The
Academy NEWSLETTER

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

FALL 2018

Inside This Issue

THE YOUNG AND THE RESTLESS

One of the challenges facing the AACP is in attracting and maintaining members who are within the earlier part of their careers (years 1-5). To that end, the academy is planning sessions for the 2019 meeting (both fireside chat and scientific) targeting a younger audience. Moreover, the Academy has an active student membership and includes "Fireside Chats" that are directly applicable to this group.

Although the overall designation of millennial (Generation Y) and the following Generation, Z are a bit non-specific on the exact birth years for qualification into these groups, it seems fair to say that most of the new perfusion graduates and pre-graduates are from the millennial cohort. Generation Y (millennial) is generally considered to include birth years form the early 1980s until the mid to late 1990s however, there is information sourcing the Generation Z group beginning in 1995 (meaning, our youngest students and new graduates may be Z gen).[1]

Since the Academy is interested in attracting these young adults then it makes sense to look at what characteristics are commonly associated with them. Demographic researchers ascribe seven basic traits to the millennial cohort: special, sheltered, confident, team-oriented, conventional, pressured, and achieving. These traits were partially shaped by major events of the time including September 11th 2001, and the great recession of 2008.[2] Another psychological researcher refers to the millennial and early Generation Z groups as "Generation Me" attributing the traits of confidence and tolerance, but also of entitlement and narcissism. In addition, "extensive use of technology and the internet" are common millennial characteristics.[3] Therefore; the 2019 AACP planning committee has included an entire scientific session with generations Y and Z in mind entitled; *Considerations for the new perfusionist* including talks about communication, financial stewardship, managing stress, compassion and empathy training and about being the new perfusionist in town. In addition, a new fireside chat entitled *Pump On: the first five years* geared toward lively and informative conversations around the challenges facing new graduates at their first jobs should prove informative. Yes new graduates, we are working for you and, in return, perhaps y'all can help us graying Generation X and hunched baby boomers with our new smart phones!

In all seriousness, the academy supports continuous learning through education, research, mentorship and collegiality and, to those ends, welcomes any new members who expect excellence in the field of perfusion science and enjoy learning and sharing knowledge with a broader group of like-minded perfusion professionals.

Respectfully,
Kevin Charette, CCP
President, AACP

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Research and Reading the Literature

With our 40th Annual Seminar rapidly approaching, we thought that it would be a good time to reprint three articles that were originally published in our 2014 Summer, Fall and Winter Newsletters.

Richard Chan, Mark Kurusz and **Jeff Riley**

Introduction

These topics were presented at the 2013 and 2014 seminars of the American Academy of Cardiovascular Perfusion as Fireside Chats. For those who were unable to attend the meeting, the handout material in three parts is being published in the next three issues of the *AACP Newsletter*. This issue contains Part 1, and it also includes a list of resources for additional information pertaining to all three topics. Part 2 is entitled, "Preparing a Presentation" and Part 3 is entitled, "Publishing a Paper." They will appear in the Fall and Winter issues of the *AACP Newsletter* later this year.

What to Read? Continuing education is a high priority for perfusionists to keep abreast of latest developments in the field. There are now several good sources besides thoracic surgery journals (*The Annals of Thoracic Surgery*, *The Journal of Thoracic and Cardiovascular Surgery*, and *The European Journal of Cardio-Thoracic Surgery*). Today the two major perfusion journals are *Perfusion* (6 issues/year) and AmSECT's *The Journal of ExtraCorporeal Technology* (4 issues/year). Manuscripts from presentations at the AACP meeting are submitted to *Perfusion* for peer review. Another journal that has relevant perfusion -related articles is the *ASAIO Journal*. Occasionally, articles of interest to perfusionists appear in *The Journal of Cardiothoracic and Vascular Anesthesia*, *Artificial Organs*, and *The International Journal of Artificial Organs*. Thompson Reuters assigns an Impact Factor to journals to help consumers understand the potential influence of their future publication and the chance for their paper to be referenced in the future. There are also often citation statistics published for individual papers in PubMed, OVID, and the Web of Knowledge.

Keywords. The assignment to your manuscript and use of keywords for a search are skills to hone. PubMed provides a MeSH Database of keywords and phrases that are commonly employed. Potential authors should use the MeSH Database for searches and writing. MeSH is a good starting place for new researchers and authors.

Reference File. These may consist of photocopies or reprints or more commonly electronic files with pdfs of full-text journal articles. The files should be categorized so that when a question comes up, you can easily retrieve pertinent articles on any given topic. It is advised to use reference management databases such as RefMan or EndNotes to collect selected evidence articles to use to support your practice, your clinical procedure guidelines, or to research and write your manuscripts. You can set up your own personal PubMed search engine to notify you when articles are published according to your list of key words from the MeSH Database. You can do the same activity at many journal sites so you are notified when a publication in your area of interest is published.

Reading the Literature. It may seem obvious, but the first thing to read is the title followed by the abstract. If both appear to meet your needs, then a careful reading of the entire article follows. You should approach every article as a skeptic—that is, you should constantly be asking yourself,

"Is the author being objective yet persuasive?" or "Does the paper appear authoritative?" or "Is the language simple and does the narrative flow logically from one section to another?" One of the ways to confirm first impressions is to flip between the text and the reference list to see not only what papers are being cited but whether the author has cited references correctly when making statements or reiterating conclusions from other works. The references should also be up-to-date on the subject matter thus demonstrating the author has done a credible review of the literature.

Statistics. Virtually all studies rely on statistics to evaluate data because statistics bring a study's results into focus. The type of statistics used is important as well as how they are applied. Data sets should report the mean (average) and the standard deviation (SD) and rarely the standard error of the mean (SEM). Student's t-test is used to compare the difference between two test groups. If there are more than two groups being compared, analysis of variance (ANOVA) statistics should be used. The p-value quantifies the probability a difference exists between groups of data being compared that it is not due to chance or random sampling. Reporting a p-value of <0.05 means there is less than a 5% chance that there is an error when you report a significant difference between groups. There are additional subtleties regarding sample size, Type I or Type II errors, the Null Hypothesis, randomization, survey methodology, and measures of validity and bias explained in the Berryessa *et al*. and Toomasian papers cited below. It is worthwhile to consult a statistician unless you are familiar with basic statistics.

Types of Papers

Clinical Practice-Device These probably are the most common perfusion papers. The gold standard is a prospective randomized study comparing devices, which is not always possible for perfusionists to undertake. A more simple paper of this type is to describe common clinical measurements when using a new device. Retrospective reports also can be easily done to compare closely matched groups of patients. It is important to get physician or institutional approval before undertaking a study, particularly if patient outcomes are reported. As noted above, there is a need for conflict of interest disclosure so readers can make a judgment if bias in favor of a product is apparent.

Clinical Practice-Technique This is most often a description of a new way to do something. As above, it is important to get the necessary approvals before submitting the paper for publication. If the technique involved physicians in its execution, they should be offered co-authorship with its attendant responsibilities. Technique papers typically involve a series of patients. There is a distinct ranking of published articles, and readers should appreciate the hierarchy from highest to lowest: meta-analysis (systemic reviews), randomized control trials, cohort studies, case-controlled studies, case-series/reports and editorials/expert opinion.

Case Report This is another common and relatively easy type of paper for perfusionists to write. It should include all relevant details of an unusual case (patient pathology, unexpected event, or previously unreported case). As above, one must abide by hospital rules regarding patient confidentiality (HIPAA). The good case report summarizes other similar cases reported in the literature so readers can put in context the one being reported.

Review Article Anyone with access to a library (or a computer these days) can do a literature review. This often entails the exhaustive collection, reading, and summarizing of the findings of other authors on a given topic. This type of paper is sometimes called a meta-analysis that entails use of statistics applied to previous reports to detect trends, patterns, or areas of disagreement. A benefit of a meta-analysis is that study results involving large numbers of patients from multiple centers can be pooled for analysis. One of the major problems with a meta-analysis is to identify common data points from various articles. For example, sampling time lines, exclusion and inclusion criteria, or differences in perfusion techniques are variables difficult to deal with since the studies are not collaborative efforts. Analyses are seldom conclusive with any confidence level (p-value).

Meta-analysis The main purpose of a review article or a meta-analysis is to draw conclusions from large bodies of work so that new perspectives might be elucidated. While ii may be difficult for perfusionists to perform blinded, prospective randomized human clinical research independently, students and

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practicing perfusionists can perform reviews and meta-analyses. There is meta-analysis software to help guide these projects.

Basic Research This type of paper seeks to answer a question (or prove or disprove a hypothesis) in the laboratory setting that is not amenable to clinical study alone. This type of research also may include descriptions of unique prototypes. Most perfusionists have limited ability to conduct basic research depending on their setting and available funding for laboratory supplies. Search engines are very useful. Clinicians and authors will find PubMed, OVID, CINAHL, ISI Web of Knowledge, SCOPUS, clinical trials finders, and Cochrane Reviews helpful tools to perform searches.

Abstract Despite being brief, writing an abstract is often a challenge because authors are forced to distill down the key points of a paper. It is typically written after the paper has been completed and it allows readers to gain a quick understanding of the subject matter. If the abstract appears interesting or important, the reader will then be inclined to read the full text and perhaps add it to a reference file. Some journals require the abstract have sections corresponding to sections in the full paper to further aid the reader in making a quick assessment (see IMRAD below). Abstracts are also submitted to program committees for consideration for presentation at a meeting. When submitting an abstract to a program committee, you should avoid the "kiss and a promise" type of submission in which little information is conveyed other than "we did so-and-so study and the results will be presented" because this gives the program committee little to determine if the presenter deserves a slot on the program.

Textbook These most often have a single or a few editors who solicit book chapters from noted experts on given topics. The editors are responsible for making the chapters consistent in style without significant overlap in content. Alternatively, a book may be written by one or more authors, which represents their accumulated experience, perspective, and judgment on a given topic.

Invited Commentary This type of publication is sometimes solicited by journal editors and is often the result of a manuscript review by the person being solicited. It is intended to offer a different perspective on a paper published by others. The commentary most often appears immediately following the paper being commented upon and is limited in size. It may or may not have references.

Letter to the Editor Like the invited commentary above, these are limited in size, but unlike a commentary, they are sent unsolicited to the journal editor regarding a previously published paper. They may be critical of some aspects of the paper or may offer additional details or an uncited reference that was not included in the original paper. Usually the original author of the paper being critiqued is offered the chance to reply, so the advantage goes to the first author since she or he has the last word. The language is generally polite and complimentary in tone, and letters are typically very short with only a few references, if any.

Editorial These typically are written by journal editors or section editors. The subject matter is often broad, they can be more philosophical in tone, and they almost always draw attention to the content of a given issue of the journal.

Book Review These appear infrequently, but can alert readers of new books. By their nature they are judgmental. Somewhat surprisingly, favorable book reviews rarely increase sales, while unfavorable reviews can hurt book sales.

Historical Review These are reviews of noteworthy cases or events and contain details that may not be generally well-known. They often appear decades after the original report(s) of the case or event.

Panel Discussion These appear infrequently nowadays because they are lengthy and can be somewhat unfocused depending on the skill of the moderator. They are based on edited transcripts of discussions that transpired at a meeting.

Newsletter Article These often are the first publications of students and therefore are a good way to gain experience in writing a paper. A disadvantage is that they are not cited by the major indexing services such as PubMed, OVID, or Web of Science. They often do not contain an extensive reference list and may, in fact, not have any references at all.

It is important to note that modern ranking of published papers by experts for the level of evidence and clinical practice recommendations is now the standard. The American College of Cardiology and the American Heart Association have designed a systemic process to evaluate publications (evidence) to categorize the level of effectiveness and the expert recommendations that come from the published evidence. Researchers today need to be familiar with the evidence-recommendation rating systems.

Additional Resources

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Abstract Deadline for the 2019 Meeting October 31, 2018

Preparing a Presentation

Richard Chan, Mark Kurusz and **Jeff Riley**

Introduction
This is Part 2 of 3 articles derived from handout material at past Fireside Chats. After you have done some research and wish to present your results at a meeting, there are some simple guidelines for delivering an effective presentation.

Know your Audience. A presentation will be most effective if the presenter tailors the talk to those whom she or he wishes to communicate. This requires some objectivity and the ability to imagine oneself in the audience. "What will get and keep their attention?" "Are the slides being used appropriate in quantity and quality?"

The KISS rule—"Keep it simple, stupid." The general rule of thumb is not to exceed seven lines or bullet points in a text slide so that a person sitting in the back of the room can easily read it.

Write the Manuscript Before you Prepare the Presentation. There is no way you can convey the entire contents of the paper in your presentation, but you should present the highlights in an orderly manner while giving verbal emphasis to important details or your conclusions, which are the "take home" messages.

Use a Bold Simple Font. Calibri or **Arial** work well. Sans serif is preferred. (Times New Roman is an example of a serif font.)

Avoid Fancy Backgrounds. These can be distracting to the audience. Using a plain dark blue background with white letters (old-fashioned blue diazo style) is tried and true. Alternatively, a light brown background with black letters also works well. Avoid a white background with black letters so you don't "blind" the audience in a darkened room with every slide change (this may also startle or wake up a snoozing person in the audience). Preview your slides to eliminate colored lettering that is indistinct on the background color (for example, red lettering on a blue background is hard to read no matter how spiffy it may look on your computer screen). The use of colors during presentations can evoke audience emotion. A useful simple rule for word slides is no more than seven lines with seven words each and to keep the font greater than 20.

Animations Can be Effective. This allows you to present one point followed by another followed by another instead of displaying everything at once. Using animations this way allows you to effectively lead the audience through your data to make a key point.

Keep Transitions Simple. Avoid the use of cute noises or visual effects that can be annoying when repeated with every slide change. Noises available on PowerPoint include applause, bomb, chime, drum roll, explosion, hammer, or whoosh, among others. Effects include cut, fade, push, wipe, split, reveal, random bar, shape, uncover, or cover.

Use an Oral Text. Using Note Pages in PowerPoint, the oral text can be read verbatim or referred to during the presentation to avoid the jitters when you are at the lectern. The Note Pages containing the oral transcript for all slides should be stapled or clipped together to avoid a paper shuffle at the lectern. Feathering the sheets of paper allows you to turn the pages one at a time without fumbling around.

Humor can Help. Showing a cartoon or delivering a well thought out quip (especially at the start) can engage the au-

dience so they will become more receptive to the content of your talk. Cartoons, if used, should be used sparingly—remember, you're not a comedian.

Practice. Even if you have memorized the talk or have an oral text, it is extremely helpful to practice the talk several times either by yourself or preferably before some coworkers. You will have the benefits of refining the talk and receiving a critique before the real presentation. It is also extremely important that you time your talk so that it can be completed within the allotted time; if you go over, you run the risk of being cut-off by the moderator, and, at the very least, the audience will become annoyed that you broke the rules.

Go to the Podium Beforehand. You should become familiar with the slide advance/reverse buttons and laser pointer. It's also useful to introduce yourself to the moderator(s) and to confirm your PowerPoint is loaded onto the laptop and easily accessible when the time comes for your presentation. It also helps to introduce yourself to the audio-visual technician who may raise or dim the room lighting or adjust the microphone as needed or help with technical issues if something goes awry. Going up to the podium beforehand also can help relieve some of the anxiety of the actual presentation when you are standing in front of the audience with all attention focused on you. This also will allow you to familiarize yourself with where to stand to view the screen and think about the audience and where you may gaze; it's best to focus on a person or two near the back of the room but definitely look at the audience from time to time. Avoid the bouncing laser point effect by steadily focusing only on the part of the slide you wish to draw attention to; a bouncing laser point can induce vertigo in the audience and is extremely distracting.

Opening Set. Grab and capture the audience's attention with your first words. Humor, a personal story, asking the audience a challenging question, singing, reciting poetry, acting out, and the use of props are all methods to get attention and creating memories when you start your presentation.

Duplicate Flash Drive. Always hand carry the flash drive and your oral text so they don't get lost in transit. Today you can email your presentation to yourself as a backup plan.

Anticipate Questions. Once again, imagine yourself in the audience and consider what questions you may be asked by the moderator or audience. It's appropriate to have a few backup slides if they will help answer the question; you should also be prepared to go back and display a slide if it is relevant to the question being asked. If you do not know the answer to a question, it's far better to say so than deflecting and rambling on—the audience will not be pleased with your non-response. Be sure to tell moderators if you want to expand your presentation on a certain topic—moderators like to have questions to ask.

THE ACADEMY TO OFFER LIVE WEBCAST

The American Academy of Cardiovascular Perfusion will again be offering a live webcast of our 2019 Annual Meeting in Palm Coast, Florida. The General Sessions of the meeting and one Fireside Chat 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.

Publishing a Paper

Richard Chan, Mark Kurusz and **Jeff Riley**

Introduction

This article is the third in a series derived from handout material at past Fireside Chats. After the presentation, publication should follow. A study is not completed until it is shared and disseminated with your peers. Publishing can be a daunting experience because your work will usually be subject to peer review. The guidelines below describe some potential pitfalls and a recommended way to write a paper intended to make the process easier.

Why Publish?

"Publish or perish" really doesn't apply to most perfusionists; instead it might be better described as "publish and prosper" insofar as building your Curriculum Vitae will enhance your marketability when seeking a job or other opportunities. One major reason to publish is the sharing of ideas that can improve perfusion practice, and in some cases, can provide scientific data to contribute to the process of evidence-based perfusion practice. Publish and share your knowledge to help improve patient care and help other clinicians solve clinical problems. Perfusionists and students should use research and publications to question fundamental perfusion beliefs, lore and historic practices through research and publication.

Authorship

Obviously, the person who writes the paper is an author and most often is the first name listed on the title page. However, the answer as to who else should be named as a co-author seems straightforward but it is not always so because justification depends on their level of contribution. A significant contributor does not simply suggest that a study be done or provide cursory advice or criticism unless the intellectual content of the paper is fundamentally changed. All named authors must be sufficiently familiar with the work or content to defend it if challenged. This usually entails substantially contributing to the hypothesis, reviewing previously published work, helping develop the study design, collecting and analyzing the data, providing explanatory insight, or writing first drafts or critically important revisions. The last author listed on a publication is usually reserved for a senior author or someone who is influential such as a director of the study and/or the main grant recipient.

Duplicate Publication

This sometimes called "salami" publication and consists of "submission or publication by the same authors of the same or nearly the same information based on one study in more than one scientific journal (without the editor's knowledge) or in the same journal more than once…It is publication more than necessary to meet the needs of the readers or the discipline," according to the Council of Biology Editors. It is frowned upon because it represents a waste of editors', reviewers', and readers' time and is also a waste of valuable journal space, which also prevents other authors from publishing their work. One possible exception is if the work is published in a minor journal or proceedings in a foreign country whose readers typically do not subscribe to a major journal; however, even in this situation the editor must be informed at the time the paper is submitted and it's usually prudent to cite or acknowledge the original publication.

Plagiarism

According to Wikipedia, plagiarism is defined in dictionaries as the "wrongful appropriation," "close imitation," or "purloining and publication" of another author's "language, thoughts, ideas, or expressions," and the representation of them as one's own original work. Even if an idea is

not written word-for-word in a manuscript, if it not your own it must be properly cited and given due credit. It is recommended to scan your manuscript through a free service that checks for grammar errors and evaluates your text for plagiarism (see www.grammarly.com).

Conflict of Interest
Perfusionists are most often at risk of this serious mistake when collaborating with manufacturers on devices they have evaluated. If the author has a financial interest in the company or the product's success, this should be disclosed to the editor when submitting the paper to a journal. Most journals now require such disclosure because of abuses that have introduced bias in study results. A guideline for when to disclose a relationship with a device manufacturer is that it should be made to the journal by the perfusionist if public disclosure would cause embarrassment.

Stages in Writing a Paper

Confirm the Idea
The idea may come at any time—during a case or a few days (or months) later. You may hear a presentation or read another paper and a question comes to mind that you think should be answered. The emotion most often associated with the idea stage is great enthusiasm, which is usually transient in nature.

List the Topics
Think and write down the various aspects of the question you are trying to answer. This usually is accompanied by feelings of confusion as you focus on the important issues. The topics usually can be listed in a few hours.

Gather Facts
This is the most time-consuming part of writing a paper and may take up to several months. It entails reading all the available relevant literature on a topic and making notes. If one was somewhat confused during the earlier step, the most humbling emotion at this stage is a feeling of ignorance as you discover other authors who have previously written about the topic. Facts most often consist of references you will footnote and list at the end of the paper.

Study and Evaluate
This stage is also time-consuming and can take weeks to months. It is best accomplished by considering the gathered facts in several different sessions. Some facts or papers initially thought to be important will fall away in importance as you learn more about the subject matter. Tne benefit will be the ability to distinguish good scholarship from mediocre scholarship. The emotion most often associated with this stage is panic, but it gives way to competence in the next stage below.

Outline and Draft
It is rare for a coherent and persuasive paper to be written without the author having prepared an outline. This is your roadmap on how the paper will be structured and can be likened to a feeling of catharsis. The acronym IMRAD is often used for scientific papers to designate an accepted format; it stands for Introduction (this consists of a brief review of the literature, the question to be answered, and the purpose of the paper); Materials and/or Methods (this must have sufficient detail to allow the reader to understand what was done in detail or to be able to independently reproduce what you have done and may include figures to illustrate aspects of the work to be reported); Results (this is usually straightforward and simply reports what you learned during completion of the work, and they may be reported in narrative or tabular form using statistics); and Discussion (this is the section that reiterates your important findings, puts your paper in the context of other published papers on the subject, and contains your conclusions). If the paper is not a study, then section headings should be according to major subjects covered in the paper. To develop an outline and write the first draft typically takes several days to complete.

Revise
After the draft is written it's best to let it simmer for a few days and then come back and re-read what you've written. Sections that are out of place will be rearranged in a logical fashion using the outline. This is the stage where you can "clean up and polish" the writing. The emotion most often associated with this stage is curiosity as you consider the reader by constantly asking yourself, "Have I expressed myself as simply and clearly as possible?" A revision typically takes several hours or days to complete.

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Check and Complete
This is a necessary step to ensure the paper you are about to submit to a journal conforms to the journal's Instructions for Authors. It also includes the sometimes overlooked proofreading to correct minor errors. The most common shortcoming in submitted manuscripts is not citing references exactly as specified by the journal. There are different ways to do this, and the so-called Vancouver style is the most common and consists of the author[s] last name[s]; author's initials; title of article; journal name; year; volume; and inclusive pagination. The feeling most often associated with this stage is satisfaction that you've done a proper job in writing the paper. This stage typically takes several hours or days to complete.

Peer Review
This is the first feedback you'll receive on your paper. Usually two or more anonymous reviewers wll critique your work and inevitably recommend either a minor or a major revision. The critique will be communicated to you by the journal editor. The emotions associated with this stage range from disappointment to gratitude. Sometimes reviewers can be harsh in their judgments, but it's best to consider every point they make, revise the paper according to their recommendations, and resubmit it. If you do not agree with a particular criticism, you are certainly justified in letting the journal editor know this but it must be supported by good reasoning in a cover letter when you resubmit the revision. Remember, one of the by-products of peer review is to improve the paper for publication, but reviewers are not infallible. This stage typically takes days to weeks while you wait to hear back from the journal editor.

Publication
You can take justifiable pride in your paper appearing in print providing you have done a good job and addressed concerns raised during the peer review process. You should realize that few perfusionists publish, and having your paper cited by others is perhaps the best compliment and reward for the time spent in writing a paper.

Note on Time Frame
There are two basic ways to write a paper—one follows the steps outlined above and may take weeks to months to complete, often with periods of non-activity directly involved in progressing through the stages. The advantage of this orderly process is that your subconscious will be working nonetheless as new insights become evident as the paper evolves first in your mind and then on the document. The other way is less desirable where no work is done after the initial idea comes to mind. At some point there will be a deadline, and all the stages will be compressed and must be completed in a short time. This can cause anxiety and also suffers from lack of the subconscious contributing to the process. The predominant emotion if one chooses this approach is worry that you might not be doing the best job you can and that if the paper is accepted for publication the editors or readers will quickly point out the paper's shortcomings.

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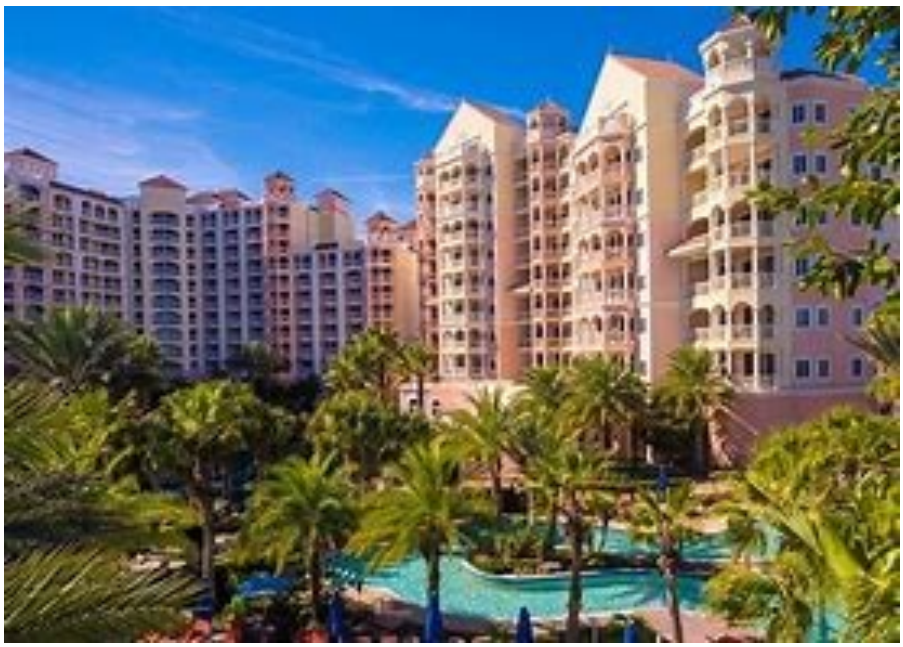
40th Annual Seminar of The American Academy of Cardiovascular Perfusion



Hammock Beach Resort
200 Ocean Crest Drive
Palm Coast, Florida
February 6-9, 2019

(Tentative Program)

Wednesday, February 6, 2019

9:00 AM – 2:00 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

Thursday, February 7, 2019

7:00 AM	REGISTRATION
7:00 AM – 8:00 AM	Video Presentations
8:00 AM – 09:30 AM	Scientific Paper Session
9:30- AM – 11:30 AM	Fireside Chats Clinical Instructor Session ECMO (Webcast Also) Myocardial Preservation Student Forum Using EMRs, Apps and New Technologies to Improve Patient Safety

11:30AM - 1:00PM Lunch (Historical Videos)

1:00 PM – 3:00 PM Special Scientific Panel Session
Hot Topics and Current Trends
Moderators: Linda Mongero, Ken Fung
Transmedics for Lungs and Hearts (TBA)
Heartmate lll Experience (*Justin Sleasman*)
Are You Getting Paid What You're Worth? Perfusion Compensation; The HR Perspective (*Jenni Peters*)
Ultrafiltration and AKI, (*Dr. Michael Manning*)
3D Imaging and Virtual Reality; Tools for Surgery (*Jonathan Chen*)
Panel Q&A

3:00 PM – 3:30PM Break

3:30PM – 5:30PM Special Scientific Panel Session
Education, Communication and Collaboration with Industry Partners
Moderators: Kenny Shann, Kevin Lilly

06:00PM Sponsor's Hands-On Workshop & Reception

Friday, February 8, 2019

7:00 AM REGISTRATION
7:00 AM – 8:00 AM Video Presentations
8:00 AM – 9:30 AM Scientific Paper Session
9:30- AM – 11:30 AM Fireside Chats
Anticoagulation
ECMO Scenarios
Perfusion Accidents
Pump On: The First Five Years (Webcast Also)
Research: How to Conduct, Publish and Get IRB Approval

11:30AM - 1:00PM Lunch (Historical Videos)
1:00 PM – 3:00 PM Special Scientific Panel Session
Extracorporeal Support - In & Out of the Operating Room
Moderators: Allison Weinberg, Robert Grimmett
Lung Transplantation (*Desiree Bonadonna*)
Shock and eCPR Use (*Desiree Bonadonna*)
Heaters for ECMO (*Kevin Charette*)
Heparinless ECMO: It is long past due, are we there yet? (*James Beck*)
How to Get ECMO Out of the ICU (*Dr. Robert Bartlett*)
Panel Q&A

3:00 PM – 3:30PM Break

3:30 PM – 5:30 PM Memorial Session
Charles C. Reed Memorial Lecture *(Robert H. Bartlett, MD)*
Thomas G. Wharton Memorial Lecture *(Kevin Charette, CCP)*

6:30 PM Induction Dinner
All Attendees and Guests

Saturday, February 9, 2019

7:00 AM REGISTRATION
7:00 AM – 8:00 AM Video Presentations
8:00 AM – 9:30 AM Scientific Paper Session
9:30 AM – 10:00 AM Break
10:00 AM – 11:30 AM Special Scientific Panel Session
Complex Congenital Heart Surgery
Moderators: Michael Brewer, Alex Gum
Using CPB to Prime ECMO (TBA)
Managing the Adult Congenital Patient (*Richard Walzak*)
Ozaki Procedure (*Dr. Christopher Baird*)
Mitochondrial Transplantation (*Molly Bryant*)
Antibody Filters During Their ABO Incompatible Heart Transplants (TBA)
Panel Q&A

11:30 AM – 1:00 PM Lunch (Historical Videos)
1:00 PM – 3:30 PM Special Scientific Panel Session
Perfusion Considerations For The New Perfusionist
Moderators: Joseph Deptula, Bharat Datt
Managing the "New Perfusionist in Town" role (*Alex Gum*)
Managing Finances and Incurring Debt (*Kevin Lilly*)
Managing Stress and Job Satisfaction (*Joshua Walker*)
Interpersonal/Professional Communication (*Anthony Corsino*)
Compassion & Empathy Training for Interaction with Patient and Family Outside the OR (*David Fitzgerald*)
Panel Q&A

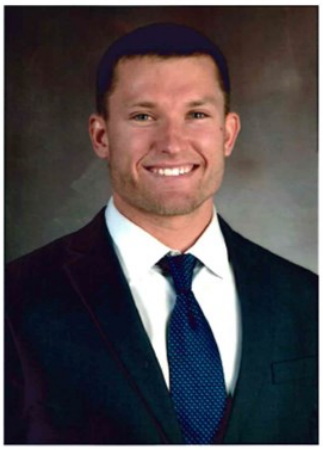
3:30 PM – 5:30 PM Fireside Chats
Blood Conservation, Transfusion Triggers
Dealing With Stress, Work Life Balance, Team Building, Communication
Evolving Scope of Practice: Past, Present and Future
Pediatrics
Taking the Show on The Road: Transporting VADs and ECMOs (Webcast Also)

5:30 PM Closing Business Meeting
Fellow, Senior and Honorary Members Only

The Student Section

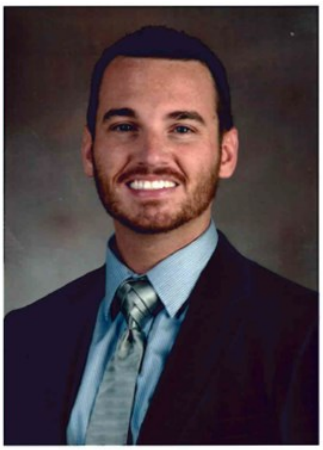
High-Fidelity Simulation from the Other Side: Students' Perspective

UTHealth Cardiovascular Perfusion Program
McGovern Medical School
Houston, Texas



Blake Pols

Leah Muse



Taylor Morgan

As students at a training program that does not currently utilize simulation, we can attest to the lack of confidence we felt the first time we initiated bypass. Could this level of confidence been changed if we had the ability to simulate cases prior to ever pumping a real patient?

High-fidelity simulation (HFS) affords the opportunity to teach and expose students to various situations in the safety of the classroom. From nurses to emergency medicine doctors, many medical professions have already included simulators in their curriculum. The perfusion simulator, paired with any working heart lung machine, is comprised mainly of a hydraulic simulator, an electronic interface unit, and a controlling computer. This allows for the at-will production of numerous types of scenarios. Students can practice initiating and terminating cardiopulmonary bypass as well as conducting more specific tasks, such as administering drugs and cardioplegia. Troubleshooting tasks such as volume loss, oxygenator failure, and air entrainment are also possible if desired. A simulator along with a video recording system allows the ability for instructors to view student actions in real time as well as provide students with the opportunity to review and study their own actions after a case. Use of the simulator allows a student to go from pumping a "routine" case to handling a catastrophic situation in seconds if desired. Along with crisis management exposure, simulation can also be used to test and assess the core competencies of students before they enter their careers as perfusionists.

Recently, we had the opportunity to practice on an Orpheus Simulator at SUNY Cardiovascular Perfusion Program and were impressed by the realism of the simulated case. We each completed a simulated case that involved initiation, cardioplegia delivery,

basic troubleshooting, and termination of bypass. Afterward, we were debriefed on our performance and shown what we did well and where improvements could be made. We learned so much from this experience that we immediately saw the advantages of being able to learn and try unfamiliar techniques in a mimicked environment while skills are being developed.

In school, we learn of potential situations that could occur in our career but often do not experience during our training. As an example, oxygenator failure is a critical complication that requires immediate attention. Should it occur during bypass, it is imperative that the oxygenator be exchanged as quickly as possible in order to resume support for the patient. However, this multi-step process is impossible to practice in the OR on patients without conducting multiple ethical violations. Thus, a simulator is the ideal method of becoming familiar with catastrophic events and how to problem solve without the risk of harming a patient. After our experience with the simulator, we felt proud of our skills that we gained in perfusion school in just 6 months, however, it opened our eyes to how much variation is involved in the field and how much we have to learn. In order to become expert perfusionists, students should be well rounded on various machines, circuits, protocols, and an array of techniques. The ability to create diversity within these aspects makes simulation an impressive learning tool. In six months, we have each completed approximately 45 clinical cases using the same heart lung machine and disposables with surgeons with similar protocols. A lot of how we conduct bypass revolves around how individual staff practice. However, as students we have to remember that we are not always going to have another perfusionist behind us to help, so it is important to create our own routine. We have to develop the ability to make our own decisions and problem solving skills.

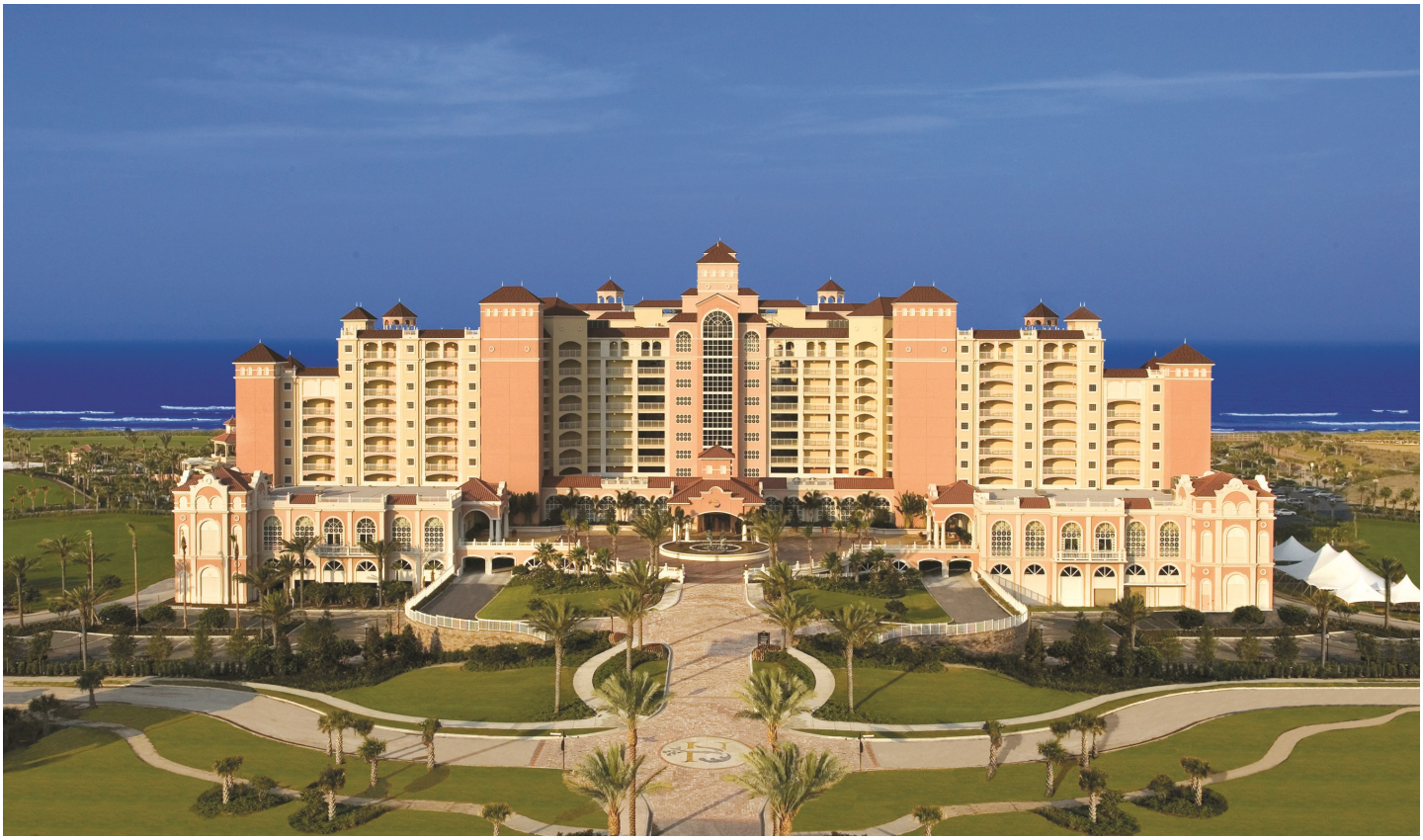
The implementation and use of HFS in the perfusion school setting can produce more experienced and confident graduates by bridging the didactic and clinical portions of the curriculum through on-demand exposure to various surgeries. It can help standardize the crisis management aspect of perfusion for new and experienced perfusionists. Aside from student use, HFS could be incorporated into all levels of perfusion. Senior perfusionists could benefit from simulation to practice new circuit modalities or rare crisis management situations to improve reaction time and confidence. Not only do we think HFS should be utilized in all programs, we believe it should be mandatory to maximize our performance and create a safer, more experienced group of new graduates. However, it is noteworthy that the cost associated with HFS is large and the manpower that is required is also great. With perfusion simulation systems packages costing over $100,000, some institutions are not currently able to obtain one without special grants or equipment donations. Our program fortunately has succeeded in obtaining a HFS system for future classes. As simulation technology improves and becomes more mainstream, we hope these systems become more affordable to allow the ability to provide this advanced training to more new and advanced perfusionists alike.

References

W Morris, Richard & Pybus, David. (2008). *"Orpheus" Cardiopulmonary Bypass Simulation System*. JECT. 39. 228-33.

Lansdowne W, Machin D, Grant DJ. (2012). *Development of the Orpheus Perfusion Simulator for use in High-Fidelity Extracorporeal Membrane Oxygenation Simulation*. JECT. 44. 250–255.

2019 Annual Academy Meeting
Host Hotel



Hammock Beach Resort
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Reservations: 866-841-0287

Please mention that you will be attending the Annual Conference of The American Academy of Cardiovascular Perfusion when making your reservations.

Important Academy Dates

The ACADEMY ANNUAL MEETING DEADLINES

ABSTRACT DEADLINE	**October 15, 2018**
MEMBERSHIP DEADLINE	**December 6, 2018**
PRE-REGISTRATION	**January 4, 2019**
HOTEL REGISTRATION	**January 7, 2019**
2019 ANNUAL MEETING	**February 6-9, 2019**

Others Meetings

20th Annual Update on Perfusion Conference
October 25 – 27, 2018
Medical University of South Carolina
151 A Rutledge Avenue
Charleston, SC 29425
Phone: 843-792-6505
Website: http://www.musc.edu/chp/cvp/conference
Contact Name: Laura Reid
Contact Phone: 843-792-6505
Contact Email: reidlau@musc.edu

Chop Cardiology and Pediatric Cardiac Surgery
February 13 – 17, 2019
Hyatt Regency Huntington Beach Resort and Spa
Huntington Beach, CA
Phone: (714) 698-1234
Contact Name: Tami Rosenthal
Contact Phone: 215-206-8491
Contact Email: rosenthalt@email.chop.edu

18th European Congress on Extracorporeal Circulation Technology
Grand Hotel
Salerno, Italy
June 12– 14, 2019
Sponsored by the Foundation European Congress on Extracorporeal Circulation Technology (FECECT)
Website: http://www.fecect.org
Contact Phone: +31 10 452 70 04 / +31 6 29 229 655
Contact E-mail: office@fecect.org

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Fax: 734-663-7981
Website: terumo-cvs.com

PRE-REGISTRATION FORM

The 2019 Annual Meeting of
The American Academy of Cardiovascular Perfusion

MEMBER	**FEE**	**Amount**
Registration Fee	$445.00	_____
2019 Annual Dues	$155.00	_____
Guest to Induction Dinner	$100.00	_____
Adult Guest to Workshop	$25.00	_____
NON-MEMBER	**FEE**	**Amount**
Registration Fee	$495.00	_____
Guest to Induction Dinner	$100.00	_____
Adult Guest to Workshop	$25.00	_____
STUDENT PERFUSIONIST	**FEE**	**Amount**
Registration Fee	$100.00*	_____
Guest to Induction Dinner	$100.00	_____
Adult Guest to Workshop	$25.00	_____
*__MUST__ *be a current Student Member of The Academy.*		
FELLOW or SENIOR MEMBER	**FEE**	**Amount**
Registration Fee	$445.00	_____
2019 Annual Dues	$180.00	_____
Guest to Induction Dinner	$100.00	_____
Adult Guest to Workshop	$25.00	_____

FIRESIDE CHAT REGISTRATION
(make your first three choices each day)

Thursday Sessions
1)_____
2)_____
3)_____

Friday Sessions
1)_____
2)_____
3)_____

Saturday Sessions
1)_____
2)_____
3)_____

PRINT OR TYPE
NAME _____

HOME ADDRESS _____

CITY _____ **STATE** _____ **ZIP** _____

HOME PHONE _____ **WORK PHONE** _____ _____

E-MAIL ADDRESS _____ ***(Required for confirmation)***

ANTICIPATED ARRIVAL DATE IN PALM COAST _____

How long have you been in the perfusion field? _____

Will you be attending the Induction Dinner on Friday evening? YES NO
(Dark Suit and Tie Required / Black Tie Optional)

Please read all instructions and information before completing this form.
If you have questions completing this form, please call the national office. Hotel Reservations must be made separately through the hotel directly.

Total Amount of Payment $ _____ METHOD OF PAYMENT: Check** __ Money Order __ Credit Card __

VISA/MasterCard # _____ **Exp. Date** _____ **3-digit security code** __ __ __

Credit card billing address if different from above.

ADDRESS _____

CITY _____ **STATE** _____ **ZIP** _____

Signature_____

** ***There will be a $25.00 service charge for any check returned for insufficient funds.***

INSTRUCTIONS and INFORMATION

o Complete each appropriate section of this form by printing or typing.
o *All attendees are invited to the Induction Dinner on Friday evening. Attire is dark suit and tie required.*
o Members must pay their 2019 Annual Dues along with their registration fees by completing that portion of the form.
o You will receive acknowledgment of your pre-registration by January 11, 2019--bring it with you to the meeting.
o No pre-registration will be processed after January 4, 2019.
-- **After this date you must register at the meeting**.
o Your receipt and meeting credentials will be available for you at the Pre-Registration desk at the meeting.
o There will be **NO ADMISSION to any Fireside Chat without proper admission credentials**.
o If you are joining The Academy with your registration you must:
1) complete appropriate areas of the form;
2) you MUST INCLUDE the membership application form;
3) include the $25 filing fee;
4) include $155 for the 2019 Annual Dues;
(Your membership begins with the closing business meeting)
o ONLY VISA/MasterCard credit cards are accepted - with VISA/MasterCard you may FAX your registration to (717) 867-1485
o The AACP Federal Tax ID Number: 63-0776991 (for hospital use only)
o Refund policy: Anyone that is pre-registered for this meeting and is unable to attend will receive a full refund minus $50.00 for handling, mailing, and processing upon written request before January 11, 2019.

o **Make checks payable to AACP (US dollars). Mail completed pre-registration form and check to:**

AACP
515A East Main Street
Annville, PA 17003

IF YOU HAVE QUESTIONS FILLING OUT THIS FORM, PLEASE CONTACT THE NATIONAL OFFICE (717) 867-1485.

o **If paying by VISA/MasterCard you may FAX this form to (717) 867-1485 or mail to above address.**