THE AMERICAN ACADEMY
OF
CARDIOVASCULAR PERFUSION
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Winter 2023

# The Academy Newsletter

Inside this issue



## *Message from the AACP President - Winter 2023*

### The Holiday Season- Reflect and Reset

As we enter the holiday season, I wanted to take a moment to extend my warmest wishes to every one of my AACP fellows, members, and friends. This time of year serves as a symbolic reminder of the importance of unity, compassion, and gratitude across our perfusion community. It is also an opportunity for us to stop and reflect on what we have accomplished within our institutions.

The challenges we have faced over the last several years were unprecedented. The COVID-19 global public health crisis strained healthcare systems worldwide. Many of our perfusion colleagues were asked to lend their expertise to departments outside of the cardiac operating room, including additional ECMO coverage, dialysis, and direct bedside support to manage the surge of patients. Disruptions in perfusion education programs required instructors to transition to remote and hybrid learning activities. The disruptions in global supply chains limited the production and distribution of essential perfusion hardware and disposables. Lastly, the pandemic exerted a toll on our overall mental health. A recent survey published this past week by the Centers for Disease Control (CDC) indicates that nearly 46% of healthcare workers reported feeling burn-

out either often or very often in 2022 compared with about 40% of other essential workers and 37% of all other workers. Some of these effects are still being addressed today.

We have experienced these impacts during an extraordinary period in our labor force. The growing workforce shortage resulted in significant operational challenges as employers strive to maintain acceptable staffing levels. The community embraced the challenge to ensure perfusion and critical patient care services were uninterrupted. While there is light at the end of the tunnel (and not an oncoming train!) we continue to experience an evolution in our workforce demographics.

This season, I encourage you to take a moment for self-care and reflection. Celebrate your extraordinary accomplishments, acknowledge the enormous hurdles you've overcome, and find joy in the positive impact you've had on patients and their families. As AACP President, I am truly grateful for all of you:

- Perfusion workforce- for your unstoppable drive and resilience to conquer these aforementioned obstacles to impact the lives of countless individuals.
- Perfusion educators- for your ability to adapt the perfusion curriculum and increase the number of perfusion graduates to increase our labor force.
- Professional volunteers- for your ability to balance your employment and personal commitments to serve our profession.
- Perfusion manufacturers and industry partners- for your incredible dedication to overcoming the barriers of supply shortages to support our clinical services.
- Perfusion family and friends- for their unwavering support and understanding of the perfusion work demands and lifestyle.

As perfusion stakeholders, you embody these values every day, making a significant difference in the lives of those you serve. Whether on the front lines or behind the scenes, your contributions do not go unnoticed. While our work will never be complete, this is an opportune moment to pause and recognize the accomplishments of our colleagues. Let us reflect on the values that bring us together this time of year; giving and generosity, peace and goodwill, and hope and optimism.

I look forward to seeing you soon at the 2024 Annual Meeting in Nashville. 6 weeks and counting! It is here we gather to appreciate the collective efforts that make the AACP truly special. From seasoned perfusionists to new fellow inductees, I look forward to recognizing the career accomplishments of our perfusion community. Moreover, we also look ahead to identifying the possibilities, challenges, and opportunities to advance our profession in the coming year.

May the holiday season bring you moments of peace, joy, and connection with your loved ones. Thank you for what you do for our patients. Wishing you and your families a joyful holiday season and a fulfilling New Year.

Yours in service,

Dave Fitzgerald
AACP President

**Katie Justiss**, BSN, RN
School of Perfusion
The Texas Heart Institute
Houston, Texas 77030

*Katie Justiss is a senior at Texas Heart Institute School of Perfusion Technology, graduating in December of 2023. Prior to pursing perfusion, she obtained her Bachelor of Science Nursing Degree from University of Texas at Arlington and practiced as a CVOR registered nurse for four years. She is eager to start as a staff Perfusionist at Baylor All Saints in Fort Worth Texas, upon completion of the program.*

# Factor XIII Deficiency

In order to determine how Factor XIII deficiency (FXIII) affects patients undergoing open heart surgery, we must first understand what this significant medical condition is, by exploring the deficiency's signs and symptoms, its role in the coagulation cascade, diagnosis, treatment, and its management during and post cardiopulmonary bypass by reviewing a case report.

Factor XIII (FXIII) deficiency is an extremely rare inherited or even acquired bleeding disorder caused by a deficiency or dysfunction in the factor XIII protein. This protein is a clotting factor that plays a critical role in stabilizing blood clots, leading to an increased risk of excessive bleeding not only regarding surgery, but even with minor injuries. It is primarily inherited as a congenital autosomal recessive disorder, although it can also be acquired. Estimated to be between 1 in 2-3 million people, it affects males and females equally, and often goes undiagnosed, making it difficult to determine the disorder's true frequency.

Depending on the severity of the deficiency, expressions of the disease can vary from mild symptoms such as nose and mouth bleeds, or more severe spontaneous bleeding episodes into muscles, joints, or intracranial hemorrhaging. It is common for delayed wound healing to occur in any capacity, due to impaired clot formation and stability.

Factor XIII is composed of two subunits: A and B. The A subunit, encoded by the F13A gene, is responsible for catalytic activity and functions by cross-linking fibrin strands, stabilizing blood clots and enhancing their strength and durability. Subunit B, encoded by the F13B gene, aids in stabilizing and protecting the A subunit by contributing to the proper folding and transportation of the A subunit within the body. Mutations in either subunit can lead to FXIII deficiency, however, 95% of deficiencies are caused by subunit A mutation. Full activation of factor XIII occurs in two steps: first, thrombin cleaves FXIII activation peptide. Then calcium ions bind to FXIII and results in disassociation of the FXIII-B subunit from the A subunit of FXIII, leading to full activation of FXIII-A. As for the role of FXIII in coagulation, it is the first stage of clot formation at the site of injury, formed by platelet adhesion and aggregation, along with the conversion of fibrinogen to fibrin, as the primary mechanism of stopping bleeding and initiating clot formation. Further reinforcement and stabilization of the clot occur through the cross-linking of the fibrin strands by Factor XIII, making the clot stronger and more resistant to breakdown.

The diagnosis of Factor XIII deficiency is crucial for several reasons. Firstly, it allows for appropriate management and treatment of the condition, reducing the risk of bleeding complications and improving patient outcomes. Early diagnosis also helps in identifying affected family members who may require testing and intervention. Additionally, it provides important information for surgical planning, particularly in procedures where clotting is essential, such as open-

heart surgery, during and post cardiopulmonary bypass. Since testing for FXIII deficiency is not routine, it is important to obtain a thorough clinical evaluation, and conduct laboratory tests and genetic analysis if suspected. It is important to note that clotting tests will result normally, and will not be indicative of a deficiency, due to the patient's ability to form a clot, but it is the ability of the clot to resist breakdown that is affected. Due to this, there are additional testing options to aid in the detection of this deficiency. The clot solubility test is often the first test used to determine if additional testing is necessary, as it indicates a possible deficiency. Though, it is not a definitive test, due to the lack of ability to test the severity of the deficiency. Quantitative FXIII activity assays are recommended as first-line screening tests, with ammonia release assay being the most common due to its short resulting time in under 15 minutes.

The primary approach to treat this deficiency is FXIII replacement therapy. This involves infusing a concentrated form of the FXIII protein, derived from human plasma, which helps to stabilize blood clots and prevent bleeding. In addition, FFP can also be used in place of FXIII concentrate, which is more commonly used in the intraoperative and postoperative periods.

Cryoprecipitate may be transfused as well, however, the amount of FXIII in Cryoprecipitate is lower than that of FFP and is often more difficult to determine its amount. As for managing this condition outside of the hospital, or leading up to invasive procedures, there are two replacement therapy options. Cortifact is a concentrated form of the FXIII protein derived from human plasma, which is approved by the FDA for prophylactic treatment, while Tretten is the only recombinant FXIII replacement on the market.

Without sufficient FXIII, a person may experience prolonged bleeding, which can increase the risk of complications such as hemorrhage, wound healing problems, and blood transfusions. Increased risk of bleeding is amplified while on cardiopulmonary bypass, as activation of the coagulation system is increased as blood comes into contact with the foreign surfaces of the pump, and the patient is affected not only intraoperatively, but greatly postoperatively as well.

Reviewing a case report, a 62-year-old male underwent surgery via sternotomy for aortic valve replacement, and coronary artery bypass grafting. Diagnosis included FXIII deficiency, severe aortic stenosis, coronary artery disease, hypertension, and diabetes mellitus. The morning of surgery labs included a hemoglobin of 13.6g/dl, and hematocrit of 41.4%, PT 14.7sec, PTT 35.5sec, INR 1.17. Prior to going on cardiopulmonary bypass, two units of fresh frozen plasma (FFP) was added to the prime. A substantial amount of blood products was given intraoperatively, consisting of 17 units of FFP, 5 units of packed red cells (PRBC), 5 units of cryoprecipitate (cryo), and 4 units of platelets (PLT). However, postoperatively (post-op), the need for blood products increased greatly. Day 1 post-op: 4 PLT, 2 PRBC, and 1 cryo was given. Day 2 post-op: 14 units of FFP, 26 units of PRBC. Day 3 post-op: 6 FFP, 5 PRBC, and 3 PLT. Day 4 post-op: 10 FFP, 3 PRBC, and 1 cryo was given. The delayed bleeding represented here is not uncommon and can be attributed to the impaired sta-

bility and strength of blood clots.

In conclusion, Factor XIII deficiency is a rare inherited bleeding disorder characterized by a deficiency or dysfunction of FXIII, an essential component of the coagulation cascade. This deficiency affects the formation and stability of blood clots, leading to an increased risk of bleeding and potential complications. Specific surgical complications can vary depending on the type and complexity of the surgical procedure, as well as the severity of FXIII deficiency in the individual patient. Close collaboration between the surgical team, hematologist, and other healthcare professionals is crucial to manage and mitigate these potential complications effectively. Discussion with the surgeon and anesthesia is needed to determine what blood products need to be included in the bypass prime as well, in order to help aid in the management of this deficiency during cardiopulmonary bypass.

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# *New Executive Director Chosen*

As you may know, after 24 years of extraordinary service and leadership, Jill and David Palanzo will be retiring from their Executive Director position, effective April 2024. Much of the Academy's success in inspiring continuous learning through education, research, mentorship, and collegiality has been achieved with strong and steadfast support from the National Office. While Council members come and go, stability in the Executive Director position has been essential in meeting the needs of our membership and perfusion community at large. The fellowship has been fortunate to have Jill and David at the helm over the last two and a half decades.

Following the 2023 Annual Meeting, an Executive Director Search Committee was formed to recruit and retain an eventual successor. The committee was comprised of Council members, the Executive Director, and several volunteers from the fellowship. The 13-member committee was chaired by James Beck. A review of the job description and expectations was conducted in March. A request for proposal was then distributed across the Academy membership and select association management groups. Proposals were received in May, and interviews with candidates were conducted in July.

What became clear to the committee was the value of having someone enter this position with intimate working knowledge of the council. We are a brotherhood/sisterhood brought together by our collective commitment to fellowship. To that end, the relationships between the Executive Director, Council, and Fellowship are integral to accomplishing the strategic goals of the Academy.

The search committee is pleased to announce that Molly Bryant will be the next AACP Executive Director, effective April 1, 2024. Molly has been an Academy Fellow since 2017. She served on the AACP Council from 2018-2023 and is the current Chair of the Student Liaison Committee. Molly has supported our annual meetings as a planning committee member, scientific session moderator, and fireside chat moderator. During the interview process, Molly shared an exciting vision for fostering new member and fellow engagement initiatives while maintaining our organization's rich tradition and history.

*Reprinted from the AACP Fall 2023 Newsletter.*

While Molly will perform most of the executive director's duties and responsibilities, her husband Keith will provide ancillary support and serve as a resource to manage time-sensitive duties. Molly and Keith have collective experience in meeting planning, sponsor recruitment, and fundraising. Their experience in developing student programs and social media marketing will help recruit and secure the next generation of AACP Fellows.

Molly graduated from the University of Minnesota with a bachelor's degree in chemistry. She obtained her Perfusion Certificate from Vanderbilt University Medical Center in 2014 and earned her master's degree in healthcare administration from Walden University in 2018. She currently serves as an adult and pediatric perfusionist at the Mayo Clinic in Rochester, Minnesota.

To help with Molly's successful transition, David and Jill have agreed to serve as part-time consultants for the upcoming 2024 year. This will provide the Palanzos and Bryants with sufficient overlap to help facilitate a seamless transition. We are deeply appreciative of David and Jill's ongoing commitment to mentoring our new executive leadership.

I would also like to recognize the members of the search committee for their contribution and guidance: Isaac Chinnappan, Edward Delaney, Joseph Deptula, Kenmund Fung, Robert Grimmett, Richard Melchior, Justin Resley, Tami Rosenthal, Steve Sutton, Allison Weinberg and David and Jill Palanzo. A special thanks to Jimmy Beck for his leadership as committee chair.

We look forward to exciting opportunities that lie ahead for the Academy. Please join me in congratulating our next Executive Director, Molly Bryant.

Yours in service,

Dave Fitzgerald
AACP President

**Kaitlyn Bickhaus**
School of Perfusion
The Texas Heart Institute
Houston, Texas

*Prior to perfusion school, Kaitlyn Bickhaus worked as a patient care technician in Phoenix, Arizona. After graduation from the Texas Heart Institute, I will be joining a perfusion team in Sioux Falls, South Dakota. During my days off I enjoy anything outdoors such as hiking and camping.*

# Microplegia in Cardiac Surgery: A Review of Whole Blood Cardioplegia Usage for Myocardial Protection

**Introduction to Cardioplegia**

The term cardioplegia dates back to the 1950s. Cardio meaning heart and plegia meaning paralysis (Vinten-Johansen, 2015). Cardioplegia is a solution that is given during cardiac surgery to temporarily arrest the heart. In addition, cardioplegia provides protection to the heart by minimizing damage caused by myocardial ischemia. This allows for a motionless and bloodless surgical field. Cardioplegia can be categorized as crystalloid cardioplegia or blood cardioplegia.
Solutions can be given as straight crystalloid with additives, whole blood with additives, or various ratios of blood and crystalloid with additives.

Crystalloid cardioplegia is divided into two categories: extracellular and intracellular. These two classifications are defined by their ion composition and the cellular environment they reflect. A Few examples of extracellular cardioplegia are plegisol, St. Thomas, Buckberg, and Del Nido. A few examples of intracellular cardioplegia are custodial and Bretschneider (Kibler, 2022). As previously stated, some of these cardioplegia solutions are given as straight crystalloid, whereas others are given in different ratios of blood and crystalloid.

The components within the solution are what categorize the cardioplegia as intracellular or extracellular. A few of the most common components are magnesium sulfate, lidocaine, adenosine, mannitol, potassium chloride, and sodium bicarbonate (Guru, et al., 2006). Each component has a special role when used in a cardioplegia solution. Potassium chloride is the arresting agent and will be found in every cardioplegia solution.

A buffer is used in cardioplegia to compensate for the metabolic acidosis that accompanies ischemia (Owen, et al., 2020). The buffer used may include phosphate, bicarbonate, tromethamine, histidine, or the patient's own blood.

**Complications Associated with Diluted Cardioplegia**

By using a cardioplegia solution that includes crystalloid, you are more likely to observe intraoperative hemodilution, which may result in low cardiac output syndrome, tissue edema, and high potassium and glucose levels (Vinten-Johansen, 2015). As a result of intraoperative hemodilution, there is likely to be a drop in the patient's hematocrit; thus, leading to an increased need for blood transfusion. As a result, it became questioned as to whether the crystalloid portion of cardioplegia is necessary.

**History of Microplegia**

Microplegia, also known as miniplegia or whole blood cardioplegia, uses post oxygenator blood as the carrier of a concentrated arresting agent and other additives. The idea behind microplegia was to eliminate hemodilution by using the patient's own blood as the most physiologic buffer. In 1955 Melrose introduced the first all-blood potassium cardioplegia (Clin, 2021). Because this solution was associated with post-operative cardiac dysfunction, it was later abandoned and not readdressed until the 1990s when all-blood miniplegia was proposed.

Microplegia has been proven to have various benefits that address the risks associated with diluted crystalloid. Some of which include less intracellular swelling, improved oxygen delivery, decreased blood transfusions, minimal hemoconcentrator usage, reduction in ICU days and hospital stay (Borden eat al., 2020).

**Operating Room Outcomes**

A study conducted from 2016 to 2020 at the King Edward Medical University in Pakistan, revealed positive post operative outcomes using whole blood cardioplegia. The patients in this study received coronary artery bypass grafts ranging from single vessel to up to five vessels. This study excluded those with severe pulmonary hypertension, preoperative uncontrolled diabetes, poor left ventricular function, balloon pumps, and chronic renal failure requiring hemodialysis. During this study, they compared patient outcomes of those that received whole blood del Nido versus those that received crystalloid del Nido.

Findings from this study showed those that received whole blood del Nido cardioplegia had improved hemoglobin concentrations, lower serum creatinine and blood urea levels (Haider, et al., 2021). They also found that those who received the crystalloid del Nido had prolonged in-hospital stays in comparison to those who received whole blood del Nido.

**Quest MPS**

Recently I was given the invaluable opportunity to be a student intern with Quest Medical at the Sanibel Symposium. During my time at this conference, I was taught about the Quest MPS 3 ND system that demonstrates myocardial protection with the following features: autostart, real-time data collection, no water, active monitoring controller, specific drug cartridges, and the ability to do multiple ratios.

Gerdisch published a study in 2018 with evidence from 250 hospitals using the Quest myocardial protection system. This study compared patient outcomes with the use of the second generation microplegia delivery system versus traditional cardioplegia during the following cardiac surgeries: Coronary artery bypass grafts, aortic valve replacements, and mitral valve replacements. Cases where the MPS2 was used saw significant reduction in ICU days and total hospital stay. There was an overall reduction in adverse events by 5.25% in centers using the MPS2 (Gerdisch, et al., 2018). Adverse events in this study were defined as such: respiratory failure, pleural effusion, pulmonary embolism, acute kidney injury, acute myocardial infarction, and transient ischemic attack.

**Conclusion**

While there is still a need for larger multi-center studies on the beneficial outcomes of microplegia, based on the previous studies, it can be concluded that whole blood cardioplegia

leads to less hemodilution, improved oxygen delivery, decreased blood transfusions, reduction in ICU days and hospital stay for patients, and minimal myocardial edema. As a result, microplegia could ultimately lead to hospital cost reductions.

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# Important Academy Dates

The ACADEMY ANNUAL MEETING DEADLINES

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| **ABSTRACT DEADLINE** | **October 31, 2023** |
| **MEMBERSHIP DEADLINE** | **December 1, 2023** |
| **PRE-REGISTRATION** | **January 18, 2024** |
| **HOTEL REGISTRATION** | **January 18, 2024** |
| **2024 ANNUAL MEETING** | **February 7-10, 2024** |

# 45th Annual Seminar of The American Academy of Cardiovascular Perfusion

## Loews Vanderbilt Hotel
## 2100 West End Avenue, Nashville, TN 37203
## February 7-10, 2024

***(Tentative Program)***

### Wednesday, February 7, 2024

11:00 AM – 4:00 PM REGISTRATION

3:30 PM - 4:00 PM Opening Business Meeting
*Fellow, Member, Senior and Honorary Members*

4:00 PM – 7:00 PM **Manufacturers' Breakout Rooms**
*Medtronic*
*Spectrum Medical*

### Thursday, February 8, 2024

7:00 AM REGISTRATION
7:00 AM – 7:45 AM Video Presentations

7:45 AM – 9:30 AM **Scientific Paper Session**
*Moderators: Tami Rosenthal, Murphy Rayle*

CLINICAL COMPARISON OF GLYCOL VERSUS WATER-BASED HEATER COOLER SYSTEMS FOR CARDIOPULMONARY BYPASS
McKenzie Ayala, Samantha Bruner, Melissa Pollard, Amber Stone, Jennie Kwon, Kelly Ohlrich, Ashley Morgan Hill, David Fitzgerald, Arman Kilic

A SINGLE CENTER STUDY ON MR FROSTY: IS GLYCOL THE FUTURE?
Joy Evangelin, Kyle Spear, Rene'Dekkers

INTRAOPERATIVE ELECTROPHYSIOLOGY MAPPING OF THE CARDIAC CONDUCTION SYSTEM TO AVOID HEART BLOCK DURING CORRECTION OF CONGENITAL CARDIAC LESIONS: TECHNICAL APPROACH TO CARDIOPULMONARY BYPASS
Joseph Deptula, Vincent Olshove, Molly Oldeen, Deborah Kozik, Bahaaldin Alsoufi

MULTISTAGE BLOODLESS NORWOOD IS POSSIBLE: ENCOURAGING RESULTS OF A MULTIYEAR, ITERATIVE QUALITY PROGRAM TO REDUCE AND REMOVE EXOGENOUS BLOOD PRODUCTS FOR NEONATAL AND INFANT CONGENITAL HEART SURGERY
Kevin Charette, Lyubomyr Bohuta, Amy Falconer-Harris, Brian Perfette, Kailey Fuegmann, Navriti Sharma, Moore Phillips, Denise Joffe, Andrew Koth, Christina Greene, David Mauchley, Aartie Bhat, Michael D. McMullan

PREDICTORS OF MORTALITY IN PATIENTS REQUIRING EXTRACORPOREAL MEMBRANE OXYGENATION SUPPORT (ECMO)
Gabrielle Ward, Iris Feng

9:30 AM – 11:30 AM **Fireside Chats**

Everything ECMO
- *Collaborate with colleagues about the intricacies of what goes into all parts of ECMO*

Pediatrics
- *An open forum to discuss standards of care and new practices in the field*

Perfusion accidents
- *If you can think of it, it has either happened to someone else or will to you. Let's share and learn.*

Simulation: from low to high fidelity
- *See what other centers are doing to build and grow this important technique (Combo: chat and simulation)*

Students Only Forum
- *A forum to meet and greet for students only*

11:30 AM – 12:30 PM Lunch (Speaker)

12:30 PM – 2:30 PM **Special Scientific Panel Session - Our Early Years of Cardiopulmonary By-pass: A Blast from the Past**
*Moderators: Thomas Frazier, James Beavers*

*Pumps and Hardware - Steven Sutton*
*Circuit Components - David Palanzo*
*Myocardial Protection Techniques: 1967 to 1980 - James MacDonald*
*Perfusion Safety - Mark Kurusz*
*ECMO- John Toomasian*
*Panel Discussion*

2:30 PM – 2:50 PM Break

2:50 PM – 4:20 PM **Special Scientific Panel Session - Future Innovation: AI and HLMs**
*Moderators: Vincent Olshove, John St. Onge*

*Big Data / Predictive Analytics – James Beck*
*Future of Hardware / Safety – Kathryn Gray DeAngelis*
*Future of Simulation – Edward Darling*
*Future of Education – Laura Dell'Aiera*
*Panel Discussion*

05:00PM Sponsor's Hands-On Workshop & Reception

**Friday, February 8, 2024**

7:00 AM REGISTRATION
7:00 AM – 7:45 AM Video Presentations

7 :45 AM – 9:30 AM **Scientific Paper Session**
*Moderators: Gabrielle Ward, Robert Grimmett*

EXPANSION OF THE HEART TRANSPLANT DONOR POOL WITH DONATION AFTER CIRCULATORY DEATH UTILIZING NORMOTHERMIC REGIONAL PERFUSION
*Iulianelli, Christian M., Gawlinski, Lauren A., Cockrell, Amanda M., DeBose-Scarlett, Alexandra, Warhoover, Matthew*

THE ETHICAL CONSIDERATIONS OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN PERFUSION
*Adam L. Fernandez*

PUTTING THE AI IN TRAINING: DYNAMIC PERFUSION SCENARIO TOOL
*Madison Lynch, Raymond Wong*

DEVELOPING ACTIVE LEARNING ACTIVITIES FOR DIDACTIC PERFUSION COURSES
*Catherine Kim*

ADVANCES IN REMOTE AND CLOUD-BASED SIMULATION THROUGH WEB CONFERENCING PLATFORMS
*Abby Curtis, Chandler Causey, Elisabeth Jones, Michaela Califiano, Justin Muir, William Dauch, Laura Dell'Aiera, David Fitzgerald*

9:30- AM – 11:30 AM **Fireside Chats**

Pediatrics and Pediatric ECMO
- *What's new, what's not and what struggles do we face as the specialty moves forward*

Shortages
- *From human resources to material resources*

Simulation: from low to high fidelity
- *See what other centers are doing to build and grow this important technique (Combo: chat and simulation)*

What they didn't teach us in school/Dealing with stress/Work life balance
- *Round table discussion on situations you never anticipated after graduation, and how to navigate*

Women in Perfusion
- *Collaborate with some special situations and challenges of other women in the field*

11:30AM - 12:30PM Lunch (Historical Videos)

12:30 PM – 2:30 PM **Special Scientific Panel Session – *ECMO Update***
*Moderators: Allison Weinberg, Dana Mullin*

*Adult ECMO – Dr. Christina Jelly*
*Pediatric ECMO – Dr. Melissa Danko*
*Hybrid Cannulations / MCS – Killian Patton-Rivera*
*ECPR – Thomas Preston*
*ECMO Case Report – Ashleigh LeBlanc*
*Panel Discussion*

2:30 PM – 3:00PM Break

3:00 PM – 5:00 PM **Memorial Session**
*Moderator: Justin Resley*

Introduction – *Justin Resley, CCP, MM*
Charles C. Reed Memorial Lecture (*James Abernathy,MD, MPH*)
Thomas G. Wharton Memorial Lecture (*David Fitzgerald*)
Special Presentation by the Fellowship

6:30 PM Induction Dinner
*All Attendees and Guests*

**Saturday, February 10, 2024**

7:00 AM REGISTRATION
7:00 AM – 7:45 AM Video Presentations

7:45 AM – 9:30 AM **Scientific Paper Session**
*Moderators: Nicole Michaud, Ray Wong*

BIVALIRUDIN: AN ANTICOAGULATION ALTERNATIVE FOR CARDIO-PULMONARY BYPASS
*Joseph Timpa*

ANTICOAGULATION MANAGEMENT OF ANTIPHOSPHOLIPID PATIENTS: A COMPARISON OF ACT AND HEPARIN CONCENTRATION OUTCOMES
*Edgar Longoria*

ALPHA-GAL SYNDROME: A HIDDEN RISK IN CARDIAC SURGERY
*Ashley K Mathews, Raymond K Wong*

REMOVAL OF IVC STRUT USING MINIMALLY INVASIVE SURGERY AND MEDISTIM IMAGING PROBE
*Edward DeLaney Dr. Nirav Patel*

THE EFFECTS OF HYPONATREMIA ON HEARTMATE III OUTCOMES: A SINGLE CENTER STUDY
*Jennifer Stubblebine, Brian Reeder, Brian Houston, Rachel Beck, Mary Dooley, Laura Dell'Aiera, David Fitzgerald*

ACUTE KIDNEY INJURY DURING CARDIOPULMONARY BYPASS SURGURY: A STUDY OF THE INVOLVEMENT OF PULSATILE VERSUS NON-PULSATILE FLOW AND THE USE OF DIURETICS
*Michael Gallagher*

9:30 AM – 10:00 AM Break

10:00 AM – 11:30 AM **Special Scientific Panel Session - Pediatrics**
*Moderators: Nicole Michaud, Joseph Deptula*

*Adult Congenital – Bradley Kulat*
*Fetal Cardiology and Interventions – Jamie N. Colombo, DO, FACC*
*Pediatric Registry – Vincent Olshove*
*Complicated Cases – Joseph Deptula*
*Panel Discussion*

11:30 AM – 12:30 PM Lunch (Historical Videos)

12:30 PM – 1:30 PM **Special Scientific Panel Session – Pro / Con Debate**
*Moderators: Richard Melchior, James Beck*

*Flow vs. Neo-Synephrine – Christine Chan and Bharat Datt*
*Recredentialing for all CCPS – Anna Iulianelli and Isaac Chinnappan*

1:30 PM – 3:00 PM **Special Scientific Panel Session – Heart Transplantation**
*Moderators: Amy Ging, Scott Noesges*

*Donation After Circulatory Death (DCD) Organ Procurement – Fred Hill*
*Normothermic Regional Perfusion (NRP) – Dr. Ashish Shah*
*Partial Domino Heart Transplant – Michael Brewer*
*Panel Discussion*

3:00 PM – 5:00 PM **Fireside Chats**

ECMO and VAD Challenges: Scenarios and Transports
- *Let's learn from each other as transports (intra and inter hospital) are becoming their own new specialty.*

Electronic Medical Records: The Good, the Bad, and the Glitchy
- *See how centers are tackling and incorporating this evolving standard of care.*

Industry and CCP
- *What it's like to go from clinical to industry, combine both, and maybe back again with all the challenges faced.*

Myocardial Preservation
- *Everything from the OR, to NRP to DCD*

5:00 PM Closing Business Meeting
*Fellow, Senior and Honorary Members Only*

# THE ACADEMY TO OFFER LIVE WEBCAST AGAIN THIS YEAR

**The American Academy of Cardiovascular Perfusion will again be offering a live webcast of our 2024 Annual Meeting in Nashville, Tennessee. The General Sessions of the meeting and two virtual Fireside Chats each day will be broadcast in high quality streaming video. There will also be an opportunity for attendees to ask questions, thus qualifying for Category I CEUs from the American Board of Cardiovascular Perfusion.**

# *2024 Annual Meeting*

## *Nashville, Tennessee*


## Our Host Hotel
## Loews Vanderbilt Hotel

**2100 West End Avenue, Nashville, TN 37203**

**Reservations: 800-336-3335**

**Single/Double Occupancy: $249.00**

***Remember to mention that you will be attending the Annual Conference of The American Academy of Cardiovascular Perfusion (AACP).***

### *AACP 2023 Officers and Council*

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