



# INTERFACE

## 2011 Board of Directors

### President

Kirk Shelley, MD, PhD  
kirk.shelley@yale.edu

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George Blike, MD  
george.t.blike@hitchcock.org

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djdoyle@hotmail.com

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keith.ruskin@yale.edu

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david.reich@mountsinai.org

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anserminos@yahoo.ca

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chistina.demur@draeger.com

### At Large

Brian Rothman, MD  
brian.rothman@vanderbilt.edu

### At Large

Joe Orr, PhD  
joe.orr@hsc.utah.edu

### A&A Section Editor

Dwayne Westenskow, PhD  
dwayne.westenskow@hsc.utah.edu

### Annual Meeting Program Chair 2011

Maxime Cannesson, MD  
maxime\_cannesson@hotmail.com

### Annual Meeting Abstract Chair 2011

Jesse Ehrenfeld, MD  
jesse.ehrenfeld@vanderbilt.edu

### Executive Director

Jane Svinicki, CAE  
jane@svinicki.com

### Assistant Executive Director

Annette Schott  
schott@svinicki.com

## 2011 STA Ty Smith Dinner

By Butch Loeb, MD, STA Past President

The Ty Smith STA dinner at the 2011 ASA Annual Meeting in Chicago was delicious and stimulating. On Sunday evening, over sixty STA members and guests gathered at Riva Crabhouse on Chicago's Navy Pier. Friends reunited and newcomers were welcomed while enjoying cocktails and views of the city skyline and Lake Michigan. Following a wonderful seafood dinner, our guest speaker, Dr. Stuart Hameroff, delivered a provocative talk on the nature and mechanisms of consciousness.

The annual dinner is held to honor N. Ty Smith, Professor Emeritus at the University of California in San Diego, a founding member of the Society for Technology in Anesthesia, and its President for the first 5 years. Ty is well known for his research in cardiac physiology, mathematical modeling, and computer simulation in anesthesia. He was a mentor to many of us in the STA and we always look forward to seeing him with his wife, Penelope, at Society meetings and functions. We were sad that he was not able to attend this year's dinner.

This year, the STA was fortunate to have Dr. Stu Hameroff as a speaker. Dr. Hameroff is a professor emeritus at the University of Arizona who has been featured in the movie "What the Bleep to we Know", and the television series "Through the Wormhole" with Morgan Freeman. He began his lecture by tracing mankind's notions about the



Riva, on Chicago's Navy Pier was the location for the 2011 Ty Smith Dinner.

nature of consciousness throughout history. He then discussed why general anesthesia is a good test bed to study mechanisms of consciousness, since anesthesia erases consciousness fairly selectively, sparing non-conscious brain activities.

Dr. Hameroff pointed out that anesthetics act by weak van der Waals forces in hydrophobic sites, as evidenced by the Meyer-Overton theory. He then presented his Orch OR theory of consciousness, which he formulated in 1995 with physicist Roger Penrose. This intriguing theory proposes that intracellular microtubules, the major component of the neuronal cytoskeleton, are the locus of consciousness. It accounts for the apparent conscious behavior of lower life forms, such as worms, and even

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single-cell organisms. The Penrose-Hameroff Orch OR theory proposes that quantum states in microtubule hydrophobic electron clouds provide the enormous processing power required for consciousness, which cannot be accomplished now by even our most advanced computing machines. Dr. Hameroff presented experimental evidence for this theory, including some of his most recent work that models how halothane binds to hydrophobic grooves in the tubulin molecule. Toward the end of the lecture he reviewed some new reports where a burst of coherent

EEG activity was observed in patients just prior to their death. He challenged the audience to consider whether this could be a recording of the “white light” that has been reported after near-death experiences.

For more information on these topics, and to download the slides from this lecture, visit [www.quantumconsciousness.org](http://www.quantumconsciousness.org).



*Dr. Robert "Butch" Loeb introduces Dr. Stewart Hammeroff.*



*Dr. Hammeroff was presented with a plaque at the conclusion of his presentation.*



## STA President's Message

By Kirk Shelley, MD, PhD, STA President

As has been the tradition of the Society, we held a dinner and presentation in Ty Smith's honor at this year's ASA annual meeting. Dr. Stuart Hameroff, of the University of Arizona, gave a fascinating talk on the potential role of quantum states of microtubules as the source of consciousness. As those of you in attendance know, I engaged the speaker at the first opportunity which lead to a spirited discussion. This presentation continued a long history of non-clinical talks at the ASA which have been quite thought provoking. The first serious talk I ever heard on nano-technology was given at one of these dinners by Chris Wiley of Dartmouth. My understanding and appreciation of its potential was significantly changed that evening. I remember lectures about the Hoover Dam and even Ty Smith himself describing the early history of computer technology and its impact on medicine.

Just as a reminder, we are having our annual meeting January 18-21, 2012 at the Four Seasons in Palm Beach, FL. The program put together by Maxime Cannesson promises to be quite simulating. I know it is covering topics near and dear to my heart including closed loop anesthesia, non-invasive hemodynamic monitoring and automated anesthesia. It will be featuring a first of its kind joint session with FAER, examining translational medical research. For those of us interested in anesthesia technology this is a watershed event recognizing the importance of this type of work.

Finally, I would like to welcome George Blike as our incoming president. I have known George for many years having first met him through the STA. He is a good friend and a significant innovator in his own right. I know he cares deeply about our society and will do a great job.

**Vote for the New Board of Directors at [stahq.org](http://stahq.org)**  
**Voting opens December 20, 2011**





## Report from the Executive Director

By Jane A. Svinicki, CAE

### In Too Deep? Saying yes to Adventure, then having second thoughts

**D**id you ever notice that a year before you go somewhere, it is a lot easier to say, “Yeah, I will travel to Africa - cool.”

When you are a couple days from leaving only then do you ask yourself –“How crazy am I?” Especially when you learn there are half a million refugees on the Kenya border, starving and desperate, and you are going to Kenya too, only to be driven around like some grand poobah in an air-conditioned jeep to look at animals.

When I told people I was going to Africa on vacation, they looked concerned and told me to be careful and bring the phone number of the American Embassy. Sometimes they would say, “you are really adventurous.” No one said, “wish I was going with you.”

It’s a long, long way from here to there. The Atlanta to Johannesburg, South Africa flight alone is almost 16 hours. I was on three overnight flights during my three week trip. Lots of opportunity to develop deep vein thrombosis (deadly blood clots).

I had to get four shots (including yellow fever for which they give you the live virus to develop immunity), malaria pills and Cipro, for that inevitable stomach upset, just to be allowed onto the continent. As the doctor was giving me the yellow fever shot she told me, “about one in ten people go to bed for a day or two from this shot.” I wasn’t even in Africa yet and I was potentially getting sick.

As the last week passed before I left, I learned about the African’s relaxed attitude about time. If you cannot get the flight back from Victoria Falls one day...just go the next day! It will work out.



My travel mantra was, as always, “Be flexible, be polite and be generous.” I was on vacation, time to relax and enjoy. Sometimes I had to spend some money to get out of a problem, I spent it and kept quiet. People in the third world deserve better than petty complaints about a \$50 entry visa to a country where that is a month’s wage.

When I originally said yes to going to Africa, I knew it would be a trip outside my comfort zone, way outside. And because of that, it would help me grow as a person. I would meet some new people, see some great stuff and learn more about the world.

What does this have to do with being an Executive Director of an association? It is exposure to the new and different that changes perspective, changes lives and brings about innovation. Innovation is an overused buzzword right now, but new experiences get the mind working in different ways out of the routine you may have been stuck in, to reach your goals.

So you don’t have to go to Africa to change your world, but you will have to go outside your comfort zone. Trust me, it will be thrilling.

Jane A. Svinicki, CAE  
Executive Director

## 2012 STA Annual Meeting

By Maxime Cannesson, MD, PhD

As a resident and, later on, as an attending anesthesiologist, I have always been amazed by how much anesthesiology residents are taught about anatomy, physiology, and pharmacology, and by how little they are taught about technology. This observation was even more striking to me considering that most of our decision making as anesthesiologists in an operating room is based on a technological interface.

The 2012 STA Annual meeting is focusing on what are probably some of the most important challenges facing technology for the future. A strong emphasis will be made on patients' safety and on how new technologies applied to Anesthesia can lead to a safer environment. This includes new perspectives for automated anesthesia, development of non invasive hemodynamic monitors and how they can improve patients' outcome, intelligent monitoring, and AIMS.

Also, since medical technologies are, as any other technologies, impacting our environment, we will discuss the existing opportunities to make our practice more environmental friendly, because this may eventually impact public health as a whole.

Finally, we will have the first joint FAER/STA session. This is an outstanding opportunity to emphasize the importance of teaching the basis of technology to the future generation of anesthesiologists. Technology is a second nature to most of our residents and medical students. They literally live with computers, internet, and social networks. Promoting education and research focusing on technology and anesthesia has to be a priority for these new generations.

This has been a great privilege to put together the program of the 2012 STA Annual Meeting and I would like to thank all the people on the Board of Directors of the STA for giving me such an opportunity. I also want to thank Annette Schott and Jane Svinicki for their invaluable help and patience during this process, all the moderators and speakers who accepted to be part of the program, as well as all our sponsors for helping make this event happen.

And of course, I thank you all for attending this meeting!



Maxime Cannesson, MD, PhD  
Chairman of the 2012 STA Annual Meeting

# 2012 Annual Meeting JOIN US!

January 18-21, 2012  
**Four Seasons Resort & Spa**  
Palm Beach, FL

Registration Now Open  
**Please Visit [www.stahq.org](http://www.stahq.org)**  
**for Additional Details**





Featuring a Joint  
Session with the  
**Foundation for  
Anesthesia  
Education and  
Research**

**Society for Technology in Anesthesia**

**2012  
Annual Meeting**

**January 18-21, 2012**  
Four Seasons Resort & Spa  
Palm Beach, Florida



# Meeting Accreditation Information

## Program Objectives

1. Examine and identify problems and potential solutions in the anesthesia work space with a special emphasis on exploring new developments in drug delivery, information management and patient monitoring.
2. Identify and explore key factors required for effective translational medical research, including management of conflict of interest issues and implementation of successful strategies to develop technologies.
3. Examine and identify barriers and potential solutions in order to bring new and safe technologies to the clinical practice with a special emphasis on patient monitoring, information management, and patient safety.
4. Explore opportunities to advance and enhance environmentally responsible practices within anesthesia care.
5. Explore opportunities to advance safe automated anesthesia systems in order to improve patients safety.

## Target Audience

This program is designed for physicians, engineers or other practitioners in the field of anesthesia seeking an update on the current state of anesthesia technology.

## Practice Gaps

The 2012 STA Annual Meeting will address the following practice gaps:

- The implementation of the new technology in rapidly changing work environment to include electronic medical records, new monitoring equipment and devices.
- The use of new non invasive technologies for hemodynamic monitoring and management in order to decrease the incidence of complications related to invasive technologies.
- Lower the impact of medical industry and of anesthesiology practice on the environment
- Understand how automated anesthesia can improve outcomes and patient safety.

## Accreditation Information

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the International Anesthesia Research Society (IARS) and the Society for Technology in Anesthesia (STA). The International Anesthesia Research Society (IARS) is an accredited body of the Accreditation Council for Continuing Medical Education (ACCME). The International Anesthesia Research Society (IARS) designates this educational activity for AMA PRA Category 1 Credits.™ Physicians should only claim credit commensurate with the extent of their participation in the activity.

## Overall Goal Statement

The goal of this program is to provide theoretical and practical information on various technologies within the field of clinical anesthesia.

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### DISCLOSURE

It is the policy of the IARS to comply with the ACCME standards for commercial support of CME. Planning Committee members and related staff disclosures must be on file annually with disclosures made available on program materials. Faculty participating in sponsored or jointly sponsored programs by IARS are required to disclose to the program audience any real or apparent financial relationships with commercial interests related to the content of their presentation(s). Faculty also are responsible for disclosing any discussion of off-label or investigational use of a product.

# Pre-Conference Session

## Anesthesia Information Management System Workshop (A.I.M.S.)

Wednesday January 18, 2012

1300 – 1345      **The Ideal A.I.M.S. System**  
David Reich, MD

1345 – 1630      **Interactive Session with A.I.M.S. Users**

Session will feature clinicians and system users that have experience with a specific system. The clinicians will speak to the process of system implementation, integration and modifications.

**COST TO ATTEND AIMS SESSION ONLY \$225.00**

**ADD ON TO FULL CONFERENCE REGISTRATION \$75.00**

**SEPARATE REGISTRATION REQUIRED TO ATTEND THIS EVENT**

# Schedule of Events

## Wednesday, January 18, 2012

- 0700 - 0800 **Essentials Registration & Continental Breakfast**
- 0800 - 1200 **\*Anesthesia Essentials Course 101**  
*Norma Sandrock, MD*  
*\* For Industry*
- 0800 - 1700 **Exhibitor Registration & Set-Up**
- 1200 - 1315 **Essentials & STA Board of Directors Lunch**
- 1315 - 1700 **A.I.M.S. Workshop**  
*(Additional Registration Required)*  
*David Reich, MD*
- 1800 - 1930 **Registration & Opening Reception**

## Thursday, January 19, 2012

- 0700 - 0800 **Registration & Continental Breakfast**
- 0800 - 0815 **Welcome Address**  
*Kirk Shelley, MD, PhD*  
*Maxime Cannesson, MD, PhD*

### Session 1: Technology & Safety

- 0815 - 0930 **Keynote Address**  
*Richard Dutton, MD*  
*Anesthesia Quality Institute*
- 0930 - 1000 **Break with Exhibitors**

### Session 2: Closed Loop Anesthesia Management: Here, There & Everywhere

*Dwayne Westenskow, MD - Moderator*

- 1000 - 1030 **Closed Loop System for Depth of Anesthesia**  
*Ngai Liu, MD, PhD*
- 1030 - 1100 **Closed Loop Ventilation**  
*Jürgen Manigel, PhD*
- 1100 - 1130 **Closed Hemodynamic Management**  
*Joseph Rinehart, MD*
- 1130 - 1200 **Reinforced Learning**  
*Anthony Doufas, MD, PhD*
- 1200 - 1215 **Panel Discussion**
- 1215 - 1330 **Lunch**  
*Presentation By: John Taft, MD*

## JOINT SESSION



FOUNDATION FOR ANESTHESIA  
EDUCATION AND RESEARCH

### Translational Medical Research

*George Blike, MD - Moderator*

- 1330 - 1400 **Translational Medical Research and Scientific Integrity: Positive & Negative Academic/Industry Relationships**  
*Debra Schwinn, MD, PhD*
- 1400 - 1430 **Translational Medical Research: Why Industry Needs Physicians**  
*Bruce Gingles*
- 1430 - 1500 **A Case Study in Successful TMR: Technology Development of University Intellectual Property via New Company Formation**  
*Theodore Stanley, MD*
- 1500 - 1530 **A Case Study in Successful TMR: Technology Development of University Intellectual Property via Licensing**  
*Richard Melker, MD, PhD*
- 1530 - 1600 **Panel Discussion**
- 1600 - 1615 **Break with Exhibitors**

### Session 4: Research Awards & Presentations

*Thomas Hemmerling, MD - Moderator*

- 1615 - 1800 **Research Awards & Presentation**

## Friday, January 20, 2012

- 0715 - 0815 **Registration & Continental Breakfast**

### Session 5: Non-Invasive Hemodynamic Monitoring

*Dr. Steven Barker - Moderator*

- 0815 - 0845 **Non Invasive Arterial Pressure Monitoring**  
*Joe Settle, MD*
- 0845 - 0915 **Non Invasive Cardiac Output Monitoring**  
*Steven Barker, MD, PhD*
- 0915 - 0945 **Non Invasive Fluid Responsiveness Evaluation**  
*Maxime Cannesson, MD, PhD*
- 0945 - 1000 **Panel Discussion**
- 1000 - 1030 **Break with Exhibitors & Posters**

# Schedule of Events Continued

## Session 6: New Challenges Facing Technologies in Healthcare

Charlotte Bell, MD - Moderator

- 1030 – 1100 **Institutional and System Barriers to Improving Sustainability in the Perioperative Area: How to Address & Overcome Them?**  
*Kate Huncke, MD*
- 1100 – 1130 **Facilities: How to Address Environmental Issues in Facility Planning on the Environment, Patient and Provider Health & Safety**  
*Charlotte Bell, MD*
- 1130 – 1200 **How To Decide What New Technologies Are Needed that Will Address the All-Important Triumvirate of Patient Safety, Environmental Sustainability & Cost Effectiveness?**  
*Brian Rothman, MD*
- 1200 – 1215 **Panel Discussion**
- 1215 – 1330 **STA Business Luncheon & Awards**  
*Kirk Shelley, MD, PhD*
- 1330 – 1530

## Session 7: Concurrent Workshops

- 1) Simulation Workshop**  
*David Feinstein, MD*
- 2) Hemodynamic Monitoring Workshop**  
*Kirk Shelley, MD, PhD & Maxime Cannesson, MD, PhD*
- 3) Anesthesia Machine Workshop**  
*Julian Goldman, MD*

1530 – 1700

## Session 8: Concurrent Workshops

- 1) Engineering Contest**  
*Jeff Mandel, MD*
- 2) MPOG Technical Architecture Workshop**  
*Sachin Kheterpal, MD*

1800 – 2130

## Beach Party & Dinner

*\*included in Attendee Registration Fee*



## Saturday, January 21, 2012

0730 – 0830

## Registration & Continental Breakfast

## Session 9: Anesthesia Information Management Systems (A.I.M.S.)

*Mohamed Rehman, MD - Moderator*

0830 – 0900

## Data Driven Quality Improvement in an Anesthesia Department

*David Reich, MD*

0900 – 0930

## Data Driven Quality Improvement in a Hospital

*Dean Kurth, MD*

0930 – 1000

## Using Aggregated AIMS Data to Generate Benchmarks: Results from the National Anesthesia Clinical Outcomes Registry

*Richard Dutton, MD*

1000 – 1015

## Panel Discussion

1015 – 1030

## Break

## Session 10: Cutting Edge Technologies in Healthcare

*John Doyle, MD, PhD & Kirk Shelley, MD, PhD - Moderators*

1030 – 1100

## Robotics in Anesthesia & Airway Management: What Does the Future Hold?

*Patrick Tighe, MD*

1100 – 1130

## Artificial Intelligence in Clinical Decision Support & Enhanced Physiological Monitoring

*Mark Ansermino, MBBCh*

1130 – 1200

## Path Towards Automated Anesthesia: Exploring the Future

*Thomas Hemmerling, MD*

1200 – 1215

## Panel Discussion

1215

## Adjourn





## **FOUR SEASONS RESORT** *Palm Beach*

**Four Seasons Resort & Spa**  
2800 South Ocean Boulevard  
Palm Beach, Florida

**\$255.00 STA Group Rate Available Through  
December 15, 2011**

**(\*No Resort or Internet Usage Fee)**

All Reservations must be made individually through the hotel's reservation department by calling 561-582-2800.