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xxvii Conference Committee

xxxi Fortieth anniversary of SPIE Medical Imaging meeting (Overview Paper)
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U. Lundström, D. H. Larsson, KTH Royal Institute of Technology (Sweden); P. A. C. Takman, KTH Royal Institute of Technology (Sweden) and Excillum AB (Sweden); L. Scott, Karolinska Institutet (Sweden); A. Burvall, H. M. Hertz, KTH Royal Institute of Technology (Sweden)
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H. Bosmans, J. Nens, Univ. Hospitals Leuven (Belgium); L. Delzenne, Univ. de Liège (Belgium); N. Marshall, H. Pauwels, W. De Wever, R. Oyen, Univ. Hospitals Leuven (Belgium)

8313 SL  
**Experimental study of the impact of small-angle scatterers on the x-ray dark field imaging contrast mechanism** [8313-205]  
N. Bevins, J. Zambelli, K. Li, Z. Qi, G.-H. Chen, Univ. of Wisconsin-Madison (United States)

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**Performance of a prototype 32x32 pixel indirect x-ray imager based on a lateral selenium passive pixel sensor** [8313-208]  
R. Keshavarzi, Univ. of Waterloo (Canada); K. Wang, Apple Inc. (United States); M. Y. Yazdandoost, Teledyne Dalsa Corp. (Canada); K.-W. Shin, F. Chen, S. H. Majid, S. Abbaszadeh, K. S. Karim, Univ. of Waterloo (Canada)

8313 SP  
**Simulation of presampled MTF measurements in computed radiography for different scan directions** [8313-209]  
Y. Kawaji, Junshin Gakuen Univ. (Japan); F. Toyofuku, Kyushu Univ. (Japan)

8313 SQ  
**Noise simulation system for determining imaging conditions in digital radiography** [8313-210]  
R. Tanaka, K. Ichikawa, K. Matsubara, Kanazawa Univ. (Japan); H. Kawashima, Kanazawa Univ. Hospital (Japan)

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**Novel silicon x-ray detector with TFT readout** [8313-211]  
K.-W. Shin, Univ. of Waterloo (Canada); K. Wang, Aptina Imaging Corp. (United States); N. Allec, Y. Fang, K. S. Karim, Univ. of Waterloo (Canada)

8313 SS  
**Spatio-temporal Monte Carlo modeling of a-Se detectors for breast imaging: energy-weighted Swank noise and detective quantum efficiency** [8313-212]  
Y. Fang, U.S. Food and Drug Administration (United States) and Univ. of Waterloo (Canada); A. Badal, U.S. Food and Drug Administration (United States); K. S. Karim, Univ. of Waterloo (Canada); A. Badano, U.S. Food and Drug Administration (United States)

8313 ST  
**Improved DQE by means of X-ray spectra and scintillator optimization for FFDM** [8313-213]  

8313 SU  
**Characterization of gated selenium photo detector** [8313-214]  
S. H. Majid, Univ. of Waterloo (Canada); K. Wang, Apple Inc. (United States); N. Allec, U. Shafique, K. S. Karim, Univ. of Waterloo (Canada)

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**High performance amorphous selenium lateral photodetector** [8313-216]  
S. Abbaszadeh, N. Allec, K. S. Karim, Univ. of Waterloo (Canada)
Amorphous selenium photodetector on a flexible substrate for indirect conversion medical imaging [8313-217]
S. Abbaszadeh, S. H. Majid, N. Allec, K. S. Karim, Univ. of Waterloo (Canada)

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B. Fischer, P. Krüger, Fraunhofer Institute for Non-Destructive Testing (Germany); A. A. Poznyakovskiy, T. Zahnert, Universitätsklinikum Dresden (Germany)

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S. Park, C. Lee, H. Kim, Yonsei Univ. (Korea, Republic of)

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Y. Tasinkevych, Z. Klimonda, M. Lewandowski, I. Trots, A. Nowicki, Institute of Fundamental Technological Research (Poland)

X-ray in-line phase retrieval for tomography [8313-231]
A. Burvall, U. Lundström, Royal Institute of Technology, AlbaNova Univ. Ctr. (Sweden); P. A. C. Takman, Royal Institute of Technology (Sweden) and Excillum AB (Sweden); D. H. Larsson, H. M. Hertz, Royal Institute of Technology, AlbaNova Univ. Ctr. (Sweden)

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B. Bai, The Univ. of Southern California (United States)
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M.-O. Kim, D.-H. Kim, Yonsei Univ. (Korea, Republic of)

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Norbert J. Pelc, Stanford University (United States)
Robert M. Nishikawa, The University of Chicago (United States)

2 3D Breast Imaging
Hilde Bosmans, UZ Leuven (Belgium)
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3 Breast Multi-Energy/Photon Counting
Mats E. Danielsson, Royal Institute of Technology (Sweden)
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4 Mammography
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5 X-Ray Imaging
Hee-Joung Kim, Yonsei University (Korea, Republic of)
Karim S. Karim, University of Waterloo (Canada)

6 Small Animal Imaging
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Fortieth Anniversary of SPIE Medical Imaging Meeting

Robert M. Nishikawa*
Carl J. Vyborny Translation Laboratory for Breast Imaging Research
Department of Radiology, and the Committee on Medical Physics, The University of Chicago, 5841 S. Maryland Ave. MC-2026, Chicago, IL 60637

This meeting marked the 40th year from the first SPIE Medical Imaging meeting. This paper presents a brief summary of the 40-year history of the meeting, with an emphasis on the Physics Conference. That is, when the meeting split into multiple conferences, data are presented mostly for the Physics conference only.

The first conference was held in 1972 in Chicago and it was called: Application of Optical Instrumentation in Medicine.

"We have endeavored, by way of the seminar, to provide a communication link between those with expertise in the various technologies associated with image forming devices and those in the medical field who rely on the fruits of these technologies for many of their diagnostic tools...there is a genuine interest among those in the medical field for a better understanding of the fundamental technology of imaging systems." William C. Zarnstroff, General Chairman

For the next 40 years, with the exception of 1978 the meeting was held annually.

The first 13 conferences were entitled: Application of Optical Instrumentation in Medicine, appended with a roman numeral. The 14th meeting (1986) was modified to recognize the growing importance of PACS to the meeting: Application of Optical Instrumentation in Medicine XIV and Picture Archiving and Communication Systems (PACS IV) for Medical Applications. The following year, the conference name changed to “Medical Imaging” as it is known today, although the first 6 were denoted by roman numerals. Starting in 1993, the year was appended to the title.

The meeting started as a single track, two-day conference, and now has 8 distinct conferences covering five days plus an additional day of courses.

In 1988, the proceedings were published in two volumes, 914A and 914B. The former covering physics, image processing, and perception and the latter display and PACS. The following year (1989) each of those two split in two so that there were now four conferences:

1. Medical Imaging III: Image Formation
2. Medical Imaging III: Image Capture and Display
3. Medical Imaging III: Image Processing
4. Medical Imaging III: PACS System Design and Evaluation

These sessions were partially overlapping and, thus, for the first time, the meeting had parallel session.

This configuration of conferences remained until 1994 when Image Perception and Physiology and Function from Multidimensional Images were added. In 1997, Ultrasonic Transducer Engineering was added. In 2007, Computer-Aided Diagnosis was added.

From 1976 to 1983, the meeting was held in conjunction with or preceding the American Roentgen Ray Society. As a result, the location of the meeting changed annually. Starting in 1985, the meeting was held in Newport Beach, CA, and this was home for the next 10 years, except in 1991, the meeting was held in San Jose in conjunction with the Electronic Imaging meeting. In 1995, the meeting was then moved to San Diego, and then returned once more to Newport Beach, before moving to San Diego till 2009. Since 2009 the meeting has been alternating between San Diego and Lake Buena Vista, FL.

In the Introduction to the proceedings in 1984, Chairman Roger Schneider wrote:

This meeting, the twelfth in the series ... was intended to be a change in direction from recent meetings in the series, a reversion to the attack on fundamental problems in imaging which earlier meetings represented. We also desired to bring onto the floor a recognition that the scientific interest in imaging

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is more broad and active now than it was a decade ago and that substantial progress has been made in formulating at least the structure of an understanding of the conveyance of information to human observers through imaging channels. ... We recognized the current intense interest in development of medical systems based upon the most contemporary image communication and storage technologies, and included that topic. The design goal was to address the physics and statistics of image encoding by modality; and the processing, display, archiving, management, and psychophysical considerations independently of modality, as far as possible.

It took 2 years for this new emphasis to flourish. Beginning in 1986, the attendance and the number of papers increased rapidly (as can be seen in the plots below).

Finally, it is important to note that every year for the past 40 years, the Center for Devices and Radiological Health, FDA (formerly, the Bureau for Radiological Health) has been a cosponsor or supporting organization. Further, many members of the CDRH/BRH have helped organize the meeting, such as Robert Wagner, Robert Jennings, Roger Schneider, David Brown and several others. Their contributions to this meeting mirror the impact that the CDRH/BRH have had on the field.

Figure 1. These plots capture some of the statistics from the meeting over time.

1.1 Fun Facts
Bob Wagner dubbed 1984-1987, the Palindrome Years.
The first digital mammography paper and the first dual-energy mammography paper were presented in 1983.
The first computer-aided diagnosis (CAD) paper was presented in 1985.
The first Proceedings (Vol. 35) had a black cover and was hard bound. All subsequent Proceedings had a yellow cover and were soft bound.
The first posters were in 1988. Each poster had 3 full poster boards and wine was served at the poster session.
Although there was no “Medical Imaging” meeting in 1978, there was another medical imaging themed conferences: Recent and Future Developments in Medical Imaging I; edited by Norman A. Baily.

In 2001, the proceedings were distributed on CD for the first time.

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1.2 Summary of Each Meeting

Following is a brief summary of each meeting from 1972-2012. When there were multiple conferences at the meeting, the summary focuses mainly on the Physics Conference. I also have most of this information in an excel spreadsheet. It is available from the author to those who would like it.
Overview of the 40-Year History of the SPIE Medical Imaging Meeting

1972
Application of Optical Instrumentation in Medicine (In-depth-Seminar)
Chicago Nov 29-30
Vol. 35
28 papers Attendance: n/a
Sponsors, Co-Sponsors & Supporting Organizations
SPIE; BRH; ASNR; SMM; ULWMS; AAPM
Chairs
William C. Zarnstorff, William R. Hendee, Paul L. Carson
Program Committee
Not listed
Sessions
Electro-Optical Instrumentation - William R. Hendee
Image Analysis, Enhancement and Evaluation - Paul L. Carson
Holographic and Video Images - William R. Hendee
Special Topics - William C. Zarnstorff
Panel Discussion - Jack S. Krohmer

1973
Application of Optical Instrumentation in Medicine II
Chicago Nov 29-30
Vol. 43
35 papers Attendance: n/a
Sponsors, Co-Sponsors & Supporting Organizations
SPIE; AAPM; ASNR; AAMI; BRH EMBG; OSA; SMM; SRE; SPSE;
Chairs
William R. Hendee, William C. Zarnstorff, Paul L. Carson
Program Committee
Not listed
Sessions
Nuclear Medicine Imaging
Image Enhancement and Pattern Recognition
Panel Discussion: Image Enhancement for Medical Diagnosis Can It Be Effective?
Special Topics
Image Intensifier Systems
Transmission, Storage, Retrieval and Reconstruction of Images
Panel Discussion: Performance Standards and Possible Field Evaluation of Image Intensifiers Performance Standards of Image Intensifiers

1974
Application of Optical Instrumentation in Medicine III
Kansas City, MO Aug 1-2
Vol. 47
45 papers Attendance: n/a
Sponsors, Co-Sponsors & Supporting Organizations
SPIE; BRH; AAPM, ACR, EMBG
Chairs
Paul L. Carson, Edward L. Chaney, William R. Hendee
Program Committee
Not listed
Sessions
Transmission 3-Dimensional Image Reconstruction and Computerized Axial Tomography - William R. Hendee, Joseph Gallagher
Advanced Techniques of Imaging With Ultrasound - Paul L. Carson
Acoustic Exposure Determination In Diagnostic Ultrasound - James A. Rooney
Noise, Objective, and Psychophysical Measures - Joel E. Gray
Special Topics - Jacques Ovadia
Ray Tube Focal Spot Size and Intensity Distributions: Important Practical Considerations - Bergl E. Bjornard
Automatic Brightness Control In Image-Intensified Fluoroscopy - William R. Hendee

1975
Application of Optical Instrumentation in Medicine IV
Atlanta, GA Sept. 25-27
Vol. 70
55 papers Attendance: n/a
Sponsors, Co-Sponsors & Supporting Organizations
SPIE; BRH; AAPM, ACR, SRE
Chairs
Joel E. Gray, William R. Hendee
Program Committee
Not listed
Sessions
Quality Assurance, Film Handling & Film Processing - Joel E. Gray
Loading, Heat Rating, Other Characteristics of X-Ray Tubes - Edward L. Chaney
Information Extraction & Utilization From Radiologic Images - Marvin E. Hostin
Quality Assurance In Diagnostic Radiology: Why Doesn't Every Department Have A Complete Program? Panel Discussion
Quality Assurance for Diagnostic Radiologic Instrumentation - James J. Vucich
Exposure Initiation/Termination Mechanisms and Automatic Exposure Timers In Diagnostic Radiology - Robert G. Waggener
RareEarth Intensifying Screens - E. Dale Trout
Panel Discussion: Performance Specifications for Diagnostic Radiologic Equipment - Gray-Scale Ultrasound Imaging & Tissue Identification - Paul L. Carson
Physical Evaluation of Computerized Axial Tomography - Raymond P. Rossi
Special Topics - Robert Rohrer
Performance Evaluation of Mammographic Imaging Systems - Gregory L. Dubuque
1976

Application of Optical Instrumentation in Medicine V
Washington, DC  Sept. 16-19
Vol. 96  76 papers  Attendance: n/a

Sponsors, Co-Sponsors & Supporting Organizations
SPIE; BRH; ARRS; SRE

Chairs

Program Committee
Same as Editors

Sessions
Quality Assurance in Diagnostic Radiology I - Raymond P. Rossi
Quality Assurance in Diagnostic Radiology II - Thomas Stone
Computed Tomography I - Norman A. Baily
Radiographic Images and Dose - Arthur G. Haus
Computed Tomography II - Rodney A. Brooks
Computed Tomography III - Kenneth Weaver
Diagnostic Ultrasound I - Paul L. Canon
Quality Assurance in Diagnostic Radiology III - Robert K. Carak
Current Topics in Mammography - Gregory Dubuque

1977

Application of Optical Instrumentation in Medicine VI
Boston, MA  Sept. 25-27
Vol. 127  60 papers  Attendance: n/a

Sponsors, Co-Sponsors & Supporting Organizations
SPIE; BRH; ARRS; SRE

Chairs
Joel E. Gray, William R. Hendee

Program Committee
Robert F. Wagner, William Properzio, Arthur G. Haus, Joel Pierce Jones, Raymond Rossi

Sessions
The Laboratory/Clinical Interface in Image Evaluation - Robert Wagner
Sensitometry Up Date - Joel Gray
Screen Film Systems and Photosensitive Materials - Arthur G. Haus
Approaches to Equipment Service, Equipment Specification and Performance Evaluation - Raymond P. Rossi
New Developments in Medical Imaging - William Hendee
Quality Control in Medical Imaging - William S. Properzio
Performance Characteristics of CT Scanners - Robert K. Carak
Small Group Sessions on Special Topics - Joint Session with ARRS

1978

No Meeting

1979

Application of Optical Instrumentation in Medicine VII
Toronto, Canada  Mar. 25-27
Vol. 173  55 papers  Attendance: n/a

Sponsors, Co-Sponsors & Supporting Organizations
SPIE; SPSE; ARRS; BRH; SRE

Chairs
Joel E. Gray

Program Committee

Sessions
Imaging Systems: Physical Evaluation - Joel Gray
Imaging Systems: Perception Evaluation - Joel Gray
Imaging Systems: Special Topics - Arthur Haus
Mammography - William Properzio
Special Topics - Raymond Rossi
Computed Tomography: Practical Considerations - William R. Hendee
Computed Tomography: Theoretical Considerations - William R. Hendee
X-Ray Imaging Research in Toronto - K. W. Taylor
Joint Session with the ARRS - Joel Gray; William R. Hendee; Harry Z. Mellins
### 1988

**Medical Imaging II: Part A—Image Formation, Detection, Processing, and Interpretation**

**Newport Beach, CA Jan 31-Feb 5**

**Vol. 914A** 158 papers (102 in Physics)  Attendance: 570

**Sponsors, Co-Sponsors & Supporting Organizations**

SPIE; AAPM; ACR; CDRH; IRS

**Chairs**

Samuel J. Dwyer III, Roger H. Schneider

**Program Committee**

Ronald L. Arenson; Gary T. Barnes; Harrison H. Barrett; Roger A. Bauman; Arthur Bergeste; Arthur H. Carson; Jerry Cohen; Kunio Doi; Aaron Fenster; Leonard A. Fierman; Kenneth M. Hansen; William R. Hendee; David G. Hill; Steven C. Hori; H. K. Huang; Robert J. Jennings; Robert A. Kruger; Bruce Laskin; Janis; Liew; Thomas R. Lewallen; Murray H. Low; William C. Mortinone; Laura Lee Murphy; Orhan Nalcioglu; Stephen M. Pizer; Judith M. S. Prewitt; Ronald R. Price; Stephen J. Reddener; Hans Rohrig; Roger H. Shannon; Rodney Shaw; Stephen Y. Smith; Edward V. Stad; Stephen R. Thomas; Robert F. Wagner; Henry N. Wagner, Jr.; Jason S. Zelinka

**Sessions**

Future Potential of the Several Candidate Signals for Medical Imaging - Roger H. Schneider


Digital Medical Processing - Roger A. Bauman

**Other Conferences**

Vol # | Title | Editor/Conference Chair | # of papers
---|---|---|---
848 | Part B—Image Data Management & Display | Daniel J. Dwyer III, Roger H. Schneider | 66

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### 1989

**Medical Imaging III: Image Formation**

**Newport Beach, CA Jan 29-31**

**Vol. 1090**  235 papers (51 in Physics)  Attendance: 547

**Sponsors, Co-Sponsors & Supporting Organizations**

SPIE; AAPM; ACR; CDRH; IRS

**Chairs**

Samuel J. Dwyer III, R. Gilbert Jost M.D., Roger H. Schneider

**Program Committee**

Ronald L. Arenson; Harrison H. Barrett; Gary T. Barnes; Roger A. Bauman; David G. Brown; Arthur E. Burgess; Arthur Carson; Gerald Cohen; Kunio Doi; Aaron Fenster; Kenneth M. Hansen; William R. Hendee; David G. Hill; Steven C. Hori; H. K. Huang; Robert J. Jennings; Robert A. Kruger; James L. Lehr; Thomas K. Lewellen; Murray R. Low; Orhan Nalcioglu; Stephen M. Pizer; Judith M. S. Prewitt; Ronald R. Price; Stephen J. Reddener; Hans Rohrig; Roger H. Shannon; Rodney Shaw; Stephen W. Smith; Edward V. Stad; Stephen R. Thomas; Robert F. Wagner

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1092 | Image Processing | Roger H. Schneider | 71

1093 | PACS Design and Evaluation | Samuel J. Dwyer III, R. Gilbert Jost | 60

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### 1990

**Medical Imaging IV: Image Formation**

**Newport Beach, CA Feb 4-6**

**Vol. 1231**  270 papers (60 in Physics)  Attendance: 666

**Sponsors, Co-Sponsors & Supporting Organizations**

SPIE; AAPM; ACR; CDRH; NEMA

**Chairs**

Roger H. Schneider

**Program Committee**

Ronald L. Arenson; Harrison H. Barrett; Roger A. Bauman; David G. Brown; Arthur E. Burgess; Gerald Cohen; William Dallas; Kunio Doi; Aaron Fenster; Robert J. Jennings; Robert A. Kruger; Peter J. Paul Lin; Murray H. Low; Richard L. Morin; Shigehi Miki; Orhan Nalcioglu; Thomas M. Nelson; David F. Richet; Stephen M. Pizer; Judith M. S. Prewitt; Hans Rohrig; Robert Schneider; Hans Rosen; Rodney Shaw; Stephen Y. Smith; Edward V. Stad; Stephen R. Thomas; Robert F. Wagner

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Future Potential of Ultrasound, CT, and Optical Imaging - Stephen W. Smith

Future Potential of Optical Imaging - William J. Dallas

MIL - Stephen R. Thomas

Calculated Images - Rodney Shaw

CT—Orhan Nalcioglu

Film Screen Systems - Kunio Doi

Digital Quantum Images I—Hans Rohrig

Digital Quantum Images II—Aaron Fenster

Clinical Systems and Issues - Robert J. Jennings

**Other Conferences**

Vol # | Title | Editor/Conference Chair | # of papers
---|---|---|---
1232 | Image Capture and Display | Yongmin Kim | 94

1233 | Image Processing | Murray H. Low | 54

1234 | PACS Systems Design and Evaluation | Samuel J. Dwyer III, R. Gilbert Jost | 113

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### 1991

**Medical Imaging V: Image Physics**

**San Jose, CA Feb 25-26**

**Vol. 1443**  190 papers (36 in Physics)  Attendance: 500

**Sponsors, Co-Sponsors & Supporting Organizations**

SPIE; AAPM; ACR; CDRH; IS &T; NEMA

**Chairs**

Roger H. Schneider

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Harrison H. Barrett; David G. Brown; Arthur E. Burgess; William J. Dallas; Kunio Doi; Aaron Fenster; Robert J. Jennings; Robert A. Kruger; Peter J. Paul Lin; Richard L. Morin; Orhan Nalcioglu; Hans Rohrig; Rodney Shaw; Stephen W. Smith; Stephen R. Thomas; Robert F. Wagner

**Sessions**

Magnetic Imaging - Roger H. Schneider

Acoustic Imaging - David G. Brown

Radiographic and Fluorescent Detectors and Systems - Hans Rohrig

Decision Makers and Displays - Arthur E. Burgess

Computing Images: CR, CT and PET - Kenneth M. Hanson

**Other Conferences**

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1444 | Image Capture, Formatting, and Display | Yongmin Kim | 68

1445 | Image Processing | Murray H. Low | 59

1446 | PACS Design and Evaluation | R. Gilbert Jost | 57

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1992
Medical Imaging VI: Instrumentation
Newport Beach, CA 23-24 February
Vol. 1651 221 papers (27 in Physics) Attendance: 539
Sponsors, Co-Sponsors & Supporting Organizations
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Chairs
Rodney Shaw
Program Committee
Harrison H. Barnett, David G. Brown, Arthur E. Burgess, William J. Dallas;
Kuo-Li Dai, Aaron Faridzadeh, Robert J. Jennings, Robert A. Kruger, Peter-Paul Lin,
Richard L. Morin, Orhan Nalcioglu, Hans Rohrheid, Roger H. Schneider,
Stephen W. Smith, Stephen R. Thomsen, Robert F. Wagner
Sessions
Image Instrumentation I - David G. Brown
Image Instrumentation II - Arthur E. Burgess
Image Instrumentation III - William J. Dallas
Image Instrumentation IV - Hans Rohrheid
Poster Session

Other Conferences
Vol # Title Editor/Conference Chair # of papers
1652 Image Processing Murray H. Loew 74
1653 Image Capture, Formatting, and Display Yongmin Kim 51
1654 PACS Design and Evaluation R. Gilbert Jost 69

1993
Medical Imaging 1993: Physics of Medical Imaging
Newport Beach, CA 14-15 February
Vol. 1656 250 papers (45 in Physics) Attendance: 754
Sponsors, Co-Sponsors & Supporting Organizations
SPIE, AAPM, CDRH, NEMA, IS&T, SCAR
Chairs
Rodney Shaw
Program Committee
Jacob Beutel, Arthur E. Burgess, Robert J. Jennings, Hans Roehrig;
Richard L. Van Metter, Robert F. Wagner
Sessions
Physics of Medical Imaging I - Robert F. Wagner
Physics of Medical Imaging II - Rodney Shaw
Physics of Medical Imaging III - Hans Roehrig
Physics of Medical Imaging IV - Robert F. Wagner
Physics of Medical Imaging V - Robert J. Jennings
Physics of Medical Imaging VI - Jacob Beutel

Other Conferences
Vol # Title Editor/Conference Chair # of papers
1657 Image Capture, Formatting, and Display Yongmin Kim 51
1658 Image Processing Murray H. Loew 86
1659 PACS Design and Evaluation R. Gilbert Jost 68

1994
Medical Imaging 1994: Physics of Medical Imaging
Newport Beach, CA 13-14 February
Vol. 2163 349 papers (60 in Physics) Attendance: 1073
Sponsors, Co-Sponsors & Supporting Organizations
SPIE, AAPM, CDRH, NEMA, IS&T, RISC, RSNA, SCAR
Chairs
Rodney Shaw
Program Committee
Jacob Beutel, John M. Boone, Randall P. Brown, Robert J. Jennings;
Hans Roehrig, Richard L. Van Metter, Robert F. Wagner, Martin J. Yaffe
Sessions
Physiology of Medical Imaging I - Hans Roehrig
Physiology of Medical Imaging II - Martin J. Yaffe
Physiology of Medical Imaging III - Randolf P. Brown
Physiology of Medical Imaging IV - Robert J. Jennings
Physiology of Medical Imaging V - John M. Boone
Physiology of Medical Imaging VI - Jacob Beutel
Physiology of Medical Imaging VII - Richard L. Van Metter

Other Conferences
Vol # Title Editor/Conference Chair # of papers
2162 Image Capture, Formatting, and Display Yongmin Kim 51
2163 PACS Design and Evaluation R. Gilbert Jost 97
2164 Image Processing Harold L. Kundel 24
2165 Physiology and Function from Multidimensional Images Eric A. Hoffman, Raj S. Acharya 40

1995
Medical Imaging 1995: Physics of Medical Imaging
San Diego, CA 26-27 February
Vol. 2432 349 papers (60 in Physics) Attendance: 1074
Sponsors, Co-Sponsors & Supporting Organizations
SPIE, AAPM, APS CDRH, NEMA, IS&T, RISC, RSNA, SCAR
Chairs
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Program Committee
Larry E. Antonuk, Gary T. Barnes, John M. Boone, Ian A. Cunningham;
Frank A. D'Alliance, James T. Dobin; Robert J. Endorf, Robert Jennings;
Hans Roehrig, Robert F. Wagner, Martin J. Yaffe; Herbert D. Zeman
Sessions
Image Quality and X-Ray Physics I - John M. Boone
Image Quality and X-Ray Physics II - Robert J. Jennings
Image Quality and X-Ray Physics III - Hans Roehrig
Novel Detectors for Digital Radiography I - Martin J. Yaffe
Novel Detectors for Digital Radiography II - Frank A. D'Alliance
Novel Detectors for Digital Radiography III - Ian A. Cunningham
Digital Radiography System Performance - Larry E. Antonuk

Other Conferences
Vol # Title Editor/Conference Chair # of papers
2430 Image Capture, Formatting, and Display Yongmin Kim 51
2431 PACS Design and Evaluation R. Gilbert Jost 97
2432 Image Processing Harold L. Kundel 24
2433 Physiology and Function from Multidimensional Images Eric A. Hoffman, Raj S. Acharya 40
2434 Image Processing Murray H. Loew 86
2435 PACS Design and Evaluation R. Gilbert Jost, Samuel J. Dwyer 67
2436 Image Perception Harrison H. Barrett 94

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2000

Medical Imaging 2000: Physics of Medical Imaging
San Diego, CA
Feb 13-15
Vol. 3977 493 papers (71 in Physics) Attendance: 1082

Sponsors, Co-Sponsors & Supporting Organizations
SPIE; AAPM; APS; CDRH; EMBS; IS&T; NEMA; RSNA; SCAR

Chairs
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Program Committee
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X-ray Detectors I - John M. Boone
Imaging Physics - Gary S. Kayes
Fluoroscopic Imaging - Robert A. Street
Mammography I - Martin J. Yaffe
Microscopy - James T. Dobbins III
Mammography II - Andrew D. A. Maidment
Computed Tomography and MRI - Frank A. DiBianca
New Frontiers - Jacob Beutel
Volume Imaging - Ian A. Cunningham
X-ray Detectors II - Larry E. Antonuk
Optimization of Image Quality - Robert F. Wagner

Other Conferences
Vol # Title Editor/Conference Chair papers
3976 Image Display and Visualization Seong K. Mun 62
3977 Physiology and Function from Multidimensional Images Chin-Tu Chen, Anne V. Clough 57
3979 X-ray Detectors I - Imaging Physics Kenneth H. Hanson 196
3980 PACS Design and Evaluation: Engineering and Clinical Issues G. James Blaine, Erik L. Siegel 50
3981 Image Perception Performance Elizabeth A. Kupinski 36
3982 Ultrasonic Imaging & Signal Process. K. K. Shung, Michael F. Insana 46

2001

Medical Imaging 2001: Physics of Medical Imaging
San Diego, CA
Feb 17-23
Vol. 4320 802 papers (103 in Physics) Attendance: 1195

Sponsors, Co-Sponsors & Supporting Organizations
SPIE; AAPM; APS; CDRH; IS&T; NEMA; RSNA; SCAR

Chairs
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Program Committee
Katharine P. Andriole, Tom J. Bruijns; Ian A. Cunningham; James T. Dobbins III; Michael J. Flynn; Andrew D. Maidment; Robert A. Street; Robert F. Wagner; John Yorkston

Sessions
X-ray Detectors I - Larry E. Antonuk
Imaging Physics I - Ian A. Cunningham
Fluoroscopy Imaging - Katherine P. Andriole
Mammography I - Andrew D. A. Maidment
X-ray Detectors II - Robert A. Street
CT/MR - Michael J. Flynn
Novel Imaging Methods I - James T. Dobbins III
X-ray Imaging II - Martin J. Yaffe
Volume Imaging - Tom J. Bruijns
Novel Imaging Methods II - John Yorkston
X-ray Detectors III - Robert F. Wagner

Other Conferences
Vol # Title Editor/Conference Chair papers
4319 Visualization, Display, and Image-Guided Procedures Seong K. Mun 83
4321 Physiology and Function from Multidimensional Images Chin-Tu Chen, Anne V. Clough 62
4322 Image Processing Milan Sonka, Kenneth H. Hanson 209
4323 PACS and Integrated Medical Information Systems: Design & Evaluation Erik L. Siegel, H. K. Huang 56
4324 Image Perception Performance E. A. Kupinski, Dev P. Chakraborty 31

2002

Medical Imaging 2002: Physics of Medical Imaging
San Diego, CA
23 - 28 February
Vol. 4892 564 papers (90 in Physics) Attendance: 1142

Sponsors, Co-Sponsors & Supporting Organizations
SPIE; AAPM; APS; CDRH; IS&T; NEMA; RSNA; SCAR

Chairs
Larry E. Antonuk, Martin J. Yaffe

Program Committee
Katherine P. Andriole; John M. Boone; Tom J. Bruijns; Michael J. Flynn; Paul R. Granfors; Andrew D. Maidment; Robert A. Street; John Yorkston; Wei Zhao

Sessions
X-Ray Detectors I - Imaging Physics
Volume Imaging I - Breast Imaging
Volume Imaging II - Novel Imaging Methods I
Fluoroscopy/Real-Time Imaging
Volume Imaging III
X-Ray Detectors II - X-Ray Detectors III - Imaging Physics II
Novel Imaging Methods II - Poster Session

Other Conferences
Vol # Title Editor/Conference Chair papers
4661 Visualization, Image-Guided Procedures, and Display Seong K. Mun 82
4663 Physiology and Function from Multidimensional Images Anne V. Clough, Chin-Tu Chen 53
4688 Image Processing Milson Sonka, J. Michael Fitzpatrick 198
4685 PACS and Integrated Medical Information Systems: Design & Evaluation Erik L. Siegel, H. K. Huang 54
4686 Image Perception, Observer Performance, and Technology Assessment Dev P. Chakraborty, Elizabeth A. Kupinski 40
4687 Ultrasonic Imaging and Signal Processing Michael F. Insana, William F. Walker 47

2003

Medical Imaging 2003: Physics of Medical Imaging
San Diego, CA
Feb 15-20
Vol. 5030 636 papers (108 in Physics) Attendance: 1073

Sponsors, Co-Sponsors & Supporting Organizations
SPIE; AAPM; APS; CDRH; IS&T; NEMA; RSNA; SCAR

Chairs
Martin J. Yaffe, Larry E. Antonuk

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Katherine P. Andriole; Harrison H. Barrett; John M. Boone; Tom J. C. Bruijns; James T. Dobbins III; Michael J. Flynn; Paul R. Granfors; John Yorkston; Wei Zhao

Sessions
Imaging Physics I - John M. Boone
X-Ray Detectors I - Larry E. Antonuk
CT - Paul R. Granfors
Breast Imaging I - Martin J. Yaffe
X-Ray Detectors II - Wei Zhao
Novel Imaging Methods - Harrison H. Barrett
Breast Imaging II - John Yorkston
Volume Imaging - US/Tomosynthesis - Michael J. Flynn
Imaging Physics II - James T. Dobbins III
X-Ray Detectors III - Tom J. C. Bruijns
Breast Imaging III - Larry E. Antonuk

Other Conferences
Vol # Title Editor/Conference Chair papers
5023 Visualization, Image-Guided Procedures, and Display Robert L. Golinsky, Jr. 88
5051 Physiology and Function Methods, Systems and Applications Anne V. Clough, Amir A. Amidi 63
5032 Image Processing Milan Sonka, J. Michael Fitzpatrick 198
5033 PACS and Integrated Medical Information Systems: Design & Evaluation H. K. Huang, Osman M. Rafa 57
5034 Image Perception, Observer Performance, and Technology Assessment Dev P. Chakraborty, Elizabeth A. Kupinski 40
5035 Ultrasonic Imaging & Signal Processing William F. Walker, Michael F. Insana 56
2011

Medical Imaging 2011: Physics of Medical Imaging

Lake Buena Vista, FL 13–17 February
Vol. 7961 864 papers (204 in Physics)  Attendance: 1136

Sponsors, Co-Sponsors & Supporting Organizations
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Norbert J. Pelc, Ehsan Samei, Robert M. Nishikawa

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Guang-Hong Chen; Dianna Cody; Mats Danielsson; Maria Drangova; Thomas Flohr; Stephen J. Glick; Michael Grass; Christoph Hoeschen; Marc Kachelriess; Karim S. Karim; Hee-Joung Kim; Despina Kontos; Iacovos Kyprianou; Jinyi Qi; John A. Rowlands; John M. Sabol; Taly Gilat Schmidt; Jeffrey H. Siewerdsen; Katsuyuki Taguchi; Anders Tingberg; Bruce R. Whiting; John Yorkston;

Sessions
Keynote and Imaging and Health Economics - Norbert J. Pelc; Ehsan Samei
X-ray Imaging - John A. Rowlands; Christoph Hoeschen
Metrology - Robert M. Nishikawa; John Yorkston
Iterative and Statistical Reconstruction - Jinyi Qi; Guang-Hong Chen
Detectors I & II- John Yorkston; John A. Rowlands / Karim S. Karim; Mats Danielsson
Breast Imaging - Anders Tingberg; Stephen J. Glick
Tomosynthesis I: Reconstruction - John M. Sabol; Michael Grass
Tomosynthesis II - Despina Kontos; Anders Tingberg
X-ray Imaging: Phase Contrast Diffraction - Jeffrey H. Siewerdsen; Taly Gilat Schmidt
Image Reconstruction - Bruce R. Whiting; Katsuyuki Taguchi
CT III: Multi-energy - Thomas G. Flohr; John M. Sabol
Novel Systems - Mats Danielsson; Taly Gilat Schmidt
CT IV: Cone Beam - Maria Drangova; Marc Kachelriess
Dose - Iacovos S. Kyprianou; Hee-Joung Kim

Two Special Sessions on Dose with a Panel Discussion - Ehsan Samei; Dianna D. Cody / Christoph Hoeschen; Michael F. McNitt-Gray / Ehsan Samei
2012

Medical Imaging 2012: Physics of Medical Imaging

San Diego, CA  Feb 5-9
Vol. 8313  909 papers (233 in Physics)  Attendance: ?

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SPIE; AAPM; APS; CARS; MIPS; RSNA; SIIM; SMI; WMIS; DICOM

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Program Committee
Hilde Bosmans; Guang-Hong Chen; Dianna D Cody; Mats E Danielsson; Maria Drangova; Thomas G. Flohr; Stephen J. Glick; Michael Grass; Christoph Hoeschen; Marc Kachelriess; Karim S Karim; Hee-Joung Kim; Despina Kontos; Iacovos S. Kyprianou; Joseph Y Lo; Jinyi Qi; John A Rowlands; John M Sabol; Taly G. Schmidt; Jeffrey H. Siewerdsen; Anders Tingberg; John Yorkston

Sessions
Keynote and 3D Breast Imaging - Norbert J. Pelc; Robert M. Nishikawa
3D Breast Imaging - Hilde Bosmans; Joseph Y. Lo
Breast Multi-Energy/Photon Counting - Mats E. Danielsson; Stephen J. Glick
Mammography - Anders Tingberg; Despina Kontos
X-Ray Imaging - Hee-Joung Kim; Karim S. Karim
Small Animal Imaging - John Yorkston; Maria Drangova
Photon Counting Systems and Techniques - Taly G. Schmidt; Jeffrey H. Siewerdsen
General Radiography and Fluoroscopy - John A. Rowlands; Hee-Joung Kim
Cone Beam CT - Iacovos S. Kyprianou; John Yorkston
CT - Dianna D. Cody; Marc Kachelriess
CT Detection Performance - Jinyi Qi; Bruce R. Whiting
Dose - Christoph Hoeschen; Dianna D. Cody
Reconstruction I & II - Guang-Hong Chen; Michael Grass/ Thomas Flohr; Jeff Siewerdsen

Tomosynthesis Reconstruction - John M. Sabol; Iacovos S. Kyprianou

8314  Image Processing
8315  Computer-Aided Diagnosis
8316  Image-Guided Procedures, Robotic Interventions and Modeling
8317  Biomedical Applications in Molecular, Structural, and Functional Imaging
8318  Image Perception, Observer Performance, and Technology Assessment
8319  Advanced PACS-based Imaging Informatics and Therapeutic Applications
8320  Ultrasonic Imaging, Tomography, and Therapy

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## Abbreviations

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<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>AAMI</td>
<td>Association for the Advancement of Medical Instrumentation</td>
</tr>
<tr>
<td>AAPM</td>
<td>American Association of Physicists in Medicine</td>
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<tr>
<td>ACR</td>
<td>American College of Radiology</td>
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<td>APS</td>
<td>American Physiological Society</td>
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<tr>
<td>ARRS</td>
<td>American Roentgen Ray Society</td>
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<tr>
<td>ASNR</td>
<td>American Society of Neuroradiology</td>
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<tr>
<td>BIOS</td>
<td>Biomedical Optics Society</td>
</tr>
<tr>
<td>BRH</td>
<td>Bureau of Radiological Health, Department of Health, Education And Welfare</td>
</tr>
<tr>
<td>CARS</td>
<td>Computer Assisted Radiology and Surgery</td>
</tr>
<tr>
<td>CDRH</td>
<td>Center for Devices and Radiological Health, FDA</td>
</tr>
<tr>
<td>DICOM</td>
<td>The DICOM Standards Committee</td>
</tr>
<tr>
<td>EFOMP</td>
<td>European Federation of Organizations for Medical Physics</td>
</tr>
<tr>
<td>EMBG</td>
<td>IEEE Engineering in Medicine and Biology Group</td>
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<tr>
<td>EMBS</td>
<td>IEEE—The Institute of Electrical and Electronics Engineers/Engineering in Medicine and Biology Society</td>
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<tr>
<td>IEEE-CS</td>
<td>IEEE Computer Society, Technical Committee on Computational Medicine</td>
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<tr>
<td>IRS</td>
<td>Institute for Regulatory Science</td>
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<tr>
<td>IS&amp;T</td>
<td>The Society for Imaging Science and Technology</td>
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<tr>
<td>JPL</td>
<td>Jet Propulsion Laboratory</td>
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<tr>
<td>MIPS</td>
<td>Medical Image Perception Society</td>
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<td>NEMA</td>
<td>National Electrical Manufacturers Association/Diagnostic Imaging and Therapy, Systems Division</td>
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<tr>
<td>OSA</td>
<td>The Optical Society of America</td>
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<tr>
<td>RISC</td>
<td>Radiology Information System Consortium</td>
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<tr>
<td>RSNA</td>
<td>Radiological Society of North America</td>
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<tr>
<td>SCAR</td>
<td>Society for Computer Applications in Radiology</td>
</tr>
<tr>
<td>SIIM</td>
<td>Society for Imaging Informatics in Medicine</td>
</tr>
<tr>
<td>SMI</td>
<td>The Society for Molecular Imaging</td>
</tr>
<tr>
<td>SNM</td>
<td>The Society of Nuclear Medicine</td>
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<tr>
<td>SPIE</td>
<td>The Society of Photo-Optical Instrumentation Engineers</td>
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<tr>
<td>SPSE</td>
<td>The Society of Photographic Scientists and Engineers</td>
</tr>
<tr>
<td>SRE</td>
<td>Society for Radiological Engineering</td>
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<tr>
<td>UWMS</td>
<td>University of Wisconsin Medical School</td>
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<tr>
<td>WMIS</td>
<td>World Molecular Imaging Society</td>
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