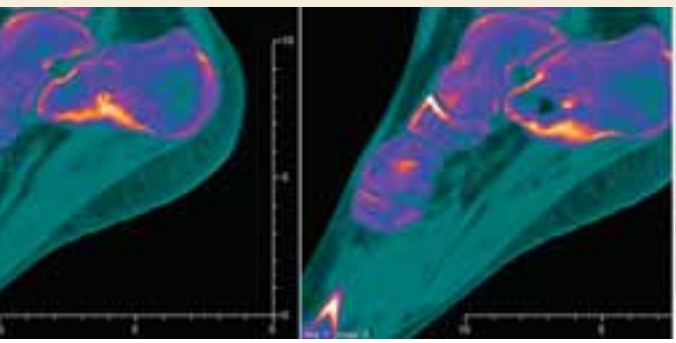
Call for Papers

SPIE Medical Imaging

Conferences + Courses: 7-12 February 2009
Exhibition: 9-11 February 2009
Disney Coronado Spring Resort
Orlando, Florida, USA

New Location in 2009

PRESENT YOUR RESEARCH — PUBLISH IN THE WORLD BODY OF SCIENTIFIC LITERATURE



- **Physics of Medical Imaging**
- **Image Processing**
- **Computer-Aided Diagnosis**
- **Visualization, Image-guided Procedures and Modeling**
- **Biomedical Applications: Molecular, Structural, and Functional Imaging**
- **Image Perception, Observer Performance, and Technology Assessment**
- **Advanced PACS-based Imaging Informatics and Image-guided Therapy**
- **Ultrasonic Imaging and Signal Processing**

SPIE
Connecting minds. Advancing light.

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PRESENT YOUR RESEARCH — PUBLISH IN THE WORLD BODY OF SCIENTIFIC LITERATURE

Your research will help define the future of medical imaging

Present your work

Start your year off right by submitting your abstract to the most relevant conference for medical imaging research. Participating at SPIE Medical Imaging gives you the opportunity to hear the latest advancements from peer researchers, present your research to leaders in the field, and gain valuable feedback on your research.

Collaborate with your colleagues

Medical Imaging provides the perfect environment to network with your peers, meet potential collaborators, and enhance your professional value. You will experience a rich marketplace of ideas, an audience of technical experts, and a dynamic atmosphere that supports professional networking opportunities.

Publish your research

Within weeks of presentation your work will be published in the SPIE Digital Library and become part of the scientific literature of the world. U.S. Patent literature cites 34,342 SPIE publications, with 161 universities and 2,785 non-academic organizations from 43 different countries citing SPIE papers.

Submit your abstract today!

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Contents

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85% of attendees surveyed would recommend SPIE Medical Imaging to a colleague.

Critical Dates

- **Abstract Due Date:** **28 July 2008**
- **Post-Meeting Manuscript Due Date:** **12 January 2009**

Please Note: Submissions imply the intent of at least one author to register, attend the symposium, present the paper as scheduled, and submit a full-length manuscript for publication in the conference proceedings.

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Call for Papers

Photo courtesy of Ken Hanson

Plan now to participate!

The SPIE Medical Imaging meeting is the internationally recognized premier forum for reporting state-of-the-art research and development in medical imaging. We invite contributions in all aspects of the full range of medical imaging modalities, from the underlying fundamental scientific principles to clinical evaluations. The symposium covers a wide range of topics on medical image acquisition, display, processing, understanding, perception, storage, and transmission, including:

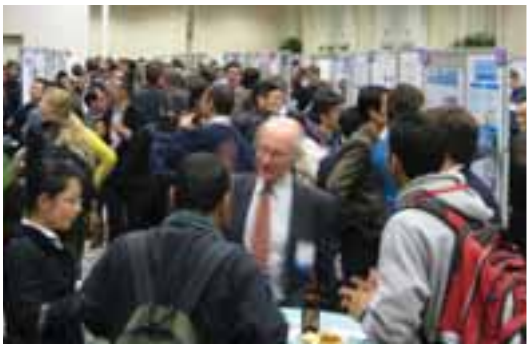
- imaging physics, systems analysis and modeling
- emerging image acquisition technologies (e.g., electrical impedance imaging, microwave imaging, optical tomographic imaging)
- molecular imaging
- ultrasonic acquisition and processing technologies
- magnetic resonance imaging (MRI)
- X-ray computed tomography
- PET, SPECT and hybrid acquisition systems
- image processing and analysis
- computer-aided detection and diagnosis
- computer-based image analysis and interpretation
- display technologies
- image-guided therapies
- visual rendering of complex datasets
- visual perception and observer performance
- physiological and functional interpretation of image data
- clinical evaluations of new technologies
- image data management (storage, retrieval, transmission)
- picture archiving and communication systems (PACS).

We encourage contributions from you and your colleagues. The SPIE copyright policy grants authors the right to submit their Medical Imaging Proceedings papers to peer-reviewed journals or magazines of their choice.

2009 Symposium Organizers:

Armando Manduca,
Mayo Clinic College of Medicine

Kevin Cleary,
Georgetown Univ. Medical Ctr.



Cooperating Organizations

AAPM—American Association of Physicists in Medicine

APS—American Physiological Society

CARS—Computer Assisted Radiology and Surgery

IS&T—The Society for Imaging Science and Technology

MIPS—Medical Image Perception Society

RSNA—Radiological Society of North America

SIIM—Society for Imaging Informatics in Medicine

SMI—The Society for Molecular Imaging

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Plenary Presentation

Willi A. Kalender,
Institute of Medical Physics, Univ. Erlangen (Germany)

X-ray computed tomography (CT) has undergone a remarkable development in the past two decades. Significant advances in the existing technology and new directions in its implementation and application have to be acknowledged.

- **The state of the art in clinical CT will be reviewed and recent development trends will be analysed briefly.**
- **Patient dose, which has become a serious topic of debate even in the public, will be discussed in detail.**
- **New CT applications such as combination imaging (PET/CT and 2D angiography/3D C-arm CT), dual energy CT, dedicated CT of the breast and micro CT will be reviewed briefly**.

Willi A. Kalender received his Ph.D. in Medical Physics from the University of Wisconsin, Madison, WI, in 1979. In 1988 he completed all postdoctoral lecturing qualifications (Habilitation) for Medical Physics at the University of Tübingen, Germany.

From 1979 to 1995 he worked in the research laboratories of Siemens Medical Systems in Erlangen, Germany. In 1995 he was appointed full Professor and Chairman of the Institute of Medical Physics at the University Erlangen, Germany.

Willi Kalender has worked mainly in diagnostic imaging. The development of spiral CT was a particular focus. His work is documented in more than 750 scientific papers with about 200 original publications among these.

Physics of Medical Imaging (MI101)

Conference Chairs: **Ehsan Samei**, Duke Univ.; **Jiang Hsieh**, GE Healthcare

Program Committee: **Guang-Hong Chen**, Univ. of Wisconsin/Madison; **Mats E. Danielsson**, Kungliga Tekniska Högskolan (Sweden); **Thomas G. Flohr**, Siemens Medical Solutions (Germany); **Stephen J. Glick**, Univ. of Massachusetts Medical School; **Christoph Hoeschen**, Helmholtz Zentrum München, GmbH (Germany); **Hee-Joung Kim**, Yonsei Univ. (South Korea); **Iacovos S. Kyprianou**, U.S. Food and Drug Administration; **Robert M. Nishikawa**, The Univ. of Chicago; **Michael Overdick**, Philips Research Labs. (Germany); **Norbert J. Pelc**, Stanford Univ.; **Jinyi Qi**, Univ. of California/Davis; **John A. Rowlands**, Sunnybrook and Women's Health Sciences Ctr. (Canada); **Jeffrey H. Siewerdsen**, Ontario Cancer Institute/Princess Margaret Hospital (Canada); **Katsuyuki Taguchi**, Johns Hopkins Univ.; **Bruce R. Whiting**, Washington Univ. in St. Louis; **John Yorkston**, Carestream Health, Inc.

This conference will cover all aspects of image formation in medical imaging including systems using ionizing radiation (x-rays, gamma rays) or non-ionizing radiation (ultrasound, optical, thermal, or magnetic resonance). Papers of either a theoretical nature or papers reporting new experimental results are invited. Topics of particular interest include experimental methods and results of image performance, tomographic image reconstruction, detector materials and electronic design, analytical and computer modeling of imaging systems, and novel methods for image formation. The conference will cover predicted and measured system performance including image noise and contrast, spatial and temporal resolution, and inherent artifacts. Systems of interest include those producing projection, tomographic, volumetric, dynamic, or time resolved studies along with systems using specialized approaches for depth or tissue discrimination. Work directed towards the imaging of human subjects, small animals, or tissue specimens imaging will be considered.

Original papers are requested in the following areas:

Imaging Science
- physics of detection and image formation
- signal characterization and contrast mechanisms
- characterization of detector and system performance (MTF, NPS, DQE, observer-based).

Technology
- novel methods for medical imaging systems
- properties of scintillating or photoconductive sensor materials
- novel sources of radiation
- advanced clinical applications.

Computational
- image reconstruction methods for CT and tomosynthesis
- computer simulation of x-ray imaging systems including models for radiation sources, imaged objects, and detectors
- optical transport and OCT reconstruction.

Devices
- advanced multi-slice or cone beam CT systems
- advanced radiographic, fluoroscopic, or angiographic systems
- non-ionizing radiation systems (ultrasound, MRI, optical, thermal)
- small animal imaging systems
- megavoltage imaging devices.

KEYWORDS: For this conference only

To assist the review process, please limit your keyword entries for submission to this conference to the abbreviations listed below.
- ALG - Algorithms; calibration, classification, etc.
- CT - All conventional CT topics
- CTCB - Cone beam CT
- CTDE - Dual energy CT
- CAR - Cardiac imaging
- DE - Dual energy radiography or mammography
- DET - Detector technology; scintillators, photoconductors, diodes, TFT
- METR - Measurement methods (MTF, NPS, DQE, eDQE, gDQE, Spectra, ...)
- MICRO - Devices/techniques for microscopic or small animal imaging
- MG - Imaging of the breast (any device)
- MR - MR imaging
- OPT - Methods/techniques for optical imaging
- OT - Novel methods including optical, x-ray source, MR-based, CAD, nuclear, ...)
- PER - Observer or perception-based performance evaluations of systems
- PHT - Work involving development of phantoms
- RECON - Image reconstruction including CT, OCT, and tomosynthesis
- SCAT - Work addressing the issue of scattered radiation
- SIM - Simulation, computational, or analytic models of performance, organs, or body
- SYNCH - Work based on synchrotron radiation
- SYS - Reports on complete systems, prototypes, products
- TSYN - X-ray tomosynthesis
- OTHER - Other technical areas

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Image Processing (MI102)

Conference Chairs: **Josien P. W. Pluim**, Univ. Medisch Ctr. Utrecht (Netherlands); **Benoit M. Dawant**, Vanderbilt Univ.

Program Committee: **Mostafa Analoui**, Pfizer Inc.; **Kyongtae T. Bae**, Univ. of Pittsburgh; **Christian Barillot**, Institut de Recherche en Informatique et Systèmes Aléatoires (France); **Aaron Fenster**, Robarts Research Institute (Canada); **Bernd Fischer**, Univ. zu Lübeck (Germany); **Alejandro F. Frangi**, Univ. Pompeu Fabra (Spain); **James C. Gee**, Univ. of Pennsylvania; **Guido Gerig**, The Univ. of Utah; **David R. Haynor**, Univ. of Washington; **Tianhu Lei**, Univ. of Pennsylvania; **Boudewijn P. Lelieveldt**, Leids Univ. Medisch Ctr. (Netherlands); **Bostjan Likar**, Univ. v Ljubljani (Slovenia); **Murray H. Loew**, The George Washington Univ.; **Cristian Lorenz**, Philips Research Labs. (Germany); **Frederik Maes**, Katholieke Univ. Leuven (Belgium); **Vincent A. Magnotta**, The Univ. of Iowa; **Sunanda D. Mitra**, Texas Tech Univ.; **Kensaku Mori**, Nagoya Univ. (Japan); **Mads Nielsen**, IT Univ. of Copenhagen (Denmark); **Sébastien Ourselin**, Commonwealth Scientific and Industrial Research Organisation (Australia); **Joseph M. Reinhardt**, The Univ. of Iowa; **Daniel Rueckert**, Imperial College London (United Kingdom); **Punam K. Saha**, The Univ. of Iowa; **Olivier Salvado**, Commonwealth Scientific and Industrial Research Organisation (Australia); **Julia A. Schnabel**, Univ. of Oxford (United Kingdom) and St. Hilda's College (United Kingdom); **Colin Studholme**, Univ. of California/ San Francisco; **Martin A. Styner**, The Univ. of North Carolina at Chapel Hill; **Philippe Thevenaz**, Ecole Polytechnique Fédérale de Lausanne (Switzerland); **Jayaram K. Udupa**, Univ. of Pennsylvania; **Andreas Wahle**, The Univ. of Iowa

Original papers are invited on all aspects of the processing and analysis of medical, small animal, or cellular images. Of interest are algorithms applied to all imaging modalities, including x-ray, CT, MRI, nuclear medicine, optical, ultrasound, macroscopic, and microscopic imaging. Papers typically involve research that includes one or more of the following categories (in alphabetical order):

Categories
- Atlases
- Classification
- Compression
- Deformable geometry
- Diffusion tensor imaging
- Functional imaging
- Image-guided therapy / intervention
- Image restoration and enhancement
- Mathematical morphology
- Motion analysis
- Multiresolution and wavelets
- Neural nets
- Pattern recognition
- Population studies
- Registration
- Segmentation
- Shape
- Statistical methods
- Texture
- Validation
- Voxel-based morphometry.

For this conference only:

KEYWORDS: The above categories will be used as "REVIEW CATEGORIES" for selecting reviewers with appropriate expertise.

Authors must select at least one of the categories above when submitting an abstract. If more than one category is used, please list in order of relevance.

Please note that there is a 4-page limit for abstracts. Submissions exceeding the page limit will not be considered for review.

Computer-Aided Diagnosis (MI103)

Conference Chairs: **Nico Karssemeijer**, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); **Maryellen L. Giger**, The Univ. of Chicago

Program Committee: **Samuel G. Armato III**, The Univ. of Chicago; **Stephen Aylward**, Kitware, Inc.; **Kyongtae T. Bae**, Univ. of Pittsburgh; **J. Michael Brady**, Univ. of Oxford (United Kingdom); **Heang-Ping Chan**, Univ. of Michigan; **Marleen de Bruijne**, Copenhagen Univ. (Denmark); **Simon Duchesne**, Univ. Laval Robert-Giffard (Canada); **Hiroshi Fujita**, Gifu Univ. (Japan); **Horst K. Hahn**, MeVis Research GmbH (Germany); **Joseph Y. Lo**, Duke Univ. Medical Ctr.; **Shih-Chung B. Lo**, Georgetown Univ. Medical Ctr.; **Michael F. McNitt-Gray**, Univ. of California/Los Angeles; **Kensaku Mori**, Nagoya Univ. (Japan); **Noboru Niki**, The Univ. of Tokushima (Japan); **Carol L. Novak**, Siemens Corporate Research; **Mary S. Pastel**, Pastel Consulting, LLC; **Ronald M. Summers**, National Institutes of Health; **Bram van Ginneken**, Univ. Medisch Ctr. Utrecht (Netherlands); **Rafael Wiemker**, Philips Research Labs. (Germany); **Axel Wismueller**, Univ. of Rochester

This conference will provide a forum for researchers involved in development and application of computer-aided diagnosis and detection systems. Original papers are requested on all aspects of CAD, including pattern recognition, feature extraction, classifier design, workstation design, human interaction, database construction, and evaluation. Of interest are methods investigated for all medical imaging modalities, including x-ray, CT, MRI, molecular imaging, optical, ultrasound, macroscopic and microscopic imaging, and multi-modality technologies.

For this conference only:

KEYWORDS: Please select one or more keywords that best categorize your abstract. These will be used for reviewer selection.

- Lung
- Breast
- Colon
- Cardiovascular
- Brain
- Retina
- Skeleton
- Abdominal
- Prostate
- Other organs
- Microscopy
- CAD development
- Observer studies
- Classifier design
- Database design
- General methodology

SHORT TALK: Authors may specify "short talk" at the beginning of the six-paragraph summary. A short talk is an oral presentation lasting 7 minutes, instead of the usual 15 minutes, and is intended to allow presentation of work in progress or to update previously presented material. Short talks will be intermixed with full-length oral presentations in the program.

WORKSHOP: A workshop with real-time demonstrations of CAD systems will be organized during the conference. This provides a unique opportunity for researchers to demonstrate their applications and get feedback from the audience. Teams who are interested in giving a demonstration are requested to submit a short description of their system before January 15, 2009. More information will be provided at http://cadworkshop-spiemi.isi.uu.nl/.

CAD COMPETITIONS: Two CAD competitions will be organized in which participants can test and compare performance of their systems in a common task. This year the tasks are lung nodule detection in CT and detection of the first signs of diabetic retinopathy (microaneurysms and dot hemorrhages) in retinal images. Regular papers are solicited that report results of CAD algorithms on the datasets of these challenges. Additional submission guidelines and more information on these competitions can be found at http://anode09.isi.uu.nl/ for the lung nodule competition and http://roc.healthcare.uiowa.edu/ for the retinopathy challenge.

Visualization, Image-guided Procedures and Modeling (MI104)

Conference Chairs: **Michael I. Miga**, Vanderbilt Univ.; **Kenneth H. Wong**, Georgetown Univ.

Program Committee: **Purang Abolmaesumi**, Queen's Univ. (Canada); **Wolfgang Birkfellner**, Medizinische Univ. Wien (Austria); **Kevin R. Cleary**, Georgetown Univ. Medical Ctr.; **Alexandre X. Falcao**, Univ. Estadual de Campinas (Brazil); **Baowei Fei**, Case Western Reserve Univ.; **Robert L. Galloway, Jr.**, Vanderbilt Univ.; **George J. Grevera**, St. Joseph's Univ.; **Steven L. Hartmann**, Medtronic Navigation; **David R. Haynor**, Univ. of Washington; **William E. Higgins**, The Pennsylvania State Univ.; **David R. Holmes III**, Mayo Clinic; **Pierre Jannin**, INSERM/Univ. de Rennes I (France); **Terry M. Peters**, Robarts Research Institute (Canada); **Frank Sauer**, Siemens Corporate Research; **Eric J. Seibel**, Univ. of Washington; **Guy Shechter**, Philips Research; **Yeong Gil Shin**, Seoul National Univ. (South Korea); **Jayaram K. Udupa**, Univ. of Pennsylvania; **Jay B. West**, Accuray, Inc.; **Ivo Wolf**, German Cancer Research Ctr. (Germany); **Ziv R. Yaniv**, Georgetown Univ.

This conference is primarily concerned with applications of medical imaging data in the engineering of therapeutic systems. This includes the use of images to guide therapeutic procedures, novel methods for visualization, the derivation of patient-specific models from images, image computing architecture, computer aided procedures, virtual reality system applications in medicine, image-guided robotics and devices, localization technologies, the novel integration of image data for use in the clinic/operating-room, and the application of imaging and mathematical models to guide/assist characterization, diagnosis, and treatment of disease. Original papers are requested in the following areas:

- 3D visualization, augmented, and enhanced reality
- mathematical modeling to guide and understand therapy
- techniques in patient-specific model generation
- novel interfaces for therapy and visualization of data
- image-guided procedures
- minimally invasive surgery
- computer-assisted therapy and therapy planning
- medical robotics
- medical image based simulation
- navigation systems
- tracking and calibration
- intraoperative patient-to-image/-model registration
- modeling of intraprocedural changes
- validation/evaluation
- telemedicine systems and their applications
- clinical applications and technology integration
- other related areas.

KEYWORDS: For this conference only

To assist the reviewers, choose one or more keywords in order of relevance from the following list.

- Abdominal Procedures
- Calibration
- Cardiac Procedures
- Pelvic Procedures
- Diagnosis
- Disease Characterization
- Localization and Tracking Technologies
- Endoscopic Procedures
- Enhanced Reality
- Image-Guided Therapy
- Data Integration for the Clinic/OR
- Intraoperative Imaging
- Medical Robotics
- Modeling
- Monitoring and Feedback
- Multimodality Display
- Neurosurgical Procedure
- Registration
- Segmentation
- Surgical Simulation
- Therapy Planning
- Treatment Planning
- Ultrasound Guidance
- Validation/Evaluation
- Visualization
- Other (please specify)

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Biomedical Applications: Molecular, Structural, and Functional Imaging (MI105)

Conference Chairs: **Xiaoping P. Hu**, Emory Univ.; **Anne V. Clough**, Marquette Univ.

Program Committee: **Amir A. Amini**, Univ. of Louisville; **Juan R. Cebral**, George Mason Univ.; **Andreas H. Hielscher**, Columbia Univ.; **Eric A. Hoffman**, The Univ. of Iowa Hospitals and Clinics; **Armando Manduca**, Mayo Clinic College of Medicine; **Robert C. Molthen**, Medical College of Wisconsin; **Erik L. Ritman**, Mayo Clinic College of Medicine; **Ronald M. Summers**, National Institutes of Health; **Merryn H. Tawhai**, The Univ. of Auckland (New Zealand); **John B. Weaver**, Dartmouth College; **Felix W. Wehrli**, Univ. of Pennsylvania; **Axel Wismueller**, Univ. of Rochester

This conference will cover all aspects of measuring and quantifying molecular, structural and functional parameters from biomedical images. Descriptions of work based on any imaging technology, including multidimensional and multimodality, are invited. Techniques, methods, and systems for evaluation and interpretation of structure-function relationships and interrelationships from images of intact, living tissues, are of particular interest. Work in emerging areas such as novel contrast agents, small animal imaging, optical or electrical impedance tomography, and dual-modality imaging is also of specific interest.

Original papers are requested in, but not limited to, the following areas:

- small animal imaging; molecular imaging
- optical, electrical impedance, terahertz or microwave imaging
- novel physiological contrast agents and imaging methods
- pulmonary function: perfusion, ventilation, mechanics, and modeling
- vessels and airways: modeling, trees, reactivity
- cardiac electrophysiology
- functional neuro-imaging and brain mapping
- soft tissue deformation: analysis and quantification
- biomechanical structure and modeling: cardiac, orthopedic, finite-element models
- physiologic modeling: metabolism, receptor-ligand binding, pharmacokinetic models.

Image Perception, Observer Performance, and Technology Assessment (MI106)

Conference Chairs: **Berkman Sahiner**, Univ. of Michigan; **David J. Manning**, Univ. of Cumbria (United Kingdom)

Program Committee: **Craig K. Abbey**, Univ. of California/Santa Barbara; **Kevin S. Berbaum**, The Univ. of Iowa Hospitals and Clinics; **Darrin C. Edwards**, The Univ. of Chicago; **Brandon D. Gallas**, U.S. Food and Drug Administration; **Matthew A. Kupinski**, College of Optical Sciences/The Univ. of Arizona; **Anthony J. Maeder**, Commonwealth Scientific and Industrial Research Organisation (Australia); **Claudia Mello-Thoms**, Univ. of Pittsburgh; **David L. Wilson**, Case Western Reserve Univ.

This conference focuses on improving the perception of medical images, observer-performance measurement, and related methodological issues. These include optimizing image display and workstations, psycho-physical and vision-science based models of human observer performance, factors that affect the diagnostic process, eye-movement studies, observer performance methodologies, CAD assessment, human CAD interaction, optimal decision-making strategies, statistical models for evaluation of observer performance, and observer variability assessment.

Original papers and posters are requested in the following areas:

- diagnostic-performance evaluation methodologies (ROC, FROC, LROC, and alternatives)
- observer performance evaluation of new technologies (CAD, AMLCDS, etc)
- cognitive aspects of image perception
- factors that influence diagnostic performance
- perceptual factors in diagnostic workstation design and perceptually optimized displays
- perceptual and performance issues in new modalities (e.g., teleradiology and telemedicine)
- models of detection and discrimination
- expertise and interobserver variance.

KEYWORDS: For this conference only

To assist the reviewers, choose up to five keywords in order of relevance from the following list.

- Image Display
- Image Perception
- Observer Performance Evaluation
- ROC Methodology
- Model Observers
- Technology Assessment
- Technology Impact
- Other (please specify)

Advanced PACS-based Imaging Informatics and Image-Guided Therapy (MI107)

Conference Chairs: **Khan M. Siddiqui**, VA Maryland Health Care System; **Brent J. Liu**, Univ. of Southern California

Program Committee: **Katherine P. Andriole**, Harvard Medical School; **William W. Boonn**, Univ. of Pennsylvania; **Kevin R. Cleary**, Georgetown Univ. Medical Ctr.; **Janice C. Honeyman-Buck**, Univ. of Florida; **Steven C. Horii**, Univ. of Pennsylvania; **Heinz U. Lemke**, Technische Univ. Berlin (Germany); **John B. Strauss**, FUJIFILM Medical Systems USA, Inc.; **Wyatt Tellis**, Univ. of California/San Francisco

Rapid developments in imaging and information technology have lead to significant changes in the design and implementation of Picture Archiving and Communication Systems (PACS) and image and healthcare information management systems. A stronger emphasis on systems integration, workflow and globalization of information management has lead to a need for more sophisticated imaging informatics techniques. In addition, the role of imaging informatics is bridging gaps between the diagnosis and treatment continuums. Integration of radiology-based imaging with the electronic medical record and multi-media information from other specialties can positively impact the diagnostic and treatment process but must meet the demands for enterprise-wide access and distribution of image-intensive data. Enterprise level PACS design and implementation, extending to all clinical areas and patient care settings, and image-guided therapeutic procedures including the operating room environment are some of today's application challenges in imaging informatics.

This conference will cover all aspects of the acquisition, management, storage, and distribution of digital medical images as well as the topic of integrated medical information systems. Clinical experience, workflow issues, system performance, data security, archive upgrade and data migration, application service provider model, multimodality image display and navigation, and new display technologies will be discussed. In addition, new topics in imaging informatics and data mining for outcomes analysis in image-guided therapeutic applications will be included. A continuing emphasis on open source software development and image workflow in surgical suites and other image-intensive therapeutic applications (eg, Radiation Therapy) will be continued in the program this year.

Papers on the technical and engineering aspects of the Transforming the Radiological Interpretation Process (TRIP™) initiative being led by the Society for Imaging Informatics in Medicine (SIIM) are also welcome.

Ultrasonic Imaging and Signal Processing (MI108)

Conference Chairs: **Stephen A. McAleavey**, Univ. of Rochester; **Jan D'hooge**, Katholieke Univ. Leuven (Belgium)

Program Committee: **Jeffrey C. Bamber**, Univ. of London (United Kingdom); **Stanislav Y. Emelianov**, The Univ. of Texas at Austin; **James F. Greenleaf**, Mayo Clinic; **Michael F. Insana**, Univ. of Illinois at Urbana-Champaign; **Jorgen A. Jensen**, Danmarks Tekniske Univ. (Denmark); **Kathryn R. Nightingale**, Duke Univ.; **K. Kirk Shung**, Univ. of Southern California; **Kai E. Thomenius**, General Electric Co.; **William F. Walker**, Univ. of Virginia

This conference will provide a forum for in-depth discussion of all aspects related to medical ultrasound imaging covering the whole spectrum going from system hardware design to the clinical evaluation of new ultrasound methodologies. Topics of interest include but are not limited to:

- System development
- New transducer technologies, design and materials
- Novel imaging approaches
- New approaches to beam forming
- Three-dimensional imaging
- Elasticity imaging
- Non-linear imaging
- Contrast media characterization
- Adaptive imaging
- Approaches towards tissue motion estimation
- Tissue characterization
- High frequency (30MHz and higher) imaging
- Optoacoustic imaging
- Molecular imaging and targeted contrast agents
- New applications of ultrasound in medicine and biology.

For the SPIE 2009 symposium, a special focus will be put on the application of image processing techniques in ultrasound and submission of abstracts in this area is particularly encouraged.

The submitted abstract should concisely describe the objective of the work, the methodology used, and the results. Each submitted abstract will be carefully reviewed and evaluated by the program committee for suitability of presentation.

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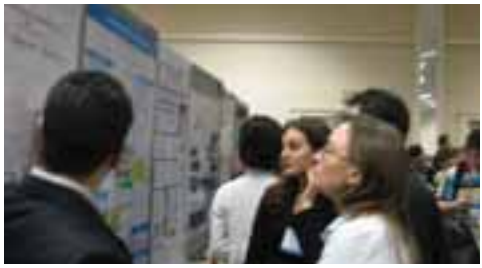
Participate in a Poster Session

Gain valuable feedback and one-on-one networking with colleagues.



The poster session is like a shopping mall where attendees can explore new ideas in depth and in terms relevant to them. At my poster presentation I spent 15% of my time explaining my ideas and 85% answering questions relevant to the problems of others. It was fascinating and I thoroughly enjoyed it.

– **Paul Cadaret,**
SPIE Attendee

Each conference review committee recognizes a selected poster at the cum laude level for the best poster presentation in their conference. Congratulations to the following who received this award in 2008.

Microcalcification detectability in tomosynthesis, Ingrid S. Reiser, Beverly A. Lau, Robert M. Nishikawa, The Univ. of Chicago . . . . . [6913-167]

Efficient classifier generation and weighted voting for atlas-based segmentation: two small steps faster and closer to the Combination Oracle, Xabier Artaechevarria, Arrate Muñoz-Barrutia, Carlos Ortiz-de-Solórzano, Univ. de Navarra (Spain) . . . [6914-67]

Classifying pulmonary nodules using dynamic enhanced CT images based on CT number histogram, Kazuhiro Minami, Yoshiki Kawata, Noboru Niki, The Univ. of Tokushima (Japan); Hironobu Ohmatsu, National Cancer Ctr. Hospital East (Japan); Kiyoshi Mori, Tochigi Cancer Ctr. (Japan); Kozo Yamada, Kanaga Cancer Ctr. (Japan); Masahiro Kaneko, National Cancer Ctr. Hospital (Japan); Kenji Eguchi, Tokai Univ. School of Medicine (Japan); Noriyuki Moriyama, National Cancer Ctr. (Japan) . . . . . [6915-97]

Assessing influence of conductivity in heart modelling with the aim of studying cardiovascular diseases, Rafael Sebastian, Sebastian Ordas, Pompeu Fabra Univ. (Spain); Gernot Plank, Johns Hopkins Univ.; Blanca Rodriguez, Univ. of Oxford (United Kingdom); Edward Vigmond, Univ. of Calgary (Canada); Alejandro F. Frangi, Pompeu Fabra Univ. (Spain) . . . . . [6916-79]

Perceptual assessment of multiple stent deployment, Craig K. Abbey, Arian Teymoorian, Univ. of California/Santa Barbara; Xiaolin Da, Cedars-Sinai Medical Ctr.; Binh T. Pham, Univ. of California/Santa Barbara; James S. Whiting, Cedars Sinai Health System; Miguel P. Eckstein, Univ. of California/Santa Barbara . . . . . [6917-42]

A real-time ultrasound calibration system with automatic accuracy control and incorporation of ultrasound beam thickness, Thomas K. Chen, Adrian Thurston, Mehdi H. Moghari, Randy E. Ellis, Purang Abolmaesumi, Queen's Univ. (Canada) . . . . . [6918-81]

Computer-aided diagnosis workstation and network system for chest diagnosis based on multislice CT images, Hitoshi Satoh, Tokyo Health Care Univ. (Japan) . . . . . [6919-44]

Imaging of acoustic attenuation and speed of sound maps using photoacoustic measurements, Rene G. H.Willemink, Srirang Manohar, Univ. Twente (Netherlands); Yashasvi Purwar, Indian Institute of Technology Madras (India); Cornelis H. Slump, Ferdi van der Heijden, Ton G. van Leeuwen, Univ. Twente (Netherlands) . . [6920-46]

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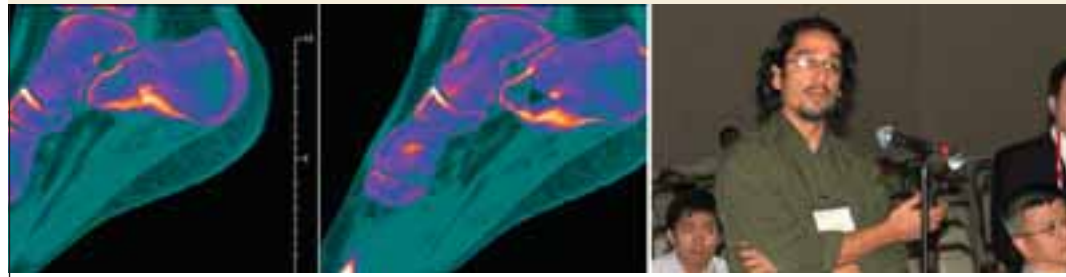

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