—INTERFACE—

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brian.rothman@vanderbilt.edu

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mark@poler.net

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effanesserv@consolidated.net

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jemandel@verizon.net

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thomas.hemmerling@mcgill.ca

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paul.addison@medtronic.com

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maxime_cannesson@hotmail.com

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jane@stahq.org

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rachel@stahq.org

President's Message

By Brian S. Rothman, MD, Vanderbilt University

Now that the leaves are changing and will soon start to fall, it is time again for members to elect new STA Board Members. Open positions include a new President-Elect, Treasurer and Directors (At Large, At Large Industry and At Large International). Please review the statements provided by each nominee included in this issue of the STA *Interface* to make informed decisions regarding who you would like to lead our society over the next few years.

This time of year is also a great opportunity to reflect on this past year's list of accomplishments.

First and foremost, I'd like to acknowledge and congratulate the Digital and Social Media Committee led by Drs. Charlene Swift and Lisa Chan. With their efforts in 2016, our Society's resident membership increased in a one-year span from 32 in 2015 to 80 resident members this year.

This growth is in large part due to the Committee's recruitment efforts at their bi-annual mixers held at the Western Anesthesia Residents' Conference (WARC) in April in San Francisco, CA, and the American Society of Anesthesiologists (ASA) Annual Meeting in October in Chicago, IL. Both events were wildly successful and continue to educate our future attendings about the existence of the STA and how we serve our specialty as a society.

In addition to their successful recruitment efforts, the Digital and Social Media Committee has led the way to redesign the STA website (www.stahq.org), which is currently under construction. We are in the final stages of redesigning the layout of the site to make it more user friendly so members can

STA 2017 Annual Meeting Registration Information on pages 11-15

STA 2017 Annual Meeting
January 11-14, 2017
Hilton San Diego Bayfront
San Diego, California

#STA17SanDiego

Society for Technology in Anesthesia
6737 W. Washington St., Suite 4210 • Milwaukee, WI 53214 • (P) 414-389-8600 • (F) 414-276-7704 • www.stahq.org • stahq@stahq.org

In This Issue!

Report from the Executive Director

By Jane Svinicki, CAE

Lessons Learned from Moving Our Office… Twice in One Year!

This year has turned out to be hectic and challenging for your STA staff. When our lease expired, we were faced with moving the office, not once, but twice! Our lease in the old space expired and our new build out was not finished.

The STA office has been in three different suites in the same building over 10 years. From 2006 to 2009, STA was in Suite 1420. We quickly outgrew this space and had the opportunity to move into a new space built out for us. From 2009 to 2015, STA was in Suite 1300. We eventually outgrew this space, too. In December 2015 STA moved temporarily back into Suite 1420 for three months while our new suite was built out for us.

On March 29, 2016, we moved to Suite 4210, with a ten-year lease and extra space to grow.

What have I learned from all this moving around?

1. **Staff is Adaptable:** Moving is stressful. Thanks to our staff for taking a deep breath and getting through close quarters. For three months in suite 1420 we had 16 people in a space big enough for 8! Everyone was doubled up in the small individual offices and the conference room.

SAMI Svinicki Association Management, Inc.

Suite ~~1360~~ ~~1420~~ 4210

2. **Get Everyone Involved:** Staff had input in every aspect of the move, from layout, design of the new cubicles, which appliances to buy, colors, break room and technology.

3. **It is really hard to change your address:** I blame technology. Our prior locations are archived everywhere online. Gone are the days when updating a phone book listing and notice to the Post Office were enough to change your address.

So if you are in the Milwaukee area please come and visit us in our new space. It started life as part of the Allis Chalmers factory and retains some of the original elements. Girders, exposed brick and large windows bring a charming, industrial feel to our new office.

Jane A. Svinicki

Jane A. Svinicki, CAE
Executive Director

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McGill University

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Paul Addison, PhD
Medtronic

A&A Section Editor
Maxime Cannesson, MD, PhD
University of California - Los Angeles

STA 2016 Ty Smith Dinner Recap

By James Szocik, MD

The 2016 Ty Smith dinner was held on Sunday, October 23rd, at the River Roast in Chicago, Illinois. Despite competition with an ASA benefit dinner, the venue was well attended. Jerry Heneghan gave a fascinating talk on medical simulation. Jerry's background is quite varied: He has a BS in Engineering from the US Military Academy, has been an AH-64 Apache Attack Helicopter Pilot, has an MBA from Duke University Fuqua School of business, and has been a commercial game developer with several companies.

Jerry met Ty Smith in the fall of 2001 at Research Triangle Institute (RTI) and was involved in creating Biogears, open source software based upon Ty's work in the 1990s. The software is dedicated to Ty Smith, and I will quote the website directly:

*This software is dedicated to **N. Ty Smith, M.D.** — physician, professor, mentor, friend, and founding director of the Pacific Academy of Ecclesiastical Music (PACEM).*

Dr. Smith was born in Iowa and graduated from Harvard College and Harvard Medical School. Dr. Smith served on the faculties at Stanford Medical Center and the University of California at San Diego. He was a Visiting Professor at the University of Washington, Institute of Medical Physics in Holland, University of Wisconsin, and University of Otago in New Zealand. Dr. Smith also served at Children's Medical Center in Boston, Massachusetts, Massachusetts General Hospital, U.S. Naval Hospital in Portsmouth, Virginia, U.S. Veterans Administration Hospital in San Diego, and Dunedin Hospital in New Zealand.

Dr. Smith, along with Ken Starko M.Sc., created "Body Simulation" in the 1990s. Body Simulation models and their interfaces were used for pharmacologic experimentation, testing, teaching, and training by device manufacturers, pharmaceutical companies, professional associations, and government agencies. BioGears builds directly from this vision and legacy.

It was Dr. Smith's fervent wish that his work continue long into the future to advance scientific discovery, improve the safety of healthcare, and ultimately save lives.

The BioGears Team
Raleigh North Carolina, September 2014

(https://biogearsengine.com/documentation/index.html)

Save the date for the next Ty Smith dinner in Boston, Massachusetts on Sunday, October 22, 2017.

Mike Perry and Kelly Sager.

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STA 2016 Ty Smith Dinner Recap Photos

Dr. Mark Poler, STA President-Elect, Tim Vanderveen and Jerry Heneghan sharing thoughts before the presentation.

Dr. Robert Bossard, Marie Scott and Dr. John Scott.

Drs. Brian Rothman and Norma Sandrock, President and Secretary of the STA.

Drs. Alan Simpao, Treasurer candidate, Charlene Swift, Digital and Social Media Committee Chair, and Patrick McCormick, Director At Large candidate.

Tim Vanderveen and David Jamison.

Drs. Steve Barker and Jeff Mandel discussing advanced engineering.

President's Message *continued from page 1*

more easily find important educational resources, such as past Annual Meeting abstracts, and bring the design current to 2016. The Board recently offered another round of suggested revisions, and our goal is to launch the new website by the January Annual Meeting. After all, we are the Society for Technology!

This year we have also focused our attention on aligning the Society through collaborative agreements with other organizations who foster the mission of the STA .

We have renewed our agreement with the Foundation for Anesthesia Education and Research (FAER) and will continue to feature a joint session at the STA Annual Meeting for the next three years. This agreement has proved to be mutually beneficial to both the STA and FAER in the past, and I'm confident it will bring forth a phenomenal lineup of speakers at our future meetings. Be sure to review the joint STA and FAER session on education, innovation and technology, moderated by Dr. Larry Chu at the 2017 STA Annual Meeting on Friday, January 13, 2017. More information can be found in the program brochure, enclosed at the end of this newsletter.

In addition, two new reciprocity agreements have been established this year between STA and the Turkish Society of Anesthesia and Reanimation (TARD), and the Society for Computing and Technology in Anaesthesia (SCATA).

While the collaboration between STA and the TARD is still developing, STA and SCATA are in the final stages of a reciprocal speaker agreement for each societies' Annual Meetings. This year, the SCATA has suggested Alexander Davey, FRCA, of the Northern Ireland Medical Deanery, to speak on Improving Perioperative Care: Death, Disability and Digital Records. I have the pleasure of moderating the session, "Technology on the horizon: Show us the evidence on outcomes and finances", in which Dr. Davey will be presenting and look forward to his insights. Again, more information can be found in the program brochure.

An affiliation between STA and the ASA was also considered by the Board and STA leadership. After much discussion, the disadvantages appeared to outweigh the advantages when the potential impact to members and the society was considered. With STA being an international organization whose membership includes physicians, engineers, students and others with an interest in anesthesia-related technologies, we were not willing to apply additional membership categories to our members, which would result in segregating our membership. Essentially, we were not willing to deny a worthy member the opportunity to sit on the STA Board of Directors to satisfy the affiliation requirements. The STA ultimately voted to not pursue the opportunity so that we could stay true to our mission and every-

one can continue to enjoy and benefit from equal membership regardless of our professional backgrounds.

Finally, I want to congratulate Dr. Jim Philip, Anesthesiologist and Director of Anesthesia Bioengineering at Brigham and Women's Hospital, Medical Liaison for Anesthesia for the Department of Biomedical Engineering of Partners Health-Care System and Professor of Anaesthesia at Harvard Medical School. His involvement with the STA, numerous publications and endless work in anesthesia have earned him our 2017 STA J.S. Gravenstein Award. Don't miss his talk over the STA business luncheon at the Annual Meeting on Friday, January 13, 2017.

In closing, we've accomplished many things in my past year as President of the STA. I'm honored to be working with my fellow colleagues to help further drive the mission of the STA – to improve the quality of patient care by improving technology and its application.

I hope you enjoy the upcoming holidays and plan to join me in San Diego for the 2017 STA Annual Meeting: *Technology Advancing Perioperative Outcomes* from January 11-14, 2017. Dr. Jonathan Wanderer has put together a program filled with dynamic speakers, and it is sure to be a fantastic event.

Sincerely,

Brian Rothman, MD
President, STA

STA Office Holiday Hours

The STA Office will be closed on the following dates:

November 24-25, 2016

December 23-26, 2016

December 30, 2016 – January 2, 2017

2017 Board of Directors Voting Information

The 2017 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, 2016

Candidate Profiles

Position: President Elect *(vote to approve)*

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 postdoc work in the anesthesiology bioengineering laboratory at the University of Utah. After his time in Utah, Dr. Kuck joined Dräger in Germany, established a new research group with a focus on intelligent software solutions and later served 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 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.

Position: Treasurer *(vote for one of three)*

Robert Freundlich, MD, MS

Dr. Robert E. Freundlich was born and raised in New Jersey. He received his Bachelor's and Master's degrees from Johns Hopkins University, followed by his MD at Baylor College of Medicine. He completed residency, critical care fellowship, and a post-doctoral research fellowship at the University of Michigan, where he focused on clinical informatics projects and implementation of the Multicenter Perioperative Outcomes Group (MPOG). He is currently an Assistant Professor in the Department of Anesthesiology at Vanderbilt University Medical Center, where he divides his time between clinical anesthesiology, cardiovascular critical care, clinical informatics, and research. In his spare time he enjoys running and spending time with his wife, daughter, and dog.

Allan Simpao, MD

Allan Simpao is an attending anesthesiologist and member of the Section of Biomedical Informatics of the Department of Anesthesiology and Critical Care Medicine, as well as a faculty member of the Department of Health and Biomedical Informatics at CHOP. His background in informatics dates to his education Computer and Information Sciences at the University of Delaware and a Master of Biomedical Informatics at the Oregon Health and Science University. Dr. Simpao is board-certified in anesthesiology, pediatric anesthesiology, and clinical informatics.

Some of his informatics research interests include applying visual analytics methods to anesthesia information management system (AIMS) and electronic health record data to enhance patient care, such as determining the timing and prevalence of harmful physi-

Candidate Profiles *continued from previous page*

ological changes under anesthesia in children and assessing the risks of anesthesia in children who have sickle cell disease. Dr. Simpao has had numerous informatics-related peer-reviewed research publications.

Dr. Simpao has performed a variety of informatics service work including being an active reviewer for several peer-reviewed informatics journals: Journal of the American Medical Informatics Association, Applied Clinical Informatics Journal, Journal of Medical Systems, and Journal of Clinical Monitoring and Computing. Dr. Simpao also serves on the editorial board of Anesthesiology as Social Media Co-Editor and an Associate. Dr. Simpao has been an abstract reviewer for the 2015 and 2016 AMIA Annual Symposiums. He moderated an outcomes and database research abstract session at the 2014 American Society of Anesthesiologists Annual Meeting, and was the Program Chair at the Society for Technology in Anesthesia 2015 Annual Meeting.

Dr. Simpao continues to demonstrate interest and devotion to serving the Anesthesiology community through the Society for Technology in Anesthesia. He would be a great addition to the Board of Directors of the Society in the capacity of Treasurer.

John C. Sudkamp, MD

In 2001, Dr. John Sudkamp attended his first Society for Technology in Anesthesia meeting as a 2nd year resident at St. Louis University and then started in private practice at a small rural hospital in 2002. As a member of STA, he has been able to transition ideas seen at the Annual Meeting into everyday practice at his facility. He sees the potential to improve the everyday care of patients in situations similar to his facility with improved application of technology. He has been active in the STA to make these transitions easier for smaller and non-academic practices. He chaired the 2010 Annual meeting with a great deal of support from his fellow members.

It has been his honor to serve for the past three years as your Treasurer. He is willing to continue in this roll if it is the members' desire.

He has run his own practice group and has been the Medical Director of Anesthesia at St. Anthony's Memorial Hospital in Effingham, IL since 2011. He has many years of budgeting and financial experience, which he believes will be a practical help to the STA.

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

Matthias Gorges, PhD

Matthias Görges is a biomedical engineer with extensive clinical research experience. He is a Scientist at the BC Children's Hospital Research Institute, where he co-leads the Clinical and Community Data, Analytics, and Informatics group. Matthias was recently appointed as an Assistant Professor (Partner track) in the Department of Anesthesiology, Pharmacology and Therapeutics at the University British Columbia.

Matthias has collaborated with a number of the researchers in the Society for Technology in Anesthesia and undertakes research in an inter-disciplinary team of engineers, computer scientists, and health care providers, where he leads a wide range of projects focusing on the development and application of new technologies primarily in pediatric anesthesia and intensive care. His research interests are patient monitoring alarms, medical displays, decision support systems, mobile health applications, and data integration/communication platforms. Matthias' goal is to extract clinically-useful information from vital signs and other clinical data, and to transform these data into information for better, more timely, and more efficient decision-making by clinicians.

Matthias has been an avid supporter of the Society for Technology in Anesthesia. He has attended every meeting since 2010 and is now very keen to contribute more to the Society!

Thomas Hemmerling, MSc, MD, DEAA

Thomas Hemmerling is an Associate Professor in anesthesia and the Director of ITAG laboratory at McGill University. He is also the Chief of Anesthesia at Fleury Hospital and 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 $7,500 per year, and for the Neurowave Award for 3 years at $5,000 per year.

His future vision is the implementation of a second research award for young researchers and improving the international profile of the STA, especially versus the emerging research community and Europe. He has an action plan for better visibility of STA abroad.

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

Paul Addison, PhD

Paul is a Technical Fellow with the Patient Monitoring group at Medtronic and runs the company's 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 91 issued US patents and 211 patent applications concerning a wide range of medical device technologies.

His current research activities include NIRS-based cerebral autoregulation measurement and non-contact monitoring. 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 for the clinical setting: Paul believes that STA is the perfect environment for fostering this kind of activity.

Steven Barker, MD, PhD

Dr. Barker received his B.S. in Physics from Harvey Mudd College in 1967, his PhD in Aeronautical Engineering from the California Institute of Technology in 1972, and his MD from the University of Miami in 1981. He has reached the rank of tenured professor in both engineering (UCLA) and anesthesiology (UC Irvine, University of Arizona). He chaired the Department of Anesthesiology at UC Irvine from 1990 to 1995, and then at the University of Arizona from 1995 to 2013. He has published over 200 scholarly works, including 15 textbook chapters. Dr. Barker has served as President of the National Organization of Anesthesiology Department Chairs (AAPD) and of the Society for Technology in Anesthesia (STA), senior oral examiner for the American Board of Anesthesiology, and Section Editor for Technology for the journal Anesthesia and Analgesia.

During his 18-year tenure as anesthesiology chair at the University of Arizona, Dr. Barker was active in a number of governance roles outside of his department. He served as the hospital Director of Perioperative Services from 1996 through 2000. He was Chair of the Council of Clinical Department Heads from 2000 through 2003, and then chair of the clinical department heads working group. He served seven years as the American Society of Anesthe-

siologists Director for Academic Anesthesiology, representing all university anesthesiology departments at the ASA. Dr. Barker has been a productive academician, and has also participated actively in governance and administration at local, state, and national levels. He is now Professor Emeritus of Anesthesiology at the University of Arizona, and Chief Science Officer for Masimo Corporation.

In November 2015, Dr. Barker received the Lifetime Achievement Award from IAMPOV (Innovations and Applications of Monitoring Perfusion, Oxygenation, and Ventilation), "for championing the development of vitally important monitoring technologies and associated testing." In January 2016, he received the J.S. Gravenstein Award from the Society for Technology in Anesthesia, "for his visionary understanding of the role of technology in anesthesia care and lifetime commitment to patient safety." In April 2016, he received the "Distinguished Alumni Award" from Harvey Mudd College.

Raj Modak, MD

Raj K. Modak, M.D. recently relocated is academic practice to Henry Ford Hospital in Detroit, Michigan with affiliation with Wayne State School of Medicine. He is currently serving as the Division Head of Cardiothoracic Anesthesiology and Program Director of Henry Ford's ACGME recognized ACTA Fellowship. During his previous 20 year tenure at Yale School of Medicine, he completed residency in Anesthesiology, fellowships in both Cardiac and Critical Care Anesthesiology. As an Assistant Professor of Anesthesiology, he served the Yale community as a member of the Section of Cardiothoracic Anesthesiology which included direct care of cardiac patients going for cardiac related surgery and intensivist coverage of the Cardiothoracic Intensive Care Unit. Dr. Modak has participated in the AASPD/SAAA since becoming a Cardiac Anesthesiology Program Director in 2010. As Program Director, he has and is continually working with residents, fellows and faculty to improve education and interests in cardiac anesthesiology and critical care. In 2006, Dr. Modak was awarded with the Faculty Award for Excellence in Education and Leadership from the Yale Department of Anesthesiology. He has been engaging in SCA activities since 1999. Dr. Modak is working on research regarding mechanical properties of the human aorta and he was a member of the Yale Center for Thoracic Aortic Disease. His critical care interests revolve around difficult ventilator weaning. One of his most noticeable educational works includes an anesthesia review books titled: Anesthesiology Keywords Review. He has also been a member of the Society of Education in Anesthesia since 2007, participating on the Committees of Research in Education and Resident Curriculum.

Candidate Profiles *continued from previous page*

Jeffrey Zavaleta, MD

Fellowship trained in Bioinformatics at the University of Washington, a Diplomate of the American Board of Anesthesiologists, and Board Certified in Clinical Informatics, Jeff brings a refreshing dedication to developing electronic tools to help clinical practices. As a private-practice pediatric anesthesiologist, he intimately understands the need for vigilant patient focus, consistent speed, and unfailing focus on patient safety. His background as an amateur objected-oriented programmer himself allows him to more easily translate clinical use cases to the professional system engineers and architects, resulting in innovative solutions designed for actual practice. His driving passion is to make the limited resource of healthcare available to more people by lowering costs and improving efficiency.

As co-founder of Graphium Health, he has an intimate understanding of how to bridge the gap between innovative ideas and market reality. He believes he can use this unique perspective to promote and grow STA's membership and influence on how to connect, engage, and empower patients with new technology.

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

Lara Brewer, PhD

Dr. Lara Brewer is honored to have been nominated for the At Large Director position. She is currently a Research Assistant Professor at the University of Utah, where she received MS and PhD Bioengineering degrees in the Westenskow lab. She has seventeen years of experience in working with industry partners such as Philips Medical, Laerdal, Respironics, and Novametrix to bring translational research solutions to the bedside. She is fortunate that her research laboratory is physically located within the Anesthesia Department and near the operating rooms. Her location facilitates collaboration among anesthesiologists and engineers and helps her identify the most important problems to focus on.

The STA organization uniquely provides what she believes is a similarly important relationship where innovative ideas can be collaboratively explored. She has been an active contributor to STA for several years, and she values the feedback she receives when she presents her work in the abstract sessions. Her primary research interests include clinical decision support and alarm systems for patient monitoring, pharmacodynamic drug interactions and developing oxygen concentrator technology for low resource countries. Currently, her colleagues and her are working to find inexpensive ways to detect and reverse postoperative respiratory depression with funding provided by the National Institutes of Health. It would be an honor to serve again as a STA Board Member. She looks forward to doing what she can to support the Society's mission.

Jorge Galvez, MD

Dr. Galvez is a Pediatric Anesthesiologist in the Section of Biomedical Informatics at the Department of Anesthesiology and Critical Care Medicine at The Children's Hospital of Philadelphia (CHOP) and board certified in Clinical Informatics. He is also a faculty member at the Department of Health and Biomedical Informatics at CHOP. He is dedicated to improving pediatric are through digital innovation and has designed and implemented AIMS at CHOP, focusing on applying data visualization and analytics tools that guides policy and clinical decision support. Nationally, Dr. Galvez works with the Society for Technology in Anesthesia, Society for Pediatric Anesthesia, and the IHTDSO to improve EHRs and AIMS for pediatric hospitals. Dr. Galvez serves as an editorial board member for Anesthesiology and is responsible for curating social media content and strategies for the journal.

His current work includes perioperative patient blood management and transfusion risk stratification for children undergoing surgery. He is a domain expert for pediatric clinical decision support systems. He has experience with 3D anatomic modeling which has been applied for airway modeling, surgical planning of complex pediatric surgeries including bilateral hand transplantation and conjoined twin separation. In 2013, Dr. Galvez led the development team who created the iOS application "Pedi Crisis" based on SPA critical event algorithms. Released in 2013, it has been downloaded in over 100 countries and remains actively used worldwide.

Dr. Galvez is also involved in applied information technology projects to improve the perioperative experience for children. He developed a virtual reality tour for the Proton Radiation Therapy Center which is currently being studied in a project with the department of Child Life Therapy.

Jorge has a history of service to the Society for Technology in Anesthesia in mentoring new members and encouraging academic participation in the annual meeting. Jorge served as Abstract Co-Chair for the Society for Technology in Anesthesia in 2015, and Annual Meeting Co-Chair in 2016. Jorge continues to partner with the School of Engineering at the University of Pennsylvania and has mentored two of the winning teams for the annual engineering challenges at the Society for Technology in Anesthesia. One project involved the design of a web-based application to create a customizable intubating oral airway for productions with 3D printers. The second project involved developing a smart-watch application that measured wrist mo-

Candidate Profiles *continued from previous page*

tion during laryngoscopy to track an individual's technique over time.

Thank you for considering Jorge Galvez for the position of At Large Director of the Society for Technology in Anesthesia.

Patrick McCormick, MD, MEng

Dr. Patrick McCormick was the STA 2016 Annual Meeting Program Co-Chair, with Jorge Gálvez. This year, Patrick was part of the STA Clinical Informatics Task Force, helping STA members qualify for and pass the Clinical Informatics board certification examination.

Patrick is a software engineer, having graduated from MIT with an EECS degree. After one startup in northern California, he attended medical school at Columbia University. Patrick completed anesthesiology residency and neuroanesthesia fellowship at Mount Sinai. Patrick recently started in a new position as attending anesthesiologist and Anesthesia Director of Quality Informatics at Memorial Sloan Kettering Cancer Center in New York.

Patrick is very excited about the future of STA and would be honored to serve on the Board.

SOCIETY FOR TECHNOLOGY IN ANESTHESIA

Brochure on pages 10-14

2017 ANNUAL MEETING

TECHNOLOGY ADVANCING PERIOPERATIVE OUTCOMES

Hilton San Diego Bayfront
1 Park Blvd
San Diego, California

Room Rate: $259/night
There is an early checkout fee of $75. A deposit in the amount of your first night's stay is due upon reservation.

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Reservation Deadline:
December 19, 2016

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STA

REGISTRATION
BROCHURE
2017

STA 2017 Annual Meeting
January 11-14, 2017
Hilton San Diego Bayfront
San Diego, California

#STA17SanDiego

MEETING ACCREDITATION INFORMATION

Activity Overview

The Society for Technology in Anesthesia (STA) 2017 Annual Meeting will provide a forum for discussion of the future of anesthesiology and innovation in perioperative care through application of bioinformatics and analysis of Big Data within perioperative medicine, advances in outcome measurement and tracking, novel approaches to education and advances in medical devices.

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:

- Describe how anesthesiologists can transition between clinical care, entrepreneurial work and medical staff leadership.
- Understand multiple approaches to large scale database research and the statistical challenges within each.
- Review recent findings with obstetric and pain management derived from database analyses.
- Discuss the current state of outcome measurement and tracking in the anesthesia community.
- Describe systematic processes to resolve data definitions at a national clinical registry.
- Explore perioperative technology that is on the horizon and its potential impact on outcomes and finances.
- Describe novel approaches to education within perioperative medicine that leverage information technology.
- Review novel medical devices under development for respiratory monitoring and training in airway management.

Barriers to change:

- Translating advances with cutting-edge technology and novel insights from scientific evidence into change in routine 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 Amedco and the Society for Technology in Anesthesia (STA). Amedco is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation Statement

Amedco designates this live activity for a maximum of **17.75 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 11, 2017 • 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 11, 2017

7:00AM – 8:00AM	**Challenges and Opportunities Registration & Continental Breakfast**
8:00AM – 5:00PM	**Exhibitor Registration & Setup**
8:00AM – 12:00PM	**Challenges and Opportunities in Developing Anesthesia Products *(for industry ONLY)*** *David Feinstein, MD, Norma Sandrock, MD, Christopher Quartararo, MD, Jesse Ehrenfeld, MD, MPH*
6:00PM – 7:30PM	**Registration & Welcome Cocktail Reception**

Thursday, January 12, 2017

7:00AM – 8:00AM	**Registration & Continental Breakfast**
8:00AM – 8:15AM	**Welcome Address** *Brian Rothman, MD, Jonathan Wanderer, MD, MPhil*

Session 1: Keynote Address
Moderator: Jonathan Wanderer, MD, MPhil

8:15AM – 9:30AM	**The Importance of Devices in Outcomes: Experiences of an Anesthesiologist and Entrepreneur** *Mark Rice, MD*
9:30AM – 10:00AM	**Break with Exhibitors & Posters**

Session 2: Insights from Large Database Research
Moderator: Brian Bateman, MD

10:00AM – 10:30AM	**Big Data in OB and OB Anesthesia Research** *Brian Bateman, MD*
10:30AM – 11:00AM	**Statistical Issues in Large Database Research** *Timothy Houle, PhD*
11:00AM – 11:30AM	**Big Data for a Big Pain: The Role of Databases in Perioperative Pain Management** *Karim Ladha, MD, MSc, FRCPC*
11:30AM – 12:00PM	**Panel Discussion**
12:00PM – 1:15PM	**Luncheon**

Session 3: What's in an Outcome: Definitions and Risk Adjustment
Moderator: Avery Tung, MD

1:15PM – 1:45PM	**What Does AQI Think You Should Measure?** *Emily Richardson, MD*
1:45PM – 2:15PM	**Would it Smell as Sweet? The Link Between Definition and Measurement** *Avery Tung, MD*
2:15PM – 2:45PM	**Solving Definitional Issues at STS** *DeLaine Schmitz, MSHL*
2:45PM – 3:15PM	**Panel Discussion**
3:15PM – 3:45PM	**Break with Exhibits & Posters**

Session 4: Research Awards and Presentations
Moderator: Thomas Hemmerling, MD, MSc, DEAA

3:45PM – 4:10PM	**Excellence in Technology Award Presentation**
4:10PM – 4:35PM	**Best Clinical Application Award Presentation**
4:35PM – 5:00PM	**Best of Show Award Presentation**

Friday, January 13, 2017

7:00AM – 8:00AM	**Registration & Continental Breakfast**

Session 5: Technology on the Horizon: Show Us the Evidence on Outcomes and Finances
Moderator: Brian Rothman, MD

8:00AM – 8:30AM	**Improving Perioperative Care: Death, Disability and Digital Records** *Alexander Davey, FRCA*
8:30AM – 9:00AM	**MACRA & MIPS: The Intersection of Quality and Payment** *James Moore, MD*
9:00AM – 9:30AM	**Implementing the Perioperative Surgical Home: Politics, Logistics and Economics** *Brian S. Rothman, MD*
9:30AM – 10:00AM	**Panel Discussion**
10:00AM – 10:30AM	**Break with Exhibits & Posters**

Session 6: STA & FAER Joint Session: Education, Innovation and Technology
Moderator: Larry Chu, MD, MS

FAER
Foundation for Anesthesia
Education and Research

10:30AM – 11:00AM	**Precision Education: The Role of Learning Analytics in Driving Innovation in Medical Education** *Larry Chu, MD, MS*
11:00AM – 11:30AM	**Use of Technology to Enhance Learning: Getting Your Hands Dirty** *Janak Chandrasoma, MD*
11:30AM – 12:00PM	**Evidence Based Teaching and Learning: Is It Practical?** *Viji Kurup, MD*
12:00PM – 12:15PM	**Panel Discussion**
12:15PM – 1:30PM	**STA Business Luncheon and J.S. Gravenstein Award Presentation** *James Philip, MD*

Session 7: Concurrent Workshops

1:30PM – 3:30PM	**Young Researchers Workshop** *Christine Lee, BS Maxime Cannesson, MD, PhD*

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 the use of predictive analytics in health care. The workshop will include a short course on predictive modeling with Python in collaboration with the UC Irvine Data Science Initiative, as well as a discussion on the current status and future of machine learning in medicine.

Friday, January 13, 2017 *continued*

1:30PM – 3:30PM   **Making the Most of Data: Turning the Raw Information into Useful Information**
Ira Hofer, MD, Emily Richardson, MD

The objective of this workshop will be to explore the opportunities and challenges associated with collecting accurate data on your patients and transforming that data into information that can be used to improve care delivery. The workshop will briefly address the overall goals and challenges with collecting data. Then, tasked with collecting data around a specific endpoint, participants will split into two smaller groups: One will discuss specific challenges and strategies associated with collecting data either from AIMS/EMR and the other will discuss how to attack the same endpoint in a practice setting that lacks these resources. At the end the participants will come together to share what they have learned as well as discuss the challenges associated with combining the data from the various sources.

3:30PM – 3:45PM   **Break with Exhibits & Posters**

Session 8: Fresenius Research Recipient Presentations

3:45PM – 4:15PM   **2015 Fresenius Research Recipient Presentation**
Christian Petersen, PhD

4:15PM – 5:00PM   **2016 Fresenius Research Recipient Presentation**
Richard Epstein, MD

5:30PM – 9:00PM   **STA Cocktail Reception**

Saturday, January 14, 2017

7:30AM – 8:30AM   **Registration**

Session 9: STA Engineering Challenge
Moderator: Jeff Mandel, MD, MS

8:30AM – 10:15AM   **Engineering Challenge**
Jeff Mandel, MD, MS

10:15AM – 10:30AM   **Break**

Session 10: Medical Device Innovation and Integration
Moderator: Kirk Shelley, MD, PhD

10:30AM – 11:00AM   **Oxygen Reserve Index: A New Pulse Oximetry Measurement**
Steve Barker, MD, PhD

11:00AM – 11:30AM   **Difficult Airway Algorithm and Rescue Cricothyrotomy - The DAARC and Serious Video Game**
Jessica Feinleib MD, PhD, CHSE

11:30AM –12:00PM   **Non-Invasive Respiratory Volume Monitoring**
Jenny Freeman, MD

12:00PM – 12:30PM   **The Role of the Anesthesiologist in Medical Device Development**
Aymen Alian MD

12:30PM – 1:00PM   **Panel Discussion**

1:00PM   **Adjourn**

INVITED FACULTY

Aymen Alian, MD
Yale University

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

Brian Bateman, MD
Harvard Medical School/ Massachusetts General Hospital

Lara Brewer, PhD
University of Utah

Maxime Cannesson, MD, PhD
University of California, Irvine

Janak Chandrasoma, MD
University of Southern California

Larry Chu, MD, MS
Stanford University

Alexander Davey, FRCA
Northern Ireland Medical Deanery

Jesse Ehrenfeld, MD, MPH
Vanderbilt University

Richard Epstein, MD
Thomas Jefferson University Hospital

Jessica Feinleib MD, PhD, CHSE
Yale University

David Feinstein, MD
Beth Israel Deaconess Medical Center

Jenny Freeman, MD
Respiratory Motion, Inc

Thomas Hemmerling, MD, MSc, DEAA
McGill University

Ira Hofer, MD
Ronald Reagan UCLA Medical Center

Timothy Houle, PhD
Massachusetts General Hospital

Viji Kurup, MD
Yale University

Karim Ladha, MD, MSc, FRCPC
University of Toronto and Toronto General Hospital

Christine Lee, BS
University of California, Irvine

Jeff Mandel, MD, MS
University of Pennsylvania

James Moore, MD
University of California, Los Angeles

Christian Petersen, PhD
British Columbia Children's Hospital

Christopher Quartararo, MD
Winchester Anesthesia Associates

Mark Rice, MD
Vanderbilt University

Emily Richardson, MD
Encompass Medical

Brian S. Rothman, MD
Vanderbilt University President, STA

Norma Sandrock, MD
Beth Israel Deaconess Medical Center

DeLaine Schmitz, MSHL
AQI Executive

Kirk Shelley, MD, PhD
Yale University

Jonathan Tan, MD, MPH
Children's Hospital of Philadelphia

Avery Tung, MD
University of Chicago

Jonathan Wanderer, MD, MPhil
Vanderbilt University Program Chair, STA 2017 Annual Meeting

ONLINE REGISTRATION   www.stahq.org

Online registration accepted until Tuesday, January 3, 2017 – 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 11/15/16	By 12/15/16	After 12/15/16
❏ STA Member Registration *(membership dues must be paid for 2017)*	$475	$500	$575
❏ *Non-Member Registration	$575	$600	$675
❏ 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 **$50**

❏ Spouse/Guest Registration **$325**

❏ 2017 Membership Dues Renewal **$100**

SUBTOTAL:

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 January 3, 2017. After January 3rd 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 **January 3, 2017** will be completely refunded with an administrative fee of $25. **NO REFUNDS WILL BE MADE AFTER JANUARY 3, 2017.**

Questions? Contact Us:

Society for Technology in Anesthesia
6737 W Washington St Ste 4210
Milwaukee, WI 53214
stahq@stahq.org
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