INTERNATIONAL SOCIETY FOR MAGNETIC RESONANCE IN MEDICINE

MR PULSE

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INSIDE

Letter from the President

The last quarter has again been a very busy period for the entire ISMRM. While many members-at-large were busy completing Annual Meeting abstracts for the November 17 submission deadline, the Board, its committees, and the Central Office were not only getting ready to receive, sort and rank them, and integrate them with the plenary lectures and educational sessions into a exciting, cohesive Annual Meeting Program in Miami Beach, but we also began to implement many facets of our new Strategic Plan. Consequently our Board meeting in Chicago on November 27 and 28, 2004 had a very full agenda, and resulted in an extensive list of action items. I will highlight some of them in this newsletter.

First and foremost, I am pleased to report that the Miami 2005 Annual Meeting is shaping up to set attendance records for the Society. The ISMRM received over 4100 abstracts this year— several hundred more than any previous year! Historically, attendance at our Annual Meeting has correlated with the number of abstract submissions— hence my optimism for meeting attendance. It will be our biggest and best meeting ever!

The SPC, chaired by Vivian Lee, reviewed, ranked, and categorized the abstracts in December and early January, then working closely with the Educational Committee, chaired by Roland Kreis, the SPC met in New York City in mid-January to assemble the Annual Meeting Program. The Program is now ready, and authors have been notified whether their submissions have been accepted. Those of you who have participated in the Annual Meeting "construction" exercise will already be familiar with the huge amount of work and coordination that is required. On behalf of the entire ISMRM I thank all the members of the SPC, the Education Committee, and all our abstract reviewers for doing this work in such a tight time-frame!

Earlier this month I informed you that Ms. Jane Tiemann has announced her intention to retire from her position of Executive Director of the ISMRM. She will be retiring on July 1, 2005, soon after the Miami Annual Meeting. In my earlier communication to you I briefly summarized Jane's history with the ISMRM. I am reproducing a part of that summary below with some updated information so that it becomes part of the ISMRM record. I have asked Jane to also write an "open letter" to the membership in this issue of *MR Pulse*.

Ms. Jane Tiemann has served the ISMRM since the time it was first formed from the merger of its predecessor societies on January 1, 1994. She began work with the Society of Magnetic Resonance in Medicine in January 1990 as Publications Coordinator, and became Assistant Director in March 1992. Jane was appointed Executive Director of SMRM in September 1992. She held that post until February 1994, when she was appointed Executive Director of the International Society

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for Magnetic Resonance in Medicine. Except for the inaugural month of the Society, she has been the only Executive Director the Society has ever had!

Jane Tiemann has been an incredible asset to the ISMRM. She has shown vision, excellent organizational skills, and a disciplined management style. When Jane started with the SMRM in 1990, it had 1985 members, attendance at the Annual Meeting was 2200, and total annual revenues were US $1.3 million. At the time of the merger, ISMRM had 3747 members, the Annual Meeting attracted 2300, the total annual revenues were US$2.5 million, and net assets were US$230,000. By 2004 the ISMRM had a membership of over 5,000, total annual revenues of over US$4 million, and net assets were US$3.5 million. The net assets of the Society grew by a factor of 12 during her tenure as Executive Director! While many ISMRM Presidents might want to take credit for this tremendous growth and the excellent financial health of the Society (myself included), the single person who has consistently been at the helm is Jane Tiemann. On behalf of the entire ISMRM membership and the Board of Trustees, I thank Jane for her excellent work over all these years!

Immediately upon learning of Jane's intention to retire, I conferred with the Board with respect to instituting an international search for a new Executive Director, and appointed a Search Committee, which is chaired by Mike Moseley, our Past-President and the Chair of our Governance Committee. The other members of the search committee are Chrit Moonen (President-Elect), Paul Finn (Vice-President), Roxanne Deslauriers (Treasurer), Mark Van Buchem and Ming Wang (members-at-large), and myself *(ex-officio)*. The professional executive search firm Tuft and Associates has been hired to assist the Search Committee with its duties. The Search Committee hopes to receive applications by early March, conduct teleconference interviews with short-listed candidates in late March, then invite 2-4 finalists for personal interviews at the ISMRM Central Office in early April. It is my intention that the new Executive Director attend our Annual Meeting in Miami as our guest, then start work with the ISMRM on June 1, 2005. Jane Tiemann will stay on as Executive Director until July 1, 2005, after which the new person will take the reins. This will allow for a one month overlap period.

Jane Tiemann has served the Society extremely well. Even with her imminent retirement she has continued to work diligently with the Executive Committee, the Board, and all its committees to ensure continued good operations and a smooth transition in leadership. She has developed an excellent organizational framework in our Central Office. This has guaranteed the ongoing efficiency of the Office, and given us confidence that all is in good order. If anything, the one deficiency in her career is that she has only once formally addressed the ISMRM. To remedy this deficiency, I have asked her to take the podium for a few minutes at our upcoming Annual Meeting in Miami– an opportunity for her to say a formal farewell to all of us. I hope that we will all show her our appreciation.

I am also taking this opportunity to recognize all of the ISMRM's Central Office staff. Although I had known a few ISMRM staff members for a number of years because of my attendance at ISMRM meetings and my previous positions on the ISMRM Board, it is only this year, my year as President, that I have had the chance to speak to all of the staff, and get to know them a little better. I have found this group of twelve individuals to be delightful and interesting people, and all of them to be extremely helpful and professional in their duties. Although I would be lying if I were to indicate that this year has not been a substantial amount of work (it has!), the ever available assistance and great attitude of the staff has made my job a pleasure– a true pleasure! And it is with pleasure that I have been able to include short biographies of each of the staff, with their pictures, in this issue of *MR Pulse*. Most of them will be in Miami Beach helping with the Annual Meeting. When in Miami please stop by the registration desk, say hello, and get to know our staff a little better yourselves.

As many of you are aware, the January 2005 issue of the *MRM* was the first under the banner of our new Editor, Michael B. Smith. Many of you are also aware that the transition from Felix Wehrli to Mike Smith was incredibly smooth. It seems to have gone off without a hiccup. I have no doubt that this was due to frequent discussions between Felix and Mike over the past several months, the high level of cooperation between them and with our publisher, all the ground work done by Mike in advance of the transition date, and some sage advice from the Editor of *MRM's* sister journal, Dr. Leon Partain. We can all look forward to continued excellence of the *MRM* under Mike's leadership.

I am pleased to inform you that I appointed J. Thomas Vaughn to the ISMRM Board on January 1, 2005. Tommy fills the vacancy on the Board left by Mike Smith. Mike was already a member of the Board when he was appointed Editor of *MRM,* a position through which Mike automatically became an *ex-officio* Board member, hence the creation of the vacancy. Welcome, Dr. Vaughn!

Finally, I am writing to inform you of one the exciting programs we have implemented arising out of our new Strategic Plan– an International Educational Outreach Program. This is a joint initiative of the Workshop, Global Development, and Education Committees to hold a number of two- and three-day educational workshops in areas of the world where we currently are under-represented. The strategic purpose of these workshops is to fulfill our objectives of being more international, and providing high quality educational programs. The model we will be using is to partner with local national scientific groups to best understand their needs, and accept their guidance with respect to the timing, venue, structure, and content of the meetings. The local national scientific groups will do all the local arrangements, while ISMRM will advise on

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educational content and the selection of international speakers with appropriate expertise in the topics selected for the meeting. This calendar year we will hold four such workshops. The meetings will be in Singapore (March), Beijing (September), Seoul (September), and Mexico City (October) in cooperation with National University of Singapore, the Chinese Society of Radiology, the Korean Society of Magnetic Resonance in Medicine, and the Mexican Society of Radiology, respectively. In future years we are considering expanding this program to Eastern Europe and South America. This outreach initiative has been met with tremendous enthusiasm by our international partners, as well as from our members, many of whom have expressed an interest in attending the meetings themselves. Preliminary information about these outreach meetings can be obtained from our Website at: www.ismrm.org/workshops/index.htm.

—Walter Kucharczyk
President, ISMRM

Message from the Executive Director

For the past 15 years, it has been my honor and pleasure to serve, first, the Society of Magnetic Resonance in Medicine and, second, the International Society for Magnetic Resonance in Medicine. During that time, I have witnessed many changes both in the Society and in the field of MR. When I joined the staff of the SMRM in 1990, the Society had just under 2000 members, attendance of 2200 at the Annual Meeting, and four parallel sessions at a time. We had a rudimentary database system that needed tweaking every week, we did most of our "instant" communication by fax, and there was not one session on functional MRI at the Annual Meeting.

Fifteen years later, the membership of the ISMRM is over 5,000, we will offer nine parallel sessions at a time at the Annual Meeting in Miami, and we expect an attendance of 3,500 – 4,000. Not only is fMRI a well-established and vibrant field, but we are also seeing exciting work on molecular and cellular imaging, parallel imaging, and constant refinements of MR in all organ systems, all at field strengths barely thought of in 1990.

The Society, too, has grown in sophistication and importance. Since the merger of SMRM and SMRI into ISMRM in 1994, we have moved from the fax machine to the World Wide Web, maintaining and refining a powerful database system to support our member services, and replacing the heavy and cumbersome paper Annual Meeting *Proceedings* with an easily transportable and searchable CD-ROM, among many other changes. We have added the study groups, which have sustained a very active workshop program, and are now reaching outward to groups around the world with whom we can collaborate to offer MR education where it has been less available.

None of this tremendous progress would have been possible without the tireless dedication of the members of ISMRM to advancing MR science and its clinical applications. At the same time, the Society itself could not have reached the position it holds today without many of these same members volunteering their time and energy to serve on all the Society's standing and ad hoc committees and the Board of Trustees. The Society we know today is also due to the commitment and diligence of the staff in the Central Office. Each staff member, every day, makes it her or his aim to serve the members of ISMRM in a way that meets their needs and fulfills the goals of the Society, whether the staff member is answering questions, processing dues payments, negotiating hotel contracts, coordinating CME activities, or keeping the books.

It has been a privilege to witness and to participate in these changes and more. I have learned many new things, met many wonderful people, including Nobel Laureates, and traveled to many exciting places. I would like to thank each and every one of you for affording me this life-changing opportunity and to send all of you my very best wishes for the future.

— Jane E. Tiemann
Executive Director

MEET THE ISMRM CENTRAL OFFICE STAFF

Jennifer Olson, Associate Executive Director, has worked for the ISMRM since 1987. At that time the Society office had only 2.5 full time equivalent (FTE) staff members and about 1,200 members. She began her career with the Society as an accountant, working part-time for the SMRM and part-time for the Marin Symphony. She brought both non-profits into the computer age, setting up their accounting software. In October 1992, she was promoted to Assistant Director of SMRM. Now working full-time for the Society, she assisted with the management of the operations of the business office, as well as directing all the activities of the Section for Magnetic Resonance Technologists (SMRT).

Jennifer has lived in the San Francisco Bay Area for most of her life. She has four grown children: her daughter is a veterinarian technologist, and soon to be married; her son is in his third year at Cal Poly, San Luis Obispo, majoring in mechanical engineering; her two stepsons are in the construction business; and she has one beautiful, perfect, genius 2-year-old grand daughter. Her interests are hiking, biking and kayaking in the many trails and water ways of West Marin. She is an avid gardener; at harvest time she brings her bounty of organic fruit and vegetables to share with the office staff. She is looking forward to her holding her daughter's wedding at home, in her well-tended gardens. She has enjoyed working for the Society over the years, experiencing its incredible growth, meeting all of the members, traveling around the world, and working with the best office staff ever.

Mariam Barzin, has been an Accountant for the ISMRM for five years. She is responsible for accounts payable functions, including reconciliation of receivables and payables. In addition, she processes reimbursements to speakers and Board members in US and foreign currencies. Mariam holds a Bachelor of Arts degree in Accounting. Born in Iran, she and her family permanently moved to California in 1996.

Mariam's hobbies are gardening, reading, and spending time with her lovely family. Her husband, with a M.S. in Cybernetics, is self employed; her son plans to graduate from Chico State College this year; and her daughter, in her third year at UC Santa Cruz, plans to become a pharmacist. Mariam is proud to be working with a diverse organization. A sociable person, she enjoys associating with people with different languages.

Helen Chatham recently retired as Accountant for the ISMRM. Helen joined the staff of the SMRM in 1992, as that Society's first full-time accountant. After the SMRM/SMRI merger in 1994, she became the ISMRM Accountant. Helen made important contributions to automating many accounting functions and to instituting procedures to ensure safe and accurate recording and deposit of incoming funds and to establish proper approval and documentation to accompany disbursement of funds. Helen especially enjoyed traveling to the many different cities in which the ISMRM Annual Meeting was held, often staying an extra week after the meeting to get to know the area in depth. All of us in the ISMRM Central Office will miss her and wish her a happy retirement.

Tom Courtney, Finance Director, started working with the Society in 2004. He has also worked in the nonprofit field as an accountant, controller, CFO, teacher, trainer, and board member. He has trained over 3,000 nonprofit and government employees and volunteers in management, financial management and accounting. Tom received his master's degree from the University of San Francisco in Nonprofit Management. He formerly served as Assistant Dean of the School of Management at John F. Kennedy University in Orinda, California; as Director of Finance for the East Bay Agency for Children; and as Chief Financial Officer for Yosemite National Institutes, an environmental education organization. He is currently a financial management consultant serving nonprofit and public organizations including ISMRM. Tom also holds teaching positions at the University of California, Berkeley– Haas School of Business and Schools of Social Welfare and Public Policy as well as the University of San Francisco's College of Professional Studies.

Robert Goldstein has worked at the ISMRM as Education Director since 1994. A health educator by profession, his prior employment was with voluntary health agencies in the fields of respiratory disease, cancer and arthritis. He has a M.P.H. from the University of California, Berkeley, and a J.D. from Tulane University, New Orleans. While born and brought up in New York City, Bob has lived in San Francisco since 1972, and with his partner Michael for 17 happy years. He enjoys bicycling (a major part of his daily commute), trains, music, architecture and cities (especially New York, New Orleans and San Francisco, about all of which he is passionate).

In his employment at ISMRM Bob has particularly enjoyed meeting and working with our members and interesting, friendly people from all over the world, as well as a top-notch staff.

Kristina King joined the Society in October of 2000 as the Executive Assistant, a position she held for three years. In July of 2004 she was promoted to the position of Membership Coordinator. Kristina's responsibilities at ISMRM include processing membership applications, issuing SMRT membership cards, and processing Student Stipend applications. She was born and raised in California and has lived in the Bay Area for 34 years. Kristina has a 16-year-old daughter who is involved in a competitive sport called "Winter Guard" (also known as "Color

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Guard"). Kristina's interests include being the Guard Mom, reading, and doing puzzles.

Roberta A. Kravitz, has been with the ISMRM, in some form or another, since 1992. Starting out as temporary assistance at the Annual Meeting, she finally came on board full time in 1995. Since that time, she has worn many hats, so to speak, having served as Executive Assistant, Study Group Coordinator, Web Coordinator, Director of Study Groups and Electronic Communications, being promoted to her present position of Director of Meetings and Electronic Communications in 2001. Roberta received her Bachelor of Arts degree in Government at St. Mary's College of California, is an active member of PCMA (Professional Convention Management Association), serves as a member of the Hawai'i Advisory Board, and is an active participant in a number of school-related organizations. Roberta and her husband, John, have a daughter Teryn, who will graduate this June from UC Davis with a degree in Wildlife Biology; a son Benjamin, who is a junior in high school; and a daughter Megan, who is a sophomore in high school.

Sheryl Liebscher, has served as Publications Manager since 1997. She is responsible for design and production of Society print publications, including *MR Pulse* and *Signals* newsletters; SMRT home studies; Annual Meeting, workshop, and regional seminar brochures; and print advertising. Prior to joining the ISMRM staff full time, Sheryl ran her own graphic design business, clients included academic departments at the local University of California campuses. In addition, she has created designs for menus, packaging, advertising, and point-of-purchase displays for restaurants, wine and spirits, and computer industries.

Sheryl received an Associate of Arts degree in Graphic Arts from Laney College. She has traveled extensively in Europe, Asia, and the US, but holds a special fondness for Yosemite National Park, where she and her partner, Beki, own a cabin. Sheryl's secret delight is playing Scrabble, especially when she's able to score big points by using arcane medical terms she learned at ISMRM.

Anne Ornelas de Lemos, a native Californian, arrived at ISMRM in 2002 as Membership Coordinator. She was promoted to Director of Membership in June, 2004. Her responsibilities include membership development, retention and recruitment; study group support; and organization of the student stipend program.

In 1992, Anne received her Bachelor of Arts degree in Psychology from the California State University, Sacramento and is currently pursuing a master's degree in Organizational Management. Anne is married to an absolutely fabulous man, who has a passion for coaching lacrosse. She eagerly awaits baseball season (San Francisco Giants) and enjoys playing with her very cute border collie named Otis.

Katie Simmons, has been the Meetings and Electronics Communications Coordinator since 2001. Her duties include assisting Roberta with planning workshops and the Annual Meeting, maintaining the web site, and coordinating ISMRM's participation as an exhibitor at other scientific meetings. She has lived and worked in the San Francisco Bay Area her entire life, aside from the four years she spent obtaining a Bachelor of Arts degree in Sociology from the University of California, San Diego. Her interests include hiking, camping, and spending time with her husband and daughter. She loves working for the ISMRM and considers the staff to be a second family. She enjoys the traveling opportunities her job affords but most enjoys the day-to-day camaraderie she feels among her co-workers and their collective dedication to the membership.

Kimberly Tran has been Registrar for the past three years. Her responsibilities include registration processing for the ISMRM/SMRT Annual Meetings, Educational Workshops, and Regional Seminars; and data base oversight. Prior to joining the Society she worked in the banking and financial industry as an ATM Reconciliation Officer for six years.

Kimberly was born in Saigon, Vietnam, and schooled in San Francisco. In 2001, she obtained a Bachelor of Arts degree in International Business from San Francisco State University. She has lived in the Bay Area for twelve years. Her interests include reading, traveling, and playing with her 9-month-old daughter. Kimberly loves working at ISMRM because everybody is wonderful to work with– we are a small happy family.

REPORT FROM THE TREASURER

Report Based on Unaudited Financial Statements to September 30, 2004

On 30 September 2004, the financial results of the ISMRM were positive relative to the budget. The year-end deficit is $99,662. The budgeted deficit was $419,656. The Annual Meeting in Kyoto was a financial success, with a Net Income of $82,658; the budgeted loss was $205,696. This financial success is largely attributed to the tireless efforts of the Local Organizing Committee.

Financial Position:

The ISMRM has Total Liabilities and Net Assets of $3,995,338. Current Assets of $1,398,509 included $359,024 in Cash, $795,060 in Short Term Investments, $64,703 in Accounts Receivable, and $179,722 in Prepaid Expenses. Non Current Assets were $2,596,829, comprised of $2,502,432 in Long Term Investments, $81,691 in Net Fixed Assets, and $12,706 in Deposits.

Total Liabilities were $574,609. Net Assets included Unrestricted Assets of $1,253,512 available for operations, $1,850,000 designated for operating emergencies and $315,301 designated for scientific and educational programs. Total Net Assets were $3,420,729.

Revenue and Expenditures, and Budget Comparison:

At the end of fiscal year 2004, the ISMRM had $3,608,501 in Operating Revenue. Budgeted revenue was $3,766,360. The ISMRM had $4,223,805 in Total Expenses. The budgeted Expenses were $4,592,766. The Operating Deficit (excluding corporate allocations and other revenue) was $615,304. The budgeted Operating Deficit was $826,406. Other Revenue included $288,891 in Unallocated Funds from Corporate Members, $72,103 in Interest and Dividends, $39,214 in Realized Gains on Investments, and $115,085 in Unrealized Gains on Investments. The Total Other Revenue was $515,643. This budgeted amount was $406,750. Taking Other Revenue into account yields a Net Loss of $99,662. The budget amount was a Net Loss of $419,656.

The ISMRM achieved $924,329 in Membership fees. Total budgeted Membership revenue was $895,000. We achieved Meeting Revenues of $1,899,590; the budgeted Meeting Revenues were $2,132,250. Expenses for the Meeting in Kyoto were $1,817,210; the budgeted amount was $2,337,946. Total Revenue for Stipends and Awards was $198,000, the amount budgeted was $251,000. The Total Expenses for Stipends and Awards was $420,306. The amount budgeted was $443,441. In FY 2004, $150,000 was budgeted to be withdrawn from the Designated Reserve for Science and Education Programs to fund Student Stipends/Awards.

The Society is in good financial shape. The financial results are positive when compared to the budget for FY 2004. The ISMRM continues to rely heavily on corporate sponsors and benefited from substantial gains on investments in FY 2004 to reduce the gap in expenses and revenues.

— Roxanne Deslauriers, ISMRM Treasurer

Call for Nominations for ISMRM Web Editor

On behalf of the Board of Trustees of the ISMRM, the Web Editor Search Committee invites nominations for ISMRM Web Editor.

The ISMRM Web Editor is appointed by the Board of Trustees and is responsible for overseeing the content of the ISMRM web site, and for identifying and developing new strategic goals, with oversight by the Board of Trustees. He/she is also responsible for day-to-day contacts with the ISMRM Central Office staff, who will co-ordinate the physical implementation (programming) of the web site. The Web Editor will be appointed for a term of three (3) years (renewable) and will be, *ex officio,* a non-voting member of the Board of Trustees.

The successful candidate will be a strategic thinker with a strong interest in the use of the world wide web to foster good communication between the ISMRM and its members, and also amongst ISMRM members. He/she should also be an active scientist in the field of medical magnetic resonance and should be a full member of the ISMRM.

Nominations must include the candidate's CV and a brief action plan for how the ISMRM web site might be developed and improved. The candidature should also be supported by at least two (2) other ISMRM members. Please send completed nomination packets to:

Peter Jezzard, Ph.D., Chair
Web Editor Search Committee
ISMRM
2118 Milvia Street, Suite 201
Berkeley, CA 94704, USA

Nomination materials may also be submitted electronically to searchcomm@ismrm.org. Nominations must be received no later than **1 April 2005**.

Only those nominees selected as candidates will be contacted by the committee.

— Peter Jezzard, Chair, Web Editor Search Committee

MESSAGE FROM THE SCIENTIFIC PROGRAM COMMITTEE

On behalf of the Scientific Program Committee (SPC), I am delighted to report on the continued progress of our committee in the construction and planning of the 13th Scientific Meeting and Exhibition of the ISMRM, to be held 7-13 May 2005 in Miami Beach, Florida, USA.

CONSTRUCTION OF THE SCIENTIFIC PROGRAM COMPLETED!

This year marked yet another record in the number of abstracts submitted to the Annual Scientific Meeting—4111!— an increase of almost 500 abstracts above last year's record for Kyoto. This rapid growth reflects not only the tremendous breadth and depth of advances in MR technology and application but also the central role of our Annual Meeting in the dissemination of these scientific advances. The overall quality of submitted material remains extraordinarily high, making the job of the SPC and reviewers all the more challenging and, at the same time, stimulating and rewarding.

Once again this year, we thank those of you who volunteered to serve as reviewers in the abstract process. Referees are selected to review based on experience, past submissions to the meeting, publication in the Society journals, and, most importantly, our need in specific categories. Of the five reviewers assigned to each abstract, only one is an SPC member. All reviewers are blinded to author and institution. Typically, reviewers averaged 40 – 60 abstracts, while SPC members averaged over 120.

Capping off a busy season of abstract reviewing, the SPC met in New York City in mid-January to construct the scientific portion of the meeting. Although the overall number of acceptances for oral and poster presentations increased from last year, the unanticipated record submission did mean that the acceptance rate had to be lowered from 78% to about 70%. Approximately 22% of all abstracts were selected for oral presentation in a scientific session or in a clinical or basic science focus session. The average scores and percentiles for the abstracts were used to guide program construction, with a modest amount of latitude allowed based on programmatic considerations. Against the backdrop of an ever increasing quality of the abstracts submitted, the SPC is discussing ways to maintain reasonable acceptance rates in anticipation of continued increases in submissions.

The assembled program of 70 oral sessions, 11 clinical science focus sessions, 4 basic science focus sessions, 192 electronic posters and 1798 paper posters to be presented over 4½ days in May reflects the richness and diversity of scientific pursuits of the membership and promises a thoroughly stimulating and invigorating 13th Annual Meeting (see pages 11-15).

A FEW HIGHLIGHTS OF THE 2005 MEETING

Building on the already superb meeting structure and offerings from previous years, the 2005 SPC, together with the Education Committee (EC), chaired by Roland Kreis, are pleased to present some of the highlights of the Miami meeting. These include special features that use technology to help attendees get the most out of the meeting, new forays in education and training, superb distinguished speakers, and other exciting featured presentations.

New Special Features

• ***Video Capture of ALL Scientific Sessions*** As the ISMRM Annual Meeting continues to expand, the increasing number of parallel sessions often makes it hard for attendees to decide which sessions to attend and which to miss. Based on a successful trial in Kyoto, this year powerpoint slide presentations from all oral sessions will be recorded (with speaker approval) with audio using macromedia flash technology and posted on the web after the meeting. This will be available to all registered attendees at no extra cost. We hope the video capture will help all attendees make the most out of the meeting. Note that with this technology, the presentation slides are NOT downloadable from the internet, and the image quality, although sufficient for viewing, is inferior to the original.

• ***Electronic Poster Displays*** This year 192 posters have been selected to be presented as electronic posters. E-posters enable presenters to take advantage of more flexible and enhanced presentation formats, including the display of dynamic video formats. In the Poster Hall, a total of 12 monitors will be used to display the E-posters during the course of the meeting. E-posters have been assigned pre-

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sentation times during the paper poster sessions. Authors are asked to stand by the monitors during allotted times to present and discuss their work. These posters are also available for viewing throughout the week and are amongst those considered for Poster Awards.

• ***Poster Awards*** Building on the success of last year's debut, a number of posters have been nominated by the SPC for Poster Awards in six categories: Pulse Sequences/Reconstruction, Hardware/Engineering, Neuroimaging, Body/MSK/Cardiovascular Imaging, Spectroscopy, and, a new category, New Frontiers. All Poster Award nominees have been notified. This year, the poster selection committee will review nominated posters anonymously. Announcement of winners will be made during Thursday morning's plenary, together with the Young Investigator Awards.

• ***Expanded WiFi coverage*** in the Miami Convention Center, in addition to regular terminals for internet and email access, a broad area of WiFi coverage will be available in the Convention Center.

New Forays in Education and Training

• ***"Clinical MRI: From Principles to Practice"***
The Miami meeting debuts a new seven-day intensive educational course for clinicians and trainees to learn about clinical MRI starting from the nuts and bolts of MR physics (in practical clinical terms) to protocol optimization. Program features include instruction in basic MR physics, hands-on workshops, and interactive image interpretation problem-solving sessions. The program spans the entire week, and offers North American attendees over 50 hours of CME credit. Similar credits will be available for members from some other countries. Please check our website for the latest information. Dedicated day-long programs over the weekend and educational sessions throughout the week will be taught by some of the world's best teachers in MR. Overall, the educational program at the ISMRM offers something for everyone, from novice to expert and for all areas of clinical interest—musculoskeletal, neuro, body, and cardiovascular. Walks-through-the-Week for these areas are available online at www.ismrm.org. Registration for this program is included in the meeting registration, with advanced sign-up required only for the hands-on workshops (refer to website for details).

• ***"Research Funding: Prospects, Pearls and Pitfalls."***
A two-hour research funding symposium will be presented on Monday afternoon to help new investigators gain insight and perspective in the challenges of obtaining research funding. The first hour of the symposium will feature two speakers: Dr. Eileen Bradley, from the NIH, giving her perspective on grants and grantsmanship and Dr. John Griffiths presenting an update on what is happening in the UK and EU. During the second hour, Dr. Richard Ehman, Past-President of the ISMRM and former chair of the NIH Diagnostic Imaging Study Section, will lead a panel discussion that includes members of the Society who will share their experiences and insights: Deborah Burstein, Charles A. Mistretta, and Chrit Moonen.

Program Highlights and Featured Speakers

• ***Expanded Educational Weekend:*** The program has been expanded to include seven different courses on each day, including "MR and Molecular Imaging," "Quantitative Data and Image Analysis," "Breast MRI," "MR of Cancer," and "Artifacts and Pitfalls." Previous courses have been renewed. Meet-The-Teacher-Breaks offer opportunities for one-to-one contact with lecturers.

• ***Distinguished Lauterbur and Mansfield lecturers:***
The SPC is delighted that **Dr. Britton Chance**, University of Pennsylvania, will be the 2005 Lauterbur Lecturer, speaking on his "NIR Optical Windows to the Body: Brain, Heart, and Fetus, Correlation with MRI and MRS" on Monday, 9 May. We are honored that **Dr. Jürgen Hennig**, University of Freiburg, will be our Mansfield Lecturer, presenting his perspective on "Fast Imaging Horizons in Rapid MR Imaging" on Thursday, 12 May 2005.

• ***Plenary Sessions:*** "MR in a Multidisciplinary World" will be the focus on Monday, 9 May. The theme for the remainder of the week will be "MR at Different Scales," where the focus will move from the level of molecules (Tuesday) to cells (Wednesday), to organs (Thursday), and finally, to whole body imaging (Friday), signifying the impressive span of MR applications.

• ***New Morning and Clinical Categorical Courses*** have been developed to appeal to both basic scientists and practicing clinicians. The SPC has refreshed existing courses and added several new programs for the 07:00 Morning Categorical courses. Each of the eight courses will run all week from Tuesday through Friday: (1) New Developments in MR Hardware, (2) Answering Clinical Questions with fMRI/DTI/PWI, (3) New Horizons in Musculoskeletal MR Imaging, (4) Cardiovascular Imaging, (5) Technical Advances and their Impact in Body MR, (6) Quantitative Neuro MR, (7) MRS and MRI at High Field, and (8) Echo Management. Five new 2-hour Clinical Categorical Courses will feature such topical subjects as "Imaging at 3T," "MRI In Mother, Fetus and Newborn," "Current Topics in Cardiac MRI," "Hot Topics for Clinical Practice," and "Cancer MR."

• ***SMRT/ISMRM Joint Forum:*** This year's forum, focusing on protocol and pulse sequence optimization, will bring together physicists, physicians, and technologists to explain how optimization can improve imaging and reduce artifacts and pitfalls.

*See **SPC Report** page 9*

2005 Scientific Program Committee: *(in alphabetical order) Vivian S. Lee, Chair, David G. Norris, Vice Chair, Peter S. Allen, Gareth J. Barker, Alberto Bizzi, David A. Bluemke, Georg Borgartz, Kim Butts, Sebastián Cerdán, Qun Chen, Steven M. Conolly, R. Todd Constable, Bruce L. Daniel, Jeffrey L. Duerk, Joshua M. Farber, J. Paul Finn, Hiroyuki Fujita, Robert J. Gillies, Rolf Gruetter, Petra S. Hüppi, Clifford R. Jack, Glyn Johnson, Risto A. Kauppinen, Michael V. Knopp, Frank R. Korosec, Roland Kreis, John Kurhanewicz, Albert C. Lardo, Weili Lin, James F. M. Meaney, Yukio Miki, Leif Østergaard, Caroline Reinhold, Neil M. Rofsky, Dikoma C. Shungu, Anne-Marie Van der Linden, Lawrence M. White, Samuel A. Wickline, Steven M. Wright.* ***ISMRM Staff:*** *Jane E. Tiemann, Robert Goldstein, and Roberta A. Kravitz.*

A Few Last Notes

The Scientific Program Committee is able to function effectively because of the tremendous behind-the-scenes work of the team at the Central Office of the ISMRM, based in Berkeley, California. As SPC Chair, I have had the real pleasure of getting to know many of the individuals in that Office this year and, from them, I have learned a lot about how they make our Society run so well and so smoothly. While I look forward to the Miami meeting and to the end of my responsibilties as SPC Chair, the Miami meeting will also mark the end of a much more important tenure. Jane Tiemann, the Executive Director of the ISMRM, has announced her early retirement following the Miami meeting. Jane's leadership and commitment to the Society have helped to make the ISMRM what it is today, a respected, financially-sound, rapidly growing scientific organization that is the envy of many others. As leader of the Central Office, she has demonstrated superb management skills. As our Executive Director, she has provided a reliability, stability, good humor, strength, and vision that will be missed by all. We look forward to honoring her contributions in Miami.

It has been a busy year for members of the 2005 Scientific Program Committee— starting with the planning of the plenary sessions in January 2004 through the development of an almost completely new set of morning and clinical categorical courses, the establishment of new initiatives such as the Clinical MRI course and Research Funding Symposium, the burdensome review of record numbers of abstracts, and culminating with the intensive program construction meeting in January 2005. I want to thank the SPC members for their tireless dedication and irrepressible spirit of enthusiasm that have made my job so richly rewarding this year. I also thank Walter Kucharczyk, this year's ISMRM President, for giving me the opportunity to serve as SPC Chair. The baton is already on its way to being passed to the 2006 SPC, led by David Norris, and EC, chaired by Leif Ostergaard, as they begin to plan the 14th Annual Meeting in Seattle, Washington. They welcome your input.

On behalf of the 2005 Scientific Program Committee, I look forward to welcoming you to the 13th Annual ISMRM Meeting. The combination of a tradition of excellence, enhanced by new program features, and the wonderful, hospitable setting of South Miami Beach, should make for one of the best meetings ever.

From the snow-covered streets of New York City, I say with great enthusiasm— See you in sunny South Florida!

—Vivian S. Lee
2005 Scientific Program Committee Chair

Program-at-a-Glance

WEEKEND EDUCATIONAL PROGRAMS, Saturday 7 May 2005

MR Physics for Physicists– Day 1	Clinical MRI: From Physical Principles to Practical Protocols	Breast Imaging	Quantitative Image and Data Analysis	MR and Molecular Imaging	Methods and Applications of Clinical Spectroscopy	Artifacts and Pitfalls (Optimization in the Clinic)
08:30 to 17:55 A201-202	08:00 to 17:30 A204-205	09:00 to 18:00 B118-122	08:30 to 17:30 B214-215	08:30 to 17:15 B217-218	08:30 to 17:45 B210-211	08:30 to 17:30 B212-213

SMRT Technologist/Radiographer Program– Day 1
07:45 to 17:00
A101-105

Program-at-a-Glance

WEEKEND EDUCATIONAL PROGRAMS, Sunday 8 May 2005

MR Physics for Physicists– Day 2	Current Debates and Recent Advances in Functional MRI	Experimental Methods in MR of Cancer	Musculoskeletal MR	Advanced Neuro MR	Cardiac MR	Advanced Body MR
08:00 to 15:00 A201-202	08:15 to 17:30 A204-205	08:00 to 17:30 B118-122	08:00 to 17:30 B214-215	08:15 to 17:30 B217-218	08:30 to 17:00 B210-211	08:30 to 16:45 B212-213

SMRT Technologist/Radiographer Program– Day 2
07:45 to 17:00
A101-105

Silver Corporate Member Lunchtime Symposium
Bruker BioSpin MRI
11:30 to 13:00
Jackie Gleason Theater

STUDY GROUPS
15:30 to 17:30

Diffusion and Perfusion MR Study Group	Hyperpolarized Noble Gas MR Study Group	Molecular and Cellular Imaging Study Group	Musculoskeletal Study Group
A201-202	A108-109	A110-111	B112-113

OPENING RECEPTION
17:45 to 19:15
Exhibit Hall B

CLINICAL MRI: FROM PRINCIPLES TO PRACTICE

The Clinical MRI Course is a week-long program contained within the ISMRM Annual Meeting to guide clinical imagers and trainees from the physics of MRI to protocol optimization and image interpretation. Registration for this course is included in the ISMRM weeklong registration. While meeting registrants should feel free to attend sessions of their choosing, the offerings of this new course include:

Saturday, 7 May: Clinical MRI: From Physical Principles to Practical Protocols

Sunday, 8 May: Choice of Musculoskeletal MR, Advanced Neuro MR, Cardiac MR, Advanced Body MR

Monday-Friday, 9-13 May: Morning Categorical Courses: Choice of Courses
Plenary Sessions
Clinical MRI Problem Solving Courses
Clinical MRI Hands-On Workshops*
MR Physics and Techniques for Clinicians

*Hands-On Workshops require pre-registration either online or at the meeting registration desk.

ISMRM 13TH SCIENTIFIC MEETING, Monday, 9 May 2005

07:45 **WELCOME and Award Presentations,** *Walter Kucharczyk, President*

8:20 **2005 LAUTERBUR LECTURE: NIR Optical Windows to the Body: Brain, Heart, and Fetus, Correlation with MRI and MRS,** *Britton Chance*

PLENARY LECTURES: The Future of MR in a Multidisciplinary World

09:00: **Imaging Psychiatric Disorders in a Multidisciplinary World,** *Marc Laruelle*

09:25: **Cancer and Immunodeficiency Imaging in a Multidisciplinary World,** *Martin G. Pomper*

09:50: **Cardiac Imaging in a Multidisciplinary World,** *Koen Nieman*

Jackie Gleason Theater

10:15 - 11:00	COFFEE BREAK

11:00 - 13:00	ORAL SESSIONS, CLINICAL MRI COURSE, AND CLINICAL CATEGORICAL							
Diffusion Acquisition A201-202	*Clinical Categorical:* ***MRI in Mother, Fetus, and Newborn*** A204-205	*Clinical MRI Course:* ***Body Problem Solving: Breast Cancer and Cirrhosis*** B118-122	**Transmit SENSE and RF Pulses** B214-215	**fMRI: Spatial and Temporal Characteristics** B217-218	**Cerebral Perfusion Methodology** B210-211	**Lung Imaging and Function** B212-213	**Spectroscopy Quantification Issues** A101-102	**Brain Motion** A104-105

13:00 - 14:00	Gold Corporate Member Lunchtime Symposium, Jackie Gleason Theater

14:00 - 16:00	POSTER SESSION, CLINICAL SCIENCE FOCUS SESSIONS, SPECIAL SYMPOSIUM, AND SMRT AND ISMRM JOINT FORUM				
POSTER SESSION Exhibit Hall B	*Clinical Science Focus Session:* **Neurodegenerative, Psychiatric Disorders and Normal Cognition** B118-122	*Clinical Science Focus Session:* **Breast MR Imaging** B214-215	*Special Symposium:* **Research Funding: Prospects, Pearls, and Pitfalls** A201-202	*SMRT and ISMRM Joint Forum:* **Optimizing Pulse Sequences and Protocols** A204-205

16:00 - 16:30	COFFEE BREAK

16:30 - 18:30	ORAL SESSIONS AND EDUCATIONAL COURSE							
Rapid Imaging I A201-202	**MR Physics and Techniques for Clinicians** A204-205	**Plaque and Vessel Wall Imaging** B118-122	**fMRI: Novel Methodology** B214-215	**Advances in Oncologic Body and Breast Spectroscopy** B217-218	**Clinical Neurospectroscopy** B210-211	**New Developments in Thermal Therapy** B212-213	**Brain MRI: Data Processing Methods and Artifact Reduction** A101-102	**Novel and Smart Contrast Agents** A104-105

18:30 - 20:30	STUDY GROUPS				
Dynamic NMR Spectroscopy Study Group A201-202	**White Matter Disease Study Group** A204-205	**MR Engineering Study Group** B214-215	**MR Flow and Motion Quantitation Study Group** B217-218	**MR in Drug Research Study Group** B210-211	**Interventional Study Group** B 212-213

ISMRM 13TH SCIENTIFIC MEETING, Tuesday, 10 May 2005

07:00 - 08:00 **Morning Categorical Courses:**

- **Cardiovascular Imaging,** Room A201-202
- **New Horizons in Musculoskeletal MR Imaging,** Room B118-122
- **Technical Advances and their Impact in Body MR,** Room B214-215
- **Answering Clinical Questions with fMRI/DTI/PWI,** Room B217-218
- **New Developments in MR Hardware: Technical Considerations,** Room B210-211
- **Quantitative Neuro MR,** Room B212-213
- **Human MRI and MRS at High Static Magnetic Fields,** Room A204-205
- **Echo Management,** Room A101-102

PLENARY LECTURES: MRI at Different Scales: Molecular Imaging of Tissue Oxygenation

08:15: **EPR Measurements of Tissue Oxygenation Status,** *Harold M. Swartz*

08:40: **BOLD and its Relationship to Brain Oxygenation,** *Richard B. Buxton*

09:05: **BOLD MRI and PET Imaging of Tumor Oxygenation,** *Anwar R. Padhani*

Jackie Gleason Theater

09:30 - 10:30 COFFEE BREAK

10:30 - 12:30 ORAL SESSIONS, CLINICAL MRI COURSE, AND CLINICAL CATEGORICAL

fMRI Physiologic Changes A201-202	*Clinical Categorical:* ***Imaging at 3T*** A204-205	*Clinical MRI Course:* ***Neuro Problem Solving: Brain and Spine*** B118-122	**MR-Guided Vascular Intervention** B214-215	**Cartilage: Basic Science** B217-218	**Human Brain MR Spectrocopy: Normal Brain Function** B210-211	**Diffusion: Tensors and Tracts** B212-213	**Myocardial Viability** A101-102	**Cancer: Models and Experimental Therapy** A104-105

12:30 - 13:30 Gold Corporate Member Lunchtime Symposium, Jackie Gleason Theater

13:30 - 15:30 POSTER SESSION, BASIC SCIENCE FOCUS SESSION, CLINICAL SCIENCE FOCUS SESSIONS, AND CLINICAL MRI COURSE

POSTER SESSION Exhibit Hall B	*Clinical Categorical:* **Hot Topics in Clinical Practice** A101-102	*Clinical Science Focus Session:* **Cardiovascular Imaging at 3.0T** B118-122	*Basic Science Focus Session:* **Arterial Spin Labeling: Arterial Source and Applications** B217-218	*Clinical Science Focus Session:* **Prostate Cancer Viewed by Multimodal MR** B210-211	*Clinical MRI Course:* ***Musculoskeletal MR Problem Solving: Cartilage and Soft Tissue Tumors*** A204-205

15:30 - 16:00 COFFEE BREAK

16:00 - 18:00 ORAL SESSIONS AND EDUCATIONAL COURSE

Global and Regional Cardiac Function A201-202	**MR Physics and Techniques for Clinicians** A204-205	**Rapid Imaging II** B118-122	**The Developing Brain: DTI and Advanced Image Analysis** B214-215	**fMRI Animal Studies** B217-218	**MR Imaging of Multiple Sclerosis** B210-211	**Recent Developments in RF Coil Designs** B212-213	**Evaluating Diffuse Liver Disease** A101-102	**MR Spectrocopy Data Acquisition Techniques** A104-105

18:15 - 19:45 BRONZE CORPORATE MEMBER SYMPOSIA

ISMRM 13TH SCIENTIFIC MEETING, Wednesday, 11 May 2005

07:00 - 08:00 **Morning Categorical Courses:**

- **Cardiovascular Imaging,** Room A201-202
- **New Horizons in Musculoskeletal MR Imaging,** Room B118-122
- **Technical Advances and their Impact in Body MR,** Room B214-215
- **Answering Clinical Questions with fMRI/DTI/PWI,** Room B217-218
- **New Developments in MR Hardware: Technical Considerations,** Room B210-211
- **Quantitative Neuro MR,** Room B212-213
- **Human MRI and MRS at High Static Magnetic Fields,** Room A204-205
- **Echo Management,** Room A101-102

PLENARY LECTURES: MRI at Different Scales: Stem Cell Tracking

08:15: **Adult Stem Cells: Plasticity, Trafficking, and Therapeutic Placement,** *Neil D. Theise*

08:40: **MR Tracking of Stem Cells Following Magnetofection,** *Jeff W.M. Bulte*

09:05: **Delivery and Tracking of Cardiovascular Stem Cells Using MRI,** *Robert J. Lederman*

Jackie Gleason Theater

09:30 - 10:30 COFFEE BREAK

10:30 - 12:30 ORAL SESSIONS, CLINICAL CATEGORICAL, AND HANDS-ON WORKSHOPS

Molecular Imaging in Physiology and Pathology A201-202	*Clinical Categorical:* ***Current Topics in Cardiac MRI*** A204-205	**Advanced Imaging of Brain Tumors** B118-122	**MR Angiography Methods** B214-215	**Diffusion Tractography: Crossing Fibers** B217-218	**MRI of Animal Brain** B210-211	**MRI Systems and Gradients** B212-213	**Magnetiza-tion Transfer and Relaxation Mechanisms** A101-102	**MR Imaging of the Bowel** A104-105

Clinical MRI Hands-On Workshop 1: **Neuro and Musculoskeletal Protocol Optimization** **GE Healthcare,** Room C220	*Clinical MRI Hands-On Workshop 1:* **Neuro and Musculoskeletal Protocol Optimization** **Philips Medical Systems,** Room C221	*Clinical MRI Hands-On Workshop 1:* **Neuro and Musculoskeletal Protocol Optimization** **Siemens Medical Solutions,** Room C222

12:30 - 13:30 Gold Corporate Member Lunchtime Symposium, Jackie Gleason Theater

13:30 - 15:30 POSTER SESSION, BASIC SCIENCE FOCUS SESSION, CLINICAL SCIENCE FOCUS SESSIONS, AND HANDS-ON WORKSHOPS

POSTER SESSION Exhibit Hall B	*Clinical Science Focus Session:* **fMRI: Brain Clinical Applications** B118-122	*Clinical Science Focus Session:* **MR Angiography** B214-215	*Clinical Science Focus Session:* **Insights into Diseases by Diffusion MR** B217-218	*Clinical Science Focus Session:* **MR Imaging of Cartilage: Clinical Applications** B210-211	*Basic Science Focus Session:* **Novel Contrast Agents and Cell Tracking Methods** B212-213

Clinical MRI Hands-On Workshop 2: **Body and Cardiovascular Protocol Optimization** **GE Healthcare,** Room C220	*Clinical MRI Hands-On Workshop 2:* **Body and Cardiovascular Protocol Optimization** **Philips Medical Systems,** Room C221	*Clinical MRI Hands-On Workshop 2:* **Body and Cardiovascular Protocol Optimization** **Siemens Medical Solutions,** Room C222

15:30 - 16:00 COFFEE BREAK

16:00 - 18:00 ORAL SESSIONS AND EDUCATIONAL COURSE

Emerging Applications in Parallel Imaging A201-202	**MR Physics and Techniques for Clinicians** A204-205	**Measurement of Brain Activation** B118-122	**Artifacts and Corrections** B214-215	**MRI of Myocardial Perfusion** B217-218	**Stroke: Prediction and Vascular Territory** B210-211	**Fetal and Female Pelvis MRI** B212-213	**MRS of Cerebral Energetics and Neuro-transmission** A101-102	**Functional Renal MRI** A104-105

18:15 - 19:15 ISMRM BUSINESS MEETING

19:00 - 21:00 STUDY GROUPS

Current Issues of Brain Function Study Group A201-202	**Cardiac MR Study Group** A204-205	**High Field Systems and Applications Study Group** B214-215	**MR of Cancer Study Group** B217-218	**Psychiatric MR Spectroscopy and Imaging Study Group** B210-211

ISMRM 13TH SCIENTIFIC MEETING, Thursday, 12 May 2005

07:00 - 08:00 **Morning Categorical Courses:**

- **Cardiovascular Imaging,** Room A201-202
- **New Horizons in Musculoskeletal MR Imaging,** Room B118-122
- **Technical Advances and their Impact in Body MR,** Room B214-215
- **Answering Clinical Questions with fMRI/DTI/PWI,** Room B217-218
- **New Developments in MR Hardware: Technical Considerations,** Room B210-211
- **Quantitative Neuro MR,** Room B212-213
- **Human MRI and MRS at High Static Magnetic Fields,** Room A204-205
- **Echo Management,** Room A101-102

07:45: Announcement of Young Investigator Awards

08:05: 2005 MANSFIELD LECTURE: Fast Imaging Horizons in Rapid MR Imaging, *Jürgen Hennig*

PLENARY LECTURES: MRI at Different Scales: Organ Imaging

08:45: **Functional Neuro MRI,** *Michael D. Phillips*

09:10: **Functional Cardiac Imaging,** *Robert M. Judd*

09:35: **Functional Skeletal Muscle Imaging,** *Scott L. Delp*

Jackie Gleason Theater

09:30 - 10:30 COFFEE BREAK

10:30 - 12:30 ORAL SESSIONS, CLINICAL CATEGORICALS, AND HANDS-ON WORKSHOPS

From Vision to Motion to Taste: Brain fMRI	*Clinical Categorical:* ***Cancer Imaging***	*Clinical MRI Course:* ***Cardiac MRI Problem Solving: Ischemic & Non-Ischemic Disease***	Diffusion Tensor Spectrum Imaging and Spectroscopy	Tendons, Muscles and Bones: Structural Analysis	Flow Quantification Method	MRI Safety and Bioeffects	MR Microscopy and Elastography	Image Processing: Brain
A201-202	A204-205	B118-122	B214-215	B217-218	B210-211	B212-213	A101-102	A104-105

Clinical MRI Hands-On Workshop 1 (REPEAT): **Neuro and Musculoskeletal Protocol Optimization** **GE Healthcare,** Room C220	*Clinical MRI Hands-On Workshop 1 (REPEAT):* **Neuro and Musculoskeletal Protocol Optimization** **Philips Medical Systems,** Room C221	*Clinical MRI Hands-On Workshop 1 (REPEAT):* **Neuro and Musculoskeletal Protocol Optimization** **Siemens Medical Solutions,** Room C222

12:30 - 13:30 Gold Plus Corporate Member Lunchtime Symposia

13:30 - 15:30 POSTER SESSION, BASIC SCIENCE FOCUS SESSIONS, CLINICAL SCIENCE FOCUS SESSIONS, CLINICAL MRI COURSE, AND HANDS-ON WORKSHOPS

POSTER SESSION	*Clinical Science Focus Session:* **Injury to the Pediatric Brain**	*Basic Science Focus Session:* **Parallel Imaging and Reconstruction Methods**	*Basic Science Focus Session:* **Advances in Engineering Methods**	*Clinical Science Focus Session:* **DTI from Cradle to Grave**	*Clinical Science Focus Session:* **Advanced MRI in Clinical Neuro-Oncology**	*Clinical MRI Course:* ***Vascular MR Problem Solving: Renal, Peripheral, and Carotid MRA***
Exhibit Hall B	B118-122	B214-215	B217-218	B210-211	B212-213	B118-122

Clinical MRI Hands-On Workshop 2 (REPEAT): **Body and Cardiovascular Protocol Optimization** **GE Healthcare,** Room C220	*Clinical MRI Hands-On Workshop 2 (REPEAT):* **Body and Cardiovascular Protocol Optimization** **Philips Medical Systems,** Room C221	*Clinical MRI Hands-On Workshop 2 (REPEAT):* **Body and Cardiovascular Protocol Optimization** **Siemens Medical Solutions,** Room C222

15:30 - 16:00 COFFEE BREAK

16:00 - 18:00 ORAL SESSIONS AND EDUCATIONAL COURSE

RF Coil Arrays for Parallel Imaging	MR Physics and Techniques for Clinicians	Image Reconstruction	Data Analysis of fMRI	Coronary Imaging	Myelin Turnover in Health and Disease as Detected by MRI	Spectroscopic Imaging Techniques	Diffusion: Localization of Function	Tumor Microcirculation
A201-202	A204-205	B118-122	B214-215	B217-218	B210-211	B212-213	A101-102	A104-105

18:15 - 19:30 RECEPTION

ISMRM 13TH SCIENTIFIC MEETING, Friday, 13 May 2005

07:00 - 08:00	**Morning Categorical Courses:**	**Cardiovascular Imaging,** Room A201-202
		New Horizons in Musculoskeletal MR Imaging, Room B118-122
		Technical Advances and their Impact in Body MR, Room B214-215
		Answering Clinical Questions with fMRI/DTI/PWI, Room B217-218
		New Developments in MR Hardware: Technical Considerations, Room B210-211
		Quantitative Neuro MR, Room B212-213
		Human MRI and MRS at High Static Magnetic Fields, Room A204-205
		Echo Management, Room A101-102

PLENARY LECTURES: MRI at Different Scales: Whole Body Imaging
08:15: **Whole Body PET/PET-CT for Oncologic Imaging,** *Richard Wahl*
08:40: **Technical Considerations in Whole Body MR,** *Steven J. Riederer*
09:05: **Whole Body MRA, Oncologic Imaging and Screening,** *Stefan G. Ruehm*
Jackie Gleason Theater

09:30 - 10:30	COFFEE BREAK

10:30 - 12:30	ORAL SESSIONS, CLINICAL MRI COURSE, AND CLINICAL CATEGORICAL							
MR Imaging of White Matter Disease (other than MS)	**fMRI: Language and Cognition**	**Myocardial Architecture and Remodeling**	**Novel Pulse Sequences and Methods**	**The South Beach Diet: "Look at All the Fat"**	**Spine: Cord and Disc**	**Advanced Modeling of RF Fields**	**MR Spectroscopy of Cells, Tissues, and Body Fluids**	**Intra- and Extracellular Diffusion and Model Systems**
A201-202	A204-205	B118-122	B214-215	B217-218	B210-211	B212-213	A101-102	A104-105

12:30 - 13:30	ADJOURNMENT

Special Symposium:
RESEARCH FUNDING: PROSPECTS, PEARLS, AND PITFALLS

Richard L. Ehman and Vivian S. Lee, Organizers

Monday, 9 May 2005, 14:00-16:00

OVERVIEW

This symposium will review current and emerging funding opportunities and provide a forum for sharing insights into the process of preparing research proposals. The first half will feature speakers from various funding agencies who will discuss funding mechanisms and the prevailing trends that are affecting them. The second half will include a panel discussion of funded researchers who will share their wisdom about grantsmanship.

Speakers: Eileen W. Bradley, Deborah Burstein, Richard L. Ehman, John R. Griffiths, Charles A. Mistretta, and Chrit Moonen.

EDUCATIONAL OBJECTIVES

Upon completion of this course, participants should be able to:

- Describe some of the current funding mechanisms that are available for MR researchers in the US and Europe;
- Appraise current trends in areas of emphasis for funding;
- Recognize strategies for preparing successful research proposals.

AUDIENCE DESCRIPTION

This session is designed for MR researchers of all levels, particularly junior investigators.

SMRT and ISMRM Joint Forum:
OPTIMIZING PULSE SEQUENCES AND PROTOCOLS

Gareth J. Barker and Todd Frederick, Organizers

Monday, 9 May, 14:00 - 16:00

OVERVIEW

This two-hour forum will present the process of developing and optimizing pulse sequences and protocols from various perspectives: a physicist may be interested in modifying the software which controls the scanner hardware; a MRI Technologist/Radiographer may be concerned with the impact of parameter choices on image quality and patient compliance; for a clinician, the most important factor is likely to be whether the resulting images allow for better patient management.

Speakers: Gareth J. Barker, Todd Frederick, Achim Gass, and Gary Israel.

EDUCATIONAL OBJECTIVES

Upon completion of this session, participants should be able to:

- Recognize how pulse sequences are designed, and how the combination of scanner hardware and software determines what happens during a scanning session;
- Optimize imaging sequences and parameters for a particular application;
- Address imaging artifacts and problems;
- Identify the pulse sequences and imaging methods that are best used for a variety of anatomical areas.

SMRT Preliminary Program: Riding the Waves of MR Excellence

FRIDAY EVENING, 6 MAY 2005, 18:30-20:30

Poster Presentation and Poster Walking Tour Reception

SATURDAY, 7 MAY 2005, 07:45-17:00

07:45 **Welcome**
Cindy T. Hipps, B.H.S., R.T. (R)(MR), SMRT President 2004-2005

Announcements
Nanette Keck, R.T. (R)(MR), 2005 Program Chair

Morning Moderator– Muriel Cockburn, D.C, R.B.Sc. (Hons.) P.Gd. Cert. MRI

08:00 **MR Arthrography of the Shoulder: Direct and Indirect Approaches**
Michael Zlatkin, M.D.

08:35 **Lower Extremity MR**
John Crues, M.D.

09:10 **Time-Resolved MRA**
Frank Thorton, M.D.

09:40 Break

09:55 **Clinical Scanning Techniques**
William Faulkner, B.S., R.T. (R)(MR)(CT)

10:30 **Proffered Papers: Volumetric Measurements in MR Improve Neuro Assessments and Analysis**

10:30 *2nd Place Research Focus:* **The Identification of Structural Brain Anomalies Associated with IQ Decline in Preterm Children**, Heather Ducie, B.Sc. (Hons), R.T.

10:40 **The Relationships Between MRI Findings and Epilepsy in Very Preterm Born Children**, Jane Ho, B.Sc. (Hons), R.T.

10:50 *3rd Place Research Focus:* **Optimization of High Resolution 3D Volumetric Scans to Differentiate Gray Matter and White Matter at 3 Tesla Using 8 Channel Brain Array Coil**, Renee Hill, R.T. (R)(MR)

11:00 *1st Place Research Focus:* **N-acetylaspartate Whole Brain Spectroscopy**, Hina Jaggi, M.S., R.T. (R)(MR)

11:15 **MR Artifacts**
Greg Brown, R.T.

11:45 SMRT Business Meeting and Awards Luncheon

Afternoon Moderator – Robin Avison, R.T. (N)(MR), C.N.M.T.

13:00 **Breast Imaging**
Todd Frederick, R.T. (R)(MR)

13:35 **Proffered Papers: Improved Imaging Techniques in Clinical MRI**

13:35 *3rd Place Clinical Focus:* **New Applications for Color Flow Imaging in MR**, Jane Johnson, R.T. (R)(MR)

13:45 **MR Cholangiopancratography (MRCP): High and Low TE Techniques in the Clinical Setting**, Jane Johnson, R.T. (R)(MR)

13:55 *2nd Place Clinical Focus:* **Dynamic Female Pelvic Floor Imaging**, Hina Jaggi, M.S., R.T. (R)(MR)

14:10 **Registry Readiness**
Carolyn K. Roth, R.T. (R)(MR)(CT)(M)(CV)

14:45 Break

15:00 **Cardiac Forum– Roundtable Discussion**
Moderator– Michael Kean, R.T.

General Anatomy and Imaging, Michaela Schmidt, R.T.
Diseases and Abnormalities, Peter Hunold, M.D.
Advantages and Pitfalls of 3 Tesla Cardiac Imaging,
William Woodward, A.R.M.R.I.T.
Functional Analysis Reporting by Magnetic Resonance,
Cindy R. Comeau, B.S., R.T. (N)(MR)

19:30 SMRT Past President's Reception– Miami Loews Hotel

SUNDAY, 8 MAY 2005, 07:45-17:00

07:45 **Welcome**
Karen Bove Bettis, R.T. (R)(MR), President 2005-2006

Announcements
Nanette Keck, R.T. (R)(MR), 2005 Program Chair

Morning Moderator – James J. Stuppino, B.S., R.T. (R)(MR)

08:00 **Neuro Imaging at 3.0T**
Steven Falcone, M.D.

08:35 **Neuro MRA**
Elke Gizewski, M.D.

09:10 **HIV Dementia MRI and MRS**
Robin Avison, R.T. (N)(MR), C.N.M.T.

09:40 Break

09:55 **Proffered Papers: MRI Techniques Convey Functional Data**

09:55 *1st Place Clinical Focus (Tie):* **Using Ungated FIESTA to Obtain Volumetric and Functional Measurements in the Cardiac MR Exam**, David Stanley, BS, RT(R)(MR)

10:05 *1st Place Clinical Focus (Tie):* **Functional Kidney MRI with Combined Perfusion and MR Angiography**, Filip De Ridder, R.N.

10:15 **Diffusion-Weighted Echo-Planar MR Imaging of the Parotid and Submandibular Glands Before and After Stimulation**, Anna Kirilova, R.T. (R)(MR)

10:30 **Pediatric Cardiac/Abdomen**
Michael Kean, R.T.

11:05 **Pediatric/Neuro**
Susan Blaser, M.D.

11:40 *President's Award Proffered Paper:* **Parametric Mapping of Hepatic Perfusion Index in Patients with Colorectal Cancer**, John Totman, D.C.R. (R) M.Sc.

11:55 Lunch

Afternoon Moderator – Carolyn Bonaceto, B.S., R.T. (R)(MR)

13:00 **Comprehensive Assessment of Disease with Large Anatomic Coverage**
Silke Bosk, R.T.

13:35 **The Current State of Imaging in the Abdomen at 1.5T and 3T**
Herbert Y. Kressel, M.D.

14:05 Break

14:20 **MR Safety**
Frank Shellock, Ph.D.

15:00 **MR Educators Update**
Moderator– Todd Frederick, R.T. (R)(MR)

JCERT Update, Luann Culbreth, R.T. (R)(MR)(QM) M.Ed.
Teaching Methods and Techniques,
Carolyn K. Roth, R.T. (R)(MR)(CT)(M)(CV)
Writing Effective Objectives and Exams,
Sonja K. Belville, A.S., R.T. (R)(MR)
Current Issues in MR Education, Todd Frederick, R.T. (R)(MR)

17:00 Meeting Adjournment

Message from the SMRT President

My year as President of the SMRT is flying by! It seems like yesterday when I took the podium in Kyoto, Japan. What a great experience this is for me! It honors me to have this opportunity to serve the SMRT and see the difference MRI technologists make in our industry. Where would you be without your MRI technologist/radiographer?

I know as a radiologist or scientist you know the answer to the question above. That is why I am asking you to help provide the support necessary for your technologist(s) to attend the SMRT Annual Meeting to be held in Miami Beach, Florida, 6-8 May 2005! With a record number of abstracts being submitted for review, this meeting will most likely be attended in record numbers. It is important for technologists to gather and network with one another and share information from all levels of MR excellence. I look forward to this meeting and I hope to meet your technologist!

The SMRT Policy Board met in Chicago at RSNA. This is one of the two meetings held each year for the entire policy board. The Executive Committee meets more frequently to discuss issues as they arise by teleconference. At the meeting in Chicago, a presentation was made by Heidi Berns, RCEEM Chair, concerning the SMRT's application to the ARRT to become a Recognized Continuing Education Evaluation Mechanism of the ARRT. Acceptance would allow the SMRT to accredit MR educational activities. We have recently heard from the ARRT that our application has been approved. I would like to thank Ms. Berns and her committee for preparing this intense document. We look forward to implementing this new and exciting project.

John Christopher, SMRT Education Committee Chair, and Nanette Keck, SMRT Program Chair, have been working diligently with their committees on the final phases of planning the annual meeting to be held in Miami in May. The committee chairs and their committees are to be commended on an outstanding job! For program details go to http://www.ismrm.org/smrt/05/program05.htm

Julia Lowe, SMRT External Relations Chair, attended the Health Professions Network meeting in Salt Lake City, Utah, in September. She helped to moderate the Associated Sciences Consortium at RSNA. She is scheduled to attend the Alliance Meeting in Washington, DC, in the spring along with myself. The CARE Bill and RadCARE Bill have yet to be passed and are scheduled again this legislative session. The SMRT supports the Alliance in their efforts by providing guidance for MR education standards in the field. Passage of these bills supports minimum US federal educational requirements for imaging professions.

Nominations/Awards Chair, Maureen Ainslie reported to the SMRT membership the results of the recent SMRT election. This year marked the first time in SMRT history where a tie had to be broken. New Policy Board Members and other award recipients will be announced at the SMRT Business Meeting in Miami.

The SMRT Executive Committee is still fast at work developing the first SMRT Strategic Plan. Plans are to have a working document by the Annual Meeting in May. The Executive Committee will be meeting by teleconference to finalize this plan that will be submitted to the SMRT Policy Board.

Jim Stuppino, SMRT Regionals Chair, has done a great job promoting SMRT Regionals across the globe. There are plans to host a Regional outside the US in 2005. There were seven regional meetings held during fiscal year 2003/2004. The Regional hosts are to be commended! Judy Wood, SMRT Chapters Committee Chair reports the addition of two new chapters this year. The SMRT Regionals and Chapters are a great avenue for promoting the SMRT in many areas where technologists might not ever have the benefits of quality MR education. The SMRT is proud of these accomplishments!

With the leadership of Anne Sawyer-Glover, *SMRT Educational Seminars* Editor, the home study program continues to provide an excellent means for technologists to learn and to gain continuing education credit. Recent issues include *"MR Imaging and Spectroscopy of the Prostate"* and *"Atlas of Knee Anatomy."* It is also important to note that **Invivo** (formerly MRI Devices), will continue to financially underwrite the home study program this fiscal year. My thanks to Anne and her committee for a job well done!

Julie Peay, SMRT *Signals* Newsletter Editor, has also been instrumental in her efforts by providing the necessary guidance to the quarterly issues of the newsletter. We have been right on track this year and issue #53 is in the final stages of production! Thanks to Julie and her committee for an exceptional year!

The SMRT Membership Committee, chaired by Todd Frederick, along with Sheryl Liebscher and Anne Ornelas de Lemos of the ISMRM/SMRT Central Office has designed a new member brochure. Plans are underway to use the new piece as a membership drive to attract more MR technologists who are unaware of the SMRT. Greg Brown, SMRT Publications Chair, assisted the membership committee with an ad that has been submitted for publication in the ISMRM journals promoting SMRT member benefits.

I would like to end by thanking the ISMRM, SMRT Committee Chairs, Committee members, Executive Committee, Policy Board members and ISMRM/SMRT Central Office for the support and leadership to the SMRT. It is a collaborative and ongoing project that would not flourish without the combined effort of all involved. On behalf of the SMRT Executive Committee and Policy Board, I would like to thank Jane Tiemann, ISMRM Executive Director for her leadership and support of the SMRT and its mission during her tenure. Jane, you will be missed!

— Cindy T. Hipps, SMRT President

STUDY GROUP UPDATE

The Study Group program continues to thrive, with 15 study groups presenting programs at the ISMRM 13th Scientific Meeting and Exhibition in Miami Beach Florida, USA. Please monitor the ISMRM Website, both under the 13th Scientific Meeting program information and the individual study groups headings, for program updates; however, following are the preliminary plans of each study group for the Miami Beach meeting:

Sunday, 8 May 2005, from 15:30 to 17:30

Diffusion and Perfusion MR Study Group

The Diffusion and Perfusion MR Study Group will present a scientific program on Sunday, 8 May 2005, from 15:30 to 17:30 in Room A201-202.

Program Outline:

1. Summary of Accounts and Membership Statistics
2. Report on ISMRM Workshop on Methods for Quantitative Diffusion MRI of Human Brain
3. Presentation of Common DTI Data Set Resource and Preliminary Results.
4. Perfusion Debate: "Arterial Spin Labelling Can Not Measure Perfusion in White Matter"
   For: *Jeff Duyn,*
   National Institutes of Neurological Disorders and Stroke, National Insititutes of Health, Bethesda, Maryland, USA
   Against: *John Detre,*
   Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania, USA
5. Announcement of newly elected committee members.
6. Open floor for suggestions for future directions/actions for study group.

Hyperpolarized Noble Gas MR Study Group

The Hyperpolarized Noble Gas MR Study Group will present a scientific program entitled ***"Commercial and Regulatory Issues Facing the Development of Hyperpolarization Technology"*** on Sunday, 8 May 2005, from 15:30 to 17:30 in Room A108-109.

Business Meeting

Scientific Meeting

"A Regulatory Perspective on Hyperpolarized Gases," *David Place, Federal Drug Administration, Rockville, Maryland, USA*

"Commercialization Issues Facing Hyperpolarization Technology," *Jonathan Allis, GE Healthcare Biosciences, Buckinghamshire, UK*

Molecular and Cellular Imaging Study Group

The Molecular and Cellular Imaging Study Group will present a scientific program entitled ***"Targeted MR Contrast Agents"*** on Sunday, 8 May 2005, from 15:30 to 17:30 in Room A110-111. Similar to last year, we will have a junior and senior speaker describing in detail the technical aspects of targeted MR contrast agents as well as biomedical applications. New to this year's program, we will also incorporate an industrial perspective of MR contrast agents.

Musculoskeletal Study Group

The Musculoskeletal Study Group will present a scientific program entitled ***"New Research Opportunities from the NIH and an Update in MR Safety"*** on Sunday, 8 May 2005, from 15:30 to 17:30 in Room B112-113.

15:30 ***"The Osteoarthritis Initiative: Research Opportunities,"*** *Gayle E. Lester, National Insititutes of Health, Bethesda, Maryland, USA; Erika Schnieder, Consultant on the Osteoarthritis Initiative, National Insititute of Arthritis, Musculoskeletal and Skin Diseases, Bethesda, Maryland, USA*

16:00 Discussion

16:45 ***"MRI Safety in Musculoskeletal Imaging,"*** *Frank Shellock, University of Southern California, Los Angeles, California, USA*

17:15-17:30 Discussion and Business Meeting

*See **Study Groups** page 19*

Monday, 9 May 2005, from 18:30 to 20:30

Dynamic NMR Spectroscopy Study Group

The Dynamic NMR Spectroscopy Study Group will present a scientific program on Monday, 9 May 2005, from 18:30 to 20:30 in Room A201-202.

Interventional MR Study Group

The Interventional MR Study group will present a scientific program entitled ***"Pushing the Envelope of iMRI– Opportunities and Challenges for the Expansion of Interventional MRI to New Clinical Applications"*** on Monday, 9 May 2005, from 18:30 to 20:30 in Room B212-213. A brief business meeting will be followed by a session which includes brief focus talks by clinical experts in three fields that are "ripe" for more interventional MRI activity. After the focus talks, members of the study group will break up into sub-groups and work with our invited experts to define the potential MR-guided interventions in these areas, as well as the barriers to the wider use of MRI for guiding procedures.

MR Engineering Study Group

The MR Engineering Study Group will present a scientific program entitled ***"What's the Next for RF Coil Technologies?"*** on Monday, 9 May 2005, from 18:30 to 20:30 in Room B214-215.

Business Meeting

Scientific Meeting: *"Wireless and Fiber Optic Cabling."* Recent advances of MR scanner design involve an ever-increasing number of receiver channels, which is required to realize the full potential of parallel imaging techniques. However, we cannot underestimate the impact of so many RF cables on cable management, giving rise to concerns for coupling and safety. On the other hand, looking outside of MRI, the rest of the world is moving to "wireless" technologies. This engineering meeting presents an opportunity to look at the state-of-the-art wireless technologies currently available in the wireless industry and identify what we may be missing to go from the current RF coil technologies to wireless. We will also investigate fiber optic cabling as a viable approach. Speakers will be announced.

MR Flow & Motion Quantitation Study Group

The MR Flow & Motion Quantitation Study Group will present a scientific program on Monday, 9 May 2005, from 18:30 to 20:30 in Room B217-218.

1. Business Meeting.

2. Update on Multi-Centre Flow Quantification Trial.

3. Invited Talks on one or more topics of current "Flow and Motion" interest, tailored to encourage discussion of the problems of acquisition, quantification, and interpretation:

"Vexing Issues with PC Velocity Studies." A look at various sources of errors and choices to be made in visualization and standardization.

"Cardiac Motion– Technical Issues." Issues in image analysis and combination of motion with other studies.

MR in Drug Research Study Group

The MR in Drug Research Study Group will present a scientific program entitled ***"MR in Drug Research: Translational Research"*** on Monday, 9 May 2005, from 18:30 to 20:30 in Room B210-211.

"Use of Pharmacologic MRI for Pre-Clinical and Clinical Screening of Drugs," *Bruce G. Jenkins, MGH-NMR Center, Charlestown, Massachusetts, USA*

"Potential of MR for Drug Discovery and Clinical Trials in Alzheimer's Disease," *Clifford R. Jack, Mayo Clinic, Rochester, Minnesota, USA*

"Dynamic MRI in Pre-Clinical Studies and Clinical Trials of AntiVascular Treatments," *Anwar R. Padhani, Mount Vernon Hospital, Northwood, England, UK*

"MR as a Translational Research Tool in Anti-Cancer Drug Development," *Ross J. Maxwell, Mount Vernon Hospital, Northwood, England, UK*

White Matter Disease Study Group

The White Matter Disease Study Group will present a scientific program intended to spark interest in the upcoming "Study Group Conference on Myelin" planned for 2006. A business meeting will follow. The program is scheduled for Monday, 9 May 2005, from 18:30 to 20:30 in Room A204-205.

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Wednesday, 11 May 2005, from 19:00 to 21:00

Current Issues in Brain Function Study Group

The Current Issues in Brain Function Study Group will present a scientific program of three presentations on Wednesday, 11 May 2005, from 19:00 to 21:00 in Room A201-202.

Business Meeting

Inaugural Lecture: ***"Neuroimaging in the 21st Century: A Historical Perspective,"*** *Marcus E. Raichle, Washington University School of Medicine, St. Louis, Missouri, USA*

Followed by two lectures:

"Plumbing, Energy or Something Else: What Are We Looking at with BOLD?," *Richard Buxton, University of California at San Diego, La Jolla, California, USA*

"O_2 Consumption, The Orphan of Brain Imaging," *Peter van Zijl, Johns Hopkins University Medical School, Baltimore, Maryland, USA*

Cardiac MR Study Group

The Cardiac MR Study Group will present a scientific program on Wednesday, 11 May 2005, from 19:00 to 21:00 in Room A204-205.

High Field Systems and Applications Study Group

The High Field Systems and Applications Study Group will present an industry forum entitled ***"7 Tesla Human MRI: Status and Challenges"*** on Wednesday, 11 May 2005, from 19:00 to 21:00 in Room B214-215.

MR of Cancer Study Group

The MR of Cancer Study Group will present a scientific program entitled ***"Recent Advances in Cancer Understanding and Treatment"*** on Wednesday, 11 May 2005, from 19:00 to 21:00 in Room B217-218.

Psychiatric MR Spectroscopy and Imaging Study Group

The Psychiatric MR Spectroscopy and Imaging Study Group will present a scientific program on Wednesday, 11 May 2005, from 19:00 to 21:00 in Room B210-211.

Business Meeting:
Introduction of New Officers
Discussion of Joint Workshop with Dynamic Spectroscopy
Other Business

Scientific Meeting:
"Methodology of Diffusion Tensor Imaging," *Derek K. Jones, Institute of Psychiatry, King's College, London, England, UK*

"Applications of DTI to Alcoholism," *Adolf Pfefferbaum, Stanford University, Stanford, California, USA*

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Advances in Experimental and Clinical MR in Cancer Research

ISMRM Cancer Study Group (SG) biannual Workshop (WS) entitled *"Advances in Experimental and Clinical MR in Cancer Research"* was held 16-18 October in Manchester, UK. This relatively broad meeting title was broken down to topics as follows: (a) *in vivo* MR in cancer drug development, (b) molecular imaging by MR in cancer and (c) endogenous MR detectable 'biomarkers' in experimental and clinical oncology. The venue was a Victorian Hotel called *'The Britannia'* in downtown Manchester, a site that differed from the previous more remote sites, such as those in Geiranger (Norway) in 2000 and Santa Cruz (USA) in 2004. Hotel Britannia provided a unique venue for the meeting, with numerous period features including extensive chandeliers in the meeting room and a cosy decorated room for poster sessions.

Organising committee (OC) was built around the SG officers and included Zaver Bhujwalla (Baltimore, USA), Martin Leach (London, UK), Risto Kauppinen (Manchester, UK) and Gene Reddick (Memphis, USA) together with two local organisers Pat Price (Wolfson Molecular Imaging Centre) and Ian Stratford (The University of Manchester). Because the program contained a component of cancer drug development, Jeff Evelhoch (Amgen, USA) was invited to join the OC representing *MR in Drug Research Study Group*.

A total of 61 abstracts were submitted to the meeting, a yield that was 25% greater than to the workshop in 2002. The participation was at the same level as in the Santa Cruz meeting 2002; we had 134 attendees and 17 invited speakers. The delegates came from the North America (55), the UK (49), rest of Europe (38) as well as three people from China, one from Japan, and one from Brazil. Students comprised 28% of attendees.

The program was spread over two and one-half days, embracing the Negendank Memorial Lecture, 14 invited talks, 12 proffered oral presentations, two roundtable discussions, and two poster sessions with 49 posters.

Traditionally the Negendank Lecture, dedicated to the great advocate of MRS for oncology research, Dr. Bill Negendank, is delivered on the first day of the WS. The lecture was given by Michael Garwood (Minnesota, USA) under the title *"Advanced MRS and MRI Methods in the Clinical Assessment of Cancer."* Dr. Garwood provided us with an outstanding overview of recent developments in high field MR techniques devised for clinical cancer research and patient care. He highlighted the previous results indicating that choline-containing compounds, as quantified by ^{1}H MRS using advanced MRS methods, may serve as a 'biomarker' for staging breast tumours as well as revealing responders to neoadjuvant chemotherapy as soon as 24 hours after the first drug administration. Dr. Garwood introduced several endogenous novel yet experimental MR contrasts, such as $T_{1\rho}$ and $T_{2\rho}$, which show great potentials to reveal tumour responses earlier than existing MR techniques. The Negendank lecture by Dr. Garwood demonstrated the ultimate benefits of high field MR in the clinical assessment of cancer.

The first meeting day, coordinated by Jeff Evelhoch and Martin Leach, covered the topics of oncology drug development and potentials of *in vivo* MR methods in preclinical and clinical drug testing. This part of the program was a joint venture with the *MR in Drug Research SG*. The field of anti-cancer drug discovery, spanning from the search of drug targets and mechanisms of actions to the costs of development was introduced by Teresa McShane (Pfizer Inc., USA). Her extensive review to the syllabus and insightful talk were highly appreciated by the audience. Dr. McShane painted a picture of future clinical trials based more and more on biomarkers detectable by imaging *in vivo*. John Waterton (AstraZeneca, UK) expanded the latter aspect by elaborating MRI and MRS detectable biomarkers in drug discovery and development. Dr. Waterton brought up examples of physiologic and morphologic biomarkers from various tumour types. He stressed that there is a substantial variation in MR detectable biomarkers in response to therapy from one tumour type to another. According to Dr. Waterton a satisfactory correlation between the MR biomarkers and histology can be obtained in animal tumours, yet the ultimate goal is to establish this correlation also in man. He advocated the role of MR in preclinical and clinical drug development to speed up the process of moving from the present 'cytotoxics' to targeted anti-cancer drugs.

An example of usage of advanced MR methods in preclinical cancer drug development was presented by Bob Gillies (Arizona Cancer Center, USA). Dr. Gillies demonstrated the potentials of combined DSC MRI, both using low and

Figure 1. *John Waterton (left) and Bob Gillies previewing their slides with Nick (in middle), the AV technician. Jeff Alger enjoying the coffee break (far right).*

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high molecular weight contrast agents, diffusion MRI and ^{1}H MRS to monitor tumour responses to novel 'targeted' anti-cancer drugs. He used a compound inhibiting hypoxia-inducible factor 1α as an example for cancer drug development. Gordon Jayson (Christie Cancer Hospital, UK) emphasised that one of the difficulties in developing new biological treatments, such as anti-angiogenic agents, is that hitherto dose finding phase I studies have focused on the maximum tolerated dose (MTD), yet for many drugs the optimum biologically active dose is less than the MTD. Dr. Jayson showed that DSC MRI is a very useful tool to investigate the vascular effects of anti-angiogenic drugs in phase I trials, aiding to identify suitable doses for phase II drug trials.

Prior to the second part of the cancer drug development session, a panel discussion was held followed by two proffered papers presented by Jelena Miljus (Denver, USA and Bremen, Germany) and Inna Linnik (Manchester, UK). The paper by Miljus and coworkers showed that ^{13}C MRS using exogenous substrates can reveal specific metabolic perturbations associated with anti-cancer drug exposures in colon cancer cells. Dr. Linnik demonstrated the ability of DSC MRI to detect anti-angiogenic properties of an anti-tumour antibody in human melanoma xenograft. A poster session with 25 presented papers preceded the second part of oral session.

The latter part of the first meeting day focused on anti-cancer drug discovery, pharmacology of novel drugs and evaluation of cancer drug effects by MR. Paul Workman (Institute of Cancer Research, UK) emphasised the need to understand the molecular pathology of cancer for drug design. Genomic and molecular biology techniques play key roles in this pursuit. Dr. Workman claimed that 'molecular biomarkers' are needed to select responders to therapy to assure successful outcome. These biomarkers form a major challenge for imaging modalities, such as MRI and MRS, to this end. Ian Judson (Institute of Cancer Research, UK) presented work on pharmacodynamic biomarkers for new generation of anti-cancer drugs devised to act, for instance on angiogenesis, apoptosis and chromatin modulation. Dr. Judson illustrated the use of FDG PET in this pursuit owing to the ability of this imaging method to reveal decline in FDG uptake quantitatively in responding tumours. It is expected that PET and also other imaging methods will have an increasing role in detection of pharmacodynamics of novel drugs to prove the efficacy of given drug and guide determination of optimal dose. Anwar Padhani (Mount Vernon Hospital, UK) reviewed DSC MRI studies exploited in clinical trials of antivascular drugs. The presentation of Dr. Padhani convincingly demonstrated that DSC MRI is an essential tool to directly determine the efficacy of an antivascular drug and a biologically active dose. The presentation stressed the standardisation of DSC MRI protocols for drug testing in clinical settings.

Figure 2. *Poster viewing on day one of the meeting.*

The second day of the WS comprised two oral sessions, a poster session and a roundtable discussion, all these under the theme of *'Molecular Imaging by MR in Cancer.'* The session on *'Molecular and Cellular Imaging of Cancer,'* coordinated by Risto Kauppinen, and Michal Neeman (Weizman Institute, Israel) focused on the molecular detection of angiogenesis by MR in tumours. The Weizman group has shown that tumour associated fibroblasts can be revealed with albumin-based MR contrast reagents. Dr. Neeman illustrated revelation of transglutaminase activity through an MR detectable substrate in tumour spheroids. Transglutaminase is involved in tissue remodeling in the extracellular matrix. Similarly, they have developed an MR based 'assay' for hyaluronidase, a key regulator of angiogenesis in solid tumours. The work presented by Dr. Neeman indicates that molecular imaging with MR bears great promise for detection of specific interactions between tumour vasculature and stroma. Catharine West (Christie Cancer Hospital, UK) presented an MRI study devised to reveal hypoxia in clinical cancer cases. This presentation underscored the urge to develop efficient imaging methods for detection of tumour oxygenation, because hypoxia is one of the key factors leading to failure in radiation and drug therapies.

The talk by Dr. West was followed by three orals selected from the submitted abstracts. Timo Liimatainen (University of Kuopio, Finland) presented a paper describing ^{1}H MRS of tumour lipids during apoptosis induced by gene therapy. The work indicates that ^{1}H MRS may provide data from the endogenous phospholipase A_2 (PLA_2) activity in apoptotic tumours. Mark Swanson (UCSF, USA) described a combined metabolic, pathologic and genetic analysis of prostate tissue. This group is using high resolution magic angle spinning to map the metabolites in prostate specimens in association with histology and gene mapping from the same specimens. Matthew Milkevitch (University of Pennsylvania, USA) showed that in DU145 prostate carcinoma cells changes in lipid and choline

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metabolites detected by ^{1}H and ^{31}P MRS can be attributed to cytoplasmic PLA_2 activity, as verified with a fluorescent probe in these cells.

Zaver Bhujwalla (Johns Hopkins University, USA) presented an excellent review about the use of multimodal functional imaging of tumours. Dr. Bhujwalla showed that effects of siRNA approach can be monitored through choline peak by ^{1}H MRS. She also presented data from combined use of MR and optical imaging techniques to assess the degree of hypoxia in tumours. In these studies the Johns Hopkins group has used VEGF over-expressing tumours to examine the role of the growth factor in tumour vascular volume and permeability. Dr. Bhujwalla stressed the ultimate value of MR methods for elucidation of tumour physiology and genomics to understand malignant phenotype.

The first session on Sunday was concluded by three proffered papers. Nada Al-Saffar (Cancer Research UK, London) showed that the molecular mechanism of action of a choline kinase inhibitor can be scrutinized by ^{31}P MRS. Kristine Glunde (Johns Hopkins University, USA) presented an approach for choline kinase knock-down in breast cancer xenografts and use of MRS analyses to reveal the molecular effects of this approach. Hisataka Kobayashi (NIH, USA) presented synthesis of nano-size macromolecular contrast agents to visualize lymphatic flow in mice. Dr. Kobayashi had used these agents for imaging of lymphatic metastasis in animal models of breast cancer.

The next oral session dealt with targeted contrast agents for cancer models and it was coordinated by Silvio Aime (University of Turin, Italy). Dr. Aime stressed the need to amplify 'contrastrographic' ability of MRI contrast reagents by means of chemical design. The presentation by Joel Garbow (Washington University in St Louis, USA) reviewed various animal models used for human malignant disease equivalents. The Biomedical MR Laboratory in St. Louis maintains several animal models for cancer in brain, lung and reproductive organs. Dr. Garbow highlighted the state-of-the-art MR repertoires available for noninvasive assessment of mouse cancers *in vivo*. He showed sets of stunning MR micro-images of mouse cervix including absolute diffusion images revealing the invasive neoplasia. Kevin Brindle (University of Cambridge, UK) reviewed MR work towards detection of apoptosis induced in tumour models by various treatment methods. There appear to be several endogenous biomolecules, such as CDP-choline and fructose-1,6-bisphosphate, that increase in early phase of apoptosis. Similarly, DSC MRI has shown increased vascular volume in immunorejection of tumours. Dr. Brindle shared his enthusiasm to work towards targeted probes tagged with MR reporters, such as SPIO, to visualise phosphatidylserine externalization. His laboratory has successfully used synaptotagmin I-based probe for MRI of apoptosis in subcutaneous tumours.

Figure 3. *Attendance during the Negendank lecture.*

Jeff Bulte (Johns Hopkins University, USA) discussed extensively the technical issues related to the design of targeted contrast reagents. He emphasized the issue of sensitivity in regard to the use of MR for molecular and cellular imaging of cancer. According to Dr. Bulte iron oxide nanoparticles are currently the contrast agent of choice for cellular imaging in cancer. Dr. Bulte showed how labelled white blood cells have been used to study dynamic of tumour homing, for instance in design of cytotoxic therapy exploiting T-lymphocytes. MR imaging is expected to play a role in this pursuit.

A poster session with 24 posters was held before the roundtable discussion. The second meeting day was closed by the roundtable discussion under a working title *'How Specific Can MRI/MRS Become in Detection of Cancer Diagnosis and Treatment Response in vivo'* coordinated by Sarah Nelson (UCSF, USA) and Jerry Glickson (University of Pennsylvania, USA). Both coordinators gave excellent introductions to the theme with numerous examples stimulating a lively and to a certain extent, also critical appraisal of the symbiosis between MR and oncology communities.

The third meeting day comprised an oral session entitled *'MRI and MRS in the Assessment of Therapeutic Response and Toxicity'* coordinated by Pat Price. John Griffiths (St. George's Medcal School, UK) presented a summary of multi-nuclear MRS approaches for metabolic profiling used in experimental setting to evaluate drug treatment responses. Dr. Griffiths demonstrated that a large body of results from the experimental models can be transferred to clinical settings to monitor directly drugs in tumours as well as their efficacy in killing tumour cells. Harish Poptani (University of Pennsylvania, USA) reviewed MR work exploiting multinuclear MRS and advanced MRI methods to detect therapeutic responses. Dr. Poptani neatly showed that quantitative MRI using either diffusion, T_2 or $T_{1\rho}$ contrast reveals cell kill before decline in tumour volume. He showed also that less commonly used MRS

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nuclei, such as ^{13}C and ^{23}Na, bear great potential to complement detection of early tumour responses in conjunction to the better known MR techniques. Dr. Poptani anticipated that a move to high field human MR will promote exploitation of ^{13}C, ^{23}Na and ^{31}P for clinical applications. Pek-Lan Khong (University of Hong Kong, China) presented DTI data from pediatric medulloblastoma and acute lymphoblastic leukemia (ALL) patients treated with prophylactic cranial radiation with and without chemotherapy. The Hong Kong group reported that white matter (WM) fractional anisotropy (FA) decreased following cranial radiation in normal appearing WM (NAWM) in ALL survivors. Interestingly, severity of FA decline correlated with cognitive performance of patients. These data suggest that FA may be useful in guiding timing and application of potentially neurotoxic treatments in pediatric malignancies.

The final part of the session was devoted to the proffered papers dealing with translational MR work for cancer imaging. Gene Reddick (St. Jude Children's Research Hospital, USA) reported that NAWM volume is smaller in brain tumour (BT) survivors than in age-matched ALL patients. BT survivors perform worse in cognitive tests than ALL patients. Jeff Alger (UCLA, USA) is researching gliomablastoma multiforme patients by means of ^{1}H MRS and diffusion MRI. In his material, comprising of over 130 scanning sessions, choline was found not to increase at time close to the survival limit of patients, and ADC was shown to decline with patient deterioration. These findings indicate that glioblastomas progress by necrotic expansion rather than by regrowth. Stephan Price (Addenbrooke's Hospital, UK) showed that DTI and Eigenvector rose-diagrams provide a new means to reveal tumour infiltration in WM. These techniques are expected to aid in planning of both surgical and radiation therapies. David Buckley (University of Manchester, UK) introduced a multiparametric MRI method to quantify treatment response to radiotherapy in prostate. Hanneke van Laarhoven (University Medical Centre Nijmegen, The Netherlands) presented results from Gd-DTPA kinetics in liver metastases and its relationship with response to chemotherapy. The Nijmegen group has observed a correlation between the kinetic parameters of DSC MRI and tumour size as well as their responsiveness to treatment. The final oral presentation was given by Scott Semple (University of Aberdeen, UK) from combined use of DSC MRI and FDG PET to study breast tumours. Dr. Semple showed that MRI and PET data correlate in breast cancer in many regards supporting the proposed relationship between tumour vascular and metabolic properties.

A report like this does not give full right to all papers submitted to the meeting. It was a unanimous message from the reviewers to the OC that the overall quality of submitted papers was excellent. This can be regarded an amazing achievement by the members of the SG, given that the ISMRM Annual Meeting was held only five months before the Manchester WS. To show recognition to the work submitted to the meeting, the study group awards Negendank poster prices. The winners of these prestigious prices were as follows: Emma O'Connor, University of Sheffield, UK; Barjor Gimi, Johns Hopkins University, USA; and M. Margarida Julià-Sapé, Universitat Autònoma de Barcelona, Spain. These awards come with a money prize attached.

The Manchester WS introduced a new feature to the protocol of Cancer workshops by sharing a day with *MR in Drug Research SG*. This concept was welcomed with great cheers in the feedback by the attendees. The meeting corroborated that the biannual Cancer workshops are an institutionalised concept among the ISMRM study group workshops. From meeting to meeting these workshops attract a large number of established cancer MR folks in right proportion to the junior scientists. This time we were particularly pleased to see several delegates from less represented fields, such as pharmacology and chemistry. The atmosphere in the Cancer SG workshops is highly scientific, very intimate and friendly. This conclusion was readable also from the submitted evaluation forms showing appraisals, such as *'truly outstanding workshop, very high quality workshop'* to quote a few.

Organising a Cancer Study Group Workshop is a great pleasure owing to the high spirit within the membership. This work was made much more pleasant by the ISMRM staff; the OC would like to warmly thank Roberta Kravitz for her outstanding contributions both in the office and on site. We are indebted to Bob Goldstein for his help as well. We would like to thank the ISMRM Corporate Members for their support. We greatly appreciate the Cancer Workshop sponsorships by Philips Medical Systems UK, Bruker Biospin MRI, Inc., and Pfizer, Inc.

— Risto Kauppinen
on behalf of the Organising Committee

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BOARD MOTIONS, NOVEMBER 2004

It was moved, seconded, and carried to endorse the slate of nominees for Vice President and Board of Trustees.

It was moved, seconded, and carried that Stockholm and Berlin both be considered as potential sites for 2010; the Meetings Coordination Committee will ask Local Organizing Committees from both cities to produce a budget within 60 days to support meeting costs.
It was moved, seconded, and carried to approve the draft contract with ESMRMB for a Joint Annual Meeting in 2007.

It was moved, seconded, and carried that the Central Office remain in Berkeley for the foreseeable future.

It was moved, seconded, and carried to approve the cost of ~US$60,000 for iMIS software upgrade and customization of database software for electronic management of membership activities.

It was moved, seconded, and carried that there will be an award for the best teacher in every course within the weekend program.

It was moved, seconded, and carried to keep a historical database of speakers' performances.

It was moved, seconded, and carried to approve the proposed slate for Associate Membership.

It was moved, seconded, and carried to provide free access to the full electronic archive of Scientific Meetings:
(i) immediately to registrants;
(ii) after one year to members;
(iii) after 3 years to non members.
Access to Educational Meeting proceedings will always be charged.

It was moved, seconded, and carried to establish a Subcommittee to consider the future scope and format of the Society journals and the choice of publisher (including the possibility of self publication), and to allocate US$10,000 for this activity.
It was moved, seconded, and carried that the Publications Committee formulates a plan to advertise for and appoint a Web Editor who will be an *ex officio* member of the Board.

It was moved, seconded, and carried to provide two Internet kiosks adjacent to Gold Corporate Members' booths.

It was moved, seconded, and carried to increase funding for Student Stipends up to a maximum of US$50,000 from the Scientific and Educational Reserve with the aim of supporting two-thirds of stipend applicants.

It was moved, seconded, and carried to allow clinician trainees who submit abstracts to receive a stipend even if their abstract is rejected.

It was moved, seconded, and carried to allocate an additional US$20,000 for clinician trainees to receive a stipend who have not submitted an abstract or whose abstract has not achieved the threshold for funding in the student stipend scheme whether it is accepted or rejected.

It was moved, seconded, and carried to adopt the FY 2005 budget submitted by the Finance Committee, with the addition of US$10,000 for the Publication Committee and US$20,000 for the Student Stipend Committee, and to give permission to take up to US$50,000 from the designated scientific and educational reserves for student stipends.

The results of the election for Vice President and members of the Board of Trustees are as follows:

Vice President: Jeffrey L. Duerk, Ph.D.

Board of Trustees: Alberto Bizzi, M.D.
David A. Bluemke, M.D., Ph.D.
Christiane K. Kuhl, M.D.
Debiao Li, Ph.D.
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Brian K. Rutt, Ph.D.

Mark Your Calendar! ISMRM IMPORTANT DATES AND DEADLINES

13-16 March 2005 — ISMRM Workshop on Methods for Quantitative Diffusion MRI of Human Brain
Lake Louise, Alberta, Canada.

25 March 2005 — Deadline for Advance Registration for the ISMRM 13th Scientific Meeting and Exhibition.

22 April 2005 — Full Text version of the Proceedings is available online to preregistered attendees only.

7-13 May 2005

Friday, 6 May 2005	On-site Registration open from 14:00 - 20:00. SMRT Poster Tour and Reception 18:30 - 20:00.
Saturday, 7 May 2005	Weekend Educational Program begins. On-site Registration open from 06:30 - 18:00. SMRT 14th Annual Meeting begins 07:45.
Sunday, 8 May 2005	Weekend Educational Programs continue. On-site Registration open from 07:00 - 18:00. SMRT 14th Annual Meeting 07:45.
Monday, 9 May 2005	On-site Registration open from 06:30 - 18:00. Scientific Sessions begin at 07:45. Technical Exhibition open at 10:00.
Tuesday - Thursday, 10-12 May 2005	On-site Registration open from 06:30 - 18:00. Morning Categorical Courses begin at 07:00. Scientific Sessions begin at 08:15. Technical Exhibition open at 09:30.
Friday, 13 May 2005	On-site Registration open from 06:30 - 12:30. Morning Categorical Courses begin at 07:00. Scientific Sessions begin at 08:15. Technical Exhibition open at 10:00.

Bill Negendank Award Fund

In memory of William George Negendank, M.D., his colleagues in the ISMRM MR of Cancer Study Group have established the ***Bill Negendank Award Fund*** to recognize outstanding young investigators in the field of Cancer MR (see MR Pulse, Vol. 3, No. 3, page 6). To make a contribution, please send your check made payable to the ISMRM or submit your Visa, MasterCard, American Express, or Eurocard number, expiration date, and amount you wish to donate to the following address:
Bill Negendank Award Fund, International Society for Magnetic Resonance in Medicine, 2118 Milvia Street, Suite 201, Berkeley, CA 94704, USA

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