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.; Sherwin 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 FiO2 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 CO2 Absorbent Linda F.M. Versiezen, MD; Georges Rolly, Ph.D; Michel M.R.F. Struyfs, PhD; Marie Paule L.A. Bouche, PhN; Eric P. Mortier, DSc; Anesthesia, Ghent University Hospital, Gent, Belgium. No Comp A during in vitro closed circuit sevoflurane and lithium hydroxide.

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 Cranio- mities Requiring Speech Monitoring Anh-Thuy T. Nguyen, M.D.; David Z. Ferson, M.D., Anesthesiology, The University of Texas, MD 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 cranioanesthesia 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; Kannath 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. Loeh, M.D.; W. Tecumseh Fitch, Ph.D., 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. Tetuault, 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 Absorbers with and without Strong Alkali Amit Bedi, FRCA; Ann C. Gallagher, FFARCSI; James M. Murray, MD; J.P. Howard Fee, MD PhD, Anaesthesics, The Queen's University, Belfast, United Kingdom. Removing NaOH/KOH from CO2 absorbers reduces CO2 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 Gebrin, MD; Christoph Hornerberg, Ph.D; Holger Matz, ME; Ewald Kneebrev, Ph.D; 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(Oximart XL® + Oxismart®) and Masimo SET® SpO2 algorithms were tested in 24 volunteers during normoxia/hyperoxia 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, MBBS; 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, BS; Christopher Young, MD; John Sunn 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)
CO2 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 CO2 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.