

PRELIMINARY PROGRAM



The 20th Symposium for Computer Applications in Radiology

ANNUAL MEETING 2003

JUNE 7-10, 2003 • BOSTON, MASSACHUSETTS

The Annual Meeting
of the Society
for Computer
Applications in
Radiology (SCAR)

Jointly Sponsored
by the American
College of Radiology
(ACR) and SCAR



Boston

2003 TOUR HOST INSTITUTIONS:

- Beth Israel Deaconess Hospital
- Brigham and Women's Hospital
- Children's Hospital of Boston
- Massachusetts General Hospital
- New England Baptist Hospital



SCAR 2003



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*Education Coordinator
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Dear Colleague,

Do you need access to authoritative, up-to-date information on PACS, electronic imaging, and radiology information systems? Would you like to view exhibits of leading radiology computer products and services in a relaxed atmosphere? If so, plan now to attend SCAR 2003, the 20th Symposium on Computer Applications in Radiology, which will be held in Boston, June 7–10, 2003. The Symposium is the longest running series of meetings on radiology computer applications. Since the first conference in 1964, SCAR has been the gathering place for experts in the field and those who want to learn from them. Attendees tell us that they enjoy the diversity of educational programs, the interactive and dynamic sessions, and the extensive technical exhibits. Despite the growth of the meeting in recent years, SCAR retains a collegial and relaxed atmosphere that attendees appreciate. This year, the Program Committee has continued to strengthen and expand the program. Highlights of SCAR 2003 include:

- Keynote address by Mr. Ray Kurzweil, pioneer of computer-based speech recognition systems, author of *The Age of Intelligent Machines* and *The Age of Spiritual Machines*, and a 2002 inductee into the National Inventors Hall of Fame.
- An updated SCAR University, a comprehensive didactic course in computer applications in radiology. Introductory, intermediate, and advanced lectures will cover the latest information on PACS, RIS, CAD, speech recognition and CR/DR. Many institutions bring their entire PACS team — administrators, CIO's, radiologists and technologists — to SCAR U for the latest information on technology implementation in radiology.
- Closing Session on the developing information explosion in radiology. How can radiologists deal with the burgeoning numbers of images produced by new technology? Representatives of NASA, the CIA, and the entertainment industry will explain how they manage huge data sets.
- More than 75 original scientific papers, posters, and demonstrations on all aspects of computer applications in radiology, from image processing to PACS implementation to speech recognition systems.
- Tours of electronic imaging activities at Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Children's Hospital of Boston, Massachusetts General Hospital, and New England Baptist Hospital. Special sessions delivered by radiology informatics faculty of Boston medical schools.
- A large exhibit hall filled with technical exhibits of leading radiology image management and IT vendors. More PACS vendors assembled than any other conference except the RSNA.

Whether you are a radiologist considering incorporating electronic systems into your practice, a CIO or administrator evaluating the costs and benefits of such systems, or a computer scientist involved in radiology research, SCAR 2003 will provide the up-to-date information you need. Please review the enclosed program and plan to attend this premiere meeting for users and developers of computer-based equipment and applications in medical imaging. CME credit is available for attendees. We look forward to seeing you in Boston!

Byrn Williamson, Jr., MD
Chair, SCAR Program Committee



Course Objectives

The Symposium for Computer Applications in Radiology is an annual scientific and educational meeting presented by the Society for Computer Applications in Radiology (SCAR), and it is designed to provide important information to professionals who use, buy, or develop computer-based equipment with applications in radiology. It features the most recent developments in medical computer applications, particularly the advances in computer technology that improve the clinical practice of radiology and the effective management of health care resources.

Upon completion of the program, participants will be prepared to:

- Determine which computer applications can contribute to their practice
- Evaluate components of electronic image and information management systems
- Prepare for the changes that will result from implementing computer applications in their departments and institutions
- Choose promising areas for future research

Continuing Medical Education Information

Physician:

This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through joint sponsorship of the American College of Radiology and the Society for Computer Applications in Radiology. The American College of Radiology is accredited by the ACCME to provide continuing medical education for physicians.

The ACR designates this educational activity for up to 28 hours of Category 1 credit towards the AMA's Physician's Recognition Award. Each physician should claim only those hours of credit that he/she actually spends in the educational activity.

Technologists:

The American College of Radiology (ACR) is approved by the American Registry of Radiologic Technologists (ARRT) as a Recognized Continuing Education Evaluation Mechanism (RCEEM) to sponsor and/or review Continuing Medical Educational programs for Radiologic Technologists and Radiation Therapists.

The ACR designates this Continuing Medical Educational Activity as meeting the criteria for up to 28 Category A credit hours of the ARRT. Each technologist should claim only those hours of credit

that he/she actually spends in the educational activity.

Medical Physicists:

The American College of Radiology is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education credit activities.

The ACR designates the following educational activity as meeting the criteria for up to 28 hours of Medical Education for Physicists (MEPS) credit. Each medical physicist should claim only those hours of credit that he/she actually spends in the educational activity.

Presenters at this conference will disclose any conflict of interest or their intention to discuss off-label use, if applicable, in accordance with ACCME Standards and FDA requirements. Conflict of interest will be disclosed either in print or verbally at the beginning of the presentation.

Dates to Remember

Hotel Reservation Deadline	April 28
Early Registration Deadline	May 2
Cancellation/Refund Deadline	May 16
Pre-Registration Deadline	May 30
On-Site Registration Opens	June 6
PACS Administration Course	June 6
Meeting Dates	June 7-10

Table of Contents

Program Committee	inside cover
Who Should Attend	1
Objectives and CME Information	1
General Sessions	2
Special Sessions	3
Lunch Sessions	4
SCAR University 2003	6
Pre-Conference Sessions	9
Program at a Glance	10
Scientific Papers	15
Scientific Posters and Demos	18
Hospital Tours	20
Exhibitors	23
SCAR Corporate Members	23
Registration Information	24
Registration Form	25
Hospital Tour Registration	26
Hotel and Travel Information	27
Hotel Reservation Form	28

Who Should Attend SCAR 2003

- Radiologists and other physicians who are considering implementing RIS, PACS, speech recognition, or teleradiology systems in their practice. (The "Program-at-a-Glance" indicates sessions of particular interest to practicing radiologists with an asterisk*)
- Radiologists, imaging physicists, and others who are interested in learning about cutting edge electronic imaging developments
- Technologists, PACS administrators, and those who are interested in becoming PACS administrators
- CEO's, CFO's, CIO's, and healthcare administrators at institutions that are considering implementing or replacing PACS or Radiology Information Systems
- Computer scientists, IT professionals, and engineers who want information about the latest research in computer applications in radiology
- *Anyone* who wants access to practical information about imaging technology in an open, collegial environment

General Sessions

OPENING SESSION

Saturday, June 7, 2003
8:00 AM – 9:30 AM
Grand Ballroom
Sheraton Boston Hotel

Welcome

Katherine P. Andriole, PhD
Chair, Society for Computer Applications in Radiology
University of California, San Francisco

Byrn Williamson, Jr., MD
Chair, Annual Meeting Program Committee
Mayo Clinic, Rochester

Keynote Address

“The Impact of 21st Century Technology on Human Health and Society”

Raymond Kurzweil
Founder, Chairman and CEO
Kurzweil Technologies, Inc.

Raymond Kurzweil is an inventor of computer-based speech recognition technology and futurist author of the best selling book, *The Age of Spiritual Machines, When Computers Exceed Human Intelligence*, as well as a 2002 inductee into the National Inventors Hall of Fame.



In “The Impact of 21st Century Technology on Human Health and Society,” Mr. Kurzweil will investigate the implications of the accelerating knowledge of technology and workings of the human brain. Once non-biological intelligence matches the range and subtlety of human intelligence, it will necessarily soar past it because of the continuing acceleration of information-based technologies, as well as the ability of machines to instantly share their knowledge.

Intelligent nanorobots will be deeply integrated in the environment, our bodies and our brains, providing vastly improved health, extended longevity, full-immersion virtual reality and enhanced human intelligence. The implication will be an intimate merger between the technology-creating species and the evolutionary process it spawned.

CLOSING SESSION

Tuesday, June 10, 2003
8:30 AM – 10:00 AM
10:30 AM – 12:30 PM
Constitution Ballroom, Sheraton Boston Hotel

Medical Image Interpretation — The Collision between Humans and Data

Co-Moderators:

Katherine P. Andriole, PhD
University of California, San Francisco
Chair, Society for Computer Applications in Radiology

Richard L. Morin, PhD
Mayo Clinic, Jacksonville
Chair, Transforming the Radiological Interpretation Process (TRIP) Subcommittee of the SCAR Research and Development Committee

Panel:

Richard Weinberg, PhD
University of Southern California

Gus Hunt
Central Intelligence Agency

Stephen Wharton, PhD
NASA Goddard Space Flight Center

William Young, MS
National Imagery & Mapping Agency

TBA
Disney Speaker via live satellite (tentative)

This is a session highlighting the SCAR 2003 theme of *Information Explosion: Embracing our Future* and will feature exploration of the management of large data sets by the intelligence, space exploration and entertainment industries.

Medical imaging data has increased radically in both the size of the examination as well as the number of examinations. This has resulted in display and analysis of increasingly greater amounts of image data by a radiologist each day. This situation currently appears unbounded and portends disaster for the future. The purpose of this session is to examine how other disciplines faced with similar challenges of large amounts of image data have dealt with these situations. SCAR intends for this session to spark



strategic thinking and debate regarding a shift in the current paradigm used for medical image interpretation. SCAR is prepared to champion this cause and provide leadership to address and solve this dilemma.

Learning Objectives:

- Understand the problems associated with human viewing of large image data sets.
- Learn how other disciplines have solved problems associated with large image data sets.
- Engage in new methods for the interpretation of large image data examination in medical imaging.

Saturday, June 7
Special Session I
10:00 AM – 11:45 AM

Strategic Business Plan for PACS

S. Ted Treves, MD
Session Chair
Children's Hospital of Boston
Chief, Division of Nuclear Medicine

This session will present the business perspective on assessing the value of PACS.

Sunday, June 8
Special Session II
10:00 AM – 11:45 AM

Decision Support Beyond Radiology

David W. Bates, MD, MSc
Session Chair
Medical Director of Clinical and Quality Analysis
Partners Healthcare System

Participants:

John Halamka, MD
Chief Information Officer
Caregroup Healthcare System

Gilad J. Kuperman, MD, PhD
Associate Director,
Clinical Informatics Research and Development
Partners Healthcare System

This session will describe clinical decision support in two Boston-area integrated delivery systems. Dr. Kuperman will begin by describing the basics of clinical decision support. Next, Dr. Halamka will describe Caregroup's efforts in this area. Dr. Bates will conclude describing evidence that clinical decision support makes a difference.

Learning Objectives:

- Describe different levels of clinical decision support, from simple to more complex.
- Describe evidence that clinical decision support improves the efficiency, quality and safety of care.

Monday, June 9
Special Session III
10:00 AM – 11:45 AM

Radiology Frontiers

Ramin Khorasani, MD
Session Chair
Vice Chairman, Department of Radiology
Medical Director, Multi-disciplinary PACS
Assistant Professor of Radiology
Harvard Medical School
Brigham and Women's Hospital

Participants:

Thomas H. Lee, MD
Medical Director
Partners Community HealthCare, Inc.
Associate Editor, New England Journal of Medicine
Associate Professor of Medicine
Harvard Medical School

Steven E. Seltzer, MD
Chairman, Department of Radiology
Brigham and Women's Hospital
Phillip H. Cook Professor of Radiology
Harvard Medical School

Health care delivery systems are focusing on reducing medical errors and improving quality of care. Medical imaging will increasingly become a focus of these efforts due to rapid growth of imaging technologies and applications. Radiology has a unique opportunity to lead such efforts. We will discuss how leveraging information technology solutions can help transform radiology's perceived role of technology provider to that of a knowledge provider in patient care.

Learning Objectives:

- Recognize factors contributing to overuse/miss-use/under-use of imaging.
- Discuss medical errors in the context of medical imaging and their potential impact on health care costs and quality.
- Use a case example to describe how radiology can leverage information technology solutions, specifically Computerized Physician Order Entry, to help deliver knowledge at the point of care to reduce errors and improve quality of care while improving efficiency.

Monday, June 9
Special Session IV
1:15 PM – 3:00 PM

The Electronic Medical Record

Keith J. Dreyer, DO, PhD
Session Chair
Vice Chair,
Radiology Computing & Information Sciences
Massachusetts General Hospital
Partners HealthCare System, Inc.

Participants:

John P. Glaser, PhD
Vice President and Chief Information Officer
Partners HealthCare System, Inc.

John Halamka, MD
Chief Information Officer
Caregroup Healthcare System

Paul J. Chang, MD
Director, Division of Radiology Informatics
University of Pittsburgh Medical Center

Eliot L. Siegel, MD
Vice Chair
Imaging Information Systems
University of Maryland School of Medicine
Chief, Imaging VA Maryland Healthcare System

This session will summarize the current status and existing limitations in clinical practice for RIS/HIS integrated, enterprise-wide EMR.

Monday, June 9
Special Session V
3:30 PM – 5:15 PM

Radiology Systems Upgrades — the 7-Year Itch

David Avrin, MD, PhD
Session Chair
Professor of Radiology
Chief, Abdominal Imaging
University of Utah Hospitals & Clinics

The session will address the issues involved in renewing or even replacing major computer systems in radiology (i.e. PACS or RIS). A broad range of questions will be addressed: Which vendor upgrades do you accept? How do you finance a whole new system? How do you switch to a new system without bringing the radiology department to its knees?

Lunch Sessions

LUNCH SESSION I

Saturday, June 7
11:45 AM – 1:15 PM

Zen and the Art of PACS Administration

Moderator:

Paul G. Nagy, PhD
Medical College of Wisconsin

Panel:

Steve Chechet
*Application Analyst
Appleton Medical Center/Theadacare*

Charles Socia RT(R)(CT)(QM)
*PACS System Administrator
Baptist Health*

Marc Deshaies
*Lead PACS Service Engineer
GE Medical Systems*

Are you a PACS administrator who wants to glean secrets of success from PACS administrators who make it look easy? What is the career development path for PACS administrators? PACS is a constantly changing field, so if you do not stay up-to-date, you will become obsolete. This session will present several successful administrators who will discuss what you can do today to stay ahead of the curve.

Learning Objectives:

- Describe traits and prerequisites to be a PACS professional.
- Learn valuable job survival skills to succeed as a PACS professional.
- Explore tools and tips on how to become a PACS expert.

LUNCH SESSION II

Saturday, June 7
11:45 AM – 1:15 PM

Public Domain Software for PACS and Informatics Implementation

Moderator:

J. Anthony Seibert, PhD
University of California, Davis

Participants:

R. L. "Skip" Kennedy, MSc
Kaiser Permanente, Sacramento

Steven C. Horii, MD
University of Pennsylvania

Public domain software, including freeware, shareware and open source development opportunities is a resource that can provide significant assistance to implementers and users of PACS. This session will describe methods, strategies, and the discovery process of finding software and information from simple DICOM image viewers, database management tools, PACS administrative and QC tools, DICOM libraries, PACS FAQs, to available RFP documents and open source code. Open source code development for use and contribution by the public sector provides a fertile ground for creative implementation and sharing of ideas. Demonstration of specific software programs during the session will illustrate many of these creative and state-of-the-art capabilities.

Learning Objectives:

- Learn about the public domain software available from the Web and other resources.
- Gain an understanding of how to access, download, and implement specific freeware and shareware routines and retrieve useful information and suggestions about PACS and informatics issues.
- Demonstrate the capabilities, advantages, and implications of open source software.

LUNCH SESSION III

Sunday, June 8
11:45 AM – 1:15 PM

How Not to Give a Scientific Talk

Presented by the SCAR Research and Development Committee

Moderator:

Katherine P. Andriole, PhD
*University of California, San Francisco
Chair, SCAR Research and Development Committee*

Participants:

John A. Carrino, MD, MPH
Brigham and Women's Hospital

Bradley J. Erickson, MD, PhD
Mayo Clinic, Rochester

Bruce I. Reiner, MD
University of Maryland

This session will illustrate the proper way to orally present a scientific paper. Examples of good and poor presentations of the same paper will be given. Ample time will be available to analyze each presentation, pointing out the positive and negative aspects with suggestions for improvement. The audience will be invited to participate in the discussion.

Learning Objectives:

- Learn the basic elements required to construct a solid scientific oral paper presentation.
- Become aware of common mistakes and potential pitfalls to avoid in giving scientific presentations.
- Recognize good and bad practices in scientific presentations to facilitate improving the creation and delivery of presentations in the future.



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LUNCH SESSION IV

Sunday, June 8

11:45 AM – 1:15 PM

IHE Update—Integrating the Healthcare Enterprise: Workflow and How You Get It

An RSNA IHE Initiative Presentation

Moderator:

David Piraino, MD
Cleveland Clinic Foundation

Panel:

David Channin, MD
Northwestern Memorial Hospital

Paul Nagy, PhD
Froedert Hospital

Kevin O'Donnell
Toshiba Medical Systems

John Paganini
IDX Systems Corporation

Charles Parisot
GE Medical Systems

IHE is an initiative of IT and healthcare professionals and industry to implement standards to solve real-world clinical problems. In radiology IHE has defined standards-based transactions to support the workflow of typical patient encounters and numerous other enhancements to the efficiency of clinical care. IHE makes it simpler for vendors to adopt these solutions and for purchasers to specify them when acquiring systems—reducing the difficulty and cost of tightly integrating systems. Learn what you need to know to put these benefits into practice today.

Learning Objectives:

- Learn the benefits of a tightly integrated workflow in radiology.
- Understand the constantly expanding scope of integration capabilities available through IHE.
- Draw on the experience of users who have successfully integrated imaging and information systems with IHE.

LUNCH SESSION

Monday, June 9

11:45 AM – 12:15 PM

SCAR Membership Meeting and Fellows Induction

12:15 PM – 1:15 PM

3rd SCAR Research and Development Committee Symposium

“Evaluation of Interstitial Lung Disease on 5 Mpixel CRT vs. 3 Mpixel LCD Displays”

Presented by the SCAR Research and Development Committee

Moderators:

Katherine P. Andriole, PhD
University of California, San Francisco
Chair, SCAR Research and Development Committee

Steve G. Langer, PhD
Mayo Clinic, Rochester

Participants:

Bradley J. Erickson, MD, PhD

Brian J. Bartholmai, MD

Ken A. Fetterly, MS
Mayo Clinic, Rochester

Eliot L. Siegel, MD
University of Maryland School of Medicine

John A. Carrino, MD
Brigham and Women's Hospital

The R&D study is aimed at performing a receiver operator characteristic (ROC) evaluation of 5 Mpixel CRT vs. the evolving 3 Mpixel LCD display. The question to be answered is, “Can radiologists perform diagnosis as accurately on the currently available 3 Mpixel LCD technology as they do with current 5 Mpixel CRT displays?” Initial results from a multi-institution, multi-observer study will be presented.

Learning Objective:

- Learn the basics of statistical concepts, experimental design, and informed display choices.

BREAKFAST SESSION

2003 RESIDENT ROUNDTABLE

Tuesday, June 10

7:00 AM – 8:30 AM

Electronic Teaching Tools: Old Dogs and New Tricks

Presented by the SCAR Resident and Fellows Education and Training Committee

Moderator:

David S. Channin, MD
Northwestern University Medical School
Chair, SCAR Resident Education and Training Committee

Participants:

Brian J. Bartholmai, MD
Mayo Clinic, Rochester

Barton F. Branstetter, MD
University of Pittsburgh Medical Center

David S. Hirschorn, MD
Massachusetts General Hospital

Khan M. Siddiqui, MD
Geisinger Medical Center

Participants will have an opportunity to hear a summary of existing electronic teaching tools in radiology. There will be a chance to discuss individual experiences with these tools. A focus will also be made on functional requirements for new tools to be developed in the future.

Learning Objectives:

- Understand the electronic teaching tools available now.
- Describe what is missing from teaching tools.
- Understand technologies available to develop new tools.

The advancement of computer applications in medicine continues to move at a breathtaking rate, and no discipline is more affected (or more at the cutting edge) than radiology.

SCAR has been fortunate to have some of the leading researchers and adopters of these technologies within its constituency, and these experts have served as educators within SCAR University. The clinical and research topics of special interest to the members of SCAR continue to expand into new arenas such as computer-aided diagnosis, structured reporting, speech recognition, and strategies for review and interpretation of large and complex image datasets.

With the increasing adoption of digital radiography and PACS, filmless imaging is moving from an early adopter to an early majority phase. What was previously the exclusive domain of tertiary care academic facilities is now entering into the domain of small and medium sized community

hospitals. As the electronic medical record also becomes a reality, these digital applications will become necessary components to achieve this paperless, filmless paradigm.

At the same time, our society has expanded its base to include healthcare professionals in a wide array of occupations including physicists, technologists, administrators, engineers, physicians, information technology specialists, and industry consultants. We welcome this expanded member base, which serves to facilitate the sharing of ideas across the entire healthcare spectrum.

In response to the rapid developments in the field, SCAR University continues to expand its curricula to meet these rapidly expanding educational challenges. We have added a number of new educational tracks to our program, while expanding the educational program to go above and beyond the annual meeting. Some of these new educational initiatives can be found on-line at www.scarnet.org, as well as in print with our



*Eliot Siegel, MD and Bruce Reiner, MD
 Co-Chairs, SCAR University*

primer series, which includes four publications to date (Security, Electronic Archive, Quality Assurance, and our newest addition on the topic of Electronic Reporting).

We would like to thank you for being an active member of SCAR University and hope you enjoy the meeting. We continue to look for new ways to meet your educational needs and welcome any suggestions or feedback you have to offer.

100 LEVEL INTRODUCTORY COURSES

Will provide attendees with the basics and fundamental information used in everyday application of the technologies.

SATURDAY, JUNE 7

10:00 AM – 11:45 AM

101
The Essentials of CR & DR
 Katherine Andriole, PhD
University of California, San Francisco
 10:00 AM – 10:30 AM

102
Use of Decision Support Tools in Today's Clinical Practice
 Curtis Langlotz, MD, PhD
University of Pennsylvania
 10:30 AM – 11:00 AM

103
CR/DR Workflow Optimization
 Anna Chacko, MD
The Lahey Clinic
 11:00 AM – 11:30 AM

3:15 PM – 5:00 PM

104
The LCD vs. CRT Conundrum
 Michael Flynn, PhD
Henry Ford Health System
 3:15 PM – 3:45 PM

105
Fundamentals of Teleradiology Quality Control
 John Romlein, MS
Xtria Healthcare Systems
 3:45 PM – 4:15 PM

106
Buyer's Guide to RIS Purchasing
 William Montgomery, CIO
Shands HealthCare, Inc.
 4:15 PM – 4:45 PM

SUNDAY, JUNE 8

10:00 AM – 11:45 AM

107
Introduction to Networking
 Paul Chang, MD
University of Pittsburgh Medical Center
 10:00 AM – 10:30 AM

108
Is Digital Mammography Ready for Prime Time?
 TBA
 10:30 AM - 11:00 AM

109
Introduction to Speech Recognition
 Stephen Herman, MD
Toronto General Hospital
 11:00 AM – 11:30 AM

1:15 PM – 3:00 PM

110
Digital Image Capture Using PACS
 Richard Wiggins, III, MD
University of Utah School of Medicine
 1:15 PM – 1:45 PM

111
Introduction to Storage: Does Size Really Matter?
 Edward Smith, DSc
University of Rochester Medical Center
 1:45 PM – 2:15 PM

112
Designing and Redesigning the Digital Radiology Reading Room
 Eliot Siegel, MD
Baltimore VAMC/University of Maryland
 2:15 PM – 2:45 PM

SENIOR-LEVEL SESSIONS (200, 300, 400)

These senior sessions are organized by topic and will allow participants to explore digital imaging technologies in greater depth. These detailed and complex didactic offerings are aimed at the technophiles and more experienced users of the technology. Courses 201, 301, 401 through 212, 312, 412 parallel topics 101–112 in the 100 level introductory course session. 213, 313, 413 deal with an additional topic, security.

SATURDAY, JUNE 7

Design Considerations in a Filmless Enterprise



Eliot L. Siegel, MD
*University of Maryland
Baltimore VAMC
Section 12 Head*
10:00 AM – 11:45 AM

212
**The Digital Imaging Department:
An Architect's Perspective**
Morris Stein, FAIA, FACHA
The Stein-Cox Group Architects
10:00 AM – 10:30 AM

312
**Radiology Department
Redesign in the Digital Era:
A Case Study Approach**
Bill Rostenberg, FAIA, FACHA
Smith Group Architects
10:30 AM – 11:00 AM

412
**Looking into the Crystal Ball:
The Radiology Department of
the Not Too Distant Future**
Mark Morita
GE Medical Systems
11:00 AM – 11:30 AM

Productivity/Workflow



Bruce I. Reiner, MD
*University of Maryland
Section 3 Head*
3:15 PM – 5:00 PM

203
**Interpretation Strategies
for Large Imaging Datasets**
Eliot Siegel, MD
*University of Maryland
VA Maryland Healthcare System*
3:15 PM – 3:45 PM

303
**The New Paradigm in
Electronic Reporting**
Bruce Reiner, MD
University of Maryland
3:45 PM – 4:15 PM

403
**Designing Software Tools for
Radiologist Workflow Optimization**
Kaushal Shastri
Fujifilm Medical Systems, USA
4:15 PM – 4:45 PM

SUNDAY, JUNE 8

New Frontiers in Digital Radiography



Katherine P. Andriole, PhD
*University of California, San Francisco
Section 1 Head*
10:00 AM – 11:45 AM

201
**Purchasing and Implementation
Strategies for Digital Radiography**
R.L. "Skip" Kennedy, MSc
Kaiser Permanente Sacramento
10:00 AM – 10:30 AM

301
Specialty Applications
Katherine Andriole, PhD
University of California, San Francisco
10:30 AM – 11:00 AM

401
**New Technologies in
Digital Radiography**
J. Anthony Seibert, PhD
University of California, Davis
11:00 AM – 11:30 AM

Radiologist Decision Support Tools



Bradley J. Erickson, MD, PhD
*Mayo Clinic, Rochester
Section 2 Head*
1:15 PM – 3:00 PM

202
Clinical Applications of CAD
Heber MacMahon, MD
University of Chicago
1:15 PM – 1:45 PM

302
**Use of Advanced Image Processing
Algorithms for Image Enhancement**
Bradley Erickson, MD, PhD
Mayo Clinic, Rochester
1:45 PM – 2:15 PM

402
Neural Networks and Fuzzy Logic
Susan Wood, PhD
Jimmy Roehrig, PhD
R2 Technology, Inc.
2:15 PM – 2:45 PM

Information Systems



Janice Honeyman-Buck, PhD
*University of Florida
Section 6 Head*
3:30 PM – 5:15 PM

206
**The Changing Role of
Informatics in the Current
Digital Radiology Practice**
Chris Siström, MD
University of Florida
3:30 PM – 4:00 PM

306
Integration of RIS and PACS
Meryll Frost
Medical Imaging Consultants, Inc.
4:00 PM – 4:30 PM

406
**Advanced Information System
Functionality, Interoperability,
and Issues**
Janice Honeyman-Buck, PhD
University of Florida
4:30 PM – 5:00 PM

Security



Samuel J. Dwyer, III, PhD
*University of Virginia Health System
Section 13 Head*
3:30 PM – 5:15 PM

213
HIPAA Security Update
Kristin Hughes, JD
SG&A Consulting, Inc.
3:30 PM – 4:00 PM

313
**Security Strategies for
Wireless Technologies**
Samuel Dwyer, III, PhD
University of Virginia Health System
4:00 PM – 4:30 PM

413
**Creating a Bullet-Proof
Digital Imaging Network**
Herman Oosterwijk, MS, MBA
OTech Inc.
4:30 PM – 5:00 PM

Workstation Design and Quality Control



John A. Carrino, MD, MPH
Brigham and Women's Hospital
Section 4 Head
3:30 PM – 5:15 PM

204 Assessment of Display Performance for Medical Imaging Systems

Andrew Maidment, PhD
University of Pennsylvania
3:30 PM – 4:00 PM

304 Developing an Enterprise-Wide Monitor QC Program

Manuel Arreola, PhD
University of Florida
4:00 PM – 4:30 PM

404 Comparison of Color and Monochrome Displays in 2003

Michael Flynn, PhD
Henry Ford Health System
4:30 PM – 5:00 PM

MONDAY, JUNE 9

Connectivity/Networking



Paul J. Chang, MD
University of Pittsburgh Medical Center
Section 7 Head
10:00 AM – 11:45 AM

207 Update on IHE

David Channin, MD
Northwestern University Medical School
10:00 AM – 10:30 AM

307 New DICOM Initiatives

Steven Horii, MD
University of Pennsylvania
10:30 AM – 11:00 AM

407 Wireless Technologies: Current State-of-the-Art

Paul Chang, MD
University of Pittsburgh Medical Center
11:00 AM – 11:30 AM

QA in the Digital Enterprise



Charles E. Willis, PhD
Texas Children's Hospital
Section 5 Head
10:00 AM – 11:45 AM

205 Expanding the Role of the Technologist in Digital Radiography QC

Ellen Charkot, MRT
Hospital for Sick Children, Toronto
10:00 AM – 10:30 AM

305 Artifacts and Misadventures in Digital Radiography

Charles Willis, PhD
Texas Children's Hospital
10:30 AM – 11:00 AM

405 Developing an Enterprise-wide Digital Quality Assurance Program

Stephen Thompson, MS
MD Anderson Cancer Center
11:00 AM – 11:30 AM

Speech Recognition and Structured Reporting



David L. Weiss, MD
Geisinger Medical Center
Section 9 Head
1:15 PM – 3:00 PM

209 Demo of Problem-Solving Scenarios

David Weiss, MD
Geisinger Medical Center
1:15 PM – 1:45 PM

309 Practical Applications of Structured Reporting with Demo

Curtis Langlotz, MD, PhD
University of Pennsylvania
1:45 PM – 2:15 PM

409 Radiology Lexicon and the RadLex Project

John Carrino, MD, MPH
Brigham and Women's Hospital
2:15 PM – 2:45 PM

Digital Mammography



Martin J. Yaffe, PhD
Sunnybrook & Women's College
Health Science Center
Section 8 Head
1:15 PM – 3:00 PM

208 Current and Future Technologies for Digital Mammography

Martin Yaffe, PhD
Sunnybrook & Women's College
Health Science Center
1:15 PM – 1:45 PM

308 DICOM and PACS for Digital Mammography

Andrew Maidment, PhD
University of Pennsylvania
1:45 PM – 2:15 PM

408 Advanced Clinical Applications for Digital Mammography (Telemammography, Tomosynthesis, CAD Breast Angiography)

Daniel Kopans, MD
Massachusetts General Hospital
2:15 PM – 2:45 PM

SCAR U: How To (A Practical User's Guide)



Nogah Haramati, MD
Montefiore Medical Center
Section 10 Head
3:30 PM – 5:15 PM

210 An Update on Wireless Technologies

Mary McKenna, RN, MSN
Bellevue Hospital & South Manhattan
Healthcare Network
3:30 PM – 4:00 PM

310 Interpretation Strategies for Large Cross Sectional Image Data Sets

Nogah Haramati, MD
Montefiore Medical Center
Menashe Benjamin, PhD
Algotec Systems, Inc.
4:00 PM – 4:30 PM

410 Customizing Hanging Protocols

Roberta Locko, MD
Harlem Hospital Center
4:30 PM – 5:00 PM

Electronic Storage Media



David S. Channin, MD
Northwestern University Medical School
Section 11 Head
3:30 PM – 5:15 PM

211 Storage Media

Katherine Andriole, PhD
University of California, San Francisco
3:30 PM – 4:00 PM

311 Storage Options: DAS, HSM, SAN, NAS and other Buzzwords

Prakash Mathew, PhD
GE Medical Systems
4:00 PM – 4:30 PM

411 Practical and Clinical Determinants of Storage Requirements

David Channin, MD
Northwestern University Medical School
4:30 PM – 5:00 PM

Pre-Conference, Educational Sessions

SCAR PACS Administration Course — NEW!

Friday, June 6, 2003 • Hynes Convention Center • 9:00 am–5:00 pm

Presented by the PACS Administration Subcommittee of the SCAR Education Committee

Faculty:

George Bowers, MBA
*Principal
Health Care Information Consultants, LLC*

Paul G. Nagy, PhD
*Director, Radiology Informatics Laboratory
Medical College of Wisconsin*

Jay Gaeta
PACS Consultant

Thomas M. Hanson, MS, RT
*PACS Specialist
Froedtert Hospital*

Liaisons:

Bruce I. Reiner, MD
*Associate Professor, Department of Radiology
University of Maryland*

Eliot L. Siegel, MD
*Director Imaging, Department of Radiology
Baltimore VAMC/University of Maryland*

Target Audience: Recent and soon-to-be PACS Administrators

Registration: \$100 USD (meals and registration materials included). Space is limited. Register now and reserve your space by using the SCAR 2003 Meeting Registration Form on pages 25–26 of this brochure or online on the SCAR Website. Six hours of continuing education credits available for course attendees.

Course Description:

As the leading educational organization that deals with PACS, it is synergistic with SCAR's mission to define PACS Administration and determine the competencies required in this evolving field.

The first SCAR PACS Administration Course will be a focused one-day session prior to the SCAR 2003 Annual Meeting. The course will provide an overview of the profession covering the four modules that encompass the different competencies. The course is designed to provide a framework that enables the participant to develop an understanding of the roles and skill sets necessary for effective PACS Administration. Tailored specifically for new

PACS Administrators, this introductory course will identify resources available, including a roadmap to the SCAR Annual Meeting particularly focused on PACS Administration content.

Since there is way too much content to teach people PACS administration in a single day, the SCAR PACS Administration course will present an overview of the methods and tools a person can use to be a competent and happy PACS administrator. This course will focus on the techniques to embrace change and stay on top of the fast moving field of PACS Administration.

For more information, visit the SCAR Website.

Learning Objectives:

By the conclusion of the course, participants will be able to:

- Describe the core competencies of PACS Administration.
- Recognize each of the roles involved in PACS Administration: Users, Business, and Technical.



- Identify the Available Resources, including SCAR 2003 conference sessions of particular interest to PACS Administrators.

SCAR-affiliated User Groups — Annual Educational Meetings

IDXrad Radiology Information Systems Society (IRISS)

IRISS

Thursday, June 5 – Friday, June 6, 2003
Sheraton Boston Hotel, 9:00 am–5:00 pm

AGFA PACS Users Group (APUG)

APUG

Friday, June 6, 2003
Hynes Convention Center, 9:00 am–5:00 pm

FUJI PACS User Group Meeting

Friday, June 6, 2003
Hynes Convention Center, 9:00 am–5:00 pm

Program at a Glance

Day 1—Saturday, June 7

6:30 am	Registration 6:30 am–5:30 pm			Continental Breakfast 7:00 am–8:00 am		
8:00 am	<p align="center">Opening Session The Impact of 21st Century Technology on Human Health and Society <i>Keynote: Ray Kurzweil</i> 8:00 am–9:30 am • Grand Ballroom Sheraton Boston Hotel</p>					
9:30 am	Break 9:30 am–10:00 am					
10:00 am	<p>* SCAR U 100 Introductory Course 10:00 am–11:45 am</p> <p>101 The Essentials of CR & DR 102 Use of Decision Support Tools in Today's Clinical Practice 103 CR/DR Workflow Optimization</p>		<p>SCAR U Senior Session Design Considerations in a Filmless Enterprise 10:00 am–11:45 am</p> <p>212 The Digital Imaging Department: An Architect's Perspective 312 Radiology Department Redesign in the Digital Era: A Case Study Approach 412 Looking into the Crystal Ball: The Radiology Department of the Not Too Distant Future</p>		<p>Special Session I Strategic Business Plan for PACS <i>S. Ted Treves, MD</i> 10:00 am–11:45 am</p>	
11:45 am	<p>Lunch Session 1 Zen and the Art of PACS Administration 11:45 am–1:15 pm</p>		<p>Lunch Session 2 Public Domain Software 11:45 am–1:15 pm</p>		<p>Lunch 11:45 am–1:15 pm</p>	
1:15 pm	<p>Scientific Session 1 Image Processing 1:15 pm–2:45 pm</p>		<p>* Scientific Session 2 Departmental Productivity & Workflow 1:15 pm–2:45 pm</p>		<p>Scientific Session 3 Image Acquisition & Storage 1:15 pm–2:45 pm</p>	
2:45 pm	Break 2:45 pm–3:15 pm					
3:15 pm	<p>* SCAR U 100 Introductory Course 3:15 pm–5:00 pm</p> <p>104 The LCD vs. CRT Conundrum 105 Fundamentals of Teleradiology Quality Control 106 Buyer's Guide to RIS Purchasing</p>		<p>SCAR U Senior Session Productivity & Workflow 3:15 pm–5:00 pm</p> <p>203 Interpretation Strategies for Large Imaging Datasets 303 The New Paradigm in Electronic Reporting 403 Designing Software Tools for Radiologist Workflow Optimization</p>		<p>* Hospital Tours B Tour 1,2,3,4 3:15 pm–5:15 pm</p>	
5:00 pm	SCAR 2003 Opening Reception in the Exhibit Hall 5:00 pm–7:00 pm					

* Activity of particular interest to practicing radiologists.

Day 2—Sunday, June 8

7:00 am	Registration 7:00 am–5:00 pm		Continental Breakfast 7:00 am–8:00 am	
8:00 am	* Scientific Session 4 Reading Room 8:00 am–9:30 am	Scientific Session 5 Enterprise Productivity & Workflow 8:00 am–9:30 am	Scientific Session 6 Image Distribution 8:00 am–9:30 am	
9:30 am	Break 9:30 am–10:00 am		Exhibit Hall A	
10:00 am	* SCAR U 100 Introductory Course 10:00 am–11:45 am 107 Introduction to Networking 108 Is Digital Mammography Ready for Prime Time? 109 Introduction to Speech Recognition	SCAR U Senior Session New Frontiers in Digital Radiography 10:00 am–11:45 am 201 Purchasing and Implementation Strategies for Digital Radiography 301 Specialty Applications 401 New Technologies in Digital Radiography	Special Session II Decision Support Beyond Radiology <i>David Bates, MD, MSc</i> 10:00 am–11:45 am	
11:45 am	Lunch Session 3 How Not to Give a Scientific Talk 11:45 am–1:15 pm	Lunch Session 4 IHE Update 11:45 am–1:15 pm	Lunch 11:45 am–1:15 pm Exhibit Hall A	
1:15 pm	* SCAR U 100 Introductory Course 1:15 pm–3:00 pm 110 Digital Image Capture Using PACS 111 Introduction to Storage: Does Size Really Matter 112 Designing and Redesigning the Digital Radiology Reading Room	SCAR U Senior Session Radiologist Decision Support Tools 1:15 pm–3:00 pm 202 Clinical Applications of CAD 302 Use of Advanced Image Processing Algorithms for Image Enhancement 402 Neural Networks and Fuzzy Logic	Poster and Demo Session 1:15 pm–3:00 pm	* Hospital Tours C Tour 1,2,3,4 1:15 pm–3:15 pm
3:00 pm	Break 3:00 pm–3:30 pm			
3:30 pm	SCAR U Senior Session Information Systems 3:30 pm–5:15 pm 206 The Changing Role of Informatics in the Current Digital Radiology Practice 306 Integration of RIS and PACS 406 Advanced Information System Functionality, Interoperability, and Issues	* SCAR U Senior Session Security 3:30 pm–5:15 pm 213 HIPAA Securing Update 313 Security Strategies for Wireless Technologies 413 Creating a Bullet-proof Digital Imaging Network	SCAR U Senior Session Workstation Design and Quality Control 3:30 pm–5:15 pm 204 Assessment of Display Performance for Medical Imaging Systems 304 Developing an Enterprise-wide Monitor QC Program 404 Comparison of Color and Monochrome Displays in 2003	* Hospital Tours D Tour 1,2,3,4 3:15 pm–5:15 pm
6:00 pm	SCAR Welcome Reception 6:00 pm–8:00 pm		Prudential Center Top of the Hub	

* Activity of particular interest to practicing radiologists.

Program at a Glance

Day 3—Monday, June 9

7:00 am	Registration 7:00 am–5:00 pm		Continental Breakfast 7:00 am–8:00 am	
8:00 am	Scientific Session 7 Vendor Session 8:00 am–9:30 am	* Scientific Session 8 PACS Experience 8:00 am–9:30 am	Scientific Session 9 Infrastructure & Administration 8:00 am–9:30 am	
9:30 am	Break 9:30 am–10:00 am			
10:00 am	SCAR U Senior Session Connectivity/Networking 10:00 am–11:45 am 207 Introduction to Networking 307 New DICOM Initiatives 407 Wireless Technologies: Current State-of-the-Art	SCAR U Senior Session Quality Assurance in the Digital Enterprise 10:00 am–11:45 am 205 Expanding the Role of the Technologist in the Digital Radiology QC 305 Artifacts and Misadventures in Digital Radiography 405 Developing an Enterprise-wide Digital Quality Assurance Program	* Special Session III Radiology Frontiers <i>Ramin Khorasani, MD</i> 10:00 am–11:45 am	
11:45 am	SCAR Membership Meeting and Fellows Induction 3rd SCAR Research and Development Committee Symposium 11:45 am–1:15 pm		Lunch 11:45 am–1:15 pm Exhibit Hall A	
1:15 pm	SCAR U Senior Session Speech Recognition and Structured Reporting * 1:15 pm–3:00 pm 209 Introduction to Speech Recognition 309 Demo of Problem-solving Scenarios 409 Radiology Lexicon and the RadLex Project	SCAR U Senior Session Digital Mammography * 1:15 pm–3:00 pm 208 Current and Future Technologies for Digital Mammography 308 DICOM and PACS for Digital Mammography 408 Advanced Clinical Applications for Digital Mammography	Special Session IV The Electronic Medical Record (EMR) <i>Keith Dreyer, DO, PhD</i> 1:15 pm–3:00 pm	* Hospital Tours E Tour 5 1:15 pm–3:15 pm
3:00 pm	Break 3:00 pm–3:30 pm		Exhibit Hall A	
3:30 pm	SCAR U Senior Session * SCAR U: How To (A Practical User's Guide) 3:30 pm–5:15 pm 210 An Update on Wireless Technologies 310 Interpretation Strategies for Large Cross Sectional Image Data Sets 410 Customizing Hanging Protocols	SCAR U Senior Session Electronic Storage Media 3:30 pm–5:15 pm 211 Storage Media 311 Storage Options: DAS, HSM, SAN, NAS and other Buzzwords 411 Practical and Clinical Determinants of Storage Requirements	* Special Session V System Upgrades the 7-Year Itch <i>David Avrin, MD, PhD</i> 3:30 pm–5:15 pm	* Hospital Tours F Tour 5 3:15 pm–5:15 pm

* Activity of particular interest to practicing radiologists.

Day 4—Tuesday, June 10

7:00 am	Registration 7:00 am–9:00 am	Continental Breakfast 7:00 am–8:00 am	Residents' Roundtable Electronic Teaching Tools: Old Dogs and New Tricks 7:00 am–8:30 am
8:30 am	* Closing Session Medical Image Interpretation — The Collision between Humans and Data <i>Co-Moderators: Richard Morin, PhD, Katherine Andriole, PhD</i> 8:30 am–10:00 am		
10:00 am	Break 10:00 am–10:30 am		
10:30 am	* Closing Session Medical Image Interpretation — The Collision between Humans and Data <i>Co-Moderators: Richard Morin, PhD, Katherine Andriole, PhD</i> 10:30 am–12:30 pm		

* Activity of particular interest to practicing radiologists.

Key:

- General and Special Sessions
- SCAR University Sessions
- Scientific Sessions
- Hospital Tours

Please note: the program sessions are preliminary and subject to change or substitutions.



Dr. Alan Rowberg, Dr. Brad Erickson, and Dr. Kathy Andriole field R&D Symposium attendee questions.

SCAR Annual Membership Meeting

SCAR Members — be sure to attend the Annual Membership Meeting/Luncheon and induction of SCAR Fellows on Monday, June 9 at 11:45 AM. Following the business meeting, the SCAR Research and Development Committee will present their third symposium. The topic of the 2003 R&D Symposium is *“Evaluation of Interstitial Lung Disease on 5 Mpixel CRT vs. 3 Mpixel LCD.”*



Dr. David Avrin of the University of California, San Francisco (left) presents a plaque to Samuel Dwyer, PhD (right) of the University of Virginia, honoring him as a SCAR fellow.

Registration Hours:

Friday, June 6	5:00 PM – 8:00 PM
Saturday, June 7	6:30 AM – 5:30 PM
Sunday, June 8	7:00 AM – 5:00 PM
Monday, June 9	7:00 AM – 5:00 PM
Tuesday, June 10	7:00 AM – 9:00 AM

All scientific and educational sessions, posters and demonstrations for SCAR 2003 will be held at the Sheraton Boston Hotel. Technical exhibits will be held in Hall A at the Hynes Convention Center. Bus transportation will be provided from the Boylston Street entrance of the Hynes Convention Center to the hospital tour sites.

For a complete up-to-date list of presentations and online registration, visit www.scarnet.org

SCAR gratefully acknowledges the following cooperating organizations:

- AAPM** American Association of Physicists in Medicine
- ACR** American College of Radiology
- EuroPACS**
- HIMSS** Healthcare Information and Management Systems Society
- RSNA** Radiological Society of North America
- SPIE** The International Society of Optical Engineering

Stay informed!

For the latest information on SCAR 2003 or to register online:

- Visit the SCAR Website at www.scarnet.org
- Call the SCAR office at **703-757-0054**; Monday – Friday, 9:00 AM – 6:00 PM eastern time
- Email SCAR at SCAR2003@scarnet.org



Drs. Erickson, Rowberg, Horii, Andriole and Siegel participate in a special session of 'experts' at SCAR 2002.

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Scientific Papers

SATURDAY, JUNE 7

Session 1 Image Processing 1:15 PM – 2:45 PM

Co-Chairs:

Katherine P. Andriole, PhD
Bradley J. Erickson, MD, PhD

Utility of Advanced Computed Radiography Image Processing Algorithms in the Soft-Copy Interpretation of Musculoskeletal Trauma

Bruce I. Reiner, MD
University of Maryland
Eliot Siegel, MD
Ryan Moffitt
Steven Brower

Mining of Association Rules in Medical Image Data Sets

Sylvanus A. Ehikioya, PhD
University of Manitoba
Adepele Olukunle

A Distributed Execution Environment for Analysis of DCE-MR Image Datasets

Tahsin M. Kurc, PhD
Ohio State University
John D Fleig, MSc
Joel H Saltz, MD, PhD
Michael Knopp, MD, PhD

Detection of Microcalcification in Digitized Mammograms Using Wavelet Transform Local Extrema

M. G. Mini, MS
Cochin University of Science and Technology
V.P. Devassia
Tessamma Thomas, PhD



Session 2 Departmental Productivity & Workflow* 1:15 PM – 2:45 PM

Co-Chairs:

Bruce I. Reiner, MD
Charles E. Willis, PhD

Vendor Requirements for Implementation of the IHE Presentation of Grouped Procedures Integration Profile in a Multi-Vendor Environment

Gary J. Wendt, MD, MBA
University of Wisconsin, Madison
Wally Pepler, PhD

Creating a Playbook for IHE Scheduled Workflow Operations

Arnon Makori, MD
*Feinberg School of Medicine
Northwestern University*
David S. Channin, MD

Impact of Electronic Signature of Radiology Reports on Timeliness of Final Report Availability

Luigi Lepanto, MD
Centre Hospitalier de l'Universite de Montreal
Pierre Robillard, MD
Jacques Lesage, MD

How to Successfully Implement Voice Recognition: A Case Study at Children's Hospital Boston

Sharon E. Antiles, MPH
Children's Hospital Boston
Chuck Hornberger, MBA
Farhad Shahrooz
Robert Bramson, MD

Changes in Radiology Resident On-call Workflow After Implementation of PACS

Khan M. Siddiqui, MD
Geisinger Medical Center
Rodney G. Shaffer, MD
Faaiza Mahmoud, MD

Multi-Center Evaluation of Technologist Productivity and Workflow in Filmless Operation: A Comparison of Computed and Direct Radiography

Bruce I. Reiner, MD
University of Maryland
Eliot Siegel, MD
Frank Hooper, PhD

Session 3 Image Acquisition & Storage 1:15 PM – 2:45 PM

Co-Chairs:

Steve G. Langer, PhD
John A. Carrino, MD, MPH

Validation of a Self-Calibrating Active-Matrix Liquid Crystal Display System

Stephen L. Thompson, MS
MD Anderson Cancer Center
Charles E. Willis, PhD
Raimund Polman
Kenneth L. Homann

Mobile Screening Mammography: What Size Detector is Needed?

Gary J. Whitman, MD
MD Anderson Cancer Center
Donna Moxley, MS
Dorothy Page, RT (R)
Jessica Foust

Impact of Repeat Analysis in PACS

Maria Elissa Elevado Blado
Texas Children's Hospital
Yinlin Ma
Rebecca Ann Corwin, RT(R)
Stephanie G. Carr

Security Middle-Ware Infrastructure for DICOM Images in Health Information Systems

Vijay N.V. Kallepalli
University of Manitoba
Sylvanus A. Ehikioya, PhD
Sergio Camorlinga, MSc
Jose Rueda, PhD

Analyzing Audit Logs — A Multidimensional Approach

Robert M. Coleman
Maine Medical Center
Matthew D. Ralston, MD
Alexander Szafran, MS

*Sessions of particular interest to practicing radiologists

Session 4
Reading Room*
 8:00 AM – 9:30 AM

Co-Chairs:

Eliot L. Siegel, MD
 Jihong Wang, PhD

Designing the Reading Room
 in an Academic Environment

Thomas M. Hanson, MS, RT
Froedtert Hospital
 Paul G. Nagy, PhD
 Laura Kreiner
 Jeff Rehm

Effect of Illuminance at Eye Level
 on Monitor Black Level Luminance
 and Monitor Calibration

Kish Chakrabarti, PhD
CDRH/FDA
 Richard V. Kaczmarek, MS
 Jerry A. Thomas, MS

Are Consumer Grade Flat Panel
 Monitors Comparable to Medical
 Grade CRT Monitors for Primary
 Diagnosis of Abdominopelvic
 CT Exams?

David S. Hirschorn, MD
Massachusetts General Hospital
 Keith J. Dreyer, DO, PhD
 Thomas Schultz

High Volume Teleradiology Service:
 Focus on Radiologist Satisfaction

Elizabeth A. Krupinski, PhD
University of Arizona
 Kevin McNeill, PhD
 Kai Haber, MD
 Theron Ovitt, MD

A Cost Effective Web-Based
 Teaching File System

Blair T. Henderson, MD
University of Manitoba

Defining a Digital Teaching File
 Workflow: Specifications for
 Software Development

Barton F. Branstetter, MD
University of Pittsburgh
 David M. Lionetti
 Paul J. Chang, MD

Session 5
**Enterprise Productivity
 & Workflow**
 8:00 AM – 9:30 AM

Co-Chairs:

Richard L. Morin, PhD
 Curtis P. Langlotz, MD, PhD

Leveraging the Intranet for an Imaging
 Department: Centralizing Information,
 Improving Communications and
 Operations, and Providing Access to
 Learning Resources

William Tellier
Children's Hospital Boston
 Linda Poznauskis
 Keith Strauss
 Robert MacDougall

Improving Emergency and Radiology
 Interdepartmental Communications
 Through Clinical Information Systems
 Integration and the Application of
 Mobile Computing Technologies

Wyatt M. Tellis
University of California, San Francisco
 Katherine P. Andriole, PhD
 David E. Avrin, MD, PhD

Asynchronous Collaboration:
 An Enabling Technique for
 Improved Radiology Workflow

Barton F. Branstetter, MD
University of Pittsburgh
 David M. Lionetti
 Brian Paterson
 Paul J. Chang, MD

Clinician Assessment of
 Productivity Changes Following
 Enterprise PACS Implementation
 in a Community Hospital

Kevin R. Kirsch, RT(R)(CT)
Poudre Valley Hospital
 Jonathan Brown, RT
 J. Raymond Geis, MD
 Shelly A. Plowman

Progress Towards Paperless Radiology
 in the PACS Environment

Matthew D. Ralston, MD
Maine Medical Center
 Robert Coleman

Web-based Outpatient
 Radiology Order Entry

Daniel I. Rosenthal, MD
Massachusetts General Hospital
 Thomas J. Schultz
 David S. Hirschorn, MD
 Keith J. Dreyer, DO, PhD

Session 6
Image Distribution
 8:00 AM – 9:30 AM

Co-Chairs:

Paul J. Chang, MD
 Gary J. Wendt, MD, MBA

Enhancement of Enterprise Diagnostic
 Review with Integration into Electronic
 Medical Record

Kevin W. McEnery, MD
MD Anderson Cancer Center
 Charles T. Sutor, MS
 Stephen K. Thompson, MS
 Stan Hildebrand

Challenges and Limitations of Clinical
 Image Distribution in an Enterprise
 Wide PACS Environment — A Two-Year
 Evaluation of Multiple Approaches at
 the University of Wisconsin

Gary J. Wendt, MD, MBA
University of Wisconsin-Madison
 Wally Pepler, PhD

Enterprise-wide Image Distribution:
 the BWH Experience —
 Ten Years and Counting

William Hanlon, MSc
Brigham and Women's Hospital
 Ramin Khorasani, MD
 Stephanie Hoogasian

Tools for Managing Image Flow
 in the Modality to
 Clinical-Image-Review Chain

Kenneth W. Clark, MS
Washington University
 David L. Melson, MS
 Stephen M. Moore, MS
 G. James Blaine, DSc

Implementation of Key Image
 Note in PACS — Potential Problems
 and Solutions

Gary J. Wendt, MD, MBA
University of Wisconsin-Madison
 Wally Pepler, PhD

Measures of the Utility of a Clinical
 PACS: Comparison of Self-Reported
 Measures and Direct Measures of
 PACS Usage by Clinicians

Eric P. Tamm, MD
MD Anderson Cancer Center
 Kevin McEnery, MD

*Sessions of particular interest to practicing radiologists

Session 7
Vendor Session
8:00 AM – 9:30 AM

Co-Chairs:

Samuel J. Dwyer, III, PhD
Ramin Khorasani, MD

Implementation of a SANS Architecture Within A PACS Environment

Roy Seabolt
AMICAS, Inc.
Darlene Long
Bruce Hall

PACS Direct Experiences: Implementation, Selection and Benefits Realized

Karen Ondo
KLAS Enterprises
Ralph Reyes

PACS With HIS/RIS Integration in Community Hospitals

David W. Parker
SmartPACS
Kenneth C. Cohen, MD
Ann Hooper, RT
Steve Walter, MBA

Developing a Teaching File Authoring System Using Content Management Technology

Rex Jakobovits, PhD
Workhost Data Solutions
Mark Halsted, MD
Mark Shanaman, MS
Edward Weinberger, MD

PC-Based Ultrasound Image Acquisition and Data Archiving System Using Integrated Microelectronics

Steven R. Broadstone, DSc
Terason Division of Teratech Corporation
Xingbai He, PhD
Peter P. Chang, PhD
Alice M. Chiang, PhD

Implementing PACS: The Importance of Project Management: Tales from the Trenches

Stephen M. Doerner, RT
Kodak Health Imaging

Session 8
PACS Experience*
8:00 AM – 9:30 AM

Co-Chairs:

Paul G. Nagy, PhD
David S. Channin, MD

The PACS Pre-Implementation Process at a Major Teaching Hospital: A Multi-disciplinary Approach

D. Ben'et Gaytos
Children's Hospital Boston
John Speziale
Sharon Antiles, MPH
Robert Bramson, MD

Transitioning to a New PACS: 50 Ways to Leave Your Vendor

Barton F. Branstetter, MD
University of Pittsburgh
Claudine L. Martin
Therese A. Martin
Paul J. Chang, MD

Northwestern Year 4: Architectural Changes

Maria Z. Hernandez, RT(MR)
Northwestern Memorial Hospital
Elizabeth McKnight, RT (R)
Aimee Duvall, RT (R)
Andrew Longoria, RT (R)

Clinical Comparison of CRT and LCD Monitors in the Evaluation of Non-displaced Fractures

Bruce I. Reiner, MD
University of Maryland
Eliot Siegel, MD
Steven Brower
Ryan Moffitt

Can a PACS Workstation Work from 6,000 Miles Away?

David S. Hirschorn, MD
Massachusetts General Hospital
Charles D Levine, MD
Stephen R Baker, MD

PACS Modules Training at TCH

Maria Elissa Elevado Blado
Texas Children's Hospital
Stephanie G. Carr

Session 9
Infrastructure & Administration
8:00 AM – 9:30 AM

Co-Chairs:

Stephen K. Thompson, MS
Keith J. Dreyer, DO, PhD

Defining the PACS Profession

Paul G. Nagy, PhD
Medical College of Wisconsin
George Bowers
Bruce Reiner, MD
Eliot Siegel, MD

Negotiating a Service Level Agreement for PACS with the Enterprise

Bryant Mascarenhas, MBA
Froedtert Hospital
Paul G. Nagy, PhD
Daniel Peterson
Jeff Rehm

A Measurement Study of Diagnostic Imaging Modalities and Workgroups to Design a Suitable Enterprise PACS Network

Mpho Otukile
University of Manitoba-St. Boniface General Hospital Research Centre
Sergio Camorlinga, MSc
Jose Rueda, PhD

Paperless and Filmless: Integrating Dictation with PACS

Thomas E. Warfel, MD, PhD
University of Pittsburgh
Paul J. Chang, MD

Digital Image Conferencing in a Clinical Research Environment

Hendrik von Tengg-Koblick, MD
Ohio State University
Klaus Baudendistel
William Bennett
D. Spigos

A Performance Study of Replicated Metadata for Implementing a Distributed PACS Patient Location System

Ellen Cheung
University of Manitoba-St. Boniface General Hospital Research Centre
Sergio Camorlinga
Ken Barker, PhD
Jose Rueda, PhD

Note: The program sessions are preliminary and are subject to change or substitutions

* Sessions of particular interest to practicing radiologists

Scientific Posters and Demonstrations

Poster and Demonstration Session:

Sunday, June 8, 2003

1:15 PM – 3:00 PM

Poster awards will be presented at the Sunday evening
Welcome Reception.

**A Fast Algorithm for the Cortical
Surface Parameterization using
Minimum Distance Field**

Junki Lee, MS

Hanyang University

Jun-Soo Kwon, MD

Jong-Min Lee, PhD

Inyoung Kim, MD, PhD

**A Novel Automatic Algorithm for
Selecting a Standard Brain in a Data
Set Using Simple Structure Analysis
in Talairach Coordinate System**

Jong-Min Lee, PhD

Hanyang University

Bangbon Koo

Sangmin Lee, PhD

Inyoung Kim, MD, PhD

**A Perceptual Evaluation of JPEG2000
Image Compression for Digital
Mammography**

Sankararaman Suryanarayanan, MS

Emory University Medical School

Andrew Karellas, PhD

Srinivasan Vedantham, PhD

Hetal Ved

**Automatic Detection and
Segmentation of Low Contrast
Objects in the Complex Background**

Tatyana Belikova, PhD

Russian Academy of Sciences

Iryna Ivasenko, PhD

Roman Palenichka, PhD

**Automatic Stitching of
Digital X-ray Images**

Alexander L. Berestov, PhD

Medical Canon Development

Srinivasan Gopasalamy, PhD

Ivan J. Bojer

Timothy L. Kohler

**Boundary Segmentation for Detection
of Spiculated Masses Using
Morphological Characteristics in
Digital Mammogram**

Hosung Kim

Hanyang University

Jaehun Kim

Eunju Kim

Inyoung Kim, MD, PhD

**ClubPACS: An Online Community for
the PACS Administrator**

Paul G. Nagy, PhD

Medical College of Wisconsin

Jeff Rehm

Charles E Kahn, MD

**Comparison of Mammographic
Imaging Systems in Detection of
Simulated Microcalcifications:
Flat Panel, CCD, and Screen/Film
Combination**

Gary J. Whitman, MD

MD Anderson Cancer Center

Chao-Jen Lai, PhD

Wei Tse Yang, MD

Elsa Arribas, MD

**Development of ECG Management
System Conformable to DICOM
Waveform using XML**

Yongho Cho, MSE

Hanyang University

Myoung-ju Jeon, MS

Hyungsik Choi, MD

Inyoung Kim, MD, PhD

**Enterprise Imaging at Intermountain
Health Care**

Joe B. Boyce, MD

McKay-Dee Hospital, IHC

Deanna Welch

Mary Gathers

Darin Day



**Evaluation of Automated and
Semi-Automated Skull-stripping
Algorithms: Similarity Index and
Segmentation Error**

Jong-Min Lee, PhD

Hanyang University

Jung-Hyun Kim

Ui-Cheul Yoon, MS

Inyoung Kim, MD, PhD

**Modeling of Workflow in Diagnostic
Radiology Departments**

Spencer B. Gay, MD

University of Virginia Health System

Matthew J. Bassignani, MD

Alfred C. Weaver, PhD

C. Douglas Phillips, MD

**Modern Technology Gives Birth to
a New Nuclear Medical Imaging
System Conception**

Bouraoui Mahmoud, PhD

Faculty of Sciences of Monastir-Tunisia

Med Hedi Bedoui

Radoslav Raychev

Habib Essabbah

Peak Signal to Noise Ratio Performance Comparison of JPEG and JPEG 2000 for Various Medical Image Modalities, and Analysis of Precise Rate Distortion Capabilities for Improved Workflow Development

George P. Mulopulos, MD, FACR
Desert Radiologists
Laszlo R Gasztonyi
Albert Hernandez, MS

Planning for the Development of Telesonography

Matthew J. Bassignani, MD
University of Virginia Health System
Samuel J. Dwyer, PhD
Alfred C. Weaver, PhD
Jonathon Ciambotti, MD

Radiology Scheduling: Preferences of Users of Radiological Services and Impact on Referral Base Retention and Extension

Biswita C. Mozumdar, MD, MPH
National Institutes of Health
Douglas N. Hornsby, MD
Lisa Intriere, MD
Pablo Ros, MD, MPH

Softcopy Display Quality Comparison: A Proposed Quality-Index Curve

Jihong Wang, PhD
University of Texas Southwestern Medical Center
Qi Peng, MS

Teleradiology Use During Operation Joint Forge in Bosnia

Lance R. Williams, MD
Womack Army Medical Center

Transforming a Film-Based CT Practice to PACS: A CT PACS Trial Experience at Mayo Clinic Rochester

Suzanne K. Ramthun, MBA, RT(R)
Mayo Clinic, Rochester
Colleen M. Braun, RT(R)
Brian J. Bartholmai, MD

Transition from Film to Electronic Media in the First-Year Medical School Gross Anatomy Lab

Randy D. Ernst, MD
University of Texas Medical Branch at Galveston
Paul S. Sarai, MD
Orhan S. Ozkan, MD
Alberto Hernandez, MD

Use of Wireless PDA in Day-to-Day Radiology Practice

Khan M. Siddiqui, MD
Geisinger Medical Center
Joseph A. Scopelliti
Fredrick K. Emge, MD

Using Off the Shelf Digital Cameras to Scan Film into a Lightbox Free Environment

Yaron Rado, MD
Universitaetsklinik Duesseldorf
Benjamin Fritz, MD, DDS
Jens Nawatny, MD
Alexandra Rado, MD

Visualization of Three-Dimensional Fusion Image Using VRML in Clinical Epilepsy Case

Sang-Ho Lee
Research Institute for Radiological Sciences, Yonsei University
Dong-Hyun Kim
Sun Kook Yoo, PhD
Haijo Jung, PhD



For a complete up-to-date list of presentations, visit www.scarnet.org

SCAR 2003 Hospital Tours

Hospital Tours Schedule

Attendees of SCAR 2003 will have the opportunity to register for tours of Beth Israel Deaconess Medical Center (BID), Brigham and Women's Hospital (BWH), Children's Hospital of Boston (CHB), Massachusetts General Hospital (MGH) and New England Baptist Hospital (NEB).

Each institution has different vendors and configurations giving participants an overview of several system solutions. Tours will be offered as follows:

Tour 1 – BID Saturday, June 7, 2003

1:15 PM – 3:15 PM

Tour 2 – BWH 3:15 PM – 5:15 PM

Tour 3 – CHB Sunday, June 8, 2003

1:15 PM – 3:15 PM

Tour 4 – NEB 3:15 PM – 5:15 PM

Tour 5 – MGH Monday, June 9, 2003

1:15 PM – 3:15 PM

3:15 PM – 5:15 PM

Bus transportation will be provided from Hynes Convention Center (Boylston Street entrance) to each of the medical centers. A tour of any one facility will last approximately one hour. Tours require advance registration and your tour times will be sent to you with your registration confirmation. Please make your tour selections on the SCAR 2003 Meeting Registration Form (page 26). There is no additional fee, but space is limited and tours will be assigned on a first-come first-serve basis. You may pre-register for a maximum of two tours.

If taking two tours, it is recommended that tours not be scheduled back-to-back, since participants must ride the bus back to the Hynes Convention Center before boarding another bus for the next tour. However, if a participant plans to visit both Brigham and Women's and Children's Hospital, it is recommended that they register for back-to-back tours. Due to the close proximity of BWH and CHB, tour guides will walk participants from one institution to the other.



Tour 1

BETH ISRAEL DEACONESS MEDICAL CENTER

Beth Israel Deaconess Medical Center is a major teaching affiliate of Harvard Medical School (since 1928). The center is a non-profit healthcare institute with 529 beds, 1200 physicians on the active medical staff and is renowned for excellence in patient care, biomedical research, teaching and community service. Located in the heart of Boston's medical community it serves more than half a million patients annually in Boston and in communities North, West and South of the city.

The Division of Radiology at Beth Israel Deaconess Medical Center offers complete diagnostic services including general radiology, CT scans, MRI, ultrasound, mammography, nuclear medicine and interventional radiology. Each year over 250,000 examinations are performed and interpreted by sub-specialized radiologists.

The Division of Radiology has a PACS system that services three campuses and multiple outpatient centers. The PACS system has over 60 diagnostic workstations, 20 clinical workstations and Web-based image distribution. The Division of Radiology is electronically archiving 178,000 exams per year.

This tour will focus on digital workflow in an outpatient setting, providing participants with an opportunity to interact in a fully functional digital environment.

The tour includes:

Outpatient Workflow

- See CR and DR functioning in a busy outpatient department from patient arrival to final interpretation including remote reading with integrated RIS and softcopy interpretation.

Digital Mammography Workflow

- See how digital mammography improves workflow for the technologist and radiologist by streamlining the radiological process from the first patient contact through delivery of results.

Advanced Post Processing Methods

- See how a variety of advanced imaging techniques can be used to help with surgical planning, tumor staging and other facets of healthcare and research; also, the many ways in which image presentation can be made with multimedia.

The Digital Fileroom

- See how the fileroom duties have transformed from a film-based environment to digital.

BIDMC Vendors:

- GE Medical Systems
- FujiFilm Medical Systems
- Fischer Imaging Corporation
- PacsCube (DatCard Systems, Inc)
- Vital Images, Inc.

Tour 2

BRIGHAM AND WOMEN'S HOSPITAL

Since 1980, Brigham and Women's Hospital (BWH) has been recognized internationally for its excellence in patient care, medical research and the training of outstanding young physicians and other health care professionals. A teaching affiliate of Harvard Medical School and a founding member of Partners HealthCare System, Inc. (1994), the hospital comprises 716 beds, extensive outpatient facilities and state-of-the-art research laboratories.

The Department of Radiology offers a full spectrum of imaging services provided by sub-specialized radiologists. Each year over 500,000 examinations are performed. The Multidisciplinary PACS system at BWH services three hospitals (BWH, Dana-Farber Cancer Institute and Faulkner Hospital) with over 110 image acquisition devices and over 125 diagnostic and clinical review workstations, and Web-based image distribution. In addition to radiological images, OB-Gyn studies, cardiac catheterizations, echocardiography and vascular ultrasound studies are also archived to PACS. Further integration into the enterprise is being carried out via a physician order entry system and the electronic round trip.

Brigham and Women's Hospital would like to demonstrate the paperless/filmless workflow that is being implemented system-wide.

The tour includes:

Physician's Order

- Web Based Physician Order Entry used to deliver real-time decision support to referring physicians while enabling them to create clean and concise orders. Three exams will be scheduled directly on-line with radiology.

Imaging Services

- Scheduled appointments show directly on the modality via DICOM Modality Worklist.
- Image acquisition, header validation and image transfer into the PACS.
- Primary interpretation by the radiologists using various report generation techniques including back-office voice recognition.

Web Distribution

- Web distribution of the report and images electronically to the original referring physician, and to any clinician in the system that has the appropriate access and the need-to-know this diagnostic information. Images from radiology as well as from the cardiac cath lab and other imaging areas will demonstrate the multidisciplinary aspects of the Brigham PACS program and round out the presentation.

BWH Vendors:

- Agfa HealthCare Corporation
- GE Medical Systems
- Siemens Medical Solutions
- eScription
- Others



Tour 3

CHILDREN'S HOSPITAL OF BOSTON

Children's Hospital Boston is a 325-bed comprehensive center for pediatric health care. As the largest pediatric medical center in the United States, Children's offers a complete range of health care services for children from 15 weeks gestation through 21 years of age (and older in special cases). Children's records approximately 18,000 inpatient admissions each year, and our more than 150 outpatient programs and emergency services care for more than 300,000 patients annually. The hospital also performs 150,000 radiological examinations every year.

The tour includes:

Nuclear Medicine Information System

- See a demonstration of Children's Hospital's "homegrown" NMIS. A brief history and technical overview of the system will be provided followed by a demonstration of the various modules within the NMIS.

Radiology Web Strategy

- Review the Children's Hospital internal radiology website that will highlight the following functional areas in the department: Administrative, Billing, Clinical, Engineering/IT Problem Reporting, PACS Project Tracking System, Radiology IT Information, Research, Staff, Teaching Files/Links, and Training & Conferences.

Technical Tour

- See our newly constructed computer room highlighting our uniquely designed PACS architecture. Radiology IT and PACS vendor personnel will be available to answer questions about how and why we decided on this particular design.
- View our state-of-the-art MRI reading room and view a demonstration of our PACS soft copy reading stations and our VR dictation stations. An opportunity to experience 'hands-on' PACS stations will be provided.

Children's Vendors:

- Fujifilm Medical Systems
- EMC Corporation

Tour 4

NEW ENGLAND BAPTIST HOSPITAL

Established in 1893, New England Baptist Hospital is a 140-bed adult medical/surgical hospital, located in the Mission Hill neighborhood of Boston, with specialty services in musculoskeletal care, sports medicine, occupational medicine and cardiology. Since its inception, New England Baptist Hospital has continually taken patient care to new levels and today is recognized for its exceptional blend of caring and commitment.

The New England Baptist Hospital Department of Radiology is a comprehensive diagnostic entity, encompassing general radiology, CT, MRI, ultrasound, mammography, nuclear medicine and PET.

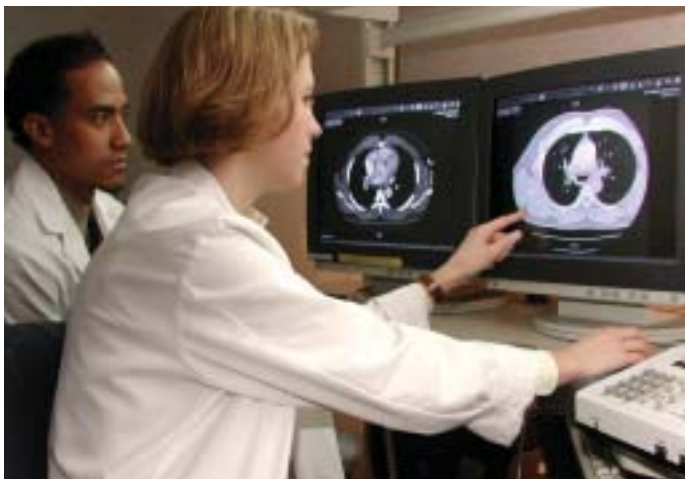
New England Baptist Hospital Radiology Department was the first electronically integrated facility in Boston. NEBH Radiology takes in electronic images from 3 satellite locations and currently is archiving 85,000 exams per year. The reading room consists of 12 diagnostic workstations as well as 3 dedicated for clinical review. Image distribution throughout the campus and clinicians offices is handled via a dedicated web server. At present more than 200 users access patient image data and radiologist interpretation via Web 1000.

The tour includes:

- A hands-on look at workflow in the surgical suites, using 42" plasma screen technology in the OR setting. With emphasis toward joint revision, we will display the newest advances in electronic templating.
- Showcase of workflow in clinic settings in dedicated Hand Surgical and Outpatient area.
- Available images printed on paper media using DICOM print.
- Demonstration of primary interpretation of PACS stations, using PACS/RIS/MIS interface.

NEB Vendors:

- Agfa HealthCare Corporation
- RTAS Systems
- Meditech



© RBAS, MGH

Tour 5

MASSACHUSETTS GENERAL HOSPITAL

Founded in 1811, the Massachusetts General Hospital (MGH) is the third oldest general hospital in the United States and the oldest and largest in New England. The 868-bed world-renowned medical center offers sophisticated diagnostic and therapeutic care in virtually every specialty and subspecialty of medicine and surgery. Each year the MGH admits approximately 42,000 inpatients and handles more than 1.2 million visits in its extensive outpatient programs at the main campus and at its four health centers. Its emergency services handle nearly 75,000 visits annually.

The MGH conducts the largest hospital-based research program in the United States, with an annual research budget of more than \$300 million. It is the oldest and largest teaching hospital of Harvard Medical School, and nearly all of the hospital's active staff physicians are on the Harvard Medical School faculty.

There are approximately 30 million radiology images stored in the PACS system at MGH making it the largest PACS System in the world. The radiology department performs an average of 1400 exams per day and about 450,000 radiological exams each year. There are 7 Interpretation Locations: Pediatrics, Neuroradiology, Bone, Chest, Gastrogenitry, Emergency Radiology and Vascular. With a staff of over 70 board-certified radiologists, and an exceptionally high volume of studies, the department has gained distinction for its subspecialty expertise in cardiac, emergency, GI/GU, interventional, musculoskeletal, neurology, interventional neurology, pediatric, thoracic, and vascular radiology, as well as breast imaging and nuclear medicine.

The tour includes:

Digital Imaging Department

- See where it all happens: System Monitoring, QA, Troubleshooting.

Emergency Department

- See CR, DR, CT functioning in a Level 1 Trauma Emergency Department.

Orthopaedic Outpatient Department

- See CR, DR functioning in a busy orthopaedic radiology department.

Interpretation Areas

- Observe primary interpretation using PACS system in conjunction with voice recognition.

The Image Service Center

- See the state-of-the-art Image Service Center.

MGH Vendors:

- Agfa HealthCare Corporation
- Amicas, Inc.
- GE Medical Systems
- Hologic, Inc.
- Siemens Medical Solutions

Exhibitors

Companies that have confirmed their participation at SCAR 2003 as of publication time.

ADVANCE Newsmagazines
 Agfa HealthCare Corporation
 AMICAS, Inc.
 Aware, Inc.
 BarcoView, LLC
 BRIT Systems, Inc.
 Cambridge Computer Services, Inc.
 Canon Medical Systems
 CCA (Creative Computer Applications, Inc.)
 Cerner Corporation
 Codonics, Inc.
 Data Distributing, LLC
 Data-Ray Corporation
 DatCard Systems, Inc.
 Decisions In Imaging Economics
 DeJarnette Research Systems, Inc.
 Diagnostic Imaging
 Dictaphone
 Eastman Kodak Company
 eDictation
 Emageon Inc.
 eMed Technologies Corporation
 eRAD/Image Medical
 Fujifilm Medical Systems USA, Inc.
 GE Medical Systems
 Hologic, Inc.
 IDX Systems Corporation
 Image Systems Corporation
 Images-on-Call
 Intelerad Medical Systems
 Konica Medical Imaging
 McKesson Information Systems
 Medical Manager Health Systems
 MEEN Imaging Technology News

Merge eFilm
 Misys Healthcare Systems
 NAI Technology Products
 Orex Computed Radiography
 peerVue
 Philips Medical Systems
 Planar Systems, Inc.
 PointDx, Inc.
 ProVox Technologies
 Quest International, Inc.
 R2 Technology, Inc.
 RADinfosystems
 Redrick Technologies, Inc.
 Richardson Electronics
 RIS Logic, Inc.
 Rorke Data, Inc.
 Sclmage
 Siemens Display Technologies
 Siemens Medical Solutions, USA, Inc.
 SmartPACS
 Softmed Systems, Inc.
 Sorna Corporation
 Source Medical Solutions
 Springer-Verlag New York, Inc.
 Stentor
 StructureRad LLC
 Tech Source
 Titan Systems Corporation
 Tourism Vancouver
 U.S. Electronics, Inc./Totoku
 U.S. Radiology On-Call
 UltraVisual Medical Systems
 VIDAR Systems Corporation
 Vital Images, Inc.
 VitalWorks
 Voxar, Inc.
 Witt Biomedical
 Ximis, Inc.

SCAR Corporate Members

Acuson Corporation
 Agfa HealthCare Corporation
 Amicas, Inc.
 BarcoView, LLC
 Canon Medical Systems
 CCA (Creative Computer Applications, Inc.)
 Cerner Corporation
 DatCard Systems, Inc.
 DeJarnette Research Systems, Inc.
 Eastman Kodak Company
 Emageon, Inc.
 eMed Technologies Corporation
 First Consulting Group
 Fujifilm Medical Systems USA, Inc.
 GE Medical Systems
 Hologic Inc.
 IDX Systems Corporation
 IMV Medical Information Division, Inc.

Johnson & Baughan, P.A.
 Konica Medical Imaging, Inc.
 McKesson Information Systems
 Medical Technology Services (MTS)
 Merge eFilm
 Misys Healthcare Systems
 Packeteer
 Philips Medical Systems, NA
 R2 Technology, Inc.
 SG&A Consulting, Inc.
 Siemens Medical Solutions, USA, Inc.
 SmartPACS
 Stentor
 Tech Source, Inc.
 Toshiba America Medical Systems
 UltraVisual Medical Systems
 Vidar Systems Corporation

Corporate Sponsors

SCAR wishes to thank the following corporations for their generous support of the SCAR 2003 annual meeting.

Platinum Level Sponsorship

Siemens Medical Solutions, USA, Inc.

SIEMENS

GE Medical Systems



GE Medical Systems
Information Technologies

Gold Level Sponsorship

Eastman Kodak Company



Silver Level Sponsorship

Emageon, Inc.



Fujifilm Medical Systems USA, Inc.



IDX Systems Corporation



Visit the SCAR 2003 Exhibits

Two full days of exhibits held in Hall A at the Hynes Convention Center feature industry leaders demonstrating the latest products and services in medical imaging, informatics, and information technology. More PACS vendors assemble at SCAR than any other conference except the RSNA.

Internet terminals and wireless kiosks will be located in the exhibit hall. Lunch and breaks will also be served in the exhibit hall on Sunday and Monday.

Exhibit Hall Hours

Saturday	Opening Reception in Exhibit Hall	5:00 pm to 7:00 pm
Sunday	Exhibit Hall Open	9:30 am to 5:00 pm
Monday	Exhibit Hall Open	9:30 am to 5:00 pm



GE Medical Systems Hosts the Opening Reception in the Exhibit Hall

GE Medical Systems is the official sponsor of the Opening Reception scheduled for Saturday, June 7 from 5:00 pm to 7:00 pm in Exhibit Hall A of the Hynes Convention Center, the site for SCAR 2003 Technical exhibits. 2000+ attendees will enjoy cocktails and hors d'oeuvres and gather to network in the sold out exhibit hall. A not-to-be-missed event!



GE Medical Systems
Information Technologies

Siemens Hosts the SCAR 2003 Top of the Hub — Prudential Tower Reception

Siemens is the generous sponsor of this year's Welcome Reception for all meeting attendees scheduled for Sunday, June 8. The reception will be held from 6:00 pm to 8:00 pm at the top of the Prudential Tower adjacent to the Hynes Convention Center and Sheraton Boston Hotel in the Top of the Hub restaurant. Soaring fifty-two stories above Boston, you can't help but be inspired by the finest of sunsets and the breathtaking views of the entire city.

A highlight of the reception is the presentation of poster awards and cash prizes and a special welcome to new individual, institutional, and corporate members of SCAR.

SIEMENS

Registration Information

Registration Fees

Payments must be made in U.S. dollars by personal check, travelers check, VISA, MasterCard, AMEX or Discover.

Payment in full is required to process your registration.

Cancellation/Refund Policy

All cancellations and requests for refunds must be in writing and received no later than May 16, 2003. Refunds are subject to an \$80 administrative fee. No refunds will be issued after May 16, 2003.

Registration Categories

SCAR Member; Non-Member; New SCAR Member: Includes badge, final program, Conference Proceedings, SCAR U syllabus, all sessions, entrance into the exhibit hall. Non-members may elect to add their first year of membership for a discounted fee by registering in the New SCAR Member category.

Daily: Includes badge, final program, Conference Proceedings, SCAR U syllabus, all sessions, entrance into the exhibit hall. SCAR membership may be purchased separately.

Residents/Medical Students Only: Same materials as Non-member. Documentation of student status is required. SCAR membership may be purchased separately for \$100.

Spouse/Companion: Registration is complimentary, if the individual is not a member, potential member, or speaker. The Conference Proceedings and SCAR U syllabus are not included.

PACS Administration Course and SCAR affiliated User Group Meetings have additional registration fees.

Official Attire at SCAR 2003 — Business Casual



Registration Form

SCAR 2003 Annual Meeting • June 7–10, 2003 • Boston, Massachusetts
Pre-registration Deadline: May 30, 2003

Occupation

(please select ONE category—best match)

- Physician
- Healthcare Administrator
(includes CIOs, CEOs, CFOs)
- Computer Scientist
- Engineer
- Health Information Technology
Professional
- Scientist/Researcher
- Medical Physicist
- PACS Administrator
- Technologist
- Vendor
- Consultant
- Other _____

Primary Occupational Setting

(please select ONE category—best match)

- University Hospital
- Government or VA Hospital
- Community Hospital
- Private Practice (office, clinic or
imaging center)
- Corporate
- Government (non-hospital)
- Resident/Medical Student
- Other _____

Medical Specialty

- Radiology
- Cardiology
- Nuclear Medicine
- Information Systems
- Other _____

Meeting Groups

(please check ALL that apply)

- IRISS Member
- APUG Member
- SCAR 2003 Scientific Presenter
- SCAR 2003 SCAR U Faculty
- SCAR 2003 Invited Speaker
(Opening, Closing, Lunch, and
Special Sessions)

How did you learn of the SCAR 2003 meeting?

- Colleagues
- Direct Mail
- SCAR News
- Journal of Digital Imaging
- SCAR Website
- Internet Link (please specify) _____
- Diagnostic Imaging
- Other Publication (please specify) _____

Do you plan to attend the SCAR Reception at the "Top of the Hub," Prudential Building on Sunday, June 8th?

- Yes No

Spouse/Companion will attend:

- Yes No

FIRST NAME	MIDDLE NAME	LAST NAME
DEGREE	TITLE	
DEPARTMENT		
ORGANIZATION/INSTITUTION		
MAILING ADDRESS	SUITE/APT	
CITY	STATE	ZIP
COUNTRY (IF NOT USA)		
PHONE NUMBER	FAX NUMBER	
E-MAIL ADDRESS		

My Spouse/Companion will attend (name for badge) _____

Request for CME Credit

Please check the type of credit you wish to receive:

- Physicians – Category I Credits for CME are offered to physicians.
- Technologists – Category A Credits for CME offered to radiologic technologists.
- Physicists – MEPS credits for CME are offered to medical physicists.

Cancellation/Refund Policy

All cancellations and requests for refunds must be in writing and received no later than May 16, 2003. Refunds are subject to an \$80 administrative fee. No refunds will be issued after May 16, 2003. Please return both sides of registration form.

Payment:

- Check enclosed in U.S. Dollars to: SCAR 2003
- Credit Card: VISA MasterCard AMEX Discover

CREDIT CARD NUMBER	CREDIT CARD EXPIRATION DATE (MM/YY)
ZIP CODE OF CREDIT CARD BILLING ADDRESS – U.S. ONLY	AUTHORIZING SIGNATURE

Registration Fees

	Early Bird Until 5/2/03	After 5/2/03 and On Site	AMOUNT
SCAR Annual Meeting			
SCAR Member Rate	\$445	\$495	_____
Non-Member Rate	\$545	\$595	_____
New SCAR Applicant* Rate	\$570	\$620	_____
Resident/Medical Student Rate	\$300	\$350	_____
Daily (per day—check day(s) below)			
Saturday, June 7	\$200	\$250	_____
Sunday, June 8	\$200	\$250	_____
Monday, June 9	\$200	\$250	_____
Tuesday, June 10	\$200	\$250	_____

*Meeting Registration and 1st year SCAR Membership
(see inside back cover for SCAR Membership Benefits)

SCAR Pre-Meeting Course, Friday, June 6

PACS Administration 1-Day Course	\$100	\$100	_____
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SCAR Individual Membership Renewal (12 months)

<input type="checkbox"/> Domestic (USA)	\$125	\$125	_____
<input type="checkbox"/> International (including Canada)	\$200	\$200	_____
<input type="checkbox"/> Medical Student/Resident (USA only)	\$100	\$100	_____
<input type="checkbox"/> Emeritus	\$100	\$100	_____

TOTAL AMOUNT ENCLOSED

\$ _____

One registration per form; copy as necessary.

Hospital Tour Registration

NAME _____

The following tours require advance registration. There is no additional fee, but space is limited. You may pre-register for two tours. See page 20 for description of tours at Beth Israel Deaconess Medical Center (BID), Brigham and Women's Hospital (BWH), Children's Hospital of Boston (CHB), Massachusetts General Hospital (MGH), and New England Baptist Hospital (NEB).



	TOUR 1	TOUR 2	TOUR 3	TOUR 4
	Beth Israel Deaconess	Brigham and Women's	Children's of Boston	New England Baptist
Saturday, June 7	Tour 1A – BID Tour 1B – BID	Tour 2A – BWH Tour 2B – BWH	Tour 3A – CHB Tour 3B – CHB	Tour 4A – NEB Tour 4B – NEB
Sunday, June 8	Tour 1C – BID Tour 1D – BID	Tour 2C – BWH Tour 2D – BWH	Tour 3C – CHB Tour 3D – CHB	Tour 4C – NEB Tour 4D – NEB
	TOUR 5			
	Massachusetts General			
Monday, June 9	Tour 5E – MGH Tour 5F – MGH			



How many hospital tours would you like to attend?

Please Circle: 1 2 None

Select your Hospital Tour by number and letter code*

(Example: "1A" for Beth Israel Deaconess at 1:15 pm on Saturday, June 7)

- 1st Choice _____
- 2nd Choice _____
- 3rd Choice _____
- 4th Choice _____
- 5th Choice _____

* Your tour times will be on your registration confirmation. Tour tickets and instructions will be in your registration packet.

Americans With Disabilities Act

Individuals needing auxiliary aids or services as identified in the Americans with Disabilities Act, please call the Society for Computer Applications in Radiology at (703) 757-0054.

Three Easy Ways to Register

- Internet:** www.scarnet.org (Credit Card Only)
- Fax:** 703-757-0454 (Credit Card Only)
- Mail:** SCAR 2003 Meeting Registration
10105 Cottesmore Court
Great Falls, VA 22066-3540

Allow up to 3 weeks for receipt of your registration confirmation letter.

Keep a copy of this form for your records.
Please return both sides of registration form.

Hotel and Travel Information

SCAR is very excited to hold their 2003 Annual Meeting in downtown Boston, Massachusetts. This location enables everyone to learn from the "Boston experience," with special sessions taught by radiology informatics faculty of Boston medical schools and tours of electronic imaging activities at leading Boston healthcare facilities.

For more information on Boston, visit the Greater Boston Convention and Visitors Bureau at www.bostonusa.com

HOUSING DEADLINE: APRIL 28, 2003

SHERATON BOSTON HOTEL

Group rates are available at the Society for Computer Applications in Radiology headquarter hotel – the Sheraton Boston Hotel. The hotel is connected to the Hynes Convention Center. All scientific and educational sessions will be held in the Sheraton Boston Hotel. Technical exhibits will be located in the Hynes Convention Center.

The 1,215-room Sheraton Boston, New England's largest hotel, has recently completed a full-scale renovation project, positioning it as one of the region's premiere business and convention venues. Nestled in charming and historic Back Bay, the Sheraton Boston Hotel is 4 miles from Boston's Logan International Airport. The Sheraton is close to the Financial District and businesses in Copley Square and Downtown Crossing, and one block from famed Newbury Street, the scenic Charles River and many favorite shops, restaurants and museums.

The hotel is connected via an indoor walkway to the Hynes Convention Center and to two hundred shops at the Prudential Center and Copley Place Mall. Saks Fifth Avenue, Ann Taylor, Gucci, Neiman Marcus, and Williams-Sonoma are just some of the fine retail establishments within this expansive complex.



ROOM RESERVATIONS

Room reservations can be made at the Sheraton Boston by calling **800-325-3535** or by faxing the attached housing form no later than Monday, April 28, 2003. After this date, reservations will be accepted on a space available basis at the SCAR meeting rate. Reservations should be made **directly with the hotel, not with SCAR.**

Some important information when booking your reservation:

- Please make reservations early. Cut off date for room reservations is Monday, April 28.
- Be sure to tell the Sheraton you are with SCAR or Society for Computer Applications in Radiology to receive the discounted room rate. Discount rate also applies for attendees participating in the IRISS, Fuji, and APUG user group meetings, and the PACS administration course.
- Ask the Sheraton to send you a written confirmation.
- The hotel will refund deposit if cancellation of reservation is received 72 hours prior to arrival date.

AIRLINE RESERVATIONS

Discounted fares are available through United Airlines and American Airlines. For United, call 800-521-4041 and refer to Meeting ID Code 511RP. For American, call 800-433-1790 and refer to Starfile #3863AO.



GROUND TRANSPORTATION

The Sheraton Boston Hotel is 4 miles from Logan International Airport. Back Bay Coach is available from Logan Airport to the Sheraton Boston at a cost of \$9.00 one way. Once you have claimed your luggage, call 888-222-5229 for pickup arrangements. Shuttle departs outside the baggage claim area approximately every 20 minutes between 7:00 am and 7:00 pm. Taxi service is also available at an approximate cost of \$30.00 one way for up to four people. Other transportation options include subway and commuter rail (MBTA), and Amtrak. See the SCAR Website for driving directions and maps.

PARKING

Valet overnight parking at the hotel is approximately \$33.00 per day. There are additional parking garages nearby where you can self-park. Prudential Garage is \$32.00, and for the Pilgrim Parking Garage, the daily rate is \$24.00.

CAR RENTAL

SCAR has arranged discounted rates for car rentals through Hertz. For reservations, call 800-654-2240 and refer to CV #02010008. Or you may contact your travel agent. Attendees may also place their reservations online at www.hertz.com.



Hotel Reservation Form

SCAR 2003 Annual Meeting • June 7–10, 2003 • Boston, Massachusetts



SHERATON BOSTON HOTEL
Attn: Reservations Department
39 Dalton Street • Boston, MA 02199
800-325-3535 • FAX: 617-236-6095

RETURN BY APRIL 28 to the Sheraton Boston Hotel

PLEASE PRINT OR TYPE

ACCOMMODATION REQUESTS: SCAR Room Rates Guaranteed June 4th to June 11th.

Arrival Date _____ Time _____ CHECK-IN TIME IS AFTER 3:00 pm
Departure Date _____ Time _____ CHECK-OUT TIME IS BEFORE 12:00 Noon

- Single Room/One Bed\$239.00 per night Club Floor/One Bed.....\$279.00 per night
 Double Room/Two Beds.....\$239.00 per night Club Floor/Two Beds\$279.00 per night
 Request Smoking Request Non Smoking Special Needs/Requests: _____

Please reserve accommodations for:

NAME _____
INSTITUTION / COMPANY _____
ADDRESS _____
CITY _____ STATE _____ ZIP CODE _____
COUNTRY _____ EMAIL _____
HOME PHONE _____ WORK PHONE _____
(If outside USA please also include country and city codes.)
NAME OF ACCOMPANYING ADULT _____

Method of Payment:

Advance deposit is required to confirm room reservations. All rates are in USD and subject to a 12.45% room tax.

- Check enclosed
 Credit Card
 American Express MasterCard Visa Discover Diners

CREDIT CARD NUMBER _____ EXPIRATION DATE (MM/YY) _____
A one night's deposit or credit card number is required in order to guarantee a room reservation. A deposit will be refunded if cancellation of reservation is received 72 hours prior to arrival date. To assure your accommodation, your reservation must be received prior to Monday, April 28, 2003 and before the SCAR reservation block is filled. After this time, reservations will be accepted on a space available basis at the SCAR meeting rate.

Signature: _____ Date: _____

Fax or mail to the above address. Keep a copy for your records!

Looking Ahead to SCAR 2004

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Vancouver Convention
and Exhibition Centre
Vancouver, British
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Vancouver 2004

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- The quarterly society update, *SCAR News*.
- Unlimited access to the SCAR email expert hotline, which enables you to ask questions of SCAR's cadre of experts.
- Reduced registration fees for SCAR conferences.
- SCAR U Online member discount.

- Member discounts on SCAR Publications (including the SCAR U Primer Series).
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