



**The Society for Technology in Anesthesia
presents its**

1994 Annual Meeting

***Learning About Technology—
Technology for Learning***

**January 26–29, 1994
Walt Disney World Dolphin
Orlando, Florida**

***Co-Sponsored by the
Anesthesia Patient Safety Foundation
and the Society for Education in Anesthesia***

In Appreciation



**The Society for Technology in Anesthesia
wishes to express their heartfelt thanks to the
meeting advertisers, supporters, exhibitors,
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Modular Instruments, Inc.
Mosby-Churchill-Waverly
Nellcor, Inc.
North American Dräger
Ohmeda
SpaceLabs Medical, Inc.

Welcome to "Learning About Technology— Technology for Learning"

Let me welcome you to this extraordinary annual meeting, which should prove to be both educational and fun. The theme of the meeting addresses both sides of technology—the challenge to clinicians and the wonderful assistance to all students.

The 1994 STA Annual Meeting is sponsored by three organizations that contribute much to the advances in anesthesia. First, the Society for Education in Anesthesia focuses on the importance of learning with the help of technology; second, the Society for Technology in Anesthesia stresses the role modern technology plays in anesthesia; and third, the Anesthesia Patient Safety Foundation can serve as an umbrella to the other two as it recognizes the essential roles of education and technology in making anesthesia safe. Each organization will address these points in panel discussions on successive mornings.

In the last few decades anesthesia has undergone great changes. Indeed, we find it necessary to speak of an 'anesthesia workstation' to describe the host of instruments we use. Gas delivery systems, ventilators, infusion pumps, invasive and noninvasive monitors, record keepers, and heating devices have become standard components of our clinical work. Anyone old enough to remember anesthetic practice two or three decades ago must be impressed by the inroads technology has made into our world. We can confidently expect the technologic advances to continue. Therefore, this meeting offers representatives from industry and clinical anesthesia the opportunity to examine jointly the current status of specific instruments used in anesthesia and to look jointly toward solutions of problems identified by manufacturer or user.

Over the years, imaginative engineers and anesthesiologists have introduced an amazing array of wonderful physical and electronic learning devices. Thus, technology has been pressed into the service of education. Simulators and training devices now enable the anesthesiologist, nurse anesthetist, nurse, medical student, technologist, and engineer to learn about anesthesia and its many facets from mechanical models, from computer-based learning packages, and even from full-scale simulators. We will have under one roof most, if not all, training devices in anesthesia and two simulators representing the most advanced versions known to us. Participants will have an opportunity to use these devices and to assess what they offer to education.

Of course, there will be poster/discussion presentations giving young and not so young investigators an opportunity to introduce us to the newest ideas, to listen to comments, and to answer questions.

Naturally, there will be splendid opportunities to converse with colleagues, to visit industry exhibitions, and to make new friends.

I hope you enjoy the meeting, and that you return home with the feeling that you were stimulated and, perhaps, even learned something new!

Sincerely,

J. S. Gravenstein, MD
1994 Program Chairman

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University of Arizona
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J.S. Gravenstein, MD

Scientific Program Chairman

Gerard Bashein, MD

Development Committee Chairman

Jan Ehrenwerth, MD

Welcome to "Learning About Technology— Technology for Learning" Program

Wednesday, January 26

7:30 am – 11:40 am

Board of Directors' Meeting and Continental Breakfast

◆ *Europe 9*

11:40 am – 2:00 pm

Committee Meetings

◆ *Europe 5 & 9*

2:00 pm – 5:00 pm

Board of Director's Meeting (reconvened)

◆ *Europe 9*

6:00 pm – 9:00 pm

Reception and Registration

◆ *Northern Hemisphere E 2-3-4*

Thursday, January 27

7:00 am – 4:15 pm

Registration

◆ *Southern Hemisphere Foyer*

7:00 am – 8:00 am

Morning Coffee with Exhibits

◆ *Southern Hemisphere III*

8:00 am – 10:15 am

Opening Remarks

Jerry M. Calkins, PhD, MD

J. S. Gravenstein, MD

Panel 1—SEA

"How Can Technology Help Us To Learn?"

Moderators:

T. Philip Malan, Jr., MD, PhD

Michael L. Good, MD

Participants:

Beth Lyall, PhD

Susan Polk, MD

Howard Schwid, MD

◆ *Southern Hemisphere I & II*

10:15 am – 10:45 am

Break with Exhibitors

◆ *Southern Hemisphere III*

10:45 am – 12 noon

Scientific Poster/Discussion Presentations

◆ *Southern Hemisphere I & II*

10:45 am – 3:45 pm

Simulators

◆ *Europe 10 & 11*

Training Devices

◆ *Southern Hemisphere IV*

12 noon – 1:00 pm

Lunch

◆ *Northern Hemisphere Salon E*

1:00 pm – 3:45 pm

Working Groups on Technologic Education

1. The Anesthesia Machine

2. Anesthesia Ventilators

3. Anesthesia Equipment: Checkout and QA

◆ *Oceanic 2*

4. Anesthesia Vaporizers

5. Monitoring Gases in Anesthesia Delivery

6. Intravenous Drug Delivery Systems

◆ *Oceanic 3*

7. Monitoring the Respiratory System

8. Monitoring the Cardiovascular System

9. Monitoring the Brain and Neuromuscular System

◆ *Oceanic 4*

10. Pediatric Anesthesia Systems and Equipment

11. Anesthesia in Special Hospital Locations

12. Anesthesia at Different Environmental Pressures

◆ *Oceanic 5*

13. Anesthesia without High Technology

14. Electronic Recordkeeping/Information Sources

15. Safety in the Operating Room: Electricity,
Lasers, EMI

◆ *Oceanic 6*

1:00 pm – 3:45 pm

Disney World Seminars

3:45 pm – 4:00 pm

Break with Exhibitors

◆ *Southern Hemisphere III*

4:00 pm – 5:30 pm

General Membership Business Meeting

◆ *Southern Hemisphere I & II*

7:00 pm

Anesthesia Database Committee Meeting

Chairman: David Edsall, MD

◆ *Oceanic 8*

Friday, January 28

7:00 am – 4:15 pm

Registration

◆ *Southern Hemisphere Foyer*

7:00 am – 8:00 am

Morning Coffee with Exhibits

◆ *Southern Hemisphere III*

8:00 am – 10:15 am

Panel 2—STA

“Technology Knowledge and Performance Issues
for the Anesthesia Care Team”

Moderators:

Robert T. Chilcoat, PhD.

Wesley T. Frazier, MD

Participants:

Michael P. Argentieri

Chalmers M. Goodyear

Michael Hannafin, PhD

A. W. Paulsen, MMSc, PhD

◆ *Southern Hemisphere I & II*

10:15 – 10:45 am

Break with Exhibitors

◆ *Southern Hemisphere III*

10:45 am – 12 noon

Scientific Poster/Discussion Presentations

◆ *Southern Hemisphere I & II*

10:45 am – 3:45 pm

Simulators

◆ *Europe 10 & 11*

Training Devices

◆ *Southern Hemisphere IV*

12 noon – 1:00 pm

Lunch on your own

1:00 pm – 3:45 pm

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◆ *Oceanic 6*

1:00 pm – 3:45 pm

Disney World Seminars

3:45 pm – 4:00 pm

Break with Exhibitors

◆ *Southern Hemisphere III*

4:00 pm – 5:30 pm

Board of Directors' Meeting (if necessary)

7:00 pm – 10:00 pm

STA Dinner

Speaker: Allen K. Ream, MD

◆ *Northern Hemisphere Salon E 3 & 4*

Saturday, January 29

7:00 am – 4:15 pm

Registration

◆ *Southern Hemisphere Foyer*

7:00 am – 8:00 am

Morning Coffee with Exhibits

◆ *Southern Hemisphere III*

8:00 am – 10:15 am

Panel 3—APSF

“What Should Be Done about the Deficiencies in our Current Education in Technology?”

Moderators:

Frances Rhoton, PhD

E. S. Siker, MD

Participants:

Arthur A. Ciarkowski

N. Ty Smith, MD

Kevin Tremper, MD, PhD

◆ *Southern Hemisphere I & II*

10:15 – 10:45 am

Break with Exhibitors

◆ *Southern Hemisphere III*

10:45 am – 12 noon

Scientific Poster/Discussion Presentations

◆ *Southern Hemisphere I & II*

10:45 am – 4:00 pm

Simulators

◆ *Europe 10 & 11*

Training Devices

◆ *Southern Hemisphere IV*

12 noon – 1:00 pm

Lunch

◆ *Northern Hemisphere Salon E*

1:00 pm – 4:00 pm

Reports from Working Groups on Technologic Education and Recommendations

◆ *Southern Hemisphere I & II*

4:00 pm – 5:00 pm

Review and Summary

◆ *Southern Hemisphere I & II*

Simultaneous Session Information

Experience the Simulators

The latest and greatest in high-tech learning systems will be available under one roof for hands-on evaluation by meeting participants. Two full-scale simulators and at least 11 training devices will be exhibited. The training devices will include uptake and distribution models (physical and computer), cerebral circulation models (physical), monitoring instrument trainers (pulse oximeter and TEE), physiological models, regional anesthesia trainers, and screen-based anesthesia "simulators." The simulators and training devices will be available to meeting participants on January 27, 28, and 29, 1994, from 10:45 am until 4:00 pm. Developers of these systems will be in the exhibit area to help guide participants and answer questions. The exhibition will be particularly valuable for anesthesia education directors and faculty interested in acquiring and using state-of-the art teaching aids.

Co-Chairs:

Charles Brindis, MD
Sem Lampotang, PhD

Full-Scale Simulators

CAE-Link
University of Florida

Training Devices

C. Brindis	L. Bunegin
J. Calkins	T. Engel
O. Fernandez	G. L. Gibby
M. L. Good	J. Philip
A. L. Schneider	H. Schwid
T. Smith	D. Westenskow

Working Groups on Technologic Education

Team leaders will be identified for each group. Each group will then be challenged to develop a clinical scenario to illustrate why technologic features need to be familiar to the user in order to ensure proper safety and usage.

Co-Chairs:

Gordon L. Gibby, MD
Daniel B. Raemer, PhD

1. The Anesthesia Machine
2. Anesthesia Ventilators
3. Anesthesia Equipment: Checkout and QA
4. Anesthesia Vaporizers
5. Monitoring Gases in Anesthesia Delivery
6. Intravenous Drug Delivery Systems
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15. Safety in the Operating Room: Electricity, Lasers, EMI

How to Gain Access to Internet

Gordon L. Gibby, MD

The power of Internet and other "data highways" make prodigious amounts of information available.

A special exhibit will educate physicians about this resource. Hands-on access to Internet software and experience using data-finding tools will be provided. Free copies of floppy disk public domain software will be available for PC users. The exhibit will explain all the connections. Participants will learn what to request to get Internet access available in their department. If you have a portable PC, bring it along, and get connected!

Exhibitors

Arkive Information Systems Inc. — 304/306

The Arkive System is a sophisticated, computerized anesthesia information management system that collects and integrates anesthesia-related patient and case data. The system can be communicated with hospital information systems, surgical scheduling systems and other local systems to facilitate the transfer of a variety of clinical and administrative data.

Becton Dickinson Vascular Access — 313

Clinical Information Systems, Inc. — 311

The AIM System: Case scheduling, case status board, bar coding, electronic anesthesia record, quality assurance, preop/postop assessment, custom reports, personnel management, electronic charge capture, open architecture connectivity.

Criticare Systems, Inc. — 312

Criticare Systems, Inc. offers a complete line of patient monitoring equipment. Pulse oximetry, capnography, vital signs and anesthetic agent monitoring systems are available for both hospital and non-hospital environments.

Datascope Corporation — 408

Datascope is introducing its new *point of view*TM monitoring system intended for general and major surgical procedures. The *point of view*TM is a cunning combination of power and portability monitoring capability including three ECGs/ST, four invasives, and cardiac output. Multiple upgrade paths exist to add additional features in the future.

Datex Medical Instrumentation, Inc. — 410

Datex offers a comprehensive line of monitors designed exclusively for anesthesia; including the AS/3TM monitoring system and the UltimaTM multigas monitor with Side Stream SpirometryTM and agent specificity.

Hewlett-Packard, Co. — 402

Hewlett Packard will exhibit the component monitoring system for OR applications with data interfaces to auxiliary devices.

King Systems, Corporation — 303

The Universal F co-axial anesthesia circuit/transport system; Fresh Scent and Sweet Dreams Scented inflatable, disposable masks; Ultra-Flex expandable circuits, adult and pediatric.

Little, Brown and Company — 404

Little, Brown and Company is the publisher of the *Journal of Clinical Monitoring*, the official journal of the Society for Technology in Anesthesia. Please stop by our booth for your free sample copy and the opportunity to order from our wide selection of anesthesia topics.

Marquette Electronics — 413

Marquette Electronics Inc., headquartered in Milwaukee, Wisconsin, designs, manufactures and markets computerized electrocardiographic diagnostic systems, ICU, telemetry and anesthesia patient monitoring systems, cardiac catheterization, defibrillators, respiratory and anesthetic gas monitoring systems. In 1992 Marquette and Gambor-Engstrom of Stockholm, Sweden, announced a joint venture to design, produce, and market advanced systems for anesthesia.

Modular Instruments, Inc. — 412

LifeLog—The next generation in anesthesia recording and information management systems.

Mosby-Churchill-Waverly — 409

Nellcor, Inc. — 309

Nellcor Incorporated manufactures and markets high-performance monitoring equipment, sensors, and accessories for patient safety and management throughout the hospital, in emergency transport and in the home.

North American Dräger — 310

North American Dräger will be exhibiting our line of anesthesia systems, patient monitors, and data management systems.

Ohmeda — 405

SpaceLabs Medical, Inc. — 305

Poster/Discussion Abstract Presentations

Thursday, January 27, 1994

Jeffrey Gerth, MD

Deborah A. Mitta, PhD, Philip D. West, MS

Designing High Technology Workstations: Building Usable Interfaces for Medical Devices

Xin-Bao Ji, PhD

James H. Philip, ME(E), MD

Parsimonious System Identification for the Inhalant-to-Systolic Blood Pressure Model

K. J. Khodr, MS (BME)

J. H. Philip, MD, ME(E)

LabView GasMan Provides Anesthesia Simulation Results Identical to Gas Man for Macintosh

K. J. Khodr, MS (BME)

J. H. Philip, MD, ME(E)

A New Pharmacokinetic Inhalant Model

Albert C. Perrino, MD

Daniel B. Phillips, BSEE, Forrest L. Levin, MS

Perioperative Data Acquisition and Archiving: A Multimedia Approach

David T. Sejtman, MD

Jeff E. Hawtof, BSCS, Thomas Eckert, MD

Learning About Anesthesia Keywords Using a Modifiable Computer-Assisted Instruction Program

Sheldon Goldstein, MD

Carrie L. McCoy, MD, Ronald P. Cody, EdD, Dorene O'Hara, MD

Prevention of Hypoxemia by Oxygen Administration Before or During Transport to the Recovery Room

Poster/Discussion Abstract Presentations

Friday, January 28, 1994

I. D. Calalang, BS (BME)

J. H. Philip, MD, ME(E)

A New Fresh Gas Flow Rate Monitor

D. B. Goodie, MBBS, FFARACS

I. D. Calalang, BS(BME), James H. Philip, ME(E), MD

Effective Viscosity of Commonly Used Infusible Substances

Alfred Feingold, MD

Charles P. Hurowitz, MS

Documentation of Cardiac Arrhythmias by the 30sec Interval Heart Rate on an Automated Anesthesia Record

Mark Abel, MD

James B. Eisenkraft, MD

The Effects of Sevoflurane and Desflurane on Medical Mass Spectrometers Not Configured for these Agents

Lynda D. Arai, MD

Stephen E. McNulty, DO, David P. Maguire, MD

An Alternate Method for Calibrating the Thromboelastograph

Sheldon Goldstein, MD

Carrie L. McCoy, MD, Ronald P. Cody, EdD, Dorene O'Hara, MD, David I. Scott, MD

Prevention of Hypoxemia by Oxygen Administration Before or During Transport to the Recovery Room, After 5 Second Head Lift

Poster/Discussion Abstract Presentations

Saturday, January 29, 1994

John C. Sanders, MD

Anne Lynn, MD

Accuracy of the Easy Cap Colorimetric End Tidal Carbon Dioxide Detector in Children with Cyanotic Heart Disease and in Infants Aged One Day to Six Months

Edward A. Clancy, PhD

Charles P. Smith, BSEE

Influence of Artifact on Bispectral Analysis of the EEG

Thomas Engel, MD

Information Retrieval for Anesthesiology Education

Thomas Engel, MD

Personal Digital Assistants in the Operating Room

Jane C. K. Fitch, MD

Medical Cards for Patients with Anesthesia Problems

Rachel Villanueva, BS

Charlotte Bell, MD, Kelly Colingo, MD, Theresa Z. O'Connor, PhD

The Effect of Peripheral Perfusion on Pulse Oximetry in Children