting.

Finally, I would like to recognize the important role of ASHRAE and the HVACR industry in responding to airborne infectious diseases. In April 2020, the CDC published a new study associating a COVID-19 outbreak with Air Conditioning in a Guangzhou, China restaurant. ASHRAE published free resources that will combat the spread of COVID-19. The design, installation, and application of air conditioning systems will play a key role in reducing the spread of the virus. ASHRAE from the National, Regional, and chapter levels will be focusing on providing this information to policymakers. Our newsletter will include an ASHRAE-approved message to use, offering our ASHRAE resources and expertise on combating airborne infectious diseases. Below are the ASHRAE resources that should be referenced on design and installation of our HVACR projects. This is a turbulent time for us all, and our continued holistic approach on building decarbonization, net zero energy, or airborne infectious control is to proceed in our projects. I’m excited to be part of an industry that makes the world a better place. Let’s put our talent to work!

All the best,

Nick Rosner, PE
ASHRAE SoCal President 2019-2020

COVID-19 Resource Page
ashrae.org/covid19 is an online compilation of over 50 free resources related specifically to combating the spread of COVID-19. Available resources include ASHRAE Journal papers, Handbook chapters, ASHRAE standards and guidelines, conference seminars and much more. This page is updated regularly—check back as additional information becomes available.
https://www.dropbox.com/s/sfdshku3igpdgsd/healthcare_a3.pdf?dl=0
Dr. ----
Minister of Health
-----

Dear Dr. ---------,

ASHRAE SoCal Chapter would like to thank you for your tireless efforts to respond to the coronavirus disease (COVID-19) pandemic, including through preventing further spread of the disease and ensuring that accurate scientifically based information is provided to the media and to the public.

Founded in 1894, ASHRAE is a global professional society of over 57,000 members committed to serve humanity by advancing the arts and sciences of heating ventilation, air conditioning, refrigeration and their allied fields.

We write to you to offer our expertise and resources to help limit the spread of the disease in buildings, including hospitals, emergency care centers, and temporary health care facilities. ASHRAE SoCal Chapter will be working hard to help in reducing cross contamination. Therefore, we announced a Society-wide effort to respond to the current global COVID-19 pandemic and provide guidance on how to ensure that buildings are prepared for future epidemics. The Epidemic Task Force has been established to help deploy our technical resources to address the challenges of the current pandemic and future epidemics as it relates to the effects of heating, ventilation, and air-conditioning systems on disease transmission in healthcare facilities, the workplace, home, public and recreational environments. The task force will also provide recommendations for setting up temporary field hospitals in convention centers, arenas and indoor stadia.

Furthermore, ASHRAE has adopted two resolutions:

1. Transmission of SARS-CoV-2 through the air is sufficiently likely that airborne exposure to the virus should be controlled. Changes to building operations, including the operation of heating, ventilating, and air-conditioning systems, can reduce airborne exposures.

2. Ventilation and filtration provided by heating, ventilating, and air-conditioning systems can reduce the airborne concentration of SARS-CoV-2 and thus the risk of transmission through the air. Unconditioned spaces can cause thermal stress to people that may be directly life threatening and that may also lower resistance to infection. In general, disabling of heating, ventilating, and air-conditioning systems is not a recommended measure to reduce the transmission of the virus.

ASHRAE have developed proactive guidance to help address COVID-19 concerns with respect to the operation and maintenance of heating, ventilating and air-conditioning systems. This webpage, https://www.ashrae.org/covid19, offers easily accessible resources that can be provided on a complimentary basis to your ministry, which include:
1. **Isolation Rooms and other Health-Related Spaces:**
   a. How to ensure negative pressure airflow to prevent airborne contaminants, bacteria and viruses from escaping the isolation room
   b. How to control the air change rate, temperature and humidity with effective controls
   c. How to monitor indoor air quality and particulate counts, and how to alert building operators when needed

2. **Ventilation, Filtration and Air Cleaning:**
   a. How to ensure that occupants in quarantine have healthy indoor environments
   b. How to monitor indoor air quality
   c. Use of ASHRAE Standard 62 for proper ventilation in commercial and residential buildings
   d. Use of ASHRAE Standard 170 for proper ventilation in health-care facilities

3. **HVAC Systems Design and O&M to prevent spread:**
   a. How to ensure systems are controlling spread of viruses
   b. How to ensure proper use of ventilation rates, airflow regimes, filtration, and ultraviolet germicidal irradiation
   c. Whether and how to filter or clean indoor air to protect occupants
   d. ASHRAE’s Technical Committee 2.9, “Ultraviolet Air and Surface Treatment” can provide additional technical assistance with all aspects of equipment and systems that utilize ultraviolet radiation to destroy or deactivate chemical and/or biological air and surface contaminants in HVAC systems and indoor spaces.

HVAC&R systems play an important role in preventing the spread of infectious disease, and ASHRAE stands at the ready to help provide resources and answer questions. Our vision is to create a healthy and sustainable built environment for all, and we offer our assistance to realize this goal. For assistance, please do not hesitate to contact us via email at COVID-19@ashrae.org.

Yours Sincerely,
Four HVAC Operating Strategy Adjustments for Covid Times

First an announcement. The “ASHRAE Position Document on Infectious Aerosols” was published on April 14. Go to ASHRAE.org and follow the Covid signs. Some of the info there is pretty good, and worth the 15-20 minutes it takes to overview it. I found the discussion of relative humidity and viruses to be particularly interesting, and it figures in what I’ve written below.

Fundamentals can be your friend, particularly when you apply them to unusual times. Here are four things to consider when operating (or advising those who operate) buildings today. The four are somewhat interrelated. We’ll talk about how dilution is the solution (a recycled phrase from my youth), how to try to minimize energy costs while increasing dilution, the air filtration implications and how this relates to the SCE power rate structure. It all starts with understanding some of the fundamentals of how HVAC systems work, and the ASHRAE position document.

I mentioned relative humidity and position document. The document notes that the optimum room RH to minimize virus aerosol transmission is 40-60% RH. Keeping it below 60% was somewhat intuitive, but I was surprised by the desire to keep RH above 40%. I encourage you to read page 8 of the document, but something that grabbed my imagination was the idea that the drier the conditions, the faster the big cough/sneeze droplets shrink down due to evaporation. This is important, because the smaller they get, and the faster that they shrink, the farther they can travel in the air. Human mucus membrane barriers also deteriorate the drier the conditions become, and that doesn’t help matters. I’m sure you all know that RH can easily get to 10% and less during a Santa Ana condition. So, for facilities that have humidifiers, it makes sense to use them. For the bulk of facilities, which lack humidification, there are other approaches. Before those approaches can be discussed, it is necessary to discuss outside air usage in the HVAC system.

More outside air is a good thing if you are striving for dilution of indoor air. Increase the minimum outside air flow. Extend the economizer cycle outdoor ambient operating range. Neuter demand control ventilation. Include a morning outside air flush cycle prior to occupancy. Building pressurization is another discussion. A well adjusted building pressurization control gets its final set up “tweak” based on avoiding exterior door whistling. Under current conditions, maybe you want a little whistle & some excess building pressurization... especially if you are doing a good job of filtering the outside air as it enters the system. But outside air is a double edged sword when it comes to relative humidity. Usually more outside air will help to keep RH up above that 40% level, but the situation changes dramatically during a Santa Ana. Under those conditions, minimum outside air may make sense. Adding some humidification would probably also be a good idea, especially in lobbies and entrance areas, where the most raw outside air is usually encountered.

Third. Keep the SCE demand charge window in mind. We are heading into summer. Maximize power consumption prior to 4:00 pm and minimize it after that. This is the perfect opportunity, with so many working from home, for building managers to move from the typical 8:00 am – 5:00 pm schedule to a 7:00 am – 4:00 pm schedule. The excess outside air can probably be cut back somewhat after 4:00 pm on
warm days in a lot of buildings, and the buildings can then be “flushed” with 100% outside air the next morning for an hour or so.

Four. When using more outside air, remember that you are also bringing more dirt into the building’s HVAC system. That means more frequent filter changes. This is not all bad; the alternative is for dirt to have an easier time of entering at the doors. At least when it enters via the HVAC system, it is filtered. Speaking of filters, what makes sense with regard to MERV ratings in Covid times? My view is that it all depends upon what you believe regarding the virus and its ability to travel in aerosol form. If that is a concern to you, then the logical step would be to move to at least a MERV 13 from the typical MERV 8 filter. A MERV 13 is supposed to be capable of catching sneeze aerosol droplets. MERV 13 is also the best filter readily available that will fit a 2” filter track, and is our code required minimum for a number of minor surgery, lab and skilled nursing applications. Bear in mind that the higher efficiency the filter is in a system, the more often it will need to be replaced. That is because it will do its job better than a lesser filter, and will plug up quicker. That leads to either low air flow (in light commercial or residential equipment), filter deformation due to static pressure differential and complete air bypass through the deformation area, or both. Again, better filters can mean that more frequent filter changes are required.

One of the roles of engineering in our society is to meet challenges by creating solutions. Often the best solutions use information that is not new…and sometimes is rather old. Combinations of solutions often work better than a single “silver bullet”. Combining solutions for buildings is part of our job. At this time, more of our clients seem to want to know more about what can be done. The challenge is in front of us.

Questions or comments?
MGallagher@wasocal.com.
COVID-19 Affecting Efficiency Workforce, with Potential Long-Term Changes

The efficiency sector, which employs more than 2.4 million workers, has been deeply affected by the COVID-19 public health crisis. Since most people are self-isolating at home, there is little work available installing energy efficient technologies and implementing other efficiency measures. Even when the immediate health crisis recedes, there are concerns about construction slow-downs and reduced budgets for state and local governments. Also, because most state legislatures are no longer in session, many energy efficiency bills that were close to being enacted may be delayed until next session.

New Nonprofit Assists State and Local Governments with Coronavirus Projects

A nonprofit called U.S. Digital Response is assisting state and local governments in finding technological solutions to the unprecedented public health issues caused by COVID-19. The program, launched last month, matches expert volunteers with governments that do not have the time or resources to expand their services. The organization provides free services such as data tracking, platform development to allow the sharing of information and new ways of fielding requests for assistance from local residents. The services offered also include resources for small business owners regarding emergency assistance programs. Read more about the U.S. Digital Response here.

2020 Better Buildings, Better Plants Summit is Now Virtual!

The 2020 Better Buildings, Better Plants Summit will be held virtually June 8-11.
Corporation and Individual tax deductible contributions helped ASHRAE fund the following Research

<table>
<thead>
<tr>
<th>IDENTIFIER</th>
<th>TC/TG</th>
<th>COST</th>
<th>RESEARCH TITLE OR SUBJECT</th>
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<tr>
<td>1408-RP</td>
<td>2.06</td>
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<td>The Effect of Lining Length on the Insertion Loss of Acoustical Duct Liner in Sheet Metal Ductwork</td>
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<td>1544-RP</td>
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<td>Establishing Benchmark Levels and Patterns of Commercial Building Hot Water Use</td>
<td>APPLIED ENERGY TECHNOLOGY - Davis, CA</td>
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<td>1588-RP</td>
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<td>Representative Layer-by-Layer Descriptions for Fenestration Systems with Specified Bulk Properties such as U-factor and SHGC</td>
<td>WHITE BOX TECHNOLOGIES, INC. - Moraga, CA</td>
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<td>Defining the Capabilities, Needs and Current Limitations of Building Information Modeling (BIM) in Operations and Maintenance for HVAC&amp;R</td>
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<td>R-40 Stability with HVAC&amp;R System Materials</td>
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<td>1673-RP</td>
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<td>Revision of the ASHRAE HVAC Design Guide for Tall Commercial Buildings</td>
<td>B&amp;S Analytics - Marina Del Ray, CA</td>
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<td>1682-RP</td>
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<td>$117,719</td>
<td>Study to Identify CFD Models for Use in Determining HVAC Duct Fitting Loss Coefficients</td>
<td>Embry-Riddle University - Prescott, Arizona</td>
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<td>Grant 14-15</td>
<td>2.01</td>
<td>$20,000</td>
<td>Support for the Development of ASHRAE Thermal Comfort Database Mark II</td>
<td>UC-BERKELEY - Berkeley, CA &amp; U. SYDNEY, Australia</td>
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Support Future Research in Building Science & Air Conditioning!

For online contributions go to [www.ashrae.org/contribute](http://www.ashrae.org/contribute)
Online Donation to ASHRAE Research Promotion

Click or Copy/Paste the following link on your browser:
https://www.ashrae.org/standards-research--technology/ashrae-rp

Select the radio button for ASHRAE Research
Support YEA, the General Funds or Scholarship
Notice this is a total of the different areas RP Investor supports

If you have any questions please feel free to send an email to the RP Chair to socalsahrae.rp@gmail.com
Membership Corner

Membership Promotion
By Carter Chappell - Membership Chair

To become a member of the Southern California Chapter you must first be a member of Society (for more info, please visit www.ashrae.org/membership/join). If you are currently a member of Society and wish to join the Chapter, you can synchronize your renewal dates by paying pro-rated Chapter dues. Society membership is $205 for Associates and Members, $21/$79/$105 (Fee per year at a 3 year introduction) for Affiliates, and $21 for students; Chapter membership is $60 for Affiliates, Associates and Members and $10 for students. Student Transfer membership allows you to maintain a reduced membership for the two years following graduation.

*Rate changes every year for the first 3 years.

If you have any questions about your membership, please don’t hesitate to contact Carter Chappell at cchappell@icidualcool.com

HAVE YOU PAID YOUR MEMBERSHIP DUES?
Even though you December have paid your Society membership dues, don’t forget to pay your Chapter dues. Chapter dues go directly to the SoCal Chapter and are greatly appreciated. If you haven’t paid your Chapter dues yet, please be sure to stop by reception at the next chapter meeting and we can accept your dues directly. Thank You!

SmartStart By Andres Palomino - Membership Chair

Are you a Student Member that recently graduated? Do you know someone that is? First off, welcome to the real world! Secondly, you should all take advantage of the SmartStart Program! SmartStart is a 3-year program that allows Student Members to transfer to Associate grade membership at a fraction of the cost:

- First Year: $21
- Second Year: $79
- Third Year: $105

Join within 6 months of your graduation date to take advantage of the SmartStart program now! (https://fs12.formsite.com/ashrae/form581146616/secure_index.html)
The Nominating Committee of ASHRAE Southern California Chapter congratulates and welcomes the new Board of Directors for the 2020-2021 year. We look forward to your leadership and service over the coming year.

I would like to thank the Nominating Committee for their tireless work during this election. They are Christine Lazo, Karine Leblanc, Phil Trafton, and Nick Rosner. And, of course, thank you to all voting members for participating in the elections.

This coming year will be a challenging one, but our new leaders and our members have what it takes to make our chapter successful!

Jay Madden, PE, Chair
ASHRAE Southern California Nominating Committee

PRESIDENT

Nick Rosner

Nicolas Rosner is a Variable Frequency Drive-Lead Sales Engineer at Eaton. Nick’s VFD focus at Eaton is consulting engineer specifying support, contractor service, facilities training, and distributor sales in CA, HI, and AZ. Prior to Eaton, Nick spent 8 years of his HVAC career at USAir Conditioning Distributors in both Southern California and Arizona. Nick Rosner is a licensed Mechanical Professional Engineer (CA & AZ). He holds a B.S. in Electrical Engineering from the California Polytechnic State University, San Luis Obispo. And, Nick has held officer and chair positions at Southern California, Central Arizona, and Tri-County ASHRAE chapters.

PRESIDENT-ELECT

Barnabas Path

Barnabas is an energy consultant working with K12, University, Municipal, and Special District customers advising on strategic energy positioning as well as evaluating energy performance at portfolio, site, and operator levels. Barnabas is currently a project manager for Los Angeles Air Conditioning; has owned an HVAC contracting business; designed, built, operated, and maintained a micro-turbine co-generation plant; supported a District Energy plant; and; has been in sales with many ESCO's including Honeywell, Siemens, and Johnson Controls. Barnabas is the past Chapter Technology Transfer Director, has been the ASHRAE Sustainability Chair. Barnabas received a B.S. in Mechanical Engineering Technology from Cal Poly Pomona.
2020-2021 Board of Directors Intro

SECRETARY
Ashley Gonzales

Ashley obtained her three bachelor’s degrees in Environmental Engineering, Sustainability, and Business Marketing at San Diego State University. Ashley is a Commissioning Agent at Glumac with a passion for green building design and sustainability. Ashley volunteers for ASHRAE Southern California as the Director of Student Activities and Young Engineers of ASHRAE (YEA). She organizes various social and technical events with the students and young engineers of the society. Ashley encourages the seasoned members to come together and take part in these activities. Her goal is to bridge the gap between the young and the seasoned members of the society.

TREASURER
Treasurer

Sierra Spitulski

Sierra Spitulski is a Mechanical Engineer at P2S Inc, a consulting firm in Long Beach, where she specializes in the HVAC design for hospitals and healthcare buildings. She is a licensed Mechanical Professional Engineer in California, a LEED Green Associate, and earned a B.S. in Mechanical Engineering and minors in math and physics from Fresno State, as well her M.S. in Mechanical and Aerospace Engineering from UC Davis. Sierra served as the first Women in ASHRAE Chair for ASHRAE SoCal during the 2018-2019 term, hosted a very successful joint networking event, and is excited to (hopefully) continue her outreach and involvement in the chapter.
2020-2021 Board of Directors Intro

DIRECTOR OF MEMBERSHIP & RETENTION

Nelson Echeverry

Nelson Echeverry is senior mechanical engineer at Donald F Dickerson Associates, with experience in high-rise residential design. He has previously served as YEA Chair and CTTC Chair for ASHRAE SoCal. He holds a BS in Mechanical Engineering with a concentration in HVAC&R from California Polytechnic State University San Luis Obispo.

DIRECTOR OF STUDENT ACTIVITIES, YEA, & HISTORIAN

Carlos Ruiz

Graduated from Cal Poly Pomona in 2015 with a Bachelors Degree in Mechanical Engineering. My last two years at Cal Poly Pomona, served as President of ASHRAE’s Student Chapter and led the Senior Project team for the ASHRAE Student Design Competition. Since then, I have had a close connection to the student chapter and the members. In my four years of being a professional, I have continued to have a strong presence at Cal Poly Pomona, in specific with ASHRAE. I have mentored one or two teams a year for the ASHRAE Student Design Competition. I have served as a mentor for other teams in other universities such as UCLA and Cal State Northridge. There is nothing more rewarding to me than to take in a small part of students interest in ASHRAE and in our industry. I am a strong believer in being accessible to our community and future engineers and to spread the ASHRAE philosophy to the youth – “Shaping Tomorrow’s Built Environment Today” My goal is to spread this connection to other universities and help strengthen the connection of ASHRAE philosophies with the Young Professionals.
2020-2021 Board of Directors Intro

DIRECTOR OF PUBLIC RELATIONS & CORRESPONDENCE

Eric Melendez

Eric Melendez has been working as a Junior Mechanical Engineer for the past 3 years with Budlong & Associates, a multi-disciplinary engineering design firm providing mechanical, electrical and plumbing engineering services (MEP), as well as project managing various industrial facility projects. Eric volunteered to support the SoCal chapter in his first year with ASHRAE; Eric has been serving as this year’s Young Engineers in ASHRAE (‘YEA’) Chair. Eric graduated from Cal State Northridge in 2016 with a B.S in Mechanical Engineering.

DIRECTOR OF CTTC & SUSTAINABILITY

Roman Verba

Roman is a Mechanical Engineer at LAX where in the last 12 years he represented the airport in commissioning of the large renovation projects, including Tom Bradley International, Terminals 5 & 8, Central Unities Plant, and others. Roman is responsible for generating and maintaining airport commissioning specifications, OPRs and Basis of Design. Roman has been participating in all phases of the construction, from the conceptual design to the commissioning and activation. Roman has been working closely with engineering consultants, contractors and agencies having jurisdiction. Roman is QCxp.
Resource Promotion Chair for SoCal Chapter

100% of this money will go to research, meaning not only you are helping creating jobs for some people (those who actually do the research projects) you are also helping advancement of our industry and helping green engineers such as myself learn faster and have better, more reliable resources. And for that we thank you!

You can make your contribution by:
- Going online and following instructions below (will take 2 mins!)
- Call me and give me your information and I will do it for you
- Send a check directly to headquarter
- Send a check to me
- Ask me to come pick your check up
- Or anything else you are comfortable with, be creative!

Thank you all and see you soon.

Online Contribution

Go the [https://xp20.ashrae.org/secure/researchpromotion/rp.html](https://xp20.ashrae.org/secure/researchpromotion/rp.html)

1. In the first rectangle put your contribution amount and check ASHRAE Research circle.
2. Check the box for endowed support
3. In existing fund name copy: S California Chapter
4. If you want to support scholarship please fill the scholarship amount and pick general
5. Click on personal contribution
6. Under contribution information field in red are required, fill out your information
7. SUBMIT and wait for your name to pop up a san honor roll investor!

**REMEMBER: All donations to ASHRAE are tax-deductable!**
Job Opportunities

INSPIRE
THE NEXT GENERATION OF
SCIENTISTS & INNOVATORS

The EnCorps STEM Teaching Fellowship transitions professionals from science, technology, engineering and math industries to teaching in high need middle and high schools. The Fellowship is a one or two-year pathway that includes training, guest teaching, and earning a teaching credential in a highly supported environment with a cohort of professional peers. No experience required, just a desire to share your talent and passion with students. Join almost 1,000 EnCorps Fellows across California making a profound impact by passing on their knowledge to the next generation.

BECOME A MATH OR SCIENCE TEACHER

Apply at www.encorps.org/apply

Contact Tanja Schroeder, SoCal Recruitment Coordinator, tanja.schroeder@encorps.org

www.encorps.org
Job Opportunities

We're Here!

All of the industry's most trusted and reliable boilers available today in California.

- Stocking a full range of high efficiency steam and condensing boilers designed to the most stringent emissions requirements.
- Local factory staff to assist with all your design, installation and commissioning needs.

Fulton Equipment Pacific
5160 Fulton Drive
Fairfield, California 94534
P: (707) 419-5885

www.fulton.com
Job Description:
We are seeking a motivated individual to join our Western Allied Corporation Engineering Team in Santa Fe Springs, CA. In this position, you will be responsible for creating design-build drawings that are complete, clear, constructible and cost conscious. We follow our projects from conception to completion and for the life of the building. As an HVAC Design Engineer, you will have the unique opportunity to be a part of the construction and service team working with field staff to deliver quality HVAC systems to our customers.

Job Responsibilities:
- Perform and assist with engineering design
- Assist with construction coordination of design drawings with field and other trade partners
- Assist with project close out documents at completion of construction
- Complete code-required energy compliance documentation
- Conduct engineering calculations, selection and layout of equipment, duct and piping system design

Job Requirements:
- Proficiency in Revit, AutoCAD and Navisworks
- 2+ years of mechanical engineering experience at a consultant or contractor
- Fluent in engineering problem solving and communication
- Understanding of psychrometrics, refrigeration, acoustics, and controls systems
- BS in Engineering desirable
- EIT Certificate or PE desirable

Please contact Brian Sybesma (bsybesma@wasocal.com) to apply
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### 2019-2020 ASHRAE Southern California Board - Officers, Directors, and Chair

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<tr>
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<th>Name</th>
<th>Email</th>
</tr>
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<tbody>
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#### DIRECTORS AND CHAIRS

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<thead>
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<th>Name</th>
<th>Email</th>
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<tbody>
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<td>Carter Chappell</td>
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<td>Resource Promotion</td>
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#### STANDING COMMITTEES AND CHAIR

<table>
<thead>
<tr>
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<tbody>
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<td>Scholarship Co-Chair</td>
<td>Jay Madden</td>
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<tr>
<td>Scholarship Co-Chair/Awards</td>
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