



INTERFACE

2015 Board of Directors

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President's Message

By Joseph Orr, PhD

As this year's President, it's my pleasure to update you on the Society's news and events. We enjoyed a wonderful evening at the Ty Smith Dinner to reminisce about the great and varied work of the event's namesake. Early this year, STA invited Dr. Steven Shafer to speak at our annual dinner, taking place during the ASA Annual Meeting. In May of 2015, Ty Smith passed away. In light of this, Dr. Shafer changed his presentation to discuss the many contributions of Ty Smith to the field of anesthesia. It was a fitting tribute and an enjoyable presentation. Dr. Shafer will also be presenting this talk during the STA 2016 Annual Meeting in Palm Beach, Florida.

It's that time of year for members to elect new STA Officers, including a new President Elect, and Directors (At Large, At Large Industry and At Large International). Please study the statements provided by each of the nominees included in this issue of the STA Interface and make an informed decision. I am very pleased

with the number and qualifications of the nominees. This interest in not only participating in STA, but also serving in its leadership, highlights STA's greatest resource, its members. I

believe that the expertise and interest in the area of anesthesia technology found in STA's membership is unique, and is of great benefit to anesthesia practice and research.

We are looking forward to a fantastic meeting in January. The venue for the meeting, the Four Seasons Resort in Palm Beach, Florida, is amazing. We held the meeting there in 2012 and it was such a great location, we decided to return. Drs. Jorge Galvez and Patrick McCormick are the Program Co-Chairs for this meeting and have prepared a program that should be informative and thought provoking.



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BOARD OF DIRECTORS ELECTION

Deadline to Cast Your Vote:

Monday, December 1, 2015

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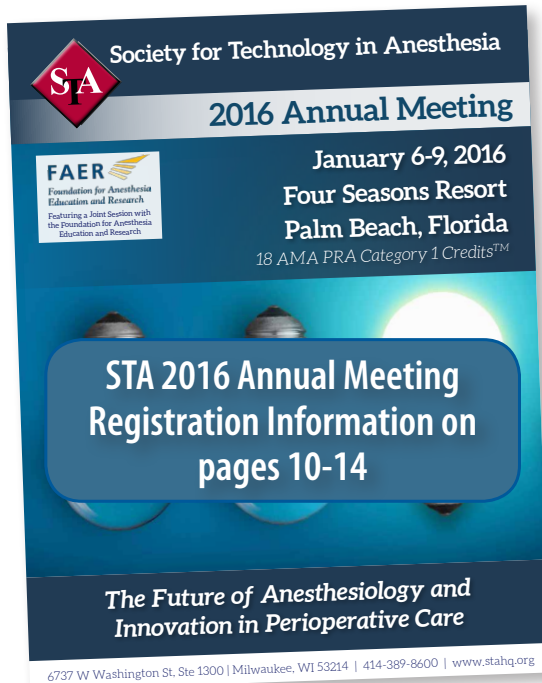
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Report from the Executive Director

By Jane Svinicki, CAE

What I Learned from the Massive Storage Project!

Did you ever have one of those projects that sits on the 'to do' list for a long, long time? It is not urgent, however it is a massive, boring and challenging project.

For many years, archived boxes of the records of the clients of Svinicki Association Management, Inc. (SAMI) had been accumulating at Iron Mountain until there were over 300 boxes. This was a problem because:

1. Iron Mountain acquired our previous vendor and input the box data into their new database not as carefully as we had hoped. In other words, we had no way to know exactly, with full confidence, what was in each of those 300 boxes.
2. Over the past couple of years, SAMI had added new clients and some of these clients had pallets of old materials that were sent directly to Iron Mountain without any review. A couple of times the prior management company admitted they hadn't looked at the boxes in decades.

In late August five SAMI staff scheduled a day-long session to go to the warehouse, review the records and update the database. We arrived to find eight and one half pallets containing over 300 boxes. Each box had a bar code and some information on the contents. We used this information to confirm the barcode, the client and the contents for each box. We then updated the database and each box was designated as 'return to inventory' or 'destroy.'



Here are my lessons learned from this project.

Be prepared. It is important to know what your starting point is and bring the right supplies. Andrew Bronson re-created and updated the database so that we could input the box information as we reviewed it. Since we knew some boxes were collapsing, we brought new boxes, file jackets, tape, box cutters, and plenty of water since we would be sitting in the warehouse.

Give everyone a specific job. Dividing up the work kept it organized. Marie Marinello entered all the boxes in the database so each reviewer could shout out the barcode number, the client and the disposition (keep or destroy) of the box. Each person was responsible for reviewing the boxes of their clients and applying the client's records retention policy.



Nobody wants to review stored records. Prior managers of some clients just shipped everything that was the organization's property. It was easier to just kick the project down the road to the next person. I was the next person and I didn't want to do it either. By the end of the day, we had marked over 180 boxes for destruction, mostly financial records that had aged out of the need to continue to hold them (such as 25 year old bank statements).

Treasure the humorous among the monotonous. We did occasionally have a laugh over old technology or archive photos from the 1970 annual meeting. Past photos of the President, in a suit, smoking a cigarette at the annual meeting podium were, of course, kept.

Most records are now electronic. The digital age has caused the storage of paper records to drop dramatically. We found much less paper being stored in recent years, then was stored 15 years ago. Three years of financial records can now fit in one box, whereas the 1995 fiscal year alone may have taken up two boxes.

Get it done. Pick a date, prepare and go do it. Since we had so many pallets, Iron Mountain had us work in the warehouse itself. There was an astounding amount of paper being stored there. *It was incredibly satisfying to close the lid on that last box.*

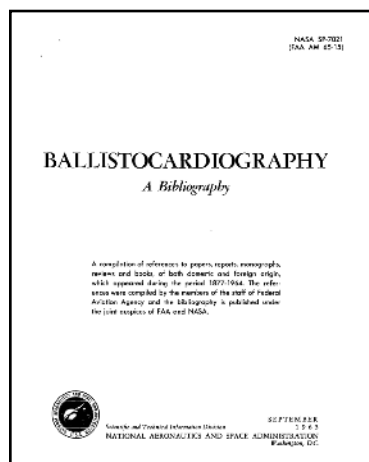
Now that the task is over, we are all committed to keeping the records in a highly accurate and well-managed state. We never want to have to do that again!

Jane A. Svinicki, CAE
Executive Director

STA 2015 Ty Smith Dinner Recap

By James Szocik, MD

The annual Ty Smith Dinner at the 2015 ASA Annual Meeting took place at the Prado Restaurant in Balboa Park in San Diego, CA. We were treated to a wonderful tribute to Ty entitled, "The Measure of a Man" by Dr. Steven Schaffer. Ty had a long and productive career in anesthesia, with multiple co-authors such as Drs. Eger and Stoelting. His career spanned the range from analog computers to the digital age. His interests encompassed everything from cardiac physiology to EEGs and automatic control loops. Several of Ty's compatriots were in the audience to hear and recollect their experiences. His work with the ballistocardiograph was cited in a 1965 NASA bibliography.



I'd like to share my personal recollection of Ty. I was attending my first STA meeting, at the Scottsdale Princess in Arizona, sometime in the early 1990s. I came down for breakfast, and saw a gentleman sitting alone. I introduced myself, and stated my connection to the meeting. I remember asking him of his connection to the meeting. I don't recall the specifics of our conversation, but I remember Ty's warmth and encouragement, and quiet understatement of his relationship to the STA.

SMITH, N. T. ; and CORBASCIOA, N. : The Genesis of the Split J Wave of the Ultra-low Frequency Dog Ballistocardiogram. Federation Proc. 22: 307 (No. 2, Part 1) March-April 1963. (Abstract SO. 874)



Drs. Michael Jopling, Jeff Mandel, Matthew Weinger and James Martin; Ty's Co-Authors on Various Papers

To the STA staff - Thank you so much for the gift of being with you all last Sunday. The evening was perfect for us starting with an al fresco cocktail hour then the dinner, which was very tasty and beautifully presented. I thought Dr. Shafer's talk was a masterful balance of serious and humorous and it educated all of us. We are so grateful to you for including us.

Best wishes, Penelope and family.



Ty Smith Dinner Location, The Prado at Balboa Park



Dr. Steven Shafer, Guest Speaker



Dr. Steven Shafer, Guest Speaker



Penelope Smith, Ty's Wife



Dr. David Reich, Jane Svinicki and Marie Marinello

President's Message *continued from cover*

I hope you will join us for the meeting and invite colleagues who are not yet members of STA to join you. More information is provided in this issue.

Thank you for the opportunity to serve as your President, and I look forward to seeing you in January at the STA Annual Meeting.

See you in sunny Palm Beach!

Sincerely

A handwritten signature in dark ink, appearing to read "Joe".

Joseph Orr, PhD
STA President



Office Holiday Hours

The STA Office will be closed
on the following dates:

November 26-27, 2015

December 24-25, 2015

December 31, 2015 –
January 1, 2016



2016 Board of Directors Voting Information

The 2016 candidate statements for the STA Board of Directors are provided to assist you with voting. Voting is conducted online, please visit the STA website at www.stahq.org or [CLICK HERE](#) to proceed to the voting website.

BOARD OF DIRECTORS ELECTION
Deadline to Cast Your Vote:
Tuesday, December 15, 2015

Candidate Profiles

Position: President Elect *(vote for one of three)*



Larry Chu, MD, MS

Larry Chu is a practicing anesthesiologist who runs the Anesthesia Informatics and Media (AIM) lab at Stanford University. He is an associate professor of anesthesia on the faculty of the Stanford University School of Medicine. Dr. Chu teaches three courses at Stanford University, Engage + Empower Me (a patient engagement design course) and Design for

Health (applying design innovation to improve healthcare) and Medical Education in the New Millennium (challenges and opportunities for innovation and digital disruption). He collaborates with researchers in simulation and computer science at Stanford to study how cognitive aids can improve medical team performance in a crisis. Dr. Chu has received several NIH grants to study opioid-induced hyperalgesia. Most recently he has received an RO1 grant from NIDA to study opioid physical dependence, opioid withdrawal and the role 5HT3-receptor antagonists may play in treatment of these disorders.

Dr. Chu is also the Executive Director of Stanford Medicine X, a project of the Stanford AIM Lab. Medicine X is a catalyst for new ideas about the future of medicine and health care. The initiative explores how emerging technologies will advance the practice of medicine, improve health, and empower patients to be active participants in their own care. The "X" is meant to encourage thinking beyond numbers and trends—it represents the infinite possibilities for current and future information technologies to improve health.



Kai Kuck, MD, PhD

Kai Kuck has been involved since 1991 in the research and development of innovative medical technologies with a focus on anesthesia and critical care. His areas of focus include cardiorespiratory monitoring, intelligent decision support, and ventilation.

Dr. Kuck has authored more than 30 publications, including abstracts, peer-reviewed articles, and book chapters. He is an inventor on 14 US and international patents. Dr. Kuck's experience covers the whole range from research, hands-on engineering for hardware, software, algorithms, and graphical user

interface development all the way to managing projects, programs, and large teams of researchers. He spent his career at the interface between industry and academia, starting with his PhD and post-doc work in the anesthesiology bioengineering laboratory at the University of Utah.

After his time in Utah, Dr. Kuck joined Dräger in Germany, establishing a new research group with a focus on intelligent software solutions and served later as Dräger's head of research, overseeing 40 scientists and 30 students.

Since 2014, in his role as Director of Bioengineering at the University of Utah's Department of Anesthesiology, he has the privilege of working closely with clinicians again and learning about real-world needs and opportunities for technologies. Because transforming healthcare increasingly involves innovations at the system and workflow level, he feels this collaborative approach is essential to creating technologies that address real needs in the clinic.

Dr. Kuck has been an active attendee of STA annual meetings since the early 1990s. He believes that technology continues to be one of the strongest drivers and enablers of change in anesthesia care. For STA he wants to create even more opportunities for engineers, clinicians, and industry to meet and innovate, identify opportunities for technology innovation in the changing anesthesiology and healthcare environment, and strengthen the recruitment, support, and mentoring of more junior members of STA.



Mark Poler, MD

S. Mark Poler has been a member of STA since the first year, attending the second annual meeting and missing only a few. He was recently Secretary of STA, and was an At-Large Board Member and committee chair in the dark past of lost records. He trained at UCSF, was on faculty at Washington University in St. Louis, and is now Vice Chairman of Anesthesiology

for the Geisinger Health System (www.geisinger.edu). He is Board Certified in Anesthesiology and Clinical Informatics. He has addressed technological challenges in bench and clinical research, and worked extensively on interoperability embodied in ASTM, IEEE, and HL7 standards for about 25 years.

Candidate Profiles continued on next page

Candidate Profiles continued from previous page

Position: At Large Director (vote for one of six)**Aymen Alian, MD**

Aymen Alian is currently an Associate Professor of Anesthesiology at Yale University, where he did his anesthesia residency. His primary research interests focus on studying the impact of different breathing patterns on the pulse oximeter and peripheral venous pressure.

He has been an active member and participant in STA for over 14 years. His participation began in 2001, when he was honored to receive an award from STA for the Best Technology Abstract entitled, "Blood Pressure Determination Using the Pulse Oximeter Waveform." He has been an active participant in the annual meeting every year since then. In addition, in 2011, he was honored once again receiving an honorable mention award for Best Technology Abstract entitled, "Impact of Central Hypovolemia on Photoplethysmographic Waveform Parameters in Healthy Volunteers."

Over the years he has been impressed by the focus of the Society's members, and by their openness to new ideas, as well as their ability to embrace and nourish so many new technologies. He has seen first-hand how the support of the society has spurred on the interest of many researchers, such as himself, and how STA has encouraged the development of new technologies that no one else would.

**Robert Bolash, MD**

Robert Bolash is an Assistant Professor of Anesthesiology at the Cleveland Clinic Lerner College of Medicine. He received his medical degree from the University of Miami School of Medicine and trained in Interventional Pain Management at the Cleveland Clinic. He is a Fulbright Scholar and is Board Certified in both Pain Management and Anesthesiology.

His research focuses on the use of implantable technology to facilitate clinical outcomes among patients with chronic pain.

**Matthew Levin, MD**

Matthew Levin is a cardiac anesthesiologist and the Director of Research for the Division of Informatics in the Department of Anesthesiology. His research interest lies in leveraging large data sets of intraoperative physiological data to reduce morbidity and mortality and enhance patient safety during the perioperative period. Over the past several years, along

with his colleague, Dr. Patrick J. McCormick, he has designed and implemented a large perioperative data warehouse containing detailed pre-, post-, and intra-operative information, including high resolution physiological data captured from intraoperative monitoring devices, for over 500,000 surgical cases. This anesthesia data warehouse continues to grow at a rate of 50,000 cases per year as new case data is automatically added on a real time basis.

Through his multi-disciplinary collaborations with other researchers in the Icahn School of Medicine, Dr. Levin is pushing the boundaries of perioperative research in order to answer previously un-addressable questions on the phenotype and genotype of the response to anesthetic and surgical stress. Dr. Levin is affiliated with The Charles Bronfman Institute for Personalized Medicine and collaborates closely with fellow IPM member Dr. Eimear Kenny. Together they were recently awarded a prestigious starter grant from the Society of Cardiovascular Anesthesiologists. Dr. Levin has also been collaborating with members of Dr. Joel Dudley's lab on several initiatives looking to leverage clinical and administrative hospital-wide data in order to improve the early detection of unexpected deteriorations in clinical status among inpatients.

**Jeff Mandel, MD**

Jeff Mandel's involvement in STA spans many years, but he has attempted to always focus on the road forward for the organization. Many of you know him through his work on the Engineering Challenge, which attempts to find talented trainees and fire their interest in applications of technology to problems in anesthesia. Others may know him from his work

in pharmacokinetic control. He enjoys bringing his perspective to help keep the Society vibrant, and hopes to continue serving as a member of the Board of Directors.

**Derek Sakata, MD**

Derek Sakata received his Bachelor of Science degree in electrical and computer engineering from the University of California, Irvine and his medical degree from Loma Linda University, Loma Linda, CA. Further, he completed an internship at Arrowhead Regional Medical Center, Colton, CA and a residency in anesthesiology at the University

of Utah School of Medicine in Salt Lake City, UT. He served as chief resident in his final year of residency at which time he decided to continue as faculty at the University of Utah.

Dr. Sakata is currently associate professor and vice chair at the Department of Anesthesiology at the University of Utah Health Sciences Center. He currently holds a Leland O. and Avanelle W. Learned Endowed Professorship in Anesthesiology. He is director of anesthesia services for the John Moran Eye Center and holds an adjunct associate professorship of ophthalmology. He further has an adjunct associate professorship of bioengineering.

Dr. Sakata's research interests include device design within the fields of bioengineering and anesthesiology. In collaboration with Drs. Westenskow and Orr, he has been involved with two anesthesiology-based devices that are currently on the market and are marketed by two separate companies. In addition to medical devices, Dr. Sakata is currently collaborating with the

Candidate Profiles continued on next page

Candidate Profiles continued from previous page

Position: At Large Director *continued* (vote for one of six)

Department of Pharmacology/Toxicology at the University of Utah to work on developing new inhaled anesthetics. He is also engaged in creating new Epic-based algorithms to facilitate perioperative efficiency.



Allan Simpao, MD

Allan Simpao has been a proud STA member since 2009. He was thrilled to give a podium talk as a resident at the STA 2010 Annual Meeting and has happily presented numerous abstracts at subsequent STA meetings. He has enjoyed an increasingly active role within STA; he served as the Abstract Chair of the 2014 STA Annual Meeting and the Program Chair

of the 2015 Annual Meeting.

Prior to medical school, Allan utilized his biology and computer science background in pharmacology and biomedical informatics research. He earned his medical degree and did his residency at Thomas Jefferson University, and he completed his pediatric anesthesiology fellowship at The Children's Hospital of Philadelphia (CHOP). He will finish his master's degree in biomedical informatics through Oregon Health and Sciences University in December 2015. He is currently an Assistant Professor of Anesthesiology and Critical Care at CHOP and the University of Pennsylvania. His current work focuses on applying visual analytics tools to healthcare data to enhance clinical operations and improve patient safety.

He would be honored to serve STA as a Board Member. He looks forward to helping STA thrive and grow by cultivating interest and involvement in STA, particularly among the younger members.

Position: At Large International Director (vote for one of four)



Guy Dumont, PhD

Guy Dumont holds a PhD degree in Electrical Engineering from McGill University in Montreal, Canada. He has been a professor at the University of British Columbia, Vancouver, Canada since 1989. An expert in control theory and signal processing, in 2002 he founded together with Dr. Mark Ansermino the Electrical and Computer Engineering for

Medicine (ECEM) research group. Together, they have developed a number of innovative technologies aimed at increasing patient safety through enhanced clinical monitoring and the application of advanced signal processing and control technology. Dumont is co-inventor of the NeuroSense depth-of-hypnosis monitor and of the Phone Oximeter. He also is actively leading the development of a system for closed-loop control of anesthesia and is currently developing low-cost mobile health technology for use in the developing world. He has been attending most STA Annual Meetings since 2005, at which he and his students have garnered a number of awards. He believes the STA is a unique organization where engineers and technology-savvy clinicians can freely and openly exchange ideas for the betterment of health care worldwide. He also thinks that the STA deserves to be better known within the biomedical engineering circles, and as an IEEE Fellow will try to build bridges with the IEEE Engineering in Medicine and Biology Society.



Matthias Gorges, PhD

Matthias Gorges earned his PhD in bioengineering from the University of Utah under the supervision of Professors Westenskow and Orr. For his post-doctoral training, Matthias worked with Professors Ansermino and Dumont in Electrical & Computer Engineering at the University of British Columbia. Most recently, he became a staff scientist in the Pe-

diatric Anesthesia Research Team at the Child and Family Research Institute located on the BC Children's Hospital campus. Matthias has attended STA Annual Meetings since 2010, which he enjoys for opportunities to network, discuss new research ideas, and receive feedback from leaders in both engineering and perioperative medicine. Matthias' research interests are mobile patient monitoring, alarms and decision support, and technology evaluations in the perioperative and critical care setting.



Thomas Hemmerling, MSc, MD, DEAA

Thomas Hemmerling is an Associate Professor in anesthesia and the Director of ITAG laboratory at McGill University. He acts as Chair of the STA Research Committee.

Dr. Hemmerling has implemented and secured funds for the past 3 years for the STA Fresenius Award at approximately \$7,500 per year.

His future vision is a confirmation of a new sponsor for the STA Research Award – possibly an international sponsor – as well as implementation of a second, smaller, research award for young researchers. His focus is equally the enlargement of the international profile of the STA, especially versus the emerging research community in Asia and Europe.



Jan Hendrickx, MD, PhD

Jan Hendrickx studied Medicine at the University of Louvain, Belgium. He graduated as an anesthesiologist from the University of Pittsburgh, PA, in 1996. He currently works in the OLV Hospital, Aast, Belgium. His major research interests include quantitative aspects of low flow and closed circuit anesthesia, automated low flow anesthesia, and PKPD

visualization systems. He is current chair of the ESA committee on Monitoring, Ultrasound, and Equipment. He is founder of

Candidate Profiles continued on next page

Candidate Profiles continued from previous page

Position: At Large International Director *continued* (vote for one of four)

NAVAAt, an international platform for automated low flow and PKPD visualization systems (www.navat.org). He is Associate Editor of the Journal of Clinical Monitoring and Computing.

Jan Hendrickx studied Medicine at the University of Louvain Belgium. He graduated as an anesthesiologist from the University of Pittsburgh, PA, in 1996. He was a cardiac anesthesiologist at Stanford University, CA, between 2004 and 2006, while being a fellow of Steve Shafer, studying PKPD modeling. He

currently works in the OLV Hospital, Aast, Belgium. His major research interests include quantitative aspects of low flow and closed circuit anesthesia, automated low flow anesthesia, and PKPD visualization systems. He is current chair of the ESA committee on Monitoring, Ultrasound, and Equipment. He is founder of NAVAAt, an international platform for automated low flow and PKPD visualization systems (www.navat.org). He is Associate Editor of the Journal of Clinical Monitoring and Computing.

Position: At Large Industry Director (vote for one of four)



Paul Addison, PhD

Paul Addison is a Technical Fellow who runs the Medtronic R&D Facility in Edinburgh, UK. He was formerly CEO of start-up company, CardioDigital Ltd, which he co-founded in 2002 (and later its US subsidiary, CardioDigital Inc in Portland, OR). Paul joined Covidien (now Medtronic) when it acquired CardioDigital's pulse oximeter and blood pressure technologies in 2008. He has a master's degree in engineering and a PhD in fluid mechanics, both from the University of Glasgow, Scotland. Previous academic life as a tenured professor included the output of a large number of technical papers, covering many aspects of engineering and bioengineering, and two signal processing text books: both originally published by the Institute of Physics in the UK, of which he is a Fellow. Paul has 68 issued US patents and 191 patent applications concerning a wide range of medical device technologies. His core skills are out-of-the-box thinking for biosignal algorithm design closely aligned with an awareness of clinician needs in order to produce robust, reliable monitoring devices necessary for the clinical setting. Paul believes that STA is the perfect environment for fostering this kind of activity.

Heidi Hughes has over 20 years of experience in the medical industry, including extensive clinical experience in anesthesia, critical care and cardiology, holding a Bachelor's degree in science (Nursing), with a major in critical care nursing, as well as formal marketing qualifications.

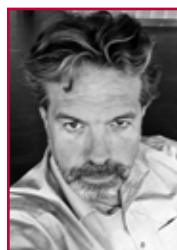


Heidi Hughes, BSc

She has extensive international experience having lived and worked in the field on three continents and five countries and has given her a very strong network within the critical care and anesthesia environment.

She has been involved with STA for 18 years and is a strong supporter of its vision. She looks forward to working closely with the Society again.

She has been involved with STA for 18 years and is a strong supporter of its vision. She looks forward to working closely with the Society again.



Frederic Michard, MD, PhD

Frederic is a critical care doctor trained in Paris, France, and at the Massachusetts General Hospital-Harvard Medical School in Boston, USA. He is a published researcher in-patient monitoring solutions; known for the invention and validation of the Pulse Pressure Variation (PPV), a parameter now displayed on most bedside and hemodynamic monitors. He is a frequent lecturer at conferences on cardio-respiratory physiology and monitoring and architect of acclaimed graphical displays for clinical decision support. He is an experienced medtech leader, having worked and consulted for successful start-ups and multinational firms, most recently with Edwards Lifesciences, serving as Medical Director & Vice President, Global Medical Strategy.

Kelly Sager is an engineer turned business leader who has devoted her career to finding innovative technology to solve healthcare's biggest challenges. Kelly has worked in the healthcare industry for the past 12 years in a variety of areas, including medical devices, electronic medical records, imaging IT applications, and connectivity solutions for health IT data exchange. She currently serves as a Business Director at Becton Dickinson, where she leads a business unit devoted to IV injectable medication safety. Prior to her role at BD, Kelly held roles in marketing, project management and software engineering developing next generation health IT applications at Hospira, GE Healthcare and MedImage, Inc.



Kelly Sager, MBA

In addition to her professional experience as a healthcare vendor, Kelly has been actively involved in industry groups such as the Anesthesia Patient Safety Foundation (APSF) and the Healthcare Information Management Systems Society (HIMSS). In 2009, she contributed to a HIMSS whitepaper on *Workflow Redesign in Support of the Use of Information Technology within Healthcare*.

Kelly earned her Bachelor's degree in Computer Science from the University of Michigan and her MBA in Marketing Management from Northwestern University's Kellogg School of Management.

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Society for Technology in Anesthesia 2016 Annual Meeting

*Brochure on
pages 10-14*

***The Future of Anesthesiology and
Innovation in Perioperative Care***



Society for Technology in Anesthesia

2016 Annual Meeting



January 6-9, 2016
Four Seasons Resort
Palm Beach, Florida

18 AMA PRA Category 1 Credits™



*The Future of Anesthesiology and
Innovation in Perioperative Care*

Meeting Accreditation Information

Activity Overview

The Society for Technology in Anesthesia (STA) 2016 Annual Meeting will provide a forum for discussion of the future of anesthesiology and innovation in perioperative care through information technology for perioperative medicine and big data, advances in respiratory monitoring, the perioperative surgical home and clinical applications of 3D printing.

Target Audience

This live activity is designated for a national and international audience of physicians, engineers and industry members, as well as other practitioners in the field of anesthesia seeking an update on the current and future state of anesthesia technology.

Educational Objectives

As a result of participation in this CME activity, learners should be able to:

- Discuss how anesthesia technology fits into major structural changes within the health care landscape
- Examine current problems facing anesthesiologists that can be addressed with technology, including quality improvement, outcome tracking and advances in inhalational agent monitoring
- Review cutting-edge research in the field of anesthesia technology
- Discuss the current state of perioperative surgical home (PSH) and how technology can be used to achieve PSH goals
- Discuss the peer-review process and how to be an effective reviewer for a scientific journal
- Networking for mentees and mentors, with didactic workshop to discuss mentorship
- Explore current and future clinical applications for 3D printing: medical device design, anatomic models, procedure planning and bioprinting
- Investigate current big data applications designed to track anesthesia outcomes

Barriers to change:

- Integrating valid scientific evidence and cutting-edge technology into daily clinical practice

Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the Institute for the Advancement of Human Behavior (IAHB) and the Society for Technology in Anesthesia (STA). IAHB is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation Statement

IAHB designates this live activity for a maximum of **18.0 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Pre-Conference Session

Challenges and Opportunities in Developing Anesthesia Products (for industry)

Wednesday, January 6, 2016 • 0800 - 1200

This half day course is planned for industry by the scientist and researcher members of the STA involved in designing, testing and marketing new developments and products to anesthesiologists. Talks will provide participants with a basic understanding of the practice of anesthesiology and how to recognize opportunities for new products. Mini lectures and group discussions on key aspects of the clinical specialty, including anesthesia 'work', behaviors driving equipment usage, the state of anesthesia-induced unconsciousness and machine function. Simulator sessions using patient mannequins will allow course participants to actually become 'anesthesiologists' for routine and emergent cases presenting common clinical conundrums, demonstrating interactivity with operating room teams, and complications of record keeping. Work groups of anesthesiologists and participants will address what challenges are faced in the design process and how these can be overcome to market a successful product. This will be a highly interactive and stimulating workshop. **OPEN TO INDUSTRY PARTICIPANTS ONLY**

Schedule of Events

Wednesday, January 6, 2016

0700 - 0800	Challenges and Opportunities Registration & Continental Breakfast
0800 - 1700	Exhibitor Registration & Setup
0800 - 1200	Challenges and Opportunities in Developing Anesthesia Products (for industry ONLY) <i>David Feinstein, MD, Norma Sandrock, MD</i>
1800 - 1930	Registration & Welcome Cocktail Reception


Thursday, January 7, 2016

0700 - 0800	Registration & Continental Breakfast
0800 - 0815	Welcome Address <i>Joseph Orr, PhD, STA President</i> <i>Jorge Galvez, MD & Patrick McCormick, MD</i> <i>STA Annual Meeting Program Co-Chairs</i>

Session 1: Keynote Address

0815 - 0930	Opportunities at the Intersection of Innovation, Entrepreneurship and Patient Care <i>Bimal Desai, MD, MBI, FAAP</i>
0930 - 1000	Break with Exhibits & Posters

Session 2: Anesthesia 2025: Innovation and Inhaled vs. Intravenous Anesthetic Delivery

Sponsored by: 

Moderator: Jeffrey Feldman, MD, MSE

1000 - 1030	Innovation Will Secure the Future of Inhalation Anesthesia <i>Jan Hendrickx, MD, PhD</i>
1030 - 1100	Innovation Will Eliminate the Need for Inhalation Anesthesia <i>Steven Shafer, MD</i>
1100 - 1130	Regulatory Considerations and Closed Loop Anesthetic Delivery Systems <i>Bahram Parvinian</i>
1130 - 1215	Panel Discussion
1215 - 1330	Luncheon

Session 3: STA & FAER Joint Session

Moderator: Jean-Francois Pittet, MD, ChB

1330 - 1400	Peer Review Discussion <i>Jean-Francois Pittet, MD, ChB</i>
1400 - 1445	The Measures of a Man: Ty Smith <i>Steven Shafer, MD</i>
1445 - 1530	Cardiorenal Function Estimation Using Near-Infrared Fluorimetry <i>Michael Hutchens, MD, MA</i>
1530 - 1545	Break with Exhibits & Posters

Session 4: Research Awards & Presentations

Moderator: Thomas Hemmerling, MD, MSc, DEAA

1545 - 1630	Gravenstein Award Recipient Presentation <i>Steven Barker, MD, PhD</i>
1630 - 1645	Best Clinical Application Award Presentation <i>Thomas Hemmerling, MD, MSc, DEAA</i>
1645 - 1700	Excellence in Technology Award Presentation <i>Thomas Hemmerling, MD, MSc, DEAA</i>

Friday, January 8, 2016

0715 - 0815	Registration & Continental Breakfast
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Session 5: Outcomes Databases

Moderator: Mohamed Rehman, MD

0815 - 0845	Flight Operational Quality Assurance (FOQA) Database and Outcomes <i>Mohamed Rehman, MD</i>
0845 - 0915	Using Anesthesia Data to Drive Outcomes <i>Richard Dutton, MD</i>
0915 - 0945	Twenty Years of ICU Outcome Development in the United Kingdom <i>Andrew Norton, MD</i>
0945 - 1000	Panel Discussion
1000 - 1030	Break with Exhibits & Posters

Session 6: Perioperative Surgical Home

Moderator: Brian Rothman, MD

1030 - 1100	The Perioperative Surgical Home: Where Do We Stand? <i>Adam King, MD</i>
1100 - 1130	Big Data, Hospital Metrics and the Anesthesiologist's Role in Pay for Quality <i>David Reich, MD</i>
1130 - 1200	Implementation of the Surgical Home and IT Implications <i>Matthew McEvoy, MD</i>
1200 - 1215	Panel Discussion
1215 - 1330	STA Business Luncheon and Awards

Session 7: Concurrent Workshops

1330 - 1530	1) Young Researchers Workshop <i>Maxime Cannesson, MD, PhD, Barrett Larson, MD, Ali Hassanpour, MD, Christine Lee, BS</i>
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The objective of this workshop is to bring together a community of young research scientists. In this community, researchers will share their individual research experiences, as well as develop collaborative relationships to further promote the advancement of technology in anesthesia. The focus of this year's workshop will be on designing and developing technological solutions to fill unmet clinical needs, and will begin with a guest talk by Dr. Barrett Larson, Stanford University School of Medicine, on his personal experience with starting his company Leaf Healthcare.

1330 - 1530	2) Mobile App Development Workshop <i>Rajnish Gupta, MD</i>
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In this session, attendees will discuss the current lack of high quality medical apps for the medical community. Learners will discuss the balance necessary to bridge in-depth medical information, guidelines and algorithms with user-centric interface design. They will look at examples of utilizing smartphone technologies to enhance written algorithms. Learners will discuss an example case of content that would be valuable in an always-present smartphone app and how to navigate transitioning that content to an easy to use app format. Learners will also discuss strategies to handle licensing and copyright issues with medical societies and publishers.

Schedule of Events Continued

Session 8: Concurrent Workshops

1530 - 1730

1) A&A Review Panel Workshop

Jean-Francois Pittet, MD, ChB

In this interactive hands-on workshop, attendees will discuss the peer-review process from the editorial board perspective. The workshop will consist of an overview discussion from Dr. Pittet, Editor-in-Chief for Anesthesia & Analgesia. Next, the audience will discuss the necessary steps in the peer review process and participate in hands-on manuscript review with a focus on providing structured feedback on manuscripts. The goal of the workshop is to provide an opportunity to critically review manuscripts for publication.

1530 - 1730

2) AIRS Integration with Epic Workshop

Patrick Guffey, MD

This interactive workshop will explore why incident reporting by anesthesiologists for anesthesiologists can improve the quality and safety of your practice. We will review the theory and design of quality reporting systems and how to build them into your current workflow. How to integrate the Anesthesia Quality Institute's Anesthesia Incident Reporting System with your EMR will be demonstrated. Finally, in a collaborative format, we will explore ways to improve the capture of quality data, and build systems that allow for reliable capture of cases where patients experience preventable harm.

1800 - 1900

STA Cocktail Reception

Saturday, January 9, 2016

0730 - 0830

Registration

Session 9: STA Engineering Challenge

Moderator: Jeff Mandel, MD, MS

0830 - 1015

Engineering Challenge

1015 - 1030

Break

Session 10: 3D Printing

Moderator: Jorge Galvez, MD

1030 - 1100

3D Printing: Its Impact on Clinical Care Today!

Todd Pietila, MBA

1100 - 1130

3D Printing in Congenital Heart Disease

Yoav Dori, MD, PhD

1130 - 1200

3D Printing in Pediatric Anesthesiology: Experience, Opportunities and Challenges

Clyde Matava, MBChB, DA, Mmed

1200 - 1230

3D Cell Printing for In Vitro Biological Model

Wei Sun, PhD

1230

Adjourn

Invited Faculty

Steven Barker, PhD, MD
University of Arizona College of Medicine

Maxime Cannesson, MD, PhD
University of California, Irvine

Bimal Desai, MD, MBI, FAAP
Children's Hospital of Philadelphia

Yoav Dori, MD, PhD
Children's Hospital of Philadelphia

Richard Dutton, MD
US Anesthesia Partners

David Feinstein, MD
Beth Israel Deaconess Medical Center

Jeffrey Feldman, MD, MSE
Children's Hospital of Philadelphia

Jorge Galvez, MD
STA Program Co-Chair
Children's Hospital of Philadelphia

Patrick Guffey, MD
Children's Hospital Colorado

Rajnish Gupta, MD
Vanderbilt University School of Medicine

Ali Hassanpour, MD
Children's Hospital of Pittsburgh

Thomas Hemmerling, MD, MSc, DEAA
McGill University

Jan Hendrickx, MD, PhD
OLV Hospital, Aalst, Belgium

Michael Hutchens, MD, MA
Oregon Health and Science University

Adam King, MD
Vanderbilt University School of Medicine

Barrett Larson, MD
Stanford University School of Medicine

Christine Lee, BS
University of California, Irvine

Jeff Mandel, MD, MS
University of Pennsylvania

Clyde Matava, MBChB, DA, Mmed
Hospital for Sick Children

Patrick McCormick, MD
STA Program Co-Chair
Icahn School of Medicine at Mount Sinai

Matthew McEvoy, MD
Vanderbilt University School of Medicine

Andrew Norton, MBBS, FRCA, DEAA
United Lincolnshire Hospitals NHS Trust

Joseph Orr, PhD
STA President
University of Utah

Bahram Parvinian
FDA Center for Devices and Radiologic Health

Todd Pietila, MBA
Materialise

Jean-Francois Pittet, MD, ChB
University of Alabama at Birmingham

Mohamed Rehman, MD
Children's Hospital of Philadelphia

David Reich, MD
Icahn School of Medicine at Mount Sinai

Brian Rothman, MD
Vanderbilt University Medical Center

Norma Sandrock, MD
Beth Israel Deaconess Medical Center

Steven Shafer, MD
Stanford University

Wei Sun, PhD
Drexel University

Meeting Registration Information

ONLINE REGISTRATION www.stahq.org

Online registration accepted until Sunday, December 27, 2015 – Limited Onsite Registration

MAIL OR FAX REGISTRATION FORM

This is how your name will appear on your name badge. *Required fields.

*FIRST NAME: *LAST NAME:

PROFESSION: *HIGHEST DEGREE(S):

*COMPANY/INSTITUTIONAL AFFILIATION:

*ADDRESS:

*CITY: *STATE/PROVINCE: *ZIP: *COUNTRY:

*PHONE: FAX:

*EMAIL ADDRESS:

Special Needs: ☐ Hearing Impaired ☐ Sight Impaired ☐ Other:

☐ Dietary (Please Specify)

REGISTRATION FEES Course materials, 2 continental breakfasts, 2 lunches and 2 cocktail receptions

	Early Bird by 11/16/15	12/14/15	After 12/14/15
<input type="checkbox"/> STA Member Registration (membership dues must be paid for 2016)	\$475	\$500	\$575
<input type="checkbox"/> *Non-Member Registration	\$575	\$600	\$675
<input type="checkbox"/> Resident Registration	\$50	\$50	\$50

*Non-member fee includes 1 year of membership to qualifying physicians

A LA CARTE ITEMS

- ☐ Additional Wednesday Reception Event Ticket.....\$50
- ☐ Additional Friday Reception Event Ticket
- ☐ Spouse/Guest Registration
- ☐ 2016 Membership Dues Renewal.....\$100

SUB TOTAL:

PAYMENT MUST ACCOMPANY REGISTRATION

TOTAL DUE:

METHOD OF PAYMENT

The following methods of payment are acceptable for the registration fee:

1. **Check:** Made payable to STA. *There is a \$25 returned check fee.*

☐ Check Included

2. **Credit Card Payments:** ☐ Visa ☐ MasterCard ☐ Discover ☐ AMEX

NAME ON CARD:

CARD #: SECURITY CODE: EXP. DATE:

SIGNATURE:

Paper Registrations

By Fax or Mail

(SEE CONTACT INFORMATION BELOW)

If you are unable to register online please fax or mail your paper registration form.

Onsite Registration

Online registration accepted until December 27, 2015. After December 27th limited onsite registration is available.

Registration Cancellation

All cancellations must be in writing and sent via U.S. mail, email or fax. Fee for cancellations postmarked or date stamped before **December 27, 2015** will be completely refunded with an administrative fee of \$25. **NO REFUNDS WILL BE MADE AFTER DECEMBER 27, 2015.**

Questions? Contact Us:

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in Anesthesia**
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OFFICE: 414-389-8600
FAX: 414-276-7704

PLEASE NOTE: Registration is not complete until you receive a confirmation email for your pre-registration. If you do not receive this email within 5-7 days of registration, please contact us at 414-389-8600.

It is recommended to bring your confirmation of registration with you to the conference.

Registration Fee Includes:

- Registration and course materials
- 2 continental breakfasts, 2 lunches and 2 cocktail receptions