

ISMRM 17th Scientific Meeting & Exhibition
SMRT 18th Annual Meeting
18-24 April 2009



Honolulu

Hawai'i

Event Registration and Information

Save when you register by **18 March 2009**

register online at
<http://www.ismrm.org>

— INTERNATIONAL SOCIETY FOR —
ISMRM
MAGNETIC RESONANCE IN MEDICINE

*The International Society for Magnetic Resonance in Medicine
is accredited by the
Accreditation Council for Continuing Medical Education
to provide continuing medical education for physicians.*

Attention Clinicians!
**New Clinical Intensive Course on MSK,
Breast and Body Imaging!**

See page 17



Honolulu, Hawai'i

ISMIRM 17th Scientific Meeting & Exhibition, 18-24 April 2009

PROGRAM AT-A-GLANCE

For complete program information, full course descriptions, and skill levels,

Weekend Educational Programs (Pages 21-23)		Scientific Meeting:	
Saturday, 18 April	Sunday, 19 April	Overview	Monday, 20 April
<ul style="list-style-type: none"> MR Engineering - Part 1 MR Physics for Physicists Body MRI by the Experts <ul style="list-style-type: none"> Cancer Imaging I: Tumor Biology & Experimental Models Cellular & Molecular Imaging <ul style="list-style-type: none"> Cardiovascular MRI: Current Applications, Clinical Needs & Technical Developments Quantitative Imaging & Data Analysis Advances in Quantitative MRI of Perfusion <ul style="list-style-type: none"> Crossing Fibers in Diffusion MRI Diffusion Tensor MRI for the Clinician & the Neuroscientist: From Experimental Design to Data Analysis 	<ul style="list-style-type: none"> MR Engineering - Part 2 Probing Cancer with MR II: From Animal Models to Clinical Assessment <ul style="list-style-type: none"> Cancer MR Spectroscopy: Clinical & Research Applications Imaging of the Lower Extremity: From Basics to Advanced Techniques Advanced Neuroimaging fMRI Advanced Issues & Processing Software <ul style="list-style-type: none"> Imaging Strategies Clinical MRI: From Physical Principles to Practical Protocols <ul style="list-style-type: none"> Study Group Programs <p>17:45 - 19:15 Opening Reception</p>	<p>Sunrise Educational Courses Tuesday-Friday <i>(Find full course descriptions on pages 11-12)</i></p> <p>Plenary Sessions <i>(Find full session descriptions on page 10)</i></p> <p>Morning Parallel Sessions <i>(For educational course overviews, see pages 14-16; go online for full details)</i></p> <p>Lunchtime Symposia</p> <p>Mid-Day Parallel Sessions <i>(For educational course overviews, see pages 14-16; go online for full details)</i></p> <p>Afternoon Parallel Sessions <i>(For educational course overviews, see pages 14-17; go online for full details)</i></p> <p>Evening Sessions</p>	<p>INTERNATIONAL SOCIETY FOR ISMIRM MAGNETIC RESONANCE IN MEDICINE</p> <p>07:30 • Welcome & Awards 08:20 • Mansfield Lecture: <i>Brain Energy & Brain Work</i> • Plenary: <i>Stroke: Forward Looking Retrospective on the Role of MR</i> • Advances in Musculoskeletal MRI</p> <p>11:00-13:00 • Scientific Sessions • The Rise & Fall of the Brain Part I: <i>The Developing Brain</i> • Breast MRI</p> <p>13:00-14:00 Gold Corporate Symposia</p> <p>14:00-16:00 • Poster Sessions • SMRT & ISMIRM Forum • Case-Based Teaching I: <i>Soft Tissue Imaging</i> • Tools & Tips for Mouse Imaging & Spectroscopy</p> <p>16:30-18:30 • Scientific Sessions • MR Physics & Techniques for Clinicians</p> <p>18:30-20:30 Study Group Programs</p>
<p>See page 21 for the SMRT 18th Annual Meeting Program Details</p>			



and the SMRT 18th Annual Meeting, 18–19 April 2009

APRIL 2009

please see pages 6-16, or visit our website: <http://www.ismrm.org>

Monday through Friday, 18-24 April 2009

Tuesday, 21 April	Wednesday, 22 April	Thursday, 23 April	Friday, 24 April
07:00-08:00 Tuesday through Friday:			
<ul style="list-style-type: none"> Image Reconstruction Safety Update Quantitative Neuroanatomic & Functional Image Assessment Mobile Lipids in Disease Magnetic Resonance in Tissue Engineering 		<ul style="list-style-type: none"> Clinical Science for Physicists & Engineers Cardiovascular: Disease or Problem-Based Teaching & Practical Protocols MRI & MRS of the Mouse Brain: Techniques & Applications Unsolved Problems in MSK MRI: What Do We Know and What Don't We Know? Hot Topics in Body MRI 	
<p>08:15</p> <ul style="list-style-type: none"> Plenary: <i>Molecular MRI: MR Probe Development from Bench to Patient Table</i> Advances in MR Angiography <p>09:30</p> <ul style="list-style-type: none"> Sounds & Visions: <i>Return of Aloha</i> 	<p>08:15</p> <ul style="list-style-type: none"> Plenary: <i>What Have We Learned from NSF?</i> 	<p>08:15</p> <ul style="list-style-type: none"> YIA & Poster Awards <p>08:30</p> <ul style="list-style-type: none"> Lauterbur Lecture: <i>MRI: A Charmed Past & an Exciting Future</i> <p>Plenary: <i>MR Scanners in 2025</i></p>	<p>08:15</p> <ul style="list-style-type: none"> Plenary: <i>Prostate Cancer: What Every Man of 60 Needs to Know - Biology to Therapy</i>
<p>10:30-13:00</p> <ul style="list-style-type: none"> Scientific Sessions Atherosclerosis Imaging Extracranial Diffusion-Weighted Imaging 	<p>10:30-12:30</p> <ul style="list-style-type: none"> Scientific Sessions Imaging the Fetus & Newborns Sports Imaging: <i>Elbow</i> Hands-On Workshop #1 	<p>10:30-12:30</p> <ul style="list-style-type: none"> Scientific Sessions The Rise and Fall of the Brain Part II: <i>The Aging Brain</i> Cased-Based Teaching V: <i>Manifestations of Systematic Disease on the Cardiovascular System</i> Hands-On Workshop #1 (repeat) 	<p>10:30-12:30</p> <ul style="list-style-type: none"> Scientific Sessions
<p>12:30-13:30</p> <ul style="list-style-type: none"> Gold Corporate Symposia 	<p>12:30 - 13:30</p> <ul style="list-style-type: none"> Gold Corporate Symposia 	<p>12:30 - 13:30</p> <ul style="list-style-type: none"> Silver Corporate Symposia 	<p>12:30</p> <ul style="list-style-type: none"> ISMRRM 2009 Scientific Meeting adjourned
<p>13:30-15:30</p> <ul style="list-style-type: none"> Poster Sessions Fat Imaging & Quantification Image Analysis Case-Based Teaching II: <i>Abdominal Pain</i> 	<p>13:30-15:30</p> <ul style="list-style-type: none"> Poster Sessions Use of Intravenous Contrast in MRI Introduction to Imaging Biomarkers Hands-On Workshop #2 Case-Based Teaching III: <i>Lower Extremity</i> 	<p>13:30-15:30</p> <ul style="list-style-type: none"> Grant Writing in a Competitive Era Imaging Biomarkers in Practice Hands-On Workshop #2 (repeat) 	<p style="text-align: center;">Mark your calendars for the Joint Annual Meeting ISMRM-ESMRMB May 2010!</p>
<p>16:00-18:00</p> <ul style="list-style-type: none"> Scientific Sessions MR Physics & Techniques for Clinicians 	<p>16:00-18:00</p> <ul style="list-style-type: none"> Scientific Sessions MR Physics & Techniques for Clinicians Case-Based Teaching IV: <i>fMRI & DTI in Clinical Practice</i> 	<p>16:00-18:00</p> <ul style="list-style-type: none"> Scientific Sessions MR Physics & Techniques for Clinicians Case-Based Teaching VI: <i>Physics & Engineering: Guess the Artifact</i> 	
<p>18:15-19:45</p> <ul style="list-style-type: none"> Bronze Corporate Symposia 	<p>19:30-21:30</p> <ul style="list-style-type: none"> Study Group Programs 	<p>18:15</p> <ul style="list-style-type: none"> Farewell Party 	

Stockholm, Sweden



As those of you who have visited will know, Hawai'i is a spectacular venue for a scientific meeting. The convention center is a perfect fit for our conference; it has generous sized meeting rooms, it is built to enjoy the ocean breezes that cool Honolulu, and it has delightful spacious open communal spaces and atria. All of this is

within easy walking distance of the beaches, city and hotels. Our main problem will be keeping people inside the centre and working rather than enjoying the many, many attractions on offer around the islands.

The Annual Meeting Program Committee has been working hard since January of this year putting the Hawai'i meeting together. I am delighted to announce that **Professor Robert Shulman** and **Professor Al Macovski**, have accepted the invitation to be our Mansfield and Lauterbur lecturers for 2009. Both of these impressive scientists have the most distinguished careers that have encompassed a wide body of work. Professor Shulman is the Sterling Professor Emeritus of Molecular Biophysics and Biochemistry at Yale University and has been instrumental in developing the use of MR spectroscopy in vivo for the investigation of metabolic pathways in animals and humans. He has measured the flow of substrates in muscle and brain, examined the storage pathways of glucose in skeletal muscle and the role of its regulation in diabetes, and examined energy production and usage in neurotransmission. He has recently co-edited *Metabolomics by In Vivo NMR*. Professor Macovski is the Canon Emeritus Professor of Electrical Engineering and Radiology at Stanford University. His career has spanned working on television to medical imaging. Apart from some fundamental work in real-time ultrasound and dual-energy CT, he has pioneered blood vessel imaging with MRI. Amongst their many accolades and awards, both our speakers have been recipients of the Gold Medal of the ISMRM and are members of the National Academy of Science. We are honoured to have them speak at our meeting.

The plenary sessions this year will cover diverse subjects bringing together the engineering, physics and clinical communities of our society. The topics include the role of MR in stroke, MR scanners in 2025, MR probe development in molecular imaging, the lessons learnt from NSF and a session on prostate cancer from biology through imaging to therapy.

Education is being led by **Dan Sodickson** this year, and we have a fabulous, diverse and exciting program of education offerings. At the weekend we have eight parallel sessions on each of Saturday and Sunday. This is followed by 10 "Sunrise" education offerings each morning, and a further 24 education sessions scattered throughout Monday-Thursday.

Many of the popular courses have been retained but all of these have been reviewed and refreshed. Case-based teaching introduced last year will be continued but enhanced by the use of audience response buttons. These sessions have been extended to the physics community, and **Mark Griswold** will be leading an interactive case-based session on *Guess the Artifact*. In the light of continuing legislative and clinical issues, safety is again featuring in the education program and other extremely successful sessions such as "Grant Writing," of interest to most scientists, will re-run.

There are many new courses in 2009 and these include such offerings as *The Rise and Fall of the*

Brain (highlighting the developing and the aging brain in a pair of sessions), a practical primer on *Small Animal Imaging and Spectroscopy*, an early morning course on *Mobile Lipids in Disease*, and daytime courses on *MR of Engineered Tissues* and *Fat Imaging and Quantification*.

As part of an ongoing initiative to provide state-of-the-art education in clinical MRI, the 2009 meeting will include a five-day continuing medical education course which will serve as a focused introduction to the ISMRM meeting for clinicians new to our meeting and our Society. This course will combine existing educational offerings with additional tailored content to form an exciting program in musculoskeletal and body MR.

I am delighted to announce a new initiative aimed at linking the ISMRM with the local community. We intend to give local high school students interested in science the opportunity to see "Science at Work." Groups of students will visit the meeting and observe poster presentations, visit the exhibits and join a scientific session. **Thomas Ernst** of the University of Hawaii has kindly agreed to lead this initiative.

Of course we then have the science, and the "Call for Papers" has already opened up, indeed, we have already had our first submissions. This year the committee has identified three key areas in which we would like to encourage submissions. These special sessions will be on MRI studies on functional biomechanics and exercise physiology, time resolved MR angiography, and in-vivo MR with DNP-polarized compounds. The request for these abstracts is incorporated into the online submission process and has the same time line as conventional abstracts.

The successful integration of traditional and multi-media e-posters initiated in Toronto will be continued in Hawaii. The size of the files that can be loaded has been increased to 40MB in response to requests from the Toronto meeting, and we hope that this will be adequate to support all presentations.

Sounds and Visions of MR 2009-The Return of Aloha is returning to the meeting. See page 17 for submission details; so, all of you MR musicians and artists...start preparing your material!

Honolulu is a lovely city, and there are many fabulous things to do on Oahu and the surrounding islands. The convention hotels are all within walking distance of the conference centre, and we have ensured that there is internet access in all of these. They will all give easy access to the town, the beaches, and the convention centre.

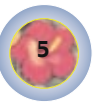
Further afield there are visits to the erupting volcano on the big island of Hawai'i, swimming with dolphins and turtles, walking the Na Pali coast, playing golf, surfing, or just relaxing on the beach with some sweet pineapple. This fantastic location is an excuse for a holiday—bring your friends and family and have fun!!

April 2009 will soon be upon us and the committee and I look forward to welcoming you to ISMRM, Hawaii 2009.

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The Meeting

Date	18-24 April 2009
Location	Hawai'i Convention Center, Honolulu, Hawai'i, USA
Meeting Program Details	The meeting program will be available online through the ISMRM Web site: http://www.ismrm.org
Contact information For more information please call the ISMRM Central office	E: info@ismrm.org T: +1 510 841 1899
Credit Designation	The ISMRM designates this meeting for up to 55.5 AMA PRA Category 1 Credits™ . Physicians should only claim credit commensurate with the extent of their participation in the activity

Technical Exhibition

Location of Technical Exhibition	Exhibit Hall I - Hawai'i Convention Center
Dates and Open Hours	17:45-19:15 Sunday, 19 April (Opening Reception) 09:30-16:30 Monday, 20 April 09:30-16:30 Tuesday - Wednesday, 21 - 22 April 09:00-16:00 Thursday, 23 April
Admission	By meeting badge only
Restrictions	Children under 16 are not allowed on the exhibit floor

New Entrant Stipend Award:

Apply Online: http://www.ismrm.org/09/new_entrant.htm

Membership Application/Dues Payment Deadline: 5 December 2008 • New Entrant Stipend Application Deadline: 12 December 2008

Purpose

The ISMRM invites applications for stipends that encourage new entrants to research in areas of interest to the ISMRM. Each awardee will receive US\$400 toward the costs of attending the ISMRM 17th Scientific Meeting & Exhibition in Honolulu, Hawai'i, USA, in April 2009.

New This Year:

2009 ISMRM membership is required before application for a New Entrant stipend. If you are not a member, you will need to complete the membership application process on or before 5 December 2008 in order to apply for a New Entrant Stipend. If you are already a member, you will need to pay your 2009 membership dues on or before 5 December 2008.

Application Chair:

James G. Pipe, Ph.D., Chair

International Society for Magnetic Resonance in Medicine

Subcommittee on Student Stipends

2030 Addison Street, Suite 700

Berkeley, CA 94704 USA

Who Should Apply?

- Students, trainees, or researchers who are new to the field and might not be funded under the main educational stipend program;
- Persons who are already actively involved or about to be actively involved in some aspect of research related to the ISMRM.

Restrictions:

- Applicants cannot have received an Educational Stipend, New Entrant, or E. K. Zavoisky stipend previously;
- Applicants cannot be first or presenting authors on abstracts submitted to the ISMRM program and do not need to submit an abstract to the meeting;
- Applicants are required to attend at least 4 days of the ISMRM meeting, including at least one day of the weekend educational courses.

Application Requirements

(all documents listed below should be sent in electronic format):

- A letter from the applicant which should include a brief statement of their interest in attending the Scientific Meeting and explain how this will relate to their own work;
- A letter of support from the Department Chair stating that the student either will be given the time off to attend and be supported for the remaining cost of the meeting, or will use vacation time and personal funds as needed;
- A curriculum vitae of the applicant;
- Completed online New Entrant Stipend Application Form to be submitted with the application;
- Stipend awards are dispersed to ISMRM members only.



Skill Levels: **Basic** **Intermediate** **Advanced**

**Saturday-
Sunday,
18 -19 April**

MR Engineering: Part I

Brian K. Rutt, Ph.D., Mark A. Griswold, Ph.D., Greig C. Scott, Ph.D.

**SKILL LEVEL:
Intermediate**

This two-day course will explore the engineering issues of hardware components and system design of modern MRI scanners. Lectures are provided in the general topics of magnets, gradients and shims, RF coils and electronics, and system design, and we will cover basic hardware components of an MRI scanner and how they interact;

basic methods for magnet, gradient and shim design; basic types of RF coils, and their design principles; RF electronics that interface with coils; and trade-offs in designing customized NMR/MRI instrumentation. On Saturday, specific topics include: MRI system overview, magnet design and modeling, magnet construction, shim design and

principles, dynamic shimming, gradient coil design and limitations, gradient systems, amplifiers and eddy current compensation, RF electromagnetic modeling, RF engineering principles, experimental animal and micro RF coils, and RF receive-coil arrays.

**Saturday
18 April**

MR Physics for Physicists

Organizers: Michael H. Buonocore, M.D., Ph.D., Michael Markl, Ph.D., and Lawrence L. Wald, M.D., Ph.D.

**SKILL LEVEL:
Intermediate -
Advanced**

This one-day course will explore the physical methods and mathematical models that underlie nearly all research and development in MRI and MR spectroscopy. Lectures will cover the general topics of spin physics, signal detection, generation of contrast, and imaging physics. Specific topics will include quantum mechanical and semi-classical equations for describing spin dynamics, the density matrix formalism

and its applications in MRS, physical mechanisms of hyper polarization, radiofrequency field equations and reciprocity laws for signal detection, sources of noise and limits to SNR, tissue microstructure and molecular factors that govern image contrast, physical mechanism of exogenous and endogenous contrast agents, methods and models to describe magnetization exchange, physics and mathematics

for susceptibility weighted imaging, mathematical description of dynamic equilibrium in fast sequences, calculation of effective relaxation times in fast sequences, applications of advanced electromagnetic theory in imaging, use of magnetization phase in applications, methods for quantitative parameter mapping, and mathematical formalisms for RF pulse design.

**Saturday
18 April**

Body MRI by the Experts

Organizers: Georg Bongartz, M.D., Elmar M. Merkle, M.D., and Clare Tempany, M.D.

**SKILL LEVEL:
Intermediate**

This one-day organ-based course will cover the most common indications in abdominal and pelvic MRI as well as the status quo in terms of hardware and software usage and new cutting edge technologies for the body MR

clinician. Designed for intermediate level clinical radiologists, technologist and physicists, this course will focus on the current role of MR in the workup of patients with abdominal and pelvic conditions, the application of new body

MR techniques in practice to shift patients with abdominal and pelvic conditions from the CT suite to the MR suite, and the use of multiparametric MRI for improved diagnosis.

**Saturday
18 April**

Cancer Imaging I: Tumor Biology and Experimental Models

Organizers: Carles Arús, Ph.D., and Markus Rudin, Ph.D.

**SKILL LEVEL:
Intermediate**

This one-day course is designed to introduce attendees to aspects of carcinogenesis and cancer physiology that are addressable by imaging. Our

scientist-teachers will cover tumor biology, imaging strategies to probe tumor 'hallmarks' eg: proliferation, metabolism, apoptosis, angiogenesis, etc; and use

of imaging tools to demonstrate therapy efficacy. The overall goal of the course is to familiarize attendees with state-of-the-art tumor imaging using MRI techniques.

**Saturday
18 April**

Cellular & Molecular Imaging

Organizer: Patrick Winter, Ph.D.

**SKILL LEVEL:
Basic**

The first part of this one-day course will focus on technological aspects of cellular and molecular imaging, covering the underlying physical principals and design criteria for three primary classes of MRI contrast agents (paramagnetic, super-paramagnetic and activatable agents). The second part will focus on biological labeling techniques, including *in vivo* targeting of MRI contrast agents to biomarkers, labeling strategies for

tracking cellular migration and homing, and cell tracking using methods that produce positive image contrast. The third part will outline diverse applications of cellular and molecular imaging techniques, demonstrating specific contrast agent designs to meet the unique needs of each: ultra-high field imaging, nanotechnology and detection of angiogenesis. The final portion covers the use of molecular and cellular MRI for

detecting and monitoring the response to therapy. In particular, three broad applications will be presented, including two of the most prevalent and debilitating diseases (cancer and cardiovascular disease) and the newly emerging field of gene therapy. Apart from the technological aspects, most of the lectures in the course will highlight recent applications of cellular and molecular imaging in biomedical research.



Skill Levels: **Basic** **Intermediate** **Advanced**

Saturday
18 April

Cardiovascular MRI: Current Applications, Clinical Needs & Technical Developments

Organizers: Subha V. Raman, M.D., Orlando P. Simonetti, Ph.D., and Han Wen, Ph.D.

SKILL LEVEL:
Intermediate

This one-day course will provide an overview of the role of CMR within the spectrum of imaging techniques available for diagnosis and evaluation of cardiovascular disease. State-of-the-art cardiac and vascular imaging techniques will be described in detail by

MRI physicists, and physician experts will identify and demonstrate current clinical applications. Specific topics will include MR angiography, cardiac function, flow, perfusion imaging, tissue characterization and an overview of coming technologies. This course will provide basic background

and an overview of the technology and applications that will be covered in the weekday categorical courses on cardiovascular MRI. Time will be allotted for personal discussion with the teachers.

Saturday
18 April

Quantitative Imaging & Data Analysis

Organizers: Vince D. Calhoun, Ph.D., and Alan Connelly, Ph.D.

SKILL LEVEL:
Intermediate

This half-day course will provide a detailed overview of the methodological issues that are important when undertaking quantitative analyses. It will cover intermediate level topics in quantitative MRI, and presenters will

be physicists and image processing scientists with extensive technical experience. The theory underlying many current approaches to quantification will be discussed, and potential problems and artifacts will be highlighted and explained.

Specific topics will include MR parameter mapping, dealing with data imperfections, image registration, segmentation and morphological analysis, cardiac motion modeling, and spectroscopy modeling and analysis.

Saturday
18 April

Advances in Quantitative MRI of Perfusion

Organizers: Afonso C. Silva, Ph.D., and Matthias J.P. van Osch, Ph.D.

SKILL LEVEL:
Advanced

Cerebral blood flow is of critical importance for the survival of brain tissue because it supports the brain's energy, metabolism and function. Blood flow measurements are an important way

to assess brain tissue viability under normal and pathologic states. This advanced half-day course will cover novel techniques and applications for measuring and interpreting cerebral

perfusion maps under normal physiology and disease. The two sessions will cover measurements of perfusion by bolus tracking and arterial spin labeling.

Saturday
18 April

Crossing Fibers in Diffusion MRI

Organizers: Fernando Calamante, Ph.D., and Derek K Jones, Ph.D.

SKILL LEVEL:
Advanced

Despite its widespread popularity and relative ease of interpretation and implementation, diffusion tensor imaging has some limitations – particularly in image voxels containing more than one dominant fiber orientation. The overall goal of this half-day course is to enable someone with basic familiarity with diffusion imaging to become familiar with

the limitations of DTI and approaches to improve to resolve crossing fibers and thus characterize tissue microstructure more completely. The speakers are mostly basic scientists who are developing new methods to identify and resolve crossing fibers, and will cover basic neuroanatomy, theory of diffusion, data acquisition, choice of analysis

method, validation and the application of such approaches, before considering limitations and areas for future research. There will be formal presentations, as well as opportunities for attendees to speak with the presenters and seek clarification on any point they wish.

Saturday
18 April

Diffusion Tensor MRI for the Clinician & the Neuroscientist: From Experimental Design to Data Analysis

Organizer: Carlo Pierpaoli, M.D., Ph.D.

SKILL LEVEL:
Intermediate

This half-day course is designed for scientists and clinicians starting to work in the field of diffusion tensor MRI who would like to have a roadmap for setting up their studies and interpreting their results. The first half of the course will cover the fundamentals of diffusion

imaging acquisition, experimental design, data analysis and clinical applications, with a lot of practical tips from experts in the field. The second part of the course will be dedicated to providing a comparative review of existing software packages for DT-MRI

processing and analysis, and will include short presentations by their authors. A panel discussion will close the course. Participants should expect to improve their ability to design and carry out DT-MRI clinical studies and better describe potential artifacts and confounds.



Skill Levels: **Basic** **Intermediate** **Advanced**

**Saturday-Sunday,
18 -19 April**

MR Engineering: Part II

Brian K. Rutt, Ph.D., Mark A. Griswold, Ph.D., Greig C. Scott, Ph.D.

**SKILL LEVEL:
Intermediate**

This two-day course will explore the engineering issues of hardware components and system design of modern MRI scanners. Lectures are provided in the general topics of magnets, gradients and shims, RF coils and electronics, and system design, and we will cover basic hardware components of

an MRI scanner and how they interact; basic methods for magnet, gradient and shim design; basic types of RF coils, and their design principles; RF electronics that interface with coils; and trade-offs in designing customized NMR/MRI instrumentation.

On Sunday specific topics include: RF front ends, Introduction to preamplifiers, Introduction to RF power amplifiers, RF volume coils, RF transmit-coil arrays, Multi-tuned coils, RF characterization on the bench, System Design Tradeoffs, and Roll-your-own scanners.

**Sunday
19 April**

Probing Cancer with MR II: From Animal Models to Clinical Assessment

Organizers: Martin O. Leach, Ph.D., and Anwar R. Padhani, MRCP, FRCR

**SKILL LEVEL:
Basic -
Intermediate**

This one-day course focuses on clinical imaging biomarker development with a view to meet current challenges in clinical diagnosis and management and drug development. Didactic lectures will cover the key biological hallmarks of cancers which are assessable by MRI/MRS techniques that are ready for clinical translation (hypoxia, proliferation,

altered metabolism and angiogenesis). For each biomarker, the biological basis, quantification methods, validation and clinical use will be described by pairs of experts (scientist with physician) involved in biomarker development. Emphasis will be placed on biomarker qualification processes including the integration of multi-parametric information using

statistical methods and bioinformatics. The approaches demonstrated will be relevant to other biomarkers and for diagnosis, the assessment of tumor aggressiveness, therapy response and resistance and will be relevant to the development of novel anti-cancer therapeutics.

**Sunday
19 April**

Cancer MR Spectroscopy: Clinical and Research Applications

Organizers: N.R. Jagannathan, Ph.D., and Daniel B. Vigneron, Ph.D.

**SKILL LEVEL:
Intermediate**

This one-day course focuses on cancer and MRS. It is designed for physicians (radiologists and oncologists) and for research scientists who wish to be updated on current state-of-the-art MRS techniques and clinical applications. The first part of the course will describe how MRS is used to evaluate cancers that

occur in various body systems, and will also cover current efforts using MRS for cancer therapy planning and outcome assessment. The focus will be on clinical studies in human patients. This part of the course will introduce the basic technological underpinnings of MRS and discuss the biochemistry and metabolic

features associated with signals that are detected with MRS. The second part will describe how MRS is used for the study of cancer-related animal models and tumor samples, and is intended to prepare participants for new cancer-related MRS applications that may emerge in the next few years.

**Sunday
19 April**

Imaging of the Lower Extremity: From Basics to Advanced Techniques

Organizers: Christine Chung, M.D., Juerg Hodler, M.D., M.B.A., and Hollis G. Potter, M.D.

**SKILL LEVEL:
Intermediate -
Advanced**

This one-day course, in the morning, will provide an intermediate-level overview of current MRI of the lower extremity, including the anatomical basis and optimization of imaging protocols, as well as an introduction into the most common

abnormalities of the corresponding region. The afternoon session will aim at an advanced audience with experience in MRI of the lower extremity. This course will instruct about advanced MR techniques that are not yet in the

clinical mainstream, but are available or will soon become available on clinical MR scanners, including coil technology, advanced functional, dynamic and anatomical imaging.



Skill Levels: **Basic** **Intermediate** **Advanced**

**Sunday
19 April**

Advanced Neuroimaging

Organizers: P. Ellen Grant, M.D., and Pia C. Maly Sundgren M.D., Ph.D.

**SKILL LEVEL:
Intermediate**

This one-day course will provide a comprehensive overview of advanced brain MRI techniques including perfusion (both DSC and ASL), diffusion (including tractography), combined advanced techniques in specific disease processes, MEG, high field MRI, high

field MR spectroscopy and PET-MR. The overall goals of this course are to evaluate the potential role, advantages and disadvantages of bolus perfusion and arterial spin labeling; describe the potential role of DTI and tractography in clinical practice; explain the role of

advanced MR techniques individually and in combination in clinical practice; and describe upcoming imaging technology that may impact clinical practice.

**Sunday
19 April**

fMRI Advanced Issues & Processing Software

Organizers: Peter A. Bandettini, Ph.D., and Ziad Saad, Ph.D.

**SKILL LEVEL:
Advanced**

This one-day course will provide an in-depth and advanced overview of the latest functional MRI processing methods and available software, an in-depth look at the most current concepts in fMRI, as well as the latest assessment of what

are the limits in temporal resolution, spatial resolution, and interpretability. The intended audience is advanced fMRI users and developers - including physicists, statisticians, mathematicians, and clinicians - who are very comfortable

working in highly technical domains that involve processing or pulse programming, but who desire an overview of what's available to help them advance in the field of fMRI methodology.

**Sunday
19 April**

Imaging Strategies

Organizers: Walter Block, Ph.D., Jean H. Brittain, Ph.D., and Brian A. Hargreaves, Ph.D.

**SKILL LEVEL:
Intermediate**

This one-day course will cover methods important for people who want to design or understand imaging pulse sequences and reconstruction methods. It is meant to be a companion course to "MR Physics for Physicists", which will be held the

previous day. This course is composed of four sessions: General Pulse Sequence Strategies, Pulse Sequence Tools, and Tools for Rapid Imaging I & II. It will encompass data collection strategies and their uses, design of pulse sequences to

achieve the desired contrast, addressing patient and physiologic motion, methods for rapid spectroscopic imaging, methods of acceleration, and the basic principles of parallel transmit methods.

**Sunday
19 April**

Clinical MRI: From Physical Principles to Practical Protocols

Organizers: Andrew J. Kiruluta, Ph.D., and Joshua S. Shimony, M.D., Ph.D.

**SKILL LEVEL:
Basic**

This one-day program will begin with a basic overview of MR physics. Then, over the course of the day, M.D.s will use physiological principles and case examples to illustrate the impact of

protocol choices in real world settings. Physics speakers will build on these examples by explaining the underlying principles of MR physics that explain the protocol choices. The presentation

will be an integrated series of lectures, to illustrate protocol choices and trouble shooting tips.



The Scientific Meeting

Scientific Sessions	<p>The formal Scientific Sessions will include:</p> <ul style="list-style-type: none"> • Oral Sessions • Traditional Poster Presentations • Multi-Media Electronic Poster Presentations <p>The content of these sessions will reflect the entire spectrum of submitted papers. This is where participants will present their most recent results. The Society aims to maintain the scientific quality and fair selection of the contributed presentations, based on an anonymous review process involving at least four peers. The composition and themes of the scientific sessions will reflect the number of submissions in a specific category and the most appropriate encompassing topic.</p>										
Oral Sessions	In oral sessions, each author will make a nine-minute presentation, followed by three minutes for discussion.										
Traditional Poster Sessions	<p>A poster session is an informal presentation of the poster with the opportunity for scientific interchange between the authors and other meeting participants.</p> <p>A poster may contain text, graphs, photographs, diagrams, etc., affixed to a poster board so it can be viewed. Specific times for the authors to be present for discussion will be assigned.</p>										
Multimedia Electronic Poster Presentations	<p>Electronic posters will be uploaded to the ISMRM prior to the meeting and will be available for viewing throughout the week on computer kiosks in the poster hall.</p> <p>A multimedia electronic poster session is an informal presentation of the poster at the computer kiosk with the opportunity for scientific interchange between the authors and other meeting participants. Specific times for the authors to be present for discussion will be assigned.</p>										
Plenary Sessions	<p>Preceding the scientific sessions each day, the plenary sessions will cover a broad range of interesting and topical themes.</p> <table border="1" data-bbox="407 982 1336 1182"> <tr> <td>Monday</td> <td>Stroke: A Forward Looking Retrospective on the Role of MR</td> </tr> <tr> <td>Tuesday</td> <td>Molecular MRI: MR Probe Development from Bench to Patient Table</td> </tr> <tr> <td>Wednesday</td> <td>What Have We Learned From NSF?</td> </tr> <tr> <td>Thursday</td> <td>MR Scanners in 2025</td> </tr> <tr> <td>Friday</td> <td>Prostate Cancer: What Every Man of 60 Needs to Know—Biology to Therapy</td> </tr> </table>	Monday	Stroke: A Forward Looking Retrospective on the Role of MR	Tuesday	Molecular MRI: MR Probe Development from Bench to Patient Table	Wednesday	What Have We Learned From NSF?	Thursday	MR Scanners in 2025	Friday	Prostate Cancer: What Every Man of 60 Needs to Know—Biology to Therapy
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Mansfield and Lauterbur Lectures

2009 Mansfield Lecture: Monday, 20 April

Professor Robert G. Shulman, Ph.D.
Yale University, New Haven, Connecticut, USA

“Brain Energy & Brain Work”

Professor Robert G Shulman is the Sterling Professor (Emeritus) of Molecular Biophysics and Biochemistry at Yale University where he is presently Senior Research Scientist in Diagnostic Radiology. His main contribution to *in vivo* magnetic resonance has been the development of Magnetic Resonance Spectroscopy (MRS). With many collaborators he has shown how high resolution NMR *in vivo* (MRS) can measure the flow of ^{13}C enriched substrates such as glucose through pathways in humans particularly when guided by rodent studies. They have shown the flow of glucose to glycogen in the human skeletal muscle to be the major storage pathway for glucose and its down regulation to be the origin of NIDDM. In the brain the flow from glucose to glutamate measured the rate of energy production while the flow from glutamate to glutamine and GABA measured these ubiquitous neurotransmitter fluxes. The high baseline energy usage for the work of neurotransmission shown by these experiments contradicts psychologically based computer-like views of brain function and is allowing mental processes to be explored with the surety of physical science. He has received the Gold Medal of the International Society for Magnetic Resonance in Medicine and is a member of the National Academy of Sciences and of the Institute of Medicine.

2009 Lauterbur Lecture: Thursday, 23 April

Professor Albert Macovski, Ph.D.
Stanford University, Stanford, California, USA

“MRI: A Charmed Past and An Exciting Future”

Professor Al Macovski is the Canon Emeritus Professor of Electrical Engineering & Radiology at Stanford University. His career has concentrated on various aspects of imaging. In the 1950's he worked on color television at RCA Laboratories. He received numerous awards for this work including the International Zworykin Award. In the 1960's he began his work on medical imaging making fundamental contributions to ultrasound including real-time imaging using arrays. In x-ray imaging and computerized tomography he introduced dual-energy imaging for separating bone and soft tissue and non-linear distortion correction. In MRI he pioneered blood vessel imaging and made contributions to high-speed imaging. He is a member of two branches of the National Academy of Science, The National Academy of Engineering and the Institute of Medicine. He is a Fellow of ISMRM, the Institute of Electrical and Electronic Engineering, The Optical Society of America, and The American Institute of Biomedical Engineering. In 1998 he received the Gold Medal from the International Society of Magnetic Resonance in Medicine. Dr. Macovski has over 160 issued U.S. Patents, most of which have foreign counterparts. In 1988 he was honored as Inventor of the Year by the Patent Attorney Association of Northern California.



Tuesday – Friday, 21–24 April 2009

Skill Levels: Basic Intermediate Advanced

<p>Tuesday – Friday, 21-24 April</p>	<p align="center">Image Reconstruction <i>Organizers: Peter Börnert, Ph.D., Klaas Pruessmann, Ph.D., and Jeffrey Tsao, Ph.D.</i></p>	<p>SKILL LEVEL: Intermediate</p>
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This four-hour course is designed for attendees with an interest in the workings and capabilities of contemporary MR image reconstruction and is dedicated to recent advances and directions in

this field. Its eight lectures are grouped around the general themes of extended encoding models, sparse sampling and prior knowledge. Specifically, they will address the principles and practice

of fast non-Cartesian reconstruction, B0 inhomogeneity correction, parallel imaging, sparse sampling, water-fat imaging and motion correction.

<p>Tuesday – Friday, 21-24 April</p>	<p align="center">Safety Update <i>Organizer: Penny A. Gowland, Ph.D.</i></p>	<p>SKILL LEVEL: Basic- Intermediate</p>
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This four-hour course will cover the science of MR safety and its application to safety management. Topics to be

covered include SAR, interactions of tissues with low frequency magnetic fields, safe gradient coil design, implants

and ASTM labeling standards, the new ISO/IEC standard for active implants, accidents, and the risks of acoustic noise.

<p>Tuesday – Friday, 21-24 April</p>	<p align="center">Quantitative Neuro-Anatomic & Functional Image Assessment <i>Organizers: Peter A. Bandettini, Ph.D., and Carlo Pierpaoli, M.D., Ph.D.</i></p>	<p>SKILL LEVEL: Advanced</p>
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This four-hour course will be presented by Ph.D. scientists covering the fundamental issues involved with extracting quantitative information from neuro-anatomic and functional MRI data. Topics to be covered include quantitative assessment of white matter, group

anatomical comparisons, calibration of activation-related and resting state fMRI, and the use of resting-state fMRI data for calibration of activation-related signal. The overall goals of this course are to instruct the MR physicist, neuroscience researcher and clinician on the state

of the art in methods for extracting and comparing quantitative anatomic and functional information from DTI data, standard anatomical data and functional time series data.

<p>Tuesday – Friday, 21-24 April</p>	<p align="center">Mobile Lipids in Disease <i>Organizers: Carles Arús, Ph.D., and Edward J. Delikatny, Ph.D.</i></p>	<p>SKILL LEVEL: Advanced</p>
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This four-hour course will consist of two to three lectures each morning followed by a discussion. Most speakers will be from the NMR field with expertise in detection and interpretation of the NMR visible mobile lipid (ML) region of the ¹H NMR spectrum in humans and

in cell and animal models of human disease. Additional speakers will address the field of lipid metabolism and lipid droplet dynamics. Topics will range from the biochemical and subcellular origin of ML, the dynamics of ML inside cells, their NMR measurable

biophysical parameters, in model systems, cells, biopsies and *in vivo*, and finally the correlation between their MRS observable changes *in vivo* and disease detection and diagnosis (cancer, diabetes, liver disease).

<p>Tuesday – Friday, 21-24 April</p>	<p align="center">Magnetic Resonance in Tissue Engineering <i>Organizer: Richard G.S. Spencer, M.D., Ph.D.</i></p>	<p>SKILL LEVEL: Intermediate</p>
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This four-hour course will offer speakers who are basic scientists engaged in tissue engineering studies, primarily using MR imaging and spectroscopy approaches, with a goal to identify potential research opportunities in tissue engineering in which MR may play an important role

and to encourage such further efforts. Topics to be covered are an overview of the field of tissue engineering, opportunities in tissue engineering related to the capabilities of MR, and current specific applications of MR imaging and spectroscopy to the design

and evaluation of engineered tissue constructs. This includes studies of tissue matrix, angiogenesis, and metabolism. Specific organs to be discussed include cartilage, bone, liver, pancreas, bladder, and others.



Tuesday – Friday, 21–24 April 2009

Skill Levels: **Basic** **Intermediate** **Advanced**

Tuesday – Friday, 21-24 April

Clinical Science for Physicists & Engineers

Organizers: Vivian S. Lee, M.D., Ph.D., Tim Leiner, M.D., Ph.D., and Bachir Taouli, M.D.

SKILL LEVEL: Basic

This four-hour course will focus on basic anatomy, physiology, pathophysiology, epidemiology and clinical information on various organ systems and diseases that are deemed relevant for physicists and engineers. These will include the

central nervous system, kidneys, liver, cardiovascular and musculoskeletal systems and selected diseases in each system. All lecturers are clinicians with strong clinical knowledge of the topic. Talks will also focus on unmet

technical and engineering needs that need to be overcome in the future in order to facilitate better understanding of physiology and diseases.

Tuesday – Friday, 21-24 April

Cardiovascular Imaging: Disease or Problem Based Teaching, Practical Protocols

Organizers: Victor A. Ferrari, M.D., and Stefan G. Ruehm, M.D., Ph.D.

SKILL LEVEL: Basic

This four-hour course will review current cutting-edge topics in cardiovascular MRI that are frequently used to assess patients with cardiovascular diseases. The major emphases of the course will include coronary MRA, right heart failure, ischemic heart disease and 7T cardiovascular MRI. Course instructors are MD's, PhD's (or both), and are

recognized experts in their respective fields. Content will include selection of pulse sequences for optimal disease detection, practical and time-optimized imaging protocols and a thorough review of the potential pitfalls of imaging these patients and disorders. Comparisons and contrasts to other imaging modalities will be presented where appropriate, to

provide attendees with an understanding of the strengths and limitations of current MRI methods. The overall goals are to increase the attendee's knowledge base in these areas, and to inform future clinical imaging decision-making.

Tuesday – Friday, 21-24 April

MRI and MRS of the Mouse Brain: Techniques & Applications

Organizers: Jeffrey R. Alger, Ph.D., and Afonso C. Silva, Ph.D.

SKILL LEVEL: Intermediate

This four-hour course will teach how to perform the following types of mouse brain MRI studies: anatomical (T1- and T2-weighted) imaging, diffusion tensor

imaging, functional imaging and magnetic resonance spectroscopy. Each technical introduction will be followed by a survey of significant biomedical findings that have

been obtained with the particular type of MRI.

Tuesday – Friday, 21-24 April

Unsolved Problems In Musculoskeletal MR: What Do We Know and What Don't We Know?

Organizers: Christine Chung, M.D., Juerg Hodler, M.D., M.B.A., Timothy J. Mosher, M.D., and Hollis G. Potter, M.D.

SKILL LEVEL: Advanced

This four-hour course will discuss four clinically important MSK abnormalities: low back pain, rotator cuff abnormalities, wrist instability and internal derangements of the knee, with two speakers per topic. The first speaker will discuss MR abnormalities without or with limited clinical relevance, such as disk

protrusion, increased signal within the supraspinatus tendon, minor perforations of the central part of the interosseous ligaments and increased signal limited to the substance of the menisci. The second speaker will discuss unsolved problems and unmet needs, which may include diagnosis of lumbar spine

instability, limited diagnostic performance in diagnosing extrinsic ligaments of the wrist, determination of pennation angles of rotator cuff muscles and differentiation of the different structures of the posterolateral triangle of the knee.

Tuesday – Friday, 21-24 April

Hot Topics in Body MRI

Organizer: Talissa Altes, M.D.

SKILL LEVEL: Intermediate

This four-hour course will focus on newer techniques and applications in body MRI. The Tuesday session will provide an overview of pulmonary MRI including new techniques for proton based pulmonary MRI and a review of hyperpolarized gas

MRI. The Wednesday session on pelvic MRI will provide an expert's opinion on how to best image rectal cancer and how to perform and interpret non-neuro fetal MRI. On Thursday, methods for performing MRI guided vascular and non-

vascular interventions will be discussed. In the final session on Friday, the issues related to whole body MRI for cancer assessment and lymph node detection will be presented.



Case-Based Teaching Courses

Monday – Thursday • 20 – 23 April 2009

We welcome your telephone calls to the ISMRM: +1 (510) 841 1899

Skill Levels: **Basic** **Intermediate** **Advanced**

Monday, 20 April	<h3>Soft Tissue Imaging</h3> <p><i>Organizers: Christine Chung, M.D., Juerg Hodler, M.D., and Hollis G. Potter, M.D.</i></p>	SKILL LEVEL: Intermediate
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This course will demonstrate relevant soft tissue abnormalities using a case-based approach. Typical examples will be used for demonstration of adequate imaging protocols, followed by cases

useful for the discussion of indications for MR imaging. The course will concentrate on neoplasm and their mimickers as well as trauma. Participants will learn to plan optimal imaging protocols for the

all relevant soft tissue abnormalities, describe the indications for MRI of specific soft tissue abnormalities and identify four soft tissue abnormalities which radiologists should not miss.

Tuesday, 21 April	<h3>Abdominal Pain</h3> <p><i>Organizer: Elmar M. Merkle, M.D.</i></p>	SKILL LEVEL: Intermediate
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This two-hour session will cover the topic of abdominal pain in various patient populations ranging from trauma patients to the chronically ill. Most of these

patients are currently worked up with CT with the substantial burden of radiation exposure. The status quo as well as new cutting-edge technologies for the body

MR clinician will be presented to explore both the current and future role of MR in the workup of this patient population.

Wednesday, 22 April	<h3>Lower Extremity</h3> <p><i>Organizer: Lynne S. Steinbach, M.D.</i></p>	SKILL LEVEL: Intermediate
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This course will cover cases that outline principles of MR imaging of the lower extremity joints.

Wednesday, 22 April	<h3>fMRI & DTI in Clinical Practice</h3> <p><i>Organizers: Nicola De Stefano, M.D., Ph.D., and Micheal D. Phillips, M.D.</i></p>	SKILL LEVEL: Intermediate
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In this two-hour interactive course, the first speaker will provide a broad overview on how to use fMRI and DTI for clinical assessments of single cases. The second speaker will focus on the

limitations of using this approach to make clinical decisions. Emphasis will be on how to perform studies in the clinical environment, pointing out aspects such as technical procedures, experimental

protocols and patient cooperation. Quality assurance procedure will be described.

Thursday, 23 April	<h3>Manifestations of Systematic Diseases on the Cardiovascular System</h3> <p><i>Organizers: Vivian S. Lee M.D., Ph.D., and Stefan O. Schoenberg M.D.</i></p>	SKILL LEVEL: Intermediate
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This two-hour course is designed for radiology residents and faculty and other interested clinicians. The course will cover the etiology, differential diagnosis, diagnostic work-up, treatment options, and criteria for interpretation of non-atherosclerotic vascular

disease. Participants will learn to list the main differential diagnoses of non-atherosclerotic vascular disease, recognize unique disease patterns for inflammatory and non-inflammatory vessel diseases, interpret MRA and MRI exams of these diseases in a

standardized manner, demonstrate the relevant findings to the referring clinicians and design optimized MR imaging protocols for comprehensive morphologic and functional assessment.

Thursday, 23 April	<h3>Guess That Artifact!</h3> <p><i>Organizers: Mark A. Griswold, Ph.D., and Lawrence L. Wald, Ph.D.</i></p>	SKILL LEVEL: Basic
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In our "Guess That Artifact!" game show, contestants will compete in the evaluation of MR artifacts from the mundane to the esoteric. Emphasis will be placed on the

physical origin and methods for mitigating the artifact. Winners will receive valuable prizes! Each round will be followed by a brief (five-minute) explanation by one

of the hosts. There will be no lovely assistant.



Monday – Thursday • 20 – 23 April 2009

Skill Levels: **Basic** **Intermediate** **Advanced**

Monday, 20 April	Advances in Musculoskeletal MRI <i>Garry E. Gold, M.D., Elmar M. Merkle, M.D., Lynne S. Steinbach, M.D.</i>	SKILL LEVEL: Intermediate
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This course will review practical technical considerations related to musculoskeletal MRI, with an update on state-of-the-art clinical sequences. It will highlight the findings of shoulder instability on MRI and cover the implementation of 3D imaging of joints.

Monday, 20 April	Breast MRI <i>Organizer: Clare Tempany, M.D.</i>	SKILL LEVEL: Intermediate
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This breast session is a two-hour program, with 4 internationally renowned expert speakers. The topics to be covered are MR and pathological characterization of breast cancer, breast MRI update on new techniques - 3T vs. 1.5T, assessment of treatment response and MR-guided breast FUS. The goal is to provide an update on breast MR techniques, how to optimize protocols, assess the advantages of 1.5 and 3.0T approaches and assess the role of imaging in treatment response and MR-guided focused ultrasound surgery for breast cancer.

Monday, 20 April	Rise & Fall of the Brain, Part I: The Developing Brain <i>Organizers: P. Ellen Grant, M.D., and John Port, M.D., Ph.D.</i>	SKILL LEVEL: Intermediate
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In this two-hour course, the first of each pair of speakers will provide a broad overview of normal brain development and current MRI techniques (how I do it), while the second speaker will focus on the MR appearance of various developmental brain abnormalities that can occur. The first pair of speakers will explore fetal brain development (18-40 weeks GA), discussing abnormalities as well as the technical limitations and detectability issues involved with fetal MRI. The second pair of speakers will explore normal brain development in postnatal infants and abnormalities in brain myelination.

Monday, 20 April	Tools and Tips for Mouse Imaging & Spectroscopy <i>Organizer: Carles Arús, Ph.D., and Klaas Nicolay, Ph.D.</i>	SKILL LEVEL: Basic
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This two-hour course deals with the practicalities of MR imaging and spectroscopy of mice. A significant fraction of the biomedical MR research that is done worldwide involves studies on small animal models (predominantly mice). Working with such small animals often requires very specific solutions in terms of MR hardware (RF and gradient coils), shimming procedures, physiological monitoring approaches, etc. Topics to be covered are anesthesia and physiological monitoring procedures, wild-type and genetically modified animal models, high-resolution whole-body imaging, ultra-small voxel spectroscopy, the use of whole-body MRI scanners for studies on mice and the design of dedicated mouse RF coils.

Monday, 20 April	SMRT-ISMRM Forum: How to Perform a Multi-Site Neuro-Imaging Study <i>Organizers: Gary H. Glover, Ph.D., Bryon A. Mueller, Ph.D., Caron Murray, M.R.T.(R), (MR), and Douglas C. Noll, Ph.D.</i>	SKILL LEVEL: Basic
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This joint SMRT-ISMRM program is aimed at technologists/radiographers, as well as clinicians and scientists. It will cover the design and implementation of multi-center MR neuro-imaging studies. The importance of scanner QA, parameter selection and vendor compatibility will be discussed, as will the lessons learned from multi-center structural, diffusion tensor, functional and perfusion studies.

Tuesday, 21 April	Extracranial Diffusion-Weighted Imaging <i>Organizer: Bernard E. Van Beers, M.D., Ph.D.</i>	SKILL LEVEL: Intermediate
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This two-hour course will be given by M.D.'s, and will cover new, cutting-edge clinical applications of DW-MRI in the body, including the assessment of diffuse liver and kidney diseases, the evaluation of tumorous abdominal lesions, and the monitoring of the response to targeted treatment, current techniques and optimization of DW-MRI in the body, including whole-body DW-MRI, the value and limitations of qualitative and quantitative DW-MRI of the body in comparison with other imaging methods and the needs for future development of DW-MRI.

Monday – Thursday • 20 – 23 April 2009

Skill Levels: **Basic** **Intermediate** **Advanced**

Tuesday,
21 April

Atherosclerosis Imaging

Organizers: *Debiao Li, Ph.D., and Orlando P. Simonetti, Ph.D.*

SKILL LEVEL:
Intermediate

This two-hour course will consist of talks by physicians and basic scientists, followed by a panel discussion. The principal topics to be covered will be plaque biology, current applications/clinical trials of MR atherosclerosis imaging, non-contrast MR techniques for atherosclerosis imaging and targeted

contrast techniques for atherosclerosis imaging. The goal is to provide a comprehensive overview of plaque biology and state-of-the-art MRI techniques for atherosclerosis imaging of the entire body. Attendees will come away with a systematic understanding of the relationships between atherosclerosis

and cardiovascular disease and between imaging characteristics and plaque components. Attendees will also learn the appropriate MRI protocols for atherosclerosis imaging, including conventional methods and targeted contrast-enhanced techniques under testing in animal models.

Tuesday,
21 April

Advances in MR Angiography

Organizers: *Garry E. Gold, M.D., Elmar M. Merkle, M.D.*

SKILL LEVEL:
Intermediate

This two-hour course will review practical technical considerations related to MRA,

with an update on state-of-the-art body work. It will highlight a comparison of

contrast-enhanced and unenhanced body MRA

Tuesday,
21 April

Fat Imaging and Quantification

Organizer: *Mark Schweitzer, M.D.*

SKILL LEVEL:
Intermediate

This two-hour course designed for physicists, basic scientists and clinicians will review the imaging of fat in its various

manifestations. The topics to be covered are different types of fat suppression, post-processing segmentation of fat

and physiologic and pathophysiologic aspects of fat in the abdomen and musculoskeletal system.

Tuesday,
21 April

Image Analysis

Organizers: *Douglas C. Noll, Ph.D., Henry Rusinek, Ph.D., and Simon K. Warfield, Ph.D.*

SKILL LEVEL:
**Basic-
Intermediate**

This two-hour course designed for M.D.s and Ph.D.s will present introductory material on tools and practical

aspects of image processing of MR data. In particular, it will cover image processing algorithms and tools for

image segmentation, structure analysis, registration, image formats and dynamic contrast enhanced (DCE) imaging.

Wednesday,
22 April

Imaging of the Fetus & Newborn

Organizers: *Petra S. Hüppi, Ph.D., and Pek Lan Khong, M.D.*

SKILL LEVEL:
Intermediate

This two-hour course for physicians, radiologists and scientists aims to highlight the techniques, challenges and clinical applications of MR imaging in the fetus and newborn. The course will be presented in lectures by clinicians and scientists, each followed by discussion.

The audience will be able to appreciate the novel developments in techniques, especially with respect to motion, and the contribution of MRI in various pathologies in the fetus and newborn, including the interpretation of timing of injury in perinatal asphyxia by MRI and MRS, the

diagnosis of biliary and ductal anomalies by MRCP, the clinical implications and management of ventriculomegaly in the fetus and newborn and the implementation and applications of DWI in the fetal brain.

Wednesday,
22 April

Sports Imaging: Elbow

Organizers: *Juerg Hodler, M.D., and Timothy J. Mosher, M.D.*

SKILL LEVEL:
Intermediate

The speakers in this two-hour course will be clinical experts in elbow MRI, and the principal topics they will cover are technical aspects and normal anatomy

in elbow MRI, MRI findings of elbow injury, and patterns of elbow instability. The overall goals of the course are to improve MRI diagnosis of elbow internal

derangement, and to enable attendees to recognize the important technical challenges in high quality elbow MRI.



Wednesday, 22 April

The Use of Intravenous Contrast in MRI

Organizers: Marco Essig, M.D., Ph.D., and Pia C. Maly Sundgren, M.D., Ph.D.

SKILL LEVEL: Intermediate

The first hour of this two-hour course will cover MR contrast media, and will include suggestions on which dosages to use depending on the clinical question and where the new contrast agents can be useful; the use of contrast media dosages at high field, especially current contrast media; which dosages to give

and differences in the use of contrast media when working with high field; and an overview of present NSF knowledge, clinical applications and appropriate guidelines for use of contrast media. The second hour will include use of contrast media in pregnant women and infants; alternative sequences when contrast

media cannot be used; whether there is a real need for contrast media in most clinical questions in infants, with special attention to neuroimaging; and what are the alternatives when contrast cannot be used for different reasons.

Wednesday - Thursday, 22 - 23 April

Imaging Biomarkers, Part 1 and Part 2

Organizers: H. Cecil Charles, Ph.D., and Jeffrey L. Evelhoch, Ph.D.

SKILL LEVEL: Basic

This course will introduce biomarker principles, how imaging is used as a biomarker in general and how imaging biomarkers are used in several specific diseases. It is comprised of two two-hour sessions with four presentations (followed by short question and answer periods) by scientists and physicians

actively involved in the use of MR biomarkers in each session. The first session will provide a broad introduction to biomarkers (both imaging and non-imaging), how they are used, how they are qualified to be fit for their intended use and what is needed to implement MR biomarkers in a multi-center

clinical trial. The second session will present examples of how imaging biomarkers (including, but not limited to MR) are used in multiple sclerosis, oncology, cardiovascular diseases and neurodegenerative diseases.

Thursday, 23 April

Rise & Fall of the Brain, Part 2: Aging Brain

Organizers: Pia C. Maly Sundgren, M.D., Ph.D., and Mark A. van Buchem, M.D., Ph.D.

SKILL LEVEL: Intermediate

This two-hour course will begin with a focus on the variations of normal aging that can occur. We will explore the normal aging process, the underlying physiology of normal aging and what can be seen in imaging of the elderly brain. We will provide a look at the underlying pathophysiology to pathological aging, and especially focus on abnormal aging,

including Alzheimer's disease and other forms of dementia. Also covered will be imaging techniques to use in a demented and sometimes uncooperative patient, and findings at imaging that can help to separate different forms of dementia based on the imaging pattern. The course will continue with different pathologies such as small vessel disease

and psychiatric diseases in the elderly patient. Speakers will discuss underlying pathophysiology to small vessel disease and imaging findings, different psychiatric diseases that can occur in the elderly population, imaging techniques/modalities and imaging findings.

Thursday, 23 April

Grant Writing: Prospects, Pearls & Pitfalls

Organizers: Richard L. Ehman, M.D., and Mark A. van Buchem, M.D., Ph.D.

SKILL LEVEL: Intermediate

This course will start with short updates on some of the most promising grant funding opportunities for MRI researchers. Speakers will describe strategies for writing successful

grant applications, avoiding the most common pitfalls, moving forward after an unsuccessful application, and appreciating the perspective of referees. The session will conclude with

a moderated panel discussion to elicit helpful "pearls" from the experienced speakers, and to respond to audience questions.

Monday - Thursday, 20 - 23 April

MR Physics & Techniques for Clinicians

Organizers: Marcus Alley, Ph.D., and Frank R. Korosec, Ph.D.

SKILL LEVEL: Basic Intermediate

This eight-hour course will be a basic but comprehensive review of MRI physics and techniques. The presentations will be non-mathematical and will be suitable for clinicians and physicists new

to the field. The course will cover the basic principles of MR physics (signal generation, encoding, and relaxation), pulse sequence timing diagrams, spin-echo imaging, gradient-echo imaging,

and fast spin-echo imaging, and a variety of more advanced techniques including ultra-fast imaging, parallel imaging, high-field imaging, perfusion imaging, diffusion imaging, and functional MR imaging.

New
This
Year!

Advances in Clinical Musculoskeletal, Breast and Body Imaging

Garry E. Gold, M.D., Elmar M. Merkle, M.D., Lynne S. Steinbach, M.D.

**Saturday-
Wednesday
18-22 April**

**For course
overviews
and skill
levels, please
see pp 6-16**

The ISMRM is excited to present this inaugural CME course intended for radiologists and other medical professionals who are interested in increasing their clinical knowledge for interpretation of MR imaging of the musculoskeletal system, body and breast. This course will run concurrently with the annual ISMRM meeting sessions and will incorporate some of the didactic and poster material from that meeting along with exclusive additional lectures for registrants.

Through a series of lectures, exhibits, panels, case reviews, and interactions with the faculty, attendees will be updated on practical and state-of-the-art aspects of MR imaging including anatomy, pathology and technical factors and innovations. There will also be the opportunity to attend ISMRM Annual Meeting lectures on hot topics in MRI such as nephrogenic systemic fibrosis, unmet needs of MRI in various areas, and application of the newest hardware, coils and sequences in the field. The registrants will have time during and after the course to review scientific posters and to attend the wide array of other sessions of the main ISMRM meeting.

Educational Objectives:

Upon completion of the course, registrants should be able to:

1. Use optimized protocols for imaging the musculoskeletal system, body, and breast;
2. Describe anatomy, normal variants and pitfalls in MRI of the body and musculoskeletal system;
3. Diagnose pathology on MRIs of the musculoskeletal system, body and breast;
4. Utilize recent updates in the field of MRI; and
5. Describe current MRI approaches for a large variety of abnormalities and pathological conditions in the musculoskeletal system, body and breast.

Saturday, 18th April	Sunday, 19 April	Monday, 20 April	Tuesday, 21 April	Wednesday, 22 April
<i>Body MRI by the Experts</i>	<i>Imaging of the Lower Extremity: From Basics to Advanced Techniques</i>	<ul style="list-style-type: none"> • <i>Advances in Musculoskeletal MRI</i> • <i>Breast MRI</i> • <i>Case-Based Teaching I: Soft Tissue Imaging</i> <p>Optional:</p> <ul style="list-style-type: none"> • <i>MR Physics & Techniques for Clinicians</i> 	<p><i>Hot Topics in Body MRI</i></p> <p>OR</p> <ul style="list-style-type: none"> • <i>Unsolved Problems in Musculoskeletal MR: What Do We Know and What Don't We Know?</i> • <i>Advances in MR Angiography</i> • <i>Extracranial Diffusion-Weighted Imaging</i> • <i>Case-Based Teaching II: Abdominal Pain</i> <p>Optional:</p> <ul style="list-style-type: none"> • <i>MR Physics & Techniques for Clinicians</i> 	<ul style="list-style-type: none"> • <i>Hot Topics in Body MRI</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Unsolved Problems in Musculoskeletal MR: What Do We Know and What Don't We Know?</i> • <i>ISMRM Plenary Session: What Have We Learned from NSF?</i> • <i>Sports Imaging: Elbow</i> • <i>Case-Based Teaching III: Lower Extremity</i> • <i>Case-Based Teaching IV: fMRI & DTI in Clinical Practice</i> <p>Optional:</p> <ul style="list-style-type: none"> • <i>MR Physics & Techniques for Clinicians</i>

Deadline: 23 January 2009

Sounds & Visions of MR 2009

Deadline: 23 January 2009

Let your MR system talk, sing, scream, dance, play games or whatever; compose a live performance to accompany your MR audiovisual impressions! Don't miss this chance to get creative with your MR scanner! All directions of music and performances involving MR are welcome. No limits!

For those of you who are still thinking about how to use your MR scanner for doing anything but acquiring routine patient images/spectra, the 17th Scientific Meeting & Exhibition in Honolulu will revive the success of Glasgow, Hawaii, and Seattle and feature the 4th audiovisual/live performance session "Sounds & Visions of MR 2009: The Return of Aloha." Every sound or visual effect generated by an MR scanner and its related hardware is welcome. Beyond pure sounds and visions of MR, consider putting together a live performance to enhance your impact factor. Sample sequences, generate a beat – be creative and put everything together in an audiovisual presentation. Consider creating an association with Hawaiian culture. Deadline for the submission of sample audiovisual files on CD-ROM will be 23 January 2009.



The Return of

Aloha!

Let your MR system

talk!

sing!

scream!

dance!

play games!

or

whatever!

For further information please contact:

Harald H. Quick

Tel.: ++49 201 723 5555

Fax.: ++49 201 723 1595

E-mail:

harald.quick@uni-duisburg-essen.de

or

Mark E. Ladd

Tel.: ++49 201 723 1541,

Fax.: ++49 201 723 1595

E-mail:

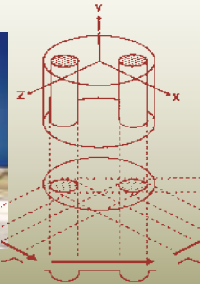
mark.ladd@uni-duisburg-essen.de

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For more information or to join over 5,700 of your peers in the international MR community, visit:

<http://www.ismrm.org>

- Stay current with clinical and scientific developments: Print and/or electronic access to one or both of the official Society journals (JMRI or MRM), as well as access to over 2,500 scientific oral presentations from annual meetings and scientific workshops;
- Network with today's MR leaders: ISMIRM events, conferences, as well as study group and chapter meetings, provide you with unsurpassed opportunities to meet leading MR professionals, and the online membership directory provides another key networking resource!
- Engage yourself: Volunteer for abstract review, committee, study group and/or chapter membership and leadership.
- Learn and enhance your career: Educational opportunities include ISMIRM scientific workshops, courses, annual meetings, e-learning – all at reduced rates for members.
- Receive discounted rates on resources through the ISMIRM Web site, including the Bookstore and the Career Center.



Choose from three ISMIRM membership categories: Full, Student, or Associate

Category	Qualifications	Submission Requirements
Full Membership <i>Full members have the right to vote and hold office.</i>	An individual who is involved in magnetic resonance in medicine, biology, or other related topics, in research, education, manufacture, or practice.	The applicant must be sponsored by one Full Member of the Society, and submit one copy of his/her curriculum vitae with, where possible, a list of peer-reviewed publications in the field of MR. Do not include abstracts or book chapters.
Student Membership	An individual enrolled full-time in an academic program that actively engages in the application of magnetic resonance in medicine and biology.	The applicant must be sponsored by one Full Member of the Society, and submit one copy of his/her abbreviated curriculum vitae and a brief statement on letterhead signed by a department head/advisor which describes the training program, type of degree, field of study, and expected date of completion by the applicant. Eligibility for student membership must be confirmed annually.
Associate Membership	An individual residing in a financially restricted country, who has limited personal income. The individual seeking membership must be involved in magnetic resonance or its applications through publication, education, manufacture, or practice. The maximum annual income allowed for Associate Membership is the equivalent of US\$10,000.	The applicant must be sponsored by one Full Member of the Society, submit one copy of his/her abbreviated curriculum vitae and a letter from the applicant, the employer, or a governmental authority verifying that the normal membership dues would constitute an excessive financial hardship. The currently defined list of countries whose nationals may qualify for Associate Membership is Bulgaria, China, India, Lithuania, Macedonia, Moldova, Romania, Slovak Republic, and Thailand. Other countries will be considered by the Board of Trustees on a case-by-case basis.

"Our diverse international fellowship of clinicians, engineers, physicists, biochemists and technologists share a passion for advancing magnetic resonance in medicine. By becoming a member of the ISMIRM, you will enjoy incomparable opportunities for intellectual exchange and lifelong friendships. As President and long-time member of the Society, I invite you to join us!"

–Vivian S. Lee, M.D., Ph.D., M.B.A.
ISMIRM President, 2008-2009

Calendar

ISMIRM membership runs on a calendar year basis and is effective 1 January through 31 December. Membership applications may be submitted year-round.

Applications submitted between:

- ◆ 1 January and 30 September are effective for the current calendar year. Approved applicants will receive all publications mailed since 1 January, and will be invoiced in October for the following year's dues.

- ◆ 1 October and 31 December are effective for the following calendar year. Benefits will begin on 1 January.

Dues payment method

(Please note:

wire transfers are not accepted.)

Checks are accepted. Checks must be payable "to" (not "through") a U.S. bank in US Dollars and must be imprinted with the computer encoding and routing information authorized by the American Banking Association. Non-US checks made payable in US Dollars to a US bank, as above, are the only acceptable non-US checks.

The following credit cards are accepted: VISA, MasterCard, and American Express.



Please send application and all materials to ISMRM:

P.O. Box 45690 • San Francisco, CA • 94145-0690, USA • Phone: +1 510 841 1899 • Fax: +1 510 841 2340 • E-mail: info@ismrm.org • Web site: http://www.ismrm.org

Name: _____

Gender: Male Female

Date of Birth: _____

Family Name _____

First/Given Name _____

Middle Name _____

How did you become aware of ISMRM membership? Colleague Journal Ad Annual Meeting/Workshop Mailing Other: _____

Honorific:	Date of Degree	Professional Classification	Primary field of endeavor:		Professional affiliations (check as many as apply)		
			BASIC SCIENCE	CLINICAL SCIENCE	AAN	AAPM	ACR
<input type="checkbox"/> M.D.		<input type="checkbox"/> Basic Scientist	<input type="checkbox"/> Biochemistry	<input type="checkbox"/> Cardiology	<input type="checkbox"/> AAN	<input type="checkbox"/> AAPM	<input type="checkbox"/> ACR
<input type="checkbox"/> M.D. Candidate		<input type="checkbox"/> Clinical Scientist	<input type="checkbox"/> Biophysics	<input type="checkbox"/> Internal Medicine	<input type="checkbox"/> ASNR	<input type="checkbox"/> IEEE	<input type="checkbox"/> ESMRMB
<input type="checkbox"/> Ph.D.		<input type="checkbox"/> Educator	<input type="checkbox"/> Chemistry	<input type="checkbox"/> Molecular Imaging	<input type="checkbox"/> JSMRM	<input type="checkbox"/> NASCI	<input type="checkbox"/> RSNA
<input type="checkbox"/> Ph.D. Candidate		<input type="checkbox"/> Industrial Management	<input type="checkbox"/> Drug Development	<input type="checkbox"/> Neurology	<input type="checkbox"/> SCMR	<input type="checkbox"/> SMI	<input type="checkbox"/> SNM
<input type="checkbox"/> Professor		<input type="checkbox"/> Radiologist	<input type="checkbox"/> Engineering	<input type="checkbox"/> Oncology	ISMRM makes its member list available to a few, carefully screened companies. If you DO NOT wish to be included, check here: <input type="checkbox"/>		
<input type="checkbox"/> RT		<input type="checkbox"/> Radiology Support Personnel	<input type="checkbox"/> Mathematics	<input type="checkbox"/> Psychiatry			
<input type="checkbox"/> Other: _____		<input type="checkbox"/> Other: _____	<input type="checkbox"/> Molecular Imaging	<input type="checkbox"/> Radiology			
(For Office Use Only) Date Received: ____/____/____			<input type="checkbox"/> Oncology	<input type="checkbox"/> Surgery			
Member ID: _____			<input type="checkbox"/> Physics	<input type="checkbox"/> Other: _____			
CV Received: <input type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Physiology	Send annual renewal notice to my: <input type="checkbox"/> Institution <input type="checkbox"/> Home			
Income Received: <input type="checkbox"/> Yes <input type="checkbox"/> No SVL Received _____			<input type="checkbox"/> Other: _____	Send journals and correspondence to my: <input type="checkbox"/> Institution <input type="checkbox"/> Home			
Sponsor ID: _____							

CONTACT INFORMATION	Institution Contact Information	Institution Name:	Home Contact Information	
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	City & State/Province:		City & State/Province:	
	Country & Postal Code:		Country & Postal Code:	
	Telephone:		Telephone:	
	Fax:		Fax:	
	Email:		Email:	

STUDY GROUPS	
<input type="checkbox"/> Cardiac MR	<input type="checkbox"/> MR in Drug Research
<input type="checkbox"/> Current Issues in Brain Function	<input type="checkbox"/> MR of Cancer
<input type="checkbox"/> Diffusion & Perfusion MR	<input type="checkbox"/> MR Safety
<input type="checkbox"/> Dynamic NMR Spectroscopy	<input type="checkbox"/> Molecular & Cellular Imaging
<input type="checkbox"/> High Field Systems & Applications	<input type="checkbox"/> Musculoskeletal Imaging
<input type="checkbox"/> Hyperpolarized Noble Gas MR	<input type="checkbox"/> Psychiatric MRS & MRI
<input type="checkbox"/> Interventional MR	<input type="checkbox"/> White Matter Diseases
<input type="checkbox"/> MR Engineering	<input type="checkbox"/> Susceptibility Weighted Imaging
<input type="checkbox"/> MR Flow & Motion Quantitation	

2009 MEMBERSHIP DUES	
Membership is effective from 1 January–31 December of the year the application is approved. Dues remittance must accompany the membership application submission.	
<input type="checkbox"/> Full Member with one journal* (<input type="checkbox"/> JMRI or <input type="checkbox"/> MRM)	US \$270
<input type="checkbox"/> Full Member with both journals*	US \$375
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<input type="checkbox"/> Student Member with one journal* (<input type="checkbox"/> JMRI or <input type="checkbox"/> MRM)	US \$135
<input type="checkbox"/> Student Member with both journals*	US \$240
<input type="checkbox"/> Associate Member (Choose one electronic-only journal: <input type="checkbox"/> JMRI or <input type="checkbox"/> MRM)	US \$30
* I prefer to receive my journal(s): <input type="checkbox"/> In print form & electronic form <input type="checkbox"/> In electronic form only	

If paying by check, make payable to ISMRM. To pay by credit card, please complete below:

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Calculate your membership fees here. All fees must be in US Dollars

Study Group Dues: (No charge for Students or Associates)

Number of study groups ____ x US \$20.00 = _____

2009 Membership Dues: _____

Total amount enclosed US \$ _____

Thank you for your application. Please review and note:

ALL APPLICANTS MUST SUBMIT:

- Membership Dues
- Completed application
- One (1) copy of current CV
- Application with sponsor Signature

STUDENT APPLICANTS MUST ALSO SUBMIT:

- Letter of student verification

ASSOCIATE MEMBER APPLICANTS MUST ALSO SUBMIT:

- Income Verification form (Please request from ISMRM)

Applicant Signature: _____ Date: _____

Sponsor Signature: _____

Sponsor Name (please print): _____

I do not know a Full Member of the Society

On 1 January 1994, the Society of Magnetic Resonance in Medicine and the Society of Magnetic Resonance Imaging merged to form the Society of Magnetic Resonance (now named the International Society for Magnetic Resonance in Medicine). The first annual meeting of the merged Society was held in Dallas, Texas, USA, in March 1994. The most recent annual meeting was held in Toronto, Ontario Canada, 3-9 May 2008.

The International Society for Magnetic Resonance in Medicine is an international, nonprofit, scientific association whose purpose is to promote communication, research, development, and applications in the field of magnetic resonance

in medicine and biology and other related topics and to develop and provide channels and facilities for continuing education in the field. Its multidisciplinary membership of over 5,000 consists of clinicians, physicists, engineers, biochemists, and technologists.

In addition to its large scientific meeting, the Society organizes workshops and publishes two journals, Magnetic Resonance in Medicine and the Journal of Magnetic Resonance Imaging, and a newsletter, MR Pulse. It also sponsors study groups on specific areas of scientific interest and chapters based on geographical location.

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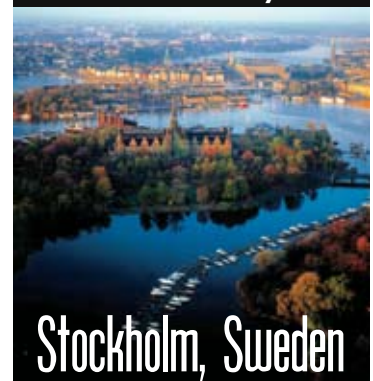
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2010: 1-7 May



Stockholm, Sweden

MARK YOUR
 CALENDAR
 for the
 Joint Annual Meeting
 ISMIRM-ESMRMB



SMRT 18th Annual Meeting Program Schedule
“Evolution of MR Innovation”

SMRT Poster Walking Tour Reception – Friday, 17 April 2009, 6:00 pm

SMRT 17th Annual Meeting
Honolulu, Hawai'i, USA, Hawai'i Convention Center

The Program and Education Committees would like to invite technologists from around the world to attend the 18th Annual Meeting of the Section for Magnetic Resonance Technologist. Our meeting will be held 18th -19th of April 2009 in conjunction with the 17th Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine at the Hawai'i Convention Center, Honolulu, Hawai'i , USA.

The goal of the SMRT is to provide quality educational opportunities for the MR technologist/radiographer and to establish and maintain a high level of professionalism in the field. Two of the most regarded and effective components of the meeting continue to be the proffered papers and poster presentation. We widely encourage technologists from around the world to submit abstracts for oral or poster presentation. The poster exhibition and walking tour will be a key event on Friday evening prior to the weekend program. This is a great opportunity to meet other registrants and see the outstanding standard your colleagues are producing both in scientific and clinical environments. The meeting program allows for seven oral presentations. These presentations will be made by the authors of the top scoring abstracts. Abstracts with either a clinical or research focus will be accepted until 7 January 2009. Online abstract instructions and submissions will be available on the SMRT website: <http://www.ismrm.org/smrt>.

This program offers a diverse range of forums including MR technology updates, safety, 3T, abdominal, pediatric, neuro, and emerging technologies such as molecular, ultrashort TE (UTE), and lung imaging. The SMRT Business Meeting will be held before lunch on Saturday. The Business Meeting is an open session to learn what the SMRT is doing to further its mission and goals. This is an important part of the meeting where you as a member get to voice your questions and opinions to the SMRT Policy Board. Sunday afternoon awards will be presented to our members who have helped fulfil the SMRT's commitment to excellence in MR education. Awards will also be presented to the authors of the most outstanding papers and posters in the clinical and research focus area.

Please be sure to attend the SMRT and ISMRM Joint Forum presentation which will be held at 14:00, Monday, 20 April 2009. Your registration for the SMRT Annual Meeting allows you to attend this forum. This year the forum topic is titled “How to Perform a Multi-site Neuro-Imaging Study.” Caron Murray, MRT(R)AC(CT)(MR) and Douglas C. Noll, Ph.D. will moderate the joint forum. Expert speakers will include Gary Glover, Ph.D., Matt Bernstein, Ph.D., Carlo Pierpaoli, M.D., Ph.D., Xavier Golay, Ph.D., and Maureen Ainslie, M.S., R.T., (R)(MR). The joint forum, by design, is a grand collaboration of energy and talent between the ISMRM and the SMRT which continuously promotes the highest quality of education in the MR world.

The SMRT was established to provide superior educational opportunities for technologist/radiographers as well as a forum for members to collaborate with and learn from each other. The 2009 Annual Meeting is dedicated to providing these numerous important tools. On behalf of the 2009 Program and Education Committees, we are pleased to invite you to join us in Honolulu for a celebration of evolution of MR innovation.

Time	Saturday, 18 April, 2009	Time	Saturday, 18 April, 2009
07:00	Registration	07:30	Registration
07:45	Welcome & Announcements Wendy Strugnell, BAppSc (MIT), SMRT President 2008-2009 Ben Kennedy, BAppSc (MIT) MMRT, SMRT Program Chair 2009	07:45	Welcome & Announcements Pam Vincent, MPA, R.T., (R)(CT)(MR), SMRT President 2009-2010 Ben Kennedy, BAppSc (MIT) MMRT, SMRT Program Chair 2009
	Moderator: Jane Francis, DCR, (R) DNM		Moderator: Sonja Robb-Belville, B.S., R.T., (R) (MR), SMRT Education Chair 2009
08:00	MRI Physics and Technology Forum Understanding K-Space: An Intuitive Approach Donald Plewes, Ph.D. Overview of MR Pulse Sequences William Faulkner, B.S., R.T., (R)(MR)(CT)	08:00	Pediatric MRI Forum Pediatric Scan Optimization Floyd Knight, R.T. (R)(MR) Pitfalls in Pediatric Image Interpretation Denis Atkinson, Jr., M.D. Congenital Heart MRI Stephan Darty, B.S., R.T., (N)(MR)
10:00	Break	10:00	Break
	Moderator: Randy Earnest, B.S., R.T., (R)(MR)		Moderator: Ashok Saraswat, M.S., Bed. R.T., (R)(MR)
10:20	MRI Safety and Patient Management – Update 2009 Frank Shellock, Ph.D., FACC, FACSM	10:20	Neuro MRI Forum Advances in Epilepsy Imaging Robert J. Witte, M.D. Principles and Practices of Functional MRI Barry Southers, BRST, R.T., (R)(MR) (Some of) What You Always Wanted to Know About DTI - But Were Afraid to Ask Derek K. Jones, Ph.D.
11:20	SMRT Business Meeting	12:20	SMRT Luncheon
12:00	SMRT Luncheon		Moderator: Joseph Castillo, B.Sc., M.Sc.
	Moderator: Maryann Blaine, MAT, B.S., R.T., (R)(MR)	13:00	Proffered Papers
12:45	Proffered Papers/President's Award Paper	13:30	Clinical Musculoskeletal Imaging Forum MRI of the Ankle and Hind Foot John Skinner, M.D. MRI of the Hand and Wrist Kimberly Amrami, M.D.
13:45	Optimizing Your 3T Imaging William Faulkner, B.S., R.T., (R)(MR)(CT)	14:30	SMRT Awards Presentation
14:45	Break	14:45	Break
	Moderator: Anna Kirilova, B.Sc., R.T., (R)(MR)		Moderator: Anne Marie Sawyer, B.S., R.T., (R)(MR)
15:00	Body MRI Forum Body MRI: Pathology and Techniques Nancy Talbot, MAppSc, M.R.T., (R)(MR) MRI of the Prostate Masoom Haider, M.D. How to Interpret Hepatic MRI Jeffrey Weinreb, M.D.	15:00	Emerging Technologies Forum Ultra Short TE Imaging Graeme M. Bydder, M.B., Ch.B. Updates in Molecular Imaging Michael Moseley, Ph.D. Hyperpolarized Helium Lung Imaging Cynthia C. Harper Little, R.T., (R)(MR)
17:00	Announcements/Close	17:00	Announcements/Adjourn





SMRT OBJECTIVES

The Section for Magnetic Resonance Technologists (SMRT) is the leading organization providing an international forum for education, information, and research in magnetic resonance for MR technologists and radiographers throughout the world. The SMRT operates as a section of the International Society for Magnetic Resonance in Medicine (ISMIRM) and strives to promote a high level of knowledge and professionalism in the field of MR technology and radiography.

The objectives of the SMRT are to advance the education, training, and quality of MR technologists and radiographers, and to promote world-wide communication and dissemination of information relevant to the field. The SMRT works with other professional organizations throughout the world to accomplish these objectives.

SMRT MEMBERSHIP BENEFITS

As an SMRT member you receive ...

SMRT Educational Benefits

- Reduced fees for all accredited SMRT and ISMIRM Annual Meetings, Workshops and Regional Seminars;
- Quarterly accredited *Educational Seminars* home study articles specific for the MR technologist/radiographer;
- Earn your all of your continuing education credits electronically on the SMRT website. Complete the quarterly *Educational Seminars* and *Electronic Home Studies* post quiz and receive your CE Certificate of Completion all on-line;
- Full library of all back issues of the SMRT accredited *Educational Seminars* home studies are available for purchase;
- SMRT electronic newsletter – *Signals* – The information to keep current on SMRT news, MR safety, and upcoming events;
- SMRT Continuing Education Credit Activity Report, receive an annual record of all your CE credits earned through SMRT educational programs;
- Reduced subscription rate to the ISMIRM journals: *Journal of Magnetic Resonance Imaging* (JMIRI) and *Magnetic Resonance in Medicine* (MRM);
- Join any of the 17 ISMIRM Study Groups for free. Visit <http://www.ismrm.org/study.htm> for Study Group information;
- Online SMRT and ISMIRM Membership directory.

SMRT Educational Opportunities

Local Chapters

- Educational opportunities in your local area allowing you to interact and exchange information with your MR colleagues. Visit <http://www.ismrm.org/smrt/chapters.htm> for information and location of local chapters.

MR Technologist List Server

- Hosted by the SMRT, the MRI Technologist List Server is a discussion group specifically for the day-to-day issues of MR technologists and radiographers. Participate in your online MR community. Find answers to your most pressing questions or learn from the expertise of a network of colleagues working across the globe. Join the discussion!

SMRT Web site: <http://www.ismrm.org/smrt>

- Check the web site for upcoming regional educational seminars, change your address, or look up a member in your locale;
- Extensive list of web links of interest on MR safety, anatomy, artifacts, patient care, methodology, pathology, resources for the MR professional, and tutorials.

SMRT Home Study Educational Seminars

The SMRT Educational Seminars series of home study educational materials is accredited for Category A Continuing Education credits as required to maintain ARRT registry of advanced examination for MR. Below is the list of back issues that are available to members only.

SMRT Educational Seminars	C.E. Units:
Functional MRI: Capabilities and Limitations	3.5
Concepts in MR Physics	3.0
Considerations in Low Field MRI	3.5
Directions in Basic Cardiac Imaging	3.0
Directions in Advanced Cardiac Imaging	3.0
The Basics of Magnetic Resonance Angiography	1.5
Introduction to Spectroscopy	3.0
Renal MR Imaging	1.0
A Primer on MR Pulse Sequences	3.0
Artifacts Encountered in Abdominal MRI	2.5
Safety Aspects in MRI	3.0
Directions in MRI of the Liver	3.0
MR Techniques in the Evaluation of the Uterus	2.0
Fundamental Principles for MR Imaging of the Brain	3.0
Atlas of Cranial Neuroanatomy	2.5
MRI of the Ankle and Foot	2.0
MR Imaging of the Breast	3.0
Diffusion-Weighted Imaging of the Brain	1.0
Directions in MRA of the Abdominal Aorta & Lower Extremities	1.0
Fundamental Principles of MR Imaging of the Head, Neck, & Spine	3.5
Advances in Interventional MRI	1.5
Diffusion-Weighted MR Imaging of the Pediatric Brain	1.5
Role of Neuroimaging in the Diagnosis of Alzheimer's Disease	2.0
Cardiovascular MRI: Update I	2.5
K-Space in the Clinic	2.5
MR Imaging and Spectroscopy of the Prostate	3.0
Atlas of Knee Anatomy	1.0
Cardiovascular MRI: Update II	2.0
Update: Safety in MR Examinations	2.5
Parallel MR Imaging	2.0
MRI of Breast Cancer: Update I	3.0
MR Atlas of the Shoulder	2.5
Exploring Magnetic Field Strengths: Challenges & Opportunities	3.0
MRI of Breast Cancer: Update II	4.0
MR Imaging of Perfusion	4.0
MR Imaging Artifacts: Appearance, Cause & Cure	3.0
Techniques in Cardiovascular MR Imaging	4.0
Update: MRI of the Brain	3.0
Update: Musculoskeletal MRI	4.0
Contrast Media in MRI Examinations	2.5



MEMBERSHIP CATEGORIES

Please review qualifications below, provide information as requested, and check the category that represents your membership status:

VOTING MEMBER QUALIFICATIONS

In order to qualify as a voting member you must have practiced as described in EITHER (A) or (B) below. PLEASE CHECK EITHER A OR B:

(A) VOTING MEMBER

Practiced as a Technologist/Radiographer in the field of magnetic resonance for a minimum of one year AND you are one of the following: (Please check box)

- For USA Citizens:
- Certified by the American Registry of Radiologic Technologists or
- A registered Diagnostic Medical Sonographer or
- A certified Nuclear Medicine Technologist or
- Certified by an equivalent professional certifying organization
For Non-USA Citizens:
- Certified by an equivalent professional certifying organization in your country in the discipline of radiographic technology, sonography or nuclear medicine technology.

Please complete the following or submit a current resume with application:

Work Experience From: ___/___/___ to: ___/___/___
Employer: _____
Job Title: _____
Certifications: _____
Registration/Certification Number: _____
Date of Registration/Certification: ___/___/___
Educational Degrees: _____
Modality/Certifications: _____
Certifying Body: _____

(B) VOTING MEMBER

Practiced as a Technologist/Radiographer in the field of magnetic resonance for a minimum of two years AND have appropriate equivalent professional competence in radiologic practice or in work in support of biochemical, biophysical or biological programs. Provide the name and signature of your department head or administrator below.

I verify the above named applicant has at least two years' practice in an NMR or MRI modality.

Department Head/Administrator Name and Signature

NON-VOTING MEMBER

An individual who does not meet the qualifications for voting membership.

STUDENT MEMBER (NON-VOTING)

In order to qualify as a student member you must be enrolled in a full-time academic program in an accredited educational institution AND provide a letter verifying student status from the Academic Program Director. The letter must include your name, the start and end dates of the program and verification of your enrollment.

ISMRM STUDY GROUPS

If you wish to join any of the following study groups, please check the boxes below. (View descriptions at http://www.ismrm.org/study.htm)

- Cardiac MR
Current Issues in Brain Function
Diffusion and Perfusion MR
Dynamic NMR Spectroscopy
High Field Systems & Applications
Hyperpolarized Media MR
Interventional MR
MR Engineering
MR Flow and Motion Quantitation
MR in Drug Research
MR of Cancer
MR Safety
Molecular and Cellular Imaging
Musculoskeletal Imaging
Psychiatric MRS and MRI
White Matter Diseases
Susceptibility Weighted Imaging

MEMBERSHIP CALENDAR

Applications submitted between 1 January and 30 September are effective for the current calendar year. Applications submitted and approved between 1 October and 31 December are effective the following calendar year.

APPLICANT INFORMATION

Family Name First/Given Name

Male Female Date of Birth: _____

Addresses (Please provide both AND check preferred mailing address)

OFFICE:

Institution/Company

Complete Mailing Address

Town/City State/Province

Zip/Postal Code Country

Telephone Fax

E-mail Address

HOME:

Complete Mailing Address

Town/City State/Province

Zip/Postal Code Country

Telephone Fax

E-mail Address

SMRT MEMBERSHIP DUES

- Voting or Non-Voting MembershipUS\$ 80.00
Voting or Non-voting Membership with one journal.....US\$185.00
Choose one journal: MRM JMRI
Voting or Non-voting Membership with two journals....US\$290.00
Student (Non-voting) Membership.....US\$ 30.00
Student (Non-voting) Membership with one journalUS\$135.00
Choose one journal: MRM JMRI
Student (Non-voting) Membership with two journalsUS\$240.00

SMRT DUES PAYMENT OPTIONS

Check, Travelers Check, International Money Order: Please make checks payable to SMRT. Must be payable "to" (not "through") a U.S. Bank in U.S. dollars and must be imprinted with the computer encoding and routing information authorized by the American Banking Association. Wire payments are not accepted.

Credit Card: VISA MasterCard AMEX

Card Number: _____

Security Code: _____ Expiration Date _____

Cardholder Name: _____

Billing Address _____

Billing Zip + 4/Postal Code: _____

Signature: _____

How did you hear about SMRT?: Seminar Ad Colleague
Annual Meeting Other: _____

Please submit application & payment to:

SMRT Section for Magnetic Resonance Technologists

P.O. Box 45690 • San Francisco, CA 94145-0690 FAX: +1 510 841 2340

Map Code	Hotel Name	Break-fast	Internet		Facilities and Services							In-Room Amenities**				Other Important Information	
		Daily Charge	Lobby*	In-Room*	Restaurant	Room Service*	Fitness Center*	Swimming Pool*	Hotel Parking*	Childcare†	Minibar	Coffee/Tea Maker	Hairdryer	Iron/Ironing Board	Distance to HCC	Deposit Payment & Cancellation Policy	
1	Hilton Hawaiian Village -Headquarters*** ☆☆☆☆ 2005 Kalia Road Honolulu, HI 96815 Garden View \$205-\$215 Sgl/Dbf Partial Ocean View \$245 Sgl/Dbf Ocean View \$275 Sgl/Dbf Ocean View Ali'i Tower: \$310 Sgl/ Dbf	\$28.25	Wireless \$15.95 per day Available at Ali'i and Kalia Towers	\$15.95 per day	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	5 Blocks	Deposit: Credit card will be submitted to the Hotel on March 27; Cancellation: 7 days prior to arrival date; No-Show: 1 night room & tax penalty	
2	Ala Moana Hotel*** ☆☆☆ 410 Atkinson Drive Honolulu, HI 96814 Kona Tower \$125 Sgl/Dbf Waikiki Tower \$165 Sg/Dbf Ocean View \$189 Sgl/ Dbf	\$16.95	Wireless \$9.95 per day	Free high-speed	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	1 Block	Deposit: Credit card will be submitted to the Hotel on March 20; Cancellation: 7 days prior to arrival date; No-Show: 1 night room & tax penalty	
3	Aqua Equus ☆☆☆ 1696 Ala Moana Boulevard Honolulu, HI 96815 Polo City \$105 Sgl/Dbf Polo City King \$114 Sgl/Dbf	Free	Free Wireless		no	no	no	yes	yes	no	yes	yes	yes	no	.6 Mile	Deposit: Credit card will be submitted to the Hotel on March 16; Cancellation: 30 days prior to March 16; No-Show: 1 night room & tax penalty	
4	Aqua Palms & Spa ☆☆☆ 1850 Ala Moana Boulevard Honolulu, HI 96815 Partial City View \$115 Sgl/Dbf City View \$125 Sgl/Dbf	Free	Free Wireless	Free high-speed	no	no	yes	yes	yes	no	yes	yes	yes	yes	.4 Mile	Deposit: Credit card will be submitted to the Hotel on March 16; Cancellation: 30 days prior to March 16 No-Show: 1 night room & tax penalty	
5	Aqua Waikiki Marina ☆☆☆ 1700 Ala Moana Boulevard Honolulu, HI 96815 Partial City View \$75 Sgl/Dbf Partial Ocean View \$85 Sgl/Dbf Ocean View \$95 Sgl/Dbf	No	Free Wireless	Free high-speed	no	no	no	yes	yes	no	yes	yes	yes	yes	.6 Mile	Deposit: Credit card will be submitted to the Hotel on March 16; Cancellation: 30 days prior to March 16 No-Show: 1 night room & tax penalty	
6	Aqua Waikiki Wave ☆☆☆ 2299 Kuhio Avenue Honolulu, HI 96815 Superior Wave \$119 Sgl/Dbf Deluxe Wave \$125 Sgl/Dbf	No	Free Wireless		yes	yes	yes	yes	yes	no	yes	yes	yes	yes	1 Mile	Deposit: Credit card will be submitted to the Hotel on March 16; Cancellation: 30 days prior to March 16 No-Show: 1 night room & tax penalty	
7	Hawaii Prince Hotel Waikiki ☆☆☆☆ 100 Holomoana Street Honolulu, HI 96815 \$195 Sgl/Dbf	\$20.50	Wireless \$10.95 per day	\$10.95 per day	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	2.5 Blocks	Deposit: Credit card will be submitted to the Hotel on March 20; Cancellation: 7 days prior to arrival date; Cancellations within 72 hours will be subject to 2-night room & tax penalty. No-Show: 2 night's room & tax penalty	
8	Ohana Waikiki Malia ☆☆☆ 2211 Kuhio Avenue Honolulu, HI 96815 \$99 Sgl/Dbf	\$8.99	Free Wireless	Data port only	yes	yes	no	no	yes	no	yes	yes	yes	yes	.8 Mile	Deposit: Credit card will be submitted to the Hotel on March 27; Cancellation: 7 days prior to arrival date No-Show: 1 night room & tax penalty	
9	Sheraton Waikiki Hotel ☆☆☆☆ 2255 Kalakaua Avenue Honolulu, HI 96815 City/Mountain View: \$210 Sgl/Dbf	\$23.00	Wireless \$13.56 per day	\$13.56 per day	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	.8 Mile	Deposit: Credit card will be submitted to the Hotel on March 27; Cancellation: 7 days prior to arrival date No-Show: 1 night room & tax penalty	

*Some facilities and services incur additional charges; check Hotel for specific information. **Some rooms may vary. † Advance arrangements required.

***There are a limited number of rooms available at the lowest rates. The information contained in this form may be amended from time to time without notice.

(Book early to ensure Best selection!)

ISMRM 17th Scientific Meeting & Exhibition
Hawaii Convention Center
Honolulu, Hawaii
18-24 April 2009

Convention
HOUSING
Management

Book early to ensure the best hotel selection! Hotel reservations will be assigned on a first-come, first-served basis based on availability. After 11 March 2009, Annual Meeting rates may not apply.

1 First Name _____ Last Name _____

Institution/Company _____

Address _____

City _____ State/Province _____ Zip/Postal Code _____

Country _____ E-Mail _____

Phone _____ Fax _____

Check below if you are:

- Professional Attendee
- Exhibitor
- Student

2 Hotel Preference: 1. _____ 3. _____

2. _____ 4. _____

3 Arrival Date: MM / DD / YY _____ Departure Date: MM / DD / YY _____ Number of Nights: _____

Room Type:


S = Single (1 person, 1 bed)

D = Double (2 people, 1 bed)

DD = Double/Double (2 beds)

Sharing Party: (Enter full name of sharing party below)

First Name _____ Last Name _____

If you require special accommodations or specific aids or services please contact CHM at +1.800.422.8996 

IMPORTANT INFORMATION

Deposit Payment Policy: A deposit in US Dollars of one night's room rate plus 11.967% tax is required to hold your reservation. Payment maybe made by credit card, or by wire transfer (contact CHM for Hotel routing number). Before making your selection and booking, please review the hotel deposit and cancellation policies by visiting the ISMRM website: <http://www.ismrm.org>.

Reservation Changes and Cancellations: Any change in arrival or departure (a partial cancellation), or full cancellation must be made through CHM *the hotels will not accept changes directly* and may result in a penalty. Please be advised if you cancel or change your reservation after the cancellation deadline set by the hotel you will be charged from one night to all nights of stay multiplied by the room rate plus 11.967% tax.

No-Shows: No refunds will be made for no-shows or early checkouts. If you don't check-in to the hotel on the first day of your reservation prior to 15:00 HST (Hawaiian Standard Time) and you do not alert the hotel in advance, the hotel will cancel your reservation and charge you a no-show.

4 **Guarantee Policy:** By providing the credit card information below, you agree to authorize the hotel to charge your credit card, in the local currency (US Dollars), in an amount from one night to all nights of your stay, as indicated, based upon the published room rate, plus 11.967% tax. Before booking, please read the hotel descriptions for the various hotel deposit and cancellation policies.

Card Type: Visa Mastercard American Express Diners Club

Credit Card No: _____ Expiration Date: _____

Cardholder Name: _____ Signature: _____

Cardholder authorizes the hotel to charge the required amount of deposit for this reservation and any cancellation or change fees that may be incurred. Charges will be in the local currency (US Dollars). Other credit card fees and surcharges may apply.

Convention Housing Management
1700 The Alameda, 2nd Floor
San Jose, California 95126
USA

Toll free: +1.800.422.8996 (Toll-free in the U.S. and Canada)
Tel: +1.408.918.4200 (Outside the U.S.)
Fax: +1.408.918.4250
Email: ismrm@chmrooms.com

Reserve accommodations
online: <http://www.ismrm.org>



Welcome to

Honolulu



The Hawai'ian Islands are one of the most beautiful places on earth. Encircled by white sandy beaches dotted with swaying palm trees, the islands evoke images of paradise. The weather is extremely friendly, the environment is a perfect mixture of rugged terrain and peaceful splendor, and the sights to see are beyond compare

Often called the island of fun and sun, Oahu remains the most sought after Hawai'ian destination among visitors. One of the most coveted exotic locales in the world, tourists can easily explore the entire island of Oahu by bus or by car. The North Shore of the Island finds surfers and others enjoying year-round the warm blue waters of the Pacific. The island is always bursting with activities of all kinds including island-style fairs, cultural festivals, ocean activities, concerts, and Hawai'ian music and dance. The adventurous visitor can seek greater heights and astounding views from atop Diamondhead Crater, which stands just east of Oahu's hub, Honolulu, a city of immense diversity and pride. Home of Waikiki Beach, Honolulu offers visitors all the comforts of home while maintaining an atmosphere of tropical bliss.

To satisfy the palate, Honolulu offers gourmet diners the opportunity to enjoy the best of haute cuisine in tandem with the warm hospitality of Hawai'i; in addition, delicious local food is not to be missed, traditionally prepared and served with the Island's casual flair. Shopping is also first-class in Honolulu, with stores offering everything from luxury items to souvenirs. Of course, the spirit of Aloha beckons, as do the breathtaking beaches of the Island where visitors can be found every day of the year enjoying temperatures ranging from 15-32 C (60-90 F).

While Oahu attracts most visitors of Hawai'i, each island destination offers its own unique brand of paradise, from endlessly spilling waterfalls to coral reefs teeming with tropical fish. Inter-island transport is possible and encouraged among the visitors of Hawai'i. The new Inter-island Terminal at the Honolulu International Airport makes visiting other islands and catching connecting flights nearly effortless. Of course, one virtue shared by all of the Islands is the Hawai'ian culture which resonates with echoes from Asia, Europe, and South America.

CURRENCY

International currency exchange services are located at banks throughout the city. The money system in the United States is based on dollars and cents. The closest bank to the Hawai'i Convention Center is the First Hawai'ian Bank located at 1580 Kapiloni Boulevard, +1 (808) 943-4437. Some larger hotels may also offer limited currency exchange services.

BORDERS AND CUSTOMS

Visitors traveling from outside the United States must have a valid passport for entry into the United States. Entry visas are required for travel from some countries. Please verify the entry documents necessary by contacting your local U.S. Consulate office, or your local travel agent. Please allow sufficient time, at least three or four months, when applying for your visa or passport.

AIRPORT AND GROUND TRANSPORTATION

Transportation to and from the airport: The Honolulu Airport is a 20-30 minute drive from Waikiki, depending on traffic. Costs currently range from about US\$18 to

US\$20 by taxi. The Airport Waikiki Express Shuttle will take you to any Waikiki hotel for US\$9 per person one way or US\$15 round trip. This convenient, air-conditioned, daily shuttle departs Honolulu Airport every 25 minutes, on the medial strip outside of the baggage claim area.

CLIMATE

Honolulu refers to the urban area on the southeastern shore of the island of Oahu. While the climate is clearly in the tropics, the climate (temperature and humidity) is moderated by the mid-ocean location and some cooling achieved by the California Current that passes through the islands much of the year. The average daily low and

high temperatures in are 65/88 °F (18/31 °C). Temperatures exceed 90 °F (32 °C) only rarely, with lows in the 50's °F (15 °C) occurring perhaps once or twice in a year. What to pack: sunscreen, light weight cotton clothing, sunglasses and a sun hat. Up-to-date weather information is available at: <http://www.rssweather.com/climate/Hawaii/Honolulu/>

VOLTAGE

Residents of Honolulu use 110 volt electrical systems at 60 hertz. You will need a voltage transformer/ converter for your electrical appliances if they operate on a different voltage. You can also purchase combination converters for both types. Main wall sockets and plugs for 110 volts are two parallel flat blades. If those sockets are different from the ones used in your country then you will need a socket converter.

Types of Appliances and Converter Needed:
Small electronics, razors and non-heating appliances 50-watts

Heating appliances (hair dryers, irons, coffee makers and other high-power electrical appliances) 1600-watts

PUBLIC TRANSIT

The Bus is Oahu's primary bus line with adult fares beginning at US\$2. Pick up and drop off locations at the Honolulu International Airport are located on the second level of the airport. Baggage Rules: No backpacks with metal frames allowed. All bags must be able to be placed under the feet or on the lap without protruding into the aisle way. No larger than 18"x24"x12". For more information: <http://www.thebus.org/default.asp>

LANGUAGES SPOKEN

Honolulu, the capital of Hawai'i, is part of the US. Primarily English is spoken there, but there are other languages spoken (just like in any American city), particularly Japanese (there is a very large Japanese and Japanese-American population in Hawai'i.) As of 2000 US Census 73.44%

of residents ages 5 and older speak only English at home. Tagalog speakers make up 5.37%, followed by Japanese at 4.96%, Ilokano 4.05%, Chinese 1.92%, Spanish 1.66%, Korean 1.61%, and Samoan 1.01%.



STEP 1: MEETING BADGE INFORMATION

Badges and materials will be available at the preregistration desk in Honolulu. No meeting materials will be mailed.

Honorific and gender: M.D. M.D. Candidate Ph.D. Ph.D. Candidate Prof. RT Other: _____ Male Female

Family Name _____ First/Given Name _____ Middle Name _____

Institution _____ City _____ State/Province _____ Country _____

STEP 2: MAILING/CONTACT INFORMATION

Street Address _____ City _____ State/Province _____ Zip+4/Postal Code _____ Country _____

Phone _____ Fax _____ Email _____

This address is for Work Home Is this new contact information? Yes No

STEP 3: STUDENT VERIFICATION*

*Required for all students, post docs, and technologists who are registering as non-members

Supervisor's Name: _____ Institution Name: _____
 Supervisor's Phone: _____ Supervisor's E-mail: _____

STEP 4: ATTENDANCE INFORMATION

I have a disability and require assistance Please send me an invitation letter for the purpose of obtaining a visa.
 This is my first ISMRM/ SMRT Annual Meeting Yes No

STEP 5: PROGRAM OPTIONS AND FEES (Please check one box below)

Program Options (please check the program you are planning to attend)	Student/Postdoc/Associates				Technologist/Radiographer Fees	
	ISMRM Member Fee	Non-Member Fee	ISMRM Student Member Fee	Student Non-Member Fee* <small>*Supervisor's information required</small>	SMRT Member Fee	Non-Member Fee <small>*Supervisor's information required</small>
ISMRM Scientific Meeting & Weekend Educational Programs 18-24 April	<input type="checkbox"/> US\$770 <i>After 18 March</i> <input type="checkbox"/> US\$880	<input type="checkbox"/> US\$1190 <i>After 18 March</i> <input type="checkbox"/> US\$1300	<input type="checkbox"/> US\$295 <i>After 18 March</i> <input type="checkbox"/> US\$330	<input type="checkbox"/> US\$490 <i>After 18 March</i> <input type="checkbox"/> US\$550		
ISMRM Scientific Meeting 20-24 April	<input type="checkbox"/> US\$570 <i>After 18 March</i> <input type="checkbox"/> US\$680	<input type="checkbox"/> US\$930 <i>After 18 March</i> <input type="checkbox"/> US\$1040	<input type="checkbox"/> US\$165 <i>After 18 March</i> <input type="checkbox"/> US\$180	<input type="checkbox"/> US\$255 <i>After 18 March</i> <input type="checkbox"/> US\$280		
SMRT Annual Meeting 18-19 April					<input type="checkbox"/> US\$270 <i>After 18 March</i> <input type="checkbox"/> US\$285	<input type="checkbox"/> US\$360 <i>After 18 March</i> <input type="checkbox"/> US\$375
SMRT Annual Meeting and ISMRM Scientific Meeting 18-24 April					<input type="checkbox"/> US\$435 <i>After 18 March</i> <input type="checkbox"/> US\$465	<input type="checkbox"/> US\$615 <i>After 18 March</i> <input type="checkbox"/> US\$655

STEP 6: PAYMENT OPTIONS (Fees are shown, and must be paid, in US dollars)

Check enclosed (personal, bank, institution) made payable to ISMRM or International Society for Magnetic Resonance in Medicine
 Credit Card Please charge registration fees to my: VISA AMEX MasterCard

Cardholder's Name (please print clearly) _____ Billing Street Address (required) _____ Postal Code _____ Cardholder's Signature _____

Card Number _____ Expiration Date _____

Payment Amount: US \$ _____

REFUNDS AND CANCELLATIONS: A refund of the registration fee, less \$75.00 for administrative charges, will be made for any program when a written request is received in the ISMRM office on or before 1 April 2009.



Honolulu

18-24 April 2009
 ISMRM 17th
 Scientific Meeting & Exhibition

Hawai'i

SMRT 18th Annual Meeting

© <http://www.ismrm.org/09/>

REGISTER EARLY (by 18 March) AND SAVE!



2030 Addison Street Suite 700
 Berkeley, California 94704 USA
<http://www.ismrm.org>

2009 IMPORTANT DATES AND DEADLINES

12 December	Deadline for New Entrant Stipend Award applications (see page 5)
7 January	Deadline for receipt of abstracts for the SMRT 18 th Annual Meeting (see page 21)
11 March	Deadline for housing reservations (See page 25)
18 March	Deadline for advanced registration for the ISMRM 17 th Scientific Meeting (see page 27)
3 April	Full text version of Proceedings & Educational Syllabus available online to pre-registered attendees only
18-19 April	SMRT 18 th Annual Meeting
18-24 May	ISMRM 16 th Scientific Meeting & Exhibition

December 2008						January 2009						March 2009						April 2009									
1	2	3	4	5	6				1	2	3	1	2	3	4	5	6	7				1	2	3	4		
7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14	5	6	7	8	9	10	11
14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21	12	13	14	15	16	17	18
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28	19	20	21	22	23	24	25
28	29	30	31				25	26	27	28	29	30	31	29	30	31					26	27	28	29	30		