



The
Academy
NEWSLETTER

THE AMERICAN ACADEMY
OF
CARDIOVASCULAR PERFUSION
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SUMMER 2015

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Focus On Growth

One focus for the Academy this year will be growth, growth of the annual meeting (attendance), and growth of membership to include Fellow, member, and student member.

One investment the Academy has made over the last several years has been in the recruitment and development of perfusion students, and new graduates, through the student membership, student ambassador, and student mentorship programs. Thanks to the work, dedication, and commitment of Fellow members Richard Ginther, Richard Melchior, and William Riley, the rewards and benefits of reaching out to the students has already begun showing great results.

Professional development involves participation within one's professional organizations. Participation can be as simple as belonging to an organization, to attending annual meetings, or getting involved in the development and leadership of an organization.

We all have different expectations on us on a daily, weekly, monthly, and yearly basis both professionally, and personally. Being at varying points in our careers we have varied limits on the amount of time, commitment, and involvement available at any given time. Regardless of these commitments on our time, we can all participate through membership.

For those not currently a member, one should consider that the primary focus of the Academy is, and has always been, perfusion education. From this perspective, one of the greatest benefits of being an Academy member, besides the annual seminar, is an annual subscription to the journal *Perfusion*, and for substantially less than the cost of an individual subscription. Also included in membership is participation in all activities of The Academy, Opening Business meeting at the annual meeting, meeting discounts, and online access to the *Members* Section of the website which includes electronic access to *Perfusion*. For those individuals who do not have the time, or limited travel funds, The Academy offered the 36th Annual Seminar of the AACP as a live webcast, and will continue to do so into the future.

If interested in membership go to: http://www.theaaccp.com/wp-content/uploads/2014/10/Member_Application.pdf

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For those currently a member, and with more time available, please consider attending the 37th Annual Seminar of the American Academy, hosted for the first time in Savannah, Ga, Feb 4-7, 2016. If looking to become more involved in the Academy, and or considering becoming a Fellow, please reach out to me, or anyone on the Membership Committee (Steve Sutton, James Beck, Ed Darling, Dennis Long, Mari-jean Zacha) or go to: <http://www.theaaccp.com/contact-us/contact-nominating-committee/> to contact the committee directly. We would be more than glad to speak with anyone about the time and commitment involved in becoming a Fellow. Additionally, current Members that have been in good standing for 3 years may apply for Fellow without nomination of current Fellows.

To all the Fellows and Senior members, the Academy needs your help. Look around and start talking to

perfusion friends and colleagues. Encourage those individuals to become an Academy Member or Fellow. Bring a friend to the annual seminar and share with them the education and camaraderie that is The Academy. Contact the Membership Committee to see how you can help.

I truly look forward to seeing one and all at the 37th Annual Seminar of the American Academy of Cardiovascular Perfusion meeting next February 4-7, 2016, being held in Savannah, GA, at the Hilton Savannah Desoto Hotel in Savannah's Historic District.

Respectfully,

Vincent Olshove
President, American Academy of Cardiovascular Perfusion

2016 Annual Academy Meeting



**Savannah, Georgia
February 4-7, 2016**

Thursday, February 4, 2016

9:00 AM – 1:00 PM	Council Meeting
10:00 AM – 3:00 PM	REGISTRATION
2:30 PM – 4:30 PM	Fireside Chats (Session #1)
4:30 PM – 5:30 PM	REGISTRATION
5:00 PM	Opening Business Meeting <i>Fellow, Member, Senior and Honorary Members</i>
6:00 PM – 8:30 PM	Sponsor's Hands-On Workshop & Reception

Friday, February 5, 2016

7:00 AM	REGISTRATION
8:00 AM – 9:30 AM	Scientific Session
9:30 AM – 10:00 AM	Break
10:00 AM – 11:30 PM	Scientific Session
11:30 PM – 1:00 PM	Lunch
1:00 PM – 3:30 PM	Special Scientific Session (Panel)
3:30 PM – 5:30 PM	Fireside Chats (Session #2)
6:30 PM	Induction Dinner <i>Fellow, Senior, Honorary Members & Guests</i>

Saturday, February 6, 2016

7:00 AM	REGISTRATION
8:00 AM – 9:30 AM	Scientific Session
9:30 AM – 10:00 AM	Break
10:00 AM – 11:30 AM	Memorial Session <i>Charles C. Reed Memorial Lecture</i> <i>Thomas G. Wharton Memorial Lecture</i> <i>Vincent Olshove, President, AACP</i>
11:30 AM – 1:00 PM	Lunch
1:00 PM – 3:30 PM	Special Scientific Session (Panel)
3:30 PM – 5:30 PM	Fireside Chats (Session #3)
5:30 PM	Closing Business Meeting <i>Fellow, Senior and Honorary Members Only</i>

Sunday, February 7, 2016

8:00 AM – 10:00 AM	Scientific Session
10:30 AM – 12:30 PM	Fireside Chats (Session #4)

THE ACADEMY TO OFFER LIVE WEBCAST

The American Academy of Cardiovascular Perfusion will again be offering a live webcast of our 2016 Annual Meeting in Savannah. The General Sessions of the meeting 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.

The Student Section

Ashley Risso

University of Arizona
Tucson, Arizona



Cardioplegia Standardization: Can we finally define the standard of care?

Evidence-based medicine has become a light that guides medicinal practice. Today's practitioners have been molded into a well-accepted culture that exalts systematic review over scientific logic and self-assertion. The Society of Thoracic Surgeons (STS) has done remarkable work in developing algorithms to help reduce postoperative morbidity and mortality in patients undergoing cardiac surgery. In support of evidence-based decision-making, the STS guidelines provide a means for cardiac surgeons to generate risk profiles for potential surgical candidates on the basis of demographic, severity of disease, and comorbidities before proceeding to operate.

Contrary to the preoperative risk reduction, the intraoperative phase plays by a different set of rules. No cardiothoracic surgery team is stranger to "the gestalt defense," "cowboy medicine," or the nebulous vindication that "it's really more art than science." Regardless of risk profile, every patient who makes his or her way to the table is different from the last. And when a case quickly starts to go awry, it is a surgical team's ability to think and respond swiftly that becomes the patient's saving grace—often under the sanction of sheer instinct. Evidence or no, when life is on the line, experience boasts the trump card nearly every time.

Nevertheless, intraoperative gestalt comes in an array of flavors and emergent improvisation is just one of many. Another, often overlooked, is a center's decision to adopt use of a specific cardioplegia formula. Cardioplegia research lacks consistency. Prospective, randomized studies are few and far between; systematic and

meta-analyses are even scarcer. Of the large-scale studies that do exist, only generalized "blood versus crystalloid" and "warm blood versus cold blood" comparisons have been published. Head-to-head formula comparisons often come in the form of small, retrospective approaches providing minimal insight. Across studies, variable formulations, dilutions, administration protocols, endpoints, and control groups render much of cardioplegia comparison inconclusive — thereby excluding the possibility of evidence-based decision-making. An institution's preference in cardioplegia formula is precisely that: preference.

How is cardioplegia efficacy assessed? We know that cardioplegia serves two functions: it rapidly arrests the heart and it reduces ischemic reperfusion injury. Assessing the first parameter is simple — how soon after dosing is asystole achieved? This is easily measured by observing the time between dosing and quiescent activity. The second parameter is more difficult to defend — to what capacity is myocardial function preserved during surgery and restored thereafter? Ischemic reperfusion injury is a multifaceted phenomenon. Markers of ischemia include troponin, creatinine kinase, and lactate; reperfusion injury is often evaluated by cardiac index, rhythm recovery, and postoperative need for inotropes, vasopressors, and mechanical support, to name a few. With confounding variables such as comorbidity, cross-clamp time, and total bypass time, discerning a single cardioplegia formula's direct myocardial protective effect is cumbersome.

Yes, cardioplegia efficacy assessment is indeed challenging, but comparing one formula to another is near-

ly impossible. In addition to differences in study design, end points, and patient populations, cardioplegia formulas themselves are highly variable. Cardioplegia ion concentrations, additives, and dilution ratios are customized across institutions, across surgeons, and even case-by-case. Administration practices (delivery temperature, dosing frequencies, reanimation doses, etc.) are equally unique. In order to award cardioplegia research some degree of credibility, changes must be made to standardize the comparison process. Consistency in administration protocols, perioperative data collection, and standardized formulations are vital in turning cardioplegia analytics into an informed decision-making process. How else would we know that intraoperative risk is truly being minimized? Without standardizing the process, evidence-based comparison of cardioplegia solutions is much like comparing apples and oranges.

Until recently, the idea of creating a national cardioplegia standard was entirely farfetched. But a recent change in legislation may be paving the way for such measures to finally become feasible. A 2013 update to the Federal Food, Drug, and Cosmetic Act (FFDCA), the Drug Quality and Security Act (DQSA), now requires tighter regulation of compounding pharmacies in terms of safety and compliance. All compounded solutions, must now undergo federally mandated release testing for potency, sterility, and endotoxin before being distributed. New release testing requirements are so extensive that it has required many compounding pharmacies to significantly downsize their supply in lieu of hospital demand.

Central Admixture Pharmacy Services, Inc. (CAPS) has been a major player in the cardioplegia compounding business for over two decades. Upon registering as a 503B Outsourcing Facility in 2014, CAPS came to the swift realization that compounding over 900 custom cardioplegia formulas for over 300 institutions simply would not be feasible under the DQSA's new batching, holding, and testing requirements. The solution: compound 20 years' worth of cardioplegia usage data and condense those 900-some formulas to a mere forty solutions – effectively standardizing the outsourced cardioplegia marketplace.

“Overall, I think the idea of standardization for cardioplegia is something long overdue, and many perfusionists have acknowledged this,” notes Todd Jones, Director of Marketing for CAPS. “There is not a lot of science behind many of the custom solutions

being used today. Many of the formulations are very similar to others, but over time and practice changes they have been modified. We have modified Buckberg solutions, modified St. Thomas solutions, even modified del Nido to manage. These solution choices come more from empirical decision-making versus hard science.”

With the help of perfusionist Thomas Muziani, CAPS concocted an abridged version of their previous cardioplegia catalog. Formulas have been condensed and classified by administration technique (induction, maintenance, reperfusion), temperature of perfusate (warm, cold), dilution (4:1, 8:1, crystalloid, microplegia), and relative additive and ion compositions. As with any change in business practice, the new model has generated some criticism, especially on behalf of clinicians reluctant to change their practices. Of those receptive to the new standards, many have even been inspired to update their practices. “Since CAPS has introduced their new cardioplegia standardization menu, many institutions have engaged in an active dialogue to rethink what their cardioplegia ‘cocktail’ is really all about,” says Muziani. Trends toward less dextrose, different buffering agents, less crystalloid dilution, and the use of additive solutions like ALM are already being observed. Both Jones and Muziani are eager to see a shift toward more evidentially sound cardioplegia research in 2015.

Further reducing surgical morbidity and mortality requires that intraoperative practices become a part of the conversation. The advent of standardization presents an opportunity for us to redefine what we know about cardioplegia. With less formula variability, more consistent protocols, and a database linking patients from hundreds of hospitals, we can begin to finally decipher the mysticism behind chemical cardiac arrest. Reopening the discussion about what defines cardioplegia efficacy is long overdue. In order for cardiac surgery to truly improve postoperative outcomes, we need to stop asking, “Is this formula good enough?” and to begin asking, “Is this formula the most protective option for my patient?” With the help of companies like CAPS and able-bodied researchers, improving our practice is indeed possible. Cardioplegia research warrants a higher level of scrutiny. Finally defining the cardioplegia standard of care is now more than ever achievable.

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In Memorium

CALVIN ROSS SCOTT

July 6, 1922 - May 12, 2015

Calvin Ross Scott ("Scottie" "Ross") died peacefully after 92 years of a dynamic, exciting and memorable life. "Scottie" was a veteran; he was called to active duty as a member of the enlisted Reserve Corps at Prairie View A&M University. Scottie was a member of Howard University's prestigious 2515 Army Service Unit, known as "the Prometheans". After discharge, Calvin returned to Howard University where he earned a Bachelor of Science Degree. He lived and worked in the medical profession in Los Angeles, California for 38 years. He was certified in the practice of Cardiovascular Perfusion and he served as National President of the American Society of Extra Corporal Technology (AMSECT). Scottie settled into retirement in San Antonio, Texas near his native home of Houston, Texas. He was preceded in death by his parents, Mr. & Mrs. Calvin Ross Scott, Sr.; his wife, Olga and son, Blain. He is survived by

an extended family of Godchildren, cousins, nieces, nephews and a very dear friend Edna Loeb.



Calvin Scott pictured here with Mark Kurusz at the Academy meeting in San Antonio this past February.

All About our Corporate

Partners

Medtronic Completes Acquisition of Covidien



Medtronic &



COVIDIEN

Medtronic completed the acquisition of Covidien on January 26, 2015, a significant milestone in the company's history. The customers, products and markets both companies serve are highly complementary. "Our extensive, innovative capabilities will allow us to strengthen our commitment to solving some of healthcare's biggest challenges, including the need to expand patient access, improve outcomes, and lower costs," said Omar Ishrak, Medtronic Chairman and Chief Executive Officer.

Since completion of the acquisition, Medtronic has initiated comprehensive integration plans. "Our first and highest priority is to preserve," explained Ishrak. "Both Medtronic and Covidien have consistently executed and met their individual growth commitments. We will focus on delivering on our commitments, minimizing unnecessary disruptions as we come together as one company."

Other acquisition priorities include:

- Transform healthcare by innovating and developing new value-based offerings for the market.

- Partner with key stakeholders across the global healthcare industry to drive new, transformative business models and solutions.

"We believe we have an opportunity to meet the universal needs of healthcare in a way no other company can," Ishrak said. "It's clear that this new Medtronic organization has incredible energy, ingenuity and commitment. I have tremendous confidence in our ability to

execute our priorities and am excited about the potential for the collective talent and expertise of our new organization to live and fulfill the Medtronic Mission. Together, we can alleviate pain, restore health, and extend life for millions of people around the world."

The shift to value-based healthcare is a fundamental change, requiring all stakeholders in the healthcare system to pivot in order to improve the quality of care for patients in a sustainable way. As a leader in healthcare, our commitment and practice of delivering clinical and economic value through innovations across products, services and solutions becomes even more relevant in this era of change.

As an acknowledgement to this shift in healthcare, Medtronic is sponsoring the [Insight Center](#) hosted by *New England Journal of Medicine* and *Harvard Business Review*. This year's online Insight Center is "Innovating for Value in Healthcare." Medtronic is extremely proud to be participating as both a sponsor and as a keen stakeholder in this discussion.

On November 5, Harvard Business School Professor Robert S. Kaplan and Senior Project Leader at HBS Derek Haas, authors of "How Not to Cut Healthcare Costs" offered advice to provider organizations on effective processes for successful cost reductions.

To listen to a replay of the Nov 5th webinar, go to <https://hbr.org/2014/11/webinar-how-not-to-cut-health-care-costs>.

All About our Corporate

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Procedure on Obese Patient Successfully Uses Single Affinity Fusion[®] Oxygenator

The cardiac surgery team at Westchester Medical Center, Valhalla, NY, performed a successful CABG procedure on a 170 kg patient in early December 2014. "When I learned of the patient's size, I was unsure whether our new Affinity Fusion[®] Oxygenator could handle it," said Anatole Kanefsky, CCP, Chief Perfusionist. At 182 cm, 170 kg, and with a BSA of 3.0 m², we knew the patient was obese. But Medtronic assured me that the Affinity Fusion Oxygenator is rated to flow up to 7L/min and could handle this patient."

After consulting with his perfusion team and the cardiac surgeons, Kanefsky decided to splice two oxygenators together in parallel to be safe. "With the new Fusion Oxygenator holder and orbit arm, the set-up was easy," Kanefsky noted. "There were no kinks in the lines and no hard-to-reach areas."

The procedure was a three-vessel revascularization, including the internal mammary artery (IMA). The following equipment was used:

- Medtronic 1/2 x 3/8 A-V loop
- Medtronic Myotherm Cardioplegia
- Affinity Fusion[®] Venous Reservoir
- 2 Affinity Fusion[®] Oxygenators
- Medtronic CM2 36/46 venous cannula
- EOPA 3D 20Fr arterial cannula

Intraoperative Perfusion

- Arterial pressures maintained at 60 -80 mm Hg.
- Arterial line pressure never exceeded 275 mmHg at full flow of 7.2L/min (index 2.4).
- Patient's flow maintained at 2.0 - 2.4 Cardiac Index.
- Blender sweep ranged from 4.3L/min to 5.0L/min to keep a PCO₂ level of 40-45.

- ViO₂ kept at 80%

The patient was cooled to 34 degrees Celsius and throughout the case, cerebral oximetry (RSO₂) ranged from 70% on the right brain to 72% on the left brain. Arterial and venous gases were within normal limits during the procedure, and the lactic acid level never increased over 2.0.

"I was cautiously optimistic and pleasantly surprised that we did not need to use the second oxygenator on a patient of this size," noted Kanefsky. "It was good to know, however, that if we ever need to use a parallel set-up in the future, it's easy and requires no duct tape."



Affinity Fusion[®] Oxygenators set up in parallel for use on an obese patient.



The best outcomes come from the heart.

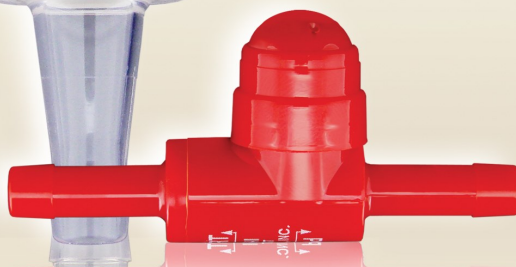
Microplegia attenuates myocardial damage in unstable angina, reduces transfusion, improves postoperative systo-diastolic function, and shortens hospitalization.¹

Q MPS²
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RetroGuard[®] Arterial safety valve automatically prevents retrograde flow in the event of centrifugal pump failure.

VRV-II assists perfusionists with management of vent pressure and vacuum relief. The retrograde check valve provides positive pressure relief and reverse flow protection. VRV-II is also available in clear.

Quest VRV and RetroGuard valves can be specified for inclusion in your custom tubing pack or purchased sterile.

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1 Francesco Onorati, et al. "Polarizing" microplegia improves cardiac cycle efficiency after CABG for unstable angina. Int J Cardiol; July 2012
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About our
Corporate
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2016 Annual Academy Meeting Host Hotel



Hilton Savannah DeSoto

Single/Double Occupancy - \$154.00 per night
Reservations: 877-280-0751

When you stay at Hilton Savannah DeSoto in Savannah, you will be in the historical district and minutes from the Sorrel Weed House and Madison Square. This romantic hotel is within close proximity of the Green-Meldrim House and the Girl Scout's First Headquarters.

www.desotohilton.com



Area Attractions

To learn more about what Savannah has to offer, please visit <http://www.visit-historic-savannah.com/savannah-visitor-center.html>

**Abstract Deadline
for the
2016 Meeting
October 15, 2015**

Contact Information for Our Sponsoring Partners

Important Academy Dates

COVIDIEN

Phone: 303-305-2370

Fax: 303-305-2865

Website: www.covidien.com

MAQUET MEDICAL SYSTEMS, USA

Phone: 888-627-8383

Website: www.maquet.com

MEDTRONIC PERFUSION SYSTEMS

Phone: 763-391-9000

Websites: www.medtronic.com

www.perfusionsystems.com

QUEST MEDICAL, INC.

Phone: 800-627-0226 or 972-390-9800

Fax: 972-390-2881

Website: www.questmedical.com

SORIN GROUP USA, INC.

Phone: 800-221-7943 or 303-467-6517

Fax: 303-467-6375

Website: www.soringroup.com

SPECTRUM MEDICAL, INC.

Phone: 800-265-2331

Fax: 803-802-1455

Website: www.spectrummedical.com

TERUMO CARDIOVASCULAR SYSTEMS

Phone: 734-663-4145 or 800-521-2818

Fax: 734-663-7981

Website: terumo-cvs.com

The ACADEMY ANNUAL MEETING DEADLINES

ABSTRACT DEADLINE	October 30, 2015
MEMBERSHIP DEADLINE	December 4, 2015
PRE-REGISTRATION	January 8, 2016
HOTEL REGISTRATION	January 8, 2016
2015 ANNUAL MEETING	February 4—7, 2016

Others Meetings

Pennsylvania State Perfusion Society Fall Meeting

Crowne Plaza - Valley Forge

King of Prussia, PA

October 3-4, 2015

Phone: 610-265-7500

Website: <http://www.cpvalleyforge.com>

Baltimore Perfusion Conference (BPC) 2015

Pier 5 Hotel

Baltimore, MD

October 24-25, 2015

Phone: 443-812-9874

Website: <http://www.mdperfusion.com/bpc.html>

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