STA ANNUAL MEETING 2009:
<< Changing Technology To Meet The Future >>
Syllabus
On behalf of the program committee and Board of Directors, welcome to this year's STA Annual Meeting: "Changing Technology To Meet The Future". I would personally like to thank Drs. Leslie Jameson and Ted Dushane for organizing this event and securing the outstanding faculty, who have generously given of their time to prepare and present their lectures and demonstrations.

The STA Annual Meeting affords an opportunity for clinicians, technicians, engineers and industry specialists at all levels to meet and exchange ideas on the future of anesthesia/healthcare related technologies. We hope that you all take advantage of this unique venue and use the take time to meet with your fellow attendees during the meeting.

With the increasing fiscal and political challenges that face healthcare and industry the Society for Technology in Anesthesia and it’s Annual Meeting become more essential in understanding and shaping our future. As a Society, we look for continued growth and new input as we move forward.

Please consider taking an active role in the STA so that we may face these challenges together. The STA committees and Board of Directors encourage new members, ideas and suggestions to help meet our goals.

Thank you for joining us. We look forward to a successful meeting.

David M. Feinstein, MD
STA President
The Society for Technology in Anesthesia (STA) is an international membership-based non-profit organization. Members are physicians, engineers, students and other non-physicians who represent the users, teachers and developers of anesthesia related technologies, computing and simulators.

The Society for Technology in Anesthesia (STA) is pleased to be a Component Society of the IARS and the sponsor of the Section in Anesthesia and Analgesia on Technology, Computing and Simulation. Anesthesia and Analgesia is the STA’s Official Journal.

2008 Board of Directors

President
David Feinstein, MD
Beth Israel Deaconess Medical Center

Immediate Past President
Mike Jopling, MD
Ohio State University

President Elect
Mohamed Rehman, MD
St. Christopher’s Hospital for Children

Secretary
D. John Doyle, MD, PhD, FRCPC
Cleveland Clinic Foundation

Treasurer
John Pawlowski, MD
Beth Israel Deaconess Medical Center

At Large International
Hanne Storm, MD, PhD
Rikshospitalet University Hospital

At Large
Christopher Wiley, MD
Dartmouth-Hitchcock Medical Center

Kick Shelly, MD
Yale University
At Large Industry
Michael O'Reilly, MD
University of Michigan Medical Center

Section Editor
Jeffery Feldman, MD
Children's Hospital of Philadelphia

Industry Liaison
Heidi Hughes, BSN

2009 Annual Meeting Program Chair
Leslie Jameson, MD
University of Colorado Health Center

2009 Abstract Chairs
Kirk Shelly, MD
Yale University

Ted Duschane, MD, PhD
Brigham & Women's Boston
Mission Statement
The Society’s mission is to improve the quality of patient care by improving technology and its application. The Society promotes education, research, collaborates with location, national and international organizations, sponsors meetings, exhibitions, awards grants, and recognizes achievement.

Meeting Objectives
1. Review new developments in mechanisms of anesthetic toxicity in newborns and elderly. Topics will focus on fetal alcohol syndrome; anesthesia induced neuronal apoptosis, anesthesia and Alzheimer’s disease, and postoperative cognitive dysfunction.

2. Discussion pharmacologic perspectives on commonly held beliefs in anesthetic dogma. Topics will include a review of benefits and potential dangers of inhalation agents, a closer look at the toxic effects of Ketamine on the injured brain, and the emerging use of Propofol by non-anesthesiologists.

3. Review innovations in genomics and proteomics used to describe drug effect, development of a DNA biobank, imaging metabolomics in vivo, and new horizons in biomarkers.

CME Accreditation Statement
This activity has been planned and implemented with the Essential Areas of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the Society for Technology in Anesthesia (STA) and the International Anesthesia Research Society (IARS.) The IARS is an accredited by the ACCME to provide continuing medical education for physicians. The IARS designates this continuing medical educational meeting for AMA PRA Category 1 Credit(s)™. Physicians should claim only those hours of credit that he/she actually spent in the educational activity.

Speaker and Presenter Disclosure Statement
The International Anesthesia Research Society (IARS) adheres to ACCME standards regarding industry support of continuing education. Disclosure of faculty and commercial relationships, if any will be made known at the activity. Speakers are also expected to openly disclose inclusion or discussion of any off-label, experimental, or investigational use of drugs or devices in their presentations.
STA 2009 Anesthesia Essentials Course: Blanco Room

Wednesday January 14, 2009

08:30 – 09:00  Introduction

09:00 – 09:30  Session 1: Mini Talks
               A Typical Day
               Anesthesia Machine for Non-Clinicians
               Anesthesia Basics

09:30 – 10:30  Session 2: Preoperative Evaluations/Record Keeping
               Introduction Topic
               Structured Pre-Op Evaluations
               Small Groups (4/5 per group)
               Patient Interview
               Discussions: Written Records v. AIMS
               What’s Important- Why Do We Interview
               Review AIMS records

10:30 – 10:45  Break

10:45 – 12:00  Session 3: What is Anesthesia: General?
               Introduction to Topic
               Simulator Session
               Drugs: Effects on vital signs, mental status, ect.
               Participants Case Study with Charting

12:00 – 12:45  Lunch: Live Oak Room

12:45 – 13:45  Session 4: What is Anesthesia: Regional & MAC?
               Introduction to Topic
               Simulator Session
               Drugs: Effects on vital signs, mental status, ect.
               Participants Case Study with Charting

13:45 – 15:00  Session 5: Interesting Cases
               Introduction to Topic
               Simulator Session
               Drugs: Effects on vital signs, mental status, ect.
               Participants Case Study with Charting

Session 5: Interesting Cases
           Introduction to Topic
           Simulator Session
           Drugs: Effects on vital signs, mental status, ect.
           Participants Case Study with Charting
## Annual Meeting 2009: Changing Technology to Change the Future

### Daily Program Schedule

#### Wednesday, January 14, 2009

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:30 - 08:30</td>
<td>Blanco Foyer</td>
<td>Anesthesia Essentials Registration &amp; Continental Breakfast</td>
</tr>
<tr>
<td>08:30 - 16:15</td>
<td>Blanco</td>
<td>Anesthesia Essentials Course (Formerly “Anesthesia 101”)</td>
</tr>
<tr>
<td>07:30 - 11:00</td>
<td>Pecan</td>
<td>Strategic Planning Session</td>
</tr>
<tr>
<td>12:00 - 13:15</td>
<td>Live Oak</td>
<td>Essentials Course &amp; Board of Directors Luncheon</td>
</tr>
<tr>
<td>13:15 - 16:30</td>
<td>Pecan</td>
<td>Board of Directors Meeting</td>
</tr>
<tr>
<td>15:30 - 19:30</td>
<td>Los Rios Foyer</td>
<td>STA Annual Meeting Registration</td>
</tr>
<tr>
<td>18:00 - 20:00</td>
<td>Los Rios East</td>
<td>Welcome Reception in Exhibit Area</td>
</tr>
</tbody>
</table>

#### Thursday, January 15, 2009

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>06:30 - 08:30</td>
<td>Los Rios Foyer</td>
<td>Registration &amp; Continental Breakfast</td>
</tr>
<tr>
<td>07:00 - 14:00</td>
<td>Los Rios East</td>
<td>Exhibits Open</td>
</tr>
<tr>
<td>07:45 - 08:00</td>
<td>Regency East</td>
<td>Welcome - David Feinstein, MD: STA President</td>
</tr>
<tr>
<td>08:00 - 09:55</td>
<td>Regency East</td>
<td>Session 1: Bridging the Gap: Old Technologies in a New Environment</td>
</tr>
<tr>
<td>08:05 - 08:40</td>
<td></td>
<td>New Uses for Processed EEG Monitoring</td>
</tr>
<tr>
<td>08:40 - 09:15</td>
<td></td>
<td>What does Universal SpO2, monitoring do for patients and the bottom line?</td>
</tr>
<tr>
<td>09:15 - 09:45</td>
<td></td>
<td>Technical Challenges of Global Monitoring</td>
</tr>
<tr>
<td>09:45 - 09:55</td>
<td></td>
<td>Panel Discussion</td>
</tr>
<tr>
<td>09:55 - 10:25</td>
<td>Los Rios East</td>
<td>Break with Exhibitors</td>
</tr>
</tbody>
</table>
Thursday January 15, 2009 (Continued)

10:25 - 12:15 Regency East  Session 2: Is Pulse Pressure Variation a New Monitoring Parameter?

10:30 - 11:05  
Is Pulse Pressure Variation a New Monitoring Parameter?  
Jeffery Feldman, MD

11:05 - 11:40  
Pulse Pressure Variation Derived from the Arterial Pressure  
Derek Woodrum, MD

11:40 - 12:15  
Pulse Pressure Variation Derived from the Photoplethysmogram  
Maxime Cannesson, MD

12:15 - 14:00 Rio Grande West  Lunch with Exhibitors

14:00 - 16:30 Regency East  Session 3: Workshop: Making Equipment Better

Breakout Sessions
Anesthesia Machines: D. John Doyle, MD, PhD
Cardiovascular Monitors: Kirk Shelly, MD, PhD
Infusion Pumps: Robert Loeb, MD
SpO2 and Beyond: Michael O’Reilly, MD

15:30 - 16:30 Regency East  Panel Discussion

Dinner on Your Own

Friday January 16, 2009

07:00 - 08:30 Los Rios Foyer  Registration
07:00 - 08:00 Los Rios  Continental Breakfast & Exhibits
Friday, January 16, 2009 Continued

08:00 – 10:35  Regency East  Session 4: Keynote Session: Managing Anesthesia Delivery
08:05 – 09:05  Closed-Loops in Anesthesia  
  Michael Struys, MD
09:05 – 09:45  Simulators: Training to Delivery  
  Wolfgang Heinrichs, MD
09:45 – 10:20  The View from the FDA: Getting Approval for Closed Loop Anesthesia  
  Sandy Weininger
10:20 – 10:35  Panel Discussion  
  Moderator: Hanne Storm, MD, PhD
10:35 – 11:05  Los Rios  Break with Exhibitors
11:05 – 12:05  Regency East  Session 5: Focus on the Future- Award Research Abstract Oral Presentations  
  Moderator: Kirk Shelly, MD, PhD
12:05 – 12:50  Los Rios  View Abstracts
12:50 – 14:00  Rio Grande West  Lunch & STA Annual Business Meeting & Gravenstein Award  
  David Feinstein, MD STA President  
  William New, MD Gravenstein Award Winner
14:00 – 16:00  Regency East  Session 6: Show & Tell Innovative Equipment & Software  
  Moderator: Robert Loeb, MD
16:30 – 19:00  Regency East  Session 7: Wound Care
16:30 – 17:30  Clinical Use of Negative Pressure Therapy in the Treatment of Wounds  
  Suresh Koneru, MD
17:30 – 18:30  The Theory of Negative Pressure Wound Therapy  
  Amy McNulty, PhD
18:30 – 19:00  Panel Discussion  
  Moderator: George Hutchinson, MD
Society for Technology in Anesthesia

Saturday January 17, 2009

6:30 - 08:00 Pecan
Registration

7:00 - 08:00 Los Rios Foyer
Continental Breakfast & Exhibits

7:00 - 08:00 Los Rios

8:00 - 10:30 Regency East
Session 8: Real World Information Systems from Infancy to Mortality

8:05 - 08:40 Installation and Integration of an AIMS into Your Hospital’s Electronic Environment
Michael Vigoda, MD

8:40 - 09:15 Pre-Installation Issues: The Painful 1st Year
Robert Loeb, MD

9:15 - 09:45 Growing Pains the First 5 Years
David Feinstein, MD

9:45 - 10:30 Additional Functionality I Wish the Vendor Provided
Mohamed Rehman, MD

0:30 - 10:45 Los Rios
Break with Exhibitors

0:45 - 12:30 Regency East
Session 9: Finding and Creating Useful Anesthesia Information Systems

0:45 - 12:30 Case Presentations: Current Issues and Suggested Solutions Utilizing Advances in Technology Solutions
Presented By: Sachin Kheterpal, MD
David Reich, MD
Shermeen Vakharia, MD
Michael O’Reilly, MD
John Fiadjoe, MD
Moderator: Mohamed Rehman, MD

12:30 - 14:00 Rio Grande West
Session 10: Box Lunch with AIMS Users & Vendors
Sponsorship Recognition

We would like to recognize our corporate members and supports for 2009. These companies have made our educational and research activities possible.

**Platinum**
- Masimo Corporation ........................................... www.masimo.com
- Oribion ........................................................... www.oridion.com

**Gold**
- Drager Medical .................................................. www.dragermedical.com

**Silver**
- GE Healthcare .................................................... www.gehealthcare.com
- iMD Soft ............................................................ www.imdsoft.com
- Philips ............................................................... www.philips.com

**Entrepreneur- Gold**
- Covidien ........................................................... www.covidien.com
- Dannemiller Memorial Fund .................................... www.dannemiller.com
- Hospira World .................................................... www.hospira.com
- McKesson .......................................................... www.mckesson.com
- Rapid Sequence Anesthesia Solutions ...................... www.rapidseq.com

**Entrepreneur- Silver**
- Docusys Inc ........................................................ www.docusys.net
- Eko Systems ....................................................... www.ekosystems.com
**Corporate Member & Sponsorship Information**

**Covidien**  
*Display #13*

*Positive Results for Life™.*  
Covidien is a global $9 billion manufacturer of leading medical devices and supplies, imaging products and pharmaceuticals. Covidien employs more than 43,000 people worldwide and is dedicated to working with medical professionals to improve patient outcomes. Its portfolio of leading brands includes Nellcor, Puritan Bennett, and Mallinckrodt.

**Dannemiller Memorial Foundation**  
*Display #11*

The Dannemiller Foundation is exhibiting its flagship website [www.Pain.com](http://www.Pain.com). Pain.com offers extensive resources for pain medicine professionals, including interviews, commentaries, journal abstracts, and free CME.

**DocuSys Inc.**  
*Display #1*

DocuSys, providing comprehensive digitization of anesthetics, incorporates customizable decision support, professional fee capture, comorbid condition documentation, tracking and billing of drugs to maximize quality and financial return. The system incorporates an intravenous drug monitor, DocuJect®, which utilizes bar coding and digital imaging to digitize drug delivery data.

**Drager Medical**  
*Display #3*

Drager Medical AG & Co. KG is one of the world’s leading manufacturers of medical equipment. The Company offers products, services and integrated CareArea™ Solutions throughout the patient care process—emergency Care, Perioperative Care, Critical Care, Perinatal Care and Home Care. Drager Medical employs nearly 6,000 people worldwide. Additional information is available on the company’s website [www.dragermedical.com](http://www.dragermedical.com).

**Eko Systems**  
*Display #14*

Eko Systems, Inc., a healthcare information technology company, develops and provides clinical information systems for perioperative care. Its product, Frontiers is an integrated perioperative clinical information management systems solution that meets the complex electronic medical record, compliance management, and management reporting needs of various clinicians throughout the perioperative care environment, as well as provides various clinical, operational, and financial reports. The company also provides report writer, pre-op status monitor, and intra-op status monitor.
GE Healthcare

GE is dedicated to helping you transform healthcare delivery by driving critical breakthroughs in biology and technology. Our expertise in medical imaging and information technologies, medical diagnostics, patient monitor systems, drug discovery, and biopharmaceutical manufacturing technologies is enabling healthcare professionals around the world discover new ways to predict, diagnose, and treat disease earlier.

Hospira

Hospira is a global specialty pharmaceutical and medication delivery company dedicated to Advancing Wellness™ by developing, manufacturing and marketing products that help improve productivity, safety and efficiency of patient care. With 70 years of service to the hospital industry, Hospira’s portfolio includes generic acute-care injectables, integrated medication management and infusion therapy solutions, and injectable contract manufacturing.

Masimo Corporation

Masimo (NASDAQ: MASI) is a global medical technology company that develops and manufactures innovative noninvasive patient monitoring solutions, including bedside and handheld medical devices and a wide array of sensors. A key medical technology innovator, Masimo is responsible for the invention of award-winning noninvasive technologies that are revolutionizing patient monitoring, including Masimo SET® pulse oximetry, Masimo Rainbow SET® Pulse CO-Oximetry®, and first-ever noninvasive and continuous total hemoglobin (SpHb®) monitoring technology. Visit www.masimo.com for more information.

McKesson

McKesson provides a total anesthesia solution that gives you the power to improve your clinical and financial operations. Our revenue cycle outsourcing services help anesthesiologists optimize collections, increase revenue and manage compliance risks. McKesson’s anesthesia care solution compliments the delivery of quality anesthesia care with expert documentation, streamlined workflow and improved financial position for the anesthesiologist and hospital.
iMD Soft

iMDsoft is a leading provider of clinical information systems dedicated to automating the critical care and perioperative continuum. The MetaVision Suite is a fully-integrated, customizable solution for data collection and presentation, order management, clinical analysis, and decision support. Major medical centers across the US, Europe, and Asia use iMDsoft technology to improve care quality, promote patient safety, enhance financial performance, support research and compliance, and achieve sustainable market leadership.

Oribion

Oridion’s Microstream® capnography: effective, proven airway management providing the earliest indication of airway compromise. Microstream capnography combines proprietary sensing technology, eliminating the need for gas compensation. Situation-specific patient interfaces, for oral, nasal, and intubated sampling provide accurate and easy to use assessment of your patient’s ventilation in any clinical setting, including PCA and procedural sedation.

Philips

Philips Healthcare is a worldwide provider of Diagnostic Imaging Products, Cardiac and Physiological Monitoring Systems and Information Management applications. Philips Healthcare currently offers point of care clinical information systems that automatically record, store and provide reports for a given care setting. Today Philips offers Medical IT solutions for the perioperative environment (CompuRecord), the OB environment (OB TraceVue) and the critical care environment (Intellivue Clinical Information Portfolio, Critical Care or ICIP, CC).

Rapid Sequence Anesthesia Solutions

Rapid Sequence Anesthesia Solutions’ robust, customizable and portable Electronic Anesthesia Record keeping System will enhance your revenue cycle. Data flows from OR to billing. Rapid, clean submissions plus aggressive follow-up equals more cash in your pocket. Pre-op through payment we are your team. Plus we answer our telephone! No more teleprompts!
Speaker Disclosure Information

Steven Baker, MD
No Disclosures

Maxime Cannesson, MD
Masimo Consultant
Covidien Consultant

D. John Doyle, MD, PhD
No Disclosures

David Feinstein, MD
No Disclosures

Jeffery Feldman, MD
No Disclosures

John Fiadjoe, MD
No Disclosures

Wolfgang Heinrichs, MD
AQAI GmbH, AQAI produces model software
Simulation Center Mainz for METI simulators

George Hutchison, PhD
No Disclosures

Sachin Kheterpal, MD
No Disclosures

Suresh Koneru, MD
No Disclosures

Robert Loeb, MD
No Disclosures

Amy McNulty, PhD
No Disclosures

Michael O’Reilly, MD
Masimo Executive
GE Medical Systems Consultant
Docusys Stock Options
Society for Technology in Anesthesia

Speaker Disclosure Information Continued

Josh Pyke
Masimo Research Support

Mohamed Rehman, MD
No Disclosures

David Reich, MD
No Disclosures

Kirk Shelly, MD, PhD
No Disclosures

Hanne Storm, MD, PhD
No Disclosures

Michael Stuys, PhD
No Disclosures

Andreas Taenzer, MD
No Disclosures

Shermee Vakharia, MD
No Disclosures

Michael Vigoda, MD
No Disclosures

Sandy Weininger
No Disclosures

Derek Woodrum, MD
No Disclosures
Session I: Bridging the Gap – Old Technology in a New Environment
Thursday January 15, 2009
08:00-09:55
Moderator – Leslie Jameson, MD

Presentations:

1. New uses for processed EEG monitoring
   **Speaker:** Steven Barker, MD
   **Objectives:**
   1. Review the history of brain function monitoring, to understand its goals and limitations.
   2. Examine each of the current processed EEG monitors from the standpoint of how they work and how their functional mechanisms might affect their performance.
   3. Using the information above, summarize where we are today in brain function monitoring, from the standpoint of preventing either awareness or anesthetic overdose.

2. What does universal SpO₂ monitoring do for patients and the bottom line?
   **Speaker:** Andreas Taenzer, MD
   **Objectives:**
   1. Efficacy of oximetry based universal monitoring.
   2. Impact of oximetry based universal monitoring on significant outcome variables.
   3. At the end of the session, the learner should understand how the use of universal SpO₂ may improve patient outcome and aid the efficacy of medical emergency teams as suggested by the "100,000 lives saved" campaign by the IHI.

3. Technical Challenges of Global Monitoring
   **Speaker:** Josh Pyke
   **Objectives:**
   1. Identify challenges to integrating global monitoring with clinical workflow.
   2. Present approach for addressing those challenges as used at one institution.

**Solutions:** Pulse Oximetry and EtCO₂
**Panel Discussion**
Session II: Is Pulse Pressure Variation a new Monitoring Parameter?
Thursday January 15, 2009
10:25 – 12:15
Moderator – Jeffrey Feldman, MD

Presentations:
Is Pulse Pressure Variation a new Monitoring Parameter?
Speaker: Jeffrey Feldman, MD, MSE
Objectives:
1. Review the statistical tools available to validate the clinical performance of an automated respiratory induced variation monitor
2. Review the scientific evidence to date documenting the clinical utility of automated monitors for extracting information about arterial pressure variation
3. Discuss the potential clinical utility and future studies that are needed.

Pulse Pressure Variation derived from the Arterial Pressure
Speaker: Derek Woodrum, MD
Objectives:
1. Review the physiology of respiratory induced arterial pressure variation.
2. To define the various parameters that are extracted from the arterial pressure signal to quantify the variation.
3. Describe the technology currently available for quantifying the variation using the arterial pressure signal.
4. Discuss the potential clinical application.

Pulse Pressure Variation derived from the Photoplethysmogram
Speaker: Maxime Cannesson, MD
Objectives:
1. To describe how respiratory variations in the plethysmographic waveform can provide information regarding respiratory variations in the arterial pressure waveform.
2. To describe how plethysmographic waveform can be analyzed in order to obtain this information.
3. To discuss potential applications of these new parameters for fluid optimization in the operating room.
4. To discuss the main limitations of this index and how they can be overcome.
Session III: Monitoring – Workshop – Making Equipment Better
Thursday January 15, 2009
14:00 – 16:30

Presentations:
Breakout Session: Anesthesia Machines
Speaker: D. John Doyle, MD, PhD
Objectives:
At the end of the session, the learner should know about the many human factor problems with contemporary anesthesia machines.

Breakout Session: Cardiovascular Monitors
Speaker: Kirk Shelley, MD, PhD
Objectives:
At the end of the session, the learner should know the basic role of cardiovascular monitors and the implication of newly emerging technology. This session will review the indications for cardiovascular monitoring. There will be an emphasis on the newest technologies being introduced. There’ll be a focus on obtaining information that drives clinical decisions as oppose to “knowing for the sake of knowing.”

Breakout Session: Infusion Pumps
Speaker: Robert Loeb, MD
Objectives:
After attending this presentation, the learner will:
1. Understand the challenges during the first year after AIMS installation.
2. Know how to design a training program for new AIMS users.
3. Realize that ongoing clinical support is vital to the successful introduction of an AIMS.

Breakout Session: SpO₂ and Beyond
Speaker: Michael O’Reilly, MD
Objectives:
1. Describe the parameters available from the pulse oximeter.
2. Apply continuous non-invasive hemoglobin to clinical situations.
Session IV: Managing Anesthesia Delivery
Friday January 16, 2009
08:00 – 10:35
Moderator – Hanne Storm, MD

Presentations:
Closed-Loops in Anesthesia Delivery
Keynote Speaker: Michel Struys, MD
Objectives:
This lecture focuses on the most recent developed and tested feedback systems in anesthesia. Various new approaches for controlling the administration of intravenous and inhaled hypnotic-anesthetic drugs are published recently. For the analgesics, a framework for further research has been presented in the literature. For the other drugs like muscle relaxants and hemodynamics, a short review will be presented. At the end of this session, the learner should know about newly developed automated drug delivery systems in anesthesia.

Simulators: Training to Delivery
Speaker: Wolfgang Heinrichs, MD
Objectives:
The audience should learn about:
1. How to use patient simulators for training closed loop anesthesia.
2. How to implement special models on simulators in order to generate anesthesia depth information.
3. How to implement drug interactions common in anesthesia (e.g. Propofol + Remifentanil) in the pharmacology models of human patient simulators.

The View from the FDA. Getting Approval for Closed-Loop Anesthesia
Speaker: Sandy Weininger
Objectives:
Understand the regulations and their intent Determine the anesthesiologist’s role in device safety

New Concept Equipment. What takes so long?
Panel Discussion
Computers in Anesthesia Show and Tell Session
Moderator: Butch Loeb

Interesting Hardware/Software
This session is an opportunity for conference attendees to demonstrate interesting computer programs, devices, and gadgets that they have developed or used in the past year.

Brian Rothman
Vanderbilt University
Integration Of Apple Computer Into Microsoft Enterprise Environment To Use Platform Specific Programs

Frank Block
University of Arkansas
Wiki for Collaborative Writing of the Manual of OR Design

Paul St. Jacques
Vanderbilt University
Leveraging technology to improve quality and decrease cost in providing anesthesia care

Engineering Competition
The clinical problem: Apnea and/or respiratory obstruction during patient transport can result in death or permanent morbidity. Most patients are not monitored during transport from the OR due to the cost and intrusiveness of current technology. Most ICU patients do not have respiratory monitoring during transport (aside from pulse oximetry, but desaturation of is a late sign of respiratory problems in patients breathing supplemental oxygen). Respiratory monitoring currently consists of a vigilant practitioner observing the patient for signs of apnea or obstruction.

The task: Consider available monitoring technologies and design a portable, inexpensive, reliable, and convenient device that detects patient apnea/obstruction during transport.

John Doyle
Cleveland Clinic Lerner College of Medicine of Case Western Reserve University
Preliminary Design of Respiratory Transport Monitor Based on Color Spectrographic Analysis of Breathing Sounds

Brian Rothman and James Berry
Vanderbilt University
Acoustic Apnea Detector
Bryce Hill, Joseph Orr, Ken Johnson, Dwayne Westenskow
University of Utah
A Precordial Stethoscope to Detect Airway Obstruction and Apnea during Moderate Sedation

Jeff Mandel
University of Pennsylvania
<Title to be determined>

Relevant Emerging Technology

Steve Barker
University of Arizona
Work-in-Progress: The Masimo ARM Monitor
Session VII: Wound Care
Friday January 16, 2009
16:30 – 19:00
Moderator – George Hutchinson, MD

Presentations:
Advanced Concepts in Wound Care: Lessons Learned Using the Wound V.A.C. Over The Past 12 Years
Speaker: Suresh Koneru, MD

Mechanisms of Action of Negative Pressure Wound Therapy
Speaker: Amy McNulty, MD
Session VIII: Real World Information Systems from Infancy to Maturity
Saturday January 17, 2009
08:00 – 10:30
Moderator – Mohamed Rehman, MD

Presentations:

Installation and Integration of an AIMS into your Hospital’s Electronic Environment
Speaker: Michael Vigoda, MD

Peri-Installation Issues. The Painful First Year
Speaker: Robert Loeb, MD
Objectives:
After attending this presentation, the learner will:
1. Understand the challenges during the first year after AIMS installation.
2. Know how to design a training program for new AIMS users.
3. Realize that ongoing clinical support is vital to the successful introduction of an AIMS.

Growing Pains the First Five Years
Speaker: David Feinstein, MD

Additional Functionality I Wish the Vendor had Provided
Speaker: Mohamed Rehman, MD
Objectives:
1. Understanding problems of a mature AIMS system.
2. Think of data mining and data elements during set up of AIMS.
3. Problems associated with interfacing with new software.
Session IX: Finding and Creating a Useful Anesthesia Information System  
Saturday January 17, 2009  
10:45 – 12:30  
Moderator – Mohamed Rehman, MD

Case Presentations:
Current Issues and Suggested Solutions Utilizing Advances in Technology Solutions

Case Discussion Participant
Speaker: Sachin Kheteral, MD  
Objectives:
1. To understand the goals of the multicenter perioperative outcomes group (MPOG).
2. List the different data sources that can be used for large dataset research.
3. Describe some of the opportunities and challenges associated with large dataset research.

Case Discussion Participant
Speaker: David Reich, MD  
Objectives:
At the end of the session, the learner should know the data elements that are extracted from AIMS for the purposes of creating an electronic professional charges voucher. The learner should also know the means of assuring the quality of the data and feedback mechanisms for data correction.

Case Discussion Participant
Speaker: Shermeen Vakharia, MD  
Objectives:
The goal of this session is to demonstrate to the audience the role of Anesthesia Information Management System (AIMS) in documenting and monitoring compliance.

Case Discussion Participant
Speaker: John Fiadjo, MD
<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Disclosures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aymen</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Shang</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>John</td>
<td>MB BCh</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Yehoshua</td>
<td>MS</td>
<td>Oridion</td>
</tr>
<tr>
<td>Maryam</td>
<td>BSc</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>D. John</td>
<td>MD, PhD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Chad</td>
<td>MD</td>
<td>Oridion</td>
</tr>
<tr>
<td>Richard</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>John</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Yaacov</td>
<td>MD</td>
<td>Oridion, Jerusalem, Israel</td>
</tr>
<tr>
<td>Thomas</td>
<td>MD, DEAA</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Yoshinori</td>
<td>MD, Ph.D</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>David</td>
<td>BSEE, MBA</td>
<td>Datascpe Patient Monitoring</td>
</tr>
<tr>
<td>Scott</td>
<td>MD</td>
<td>Aspect Medical Systems</td>
</tr>
<tr>
<td>David</td>
<td>BEng(Hons)</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Jeff</td>
<td>MD MS</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Raj</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Paul</td>
<td>RRT, FAARC</td>
<td>Oridion</td>
</tr>
<tr>
<td>John</td>
<td>MD, PhD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Alfred</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Paul</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Brian</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Thiruvenkadham</td>
<td>MD, DNB</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Harsha</td>
<td>MD</td>
<td>AI Medical Devices</td>
</tr>
<tr>
<td>Shashank</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Joan</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Paul</td>
<td>MD</td>
<td>Co-Inventor of technology being presented</td>
</tr>
<tr>
<td>Arthur</td>
<td>PhD</td>
<td>Oridion Capnography, Inc.</td>
</tr>
<tr>
<td>Richard</td>
<td>BS</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Carl</td>
<td>PhD</td>
<td>Draeger Medical</td>
</tr>
<tr>
<td>Christopher</td>
<td>MD</td>
<td>No Disclosures</td>
</tr>
<tr>
<td>Dwayne</td>
<td>PhD</td>
<td>Anecare Laboratories Inc.</td>
</tr>
<tr>
<td>Gozal</td>
<td>MD</td>
<td>O ridion</td>
</tr>
<tr>
<td>#</td>
<td>Title</td>
<td>Submitting Author</td>
</tr>
<tr>
<td>----</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>The Role of Transthoracic Echocardiography as a Real Time Hemodynamic Monitoring Tool During Induction of Anesthesia</td>
<td>Thiruvenkadam Salvaraj, MD, DNB, MNAMS</td>
</tr>
<tr>
<td>2</td>
<td>The Integrated Pulmonary Index: Validity and Application in the Pediatric Population</td>
<td>Yaacov Gozal, MD</td>
</tr>
<tr>
<td>3</td>
<td>Reliability of the Integrated Pulmonary Index Postoperatively</td>
<td>Yaacov Gozal, MD</td>
</tr>
<tr>
<td>4</td>
<td>Capnography Filter Lines Adapted for Pressure (PTAF) to Detect Apnea and Hypopnea as a Possible Method for Sleep Disorder Breathing Pattern Recognition</td>
<td>Richard Wales, BS, RRT</td>
</tr>
<tr>
<td>5</td>
<td>Postural Changes And End-Tidal Carbon Dioxide In The Black Rhinoceros (DICEROS BICORNIS) And Its Importance To Field Anesthesia</td>
<td>Arthur Taft, PhD</td>
</tr>
<tr>
<td>6</td>
<td>Video RIFL (Rigid Flexible Laryngoscope)</td>
<td>Harsha Setty, MD</td>
</tr>
<tr>
<td>7</td>
<td>Evaluation of Rapid Response Team Flag-Alert Parameters</td>
<td>Aymen Alian, MD</td>
</tr>
<tr>
<td>8</td>
<td>Auxiliary Gas Mixing Integrated in an Anesthesia Machine - A New Safety Feature Cross Service Analysis of the Surgical Apgar Score</td>
<td>David Jamison, BSEE, MBA</td>
</tr>
<tr>
<td>9</td>
<td>Preliminary Design of Respiratory Monitor Transport Monitor Based on Color</td>
<td>Paul St. Jacques, MD</td>
</tr>
<tr>
<td>10</td>
<td>Spectrographic Analysis of Breathing Sounds Work and Power Characteristics of Rapid Shallow Breathing Created by Inhalational Agents can be Displayed Using Dynamic 3-Dimensional Respiratory Loops</td>
<td>D. John Doyle, MD, PhD</td>
</tr>
<tr>
<td>11</td>
<td>The Easy-Cuff: A New Pressure Measuring Syringe Clinical Evaluation of a Method for Producing Probability Ramp Sedation with Propofol and Remifentanil During Colonoscopy</td>
<td>Raj Modak, MD</td>
</tr>
<tr>
<td>12</td>
<td>Integration Of Apple Computer Into Microsoft Enterprise Environment To Use Platform Specific Programs</td>
<td>Joan Spiegel, MD</td>
</tr>
<tr>
<td>13</td>
<td>Jeff Mandel, MD, MS</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Brian Rothman, MD</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Author</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Genetically Variation Influence the Skin Conductance Response to Nociceptive Pain</td>
<td>Hanne Storm, MD, PhD</td>
<td>16</td>
</tr>
<tr>
<td>15 in Anesthesized Patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of a Standard for Reducing Use</td>
<td>Carl Wallroth, PhD</td>
<td>17</td>
</tr>
<tr>
<td>16 Errors with Medical Devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of a Standard for the Interoperability of Medical Devices</td>
<td>Carl Wallroth, PhD</td>
<td>18</td>
</tr>
<tr>
<td>Development of a Standard for Physiologic Closed Loop Controllers In Medical Devices</td>
<td>Carl Wallroth, PhD</td>
<td>19</td>
</tr>
<tr>
<td>Development of a Global Standard for Anaesthetic Workstations</td>
<td>Carl Wallroth, PhD</td>
<td>20</td>
</tr>
<tr>
<td>19 End Tidal CO2 Measurements with Non-Invasive Ventilation</td>
<td>Paul Nuccio, RRT, FAARC</td>
<td>21</td>
</tr>
<tr>
<td>Operating Room Central Monitoring Systems:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Technical Pitfalls and Limitations</td>
<td>Alfred Pinchak, MD</td>
<td>22 &amp; 23</td>
</tr>
<tr>
<td>22 REMOVED FROM CONSIDERATION</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Operating Room Central Monitoring Systems:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Dependent Data Entry in an Anesthesia Information System is Not a Reliable Resource for Retrospective Clinical Outcomes Research.</td>
<td>Christopher Ward, MD</td>
<td>25</td>
</tr>
<tr>
<td>Expectation of Medical 3-D Viewer in Anesthesia Practice.</td>
<td>Yoshinori Iwase, MD, PhD</td>
<td>26</td>
</tr>
<tr>
<td>“We’ve Learned this!” USE OF MEDICAL STUDENTS TO GAUGE THE NEED FOR REPETITION OF RARE DISEASE PRESENTATION. Case Study: Carcinoid</td>
<td>John Pawlowski, MD, PhD</td>
<td>27</td>
</tr>
<tr>
<td>25 or just annoyed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Precordial Stethoscope to Detect Airway Obstruction and Apnea during Moderate Sedation</td>
<td>Dwayne Westenskow, PhD</td>
<td>28</td>
</tr>
<tr>
<td>Effects of Hypercapnic Hyperpnoea during Emergence on PACU Recovery.</td>
<td>Dwayne Westenskow, PhD</td>
<td>29</td>
</tr>
<tr>
<td>Monitoring the Health of the Scheduling Interface to an Anesthesia Information Management System</td>
<td>Richard Epstein, MD, CPHIMS</td>
<td>30</td>
</tr>
<tr>
<td>The Children’s Hospital of Philadelphia</td>
<td>John Fiadjoe, MD</td>
<td>31 &amp; 32</td>
</tr>
<tr>
<td>Title</td>
<td>Author(s)</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Quantitative Analysis of Vital Sign</td>
<td>Paul Reynolds, MD</td>
<td>33</td>
</tr>
<tr>
<td>30 Smoothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The World of Wavelets: Special Issues in Applying Wavelet Decomposition to the Electrocardiogram</td>
<td>D. John Doyle, MD, PhD</td>
<td>34</td>
</tr>
<tr>
<td>31 Analysis of the Electrocardiogram</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case Record Form Entry Time for</td>
<td>Chad Epps, MD</td>
<td>35</td>
</tr>
<tr>
<td>32 SafeSedation.org</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Evaluation of a Vibro-Tactile Belt for</td>
<td>Maryam Dosani, BCs</td>
<td>36</td>
</tr>
<tr>
<td>33 Physiological Monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34 Acoustic Apnea Detector</td>
<td>Brian Rothman, MD</td>
<td>37</td>
</tr>
<tr>
<td>Plethysmogram Variability as a Function of Time</td>
<td>Shang Allen, MD</td>
<td>38</td>
</tr>
<tr>
<td>35 Automated Analysis of Physiologic Data from an Anesthesiology Information Management System for Retrospective and Prospective Research Projects</td>
<td>Alfred Pinchak, MD</td>
<td>39</td>
</tr>
<tr>
<td>BIS Simulator: Model-based Interactive</td>
<td>Scott Kelly, MD</td>
<td>40</td>
</tr>
<tr>
<td>37 Simulation to Teach Anesthesia Titration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability of Vocera Communications Devices</td>
<td>Shashank Singh, MD</td>
<td>41</td>
</tr>
<tr>
<td>38 in the Operating Room Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual Cues for the Interaction of Two Physiological Parameters Improve Change Detection</td>
<td>John Chandler, MD, BCh</td>
<td>42</td>
</tr>
<tr>
<td>39 Comparison of Capnography Filter Lines for</td>
<td>Yehoshua Coleman, MS</td>
<td>43</td>
</tr>
<tr>
<td>Nocuand Mouth Breathing of End Tidal Carbon Dioxide Sampling With and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 Without Supplemental Oxygen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41 Using Technology to Improve Quality and Decrease Cost in Providing Anesthesia Care in an Environment with an Increasing Number of Patients and Decreasing Number of Anesthesiologists</td>
<td>Paul St. Jacques, MD</td>
<td>44</td>
</tr>
<tr>
<td>42 Head-mounted Display Evaluation in Anesthesia for Rigid Cystoscopy</td>
<td>David Liu, Beng(Hons)</td>
<td>45</td>
</tr>
<tr>
<td>Part-task Trainer Evaluation of a Head-Mounted Display for Physically Constrained Anesthesiologists</td>
<td>David Liu, Beng(Hons)</td>
<td>46</td>
</tr>
<tr>
<td>Title</td>
<td>Author</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------</td>
<td>------</td>
</tr>
<tr>
<td>McSleepyTM - a Completely Automatic Anesthesia Delivery System</td>
<td>Thomas Hemmerling, MD, DEAA</td>
<td>47</td>
</tr>
<tr>
<td>A Robot Prototype for Intravenous Catheter Placement</td>
<td>Thomas Hemmerling, MD, DEAA</td>
<td>48</td>
</tr>
<tr>
<td>Decreased Cerebral Saturations During Single-Lung Ventilation Correlate with Postoperative Morbidity Scores</td>
<td>Thomas Hemmerling, MD, DEAA</td>
<td>49</td>
</tr>
<tr>
<td>Pulsatile Cardio-Pulmonary Bypass Does Not Improve Microvascular Flow</td>
<td>Thomas Hemmerling, MD, DEAA</td>
<td>50</td>
</tr>
<tr>
<td>Managing the Risks of Display Evaluation</td>
<td>David Liu, Beng(Hons)</td>
<td>51</td>
</tr>
</tbody>
</table>