

FOG DISPENSER



Thursday, January 23 Dinner Meeting

MAIN PROGRAM:

LOW CHARGE DIRECT EXPANSION IN LOW TEMPERATURE INDUSTRIAL AMMONIA REFRIGERATION APPLICATIONS



SPEAKER: JEREMYH OLBERDING

Jeremy Olberding graduated in Mechanical Engineering at the University of Idaho. Jeremy is the Vice president of sales for Colmac Coil where he has worked for 15 years and held several positions including research and product development engineer. Today Jeremy is responsible for design and applications engineering group on Colmac focusing on Ammonia and CO2 for industrial refrigeration projects.

Presentation Summary

Jeremy Olberding will be presenting on the use of low charge direct expansion in low temperature industrial ammonia refrigeration applications. This technology reduces the first cost of installation while significantly reducing the ammonia charge required on the site. A review of recent installations using low charge direct expansion in industrial refrigeration systems will be discussed showing benefits including faster defrosting, effective operation at multiple temperature levels, good response to changes in load, fast restart after power failure, and simplified maintenance and operation through elimination of recirculation pumps. The DX ammonia piping handbook will also be covered to provide design guidelines, and example P&ID's for designing DX ammonia systems.

THURSDAY, JANUARY 23
5:30 pm to 9:00 pm

PACIFIC ENERGY CENTER
851 HOWARD STREET
SAN FRANCISCO, CA 94103

AGENDA:

5:30 pm

Registration and Social Hour

6:30 pm

Dinner, Announcements
and Introductions

7:45 pm Break

8:00 pm Main Program

9:00 pm Adjourn

COST:

\$320.00 Chapter meeting
voucher

GG ASHRAE Members:

Before 5pm, January 16	\$50
After 5pm, January 16	\$55

Non-Members:

Before 5pm, January 16	\$60
After 5pm, January 16	\$65

Students/Voucher Holder

Free, but please register before January 16 to help us better plan for meal and venue seats.

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GOLDEN GATE ASHRAE
FOG DISPENSER
VOLUME L16- NUMBER 4
JANUARY 2020

EVENT CALENDAR

FOR MORE INFORMATION AND DETAILS
GO TO WWW.GGASHRAE.ORG



NEXT MEETING:

THURSDAY, JANUARY 23, 2020

TOPIC: Refrigeration

LOCATION: PG&E Center

- FEBRUARY 1 - 5, 2020
LOCATION: ORLANDO, FL.
- THURSDAY, FEBRUARY 13, 2020
TOPIC: Debrief on ASHRAE Winter Conference
LOCATION: SCOTT'S SEAFOOD, OAKLAND
SPEAKER: TBD
- THURSDAY, MARCH 19, 2020
TOPIC: Radiant + Ceiling Fans
LOCATION: 650 California St.
SPEAKERS: Paul Raferty + Fred Bauman
- THURSDAY, APRIL 16, 2020
TOPIC: Electrification of Buildings
LOCATION: PG&E Center
SPEAKER: Peter Rumsey
- THURSDAY, MAY 21, 2020
TOPIC: PRODUCT SHOW
LOCATION: PG&E Center
SPEAKER: TBD
- THURSDAY, JUNE 18, 2020
TOPIC: Resiliency: Batteries, PV and Beyond
LOCATION: 650 California St.
SPEAKERS/LOCATION: TBD



Tom Gilbertson, Chapter Historian
December 2019

Christmas!.... the Holidays!.... "T'was the Night before Christmas... and all through the house... (*Clement Clarke Moore, written 1822, published 1837*)

Historically... That poem reminds us of Winter!... and all that it brings... Cold weather... -20 F... and lower... snow... moisture build-up as frost on our windows. We learned an appreciation of all the wonders of what was to become "ASHRAE-technology", but we just didn't know what it was!

ENERGY EFFICIENCY?... what was that?... Insulation?,,, more about that later!

Our house had poor "envelope design" ... the windows were double-glazed only because in the late Fall we installed the "storm-windows".

That outer layer of glass in a wood frame that fit poorly and leaked volumes of infiltration into our house. The windows, allowing infiltration, subjected the volumes of moisture that was being released into the home, especially from the holiday baking and cooking, to form frost, and ice, on the inside of the glass windowpanes.

Frost makes very pretty designs, and even pictures on glass windows. Our house was decorated by Jack Frost, as he orchestrated heat transfer-rates to create, each morning, frost-pictures on the windows.

The insulation in the walls?... there wasn't any.

INSULATION... a relatively new concept until the 1930's when you could get a special brass plaque on a house if that house had insulation ... complements of Johns-Manville.

We discovered "stratification" when the five-foot-high windows would "grow ¼-inch" of ice on the inside of the bottom of the pane. The top of the pane would only have a light frost. The temperature inside the house with its "gravity-oil-fired furnace" stratified the air temperature to the point that frost at the top of the pane would melt, and drain down the window, only to re-collect as it froze to a thickness of ¼-inch near the bottom of the window. Where was Steve Selkowitz when we needed him?



LIGHTING! Getting ready for Christmas meant getting down from the attic, the "Christmas Box". The magical-box that held the ornaments that went on the balsam fir-Christmas tree... the tree that cost \$3.00 and had been selected in freezing weather until the selection process was shortened by cold feet.

The box held the uniquely sustainable, two strings, of Christmas lights. Typically, each string with eight-bulbs, wired in series. But OUR light strings had nine bulbs!. My Father had cut the light-string and added another light socket. This made our bulbs burn less-bright, and last longer... and the bulbs not become so hot as to likely ignite the fir-tree.

But in the depth of the Christmas Box I found a number of silver, spring loaded clips... clips that were actually candle holders.... after much badgering I convinced my parents that we could try at least one, real candle on the tree... and we did. Carefully watched... and then only for a short time... and on Christmas Eve it was beautiful@

I think the LED bulbs of today are a better and safer choice!... and ASHRAE-technology makes us much more comfortable than the historic way that we did things.

What do you remember about the ways that you used to do things?



Tom Gilbertson, Chapter Historian
January 2020

"2020".....It seems like that should be part of an eye exam!

So maybe we ought to "examine" just where we are...and where we are going...and what we have done?

"Look!"...we have to realize that we came from a simpler time...historically. What we were satisfied with ...is now set at a "much higher bar"...and that for many reasons....Technology...rooted in ASHRAE-lore has had a lot to do with that!

Historically...our Society's Patron Saint...Ben Franklin...(Yes... ASHRAE really has a patron saint)...invented the Franklin Stove. The Franklin Stove, arguably the most significant improvement in heating our homes...was Ben's invention...What did it do...you ask?

Starting in 1740 to 1742...no one is exactly sure of the year...Ben Franklin put forth his design for what was to become known as the "Franklin Stove". The design...while initially not perfect...did allow a "reduction in consumption"...of as much as 70% of the wood that was required to achieve the heating effect that was used to heat our houses, and cook our food....-" 70% reduction"...not bad!

Do the math ...saying this another way...you could harvest...i. e. "cut and stack" ...by hand 1/3 of the wood that you had to...if you used the Franklin Stove!...Ben, being a real guy...and espousing an ASHRAE-doctrine...Franklin did not patent his stove. Franklin said that he wanted everyone to be able to use , enjoy the benefits of his invention...without cost!



North America, most every where requires "heat" at some time of the year... it is essential to life...and Franklin addressed that issue.

But wait...there is more!..."Cooking" is much easier on a stove, when compared to an open fire...particularly on a Franklin Stove as it allows the use of a Dutch Oven. So, what is the big deal?...Realize for a moment why we "cook" food!...For health and safety reasons!...We need to kill the harmful bacteria that infests our food...food that did have the benefits, years-ago, of that "R" in ASHRAE "Refrigeration"!

See, Ben was anticipating all of the advantages of his stove...and of course like a good, initial idea...many others improved upon it.

I remember my Grandmother...cooking with wood...(we had no other form of heat)...when in the morning she would take two corn cobs from a tin syrup pail that held a couple of inches of kerosene...where the cobs had been soaking...and put them in a stove and light them, for a quick "breakfast-fire".

Yes... a somewhat simpler time.

In Memoriam January 2020

Last year our Chapter lost two, long term members...

Hendrik (Hank) Mouw — whose “ASHRAE-related career spanned from being a Detroit-plumber’s apprentice in 1939, a bomber pilot in WW2, a G. I. Bill of Rights-educated Purdue mechanical engineer, and long -time consulting engineer.

Richard (Dick) Glumac — whose ASHRAE-related career begins with Dick fleeing his home in Yugoslavia in 1951. Following is the May 2012 Golden Gate Fog Dispenser that featured Dick’s history:



May – 2012...ASHRAE and History and People....Who Moved Both

“ASHRAE”...The American Society of Heating Refrigeration and Air-conditioning Engineers”....and the history of our Country.... are intertwined.....and “History”....is laced with the grand accomplishments of ASHRAE, and its members ... ASHRAE has done more than any other Society, and its related industries to make the Country a great place to live. But remember...it is the items that are specifically addressed by ASHRAE that improve the quality of life....like no other....but we need the people to move everything forward.

People make the difference....and our Golden Gate Chapter has an outstanding example....driven by history.... of an individual that “makes the difference”.....Dick Glumac!

As History turned the World in the past 100 years....at an ever-increasing rate...this “Dick Glumac” has lived and tasted most of the World’s major history making actions...like few others....consider how World History, starting with WWI.... has spun the Balkan’s and shaped what Dick has been through...and accomplished!

Dick was born in Zagreb, Yugoslavia....when “Yugoslavia”.....was barely 1-year old...From 1918 after leaving the Austro-Hungarian Empire in 1918...Zagreb was in the Kingdom of Serbs, Croats and Slovenes....and was not “Yugoslavia” until 1929...and here is “Dick”....a new little boy in a new little country!

Growing up in the 1930’s....playing happily (mostly) in the River Sava....only to experience WWII from an entirely too close-up location.....living first under a German occupation....then Russian occupation....then Tito’s puppet government.....and finally,... Dick in 1951 as an accomplished member of the “Sever Swim and Water Polo Club” of Belgrade is able to help negotiate a trip to Innsbruck, Austria.....Much more than swimming and water polo was planned!

The trip was “arranged” chiefly to enable political defection.....to quietly leave behind friends, family.....Country....and at 21 years of age.... with virtually no money, and little more than an “almost-empty suitcase”...to “start-over”.....but where?

Curiously Dick’s “trip” trailed through refugee camps, Innsbruck, Austria.... an application to immigrate to California....(if he could wait for 3 or 4 years)...then papers for Canada.....on to Bremerhaven, Germany...then a refugee ship with over 2,000 German DP’s (Displaced Persons) and seven Yugoslav’s.....and finally landing in Quebec City, Canada with \$40.00....and that almost empty suit case...and a gift of \$20.00-Canadian from Canadian-immigration...then to find employment that was yet to start that ASHRAE-marked career.

Oh...did I mention that Dick, at every turn was feverishly studying that goofy new language...English.

Canada had it challenges, too...very little work....cutting timber in the winter of 1951-1952.....and finally enrolling at the University of Toronto to study mechanical engineering...and graduating in 1956.

Montréal, Toronto, Ottawa, Vancouver....Vera Cruz, Xalapa all work and travel locations for Dick, and eventually California in 1962 to work first for a space-age firm, and then for Hellman & Lober – Consulting Engineers in Los Angeles....finally in 1965, work with Buonacoursi and Murray....then Buonacoursi & Associates...some “bent” promises...and finally **Glumac & Associates- 1971!!**

But our story doesn’t end there...it just starts!

Première engineering accomplishments starting with a one-man firm....that grew...and continues to grow....Portland, Sacramento, Los Angeles, Irvine, Seattle, Silicon Valley, Las Vegas, Corvallis, Shanghai, Hong Kong.....all of this from a water polo player who had to leave his country....and start with nothing.....in a country where he couldn’t initially, even speak the language....and that multi-national firm...practicing all that is good about ASHRAE...now operating in ten cities, and four counties!

Glumac and Associates meeting requirements that are based in ASHRAE-lore....moving forward and producing accomplishments.... all led by a man that basically “swam” his way through history....to ours and ASHRAE’s benefit.... Yes....in history, and in action... Dick Glumac and ASHRAE are intertwined....and for that we are all thankful!

**Juliana Velez**

Bay Area Science Festival

On November 2nd, Golden Gate ASHRAE had a booth at the annual Discovery Day at Oracle Park as part of the Bay Area Science Festival. We ran a pressure drop experiment where the kids blew into a short straw and a long straw and observed on how it was harder to blow through the longer straw. They learned how pressure drop can affect the amount of effort and energy that is required to move a fluid through a conduit.

The day went really well and both the kids and volunteers had fun! Thank you to all the volunteers who came out and helped! Here are some pictures from the day.



2019 Society Scholarships

The Golden Gate Chapter of ASHRAE will distribute as much as \$54,000 in scholarships to our student members. These are independent of the scholarships and grants distributed by the ASHRAE National Society. This breaks down to: Eric T Andresen Memorial Scholarship Fund (twelve scholarships) totaling \$50,000 and Golden Gate Chapter Student Scholarship (up to 3 scholarships) totaling \$4,000. Please encourage any student members you know to apply for the Golden Gate Chapter's scholarships.

The deadline for the Chapter scholarships is February 28, 2020. Please get the word out that applicants have a good chance of winning one of these scholarships due to the history of limited numbers of applicants. So far we have no applicants for these scholarships.

Applications can be found at: <https://ggashrae.org/Students>

Contact Richard Paillon at: rpailon@comcast.net with any questions.

2020 Travel Grant

Sonja Salo has been awarded a travel grant to the ASHRAE Winter Conference in Orlando Florida. The award was increased \$2,300 to bring it in line with current costs. Dana Miller, a past conference attendee has been awarded a grant of \$700 to help her with costs to attend this year's winter conference.

Call for Volunteers - K12 and University

Do you enjoy working with kids to promote STEM and engineering? Do you enjoy talking about HVAC to aspiring engineers? We are looking for volunteers to help with classroom visits teaching students about STEM and engineering concepts through hands on activities. We are also looking for volunteers who would be interested in giving a talk at one of our student branch universities (UC Berkeley, Cal Maritime, and SF State). If you are interested in volunteering or have any questions, please contact the student activities committee, aggcstudents@gmail.com.



Sanjil Karki, Membership Promotion Chair

Greetings everyone and welcome back to "ASHRAE Season"! As this is my first term as a Membership Promotion Chair, I am very excited to serve the chapter and enthusiastic about helping it grow. We have a lot of potential to have a great year and I look forward to getting to know you all throughout the process and expand the chapter membership.

Membership Promotion Committee help!

I am looking for volunteers to help on the Membership Promotion Committee. The role would include recruiting new members to join ASHRAE and helping with membership retention. The time commitment would be about an hour a week. Please contact me or the other committee or board members if you are interested in participating and contributing to our local and national society. We would be happy to answer any questions you have on the responsibilities. Link to my contact information is here <http://ggashrae.org/join.php>.

Welcome New Members!

We are looking forward to another successful year of retaining our current members and recruiting new ones. When renewing your memberships, please pay your local chapter dues AND Society dues. Reminder: Golden Gate (Local) and Society dues both need to be paid. Yes, those are two separate transactions. Throughout the year I will list the members who joined over the previous month, be sure to keep a look out and give them a warm welcome! Below are our newest members who joined over this past month:

MEMBERS

Mr Vaclav Wendell Cibulka
Miss Lili Yu
Mr Samuel R Ringrose
Mr Graham Belgarde
Mr Steven Smith
Mr Graham N Lierley
Mrs Jessica YueXin Qu PE
Dr Ali Heydari, PhD
Dr Zhe Wang
Geetha Krishnan
Jorge Lopez Gordiano
Mr Ahmad Sinno
Samual Zastrow
Gwendolyn E Archambault

Mr Scott Herrington
Mr Nathan Blum
Mr Zack Dobson
Mr Daniel E Cohen
Mr Prasad More, PE
Mr Victor H Franco
Mr Ryan Hourigan
Megan Synnestvedt
Randy Cadwell
Dr Wanyu Rengie Chan
Mr Bryan B Graham
Mr Sandeep Dilwali

STUDENT MEMBERS

Mr Luis Santos
Krista Joyce Basobas Camero
Miss Sonja Salo
Mr Jack H. Cinotto



Brian Chacon, Membership Promotion Chair, Research Promotion Chair

What is the Resource Promotion Campaign?

The RP Campaign is an annual fundraising campaign benefiting the funding of numerous ASHRAE Programs. These programs include:

- **ASHRAE Research**
- **ASHRAE Scholarships for undergraduate students**
- **ASHRAE Learning Institute (ALI) development of new courses & materials**
- **Graduate Research Projects (Grants-in-Aid)**
- **Young Engineers in ASHRAE (YEA) Leadership Training**
- **Permanently endowed support to all of the above programs**

The RP Campaign is overseen by the RP Committee, a standing ASHRAE Committee. The committee is made up of 14 Regional Vice Chairs (RVC), 1 Consultant (past RVC), 3 Vice Chairs (past Consultant), and Chair (past Vice Chair). Staff support includes a 3-member team based at ASHRAE Headquarters. **The RP Campaign raises over \$2.2 million a year from over 6,000 donors.** These donors are made up of ASHRAE Members, industry associations, and industry organizations.

Your contributions are much appreciated. Thank you for making a difference and shaping tomorrow's built environment today.

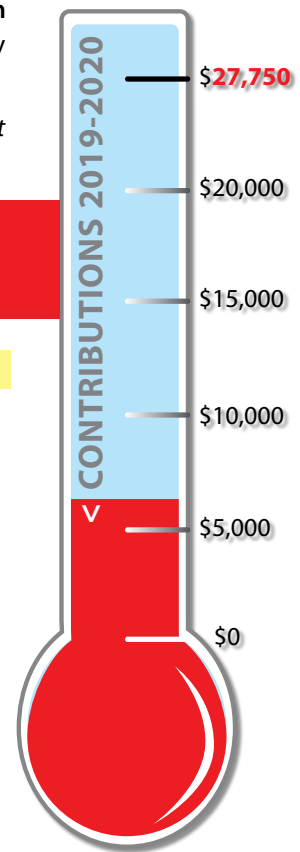
Your Board has stepped up to kick start the campaign by donating at least \$100 each!

DONORS IN 2019-2020:

ORGANIZATIONS
\$250 TO \$999

ORGANIZATIONS
Up to \$249
GG ASHRAE Golf Tournament

INDIVIDUALS
Up to \$249
Jason Lesser
Alyse Falconer
Brian Chacon
Jeremy Martinez
John Gardner
Juliana Valez



Donations are tax deductible, by check, credit card or online at www.ashrae.org/contribute

Mail Checks to: ASHRAE RP: 1791 Tullie Circle, NE: Atlanta, GA 30329

For more information, please visit Research and Promotions section on www.ggashrae.org or contact RP Chair Brian Chacon at (415) 742-9350, or bchacon@ascenthvac.com

GOAL:
\$27,750
CONTRIBUTIONS:
\$6,000.00



Mitch Pinsker, Government Affairs Committee Chair (GAC Chair)

EPA Expands the List of Acceptable Refrigerant Substitutes Under the SNAP Program

On October 31, the EPA's Director of the Office of Atmospheric Programs signed a "**Determination of Acceptability**" (<https://www.epa.gov/snap/snap-regulations>) that expands the list of acceptable refrigerant substitutes under the Significant New Alternatives Policy (SNAP) program. The SNAP program is under section 612 of the amended **Clean Air Act of 1990** (<https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary>), which requires EPA to evaluate substitutes for ozone-depleting substances to reduce overall risk to human health and the environment. The new acceptable substitutes in the refrigeration and air conditioning sector are:

- *R-1224yd(Z) in centrifugal and positive displacement chillers and industrial process refrigeration (new and retrofit equipment);*
- *R-407H in refrigerated transport—refrigerated trucks and trailers and retail food refrigeration—refrigerated food processing and dispensing equipment (new and retrofit equipment);*
- *R-448A, R-449A, and R-449B, in ice skating rinks (new equipment);*
- *R-453A in refrigerated transport—refrigerated trucks and trailers (new and retrofit equipment).*

DOE Decides to Rollback Energy Standards for Lightbulbs

On December 20, the Department of Energy (DOE) finalized its decision to rollback more stringent energy efficiency standards on lightbulbs. The move was justified by citing higher costs of efficient lightbulbs and protecting consumer choice. Sixteen states filed lawsuits against the federal government in November over the anticipated decision not to advance lightbulb efficiency standards. To read more about the DOE's decision, <https://www.federalregister.gov/documents/2019/09/05/2019-18940/energy-conservation-program-definition-for-general-service-lamps>.

Building Technologies Office 2020 Peer Review

The 2020 U.S. Department of Energy (DOE) Building Technologies Office (BTO) Peer Review will be held May 4–7, 2020, in Arlington, Virginia. The annual BTO review will cover BTO's active research, development, validation, and systems integration projects. <https://www.energy.gov/eere/buildings/building-technologies-office-peer-review> to learn more.

DOE Webinar on Zero Energy Buildings

On December 3, the Better Buildings program at the Department of Energy (DOE) is hosting a webinar on "How Buildings of All Shapes and Sizes are Becoming Zero Energy Users." During the webinar, you will learn about the financial, technological, and design process innovations that make these projects a reality today. To register for the webinar, <https://register.gotowebinar.com/register/2771022590359935491>

California Moves Forward with Lightbulb Standard

The California Energy Commission has essentially voted to bar sales of incandescent and halogen bulbs by adopting stronger energy efficiency lightbulb standards. The vote comes after the U.S. Department of Energy (DOE) withdrew the 2017 energy efficiency standards for certain types of light bulbs. The state banned the sale of pear-shaped bulbs in 2018, but the rule will now extend to other shapes of incandescent bulbs — a wide collection used in chandeliers, recessed lighting and other lamps that DOE recently rolled back.

HVAC/Plumbing/Mechanical Engineer (Stockton, CA)

Alexander Scheflo & Associates is seeking a HVAC/Plumbing/Mechanical Designer or Engineer to join our firm. The firm was established in 1969 and provides design engineering services; Plumbing, HVAC, and Energy Compliance for commercial, educational, and multi-family projects.

This is a full time position. Salary to be based on level of experience. We offer vacation time, sick leave, major holidays off, medical insurance, and 401(k) match. To apply, please submit your resume, and a detailed cover letter that conveys your relevant experience to mitch@aschefloeng.com or Alexander Scheflo & Assoc., Inc., PO Box 4183, Stockton, CA 95204.

Taylor Engineering – Mechanical Engineer Job Opening

Design HVAC systems and controls for commercial buildings using CAD tools. Perform load calculations and energy analysis. Analyze building mechanical system operation data, diagnose operation problems, and provide technical leadership. Provide whole building energy model and simulation. Make recommendations for improving system performance.

Job Requirements:

Bachelor's degree or equivalent in Mechanical Engineering or closely related field and two years experience performing HVAC systems analysis or whole building energy simulation and analysis, including HVAC.

Please send resume to Glenn Friedman, Taylor Engineering, 1080 Marina Village Parkway, Suite 501, Alameda, CA 94501.

E-mail gfriedman@taylor-engineering.com

DECEMBER DINNER MEETING RECAP PHOTOS



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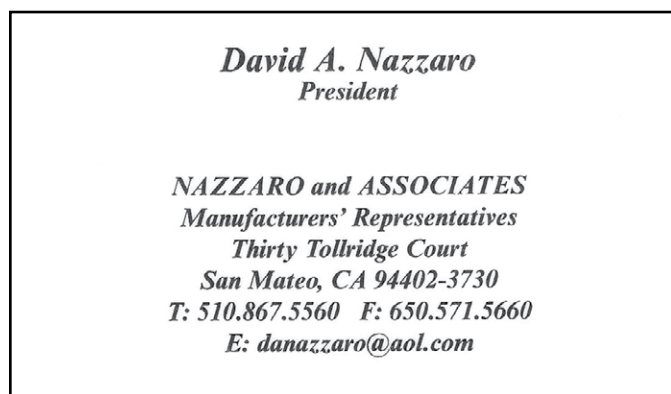
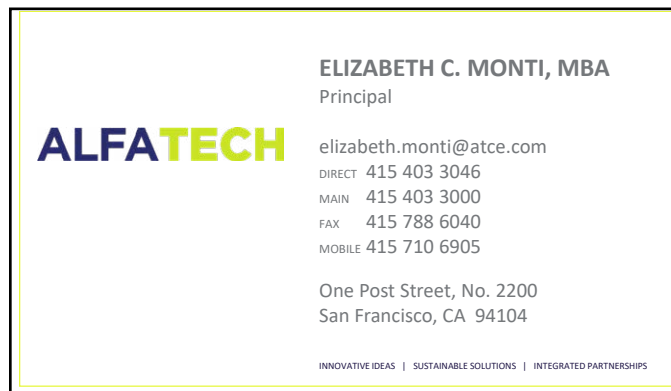
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A big thank you to the following sponsors for supporting publication of the Fog Dispenser.



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