

**A-576** Room A, 10/17/2000 9:00 AM - 11:00 AM (PS)  
**Delivery of Heliox by Anesthesia Machine Produces Error in Fresh Gas Flow and Tidal Volume Measurements** *Avery Tung, M.D.; Sberwin Morgan, R.R.T., Anesthesia and Critical Care, University of Chicago, Chicago, IL, United States.* Heliox delivery via the air flowmeter on an anesthesia machine underestimates actual Heliox flow, reducing the expected  $\text{FiO}_2$  and increasing delivered tidal volumes.

**A-577** Room A, 10/17/2000 9:00 AM - 11:00 AM (PS)  
**No Comp A Formation during In Vitro Closed Circuit Sevoflurane Administration and Lithium Hydroxide as  $\text{CO}_2$  Absorbent** *Linda F.M. Versichelen, MD; Georges Rolly, PhD; Michel M.R.F. Struys, PhD; Marie Paule L.A. Bouche, PhD; Eric P. Mortier, DSc, Anesthesia, Ghent University Hospital, Ghent, Belgium.* No Comp A during in vitro closed circuit sevoflurane and Lithiumhydroxide .

### Engineering Technology: Airway Equipment & Pulse Oximetry

**A-578** Room 301, 10/16/2000 9:00 AM - 10:30 AM (PD)  
**LMA for Airway Management of Patients Undergoing Craniotomies Requiring Speech Monitoring** *Anh-Thuy T. Nguyen, M.D.; David Z. Ferson, M.D., Anesthesiology, The University of Texas, M.D. Anderson Cancer Center, Houston, TX, United States.* Our study demonstrates that the LMA offers a safe and efficient method for airway management in patients undergoing awake craniotomies for speech monitoring.

**A-579** Room 301, 10/16/2000 9:00 AM - 10:30 AM (PD)  
**The Use of the Intubating Laryngeal Mask Endotracheal Tube with Intubating Devices** *Kirstin M. Erickson, M.D.; Harrison A. Barry, M.D.; Kamath S. Gerard, M.D., Anesthesiology, Mayo Clinic, Rochester, MN, United States.* Intubating devices may fail due to the inability to advance the endotracheal tube through the vocal cords. Using the intubating laryngeal mask endotracheal tube may prevent this problem.

**A-580** Room 301, 10/16/2000 9:00 AM - 10:30 AM (PD)  
**Laboratory Evaluation of an Auditory Display Designed to Enhance Intra-Operative Monitoring** *Robert G. Loeb, MD; W. Tecumseh Fitch, PhD, Anesthesiology, University of Arizona, Tucson, AZ, United States.* We developed and tested an audible display of 6 cardiovascular and respiratory variables. Our results suggest that such a display could enhance clinician awareness of intraoperative vital signs.

**A-581** Room 301, 10/16/2000 9:00 AM - 10:30 AM (PD)  
**The SiBI™ Connector: A New Medical Device for Inhalation Induction with Sevoflurane** *M.J. Colas, M.D.; P. Truong, M.D.; L. Dumais, M.D.; R. Martin, M.D.; J.P. Tetrault, M.D., Anesthesia, U of Sherbrooke, Sherbrooke, QC, Canada.* This study evaluates the connector's efficiency in simplifying vital capacity induction, preoxygenating patients and reducing anesthetic gas leaks.

**A-582** Room 301, 10/16/2000 9:00 AM - 10:30 AM (PD)  
**The In Vitro Performance of Carbon Dioxide Absorbents with and without Strong Alkali** *Amit Bedi, FRCA; Ann C. Gallagher, FFARCSI; James M. Murray, MD; J.P. Howard Fee, MD PhD, Anaesthetics, The Queen's University, Belfast, United Kingdom.* Removing NaOH/KOH from  $\text{CO}_2$  absorbents reduces  $\text{CO}_2$  absorption. This effect is small compared with the effect of different canister designs.

**A-583** Room 301, 10/16/2000 9:00 AM - 10:30 AM (PD)  
**Different Response of Ear and Finger Photoelectric Plethysmography (Pulse Oximeter Waveform) to Vasoconstrictive Stimuli** *Aymen Awad, MD; Wagib Ouda, MD; Robert Stout, MD; David Silverman, MD; Kirk H. Shelley, MD, PhD, Anesthesia, Yale University, New Haven, CT, United States.* This study measured the responsiveness of the ear vs. finger plethysmograph during a cold water immersion of the hand.

**A-584** Room 301, 10/16/2000 9:00 AM - 10:30 AM (PD)  
**Artifact Resistance of Newest Generation of Pulse Oximeters in Volunteers Undergoing Hypoxemia** *Hartmut Gebrung, MD; Christoph Hornberger, PhD; Holger Matz, ME; Ewald Konecny, PhD; Peter Schmucker, MD, Department of Anesthesiology, Medical University Luebeck, Luebeck, Germany*

**A-585** Room 301, 10/16/2000 9:00 AM - 10:30 AM (PD)  
**Sensitivity and Specificity Performance during Motion Artifact in Three Pulse Oximeters Designed for Use in Motion** *Michael W. Jopling, M.D.; Paul D. Mannheimer, M.S.; Donald E. Bebout, Ph.D., Anesthesiology, St. Ann's Hospital, Columbus, OH, United States.* Nellcor(Oxismart XL®+Oxismart®) and Masimo SET®  $\text{SpO}_2$  algorithms were tested in 24 volunteers during normoxia/hypoxia with voluntary induced motion artifacts.

### Engineering Technology: Measurement of Cardiac Output

**A-586** Room 220-222, 10/18/2000 10:30 AM - 12:00 PM (PD)  
**Lithium Dilution Versus Thermodilution Cardiac Output Measurement in Cardiac Surgery Patients** *Christopher C. Young, MD; Charles R. Garcia-Rodriguez, MB BS; Cynthia Cassell, BS; Habib El-Moalem, MS; Jonathan B. Mark, MD, Anesthesiology, Duke University Medical Center, Durham, NC.* LiDCO provides accurate measurement of CO when compared to TDCO in postoperative cardiac surgery patients

**A-587** Room 220-222, 10/18/2000 10:30 AM - 12:00 PM (PD)  
**Cardiac Output Measurement without Pulmonary Artery or Central Venous Catheterization: A Clinical Assessment of the Lithium Dilution Method** *Charles Garcia-Rodriguez, MBBS; Cynthia Cassell; Christopher Young, MD; John Sum Ping, MBBS; Jonathan B. Mark, MD, Anesthesiology, DUMC, VAMC, Durham, NC, United States.* Peripheral injection of lithium can measure cardiac output without central access.

**A-588** Room 220-222, 10/18/2000 10:30 AM - 12:00 PM (PD)  
 **$\text{CO}_2$  Rebreathing Cardiac Output Technique Does Not Increase Heart Rate** *Lara Brewer; Kai Kuck, Ph.D.; Joseph Orr, Ph.D., Anesthesiology, University of Utah Health Sciences Center, Salt Lake City, UT, United States.* Short rebreathing periods for measuring cardiac output do not affect heart rate. Thus, NICO2 performance is not altered by changes in HR initiated by rebreathing.

**A-589** Room 220-222, 10/18/2000 10:30 AM - 12:00 PM (PD)  
**Comparison of Alternative Methods for Intraoperative Cardiac Output Determination: Fick Partial Rebreathing  $\text{CO}_2$  and Transesophageal Echocardiography** *Pamela E. Gray, MD; Albert C. Perrino, MD, Anesthesiology, VA-CT, Yale University School of Medicine, New Haven, CT, United States.* Disparities shown between these methods warrant further study of a promising application of the Fick technique.