



The Society for  
Technology  
In Anesthesia

1995 Annual Meeting

*Technology...*  
*Pays for itself*

January 26-28, 1995  
The Scottsdale Princess  
Scottsdale, Arizona

Sponsored as a continuing medical  
education service of  
Maricopa Medical Center  
in conjunction with  
The Society for Technology in Anesthesia





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## Welcome to our Scientific Conference

January 1995

Welcome to what may well be the most innovative scientific conference held this year. Months of thought, planning, and effort on the part of many excellent men and women have gone into making this conference a reality, despite the unexpected stresses that our Society has weathered in the past weeks. We have carefully planned this conference to stimulate you with facts and ideas, and then to challenge you to burst forth with new concepts in Re-Engineering surgical health care delivery. We hope you enjoy these three days of excitement!

Our first days' lecturers are primed to complete your "mini-MBA" in two short hours, giving you all the mental tools needed to correctly measure the cost of a technology. On the second day, you'll get a deep draft of the complexities of modern healthcare finance from lecturers who are intimately involved in the administration of the centerpiece of American healthcare—the hospital.

You will be armed then with the proper evaluative tools and a fresh understanding of the problems. This will prepare you for our experts on national medical care delivery who, on Saturday, will tackle whether all our technology has made an observable difference in care.

But you will be immersed with problems of your own, for you will be one of the key players in one of three imaginary hospitals created just for this conference—and your team must completely re-develop the provision of surgical healthcare in order to win managed care contracts and keep your livelihood! Our hard-nosed managed-care negotiators are going to test your grasp of the real financial problems in your hospitals and clinics to see if you can find a way to completely re-engineer what you do, into something so clearly better that your team wins. On Saturday, we'll find out just how your team has changed the face of medicine.

Through it all, along with the presentation of dozens of scholarly scientific papers, commercial products, and scientific demonstrations, we hope you have a lot of fun. Be certain to join us at the S.T.A. Dinner. Make it a point to get to know the other participants in our unique meeting. You are the people who will form the future of Technology in Anesthesia.

Sincerely,

Gordon L. Gibby MD

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## Annual Meeting Committee

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Re-Engineering Working Groups:	Dan Raemer
Assisted by:	David Feinstein



# Meeting Program - Thursday

7:00 AM - 8:00	Registration and Continental Breakfast with Exhibitors	Oral Presentations
8:00	Opening Remarks <i>J. S. Gravenstein MD</i> <i>Dwayne Westenskow PhD</i>	10:15 A System to Calculate Tracheal Pressure From the ET Tube Cuff. Nicholas A. Wilder BS, Joseph Orr PhD, Dwayne Westenskow PhD
8:15	Panel 1 % "How to correctly measure the cost of a technology" Sandy Eames, Moderator, Datascope <i>Dwight Grant PhD</i> Univ of Arizona <i>Bob Larkin</i> , Sun Health <i>Deborah Smook</i> The Wilkerson Group	10:30 Real-Time Workload Assessment During Anesthesia. Matthew B. Weinger MD, Helen D. Shen BS, Meredith Culp BA, Neide Fehrenbacher BS, Oliver W. Herndon BS.
10:00	Refreshment break	10:45 The Medical Information Bus (MIB): Is the Clinician-Friendly Device Interface Standard Commercially Viable? S. Mark Poler MD
10:15	Oral Presentations	11:00 Usage and Financial Value of Access to Computerized Database of Medical Records During Preanesthetic Evaluation. Gordon L. Gibby MD, Guido Lemeer MSEE, Keith Jackson MS
11:15-12:00	Poster Presentations	Poster Presentations
12:00 Noon	Lunch	1. A Research Tool for Transcranial Doppler Studies: A PC-based Data Acquisition and Archival System. Vishal Kapur MS, Dennis D. Doblar PhD MD
1:00 PM	Working Groups	2. Motion-Resistant Pulse Oximetry. I. M. Elfadel PhD, W. Weber MS, S. J. Barker PhD MD
2:00 PM	Commercial Exhibits and Scientific Demonstrations	3. Syringe Resistance While Finding a Vein. Stephen T. Robinson MD, Richard D. Carr MD, Elizabeth A. Oakes MD
3:00 PM		4. Human Factors in the Design and Evaluation of Anesthesia Equipment: A Survey of Anesthesia Equipment Manufacturers. Richard Botney MD, David Gaba MD
4:00 PM		5. Distributed Programs As Building Blocks For a Comprehensive Simulated Teaching Environment. Vaduva S, Murray WB, Foster PA, Mentzer S
7:00 PM		6. A Recommendation to Reduce Intra-Operative Data Redundancy and Confusion. Ignatius Calalang BS, James H. Philip ME MD
		7. Comparison of Simultaneous Oxygen Saturation Values Using Nellcor N-100 and Marquette Tramscope 12 Oximetry. Sheldon Goldstein MD, Sam Owusu BA, David Dean BA, Deborah Jeane Rednour BSN RN, Bertil KJ Wagner PharmD
		8. Effect of Hypodermic Syringe Resistance While Using a Syringe Pump. Stephen T. Robinson MD
		9. A Fuzzy Logic System for Prioritizing Surgical Cases. Thomas Engel MD
		10. An Automated Information Management System Can Produce ROI and Improve Anesthesia Practice. Daniel C. Pettus

Working Group #1:	Salon 4
Working Group #2:	Salon 6
Working Group #3:	Salon 7
Speaker Ready Room:	Salon 3
Third Party Payor:	Salon 3

# Meeting Program - Friday

ready room Salon 3

7:00 AM - 8:00	Continental Breakfast with Exhibitors	Poster Presentations
8:00	<b>Panel 2 ☼</b> <b>"Hospital Finances, Equipment and Education in these changing times"</b> David Paulus MD, Moderator Univ of Florida Donald Chalfin MD Winthrop-University Hospital Herb Schneiderman St. Louis Univ Hospital Sue Ellen Pinkerton PhD Shands Hospital	1. Analyzing the Dynamic Behavior of Epidural Pressure in Response to Flow Step Change Uses Estimated Transfer Function Model. XinBoa Ji PhD, James H. Philip ME MD 2. Technology Education for Anesthesia Residents: Experiences and Expectations. DA Van Alstine MD, RA Duncan MD, WT Frazier MD 3. Getting Laboratory Data to the Operating Room: A New Method. Franklin L. Scamman MD, Michael M. Todd MD. 4. Adaptive Cancellation of Respiratory Noise in Esophageal Heart Sounds. Kai Kuck Dipl-Ing, Scott Douglas PhD, Dwayne Westenskow PhD 5. Electronic Pre-publication of Journal of Clinical Monitoring Abstracts. Keith J. Ruskin MD 6. Proficiency Exams for Evaluation of Education in Anesthesia Technology. WT Frazier MD, SH Odom MD, BD Biggs MMSc, AW Paulsen PhD 7. Standard Rate Titration Range and Customized Mixes of IV Anesthetics Are a More Effective Method of Teaching IV Anesthesia. Edward Teeple Jr MD MBA, Chris McConnell BA 8. The Medic Alert National Difficult Airway/Intubation Registry: Quantity and Quality of Information Captured. L. Mark MD, G. Gibby MD, B. Yueh MD, J. Schauble MD, S. Turley MA RN, M. Leonard MSc, J Drake, M Chalmers, G. Keaton, S. Johnson 9. Satisfaction After The Installation of an Automatic Anesthesia Record Keeping System in an Academic Anesthetic Department. Robert L. Coleman MD, Gayle A. Moyer MS CRNA, Iain C. Sanderson FRCA, William C. Gilbert BS, Karen S. Sibert MD 10. Arterial - Pulse Oximetry Loops: A New Method of Monitoring Vascular Tone. Kirk H. Shelley MD PhD 11. A "Biodegradable" Anesthesia Simulator. SH Odeom MD, WT Frazier MD, BD Biggs MMSc, RG Brouillard DSc, AW Paulsen PhD 12. Electronic Signatures in a Hospital Information System Environment. Sam G. Campbell MSEE BSE BSBA, Gordon L. Gibby MS MD
10:00	Refreshment break	
10:15	Oral Presentations	
11:15-12:00	Poster Presentations	
12:00 Noon	Buffet lunch with exhibitors	
1:00 PM	<div>Working Groups</div> <div>Commercial Exhibits and Scientific Demo</div>	
2:00 PM		
3:00 PM		
4:00 PM		
7:00 PM	<b>STA Dinner -families invited!</b> <b>Western Barbecue</b> <b>Guest speaker: Adrienne Lang</b>	
<b>Oral Presentations</b>		
10:15	An Automated Small Bolus Cardiac Output Measurement System. Joseph A. Orr PhD, Curtis Healey BS, Dwayne Westenskow PhD	
10:30	Computerized Preanesthesia Evaluation of Surgical Inpatients Increases Secondary Diagnoses Noted by Hospital Coders. Gordon L. Gibby MD, Michael C. Prescher MD, David A. Paulus MD, Debra J. Sirota ART, Keith Jackson MS, J.S. Gravenstein MD, Jan van der Aa PhD	
10:45	Comparison of Two Methods to Assess Intraoperative Vigilance. Robert Loeb MD	
11:00	Accuracy of Pulse Oximetry During Sickle Cell Vaso-occlusive Crisis. Brandy McMahon BS, Charlotte Bell MD, Harry Moscovitz MD	
	<b>Working Group #1:</b> <b>Working Group #2:</b> <b>Working Group #3:</b> <b>Speaker Ready Room:</b> <b>Third Party Payor:</b>	<b>Salon 4</b> <b>Salon 5</b> <b>Salon 7</b> <b>Salon 3</b> <b>Salon 3</b>



## Meeting Program - Saturday

7:00 AM - 8:00	Continental Breakfast with Exhibitors	Oral Presentations
8:00	<i>Panel 3</i> ☼ "Can we put a dollar figure on actual improved care?" Peter Duncan MD, Moderator Queens University <i>Marsha Cohen MD MHSc</i> Univ of Toronto <i>Michael Mendelson MA</i> Deputy Sec. of Cabinet, Canada <i>Kay Plantes PhD</i> Plantes Company <i>John Eichhorn MD</i> , Univ of Miss.	10:15 Computerized Detection of Quality Assurance Incidents Using an Automated Anesthesia Record-Keeping System. Kevin V. Sanborn MD, Jose Castro MD, Max Kuroda MPH, Kristin Sanborn, Daniel M. Thys MD
10:00	Refreshment break	10:30 How Much for a Life? Laurie K. Davies MD, Eddy N. Duncan MD
10:15	Oral Presentations	10:45 The Medic Alert National Difficult Airway/ Intubation Registry: Technology That Pays For Itself. Lynette Mark MD, James Schauble MD, Susan Turley MA RN, Sharon Buie, Martha Chambers, Margaret Leonard, Geneva Keaton, Lester Stein, Joyce Drake
11:15-12:00	Reports from the WorkGroup Competition & Results!	11:00 Incidence of Peri-Operative ST Changes in Transurethral Prostatectomy Patients. DH Wong PharmD MD, JM Hagar MD, SH Vora BS, MP Christiano BS, JB Miller MD, J Mootz, SJ Barker PhD MD
12:00 Noon	Review and Summary	11:15 The Use of an Indicator Dye and Near Infrared Spectroscopy to Detect an Intravascular Injection of Local Anesthetic. William X. Chen MD, Charles E. Lurito MD, Rosa M. Navarro MD
1:00 PM	Presentation of ASA and STA Research Abstract Awards	
2:00 PM		
3:00 PM		
4:00 PM		
7:00 PM		

Speaker Ready Room:      Salon 3  
Third Party Payor:        Salon 3

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## Scientific Abstracts - Thursday



### Oral Presentations

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- 10:30 Real-Time Workload Assessment During Anesthesia. Matthew B. Weinger MD, Helen D. Shen BS, Meredith Culp BA, Neide Fehrenbacher BS, Oliver W. Herndon BS.
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## Scientific Abstracts - Friday

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12. Electronic Signatures in a Hospital Information System Environment. Sam G. Campbell MSEE BSE BSBA, Gordon L. Gibby MS MD

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## Scientific Demonstrations

The Scientific Demonstrations will be available from 1 PM until 4 PM on Thursday, January 26, and Friday January 27. Please be certain to see the research that is presented at the Demonstrations. As some of the participants are heavily involved in Working Groups, specific demonstration times may be indicated at individual Scientific Demonstrations.

Arrhythmia Tutor: Interactive Multimedia Software Designed to Teach Arrhythmia Recognition for Advanced Cardiac Life Support. Harold SH Lee MD, W. Bosseau Murray MB ChB FFA(RCS)(LON) MD, Gregory C. Allen MD FRCPC

Cost Calculations of Inhaled Anesthetics from CPRA System Records. David W. Edsall MD, John H. Thompson EAA

Early Benefits From the Implementation of a Real Time Patient Tracking System for Surgical Patients. H.B. Gunnerson MD, J.S. Palmer, W.D. Watkins MD PhD, A.L. Ziemba, D. D. Cases, D. P. Strum MD, L.G. Vargas PhD, J. H. May PhD

Electronic Records Reduce Private Practice Expenses. David W. Edsall MD, Jerry Stonemetz MD

Gas Man Explains the Cost of Inhalation Anesthesia James H. Philip MD

Increase in Charges From Implementation of an Automated Charge Generation Software Program, ANELOG. Jerry Stonemetz MD, David Edsall MD

Inlet Conditions: Unexpected Source of Error in Respiratory Flow Measurements. Scott Kofoed BSEE, Joseph Orr PhD, Dwayne Westenskow PhD

Low-Perfusion Resistant Pulse Oximetry. W. Weber MS, IM Elfadel PhD, S J Barker PhD

Scanning Technology Automates Difficult Airway Registry Gordon L. Gibby MD, Lynette Mark MD, Joyce P. Drake

Supplemental Resident Education Using Computer-Assisted Instruction Programs. David T. Seitman MSBME MD, Thomas Eckert MD, Jeff E. Hawtof BSCS.

The Evolution of the Anesthetic Record: The Impact of Modern Technology. H. Ferrari, L. Baudendistel, C. Bowen, V. Foroughi, P. Krucylak, J. Schweiss



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