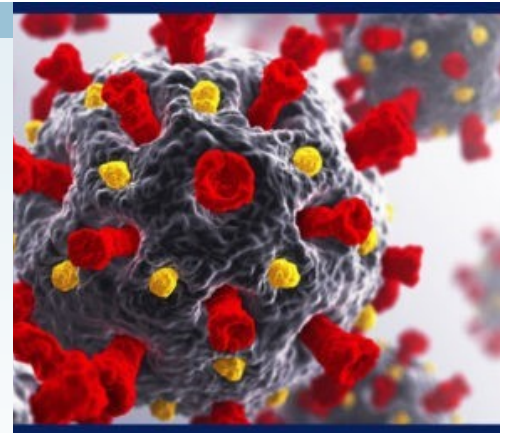


THE AMERICAN ACADEMY  
OF  
CARDIOVASCULAR PERFUSION  
515A EAST MAIN STREET  
ANNVILLE, PA 17003  
(717) 867-1485  
OFFICEAACP@AOL.COM  
HTTP://WWW.THEAACP.COM

Summer 2020



# The Academy Newsletter

## “HAWAIA?”

“Hawaia?” is the Boston dialect for the common phrase “How are you?” How many times over a day do we hear and/or utter this or a similar colloquialism to passersby, colleagues and even loved ones? I’ve recently seen social media evidence of people under quarantine conditions having full-fledged conversations with inanimate objects about their home... do they expect an answer? What do we expect in reply when we ask another person “How are you?” As an aside, I’m mortified by how natural it was for me to type the phrase quarantine conditions...

From an Atlantic article from April 24, 2020 by Ashley Fetters - “This moment has laid bare the extent to which “How are you?” is a mere pleasantry and not an honest inquiry in search of an honest answer. To ask “How are you?” is either to make the conversation very gloomy, very fast or to force someone to lie straight to your face and say they’re fine. We need better questions to ask.”

COVID-19 has changed the lives of every domesticated living being on the face of the earth, period. While we all endeavor to make the most of our current situation, I am hard pressed to find pure, unadulterated positivity in the world today. Everything we do in the era of COVID-19 will have a footnote, asterisk or notation associated with it. Shopping, dining, sports, politics, religion and education at all levels are operating under new and evolving tenets.

As Perfusionists, we are charged with professional roles and responsibilities that give us the opportunity to be on the innovative, brave and even (occasionally) victorious side of disease including this pandemic.

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### Editor

David Palanzo  
Anncville, PA

### Contributing Editors

Tom Frazier  
Nashville, TN

Kelly Hedlund  
Hays, KS

### Student Section

Richard Chan  
Oyster Bay, NY

*Continued from Page 1*

It is imperative that we give this notion pause. We owe it to ourselves to account for the profound impact we as a profession and we as individuals have on society... often while flying under the radar screen and generally with little or no fanfare.

Perfusionists have been frontline caregivers for typical patients as well as Covid-19 patients and many have experienced the struggle of furlough or being laid-off.... for some, it was both. As Perfusionists, we have the privilege of caring for patients by providing the most acute, intimate and rewarding level of care imaginable. In the setting of Covid-19, Perfusionists are suddenly tasked with running ventilators, CVVH machines and IV pumps. Perfusionists are handing out masks at hospital entrances, running tests in their main labs and helping to serve food in hospital cafeterias. I would argue that in the context of COVID-19 all of these tasks are acute, intimate and rewarding. We have been called to action in ways no one could have imagined in January of 2020... let that sink in – what were your primary fears, concerns and preoccupations 150 days ago???

As most metropolitan centers begin to ramp up, clinical caseloads and glimpses of normalcy will permeate our daily business at work and at home. Unfortunately, there will be reminders of the extra-ordinary toll COVID-19 has taken on our way of life. The American Academy of Cardiovascular Perfusion (AACP) is not immune to this pandemic. As a facet of the Joint Perfusion Covid-19 Task Force (JPCTF), the AACP contributed to and gleaned useful information from JPCTF webinars and website content on the many facets of COVID-19. JPCTF has been a platform for clinical experiences from all over the world, regular updates of state-level licensure waivers and responsible for sharing information at a time when there was so much uncertainty. It was an honor for me to represent the AACP in this endeavor.

In a quirky twist of fate, the gambling that may (or may not) have occurred at the 2020 AACP annual seminar in Reno foreshadowed the enormous risk of planning to host hundreds people from all over the world at a resort in Texas the second week of February 2021. The chance of a COVID-19 resurgence, difficulty of any form of travel and presumed lack of funding for meeting reimbursement are all very real concerns stacked up against a successful meeting. The AACP Executive Directors and Council had some very realistic and sobering conversations in the past month.

The annual seminar of the AACP for 2021 will be unique as the inaugural web-based virtual AACP meeting. The AACP council and committees are working diligently to bring as much of the camaraderie, education and inspiration from the beloved annual seminar from the ball room and conference center to the comfort of your desk chair. Certain aspects of this annual event will not translate to the screen, many handshakes (and hugs) will be missed and I'm sure the Texas hospitality I have been so looking forward to in Austin will be even more comforting when we make it there in 2022!

I wish you all health, prosperity and peace,

Bill Riley  
President, AACP



**Chloe Choi, MS, CCP**

Perfusion Clinical Coordinator

Columbia University Medical  
Center

New York, New York



## Venting the LV on ECMO

Why do we need LV venting on ECMO? To decrease stress of an already dysfunctional Left Ventricle (LV). Cardiogenic shock patients are usually unstable and decompensate quickly, for urgency, peripheral access is our cannulation strategy. Even though Venous-Arterial (VA) ECMO provides adequate tissue perfusion, it can cause increased stress on the heart by increasing the LV afterload. VA ECMO increases LV end-diastolic pressures, which increases myocardial wall stress. It also increases aortic root pressure, which may result in the aortic valve not being able to open and eject blood properly. Other indications for use of a LV Vent during ECMO are incompetent aortic valves, to capture any blood returning to the heart, and also to vent venous return still moving through the native cardiac circuit that is not captured by venous cannula. LV distention increases pulmonary artery pressures (PAP). It also leads to pulmonary edema, and possible blood stagnation or thrombus formation. LV distention can be diagnosed via increased central venous pressures (CVP), pulmonary capillary wedge pressure (PCWP), or PAP. Using TTE or TOE, LV distention, stasis, thrombus, reduced ejection fraction, and competence of the aortic valve can be found. The patient with LV distention might be having refractory ventricular arrhythmias, such as ventricular tachycardia. The patient with pulmonary edema can be diagnosed using chest X-Ray, as well as pink frothy endotracheal secretions.

In our institution, four different kinds of LV vents are used. The four types are listed below:

1. Open chest surgical placement of LV vent with central ECMO
2. ECMO + IABP
3. ECMO + Impella (Ecpella)
4. Minimally invasive LV venting with VAD and oxygenator.

After ECMO initiation, it is beneficial to insert a Swan-Ganz Catheter to measure PAP and PCWP. PAP or PCWP above 20-25 mmHg is a good indication of necessity for an LV vent.

When a patient fails to wean off cardiopulmonary bypass, they are centrally cannulated and an LV vent is inserted via the Right Superior Pulmonary Vein. A Y-connector is used in order to connect this LV Vent line to the drainage tubing of the ECMO circuit. A thumb clamp is used to adjust drainage flow as necessary. Another option for LV venting is ECMO with an Intra-Aortic Balloon Pump (IABP). The IABP helps with LV unloading by reducing afterload during systole and also inducing a higher diastolic perfusion pressure in the coronary arteries (See Figure 1). ECMO with an Impella ("Ecpella") is another option for LV venting. The Impella pumps blood from the LV to the aortic root which results in reduced LV afterload, decreased LVEDP and pulmonary venous pressures (See Figure 2, 3). A major advantage to use "Ecpella" is to control the amount of flow and the amount vented, which makes an Impella the most effective and efficient method to vent the LV. Lastly, Centrimag VA ECMO with an LV vent can be used for direct venting. This is for biventricular support. The axillary artery or the aorta is used for reinfusion purposes, and the LV apex and femoral vein are used for drainage

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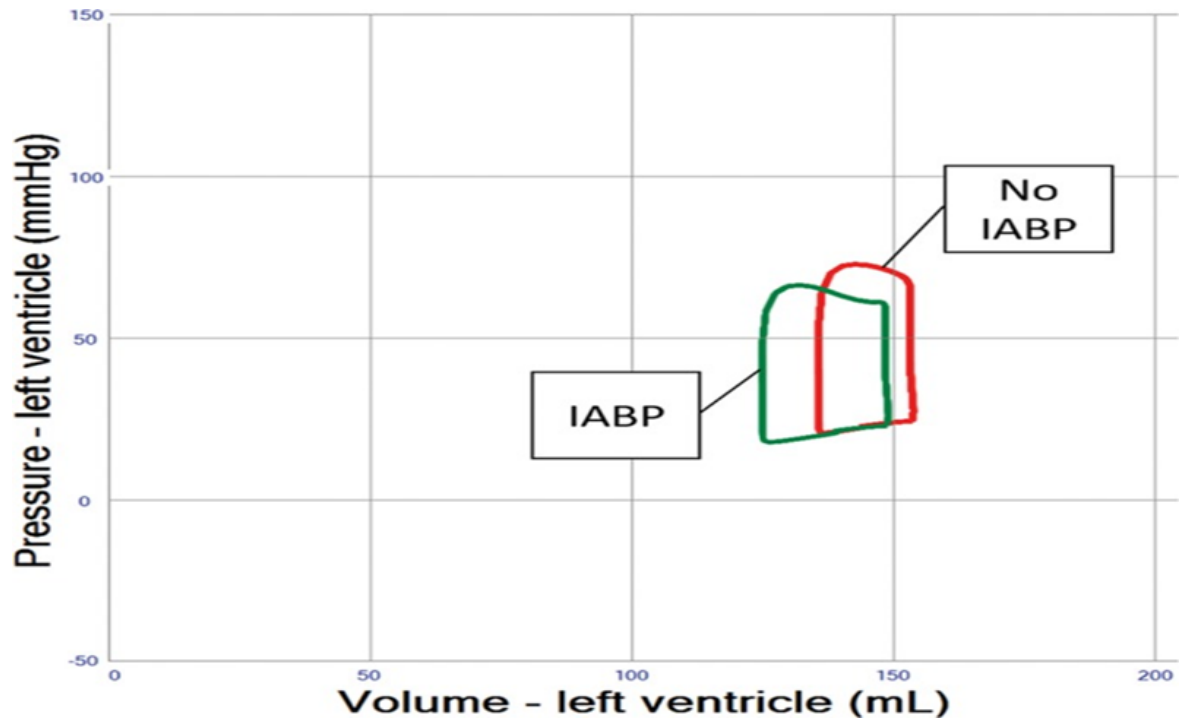


Figure 1. This pressure-volume loop shows how IABP helps decrease afterload (1).

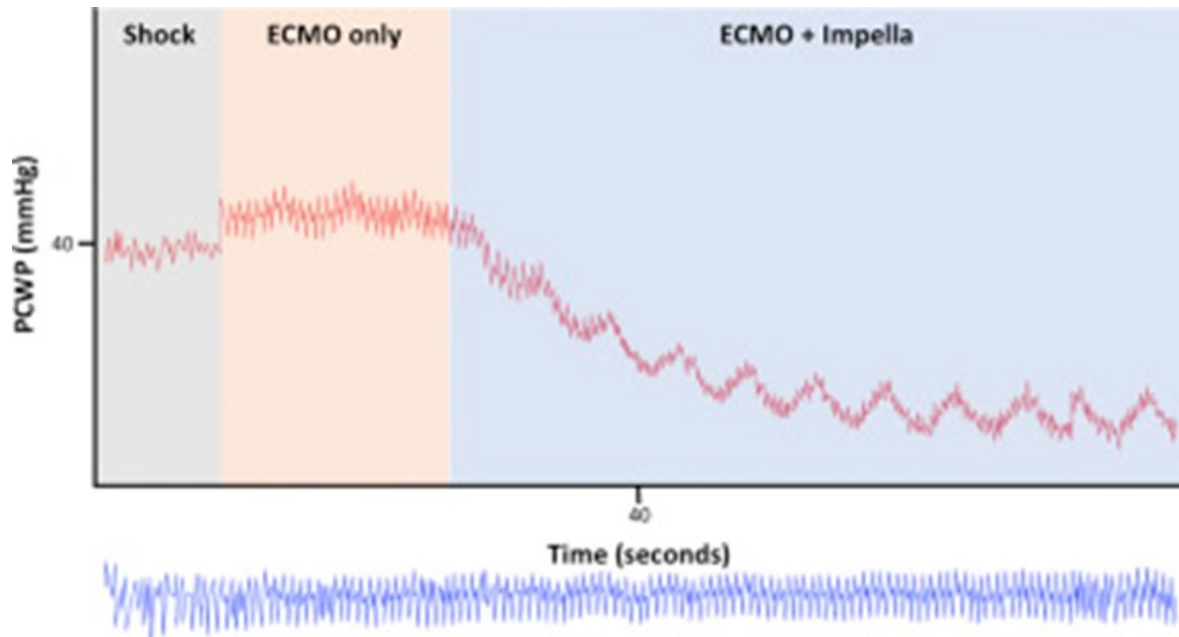


Figure 2. This graph shows how PCWP went down after impella was inserted (2).

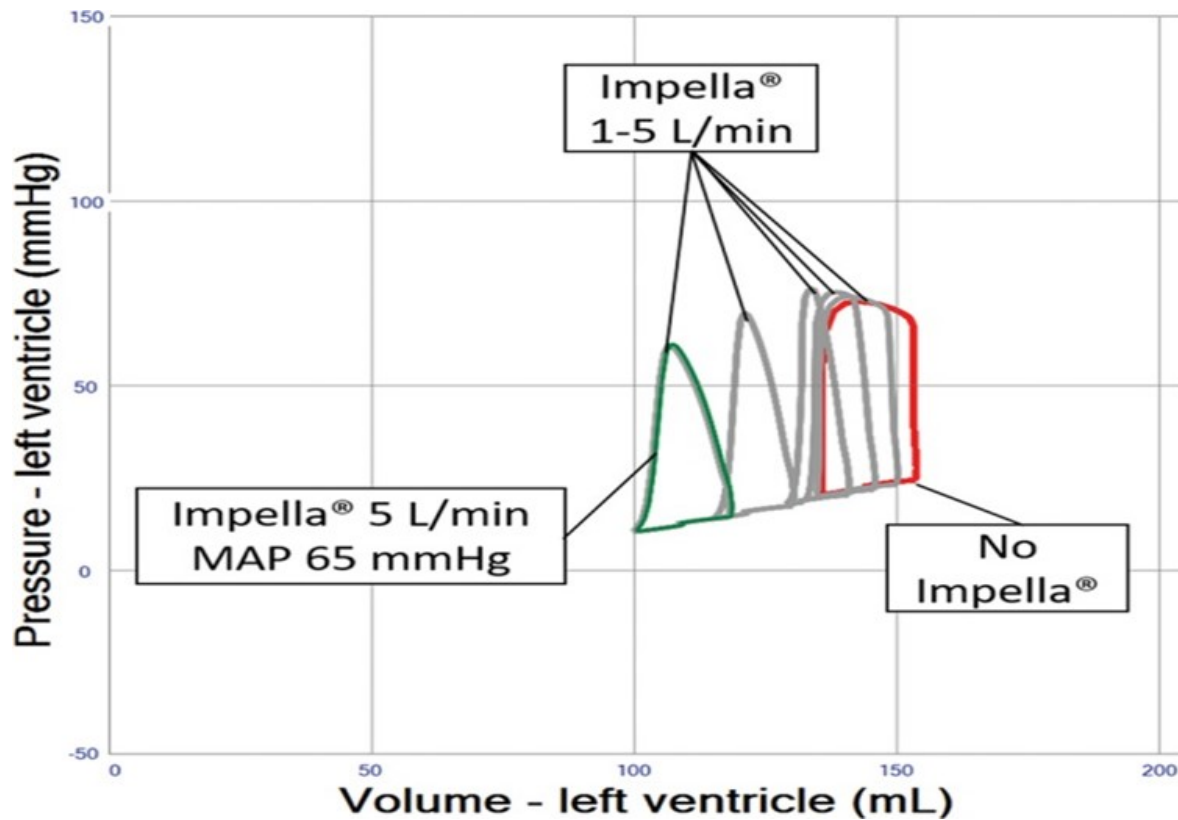


Figure 3. This loop shows how the Impella can control the amount of flow and the amount vented (1).

sources. A thumb clamp can also be used to control drainage flows.

ECMO has many complications, so ECMO is weaned first, followed by the Impella or IABP. The goal for these patients is bridge to recovery or bridge to heart replacement therapy, such as Ventricular Assist Device (VAD) or Heart Transplant. In conclusion, LV distention is a significant problem seen in VA ECMO. A key point is to diagnose quickly so that it can be prevented.

### References

1. Donker et al. Left Ventricular Unloading During Venous-Arterial ECMO: A Simulation Study. *ASIAO J.* 2019;65(1):11-20.
2. Schrage B et al: Unloading of the Left Ventricle During Venous-Arterial Extracorporeal Membrane Oxygenation Therapy in Cardiogenic Shock. *JACC Heart Fail.* 2018;6;(12):1035-1043.

**YOU  
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Thank you  
healthcare heroes.

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**Medtronic**

We all face an unprecedented challenge with COVID-19 that requires we work together on an unprecedented response. At Medtronic, we are committed to supporting the medical professionals we have worked with for decades to care for COVID-19 patients who need our help.

We are doing all we can to safely supply the market. Medtronic is mobilizing to increase production and distribution of products that can help COVID-19 patients and their caregivers - including ventilators, pulse oximeters and ECMO products.

Other lifesaving products like heart valves and pacemakers are still needed, and our people continue to produce them. We are working directly with hospital systems and governments to get our products where they are needed most.



We are at the service of our customers, and we recognize it's not business as usual. We are inspired by the heroic efforts we see by healthcare professionals around the world to treat COVID-19 patients, as well as patients with heart disease and so many related conditions. Thank you for all you are doing to save lives of patients.

We will never compromise our integrity and continue to put patient needs at the forefront of our decision

making.

Our 90,000 employees come to work every day with one common goal and Mission – to alleviate pain, restore health and extend life. We know this virus can and will be defeated, and we will do our utmost to help you make that a reality.

Find out more about [Medtronic's response](#) to COVID-19.

**Medtronic**  
Further, Together

## Contact Information for Our Sponsoring Partners

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## Important Academy Dates

### The ACADEMY ANNUAL MEETING DEADLINES

**ABSTRACT DEADLINE**      **October 15, 2020**

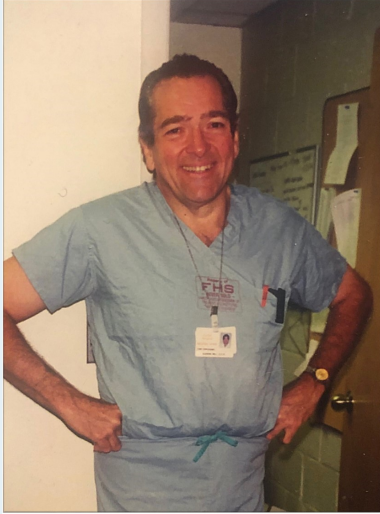
**MEMBERSHIP DEADLINE**   **December 10, 2020**

**PRE-REGISTRATION**        **January 15, 2021**

**HOTEL REGISTRATION**     **January 15, 2021**

**2021 ANNUAL MEETING**   **February 10-13, 2021**

## Aaron G. Hill Research Grant



Aaron G. Hill was a pioneer in clinical perfusion and heavily involved in the establishment of the profession. He was truly a good friend, colleague and mentor to many of us in the field of Perfusion. A research grant has been established in his name.

If you are interested in applying for a research grant, [click on this link](#).

Donations to this fund can be made by:

- mailing a check to the National Office (AACP, 515A East Main Street, Annville, PA 17003). Please make the check out to the AACP and write AG Hill Fund on the memo line,
- or by going to our [website](#) and clicking on the form.





# Aaron G. Hill Research Grant Application

Purpose: To help support perfusion-related research

Requirements: Grant recipients are required to present their research findings at an Academy meeting. This includes submitting an original manuscript that can be sent to the journal *Perfusion* for possible publication.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Institutional Affiliation: \_\_\_\_\_

Are you a Perfusionist or a Perfusion Student? \_\_\_\_\_

Does this investigation involve patients or patient data? YES or NO

If YES, do you have documented institutional IRB approval? YES or NO

IRB Number: \_\_\_\_\_

Estimated budget for your study: \_\_\_\_\_ Amount Requested: \_\_\_\_\_

On a separate sheet, give a short, detailed summary of your study, including the following: (1) title of your study; (2) an assessment of originality and how the study will contribute to the scientific literature; (3) expected start and finish dates for the research project; (3) names of co-investigators or senior advisors including their anticipated roles; (4) specifically, what will the grant award be used for such as laboratory supplies.

(NOTE: travel expenses are not covered by this grant)

*I am the principle investigator on this project and I understand that if awarded a grant, I must present my research at an Academy meeting at my own expense and submit a manuscript suitable for potential publication in the journal *Perfusion*.*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

# A Survey of Perfusionists' Communication During Critical Events

Communication errors are the most common causes of adverse events in a hospital. The current standards and guidelines provided for perfusionists do not specify communication practices during emergency situations. Therefore, we wanted to establish a baseline for communication when experiencing specific critical events during cardiopulmonary bypass. We created an online survey that was completed by practicing perfusionists. For seven critical events on CPB, survey respondents were asked to rank communication in order of importance several critical perfusion situations. Participants were also asked to provide an example of how they would communicate, using their own words. Free-response answers were categorized as optimal or non-optimal. There was general agreement among perfusionists on the most important parameters to communicate during each of these critical events: aortic dissection (line pressure and arterial blood pressure), inadequate venous return (reservoir volume and blood flow rate) air embolism (visible air and pump off), hypotension (vasopressor dose and blood pressure), oxygenator failure (pO<sub>2</sub> and oxygen saturation), heat-exchanger leak (reservoir level, hematuria and hematocrit), and arterial pump failure (pump flow). However, the participants did not identify one event as more important than the other since they are all critical emergencies. Of the free-form responses, 73.3% of the communications were identified as “optimal” based on three criteria. Based on these results, it is clear which parameters should be communicated during each of these critical events. There may be potential benefits for perfusionists to agree and standardize common parameters for perfusionists to communicate during these events to reduce errors and improve outcomes. This common language could be practiced in non-technical skills training using simulation scenarios that specifically focus on teamwork and communication.

**Adam Murphy**

Cardiovascular Perfusion Program

Medical University of South Carolina

Charleston, South Carolina

<u>Aortic Dissection</u> Parameters	Rankings						
	1	2	3	4	5	6	7
Arterial Line Pressure Changes	22	5	2	0	0	0	0
Arterial Blood Pressure Changes	23	26	12	7	1	2	0
Cerebral Oximetry Changes	4	9	24	9	13	10	2
Pump Flow Changes	12	19	19	11	4	3	3
Venous Return	5	5	9	20	21	10	1
Venous Saturation	0	1	4	21	26	16	3
Other	5	6	0	1	1	6	8

Table 1. Aortic Dissection Responses

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Disclaimer: Quantum Heater-Cooler is not FDA cleared.

## 2021 Annual Meeting

*After careful consideration and for the health and safety of our attendees, the Council of The American Academy of Cardiovascular Perfusion has decided to move our upcoming meeting in Austin, Texas from February 2021 to February 2022. There are still too many uncertainties for a possible second wave of the Covid-19 pandemic in the Fall along with travel bans and decreased reimbursement for travel expenses for us to hold an in-person meeting in early 2021.*

*The Academy will still hold a conference in February 2021, but it will be completely virtual. The Academy plans to remain flexible to the needs of the perfusion profession so the meeting will include all the elements for which the Academy conferences have come to be known. While the format of the meeting will change, we are excited about the challenge of meeting the learning needs of all our delegates, sponsors, and friends.*

*Thanks everyone for your contributions and we look forward to working with all of you to make this virtual meeting a huge success!*

## 2022 Annual Meeting

**Lost Pines, Texas**  
**February 9-12, 2022**



**Our Host Hotel**  
**Hyatt Regency Lost Pines Resort & Spa**  
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