CATEGORICAL COURSE SCHEDULE

PRACTICAL SONOGRAPHY FOR THE RADIOLIST
Teresita Angtuaco, MD; Ulrike Hamper, MD; Phil Ralls, MD; Leslie Scoutt, MD, Course Directors
Registration and separate fee required for this course.
Room: Auditorium, Level 2

Who Should Attend: Radiologists, radiologists–in–training and other health professionals interested in the use of ultrasound to diagnose abdominal, vascular, obstetric, gynecologic and musculoskeletal diseases and disorders in both the adult and pediatric population.

Goals and Objectives: Following completion of the program, participants should have an understanding of ultrasound imaging techniques and indications for appropriate use in the wide spectrum of diseases and disorders affecting the gastrointestinal tract, the genitourinary tract, thyroid, parathyroid, scrotum, breast, vascular and musculoskeletal systems. In addition, they should be able to optimize their imaging protocols for efficient management of adult and pediatric patients.

Sunday, April 26

7:30 am–10:10 am Practice Issues in Ultrasound
7:30 am–8:00 am Introduction to the Course—T. Angtuaco; Why Ultrasound—J. Crowe
8:00 am–8:30 am Turf Issues in Ultrasound—J. Crowe, L. Nazarian
8:30 am–9:00 am Ultrasound Technology in the Next 10 Years—P. Burns
9:00 am–9:30 am Ultrasound Accreditation: Current State of the Art—S. Katanick
9:30 am–10:00 am Supertechs: Radiology Extenders—M. Robbin
10:00 am–10:10 am Question and Answer Session

10:30 am–12:45 pm Abdominal Sonography
10:30 am–11:00 am Gastrointestinal Tract Ultrasound—S. Wilson
11:00 am–11:30 am Ultrasound of Portal Hypertension (TIPS)—M. Lockhart
11:30 am–12:00 noon Transplants (Liver/Kidney/Pancreas)—S. Sheth
12:00 noon–12:30 pm Pitfalls in the Abdomen (Cases)—D. Rubens
12:30 pm–1:15 pm Question and Answer Session

1:30 pm–3:10 pm Superficial Structures–High Resolution Ultrasound
1:30 pm–2:00 pm Thyroid/Parathyroid—C. Reading
2:00 pm–2:30 pm Evaluation of the Scrotal Mass—T. Winter
2:30 pm–3:00 pm Breast—L. Barke
3:00 pm–3:10 pm Question and Answer Session

3:30 pm–5:45 pm Vascular Sonography
3:30 pm–4:00 pm Update of Ultrasound in the Diagnosis of Venous Diseases—L. Needleman
4:00 pm–4:30 pm Abdomen (AAA Screen)—R. Bertino
4:30 pm–5:00 pm Carotid Sonography—E. Grant
5:00 pm–5:30 pm Problem Cases—L. Scoutt
5:30 pm–5:45 pm Question and Answer Session

Monday, April 27

7:30 am–10:10 am Gynecologic Ultrasound
7:30 am–8:00 am Ultrasound of the Endometrium—M. Böhm-Vélez
8:00 am–8:30 am Ultrasound of Adnexal Masses—J. Langer
8:30 am–9:00 am Acute Pelvic Pain: What We Have Learned From the ER—A. Lev-Toaff
9:00 am–9:30 am Chronic Pelvic Pain—T. Dubinsky
9:30 am–10:00 am Problem Cases—U. Hamper
10:00 am–10:10 am Question and Answer Session

10:30 am–12:45 pm OB Ultrasound
10:30 am–11:10 am Ectopic Pregnancy—F. Laing
11:10 am–11:50 am Fetal Survey—C. Benson
11:50 am–12:30 pm Second and Third Trimester Emergencies—D. Levine
12:30 pm–1:15 pm Question and Answer Session

1:30 pm–3:10 pm OB Ultrasound
1:30 pm–2:00 pm Twins—V. Feldstein
2:00 pm–2:30 pm Pitfalls in OB Ultrasound—B. Coleman
2:30 pm–3:00 pm Problem Solving in OB (Cases)—T. Angtuaco
3:00 pm–3:10 pm Question and Answer Session

3:30 pm–5:45 pm Pediatric Ultrasound
3:30 pm–3:45 pm Why is Radiation Reduction Important in Children?—M. Callahan
3:45 pm–4:25 pm Ultrasound of the Acute Abdomen: Infant and Young Child—L. Castro-Aragon
4:25 pm–5:00 pm Ultrasound of the Acute Abdomen: School-Age Child and Adolescent—S. Bixby
5:00 pm–5:30 pm Problem-Solving Techniques for Neonatal Cranial Sonography—G. Taylor
5:30 pm–5:45 pm Question and Answer Session

Tuesday, April 28

1:30 pm–3:40 pm Musculoskeletal Sonography
1:30 pm–2:00 pm Overview of Musculoskeletal Ultrasound—L. Nazarian
2:00 pm–2:30 pm Upper Extremity Applications—J. Jacobson
2:30 pm–3:00 pm Lower Extremity Applications—S. Allison
3:00 pm–3:30 pm Ultrasound-Guided Musculoskeletal Applications—R. Adler
3:30 pm–4:00 pm Question and Answer Session

4:00 pm–6:15 pm Innovations and the Future of Ultrasound
4:00 pm–4:30 pm Focused Ultrasound Ablation—D. Brown
4:30 pm–5:00 pm Molecular Imaging with Ultrasound—A. Fleischer
5:00 pm–5:30 pm The Future of Ultrasound Flow Imaging—J. Rubin
5:30 pm–6:00 pm Future of Ultrasound—H. Cohen
6:00 pm–6:15 pm Question and Answer Session
**Approach to Diagnosis: A Case-Based Imaging Review**

Melissa Rosado de Christenson, MD, Gerald F. Abbott, MD, Deborah A. Baumgarten, MD, Sanjeev Bhalla, MD, Course Directors

Registration and separate fee required for this course.

**Room: Auditorium, Level 2**

**Who Should Attend:** Radiology professionals at all career stages with an interest in a review of diagnostic imaging cases representing a wide array of specialty areas.

**Goals and Objectives:** Upon completion of the course, participants should be able to detect, comprehensively assess and correctly diagnose various conditions and diseases representing 11 radiology subspecialties; identify and recommend the most advantageous imaging modality and technique to the cases imaged in their practice; and describe the distinguishing characteristics that pinpoint the correct diagnosis representing the cases that may be referred to them in their practice.

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**Tuesday, April 28**

**7:00 am–9:30 am Neuroradiology**
- Neoplasms—C.D. Phillips
- Head and Neck—M. Michel* 
- Spine—Z. Rumboldt
- Vascular—C. Glastonbury
- Potpourri—J. Anderson

**10:00 am–12:30 pm Ultrasound**
- Small Parts—L. Scoutt*
- Abdominal—D. Rubens
- Vascular—J. Pellerito
- Gynecology—O. Baltarowich
- 2nd and 3rd Trimester Obstetrics—B. Hertzberg

**Wednesday, April 29**

**7:00 am–9:30 am Vascular and Interventional Radiology**
- Vascular Diagnosis—B. Funaki*
- Arterial Intervention—A. Nemcek
- Venous Intervention—S. Regolado
- Nonvascular Intervention—G. Knutinen
- Malignancy—C. Ray

**10:00 am–12:30 pm Cardiovascular Imaging**
- Chest Pain—C. Javidan-Nejad
- Murmur/Rub—K. Birchard
- Mental Status Changes—S. Seth
- Syndrome/Congenital—J. Hsu
- Plain Film Correlates of Cardiovascular Disease—S. Bhalla*

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**Thursday, April 30**

**7:00 am–9:30 am Breast Imaging**
- Breast Ultrasound—S. Durfee
- Management Guidelines for Imaging and Clinical Cases—L. Salkowski*
- MRI-Mammography, Ultrasound Correlation—G. Whitman
- Postsurgical Breast—A. Nees
- Breast MRI of the High Risk Patient—M. Roubidoux

**10:00 am–12:30 pm Chest Imaging**
- Pleural and Chest Wall Lesions—G. Abbott*
- Mediastinal Abnormalities—E. Donnelly
- Airways and Airspace Disease—D. Manos
- Pulmonary Tumors and Mass-Like Opacities—E. Moore
- Interstitial Lung Disease—A. Sharma

**1:30 pm–4:00 pm Nuclear Medicine**
- Quality Assurance—D. Yoo*
- Emergency Studies—A. Siegel
- Infection and Inflammation—T. Wong
- SPECT-CT—H. Jacene
- PET-CT—C. Rajadhyaksha

**Friday, May 1**

**7:00 am–9:30 am Musculoskeletal Imaging**
- Multifocal Lesions—S. Smith*
- Bone Marrow Abnormalities—D. Blankenbaker
- Soft Tissue Masses—K. Davis
- Tumors and Lucent Lesions of Bone—C. Gaskin
- Soft Tissue Abnormalities of Joints—N. Safdar

**10:00 am–12:30 pm Genitourinary Imaging**
- Kidney—E. Remer
- Collecting System, Ureters and Bladder—D. Casalino
- Male Pelvis—C. Woodfield
- Female Pelvis—C. Peterson
- Miscellaneous—D. Baumgarten*

**1:00 pm–3:30 pm Gastrointestinal Imaging**
- Enhancement Patterns of Liver Masses—C. Sirlin
- Colon—C. Santillan*
- Pancreas—B. Yeh
- Esophagus, Stomach, Small Bowel—C. Menias
- Mesentery, Omentum—J. Wong

*Section Chair
DAILY SCHEDULE

MEETING HIGHLIGHTS

Sunday, April 26 ........................................ pages 17-20
   Presidential Address ........................................... page 18
   Gold Medal Presentations ........................................ pages 19-20

Monday, April 27 ........................................ pages 21-22
   Caldwell Lecture .............................................. page 22

Tuesday, April 28 ........................................... pages 23-27
   Scholars and Awards ............................................ pages 23-26

Wednesday, April 29 ...................................... pages 28-29
   Member Business Meeting ....................................... page 29

Thursday, April 30 ........................................... pages 29-30

Friday, May 1 .................................................. page 31

CORPORATE SPONSORED EVENTS

Monday, April 27
12:30 pm – 2:00 pm
   Practical Protocols for Safer and More Cost-Effective Contrast Enhanced MR and CT
   Imaging—S. Saini, R. Nelson, F. Rybicki, D. Sahani, R. Solomon, S. Saini
   Supported by an unrestricted educational grant from Bracco Diagnostics. Lunch is
   available for the first 400 attendees.
   Room: 311, Level 3

Wednesday, April 29
12:00 noon – 1:00 pm
   Time Efficient CT Colonography Interpretation—J. Soto
   Sponsored by GE Healthcare. Lunch is available for the first 150 attendees.
   Room: 302, Level 3

Thursday, April 30
12:00 noon – 1:00 pm
   Recent Clinical and Economic Developments in Molecular Imaging—E. Rohren, E. Silfen
   Sponsored by Philips Healthcare. Lunch is available for the first 200 attendees.
   Room: 311, Level 3

COFFEE/SNACK BREAKS

Exhibit Hall D, Level 2

Monday, April 27 ........................................ 9:30 am-10:30 am
   *1:00 pm-1:30 pm
   *3:00 pm-3:30 pm

Tuesday, April 28 ........................................ 9:30 am-10:00 am
   *1:00 pm-1:30 pm

Wednesday, April 29 ...................................... 9:30 am-10:00 am
   *1:00 pm-1:30 pm
   *2:30 pm-3:00 pm

*Prize drawings will be held in the exhibit hall during these breaks.
“Each case-based workbook is excellent, focused, easy to read and use for review.”

Each workbook includes more than 330 challenging diagnostic radiology cases covering 11 broad categories of disease and technology. Readers will be able to improve their ability to detect, assess, and diagnose various conditions and diseases using multiple imaging techniques. Answers to cases are presented in the back of the book. These workbooks are appropriate for radiology professionals at all career stages with an interest in a case-based review of diagnostic imaging cases.

Sample chapters are available at www.arrs.org. These workbooks are a must-have for every radiology professional.

Visit the ARRS Booth #123 in the Commercial Exhibit Hall to purchase your copy today.
Sunday Schedule

Sunday, April 26

7:30 am–5:45 pm

Categorical Course: Practical Sonography for the Radiologist

Registration and separate fee required for this course.

Room: Auditorium, Level 2

7:30 am–8:00 am
Introduction to the Course—T. Angtuaco; Why Ultrasound—J. Crowe

8:00 am–8:30 am
Turf Issues in Ultrasound—J. Crowe, L. Nazarian

8:30 am–9:00 am
Ultrasound Technology in the Next 10 Years—P. Burns

9:00 am–9:30 am
Ultrasound Accreditation: Current State of the Art—S. Katanick

9:30 am–10:00 am
Supertechs: Radiology Extenders—M. Robbin

10:00 am–10:10 am
Question and Answer Session

10:30 am–11:00 am
Gastrointestinal Tract Ultrasound—S. Wilson

11:00 am–11:30 am
Ultrasound of Portal Hypertension (TIPS)—M. Lockhart

11:30 am–12:00 noon
Transplants (Liver/Kidney/Pancreas)—S. Sheth

12:00 noon–12:30 pm
Pitfalls in the Abdomen (Cases)—D. Rubens

12:30 pm–12:45 pm
Question and Answer Session

1:30 pm–2:00 pm
Thyroid/Parathyroid—C. Reading

2:00 pm–2:30 pm
Evaluation of the Scrotal Mass—T. Winter

2:30 pm–3:00 pm
Breast—L. Barke

3:00 pm–3:10 pm
Question and Answer Session

3:30 pm–4:00 pm
Update of Ultrasound in the Diagnosis of Venous Diseases—L. Needleman

4:00 pm–4:30 pm
Abdomen (AAA Screen)—R. Bertino

4:30 pm–5:00 pm
Carotid Sonography—E. Grant

5:00 pm–5:30 pm
Problem Cases—L. Scoutt

5:30 pm–5:45 pm
Question and Answer Session

8:00 am–12:00 noon

Item-Writing Workshop, Jannette Collins, MD, Course Director

Room: 201, Level 2

Who Should Attend: Radiology professionals with an interest in writing multiple-choice items for ABR exams, SAMs and other adult educational activities.

Goals and Objectives: Upon completion of the program, the participants should be able to write and edit multiple-choice items appropriate for adult educational activities, in particular ABR examinations and ABR-qualified self-assessment modules (SAMs).

8:00 am–8:30 am
Update on ABR Written Exams and SAMs—G. Becker

8:30 am–9:30 am
The Role of Objectives in Writing MCQs—B. Wood

9:30 am–10:40 am
Writing Good MCQs—J. Collins

11:00 am–12:00 noon
Review of Participant and Instructor MCQs—J. Collins

1:00 pm–5:00 pm

Education Seminar: Educating for Competency, Richard Gunderman, MD, PhD, Course Director

Room: 202, Level 2

Who Should Attend: Radiologists seeking to understand better and make more effective use of competencies in all levels of contemporary medical education.

Goals and Objectives: Upon completion of the seminar, attendees will be able to: 1. describe the role of competencies in contemporary medical education; 2. outline strengths and weaknesses of competencies as educational principles; 3. begin to develop a competency-based self-assessment; and 4. make more effective use of competencies in future educational activities.

1:00 pm–1:15 pm
Welcome and Introductions—R. Gunderman

1:15 pm–1:45 pm
Caveats about the Competencies—R. Gunderman

1:45 pm–2:15 pm
Advantages of Competency-Based Education—B. Wood

2:15 pm–2:45 pm
Leadership as a Competency—D. Heitkamp

3:15 pm–3:45 pm
Can We Assess Non-Knowledge-Based Competencies in Medical Students?—P. Lewis

3:45 pm–4:15 pm
A Required Competency Rotation in Residency—A. Relyea-Chew

4:15 pm–4:45 pm
Management and Business as Essential Competencies—S. Chan

4:45 pm–5:00 pm
Question and Answer Session
**Sunday Schedule**

1:30 pm–5:00 pm  
**Business and Practice Management Seminar, Jonathan Berlin, MD, Course Director**  
Room: 203, Level 2

Who Should Attend: Radiologists and allied health care professionals with an interest in the business and management of radiology practices. The seminar will be applicable to health care professionals at all levels of training.

Goals and Objectives: Upon completion of the business and practice management seminar, participants will be able to describe the political and legislative policies impacting radiology practice; identify and respond to trends in radiology reimbursement and radiologist productivity monitoring, and understand and apply practical tips to optimize their practice now and in the future, including tips on effective design of patient surveys and application of new technology.

1:30 pm–2:00 pm  
Legislative and Political Issues Affecting Radiology in 2009 and Beyond—H. Forman

2:00 pm–2:30 pm  
Understanding and Responding to Declining Reimbursement: The Five "S's"—J. Berlin

2:30 pm–3:00 pm  
A Half Dozen Practice Tips That You Might Not Have Thought Of—L. Muroff

3:30 pm–4:00 pm  
Service and Quality Survey Methodologies: How to Find Out What Your Patients Really Want—F. Lexa

4:00 pm–4:30 pm  
Measuring and Managing Physician Productivity: Benchmarks and Strategies—R. Duszak

4:30 pm–5:00 pm  
Radiology from the Business Consultant's Perspective: Addressing Challenges in the Future—B. Silverstein

6:00 pm–7:30 pm  
**Opening Ceremonies**  
**Gold Medal Presentations**  
Room: 302/304, Level 3

Presidential Address: E. Kazerooni  
Gold Medal Presentations

7:30 pm–9:00 pm  
**Opening Reception**  
Room: Exhibit Hall D, Level 2

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**Presidential Address**

Call to Order

Installation of Ella Kazerooni, MD  
by John K. Crowe, MD

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General Diversity and Adapting to Change

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4:30 pm–5:30 pm  
**SRS Sponsored Lecture: Necroradiology Comes Alive—**  
G. Brogdon  
Room: 204, Level 2
2009 Gold Medal Presentations

Thomas F. Budinger, MD, PhD

Scientist and physician, Dr. Thomas F. Budinger, is a professor in the depart-ments of bioengineering and electrical engineering and computer sciences at the University of California, Berkeley, and senior scientific advisor at the Lawrence Berkeley National Laboratory in Berkeley, CA. He is professor emeritus in the department of radiology at the University of California San Francisco (UCSF) and is the elected home secretary of the National Academy of Engineering.

In 1954, Dr. Budinger received his undergraduate degree from Regis College in Denver, CO and in 1957 attained his masters in physical oceanography from the University of Washington in Seattle. Dr. Budinger received his MD in 1964 from the University of Colorado in Denver and his Ph.D in medical physics from the University of California, Berkeley in 1971.

At UCSF, Dr. Budinger has been a professor of radiology in resi-dence since 1984 and served as the director of the Magnetic Resonance Science Center from 1993 to 1997. At the Lawrence Berkeley National Laboratory from the period of 1974 to 2008 he has held positions as the faculty senior scientist, director of the research medicine department and head of the Center for Functional Imaging. From 1982-1985, he served as the chairman of the National Institutes of Health (NIH) radiology study section. Dr. Budinger was a founder and president of the International Society for Magnetic Resonance in Medicine and in 2006 through 2007, president of the new Society for Molecular Imaging.

Throughout his career, Dr. Budinger has written 370 papers and book chapters including those about image processing and recon-struction, nuclear magnetic resonance imaging, single photon and positron emission tomography and new educational texts on eth-ics. He has initiated courses in medical imaging at Berkeley since 1974.

Over the years, his scientific contributions have lead to the develop-ment of quantitative single photon emission tomography and high resolution dynamic positron emission tomography. He has received recognition for his work including the NIH Merit Award for Alzheimer’s Disease research, the distinguished scientist silver medal award from the International Society for Magnetic Resonance in Medicine, the Ernst Jung Prize for Medical Research, Hamburg, the Georg Charles de Hevesy Nuclear Pioneer Award, the Paul C. Aebersold Basic Science Award from the Society of Nuclear Medicine and the Berkeley Citation for teaching and research achievements. He was elected to the Institute of Medicine in 1992 and the National Academy of Engineering in 1996.

Bruce L. McClennan, MD

Dr. Bruce L. McClennan, a native of upstate New York and 2005 president of the ARRS, is a professor of diagnostic radiology at the Yale University School of Medicine in New Haven, CT where he served as chair of the department of diag-nostic radiology from 1995-2002.

After receiving his undergraduate degree from Union College in Schenectady, NY, Dr. McClennan completed medical school at SUNY-Upstate Medical University in Syracuse. He then complet-ed his National Institutes of Health (NIH) fellowship and residen-cy in diagnostic radiology at Columbia-Presbyterian Hospital in New York City, achieving board certification by the American Board of Radiology. In 1972, Dr. McClennan entered the US Army Medical Corps and was stationed at Patterson Army Hospital at Fort Monmouth, NJ where he served as chief of radiology with the rank of major.

Dr. McClennan is a member of 20 plus societies including the ARRS, the Greater St. Louis Society of Radiologists where he served as president from 1986-1987, the New England Roentgen Ray Society where he was vice president from 2000-2002, the Society of Uroradiology where he was president from 1989-1990 and the American College of Radiology where he served on the board of chancellors for six years. He also holds honorary mem-berships with the Chicago Radiological Society, the St. Louis Urological Society, the Texas Radiological Society and the Southern Radiological Conference. Dr. McClennan serves on the New England Roentgen Ray Society’s executive committee and served as chair on the NIH’s external advisory committee for a cooperative radio-imaging study to assess progression in polycystic kidney disease. Also, he currently serves on the executive com-mittee for the Radiology Society of Connecticut.

Throughout his career, Dr. McClennan has been an editorial board member and reviewer for numerous journals including the AJR, Radiology, the Journal of Urology, European Radiology, Investigative Radiology and the American Journal of Kidney Diseases. He is also the editor of the monthly publication, RSNA News.

Dr. McClennan is credited with 36 books and chapters, 107 scientif-ic presentations and more than 140 scientific papers. To cele-brate the 100th anniversary of the discovery of the x-ray in 1995, he edited a book on the history of radiology published by Radiology Centennial Inc. He also has participated in several named lectureships, including the first annual Leon Love Lecture at the Loyola University School of Medicine in April, 2000.

His prolific career as an educator and physician has earned him several honors and awards over the years. In 2002 he was recog-nized by the American Board of Radiology and received the Distinguished Service Award. He was also named in the 2nd edition of America’s Top Doctors in 2002, named in the 7th annual edition of Who’s Who Among America’s Teachers in 2002 and named in the 2003 edition of Who’s Who Among American Executives and Professionals.
Dr. Carol M. Rumack is a professor of radiology and pediatrics with tenure at the University of Colorado Denver School of Medicine. She received her undergraduate and medical degree from the University of Wisconsin in Madison, WI. After completing her pediatric internship at the University of Maryland, Dr. Rumack spent a year at the Johns Hopkins department of pediatric radiology where she decided to switch from pediatrics to pediatric radiology; she completed her radiology residency and fellowship at the University of Colorado.

Dr. Rumack is a pioneer in neonatal brain imaging with ultrasound and she continues to practice neonatal imaging in the high risk NICU. She was awarded fellowship distinction in the American Institute for Ultrasound in Medicine, Society for Radiologists in Ultrasound and the American College of Radiology (ACR) for her outstanding contributions to radiology and ultrasound. Her awareness of ultrasound began at the University of Edinburgh Hospital with a weekly rotation to the obstetrics department to see ultrasound scanning in 1974 and research with Joseph Holmes in Denver.

In 1981, Dr. Rumack was elected as the founding president of the American Association for Women Radiologists (AAWR). She received the Alice Ettinger Award from the AAWR in 2000 for her lifetime achievements in radiology and for the advancement of women in radiology. She was also awarded the Marie Curie Award in 2006 at the 25th anniversary of the AAWR for outstanding contributions to radiology. In 2002, Dr. Rumack was appointed the women’s liaison officer for the University of Colorado School of Medicine to the Association of American Medical Colleges (AAMC) and chair of the women in medicine office; she also chairs the Health Sciences Center women faculty committee.

Dr. Rumack began her service to the ACR in 1982 as a member of the committee on membership services. She was appointed to the ACR Commission on Communications and the committee on public information from 1983-1992 where she participated in some of the earliest efforts at training ACR leaders in public interactions with the press, radio and TV. As ACR intersociety commission secretary from 1983 to 1987, she also helped to plan the agenda for yearly ACR intersociety meetings. In 1999, Dr. Rumack was appointed by the ACR to the ACGME residency review committee (RRC) which she chaired from 2002-2004. In 2002, she was elected to the ACR Board of Chancellors as chair of the ultrasound commission. In 2006, she was appointed to the ACGME Board of Directors based on GME experience in the radiology RRC and has served as designated institutional official (DIO) for ACGME since 1993. Most recently, she was nominated to be the ACR president for 2009-2010.

Other professional activities have included serving as secretary of the Society for Pediatric Radiology, serving on the board of directors for the American Institute of Ultrasound in Medicine and serving on the editorial boards of Pediatric Radiology, the AJR and JACR. Dr. Rumack has published 48 peer reviewed publications, 17 book chapters and has given 82 invited lectures. She is also the senior editor of the textbook, Diagnostic Ultrasound, which is now in its third edition.

Dr. Rumack resides in Denver, CO with her husband, Dr. Barry Rumack; they have two children and four grandchildren.

Dr. Carol M. Rumack, MD

Other professional activities have included serving as secretary of the Society for Pediatric Radiology, serving on the board of directors for the American Institute of Ultrasound in Medicine and serving on the editorial boards of Pediatric Radiology, the AJR and JACR. Dr. Rumack has published 48 peer reviewed publications, 17 book chapters and has given 82 invited lectures. She is also the senior editor of the textbook, Diagnostic Ultrasound, which is now in its third edition.

Dr. Rumack resides in Denver, CO with her husband, Dr. Barry Rumack; they have two children and four grandchildren.
MONDAY SCHEDULE

MONDAY, APRIL 27

7:00 am–8:00 am
Power Hour: Neuroradiology—M. Mullins, moderator
Room: 202, Level 2
Power Hour: Efficacy, Education and PACS—R. Gunderman, moderator
Room: 203, Level 2

7:30 am–5:45 pm
Categorical Course: Practical Sonography for the Radiologist
Registration and separate fee required for this course.
Room: Auditorium, Level 2

7:30 am–8:00 am
Ultrasound of the Endometrium—M. Böhm–Vélez
8:00 am–8:30 am
Ultrasound of Adnexal Masses—J. Langer
8:30 am–9:00 am
Acute Pelvic Pain: What We Have Learned From the ER—A. Lev-Toaff
9:00 am–9:30 am
Chronic Pelvic Pain—T. Dubinsky
9:30 am–10:00 am
Problem Cases—U. Hamper
10:00 am–10:10 am
Question and Answer Session
10:30 am–11:10 am
Ectopic Pregnancy—F. Laing
11:10 am–11:50 am
Fetal Survey—C. Benson
11:50 am–12:30 pm
Second and Third Trimester Emergencies—D. Levine
12:30 pm–12:45 pm
Question and Answer Session
1:30 pm–2:00 pm
Twins—V. Feldstein
2:00 pm–2:30 pm
Pitfalls in OB Ultrasound—B. Coleman
2:30 pm–3:00 pm
Problem Solving in OB (Cases)—T. Angtuaco
3:00 pm–3:10 pm
Question and Answer Session
3:30 pm–3:45 pm
Why is Radiation Reduction Important in Children?—M. Callahan
3:45 pm–4:25 pm
Ultrasound of the Acute Abdomen: Infant and Young Child—I. Castro-Aragon
4:25 pm–5:00 pm
Ultrasound of the Acute Abdomen: School–Age Child and Adolescent—S. Bixby
5:00 pm–5:30 pm
Problem–Solving Techniques for Neonatal Cranial Sonography—G. Taylor
5:30 pm–5:45 pm
Question and Answer Session

8:00 am–9:30 am
Room: 207, Level 2
IC102. Practice-Based Learning: Patient Quality and P4P Issues—F. Lexa; Risk Management—M. Raskin
Room: 309, Level 3
IC103. Imaging the Patient with Headache—E. Knopp, P. Schaefer
Room: 210, Level 2
IC104. Malpractice Issues in Radiology: Update 2009—L. Berlin
Room: 208, Level 2
IC105. Thromboembolic Axis of Evil: DVT, PE, IVC Filters—T. Burdick, M. Bittles, K. Daly
Room: 310, Level 3

10:00 am–11:30 am
SS1. Cardiopulmonary Imaging Papers—U.J. Schoepf, B. Sundaram, moderators
Keynote: CT of the Heart at the Crossroads—U.J. Schoepf
See pages 55-58 for abstracts.
Room: 208, Level 2
SS2. Efficacy, Education, Administration and PACS Papers—D. Heitkamp, R. Gunderman, moderators
Keynote: What Counts in Education—R. Gunderman
See pages 59-62 for abstracts.
Room: 309, Level 3
Keynote: Neuroradiology Education Update 2009—M. Mullins
See page 63-66 for abstracts.
Room: 210, Level 2
Keynote: Paradigm Shifts in Hepatic Arterial Tumor Embolotherapy—C. Ray
See pages 67-69 for abstracts.
Room: 310, Level 3
IC106. Practice-Based Learning: Safety Issues in Radiology—M. Parker; Overview and Strategies to Reduce CT Dose—M. Gunn
Room: 311, Level 3
IC107. Cooking for AJR II: A Recipe for SAMs—F. Chew, C. Roberts
Room: 207, Level 2

Please note that preregistration for educational sessions included in the general registration fee does not guarantee a seat. While we will make every effort to ensure adequate space for each session, seating for some sessions may be limited. It is best to arrive early for the sessions you wish to attend.
Dr. Bruce J. Hillman is the Theodore E. Keats Professor of Radiology at the University of Virginia where he was chair of the department from January 1992-March 2003 and president of the UVA Physicians' Practice Corporation from 1999-2003. Since 1996, he has also been a professor of public health sciences. He currently serves as both the chief scientific officer of ACR Image Metrix and as the founding editor-in-chief of the Journal of the American College of Radiology.

Since 1985, after completing a year's study at the RAND Corporation, sponsored by a Pew Memorial Trust fellowship, Dr. Hillman's interests have focused on health policy issues important to radiologists, including the development of research careers, methods for scientific technology assessment and diffusion of medical technology. His research on physician conflict of interest has been credited with altering AMA ethics policies and influencing state and federal legislation restricting self-referral. In 2007, he was named the Radiological Society of North America Outstanding Researcher.

Aside from writing and editing several texts, Dr. Hillman has published more than 160 peer-reviewed articles and more than 100 book chapters, review articles and editorials. He has also presented more than 30 honorary, keynote or named lectures. He has received NIH, Marshall Foundation and Hartford Foundation fellowships for his research.

Dr. Hillman has served as president of the Association of University Radiologists, the Society of Uroradiology, the Virginia Chapter of the American College of Radiology and the Eastern Radiological Society. He served as charter president of the Society for Health Services Research in Radiology and since 1995, has been a member of the American College of Radiology Board of Chancellors.

His work as the founding principal investigator and chair of the American College of Radiology Imaging Network (ACRIN) has led, for the first time, to the development of a functioning infrastructure for the development, implementation and analysis of multidisciplinary, multi-center clinical trials of imaging technology. Under his leadership, the NCI-funded clinical trials cooperative group initiated work on 30 trials critical to the advancement of radiology.

Dr. Hillman received his BA in 1969 from Princeton University and received his MD in 1973 from the University of Rochester. He completed his radiology residency at the Peter Bent Brigham Hospital under Drs. Herbert L. Abrams and Harry Z. Mellins and trained in research with Drs. Peter G. Herman and Norman K. Hollenberg.

The annual Caldwell Lecturer was established in 1920 to honor the research and educational achievements of founding member and x-ray pioneer Eugene Caldwell, MD.
**Tuesday Schedule**

**Tuesday, April 28**

**7:00 am—8:00 am**
Power Hour: Musculoskeletal Imaging—M. Robbin, moderator  
**Room: 202, Level 2**
Power Hour: Ultrasound—D. Rubens, moderator  
**Room: 203 Level 2**

**7:00 am—9:30 am**
Review Course: Neuroradiology  
*Registration and separate fee required for this course.*  
**Room: Auditorium, Level 2**
Neoplasms—C.D. Phillips  
Head and Neck—M. Michel  
Spine—Z. Rumboldt  
Vascular—C. Glastonbury  
Potpourri—J. Anderson

**8:00 am—9:30 am**
IC201. Update on Imaging the Benign Female Pelvis—  
P. Ramchandani, C. Woodfield, L. Scoutt  
**Room: 208, Level 2**
IC202. Cardiac MRI: The Basics—M. Atalay; Cardiomyopathies and Dysplasias—J. Jeudy; Ischemic Heart Disease—Perfusion, Function, Viability—J. Vogel-Claussen  
**Room: 207, Level 2**
IC203. Evaluation of Sport-Related Injury in Older Children and Adolescents—M. Dempsey; Imaging Evaluation of Osseous Neoplasm in Children: Plain Radiographs and Beyond—S. Vasanawala  
**Room: 210, Level 2**
IC204. 3D Ultrasound in OB/GYN: The Beginning of a New Era—B. Benacerraf; Polyhydramnios and Oligohydramnios—P. Doubilet  
**Room: 309, Level 3**
IC205. Interventional Radiology Treatment of HCC: Combination Therapy—T. Van Ha, D. Madoff, R. Murthy  
**Room: 310, Level 3**

**9:30 am—11:00 am**
IC206. Musculoskeletal Tumor Imaging, Compartmental Anatomy, Biopsy and Therapies—C. Roberts, P. Liu, D. Wenger  
**Room: 311, Level 3**
SS7. Cardiopulmonary Imaging Papers—P. Woodard, S. Patel, moderators  
Keynote: Cardiac Imaging: 2009 Update—P. Woodard  
See pages 77-79 for abstracts.  
**Room: 208, Level 2**
Keynote: Prostate MR: New Opportunities and Insights—N. Rofsky  
See pages 80-82 for abstracts.  
**Room: 210, Level 2**

**10:00 am—12:30 pm**
Review Course: Ultrasound  
*Registration and separate fee required for this course.*  
**Room: Auditorium, Level 2**
Small Parts—L. Scoutt  
Abdominal—D. Rubens  
Vascular—J. Pellerito  
Gynecology—O. Baltarowich  
2nd and 3rd Trimester Obstetrics—B. Hertzberg

**11:00 am—12:30 pm**
Scholars and Awards Session  
**Room: 210, Level 2**

**Final Reports of the 2007 Scholars**

**Anil Attili, MD,**  
University of Michigan, Ann Arbor, MI

Peter Eby, MD,  
University of Washington, Seattle, WA; ARRS/Philips Medical Systems Scholar
Tuesday Schedule

Introduction of 2009 ARRS Scholar

Bradley Foerster, MD
Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

Dr. Bradley Foerster received his undergraduate degree in chemical engineering and his MD from the University of Michigan in Ann Arbor. Dr. Foerster completed his residency training in diagnostic radiology in 2007 at the University of Michigan where he was involved in both basic laboratory and clinical radiology research efforts.

Dr. Foerster is serving as a neuroradiology fellow at Johns Hopkins Hospital in Baltimore, MD and pursuing a doctoral degree under the Graduate Training Program in Clinical Investigation (GTPCI) through the Johns Hopkins Bloomberg School of Public Health. The GTPCI program is the first of its kind in the United States and is specifically designed to train junior academic physicians in clinical research methodologies.

Dr. Foerster is working with Drs. Peter Barker and Marty Pomper to apply a newly developed MR spectroscopy technique to investigate the glutamatergic pathway which is increasingly recognized as an important therapeutic target in neurodegenerative and psychiatric disease. The ARRS Scholarship Award will enable him to complete his training under the GTPCI program. After his training is complete, Dr. Foerster will continue to pursue his research interest of translating molecular imaging techniques to neuropsychiatric disease.

As a third year radiology resident, Dr. Foerster received the RSNA Radiology Resident Award and spent six dedicated months in the laboratory, successfully developing a molecular imaging probe for a protein thought to be important in the pathogenesis of breast cancer for which he received the Henry Christian Award in 2007. More recently, he was awarded by the Bayer/NER Foundation Fellowship in Basic Science Research to apply his new MR spectroscopy technique in an animal model for neuropsychiatric disease during his second year of neuroradiology fellowship at Johns Hopkins.

Dr. Foerster is author to three book chapters, 13 publications and 26 published abstracts. He received the Outstanding Resident Publication Award in 2007.

Introduction of 2009 ARRS/Elio Bracco Scholar

Rathan Subramaniam, MBBS, PhD, MClinEd, FRANZCR
Boston University School of Medicine, Boston, MA

Dr. Rathan Subramaniam received his undergraduate degree in Sri Lanka and attended medical school at the University of Melbourne in Melbourne, Australia where he graduated with an MBBS and BMedSci degree. He received his master’s degree in clinical education at the University of New South Wales in Sydney, Australia and completed his PhD in 2008 at the University of Auckland in Auckland, New Zealand.

Currently Dr. Subramaniam is an assistant professor of radiology at the Boston University School of Medicine and an attending neuroradiologist and nuclear medicine physician at the Boston Medical Center. He completed his residency in radiology at Waikato Hospital in Hamilton, New Zealand and his fellowship in magnetic resonance imaging at Canberra Hospital in Canberra, Australia. After coming to the United States, he completed a fellowship in nuclear radiology at the Mayo Clinic in Rochester, MN, and a subsequent neuroradiology fellowship at the Mayo Clinic, completing his training in 2008.

The ARRS Scholarship Award will help Dr. Subramaniam in undertaking a research project titled 18F-FLT PET-CT as a predictive biomarker of tumor response and patient outcome. It is a prospective validation study in advanced head and neck squamous cell cancer patients. He will also undertake a MPH program at the Harvard University School of Public Health with specific focus on technology assessment, outcome analysis and health economics.

Dr. Subramaniam has received many awards and scholarships including a Fulbright Traveling Scholarship and a Mayo Brothers distinguished fellowship award. He has 48 invited lectures and presentations to his credit and 41 publications.

The scholarships are funded by The Roentgen Fund. The ARRS/Elio Bracco scholarship is made possible, in part, by a generous contribution from Bracco Diagnostics, Inc.
Introduction of 2009 ARRS Berlin Scholar in Medical Professionalism

Nabile Safdar, MD
University of Maryland
Project: A Survey of Challenges in Radiology Research: Toward a Consensus Approach to Ethics Standards

Nabile M. Safdar received his BS in 1995 from Pennsylvania State University, State College, in Pennsylvania and attended medical school at Jefferson Medical College in Philadelphia, PA. He completed his residency and fellowship training at the University of Maryland Medical Center in Baltimore, MD, where he is currently pursuing his academic interests in radiology and ethics while serving as a clinical radiologist in the musculoskeletal and imaging informatics sections of diagnostic radiology.

He has initiated several studies on the role of ethics and professionalism in radiology including an ongoing survey on the appropriateness of comments within radiology reading rooms, the first dedicated radiology intradepartmental ethics roundtable in the nation. He also initiated a survey of IRB practices as they relate to radiology protocols, which was presented at RSNA in 2008.

Within the medical system, Dr. Safdar serves on an institutional ethics advisory committee. He is one of the few radiologists in Maryland to have been invited by the Maryland Health Care Ethics Committee Network to speak at a state-level conference aimed at clarifying the role of DNR orders. In 2006, he was one of the principal medical organizers of a medical ethics conference sponsored by the Islamic Medical Association of North America, which was designed to help local physicians, from all backgrounds, deal with commonly encountered sources of controversy within practices in the Maryland area. The conference focused on issues surrounding organ transplantation, cosmetic surgery, terminal illness and brain death.

Dr. Safdar has received several honors and awards including the Roger A. Bauman Award for Best Paper from the Society for Computer Applications in Radiology in 2005. He is also author to seven non-peer-reviewed journal articles, seven peer-reviewed journal articles and seven invited speeches.

He currently lives in Elkridge, Maryland with his wife Rabeea and his two daughters Fatima and Khadija.

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Tuesday Schedule

Introduction of 2009 ARRS Residents in Radiology Awards

President’s Award

Jennifer R. Kohr, MD
University of Washington
Seattle, WA

Can Some Patients with Atypical Ductal Hyperplasia Found at Stereotactic Vacuum Assisted Breast Biopsy Avoid Surgical Excision?

Objective: Our goal was to determine if upgrade occurs when stereotactic 9- or 11-gauge vacuum assisted breast biopsy (VABB) yields atypical ductal hyperplasia (ADH) in less than three ducts and all mammographic calcifications are removed.

Material and Methods: Following IRB approval, retrospective review of 991 consecutive 9- or 11-gauge stereotactic VABB procedures for suspicious calcifications during a 68-month period identified 147 cases of atypia. One pathologist performed a blind review of all cases and confirmed ADH in 101 cases with subsequent surgical excision. On pathology review each large duct or terminal duct-lobular unit containing ADH was defined as a focus and counted for each case. Post-biopsy mammograms were reviewed to assess if all calcifications were removed. Upgrade was determined from excisional biopsy pathology reports. The upgrade rates, as a function of number of foci and presence or absence of residual calcifications, were calculated and compared with Chi-Square tests.

Results: Upgrade occurred in 20/101 (19.8%) cases. Upgrade was significantly more likely with three or more foci (15/53, 28.3%) compared with less than three foci (5/48, 10.4%, p=0.02) of ADH. Upgrade rates were similar whether all mammographic calcifications were removed (7/41, 17.1%) or not (9/45, 20.0% p=0.88). Upgrade occurred in 2/17 (11.8%) cases with less than three foci of ADH and all calcifications were removed.

Conclusions: The upgrade rate is significantly higher when ADH involves three or more foci. Although the upgrade rate is low, surgical excision is still warranted for patients when ADH involves less than three ducts and all mammographic calcifications are removed.

The scholarships and awards are funded by The Roentgen Fund.
Executive Council Award

Jenny Hoang, MBBS, FRANZR
Duke University Medical Center
Durham, NC

CT Predictors of Pre-Epiglottic Space Squamous Cell Carcinoma Invasion

Objective: Pre-epiglottic space (PES) invasion by laryngeal or oropharyngeal squamous cell carcinoma (SCCa) upstages tumor, and alters prognosis and treatment. Despite the importance of the PES, the normal CT appearance remains poorly understood. The purpose of this study is to describe the range of normal CT findings of the PES and to contrast this with the appearance of PES tumor invasion.

Materials and Methods: We conducted a retrospective case-control study. 20 patients with supraglottic laryngeal or base of tongue SCCa were assessed to have PES invasion by two radiologists, and compared to 62 aged-matched controls without cancer. For each patient, the PES was assessed on two predetermined axial CT levels: below the valleculae, and at the false cords. The soft tissues and fat of the PES were studied for the following: 1) symmetry, 2) sharpness of tissue margins, 3) dimensions, and 4) densities.

Results: Subjects with tumor were more likely to have asymmetry and ill-defined PES margins (p-values <0.001). On multivariate analysis, other significant findings were the anterior-posterior (AP) dimension and attenuation of the hyoepiglottic ligament. ROC analysis projected 85% sensitivity and 89% specificity for PES tumor if hyoepiglottic ligament AP dimension was > 6.4 mm. Hyoepiglottic ligament attenuation > 41.4 HU was 90% sensitive and 79% specific for PES tumor.

Conclusions: On axial CT there are several useful predictors of PES tumor invasion. The results of this study may inform the radiologist of the range of normal and guide the researcher in extending this work.

Executive Council Award

David S. Karow, MD, PhD
University of California, San Diego
San Diego, CA

Whole-brain, ROI-based Comparison of Brain Metabolism and Atrophy in Prodromal and Mild Alzheimer’s Disease: Hippocampal Atrophy Exhibits the Overall Greatest Effect Size

Objective: PET is currently the gold standard for the non-invasive imaging diagnosis of Alzheimer’s disease. Here we have directly compared MRI and PET by ROI across the whole brain, permitting a direct comparison of effect sizes in order to identify non-invasive biomarkers for the early detection of Alzheimer’s Disease (AD).

Materials and Methods: PET and MRI data were obtained for 304 subjects from the Alzheimer’s Disease Neuroimaging Initiative (ADNI): 80 normal controls, 156 with MCI, 69 with SMCI and 68 with AD. ROIs were derived from co-registered MRI images using high-throughput, subject-specific procedures. We examined continuous surface maps of cortical thickness and activity while simultaneously evaluating 45 predefined ROIs in order to examine metabolic and structural differences by group.

Results: The greatest changes in all disease groups were identified in MTL ROIs where atrophy predominated. The hippocampal volume measure exhibited the greatest overall Cohen’s d effect size (SMCI, 0.9; MCI, 0.9; and mild AD, 1.9). While some ROIs such as the posterior cingulate cortex exhibited greater metabolic changes, the effect sizes and magnitude of change were relatively low compared to MTL ROIs. We also found that when regressing out the effect of atrophy, PET effect sizes were significantly lower, especially in MTL ROIs.

Conclusions: In areas most implicated in AD pathogenesis such as the MTL, activity effect sizes were generally smaller than morphometry. In particular, hippocampal atrophy exhibited the greatest effect size in all diagnostic groups, suggestive of a promising role for this ROI as a non-invasive biomarker of prodromal and mild AD.
## Tuesday Schedule

### 11:00 am–12:30 pm
- **IC207. Renal and Adrenal Incidental Lesions: Controversy and Guidelines**—S. Silverman, W. Mayo-Smith  
  **Room:** 311, Level 3  
- **IC208. Peripheral Nerve Ultrasound—J. Jacobson; Rheumatologic Applications—C. Sofka; Dynamic Imaging—V. Khoury**  
  **Room:** 207, Level 2  
  **Room:** 208, Level 2  
  **Room:** 310, Level 3

### 12:30 pm–1:30 pm
- **Power Hour: Chest Imaging**—K. Birchard, moderator  
  **Room:** 203, Level 2  
- **Power Hour: Genitourinary Imaging**—E. Sadowski, moderator  
  **Room:** 202, Level 2

### 1:30 pm–6:15 pm
- **Categorical Course: Practical Sonography for the Radiologist**  
  Registration and separate fee required for this course.  
  **Room:** Auditorium, Level 2  
  **Room:** 311, Level 3  
  **Room:** 210, Level 2  
- **IC218. Neonatal Medical and Surgical Diseases: Practical Approach for Evaluation and Differential Diagnoses—J. Reid; Evaluation of Pulmonary Infection in Infants and Children: What Radiologists Should Know—E. Lee**  
  **Room:** 208, Level 2  
- **IC219. On-Call Radiology (interventional radiology)—P. Gamboa, H. Ferral, J. Lopera**  
  **Room:** 207, Level 2

### 4:00 pm–6:00 pm
- **SS14. Cardiopulmonary Imaging Papers—M. Parker, K. Birchard, moderators**  
  Keynote: Radiation Dose Reduction Strategies in Chest CT Scanning—M. Parker  
  See pages 100-103 for abstracts.  
  **Room:** 310, Level 3  
- **SS15. Gastrointestinal (Colon) Imaging Papers—A. Dachman, D. Caroline, moderators**  
  Keynote: The Future of Virtual Colonoscopy: Training and Maintaining—A. Dachman  
  See pages 104-107 for abstracts.  
  **Room:** 309, Level 3

*Live SAM pending ABR approval

CME credit forms and course evaluations are available online at [https://www.directsrv.net/ARRS/](https://www.directsrv.net/ARRS/). Your user name is arrs then your badge number (for example, arrs123456) The password is arrs2009. (Please note that your badge number is also your ARRS ID number.) Please visit this site to claim your CME credit. The site opens on April 26 and will be open through May 16. In an effort to be green, ARRS is not including CME credit forms in your registration packet.
**Wednesday, April 29**

**7:00 am—8:00 am**  
Power Hour: Gastrointestinal Imaging—D. Katz, moderator  
*Room: 202, Level 2*  
Power Hour: Pediatric Imaging—S. Puig, moderator  
*Room: 203, Level 2*

**7:00 am—9:30 am**  
Review Course: Vascular and Interventional Radiology  
*Registration and separate fee required for this course.*  
*Room: Auditorium, Level 2*  
Vascular Diagnosis—B. Funaki  
Arterial Intervention—A. Nemcek  
Venous Intervention—S. Regalado  
Nonvascular Intervention—G. Knuttila  
Malignancy—C. Ray

**8:00 am—9:30 am**  
IC301. CT Colonography—J. Yee, Z. Liao (sponsored by the AAWR)  
*Room: 207, Level 2*  
IC302. HRCT Imaging of Lung—G. Abbott, L. Heyneman, M. Gosselin  
*Room: 210, Level 2*  
IC303. MR Imaging of the Knee—M. Recht, C. Winalski  
*Room: 208, Level 2*  
IC304. Update on Infectious and Inflammatory Disease of the Brain and Spine—B. Zimmerman, J. Comunale  
*Room: 310, Level 3*  
Keynote: We Have Come a Long Way: A Reflective Perspective of Breast Imaging—L. Salkowski  
See pages 108-111 for abstracts.  
*Room: 309, Level 3*

**10:00 am—11:30 am**  
IC305. Practical Approach to the Pancreatic Lesion—D. Sahani, K. Mortele  
*Room: 311, Level 3*  
IC306. The Post-Treatment Head and Neck: Imaging and Avoiding Pitfalls—C. Glastonbury, D. Williams  
*Room: 210, Level 2*  
*IC307. Deep Venous Ultrasound: Expected and Unexpected Findings—B. Hashimoto; Doppler Waveform Analysis—Some Things You Need to Know—C. Merritt  
Room: 208, Level 2*

**10:00 am—12:00 noon**  
SS17. Breast Imaging Papers—C. Comstock, L. Salkowski, moderators  
Keynote: Breast MRI: Screening and Diagnosis—G. Newstead  
See pages 112-115 for abstracts.  
*Room: 310, Level 3*  
SS18. Musculoskeletal (Pelvis and Lower Extremity) Imaging Papers—S. Smith, A. Zoga, moderators  
See pages 116-120 for abstracts.  
*Room: 207, Level 2*  
SS19. Genitourinary/OB/GYN (Female Genitourinary) Imaging Papers—K. Andresen, P. Ramchandani, moderators  
Keynote: Female Pelvic Imaging: An Update—P. Ramchandani  
See pages 121-124 for abstracts.  
*Room: 309, Level 3*

**10:00 am—12:30 pm**  
Review Course: Cardiovascular Imaging  
*Registration and separate fee required for this course.*  
*Room: Auditorium, Level 2*  
Chest Pain—C. Javidan-Nejad  
Murmur/Rub—K. Birchard  
Mental Status Changes—S. Seth  
Syndrome/Congenital—J. Hsu  
Plain Film Correlates of Cardiovascular Disease—S. Bhalla

**12:30 pm—2:00 pm**  
IC308. HRCT: Airway and Smoking-Related Lung Disease—A. Bankier, P. Boiselle, J. Gurney, C. Meyer  
*Room: 311, Level 3*  
IC309. Pain Management: Imaging, Evaluation and Treatment (neuroradiology)—O. Ortiz, G. Zoarski  
*Room: 208, Level 2*  
IC310. Pharmacology in Interventional Radiology: Sedation and Anti-Coagulation and Anti-Platelet Therapy—H. Ferral; Use of Antibiotics in Interventional Procedures—J. Lopera  
*Room: 207, Level 2*

**12:30 pm—2:30 pm**  
SS20. Breast Imaging Papers—J. Leung, S. Patterson, moderators  
Keynote: Triple Negative Breast Cancer: Current Concepts—G. Whitman  
See pages 125-128 for abstracts.  
*Room: 310, Level 3*  
Keynote: Epidemiology and Imaging Pancreas Cancer—M. Macari  
See pages 129-133 for abstracts.  
*Room: 309, Level 3*  
SS22. Musculoskeletal (Upper Extremity) Imaging Papers—H. Umans, D. Blankenbaker, moderators  
Keynote: Sonographic Imaging of Digital Nerve Injury in the Context of Penetrating Trauma—H. Umans  
See pages 134-138 for abstracts.  
*Room: 210, Level 2*

**1:30 pm—4:00 pm**  
Review Course: Pediatric Imaging  
*Registration and separate fee required for this course.*  
*Room: Auditorium, Level 2*  
Chest—E. Lee  
Cardiac—B. Markle  
GI/GU—K. Fickenscher  
Liver/Neuroradiology—L. Lowe  
Neuroradiology-Spine/Musculoskeletal—J. Reid

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*Live SAM pending ABR approval*
2:45 pm–3:30 pm
Member Business Meeting
(Open only to ARRS members)
Room: 210, Level 2

3:00 pm–4:30 pm
IC311. Perception: How We “See” Things—J. Wolfe; Computer Aided Detection in Mammography and MR: Does it Help What We “See”?—A. Semine
Room: 311, Level 3
Room: 302, Level 3
IC313. Sonography of the Urinary Tract—W. Chong; Ultrasound of the Acute Abdomen—J. Wong
Room: 208, Level 2

3:00 pm–5:00 pm
SS23. Gastrointestinal (Diffusion/Perfusion) Imaging Papers—E. Merkle, C. Santillan, moderators
Keynote: DWI and DCE-MRI of the Liver: The Basics—E. Merkle
See pages 139-143 for abstracts.
Room: 310, Level 3
Keynote: Pitfalls in the Human Visual System—K. Schreibman
See pages 144-148 for abstracts.
Room: 207, Level 2
Keynote: Use of Novel Guidance Systems for Planning and Performing Percutaneous Procedures—S. Solomon
See pages 149-152 for abstracts.
Room: 309, Level 3

THURSDAY, APRIL 30

7:00 am–8:00 am
Power Hour: Emergency Radiology—H. Abujudeh, moderator
Room: 203, Level 2
Power Hour: Nuclear Medicine—H. Jacene, moderator
Room: 202, Level 2

7:00 am–9:30 am
Review Course: Breast Imaging
Registration and separate fee required for this course.
Room: Auditorium, Level 2
Breast Ultrasound—S. Durfee
Management Guidelines for Imaging and Clinical Cases—L. Salkowski
MRI-Mammography-Ultrasound Correlation—G. Whitman
Postoperative Breast—A. Nees
Breast MRI of the High Risk Patient—M. Roubidoux

8:00 am–9:30 am
IC401. Navigating CT and MR of the Liver and Biliary Tract—A. Fulcher, D. Morgan
Room: 208, Level 2
Room: 309, Level 3
IC403. Simplifying the Diagnosis of Difficult Musculoskeletal Injuries—C. West, L. Rogers, J. Yu
Room: 311, Level 3
*IC404. Arthritis: Basic and Advanced Imaging—D. Flemming, M. Bruno, L. Bancroft
Room: 208, Level 2
IC405. Brain, Skull Base, and Cervical Trauma: Imaging and Implications for Treatment and Prognosis—J. Smirniotopoulos, D. Nunez
Room: 310, Level 3
IC406. Introduction to PET-CT, Normal Variants, Protocols and Reporting—D. Yoo, E. Akin, T. Wong
Room: 207, Level 2

10:00 am–11:30 am
IC407. Basic Principles of Core Biopsy: Stereotactic and Sonographic—H. Peters; Basic Principles of Core Biopsy: MR Guided—E. Gombos
Room: 208, Level 2
IC408. Imaging the Patient with Atraumatic Intracranial Hemorrhage—W. Kubal; Imaging Emergent Infections of the Head and Neck—D. Nunez; MDCT of Maxillofacial Trauma: Saving Face—M. Bernstein
Room: 210, Level 2
IC409. Multimodality Imaging of the Shoulder—K. Buckwalter, K. Schreibman
Room: 311, Level 3
IC410. How to Image the Pediatric Patient: Sedation Issues and Avoiding Pitfalls (neuroradiology)—K. Mason, B. Koch, C. Robson
Room: 310, Level 3

*Live SAM pending ABR approval
Thursday Schedule

SS27. Nuclear Medicine Papers—H. Jacene, D. Yoo, moderators
   Keynote: Quantification in PET: Getting the Most Mileage from SUVs—T. Wong
   See pages 158-160 for abstracts.
   Room: 309, Level 3

10:00 am–12:00 noon
SS26. Gastrointestinal (Bowel and Peritoneum) Imaging Papers—T. Jaffe, D. Katz, moderators
   Keynote: Crohn’s Imaging in the 21st Century: Where We are Going—T. Jaffe
   See pages 153-157 for abstracts.
   Room: 207, Level 2

10:00 am–12:30 pm
Review Course: Chest Imaging
   Registration and separate fee required for this course.
   Room: Auditorium, Level 2
   Quality Assurance—D. Yoo
   Emergency Studies—A. Siegel
   Infection and Inflammation—T. Wong
   SPECT-CT—H. Jacene
   PET-CT—C. Rajadhyaksha

12:00 noon–1:00 pm
CS. Breast Tomosynthesis: Tips for Interpretation with Case Review—E. Rafferty (made possible by an educational grant from Hologic)
   Room: 302, Level 3

1:30 pm–4:00 pm
Review Course: Nuclear Medicine
   Registration and separate fee required for this course.
   Room: Auditorium, Level 2
   Quality Assurance—D. Yoo
   Emergency Studies—A. Siegel
   Infection and Inflammation—T. Wong
   SPECT-CT—H. Jacene
   PET-CT—C. Rajadhyaksha

4:00 pm–5:30 pm
IC414. Practical MR Imaging of the Abdomen—E. Merkle, D. Cornfeld
   Room: 311, Level 3
IC415. Mammography Screening: Epidemiology—D. Kopans;
   Breast MRI and Ultrasound Screening: Evidence Basis and Guidelines—J. Lee
   Room: 207, Level 2
   Room: 210, Level 2
IC417. CT Radiation Exposure: What Does It Mean for My Patients?—A. Sodickson; Acute Intestinal Ischemia and Bleeding—C. Menias; CT of the Acute Female Pelvis, with Ultrasound Correlation—D. Katz
   Room: 310, Level 3
IC418. Lesions of the Jaw and Larynx—R. Daffner, A. Lupetin
   Room: 208, Level 2
IC419. PET-CT in Lymphoma, Colorectal Cancer, and Melanoma—D. Israel, H. Jacene, E. Rohren
   Room: 309, Level 3

1:30 pm–3:00 pm
IC411. MR Indications/Screening—E. Yeh; Breast MR: Practical Aspects of Setting up a Practice from a Technologist/Manager’s Viewpoint—L. Bussolari
   Room: 207, Level 2
   Room: 210, Level 2
IC413. Musculoskeletal Tumors and PET Imaging—M. Murphey, J. Peterson
   Room: 208, Level 2
   Keynote: Organizing Patient Care and Enhancing Communication in Emergency Radiology with an Electronic Whiteboard System—H. Abujudeh
   See pages 166-168 for abstracts.
   Room: 309, Level 3

1:30 pm–3:30 pm
SS28. Gastrointestinal (Liver) Imaging Papers—D. Nakamoto, B. Choi, moderators
   Keynote: Imaging of Hepatocellular Carcinoma with MR Contrast Agent—B. Choi
   See pages 161-165 for abstracts.
   Room: 310, Level 3

CME credit forms and course evaluations are available online at https://www.directsurv.net/arrs/. Your user name is arrs then your badge number (for example, arrs123456) The password is arrs2009. (Please note that your badge number is also your ARRS ID number.) Please visit this site to claim your CME credit. The site opens on April 26 and will be open through May 16. In an effort to be green, ARRS is not including CME credit forms in your registration packet.
FRIDAY SCHEDULE

FRIDAY, MAY 1

7:00 am—8:00 am
Power Hour: Breast Imaging—J. Leung, moderator
   Room: 310, Level 3

7:00 am—9:30 am
Review Course: Musculoskeletal Imaging
Registration and separate fee required for this course.
   Room: Auditorium, Level 2
   Multifocal Lesions—S. Smith
   Bone Marrow Abnormalities—D. Blankenbaker
   Soft Tissue Masses—K. Davis
   Tumors and Lucent Lesions of Bone—C. Gaskin
   Soft Tissue Abnormalities of Joints—N. Safdar

8:00 am—9:30 am
IC501. Integrated Approach to Imaging of the Small Bowel with CT and MR—W. Thompson, J. Fidler
   Room: 311, Level 3
   Room: 207, Level 2
IC503. CT and PET-CT: SPN, Lung Cancer and Other Thoracic Malignancies—J. Bruzzi, J. Erasmus, J. Ko
   Room: 310, Level 3
IC504. Aortic Dissection in the Emergency Department: Pearls, Perils, Pitfalls and Protocols—S. Ledbetter; MDCT of Thoracic Trauma—R. Novelline; 64-MDCT of Multiple Trauma—J. Soto
   Room: 208, Level 2
IC505. Imaging Biomarkers in Cancer: PET-CT, F18-FDG and Beyond—A. Van Den Abbeele, A. Sheikh
   Room: 309, Level 3

10:00 am—11:30 am
IC506. Ethical Issues: The ACR Perspective—P. Kornguth; The Expert Witness in Malpractice (breast imaging)—E. Epstein Cohen
   Room: 207, Level 2
IC507. Radiographs and CT: Back to the Basics (chest imaging)—J. Shepard, A. Rubinowitz, S. Copley, S. Rossi
   Room: 311, Level 3
IC508. Updates in Cardiac SPECT, Myocardial Perfusion Imaging with PET and PET-CT, Assessment of Myocardial Viability—J. Arrighi, S. Dobola, M. Di Carlo
   Room: 208, Level 2

10:00 am—12:00 noon
SS30. Musculoskeletal (Systemic Disease and Spine) Imaging Papers—M. Robbin, B. Sabb, moderators
   See pages 169-173 for abstracts.
   Room: 310, Level 3

10:00 am—12:30 pm
Review Course: Genitourinary Imaging
Registration and separate fee required for this course.
   Room: Auditorium, Level 2
   Kidney—E. Remer
   Collecting System, Ureters and Bladder—D. Casalino
   Male Pelvis—C. Woodfield
   Female Pelvis—C. Peterson
   Miscellaneous—D. Baumgarten

1:00 pm—3:30 pm
Review Course: Gastrointestinal Imaging
Registration and separate fee required for this course.
   Room: Auditorium, Level 2
   Enhancement Patterns of Liver Masses—C. Sirlin
   Colon—C. Santillan
   Pancreas—B. Yeh
   Esophagus, Stomach, Small Bowel—C. Menias
   Mesentery, Omentum—J. Wang

Please note that preregistration for educational sessions included in the general registration fee does not guarantee a seat. While we will make every effort to ensure adequate space for each session, seating for some sessions may be limited. It is best to arrive early for the sessions you wish to attend.
Annual Scholarship Program

Medical schools, affiliated hospitals and clinical research institutions are invited to nominate one candidate for the 2010 ARRS scholarship program. The candidate must be a member of the ARRS at the time the application is submitted.

The scholarships are intended to support study that will enable the scholar to acquire knowledge, skills and training in areas that are vital to the future of radiology and to attain his or her professional career goals.

Up to two scholarships of $140,000 each are funded annually. Scholars may choose a one-year program requiring a minimum 80% time commitment or a two-year program requiring a minimum 50% time commitment. The scholarships are funded through a grant from The Roentgen Fund®.

The general requirements for candidates are:
• MD or DO from an accredited institution;
• completion of all required residency, fellowship training or equivalent;
• certification by the American Board of Radiology or equivalent;
• full-time faculty appointment as a lecturer, instructor, assistant professor or equivalent for no more than five years beyond completion of training.
The appointment must be in a department of radiology, nuclear medicine, or an associated department in the radiological sciences of a medical school teaching hospital in the U.S. or Canada.

Selection will be based on the competence and promise of the candidate in research, education or administration related to medical imaging as indicated by the institution making the nomination; evidence that an environment will be provided that is conducive to well-rounded professional development; and personal qualities of the candidate that indicate that he or she is a scholar and leader with exceptional potential.

Acceptance of an award from another source for the same or similar project is prohibited unless one source provides salary support only and the other source provides support only for non-personnel research expenses.

For more information about the scholarship program and application procedures, visit the ARRS Website (www.arrs.org) or telephone 800-438-2777 or 703-729-3353.

The deadline for submission of applications is November 16, 2009.