

INVITED
LECTURERS

INTERNATIONAL SYMPOSIUM
INNOVATIONS AND APPLICATIONS OF MONITORING
OXYGENATION AND VENTILATION

INNOVATIONS AND APPLICATIONS OF MONITORING
OXYGENATION AND VENTILATION

A symposium to highlight and discuss new and developing technologies. The setting will provide an educational forum for clinicians, engineers and researchers.

Takuo Aoyagi, PhD	Nihon Kohden Corporation
Steven J. Barker, MD, PhD	University of Arizona College of Medicine
Paul B. Batchelder, RRT	Clinimark
Philip E. Bickler, MD, PhD	University of California at San Francisco Medical Center
Nelson Claure, MSEE, PhD	University of Miami, Jackson Memorial Hospital
Christine E. East, PhD	The University of Queensland, Royal Brisbane and Women's Hospital
Patrick Eberhard, PhD	Radiometer Basel
Klaus Forstner, Dr med Dipl Ing	Stuttgart Institute of Clinical Research
Hartmut Gehring, MD	University of Lübeck
Julian M. Goldman, MD	Harvard School of Medicine
JS Gravenstein, MD	University of Florida College of Medicine
Nan M. Jokerst, PhD	Duke University Fitzpatrick Institute for Photonics
Robert J. Kopotic, MSN, FAARC	ConMed Vital Signs Development Center
Richard M. Langford, MD	The London, Queen Mary's School of Medicine
Neil R. MacIntyre, MD	Duke University School of Medicine
Paul D. Mannheim, PhD	Nellcor/Tyco Healthcare
David B. MacLeod, MB, BS	Duke University Medical Center
Richard J. Melker MD, PhD	University of Florida College of Medicine
Richard E. Moon, MD, MSc	Duke University School of Medicine
Michael T. Petterson, RRT	Masimo
John W. Severinghaus, MD, PhD	University of California at San Francisco School of Medicine
Allan B. Shang, MD, MSE	Duke University School of Medicine
Kirk H. Shelley, MD, PhD	Yale-New Haven Hospital
John Toffaletti, PhD	Duke University School of Medicine
Alfred X. Trautwein, PhD	University of Lübeck
Sandy Weininger, PhD	US FDA/CDRH Office of Science & Engineering Laboratories
James E. Whetstone, PhD	National Institute of Standards & Technology (NIST)

Duke University Conference Services
ISIAMOV 2007
0066 Bryan University Center
Box 90841
Durham, NC 27708-0841



March 15-17, 2007

DUKE UNIVERSITY
Durham, North Carolina, USA

Sponsored By:
Duke University (Department of Anesthesia and Fitzpatrick Institute for Photonics),
FDA Center for Devices and Radiological Health,
Society for Technology in Anesthesia,
and the University of Lübeck

www.isiamov2007.org

Purpose of Symposium:

The symposium will build upon ISIAPO in 2002 (www.imt.uni-luebeck.de/isiapo2002/index.html) bring together clinicians, device developers and researchers for an interchange of expertise and ideas in the areas of:

- Noninvasive monitoring of oxygenation and an indicator of ventilation, CO₂.
- Direct blood analysis of CO₂, O₂ and oximetry, including conditions that adversely affect measurement.
- Photoplethysmography, with an emphasis on the shape and size as indicators of physiologic and pathologic variables, e.g., cardiac output, local perfusion and respiration.
- Patient safety and monitor use, related to the aforementioned parameters.

It is intended that:

- Clinicians will gain insight on monitoring technologies, with greater appreciation of a device's capabilities and limitations.
- Engineers and device developers will have an expanded understanding of their technology in use, and associated clinical challenges and user expectations.
- Researchers will appreciate the need for optimizing study design and the consequence of variables affecting performance of a medical device.

Education Credit: This activity has been approved for AMA PRA Category I credit. Additionally, ISIAMOV 2007 has applied for granting education credits to nurses and respiratory care practitioners.

Name: _____ Title: _____

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Register by mail or online at: www.isiamov2007.org

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- \$275.00 (USD)
Registration fee
- \$120.00 (USD)
Students (include proof
of current student status)

Refund available for cancellation,
less administration cost of \$50.00,
before February 1, 2007.
Attendee substitutions permitted.

DAY THREE (Saturday, March 17, 2007)

Time	Lecturer	Title
0800-0830	Takuo Aoyagi, PhD	Multiwavelength Pulse Oximetry: the future
0835-0905	Richard E. Moon, MD, MSc	Monitoring the physiologic response to changes in altitude
0910-0940	David B. MacLeod, MB, BS	Cerebral venous oximetry and simultaneous monitoring of total hemoglobin
0945-1015	Christine E. East, PhD	Oximetry of the fetus: intrapartum and following delivery
1015-1035	BREAK	
1035-1125	Steven J. Barker, MD, PhD & Klaus Forstner, Dr med Dipl Ing	Detecting dyshemoglobins by pulse oximetry: methodology, uses, utility and validation
1130-1200	Neil R. MacIntyre, MD	Safety issues with patient monitoring devices: parameters and variables
1200-1320	LUNCH BREAK	
1320-1350	JS Gravenstein, MD	The ins and outs of capnometry: practice, evidence, risk and opportunities
1355-1425	Robert J. Kopotic, MSN, FAARC	Optimizing conditions for acquisition of blood gas and pulse oximetry data in acute care
1430-1520	Allan B. Shang, MD, MSE & Michael T. Petterson, RRT	Effects of motion on oximetry probes: characterization and clinical significance
1520-1540	BREAK	
1540-1610	Paul B. Batchelder, RRT	Maximizing the laboratory setting for testing devices and understanding statistical output
1615-1645	Sandy Weininger, PhD	Guidance for the manufacture and claims for use of oximeter and CO ₂ monitors
1650-1740	PANEL DISCUSSION <i>Chaired by:</i> James R. Whetstone, PhD	Confirming the claimed accuracy and utility of medical devices

Call for Abstracts: (January 1, 2007 submission deadline)

Clinicians, engineers and researchers are welcome to submit an abstract related to the focus of the symposium. The accepted abstracts are to be expanded by the author(s) in the form of a poster for continuous viewing and presentation at the symposium. To be considered as a poster presenter, an abstract must be submitted. All submissions are electronic through the "Abstract Submission" link within the ISIAMOV website (www.isiamov2007.org), which contains further details on the process and requirements.

www.isiamov2007.org

DAY ONE (Thursday, March 15, 2007)

Time	Lecturer	Title
1400-2100	REGISTRATION	
1900-1910	Peter C. Agre, MD <i>Vice Chancellor of Science and Technology, Duke University Medical Center</i> <i>2003 Nobel Laureate in Chemistry</i>	Welcome
1910-1950	Alfred X. Trautwein, PhD	Keynote address Iron, an important element for life: the structure and function of hemoglobin
2000-2100	Reception and Poster viewing	

DAY TWO (Friday, March 16, 2007)

Time	Lecturer	Title
0800-0830	John W. Severinghaus, MD, PhD	History of little known details on the discovery of pulse oximetry
0835-0905	John Toffaletti, PhD	Assessing the role of whole blood in oxygen transport
0910-0940	Paul D. Mannheim, PhD	Physio-optics of the light-tissue interaction
0945-1015	Philip E. Bickler, MD, PhD	The effects of skin pigmentation in the optical path
1015-1035	BREAK	
1035-1105	Hartmut Gehring, MD	Hemoximetry as the gold standard?
1110-1140	Kirk H. Shelley, MD, PhD	Photoplethysmography: beyond the calculation of SpO ₂ and pulse rate
1145-1215	Richard J. Melker, MD, PhD	Multisensor photoplethysmography in health & disease
1215-1330	LUNCH BREAK	
1330-1400	Nelson Claire, MSEE, PhD	Reduction of delivered oxygen and clinician time with closed loop control
1405-1435	Nan M. Jokerst, PhD	Sensor miniaturization and health surveillance system
1440-1510	Richard M. Langford, MD	Innovative oximetry sensors: clinical testing and use
1510-1530	BREAK	
1530-1600	Patrick Eberhard, PhD	Design, use and results of cutaneous CO ₂ analysis: current and future directions
1605-1635	Julian M. Goldman, MD	Closed loop physiologic control: including the use of capnometry and pulse oximetry
1640-1730	PANEL DISCUSSION	Advancing technology on the shoulders of past giants
1730-1845	Evening activities	Light refreshments in Poster viewing area followed by group dinner