President's Message

James H. Philip ME(E) MD, STA President

Jim Philip, President

This is my first opportunity to address you since becoming president of STA. It is an honor to serve this organization that has become so important to me as I have grown and STA has grown. As you probably know, STA was formed in 1989. This year marks our tenth anniversary, and next year we will have our tenth annual meeting. Since we were formed, technology has changed anesthesia and, in some ways, anesthesia has changed technology. All anesthesiologist now have a greater appreciation for the advantages technology brings to every aspect of our lives, including and especially our clinical practice.

STA is an Organization

The mission of the Society for Technology in Anesthesia is to improve the quality of patient care through technology and its application. To this end, the Society promotes education and research, collaborates with local, national, and international organizations, sponsors meetings, sponsors standards, provides editorial leadership for an journal, fosters relationships be international between industry and clinical care providers, and seeks additional methods and opportunities to accomplish its mission.

STA is a Meeting Place

STA is a meeting place. A place where ideas meet methods and methods meet reality. This was brought home to many of us at this year's annual meeting as we saw new companies and old, large companies and small, scientists, engineers, and clinicians share their hopes, ideas, prototypes, and products. STA and the STA Annual Meeting provide a safe meeting place where scientists, engineers, and clinicians can present products and ideas and receive constructive criticism. This year's meeting was attended by 187 people including 20 exhibitors.

Annual Meeting, 1999 – San Diego

Our 1999 Annual Meeting–"A Window to the 21st Century" at the Hotel Del Coronado in San Diego was a dramatic success. David Seitman and his Scientific Program Committee Members put together a stimulating and educational package to provide a window to the 21st century, as its name promised. Matt Weinger made the social events enjoyable and memorable for young and old. When I saw Dr. Penny Smith on the tour to the US Naval Submarine Base, right in her own neighborhood, I knew that our tours were "special"–and they were! Even the Panda waited up specially for us to finish our "STA behind the scenes tour" at the San Diego Zoo. The membership turnout was excellent for this our 9th Annual meeting. We had 167 registrants plus exhibitors in attendance. As well as being an academic and social success, the meeting was a financial success. As STA President, I thank our industrial supporters and each of our members who attended. And again I thank our scientific and social chairmen– David Seitman and Matt Weinger and our Meeting organizers Cathy Clifton, Amy Price, and Beverlee Anderson.

Annual Meeting, 2000 –Orlando!

The year 2000 will mark STA's 10th anniversary. We'll celebrate this event at the new Disney Coronado Springs Resort in Orlando (no relationship to San Diego except bringing back memories). This is a brand-new

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and underpriced Disney Property adjacent to Walt Disney World. The STA Meeting's Scientific Program will be under the direction of Dick Bartkowski. Dick is accepting suggestions and offers of help at bartkow1@jeflin.tju.edu.

Retiring Officers

On behalf of STA I would like to thank those who served us so well and are leaving their offices. Steve Barker did a masterful job guiding us through 1998 as President. Matt Weinger used his recording and communication skills as secretary documenting all that we did. Gordon Gibby provided financial leadership and success as Treasurer for several years. Under his watchful eyes, STA evolved from a financially disabled organization to a stable organization with significant financial reserves. And thanks to Dick Bartkowski who has served as Director at Large and now takes on the important responsibility as Annual Meeting Scientific Chairman for STA 2000.

Election of New Board Members

As in many organizations, members move up through the ranks. With the changing of the guard, Matt Weinger becomes President Elect and Gordon Gibby becomes Director at Large. We have two new members on the Board of Directors, each serving an important role. Butch Loeb is our new Treasurer and Dan Raemer is our new Secretary.

Committees (1999–off to good start)

With the Board's approval and guidance, Gordon Gibby (Director at Large) and the Electronic Data Management Committee which he chairs have written, obtained approval, and distributed an RFP for a method for distant medical records access to anesthesia information. The goal is to make past anesthetic records for all patients available any time any place. Another major project is underway. Al Perrino and the Testing, Standards, and Specifications Committee is soliciting software solutions to common communications problems involving clinical data. The article on page 6 tells the whole story.

Join Us

STA is your organization. Join us and get involved. Or join and don't get involved, at first. If you are like most of us, you'll find that exciting ideas, techniques, products, or some other of STA's focuses will become your interest. And then, you will get yourself involved because it benefits you and those around you in your anesthesia department or company. STA, you, and your organization will all benefit. Finally, invite your friends and colleagues to join STA. Then, together, we can help guide technology and anesthesia along a common path into the 21st century and beyond. Exciting times lie ahead of us. STA can and will play a major role guiding technology to improve the quality of patient care, just as our mission statement promises. To join, contact: Beverlee Anderson, Coordinator Andersonbf@aol.com or David Feinstein, Membership Chair Dfeinste@bih.harvard.edu
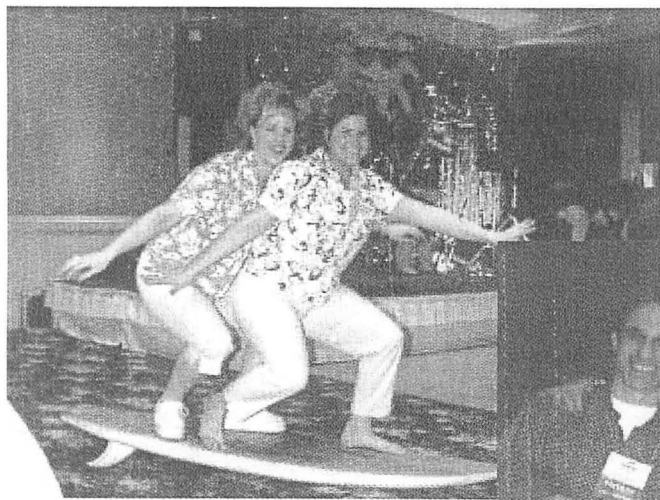
Surfing at Beach Party (Sponsored by METI)

Jeff Feldman and STA Manager, Beverlee Anderson

Editorial: Safety, Quality, Outcomes, Cost... (the "Second Story" please)

–George Blike
  Editor

I suppose I should be excited by the positive publicity that our specialty of anesthesia has received regarding landmark efforts to improve patient safety worldwide. This positive publicity is what a National Patient Safety Report by Woods et. al. Labels as the "first" story. But, where's the "second" story I wonder?

A recent article in the *New Yorker, When Doctors Make Mistakes,* written by Atul Gawande, is a case in point. Gawande, a surgical resident, tells a good "first" story regarding a difficult intubation situation in which he and an ER physician lose a patient's airway and then have difficulty with an emergency cricothyrotomy. Gawande later describes the history of events that led to the formation of the Anesthesia Patient Safety Foundation (APSF) and the unique research efforts our specialty has sponsored. Ellison Pierce's vision and leadership and Jeff Cooper's 1978 sentinel article Preventable Anesthesia Mishaps: A Study of Human Factors, are referenced. Gawande does not mention how our specialty adopted practice standards over a decade ago (before Demming was being quoted regularly in hospital corridors), but he does note APSF's role in funding research to reduce medical error as a cause of patient injury. The author cites David Gaba's work with simulation to address training for infrequent events as an example of the serious safety research anesthesiologists are conducting. Non-anesthesia researchers are also

credited with broadening safety efforts to all clinicians (notably Lucien Leap for his 1994 JAMA article *Examining Error in Medicine*). In his last few references to anesthesiology, Dr. Gawande states that in 1997, the AMA used the APSF model to found the National Patient Safety Foundation (NPSF). This article is only the most recent to spotlight the safety efforts of members of the anesthesia community.

... "A Tale of Two Stories: Contrasting Views of Patient Safety Report from a Workshop on assembling the Scientific Basis for Progress on Patient Safety."

I am indeed happy that we in anesthesia are getting some good press. I certainly prefer talking to patients about the *New Yorker* article, rather than the recently re-aired *20/20* show on awareness during anesthesia (if you remember, the lead started with "...there is a dirty little secret held by anesthesiologists; you could be awake during surgery and unable to cry out for help or something like that). However, I ultimately remain dissatisfied with the *New Yorker* article because it only scratches the surface of a complicated story. I want the public and medical professionals to be exposed to the "second," deeper story, regarding safety efforts in the aftermath of Three Mile Island and the Challenger disaster. I have been using this paradigm of attention grabbing dramatic "first" stories and richer (more constructive for solving problems) "second" stories, since reading a report David Woods, Richard Cook and Charlotte Miller authored entitled–*A Tale of Two Stories: Contrasting Views of Patient*

Safety–Report from a Workshop on Assembling the Scientific Basis for Progress on Patient Safety. This report highlights how high profile "celebrated" medical errors (the "first" story) heighten public interest and a commitment to safety efforts But this soundbite data is insufficient to actually create safer systems. In contrast, understanding complex work domains and the modes of system failure requires a richer source of information about the what, when and why an accident occurred (the "second" story). The document summarizes a two day workshop by the same title that was held December of 1997 and sponsored by the National Patient Safety

New Officers for 1999

New officers for 1999 were installed at the January meeting:

President: Jim Philip
jphilip @zeus.bwh.harvard.edu

President Elect: Mat Weinger:
mweinger@ucsd.edu

Secretary: Dan Raemer
raemer@harvardmedsim.org

Treasurer: Butch Loeb
rioeb@u.arizona.edu

At Large: Gordon, Gibby
gordon:@anest4.anest.ufl.edu

Remaining Directors at Large
John Robinson
jrobinson@hp.com

Mike Jopling
mjopling@columbus.rr.com

All Board members welcome comments from members. Anyone interested in serving on the Board should contact: Steve Barker sjbarker@u.arizona.edu.

Safety

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Foundation, the US Department of Veteran Affairs, and the Agency for Health Care Policy and Research. Twenty internationally acknowl edged experts in some aspect of human performance evaluation, ognitive psychology, or organizational behavior were assembled at the workshop with a goal to provide advice to the NPSF. The report contrasts "celebrated" medical accidents such as chemotherapy overdoses and wrong limb surgeries with the "second," less publicized, less dramatic story about the what, how, and why of medical failures. The first story is pervasive. It seems as though TQI is everywhere. "Improve outcomes, improve a cess, reduce cost, no excuses...", is a mantra being heard regularly at the Dartmouth-Hitchcock Medical Center (my place of employment) and I suspect in many

of your hospitals as well. JCAHO jumped on the safety bandwagon with a Sentinel Event policy. The policy required a "Root Cause Analysis" of sentinel events (a.k.a., accidents) to be performed and reported (this policy has since been modified). Being stuck on the "first" story may be dange ous. Prior to reading *A Tale of Two Stories...*I was invited to be on our hospital's Sentinel Event Committee and felt as if I were raining on the safety parade. I was delighted the individuals on the committee were interested in Root Cause Analysis, but chagrined that I was deemed an expert. I, in fact, know just enough to be aware of all I don't know and performing a root cause analysis. For example, root cause analysis of system failures, like all causal analyses, has major limitations. Initially, our Sentinel Event Committee was not equipped to elicit what happened from participants of a medcal disaster who were apprehensive, "shell

shocked," and tearful. Hind sight bias and the lack of an objective stop rule were meaningless concepts to most individuals being asked to perform the analysis. We needed the "second" story (and we have all benefited from reading *A Tale of Two Stories* ...). I don't object to the good press that articles like the New Yorker's provide our specialty, but *A Tale of Two Stories...*is a the reference I recommend for all who want and need the "second" story.

A Tale of Two Stories: Contrasting Views of Patient Safety Report from a Workshop on assembling the Scientific Basis for Progress on Patient Safety. and other great safety references are available at the NPSF web site (http://www.npsf.org/exec/report. html)

HINDSIGHT BIAS

Before the Accident ──────────→ | After the Accident ------→
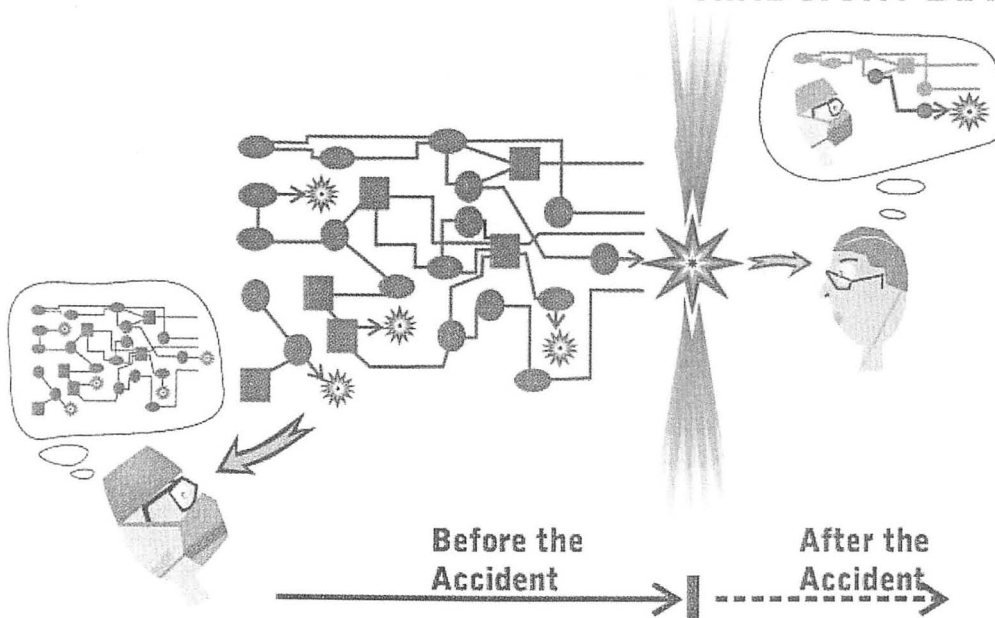
Hindsight Bias is one of several major limitations associated with "Root Cause Analysis." Those analyzing system control failures typically build an overly simplistic model depicting the events leading to an accident.

"Excellence in Technology" Awards at ASA and STA Annual Meeting

E year at the ASA meeting and at the Society's own meeting, the Research Committee present awards for outstanding abstracts which typify excellence in technology. Abstracts from the 1998 ASA meeting were from the Engineering Technology, Equipment, and Monitoring sections. Several criteria are used for evaluation of the abstracts. We look for:

a) Originality of concept/good experimental design
b) Careful analysis
c) Well presented results
d) Medical significance of the contribution

The principal author of each paper received their choice of a complimentary membership in STA or registration at the annual meeting.

The award for Best Abstract in Technology Innovation went to S. Lampotang, D. Gravenstein, and R.J. Melker for abstract A552, "A plastic optical fiberimaging style: Mechanical design and preliminary experience."

The award for Best Abstract in the Clinical Application of Technology went to H.L. Edmonds, Jr., A. Sehic, S.B. Pollock, Jr., and B.L. Ganzel for astract A941 "Low Cerebrovenous Oxygen Saturation Predicts Disorientation."

At the STA annual meeting in January 1999, the Research Committee presented four awards. The principal author of each winning abstract will receive a $100 gift certificate donated by Hewlett-Packard for books from Amazon.com (The Honorable Mention abstract was awarded $50.)

The award for Best Abstract in Technology Innovation went to P. Blazewicz, D. Nagahara, and L. Mace for "A novel fast oxygen sensor with on-airway, breath-to-breath capability.

The award for Best Abstract in the Clinical Application of Technology went to D.G. Haryadi, J.A. Orr, K. Kuck, and D.R. Westenshow for "Limited Reproducibility of Thermodilution Hampers Evaluation of New Cardiac Output Monitoring Devices."

Fritz Stawitcke
Research Committee Chairman

The award for Best Abstract in the Application of Technology to Education went to W.B. Murray, P.J. Gorman, J.D. Lieser, R. Haluck, T. Krummel, and S. Vaduva for "The Psychomotor Learning Curve With a Force-fed Back trainer: A Pilot Study."

An Honorable Mention for an abstract in the Clinical Application of Technology went to B.M. Parker, J.E. Tetzlaff, S.E. Spagnuolo, and W.G. Maurer for "A Computerized Preoperative Assessment Program: Analysis of Utilization".

Starting with the upcoming Society meeting in 2000, the Research Committee will take the responsibility for review and selection of scientific abstracts for presentation. In order to increase the recognition for research by Society members and attendees to the annual meeting, the Committee will add a special session to next year's annual meeting program devoted to a discussion of selected papers.

Fritz Stawitcke
stawitcke@hpl.hp.com

Fast Electronic Access to Past Anesthesia Records

Gordon Gibby MD

How many times have you wanted to be able to look over the last anesthetic record of a patient who had been treated at your, or another institution? Or be able to review the preanesthetic workup, to see what testing had been done on a possible medical problem? In an age where almost anything can be learned rapidly over the Internet, we are still depending on time-consuming and insecure telephone calls and fax requests to get the past anesthetic records of our patients. Since the security of online transactions has become so accepted that on-line stock trading is now one of the fastest-growing uses of the Internet, doesn't it seem that we should be able to get medical records electronically? And since the U.S. government is requiring all healthcare institutions to convert to electronic billing (which will contain all the sensitive patient identifying and disease specific information), shouldn't we be able to get their old anesthesia record, just as easily? Many institutions already have some form of electronic anesthesia record, and others would probably jump at the chance to use a simple scanning system to electronically store their paper records, if there were a way developed to store and retrieve those records, just to relieve their paper storage problem. Recognizing those factors, the Board of Directors of the Society for Technology in Anesthesia has moved our Society into the forefront of infomatics change, by releasing a Request for Proposals for methods to allow for secure, patient permitted electronic access to past anesthesia records. Individuals, organizations, or companies can write up how they believe we could best move anesthesia into the informatics age, by making it easy for manufacturers to provide electronic access to their anesthesia recordkeeping

Coming to the STA Website—Medical Device 1/0 Shareware

Albert Perrino, MD—Committee for
Equipment Testing Standards

One of the advances in the design of medical monitoring devices over the past decade has been the widespread incorporation of serial and analog inter-faces (1/0 communication ports). The interfaces allow for the transfer of data between a personal computer and the medical monitoring device. Data can then be easily analyzed, displayed, and recorded on the PC. Further, the marked reduction in costs of multi-channel data acquisition boards provide a means to integrate data from multiple medical devices simultaneously. Data acquisition, data fusion and automated record-keeping projects depend on this ability to pass

"To date, a diverse group of interfacing software has been donated..."

monitored data into a PC. Conversely, these interfaces also allow for the PC to control the measuring device in a broad range of application (e.g., feedback control of drug infusion rates). The promise of interfacing PCs to medical equipment has been hindered by the diversity of monitoring devices and their associated data, as well as by the lack of standards in medical device communication protocols. The significant barriers to accessing and/or controlling these monitors have become a challenge to both researchers and clinicians who depend on their data.

The STA has been active in promoting easier access to monitoring devices and their data. In addition to participation in national standards

organizations, STA has undertaken a "grass roots" effort to organize the substantial body of noncommercial interface software written by individuals to solve a particular need. This effort, headed by the STA's Committee for Equipment Testing and Standards, aims to create a library of software programs which will be accessible to individuals via the STA website (at GasNet). To date, a diverse group of interfacing software has been donated which collectively addresses many of the monitors common in clinical practice. A variety of physiologic parameters and data types (e.g. serial, analog, video) are available. Individuals who have developed interface software and wish to participate in this project should contact:

Albert Perrino,
MD-Committee for Equipment
Testing and Standards

1999 STA Membership Numbers Increase

STA has welcomed 39 new members as of March 1st. Ten additional members who had lapsed for over a year were also welcomed back, bringing the total to date to 227.

This number is a thirteen percent increase over 1998. All but 31 members have registered their E-mail address with the STA office. Our goal is to have 100% current E-mail addresses so we can insure that every member gets immediate notice of important issues and upcoming dates.

The membership committee will have a booth at this year's ASA meeting to increase visibility of our organization. We'll be looking for volunteers to help promote STA.

If you know of someone who would like to join STA, just give us their name, office and E-mail address and we'll take care of the rest.

Contact:
David Feinstein, MD
Membership Chair
dfeinste@caregroup.harvard.edu

Fast Records
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products in a coordinated fashion. The full text of the Request for Proposals is available on the Society's web page. There is no payment or grant or funding involved in the Society's action. At the Society's Board Meeting at the 1999 ASA Convention, the Board will review submitted proposals and may choose to endorse one or more proposal. This is similar to the methods by which the Object Management Group drove the successful development of the CORBA networking systems. Proposals must be received by the Society by September 1, 1999.

Meetings Minder

International Ergonomics Association
15th Triennial Congress in San Diego
July 30–August 4, 2000

HFES annual meeting
September
Houston, TX
hfes@compuserve.com

SCATA spring meeting
May 13, 14, 1999.
Sidcup, Kent
Contact: "Pradeep Ramayya"
(p.ramayya@scata.org.uk)

ESCTAIC and SCATA combined fall meeting
November 11–13, 1999
Glasgow, Scotland
Contact : Pradeep Ramayyya
(pramayya@scata.org.uk)
or
Gavin Kenny
(Gavin-Kennygcompuserve.com)

The 19th International Symposium on Computing in
Anesthesia and Intensive Care "Technology in
Anesthesia and Intensive Care for the Next Century"
June 2–4, 1999 Rotterdam, The Nethdands
http://www.eur.nl/FGG/Anest/iscaic1 9/

International Congress on
COMPUTATIONAL INTELLIGENCE:
METHODS AND APPLICATIONS
Rochester, New York, USA
June 22–25, 1999
http://www.icsc.ab.ca/cima99.htm

International ICSC Symposium on
ADVANCES IN INTELLIGENT DATA ANALYSIS
Rochester, New York, USA
June 22–25, 1999
http://www.icsc.ab.ca/aida99.htm
Contact: operating@ icsc.ab-ca

International ICSC Symposium on
SOFT COMPUTING IN BIOMEDICINE
Rochester, New York, USA
June 22-25, 1999
http://www.icsc.ab.ca/scb99.htm

Combined Meeting of the Anaesthetic Research
Society and The Society of Computing and
Technology in Anaesthesia.
July 8, 9, 1999
Derriford Hospital Plymouth
http://www.scata.org.uk

The Society for Computers in Anesthesiology
AnnualMeeting October, 1999 Dallas, Texas
http://gasnet.med.yale.edu/societies/scia Contact:
scia(LbAcmeAnesthesia.com

American Medical Informatics Association
November 610, 1999 -Washington, DC
www.amia.org

Japanese Society for Technology in Anesthesia
Annual Meeting November, 1999
Mito City
E-mail: n-vkato@mail.cc.tohoku.ac.jp

Society for Technology in Anesthesia Jan 12-15,
2000 Orlando, FL http://gasnet.med-
yale.edu/societies/sta/

STA Annual Meeting, testing multimedia technology with dual screen
format during lectures