

INTERFACE

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Photo: James Szocik, MD

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BOARD OF DIRECTORS 2007 - CANDIDATE STATEMENTS

STA President Candidate David M. Feinstein, MD

My first experience with the STA came in 1990 as an anesthesia resident when I was asked by Alan Grogono (Grog) to serve on the STA education committee. Since then I have enjoyed my involvement with this wonderful society in many capacities. In 1998 I organized the first simulation workshops for the STA Annual Meeting, was Course Director for both the 2003 STA Annual Meeting and the 2006 CIA/AIMS Expo Meeting. I have also been fortunate to serve the STA as membership chair, at-large Board Member and currently as Treasurer.

Over the past few years I have heard many in the STA question the purpose of our society. For me this question is easily answered. As newer technologies continue to pervade our practice, it is now more important than ever that the STA continue its leadership role in helping to shape technology advancement and to bring understanding to those affected by its development and use.

As simulation made its way into healthcare, the STA embraced the concept and fostered its development in our annual meetings. These efforts eventually spawned the new simulation society. In a similar fashion, anesthesia information management systems (AIMS) are finally starting to permeate the practice of anesthesia. Again, the STA is uniquely positioned to advance this area of technology. Airway management, imaging, education and physiologic monitoring technologies also beg our continued attention as advancements are made in these areas.

The great news is that the STA has a definite purpose and anyone, on any level, can get involved. It is a society that offers something for everyone. From the technical to non-technical, clinical to non-clinical and novice to expert, all of our STA members enjoy meeting, sharing and learning together through many venues.

I am honored to be considered as a nominee for president of the STA. If elected, I promise to continue my efforts to expand our clinical and industry membership and will continue to encourage activities that help share an understanding of these technologies and their implication on the practice of anesthesia. I would appreciate your vote in the upcoming election.

STA President Candidate Michael O'Reilly, MD

I am deeply honored to be nominated as a candidate for the president of the Society for Technology in Anesthesia. I must say David Feinstein would be a great person to lead STA. He has been

actively involved and a significant contributor for many years. Why would I run against someone with more experience, better qualifications and a more charming disposition? Apparently there must be two candidates and what better way to serve my favorite society than to sacrifice my self-esteem?

It did occur to me, though, that participating in this election would give me an opportunity to articulate a vision for what I think STA should become over the next ten years.

STA was formed and grew at a time when monitoring technology was advancing rapidly. Automated blood pressure measurements, pulmonary artery catheters, pulse oximetry and capnography became available during a short period of time. STA played a key role in stimulating the evaluation and adoption of these technologies. As we enter the new millennium it becomes apparent that future advances in the science of anesthesiology will be related to how we use the data we have to provide information at the point of care and how we use this information to create new knowledge. STA can stimulate the adoption of these technologies too by addressing the following interrelated opportunities:

Outcomes: With the advent of anesthesia information systems, we will be able to make the connection between what we do and what happens to the patient. Anesthesiology has been held up as THE medical specialty that has done the most to advance patient safety, but this is because we dramatically reduced our clean-kill rate. It is likely that there are many aspects of anesthesia care that have a significant effect on surgical outcomes. One has only to look at the National Surgical Quality Improvement Project reports. It is apparent there are wide differences in surgical outcomes that are not accounted for by the patient risk factors. Clearly the quality of surgical care, of perioperative care, is closely related to the quality of anesthesia care. Recent analysis shows that hypotension is related to surgical complications, for example, infections. This has important implications for our specialty, particularly as it relates to the use of physician extenders and the supervision of anesthesia care providers. STA should provide the leadership to support and coordinate the research agenda and to provide a forum to report results.

Pay for Performance (P4P): It is here that institutions have real money at risk. Many of the pay for performance initiatives are directly impacted by anesthesiology (prophylactic antibiotics, DVT prophylaxis, perioperative beta blockers, euglycemia and normothermia) and information technology provides the tools to help implement guidelines, report our compliance with guidelines, [Cont. on page 3]

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STA President Candidate (Cont. from previous page) Michael O'Reilly, MD

and evaluate the effectiveness of guidelines. Our society should help disseminate information on the potential tools to meet this P4P challenge to the broad anesthesia community.

Patient Safety: The modern operating room has many devices, each with independent displays and alarms. We all know there is a better way to do this. The techniques and technologies to solve this problem are well established and have been effectively applied in the aviation and nuclear power industries. Moreover, medication administration is associated with many errors and should be included in the reengineering of the anesthesia cockpit. Anesthesiology has a well established history of implementing technology in the operating room that becomes adopted in the critical care unit. This market is poised for a disruptive technology; we must solve small problems like morbidity associated with conscious sedation and aggressive analgesia. Large companies can not provide the innovation required and smaller companies do not have all the required pieces. STA can coordinate the expertise required.

Clinical Content and Standards: All vendors need clinical content. What elements constitute a complete anesthesia preoperative evaluation, intraoperative record or post op visit? Every vendor struggles with implementation because they have to reinvent the content with each implementation. Some anesthesia organization needs to step up and establish standards. STA should collaborate with the Anesthesia Patient Safety Foundation and the Data Dictionary Task force to establish standard content. Another important contribution to patient safety would be to provide a reference work that could be adopted by any vendor of anesthesia information systems or other devices. This material should include anesthetic considerations for various co-morbidities and surgical procedures as well as treatment algorithms for the management of critical incidents. This content will be an important component of clinical decision support systems. This would be a tremendous service to vendors; they do not want to distribute content from any one institution and they can not develop the content themselves. Among us, we likely have the content. This is a readily doable way for STA to collaborate with and provide value to the vendors, a traditional hallmark of our society.

In addition to the above, there are very important ways STA can act as an organization to advance an agenda. We can coordinate our Requests for Proposals (RFP) and specify important technology in our requirements. We can work with customers and vendors together to arrive at sensible requirements.

We can also act as a group to enhance competition among the vendors while providing them with our collective insight to make their products better. Vendors truly *need* the carrot and stick approach; they must be lead in the right direction and they must or forced to do the right thing.

Finally, STA should establish itself as a brand; as THE source for information about technology as it relates to not just anesthesia in the operating room, but conscious sedation, pain management and operating room management.

The current interest in Anesthesia Information Systems and patient safety provide an outstanding opportunity for STA to reinvent itself. I look forward to working with David Feinstein and the rest of the STA leadership to realize an aggressive vision for our Society.

STA Candidate at Large Andy Stasic, M.D.

As a Pediatric Anesthesiologist, I have always had a keen interest in technology and monitoring. I have always been one of the first to utilize new monitors and equipment to determine if they are indeed helpful or a hindrance.

In similar fashion, I have been involved in Indiana University's Human Patient Simulator Program from the outset. I firmly believe that simulation is an effective teaching tool for nurses, medical students, anesthesia residents and older practitioners. Simulation facilitates the experience of many rare but deadly conditions without placing any patient at risk. However, many students are intimidated by this technology and, therefore, do not derive the maximum benefit from the scenarios. My approach to leading a simulation scenario has always been to put the students at ease and to provide guidance to their endeavors. In this respect, I intervene between the technology and the student to make as real-life an experience as I am able.

My involvement with the STA has grown over the years. When I discovered the STA, I had finally found a group of individuals who shared my interest in new and interesting technologies. Furthermore, every time I have attended the annual ASA meeting, I made a special effort to attend all of the STA's functions; especially the STA Dinner. I have been impressed by the wide variety of guest speakers.

After attending Jerry Dorsch's STA dinner presentation this past year, I realized that STA has an important and vital role in the development of new anesthetic technology. The STA has members in industry as well as academics and fosters communication and dialogue between the two groups. [Cont. on page 4]

BOARD OF DIRECTORS 2007 - CANDIDATE STATEMENTS (Cont.)

STA Candidate At Large (Cont. from previous page) Andy Stasic, MD

As a result, the STA is in a position to facilitate industries to development of the tools and technology that we, practicing anesthesiologists, need to take better care of our patients. Although we presently enjoy the best monitoring technology ever, there is still much room for improvement. I am interested in exploring new areas of research in technology to provide a better understanding of the anesthetic process. I cannot think of a better organization than the STA to serve as a Board Member to advance our specialty.

think the role of STA as a mechanism for exchanging ideas and information about the role of technology in anesthesia will, if anything, increase. I believe we should remain true to our original focus on the wide range of technological innovations coming from the clinic, research, and industry. Our place is at the cutting edge, and there we should stay. I realize that there are practical reasons to be concerned about membership numbers, meeting attendance, and journal submissions; but I'm convinced that our most effective strategy is to embrace the broadest range of new technology.

STA Candidate At Large Christopher Wiley, MD

I think I became a geek the day they installed the first rotary dial telephone in my home. I was probably 6 or 7 years old, and I remember being dazzled by the prospect of being connected with someone by dialing a series of numbers instead of speaking with an operator. A few years later I built a simple electronic calculator for a science fair project, but, as the son of a physician, had always planned on becoming a doctor rather than an engineer. As an undergraduate at Dartmouth in the early 70's, I was one of the few college students at that time with access to a timesharing computer system with a BASIC interpreter with which to program it. I was hooked, but I remained faithful to my aspirations in medicine.

It was doubtless fated that I would end up in anesthesiology, arguably the most techno-centric of specialties: and medical school and residency at Stanford allowed me to indulge my computer interests both at work and at home. Naturally, I attended one of the earliest "Computers in Anesthesia" meetings (Biloxi, MS) and joined STA not long after that. Over the years I've greatly enjoyed my association with STA along with the opportunity to speak on some of my esoteric interests such as nanotechnology and distributed computing as well as co-edit our newsletter, Interface, for a time along with George Blike. It's been a particular pleasure to meet likeminded souls in both anesthesiology and industry who come to our Society literally from around the world. Thus, it's a real honor for me to be nominated for a Member-at-Large position on the STA Board of Directors.

Technology in general and medical technology in particular, has been progressing at a rapid and everaccelerating rate for my entire life. I can now reminisce about rotary phones and the Dartmouth Timesharing System while holding in my hand a cellphone/PDA which can connect me to a worldwide communication and computing network from virtually anywhere. Greater changes lie ahead. Therefore, I

STA International Candidate at Large Philippe Mayoungou, MD

It's my pleasure and honor to accept my nomination at the STA Board of Directors as International Member at Large. I have always appreciated the scientific levels, the friendly atmosphere of the STA and Computer in Anesthesia meetings. I've learned a lot from these meetings.

I am French anaesthesiologist, member of the ESCTAIC (European Society for Computing and Technology in Anaesthesia and Intensive Care), chairman and founding member of the "Societe Francophone pour l'Informatique et le Monitorage en Anesthesie Reanimation - SFIMAR" a francophone society which has similar goals as the STA. I have organised several meetings for this society and I have been involved in the organisation of meetings and tutorials about technological aspects of Anesthesiology for the French anesthesiologists with SFIMAR or the French national society of Anesthesia (SFAR). The SFIMAR organises also and improves contacts between anesthesiologists and engineers involved in anesthesia and biomedical technology in France.

At the era of globalisation I do believe that close cooperation between Societies is also essential. The SFIMAR already had the opportunity to appreciate STA collaboration with the participation of Julian Goldman at the last Joint ESCTAIC- SFIMAR meeting in Toulouse (France). In the Board of STA, I'll do my best to perpetuate this spirit of collaboration and friendship.

STA International at Large Candidate Hanne Storm MD.PhD.

I have for the last 6 years developed medical device and intellectual property rights to be able to use emotional sweating or changes in skin conductance as an objective and exact pain monitor or "Pain Detector". We have used this equipment that is directly associated to the sympathetic nerve [Cont. on page 5]

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STA International at Large Candidate
Hanne Storm MD.PhD. (Cont. from previous page)
system, on patients in anaesthesia, intensive care
units, post operative units and in departments for
neonatology. The "Pain Detector" is more sensitive and
specific than blood pressure and heart rate to monitor
pain/noxious stimuli and is not influenced from blood
circulatory changes/diseases (acetyl choline acts on
muscarine receptors). To monitor chronic pain patients
and pain at animals in anaesthesia, we have ongoing
research projects.

When I first participated at the STA, I felt I was at the most significant conference at the year for me in my role in research and development of the "Pain detector". Both meeting the industry and researchers developing medical technology equipment in anaesthesia. I understood that this conference is unique in its collaborative nature between industry and medical research leaders in anaesthesia. This collaborative nature may result in new solutions and medical devices for the future. Especially for me, the closed loop delivering of anaesthesia is important. I would be very positive to participate in the development of these closed loop systems, both as my daily work and as a board member of the STA. There are many more systemic challenges in anaesthesia and critical care that may develop into needed medical devices in the future. I would be privileged to serve STA, and may hopefully contribute in this development.



Dear VAM Users: Sem Lampotang, MD

Virtual Anesthesia Machine (VAM) web site: http://vam.anest.ufl.edu

Topics in this email:

- 1. Free coronary circulation model
- Free hosting of simulations created by other parties
- New University of Florida Transparent Reality (TR) Simulation website
- 4. New Wiki section http://tr.anest.ufl.edu/wiki
- Simulations of propofol and fospropofol (GPI 15715) pharmacokinetics
- 6. Univ. of Florida Winter Anesthesia Conference,

Snowmass Village, Colorado, March 10 - 16, 2007 http://www.anest.ufl.edu/conference/index.html

- 1. A model of coronary circulation developed by JH van Oostrom, S Kentgens, JEW Beneken and JS Gravenstein with funding provided in part by the I Heermann Anesthesia Foundation is now available free of charge at http://tr.anest.ufl.edu/simulations/cv/ This Java simulation might take some time to load -please be patient while the screen looks blank.
- 2. The Virtual Anesthesia Machine project is entering into a collaborative stage where content from developers outside the VAM team and the University of Florida are hosted and maintained on the VAM web site. We invite you to share simulations that you may have developed with your fellow VAM users. What's in it for you? Among other benefits, your simulation (which will be credited to you and your institution) will be viewed by the more than 28,000 registered VAM users (5 million hits/yr; about 650 VISITORS per DAY). We will provide statistics about the visits to your simulation as well as setting up your simulation so that it cannot be downloaded and copied without your permission. An example of shared material and how credit is given to the developer and the institution is at http://vam.anest.ufl.edu/members/preusecheck/help.swf. To share simulations, contact Sem Lampotang.
- 3. The Virtual Anesthesia Machine (VAM) web site has outgrown its name as we have diversified our simulation portfolio into different areas such as dialysis machines, airway devices, hemostasis, pharmacokinetics, health literacy, drug compliance, etc. Over the next few months, we will be phasing in the UF transparent reality (TR) simulation web site http://tr.anest.ufl.edu so that the web site name and URL are more representative of the diversity of the contents.
- 4. Along the same collaborative theme, we now have a wiki area at http://tr.anest.ufl.edu/wiki where we invite all VAM users to contribute by creating pages related to the different simulations on the VAM web site. What is a wiki? It is a web page that anyone can edit, after registering with the wiki. Wikipedia is an example of a wiki.
- 5. We are completing simulations of propofol (3 compartment PK model) and fospropofol (5 compartment PK model). These simulations will be featured as the simulation of the week in the coming weeks. http://vam.anest.ufl.edu/simulationoftheweek.php
- 6. The UF Department of Anesthesiology is holding a Winter Anesthesia Conference at Snowmass Village, Colorado, USA, March 10 16, 2007.

For registration and further details go to http://www.anest.ufl.edu/conference/index.html
For instructors, supplemental simulations are available, for a fee, in the VAM Instructor Area – see

http://vam.anest.ufl.edu/instructorcontent.html

The Virtual Anesthesia Machine http://vam.anest.ufl.edu/instructorsims/simulation



BLOG LOG

RFID Improves Delivery for Bags of Blood



As radio frequency identification tags get cheaper, they'll do the work that barcodes have traditionally done. Texas Instruments has crossed the border to help Mississippi Blood Services, utilizing RFID tags to keep better track of the inventory, making them safer for distribution and use at hospital. Of interest, the technology had to be adapted to work in a blood-bag environment:

"Challenges in implementing an RFID system on liquid blood products include both the plasma content and -30 degree Centigrade storage temperature required for preservation purposes. The content of the blood bags creates a dampening effect on the radio frequency signals, causing the resonant frequency to degrade. Special RFID tag technologies are needed for accurate and reliable performance. Using its integrated chip-to-inlay manufacturing capabilities, TI's laser tuned each inlay so that the RFID labels operated at 13.56 MHz, the optimal frequency for this application, while affixed to the bags."

More from Texas Instruments RFID - http://www.morerfid.com/details.php?subdetail=Report-8action=details&report_id=2039&display=RFID

Acoustic Sensors Make Surfaces Interactive

November 2006 NewScientist.com news service Tom Simonite

A series of acoustic sensors that turn any surface into a touch-sensitive computer interface have been developed by European researchers.

Two or more sensors are attached around the edges of the surface. These pinpoint the position of a finger, or another touching object, by tracking minute vibrations. This allows them to create a virtual touchpad, or keyboard, on any table or wall.

The system, called Tai-Chi (Tangible Acoustic Interfaces for Computer-Human Interaction), was developed by researchers from Switzerland, Italy, Germany, France and the UK. "We have made a system that can give any object, even a 3D one, a sense of touch," says Ming Yang, an engineer at Cardiff University, UK, who is coordinating the project.

A video produced by the researchers shows four sensors attached to a flat, vertical surface, being used to trace a researcher's finger (4.6MB, wmv format). Another video shows a simple interactive instrument developed using the system. The sensors were also used to create an interactive globe that accesses geographical information on a computer screen when the user touches different regions.

'Sonar' tracking

"One advantage of the system is that for little cost you can have a much larger touch-sensitive area," says Yang. "The whole surface of your desk could become your keyboard and mouse-pad."

Tai-Chi uses tiny piezoelectric sensors to sense surface vibrations. The sensors are connected to a desktop computer loaded with software developed by the team and the system can track up to two objects at once, in one of two ways.

One method involves measuring differences in the amount of time vibrations take to arrive at two or three different sensors - a similar approach to sonar. Using this method any surface can be made touch sensitive simply by attaching the sensors.

The other method requires just one sensor and can actually be more accurate - to within just a few millimeters. But this method requires the calibration of the system beforehand, so that it recognizes the vibrations caused by contact at different points on the surface. It then uses a database of vibration "fingerprints" to identify the point of contact.

Hygiene

Workplaces in which hygiene is critical, such as hospitals, could particularly benefit from Tai-Chi, says Wang. "Keyboards are very difficult to keep clean and can harbor infection," he explains. "We could have a keyboard drawn onto the desks that would work perfectly and could be disinfected [Cont. on page 7]

Acoustic Sensors Make Surfaces Interactive (Cont.)

much more easily."

William Harwin, a haptic interfaces researcher at Reading University, UK, thinks Tai-Chi has promise. "It is a very clever idea," he told New Scientist. "The technology is a neat and relatively simple solution to making ordinary objects touch sensitive."

But Harwin adds that users might not find it easy to switch from a normal keyboard to simply tapping on their desk. "People expect a degree of feedback from pushing buttons and switches," Harwin explains. "It is important in giving people a sense of quality."

Related Articles

Robot with 'human soul' explores remotely http://www.newscientisttechnology.com/article/dn10635 21 November 2006

Tactile passwords could stop ATM 'shoulder-surfing' http://www.newscientisttechnology.com/article/dn10248 06 October 2006

Gadgets get the feel of the tactile world http://www.newscientisttechnology.com/article/mg19125606.000 14 July 2006

Weblinks

Tai-Chi, Cardiff University, UK http://www.taichi.cf.ac.uk/

Interactive Systems Research Group, Reading University, UK http://www.isrg.reading.ac.uk/



STA Annual Meeting January 17 – 20, 2007 Rosen Plaza Hotel Orlando, Fl

http://www.anestech.org/meetings_staannual.htm

Meeting Topics Include:

- Technical Problems in Anesthesia: Progress & Identification
- Update on Interoperability in Healthcare
- Cardiac Output Monitoring: Is Invasiveness the only Obstacle?
- Emerging Technologies in the Operating Room of the Future: An Overview
- RFID, VOIP, Ultrasound Indoor Positioning, Hands-on demos, Show & Tell
- AIMS Systems: Pitfalls of Implementation for Customers and Vendors
- Debate: Regulatory Status of AIMS

NEW - Satellite Symposium - Introduction to Anesthesiology for Engineers and Marketers

This is a satellite session to be held on Wednesday, January 17, just before the start of the annual meeting. The course will be taught by experienced anesthesiologists and is targeted towards corporate members who may be new to anesthesia and would just like a concise overview of the specialty and an opportunity to ask questions in a non-threatening (non-sales) environment. The registration fee to attend this session is \$150. The session will run from 8:00 a.m. to 5 p.m.

STA Dinner

Sleuths Mystery Dinner Show - An evening of fun and intrigue!

Registration and Hotel Information

Please see the provided website for more information.

Hard at Work

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STA Education Committee Virtual Office

STA Education Committee is please to announce the launching of the STA Education Committee Virtual Office, with an online presence at

http://staeducation.homestead.com

At our virtual office you will find the following documents:

COMMITTEE MEMBERSHIP COMMITTEE NOTES CURRICULUM PROJECT NOTES INTERESTING PAPERS

In addition, we have posted some draft PowerPoint teaching files for critical review. These are:

Introduction to the Anesthesia Machine Patient Controlled Analgesia Safety Issues A critique of Anesthesia Technology

All STA members are invited to make suggestions and comments to help improve this concept. We are particularly interested in getting constructive feedback regarding the PowerPoint teaching files.

Respectfully Submitted,

D.John Doyle MD PhD FRCPC Chairman, Education Committee, STA Email: didoyle@hotmail.com

LET US HEAR FROM YOU!

The Editor, Interface
OR
Send Email to:
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What professional news would you like to share? Please let us know about your job description, new degrees, promotions, research, teaching, awards, etc. We are also interested in news about your life away from work: your family life, organizations you belong to, hobbies, travel adventures, etc.

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The Society

The Society for Technology in Anesthesia is an international organization of approximately 175 physicians, engineers, students and others with an interest in anesthesia-related technologies. Membership is open to all who are interested. The journal, *Anesthesia & Analgesia* is STA's official publication. An intermittent newsletter, Interface, is published and available on-line.