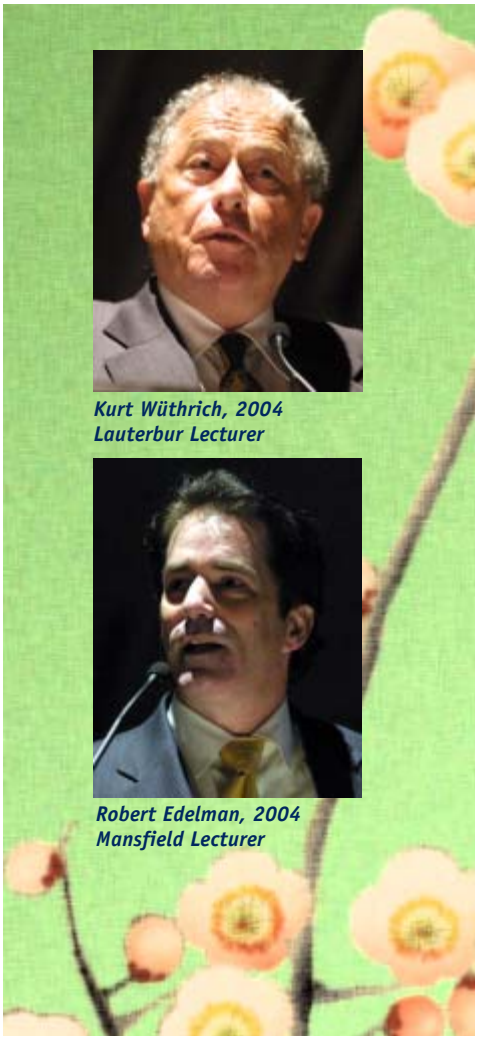

Kurt Wüthrich, 2004 Lauterbur Lecturer

Robert Edelman, 2004 Mansfield Lecturer

INTERNATIONAL SOCIETY FOR MAGNETIC RESONANCE IN MEDICINE

MR PULSE

VOL. 11, NUMBER 2 | AUGUST 2004

INSIDE

Letter From The President

It is my honor and privilege to write this letter for *MR Pulse*– my first as President of the ISMRM. With the Nobel Prize in medicine having been awarded to Professor Paul Lauterbur and Sir Peter Mansfield just a few months ago, I feel especially fortunate to have taken office this year.

June and July are often a quiet time around academic institutions, but for the ISMRM they are relatively hectic turn-around months. Committee members are still busy debriefing one another on the current year's Annual Meeting, while ramping up activities and planning for the coming year. The May 2005 meeting in Miami may seem far away, but the size and complexity of the meeting requires well over 12 months of detailed planning by large numbers of people, especially those on the Scientific Program and Education Committees, and at the Central Office. The planning and organizing are occurring right now, and will continue through to May 2005. This year the ISMRM is undertaking two very important additional tasks– developing a new Strategic Plan, and searching for a new editor of *MRM*. Summer and autumn will certainly be interesting and busy!

As has been the case every year for the Society, the Annual Meeting is its single most important event. The 2004 Annual Meeting was held in Japan for the first time ever. The Kyoto International Conference Hall proved to be an outstanding venue. Although the rainy weather put a damper on some outside activities, it certainly did not deter the staging of an exceptional meeting including an incredible final banquet followed by a remarkable fireworks display! The scientific, educational, and technical components of the meeting were great successes. Abstract submissions totaled 3,638. The meeting featured 1,592 traditional paper posters and 360 electronic posters as well as a total of 830 oral presentations, with 635 oral papers, 120 clinical science orals, 60 basic science orals, and 15 plenary lectures. There were a total of 4264 attendees from 64 different countries, with 3331 professional attendees. Of the 3331 professional attendees, 43% were ISMRM members, with 26% student members, 3% SMRT members, and 27% non-members. 364 attendees came from Japan, a record number. The meeting was a success by all metrics!

Jeff Duerk and Paul Finn, with their Scientific Program and Education Committees are to be congratulated for organizing the Scientific and Educational Programs in Kyoto. These programs were the largest and most complex we have ever undertaken. Jeff and Paul led the effort and did so on a compressed time frame, given that we only had 10 months'

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preparation after the July 2003 Toronto meeting. Of course they did not work in isolation. Jane Tiemann, our Executive Director, along with the staff of the Central Office, did a superb job as always. An enthusiastic thank you goes to our Kyoto Local Organizing Committee, led by Matsumasa Takahashi, Atsuko Heshiki, and Shoji Naruse. Professors Takahashi, Heshiki, and Naruse led a dedicated LOC that spent many years planning and fund-raising for Kyoto. The opening reception, final banquet, and fireworks were spectacular! On behalf of the Board and the entire ISMRM, I extend a huge thank you to you and the LOC for all your time and hard work! We are also grateful for our Corporate Members and Exhibitors. And of course, thanks to you our members, who year after year guarantee the success of the ISMRM and its Annual Meeting!

Planning for the May 2005 Miami Annual Meeting is well under way. Vivian Lee is chairing this year's SPC, and Roland Kreis is chairing the Education Program. The scientific theme for the plenary lectures will be *"MR at Different Scales."* On the education side there will again be a balanced program, with components for new entrants, basic scientists, and clinicians. Vivian and Roland are working closely together to ensure there is good integration of all parts of the Annual Meeting, with no overlap. It is also our express objective to capture a greater clinical MR audience this year; hence much of the planning that Vivian, Roland, and their committees have done is to ensure that there is superb clinical content, presented by experts that are excellent speakers. We want clinicians that are interested in MR to be drawn to the ISMRM and the Annual Meeting. Given that Miami is easily accessible from all of Europe as well as North and South America, we are expecting record attendance for the 2005 Annual Meeting this time with a distinctive Latin flavor.

Workshops are an important part of the ISMRM's activities. The Society continues to sponsor and endorse several Workshops every year. Educational workshops in particular are proving to be a growing and excellent outreach vehicle. In the past year there have been educational workshops in Turkey, China, and Romania. I had the pleasure of participating in the Shanghai, China, workshop held in late May 2004. The experience was very rewarding. The two-day program had international and local speakers delivering excellent lectures in a standing-room-only lecture room. The audience was extremely appreciative. Reports on the Turkey and Romania workshops were similarly favorable. Such programs will prove an excellent means of raising the awareness of the ISMRM in areas of world such as China, where we currently have little presence.

Much of the membership is familiar with many of the ISMRM Committees, especially the more visible ones, such as the SPC and Education Committees; however, the ISMRM has 20 committees, in addition to the Board of Trustees, with a total membership of over 250 people. The committees consist of ISMRM members that work on a purely voluntary basis. It is inspiring how busy professionals willingly donate their time to contribute to the work and function of the Society. As we embark on the creation of a new strategic plan, I would like to acknowledge the work of the ISMRM committees and their members. These committee members are charged with developing the strategies for fulfilling the objectives of the plan, in addition to their regular work. It is a large undertaking. The Strategic Planning Committee, chaired by President-Elect Chrit Moonen, defined 49 objectives for our Plan, grouped into seven major goals. With coordination provided by their Chairs, each of the committees has been assigned the task of developing strategies to fulfill the objectives relevant to its committee. Chrit and I will be collecting the individual committee reports over the summer, with a view to drafting a new master plan by late November 2004, ready for discussion at our winter Board meeting in Chicago.

Felix Wehrli informed the Board at its May meeting that after 13 years at the helm of *MRM,* he would be stepping down as Editor at the end of 2004. Although saddened by this news, the Board fully understood that being Editor of a major journal was a huge undertaking and that no individual could do the job forever. The Board passed a formal motion acknowledging Felix and thanking him for his impressive work. On behalf of all ISMRM members, I thank Felix Wehrli for his work and efforts in establishing our journal as the premier scientific journal in magnetic resonance in biology and medicine! In order to smooth the transtition to a new editor, soon after receiving Felix's news, the Board struck a Search Committee for a new editor, headed by Peter Jezzard. The Search Committee has met by teleconference several times since May and has developed an action plan that has been approved by the Executive Committee. If any member would like information related to the search, please contact the Central Office.

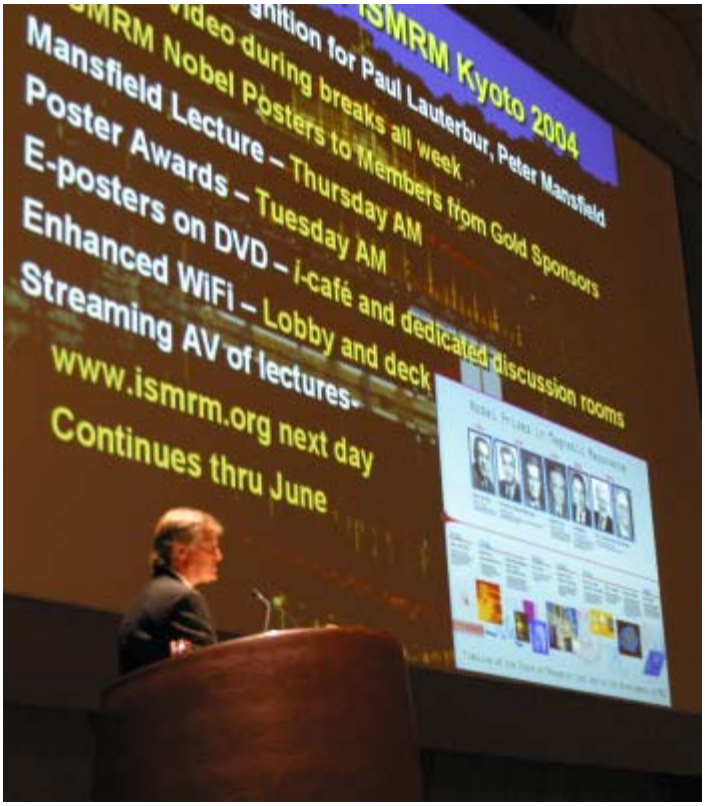
In closing, I wish to inform our members that I will work hard this year to attain the objectives and protect the interests of the Society. The ISMRM is the best organization in the world for promoting science and education as it relates to magnetic resonance in medicine. I want to ensure that it maintains and further develops its leadership position in both spheres, and that it does so throughout the world.

— Walter Kucharczyk
ISMRM President

2004 SCIENTIFIC PROGRAM COMMITTEE REPORT

The 12th ISMRM, held in Kyoto, Japan, from May 15-22, 2004, was another success in the long string of exemplary ISMRM Annual Meetings. Highlights range from the quiet beauty of the Kyoto International Conference Hall (KICH) and surrounding gardens, to the wonderful hospitality of our Japanese hosts, to the continuing impressive science and clinical utilization of MR witnessed by all in attendance. During meeting planning, the Scientific Program Committee (SPC) recognized that our creative energy would be directed to balancing the Society's effort for international outreach with modest programmatic modifications to offset constraints imposed by the meeting venue, which was selected seven years ago when our society membership was half of that today. By all indications our efforts were successful.

The KICH facilities were outstanding; the plenary hall and many of the parallel session rooms were some of the most impressive we have had the opportunity to use. The first-rate audio-visual crews provided by the KICH and AVHQ provided seamless delivery of PowerPoint files to presentation rooms since we once again used exclusively digital projection. The success of the meeting can be measured, in part, by the ~10% increase (and new record) number of abstracts submitted, 814 oral presentations in 64 parallel sessions and 15 Basic or Clinical Focus Sessions, and the more than 1500 posters and 340 e-posters that were presented. The total registration exceeded 3200.



President Michael E. Moseley welcomes the attendees and presents the awards.

Lauterbur Lecturer, Professor Kurt Wüthrich presents "NMR Spectroscopy of the Molecules of Life."

The award of the Nobel Prize in Medicine to Dr. Paul Lauterbur and Sir Peter Mansfield for their pioneering work in MRI provided great opportunity for the SPC to pay tribute to these important ISMRM members. The meeting utilized a video presentation made by the Historical Archives Committee to summarize their careers and allow listeners to hear the Laureates' personal recollections. This video ran on a bank of monitors adjacent to the Plenary Hall throughout the week, and a banner in the reception area reminded everyone of their achievement. The SPC also produced a poster summarizing the chain of all Nobel Prizes in NMR and important milestones in medical imaging. This poster is still available from the ISMRM Central Office for a small mailing fee. Finally, Drs. Lauterbur, Mansfield, Ernst, and Wüthrich (our 2004 Lauterbur lecturer) were named Honorary Members of the ISMRM during the Monday Awards Ceremony.

The Honorary Member ceremony paved the way for Prof. Kurt Wüthrich's Lauterbur Lecture on *"NMR Spectroscopy of the Molecules of Life."* This lecture served as an effective entrée into the SPC's meeting vision, which focused on describing how new developments lead to future impact/utilization in patient care. The following "Metabolomics" plenary session described how advances spawned from before and during the human genome project, for example, are gaining in power and allowing for identification of individual metabolites that change with disease processes in cancer and the potential to correlate these epigenetic changes during disease development (and progression) with genetic alterations.

The Tuesday plenary session focused on New Contrast Agents for tracking dissemination of malignant diseases was particularly interesting clinically. New contrast agents, along with enhanced means for targeting and control, are enabling molecular imaging to become better defined for MRI. Similarly, hyperpolarized contrast agents (as described in the Friday plenary) show great promise and are beginning to attract attention. The focus of all of these sessions was to

See ***SPC Report*** *page 4*

Nobel Laureate and 2004 Lauterbur Lecturer Kurt Wüthrich (l) introduced by Rolf Gruetter (c) and Seiji Ogawa (r).

provide an introduction to the technology, a description of the current state of the art and a visionary lecture describing how the agents will be used in the clinical setting in the next few years, thereby reshaping our future view of MR.

Wednesday's Plenary lectures described how disease screening technologies are evaluated and the role that MRI presently serves in cardiovascular disease and breast cancer. The Thursday plenary session was preceded by the Inaugural Sir Peter Mansfield lecture. While the Lauterbur lecture's intent is to provide historical context for important developments in MR, the Mansfield lecture is meant to be a forward-looking examination of what areas of MR are on the horizon. We were fortunate to have Dr. Robert Edelman discuss rapid imaging, its recent past, and strong future impact throughout patient care. This provided an ideal transition for the Thursday plenary on the role of imaging in cancer therapy assessment and the Friday session on the limits of detection in NMR/MRI.

There were numerous educational courses for the weekend educational program in Kyoto with more than 1500 participants; this too was a near record. Educationally, the ISMRM continues to be impressive by the depth of the teaching expertise within the Society in virtually every topic area. All courses had the mandate to provide the general clinician the skills required for daily MR practice. Overall, the role of MR in clinical practice was emphasized to a greater extent than in previous years. For example, we increased the number of Clinical Science Focus Sessions, we continued the popular Hot Topics in Clinical Practice and the MR Physics for Physicians course, and we focused the SMRT/ISMRM Joint Forum on the clinically important topic of understanding and dealing with artifacts. The well-attended Clinical Categorical Courses, held during the Monday to Thursday morning parallel sessions, focused on such clinically significant topics as Cardiovascular MR, Interventional MR, Hot Topics for Clinical Practice/High Field Neuroimaging, and Imaging in Drug Development. The weekend educational offerings in Kyoto included two-day courses on Brain Function and fMRI, Physics for Physicists, and Basic and Advanced MR Spectroscopy, as well as one-day courses on Cardiac MR, Body MR, Neuroimaging, MR of Transgenic Mice, Musculoskeletal MRI, and the popular RF Bootcamp. The importance (and re-emergence) of RF, new receive coils and parallel imaging cannot be ignored; in fact 32 separate receiver channels in both commercial and research systems and their integration across an entire suite of imaging coils offer unparalleled opportunity to explore the acquisition speed, resolution, and artifact reduction opportunities in a wide range of clinical applications. Multiple Categorical Courses ran during the week which offered both clinical and basic science material; major themes included MR Angiography, Musculoskeletal Imaging, Functional Body MRI, Understanding Diffusion Tensor Imaging and fMRI, Parallel Imaging, Spectroscopy, and the introduction of a new course on Echo Management. These were held each morning Tuesday through Friday.

Overall, the educational component of the Annual Meeting, both on the weekend and throughout the week, continued to provide clinicians and basic scientists with a detailed understanding of the principles and clinical applications of MR and to train clinicians in the recently developed applications that will form the basis for new clinical activity on their MR scanners. Of course, the high quality of the science and clinical material presented in Kyoto provides the truest measure of the success of the meeting and the continued strength of the ISMRM. The meeting evaluation forms provide quantitative measures of the quality of the program, while the excellent attendance in the sessions throughout the week and informal comments provided near-real-time feedback that confirmed our impression of another successful meeting.

As has been the case for the past several years, this year we instituted a few changes in both the abstract submission process and the meeting organization itself. First, we provided poster awards in five areas: pulse sequences, EM fields, body/cardiac imaging, neuroimaging, and cancer/spectroscopy. We increased the amount of information available via our local WI-FI network, at times stressing the KICH network to its limits. We provided a new presentation forum, e-posters, for work that was amenable to multi-media presentation. The e-poster concept would provide researchers whose work was in cine-imaging, for example, a means to show their movies in accepted posters; however, our initial implementation will need to be refined in future years to ensure greater opportunity for interaction among e-poster authors and attendees. Our second electronic innovation included capturing the audio of all presentations in Annex 1 and 2, synchronizing it with the PowerPoint file, creating a streaming video file and making it virtually instantaneously available for later examination via the ISMRM Website. This provided (and continues to provide) registered attendees the opportunity to review precisely what was said and shown at the Annual Meeting for weeks, months or years after the meeting. Registered attendees can still review these talks at

*See **SPC Report** page 5*

2004-2005 ISMRM Officers and Board Members: ***(seated l. to r.) Chrit T. Moonen, Cindy T. Hipps (SMRT President), Vivian S. Lee, David H. Miller, Walter Kucharczyk, Jane E. Tiemann (ISMRM Executive Director), Roxanne Deslauriers, Michael E. Moseley, Felix W. Wehrli, C. Leon Partain. (standing l. to r.) Roland Kreis, A. Gregory Sorensen, Margaret A. Hall-Craggs, Risto A. Kauppinen, Peter Boesiger, James F. M. Meaney, David G. Norris, Jeffrey Joseph Neil, Peter Jezzard, Kim Butts, Peter Börnert, Michael B. Smith, Leif Østergaard, Daniel K. Sodickson, Donald M. Hadley, Martin R. Prince, Peter S. Allen, Jeffrey L. Duerk, J. Paul Finn. (not pictured: Martin O. Leach, Patrick Stroman.)***

(www.ismrm.org/04/presentations.htm). We eliminated the 100-word synopsis from the *Proceedings* submission, leaving it instead in the Program Book as a way to more effectively plan one's participation in the meeting. The expanded Program Book provides more information regarding each presentation without having to carry around the abstract CD and laptop. We added submission categories to more accurately reflect the nature of our submissions, and next year we will separate diffusion/perfusion imaging from Neuroimaging as we did for functional MRI a few years ago. And we provided daily Japanese Language summary sessions, in both technical and clinical areas, for our local attendees.

Our Local Organizing Committee, led by Drs. Mutsumasa Takahashi, Atsuko Heshiki, and Shoji Naruse, provided a wide array of unique cultural experiences during the breaks, which allowed one's mind to unwind before resuming the hectic pace of the meeting. Memorable events like a tea ceremony and flower arranging come to mind as true highlights. Yet, these pale in comparison to the Gala Closing ceremony on Thursday evening. Geisha dancers, vast tables of sushi, sashimi, vegetables, noodles, and rice dishes filled the KICH. Finally, a 30-minute fireworks exhibition over the KICH gardens and surrounding lake provided an amazing Grand Finale for the meeting.

Fifteen plenary sessions were held in the Main Hall.

Local Organizing Committee provided opportunities to experience traditional Japanese culture.

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SPC Report
from page 5

2004 Annual Meeting & Exhibition
Kyoto • Japan

*See **SPC Report** page 7*

ISMRM Awards Committee Report

At the 12th Annual Scientific Meeting in May 2004 in Kyoto, the ISMRM honored a number of outstanding scientists and clinicians for their contributions to the field of magnetic resonance and to the Society:

The *Gold Medal* is the highest award of the ISMRM and was presented to two eminent members of the Society. **John C. Gore** was awarded the Gold Medal for pioneering contributions in many areas of MRI, in particular for basic developments in functional neuroimaging and improving our understanding of diffusion, susceptibility, relaxation, and contrast enhancement phenomena. **E. Mark Haacke** was awarded the Gold Medal for significant research in magnetic resonance, in particular for many important contributions in MR pulse sequence design, motion artifact suppression, MR angiography methods, functional MRI techniques, and in education of MR scientists.

2004 Gold Medal Winners

John C. Gore

E. Mark Haacke

Fellows of the ISMRM are recognized for their contributions to research and to the ISMRM. At the 2004 meeting, the Society recognized the following individuals by according them with the designation as *Fellow of the ISMRM:* **David Feinberg, Cecil E. Hayes, Xiaoping Hu, Shoji Naruse, Martin R. Prince, Frank G. Shellock, Christopher H. Sotak,** and **Peter Van Zijl.**

Four individuals, who received Nobel prizes for their research in the area of magnetic resonance, were appointed as *Honorary Members of the Society,* at the 2004 meeting: **Richard Ernst, Paul Lauterbur, Peter Mansfield,** and **Kurt Wüthrich.**

— Richard L. Ehman, Chair, Awards Committee

SPC Report

from page 6

The Annual Meeting would not be possible without the hard work of many individuals. I would like to thank all of those who reviewed abstracts, served as moderators, organized the categorical courses, and the special sessions for this year's meeting. All SPC Chairs are always indebted to the ISMRM Central Office staff including Jane Tiemann, Robert Goldstein, Roberta Kravitz, and Sheryl Liebscher, who work tirelessly to help plan, develop and run the meeting; I am no exception. They made the experience of being the SPC Chair one that I will always remember with great satisfaction. I would like to thank our Past-President, Dr. Michael Moseley, the previous SPC Chairs whose guidance I utilized in leading the SPC efforts, Drs. Jeff Evelhoch and David Lomas, and the Executive Committee of the ISMRM for providing helpful guidance throughout the process. It was also a pleasure to work with Dr. Vivian Lee, SPC Vice-Chair, to provide continuity in the program planning process, and Dr. Paul Finn, Chair of the Education Committee and currently Vice President of the ISMRM, to coordinate the educational courses offered during the weekend and weekdays. It is my genuine pleasure to thank the members of the Scientific Program and Education Committees, who dedicated their time and energy to create an outstanding program for the 12th Annual Meeting. SPC members were Vivian S. Lee, Peter S. Allen, Gareth J. Barker, Peter B. Barker, Kim Butts, Sebastian Cerdan, Kee-Hyun Chang, R. Todd Constable, Joshua M. Farber, J. Paul Finn, Hiroyuki Fujita, Robert J. Gillies, Rolf Gruetter, Atsuko Heshiki, Mathias Hoehn, Petra S. Hüppi, Clifford R. Jack, Albert C. Lardo, Cynthia Lesley Lean, Weili Lin, David J. Lomas, Riccardo Manfredi, James F. M. Meaney, Chrit T. Moonen, Neil M. Rofsky, Dikoma C. Shungu, Michael

John C. Gore (l) and E. Mark Haacke accept 2004 Gold Medal awards.

B. Smith, Daniel K. Sodickson, Scott D. Swanson, Lawrence M. White, Samuel A. Wickline, and Yasuyuki Yamashita. Education Committee members were J. Paul Finn, Roland Kreis, Maureen Ainslie, Dorothee P. Auer, Peter Jezzard, Christiane K. Kuhl, Sharmila Majumdar, Yukio Miki, Donald G. Mitchell, Chrit T. Moonen, John P. Mugler, III, Jeffrey J. Neil, Leif Østergaard, Lynne S. Steinbach, and Paul S. Tofts.

We all wish Vivian Lee and the new SPC much success for the next meeting in Miami Beach, and we invite all of you to provide us, and the new SPC, with feedback on past meetings. Your views are essential in our efforts to try to improve the meeting.

On behalf of the Kyoto SPC,

— Jeffrey L. Duerk,
2004 Scientific Program Committee Chair

REPORT FROM THE TREASURER

Report of the Audit, FY 2003

The FY 2003 ended with approximately US$4,453,378 in Consolidated Total Assets (ISMRM and ISMRT). This comes from US$671,607 in cash and highly liquid investments, US$3,497,895 investments in money market funds, certificates of deposit, equity securities and mutual funds, US$ 93,076 in receivables, US$104,471 in furniture/equipment, US$62,229 in prepaid expenses and US$24,100 in deposits.

Of the Consolidated Total Assets, the ISMRM held US$507,398 in cash and cash equivalents, US$3,298,975 investments in money market funds, certificates of deposit, equity securities and mutual funds, US$189,501 in receivables, US$104,471 in furniture and equipment, US$60,624 in prepaid expenses and US$24,100 in deposits.

In FY2003, ISMRM had US$4,006,970 in Total Support and Revenue. The Society had US$3,631,550 in Total Expenses. The change in net assets over FY 2002 was US$375,420. Our approved FY2003 budget allowed for an anticipated decrease in net assets of US$(35,671). The main differences between budgeted sums and actual sums arose from fewer expenditures than were budgeted for in the Strategic Programs portion of the budget. The US$90,000 allocated to Web Based Programming/CME Education Programs was not spent. Of the US$150,000 budgeted for Fast Track Programs, US$24,783 was spent.

In FY 2003, the ISMRM achieved US$869,105 in membership fees. Total budgeted revenue was US$860,000. Journal royalties were US$253,380; the budgeted amount was US$175,000. We achieved meeting revenues of US$1,468,775; the budgeted meeting revenues were US$1,770,850. Without corporate revenue, the ISMRM would have experienced a more serious shortfall. Grants and contributions to ISMRM for 2003 amounted to US$845,686. In FY2003, the ISMRM earned US$79,347 in dividends and interests and had a net gain on investments of US$260,166. Budgeted interest and dividends were US$100,000, with no budgeted gains/losses on investments.

In FY 2003 the ISMRM Annual Meeting incurred US$1,903,787 in expenses. Membership expenses, including journal expenses, were US$714,100. Administrative expense totaled US$693,602.

The Consolidated Total Assets for FY2003 were US$4,453,378, which can be compared to a total of US$4,020,774 for FY2002.

Financial Reserve

Based on advice from the financial advisors, the ISMRM has worked to build up a financial reserve equal to the cost of one annual meeting, to offset losses that could occur as a result of a financially disastrous annual meeting. The goal of US$1,500,000 was achieved a few years ago. The cost of the Annual Meeting has increased to over US$2,000,000; as a result the Board of Trustees approved the transfer of US$350,000 of its Net Assets to the Financial Reserve, bringing the total to US$1,850,000.

Annual Meeting Registration Fees

The cost of the ISMRM Annual Meeting has increased due to inflation as well as increased programme activities. The Annual Meeting Registration fees have not kept pace with inflation. The Finance Committee has recommended, and the Board of Trustees approved, an increase in the Annual Meeting fees for the Miami meeting.

Central Office

The lease for the space currently occupied by the ISMRM office expired in June 2004. The ISMRM Financial Manager is looking into the financial implications of lease and purchase scenarios for housing the central office. The current office space is being leased on a short-term basis, which will allow time to examine various options lease or buy options.

Kyoto Meeting

The Kyoto meeting was a success and achieved its attendance target of 3,200. A Financial Report on the meeting will be provided in the next issue of *MR Pulse*.

SEARCH FOR NEW EDITOR OF MRM

After many years of service to the Society, Dr. Felix Wehrli has chosen to step down as Editor-in-Chief of *MRM* at the end of this calendar year. All ISMRM members are aware of the enormous contributions he has made to the Society and to the field of magnetic resonance through his editorship of this important journal. A Search Committee has been appointed by Dr. Kucharczyk to recommend a new Editor to the Board of Trustees. The committee is chaired by Peter Jezzard; its other members are Kim Butts, Richard Ehman, Hiroyuki Fujita, and Jürgen Hennig. Dr. Kucharczyk is an *ex officio* member of the committee.

The Search Committee has posted a Call for Nominations in the Members-Only section of the ISMRM Web site (www.ismrm.org). It also appears below. Please take the time to consider whether you, or a colleague, would like to be considered as a candidate for this position. The deadline for receipt of nominations in the ISMRM Central Office is **17 September 2004.**

Call for Nominations for Editor-in-Chief of *MRM*

On behalf of the Board of Trustees of the ISMRM, the *MRM* Editor Search Committee invites nominations for Editor-in-Chief of *MRM*.

The Editor-in-Chief of *MRM* is appointed by the Board of Trustees and is responsible for the scientific caliber of the contents of the journal. The Editor is also expected to direct editorial policy, and to provide strategic direction for the journal, with oversight by the Board of Trustees. He/she is also responsible for the day-to-day operation of the journal and day-to-day contacts with the publisher and for maintenance of established editorial policies. He/she directs the peer-review process, ensuring that proper review procedures are followed and confidentiality of submitted manuscripts is preserved, and makes the final decision on acceptance or rejection of a manuscript. He/she is responsible for appointing an Editorial Board and for setting the manuscript acceptance rate. The 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. A budget for maintaining an editorial office will be provided.

The successful candidate will be a strategic thinker with a strong publication and reviewing record across a broad range of disciplines within the field of medical magnetic resonance. He/she should be an active and participating member of the ISMRM. Importantly, he/she must be willing and able to dedicate a significant amount of time to maintaining the high standards of this important journal.

Nominations must include the following: the candidate's CV, an action plan for the journal, and three (3) letters of support. Please send completed nomination packets to:

Peter Jezzard, Ph.D., Chair
MRM 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 **17 September 2004.**

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

Report from the 2004 Young Investigator Awards Committee

To become a YIA finalist is certainly not easy. The first step is to assemble the materials for the competition… by deadline. A full manuscript must be submitted well in advance of the coming ISMRM meeting (the last one being just over…). The manuscript must be all your own work, and your supervisor must say so, although we all know that even the simplest MR experiment needs help from a small army to be successful. This year the YIA Committee members received 19 applications in their e-mail boxes (15 for the I.I. Rabi Award and 4 for the W.S. Moore Award), to be read, understood, and evaluated. On 20 November 2003 the committee first had to select semi-finalists (5 for the Rabi Award, 4 for the Moore Award). The candidates lucky enough to make the cut were assured of a review by peers and mentors with the right esoteric expertise, as Felix Wehrli or Leon Partain (Editors in Chief of our Society journals) select 3 or 4 reviewers for a detailed scrutiny of your work.

With the reviewers' expertise in hand the YIA Committee had another teleconference, on 12 January 2004 to pick up to six finalists (3 for each the W.S. Moore and I.I. Rabi Award). This year only 2 candidates could be selected for the Moore Award, because an important hurdle for our Young Investigator is that the manuscript must be accepted for "publication," either by *MRM* or *JMRI*. It has always been difficult to find strong candidates and high-quality submissions for the (clinical) Moore Award. We welcome any ideas to advertise this Award and attract strong candidates…

We all know the names of the Finalists (Drs. Wiesinger, Assaf, Jones, Bennett, and Mougenot). I am sure that for some of them the experience was a little bit nerve-wracking, as they had to deliver a longer talk than usual and answer many tough questions from the floor or the session chairpersons. They all did a wonderful job and will undoubtedly become outstanding young scientists.

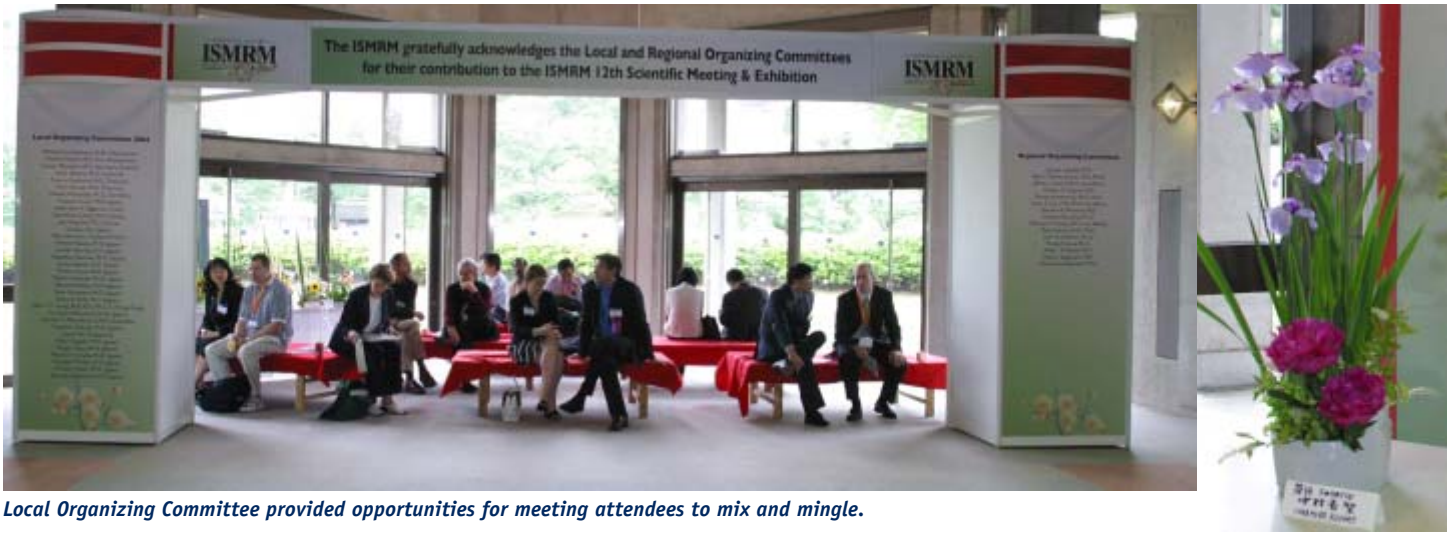
Our last job was to write a short memo starting by "The 2004 YIA competition winners are …" and to pass it on to the Society Office. The winners were selected after some more discussions in a beautiful room overlooking the astonishing lake and gardens of the Kyoto International Conference Center. Congratulations to Dr. Wiesinger of the Institute of Biomedical Engineering, Zurich, Switzerland and Dr. Bennett of the Medical College of Wisconsin, Milwaukee, Wisconsin, USA for your superb work. Your Young Investigator Award is well earned. The results were announced in the Thursday morning session at the Kyoto meeting.

Florian Wiesinger (l) and Kevin Bennett (c) accept YIA awards from President Walter Kucharczyk (r). Florian Wiesinger received the I.I. Rabi Award for his paper entitled, "Parallel Imaging Performance as a Function of Field Strength– An Experimental Investigation using Electrodynamic Scaling." Kevin Bennett received the W.S. Moore Award for his paper entitled, "Intra-Voxel Distribution of DWI Decay Rates Reveals C6 Glioma Invasion in Rat Brain."

Finally, the YIA Committee tasks were, indeed, shared by my fellow members of the committee: Danielle Balériaux, Peter Boesiger, Ron Kikinis, Denis Le Bihan, Thomas H. Mareci, Douglas C. Noll, Michael B. Smith, June S. Taylor, J. Thomas Vaughan. They were all helpful and knowledgeable, and deserve many thanks from the Society.

— Denis Le Bihan
Chair, 2004 Young Investigator Awards Committee

(**Editor's Note:** For more information about the Young Investigator Awards and a YIA application check sheet, see page 24).



Local Organizing Committee provided opportunities for meeting attendees to mix and mingle.

2004 Poster Award Winners

Pulse Sequences/Other

HONORABLE MENTION ..... Progam No. 2342

^{1}H Single and Double Quantum MRI Evaluation of Tendon Regeneration Mediated by Engineered Stem Cells

Keren Keinan-Adamsky[1], Hadassah Shinar[1], Gadi Pelled[2], Yoram Zilberman[2], Dan Gazit[2], Gil Navon[1]

[1]Tel Aviv University, Tel Aviv, Israel; [2]Hebrew University-Hadassah Medical Center, Jerusalem, Israel

Body/Cardiac Imaging

1ST PLACE ..... Program No. 795

Phosphorylated Guanidinoacetate in Muscle of GAMT Deficient Mice Only Partly Compensates for PCr as Assessed by ^{31}P MRS and Functional Measurements

Hermien E. Kan[1], W Klaas Jan Renema[1], Arnold de Haan[2], Dirk Isbrandt[3], Arend Heerschap[1]

[1]University Medical Center St Radboud, Nijmegen, Netherlands; [2]Vrije Universiteit, Amsterdam, Netherlands; [3]University of Hamburg, Hamburg, Germany

2ND PLACE ..... Program No. 1954

Complete Assessment of LV and RV Function and Volume in a Single Breathold Using Real-Time, Spiral, Steady-State Free Precession

Girish Narayan[1], Krishna Nayak[1], John Pauly[1], Bob Hu[1]

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3RD PLACE ..... Program No. 1955

Respiratory Self-Gating for Free-Breathing Segmented Cine MRI

Andrew Christian Larson[1], Peter Kellman[1], Andrew Arai[1], Glenn A. Hirsch[1], Elliot McVeigh[1], Orlando Simonetti[2]

[1]LCE, NHLBI, NIH, Bethesda, Maryland, USA; [2]Siemens Medical Solutions, Chicago, Illinois, USA

Neuroimaging

1ST PLACE ..... Program No. 1311

Grey Matter Abnormalities Before the Onset of Psychosis: An Automated MR Image Analysis

Bridget Soulsby[1], Paola Dazzan[2], Xavier Chitnis[2], Stephen J. Wood[1], John Suckling[3], Philip K. McGuire[2], Patrick D. McGorry[1], Robin M. Murray[2], Dennis Velakoulis[1], Lisa J. Phillips[1], Alison R. Yung[1], Christos Pantelis[1]

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2ND PLACE ..... Program No. 1695

Sodium MRI of Reversible Focal Brain Ischemia in the Monkey

G.C. LaVerde[1], F. E. Boada[1], D. Davis[2], E. Nemoto[2], C.A. Jungreis[2]

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3RD PLACE ..... Program No. 1299

Combined Voxel-Based Analysis of Volume and T2-Relaxometry in Temporal Lobe Epilepsy

Gaby Simon Pell[1], Regula Sofia Briellmann[1], Anthony B. Waites[1], David Fenton Abbott[1], Patrick CH Chan[1], Graeme David Jackson[2]

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HONORABLE MENTION ..... Program No. 1084

Combined Correction for Geometric Distortion and its Interaction with Head Movement in fMRI

Chloe Hutton[1], Ralf Deichmann[1], Robert Turner[1], Jesper Andersson[2]

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HONORABLE MENTION ..... Program No. 1298

Post-Surgical Failure after Temporal Lobectomy is Associated with Increased Medial Temporal Lobe Damage

Simon Keller[1], Christine Denby[1], Udo Wieshmann[2], Neil Roberts[1]

[1]University of Liverpool, Liverpool, Merseyside, UK; [2]The Walton Centre for Neurology and Neurosurgery, Liverpool, Merseyside, UK

Hardware/EMF

1ST PLACE ..... Program No. 1691

Liquid Hyperpolarized Xenon Production by Phase Exchange

Steven W. Morgan[1], Tining Su[1], Gary L. Samuelson[1], Gernot Laicher[1], Brian Saam[1]

[1]University of Utah, Salt Lake City, Utah, USA

2ND PLACE ..... Program No. 1548

An Elevated Endring Birdcage Coil for Improved Performance at 3 Tesla

Daniel Weyers[1], David Keren[1], Eddy Boskamp[1], Graeme McKinnon[1], Kevin Kinsey[1]

[1]GE Medical Systems, Waukesha, Wisconsin, USA

3RD PLACE ..... Program No. 1583

Conductor Losses in Many Channel RF Coil Arrays

Randy Duensing[1], James Akao[1], Charles Saylor[1], David Molyneaux[1]

[1]MRI Devices, Gainesville, Florida, USA

HONORABLE MENTION ..... Program No. 1662

Wave Behavior in Phantoms at 11.1 Tesla

Barbara L. Beck[1], Kelly A. Jenkins[1], Jeffrey R. Fitzsimmons[1]

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HONORABLE MENTION ..... Program No. 1624

An RF Shield Comparative Study of Different Materials and Types

Daniel Weyers[1], Qin Liu[1]

[1]GE Medical Systems, Waukesha, Wisconsin, USA

HONORABLE MENTION ..... Program No. 1599

Investigating Tissue-Coil Interactions of an 8-Elements Transmit/Recieve Torso Phased Array Coil

Bing Keong Li[1], Feng Liu[1], Ian Gregg[1], Nicholas Shuley[1], Stuart Crozier[1], Graham Galloway[1]

[1]University of Queensland, Brisbane, Qld, Australia

HONORABLE MENTION ..... Program No. 1562

A New Microstrip Resonator Coil for Imaging Rhesus Monkeys

Gene Bogdanov[1], Mathew Brevard[2], Timothy Fisher[1], Craig Ferris[2], Reinhold Ludwig[1]

[1]Worcester Polytechnic Institute, Worcester, Massachusetts, USA; [2]University of Massachusetts Medical School, Worcester, Massachusetts, USA

Cancer/Spectroscopy

1ST PLACE ..... Program No. 2000

The Anti-Angiogenic Drug, SU11657, Decreases Brain Tumor Size and Normalizes Perfusion as Indicated by DSC-MRI Perfusion Parameters

Christopher Chad Quarles[1], Scott D. Rand[1], Hendrikus G.J. Krouwer[1], Kathleen M. Schmainda[1]

[1]Medical College of Wisconsin, Milwaukee, Wisconsin, USA

2ND PLACE ..... Program No. 2007

Changes in the Tumor Microenvironment Early after Treatment with the Anti-Angiogenic Agent Thalidomide

Réginald Ansiaux[1], Christine Baudelet[1], Bénédicte Jordan[1], Nelson Beghein[1], Olivier Feron[1], Vincent Grégoire[1], Bernard Gallez[1]

[1]Catholic University of Louvain, Brussels, Belgium

3RD PLACE ..... Program No. 923

Association between Hepatic Fat Accumulation and Hepatic Glucose Metabolism in Type 2 Diabetes

Martin Krssak[1], Attila Brehm[1], Elisabeth Bernroider[1], Peter Nowotny[1], Gary W. Cline[2], Gerald I. Shulman[2], Werner Waldhäusl[1], Michael Roden[1]

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2004 STIPEND PROGRAMS

The Society funded 296 participants to attend the 12th Scientific Meeting in Kyoto. Their names and the countries from which they come are listed below.

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VICE PRESIDENT

J. Paul Finn, M.D., is Professor of Radiology, Chief of Diagnostic Cardiovascular Imaging, and Director of Magnetic Resonance Research at the David Geffen School of Medicine at UCLA. He received his medical degree from the National University of Ireland, Galway, worked as a clinical resident in cardio-respiratory medicine and gastro-enterology, and was admitted a member of the Royal College of Physicians of Ireland. He then undertook residency training in Diagnostic Radiology at Hammersmith Hospital and the Royal Postgraduate Medical School, London, and completed neuroradiology fellowship training at the National Hospital for Neurology and Neurosurgery, Queen Square, London. Dr. Finn then moved to Boston, where he spent four years on the faculty at Harvard Medical School. In 1993, he accepted a position with Siemens as head of the Research & Development group in the U.S., where he and his group concentrated on the development of packages for diffusion imaging of stroke and cardiac MRI. In 1997, he was appointed Professor of Radiology at Northwestern University, where he served as Director of MRI and departmental Vice Chair for Research. His research interests focused on cardiac MRI and time-resolved MR angiography. In 2003, he was appointed to his current position at UCLA, and his current research interests involve the development and applications of MRI techniques for cardio-vascular imaging at 3.0T. Dr. Finn publishes actively and is an author of over 100 research papers. He is Associate Editor of *Radiology* (MRI), a member of the Board of Directors of the North American Society of Cardiac Imaging, and an active scientific reviewer. He has served on the Meetings Coordination Committee, the Education Committee, the Young Investigator Awards Committee, the Study Group Review Committee, and the Nominating Committee of the Society. Dr. Finn believes it is important to enhance interaction among basic scientists involved in technical development and clinical scientists involved in the application of new methods. He also believes that it's important to enhance communication between the ISMRM and other scientific societies to ensure appropriate exposure of the members to relevant advances in evolving fields such as molecular imaging.

BOARD OF TRUSTEES

Peter Börnert, Ph.D., has been working in Magnetic Resonance Imaging research for more than 18 years. After studying physics at the Technical University of Dresden, he joined a group at the Academy of Sciences (Berlin) in 1985 dedicated to building a NMR microscope and performing MR spectroscopic and MR imaging experiments. There he finished his PhD thesis on the application of ^{19}F MR imaging for mapping the spatial distribution of artificial blood substitutes. In 1990 he went as a post-doc to the University of Bremen and worked on several applications of ultra-fast RARE imaging. In 1991 he joined Philips Research working with MRI over a very broad range of field strengths, from the very low end (0.015T) up to current high field applications at 3T. He focused from the beginning on the introduction of fast and ultra-fast MRI techniques, like echo-planar, spiral imaging and other efficient non-Cartesian sampling schemes. Furthermore, he applied multi-dimensional RF pulses for curved slice imaging and to support the navigator technology for motion sensing. In focussing on coronary artery imaging he combined efficient data acquisition schemes with multi-channel receiver coil technology and prospective motion compensation techniques. In 1997 Dr. Börnert was promoted to the position of a Senior Scientist at Philips Research, responsible for method-oriented MR research. In this position he has supervised a number of PhD students, and put special emphasis on the collaboration with important university and clinical research sites (e.g. ETH Zurich and BIDMC–Harvard Medical School). Dr. Börnert's scientific activity has resulted in numerous scientific conference contributions, many full scientific papers and patent applications. He has contributed to the organisation of national scientific meetings as a member of the German chapter of the ISMRM and supported educational training of the EMSMRB and the ISMRM. He is committed to the multi-disciplinary nature of ISMRM, and wishes to work to maintain and strengthen ISMRM's position as the premier forum for exchange between basic and clinical sciences.

Kim Butts, Ph.D., is currently Associate Professor in the Department of Radiology at Stanford University. Her work has included developing MRI techniques for monitoring thermal ablation, motion correction techniques for multishot diffusion-weighted imaging, susceptibility artifact reduction, rapid imaging, and methods for evaluating frozen tissue. She has authored over 40 papers and two patents in MRI. Dr. Butts has served on the ISMRM Student Stipend Committee and the Scientific Program Committee. She is currently the ISMRM Interventional Study Group Chair and has participated in the NIH image-guided therapy working group. At Stanford, Dr. Butts serves as advisor to graduate students and post-doctoral fellows. She teaches ultrasound physics to the Radiology residents and co-teaches an introductory imaging and anatomy course for advanced undergraduate and graduate students.

Leif Østergaard, M.D., Ph.D., earned his M.Sc. degree in Astrophysics, Physics and Mathematics from Aarhus University (AaU) in 1992, followed by his M.D. degree from AaU in 1994. Apart from clinical training (internship), Dr. Østergaard has worked within MR research since 1994 at Department of Neuroradiology, Århus University Hospital, Denmark and MGH-NMR Center, Charlestown, Massachusetts (1994-1995) focusing on brain pathophysiology in general (by PET and MRI), and MR perfusion methodology in particular. He completed his Ph.D. on methodological aspects of CBF measurements (by PET, Xe/CT, MRI) in brain tumors in 2000, and his D.Med.Sci. on MR perfusion imaging in acute stroke in 2001. He is now Associate Professor and Head of MR research at Department of Neuroradiology, Århus University Hospital, working within basic contrast physics, perfusion and diffusion methodology, fMRI and with a strong emphasis on the basic and clinical research within acute stroke, dementia, MS and epilepsy. Dr. Østergaard also heads the

*See **New Board Bios** page 15*

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Center for Functionally Integrative Neuroscience (CFIN), a crossdisciplinary group studying the integration of metabolic, biochemical, microstructural, haemodynamic and cognitive brain processes. He has served on the Governing Committee of the Diffusion and Perfusion Study Group (2000-2002) and as a member of the Education Committee (2003-).

Martin O. Leach, Ph.D., has been active in MR for the last 20 years, and has jointly directed the Cancer Research UK Clinical Magnetic Resonance Research Group at the Institute of Cancer Research and Royal Marsden Hospital since 1990. He graduated in Physics from the University of Surrey in 1973, gaining an MSc in Applied Radiation Physics and subsequently a PhD in Physics from the University of Birmingham in 1979. He joined the Division of Physics at the Institute of Cancer Research and Royal Marsden Hospital in 1978, becoming Chairman of the new Section of Magnetic Resonance in 1990. He has developed an interdisciplinary programme of research focussing on applications of Magnetic Resonance to cancer diagnosis, treatment and research, with particular emphasis on imaging and spectroscopic methods for evaluating cancer therapeutics, particularly those directed against novel targets. This includes hardware development, spectroscopic and imaging measurement and analysis, clinical trials and pre-clinical studies. Current studies include a multicentre study of DCE MRI for screening women at genetic risk of breast cancer, evaluation of HSP90 and other signalling inhibitors, assessment of new anti-angiogenic agents. Research funders include Cancer Research UK, NCI, MRC, EPSRC, AICR, Department of Health, NCRI. He has some 230 publications and papers. He was appointed Professor of Physics as Applied to Medicine at the University of London in 1996, and a Fellow of the Academy of Medical Sciences of the United Kingdom in 2002. He is Chair Elect of the ISMRM Cancer Study Group, and of the ISMRM British Chapter. He was previously Editor of *Physics in Medicine and Biology,* and a member of the Council of ESMRMB, recently contributing to developing revised statutes.

Jeffrey J. Neil, M.D., Ph.D., is Professor of Neurology and Radiology, and Associate Professor of Pediatrics, at the Washington University School of Medicine in St. Louis. He received his MD and PhD in neuroscience from Washington University and is board certified in Pediatrics and Child Neurology. He maintains a hospital-based pediatric neurology practice in addition to being actively engaged in research. His research is focused in two areas. The first is obtaining a better understanding of the mechanism(s) underlying the decrease in water apparent diffusion coefficient that accompanies brain injury. These studies have involved compartment-specific water diffusion measurements in a variety of systems, ranging from single cells (*Xenopus* oocytes) to rat brain. The second research focus is application of diffusion tensor imaging methods to brain development and injury in premature human infants. This research has involved assessment of water diffusion anisotropy in cortical grey matter of very premature infants (25 to 28 weeks gestational age). Diffusion anisotropy in developing cortex derives from the organization of radial glia and apical dendrites of pyramidal cells. Dr. Neil was a member of the Student Stipend subcommittee in the past, serving as PI on the NIH grant proposal that provided money for travel to the ISMRM meeting in Vancouver in 1997. He has been a regular member of NIH study section for the past three years. He is currently a member of the Education Committee, and Chair of the Student Stipend Subcommittee.

Daniel K. Sodickson, M.D., Ph.D., received a Bachelor of Science degree in Physics and a Bachelor of Arts degree in Humanities from Yale College in 1988. He received his Ph.D. in Medical Physics from MIT in 1994 as part of the Harvard-MIT Division of Health Sciences and Technology (HST). His doctoral thesis work, performed with Professors John Waugh and Robert Griffin, involved the development of new techniques for molecular structure determination using solid-state NMR spectroscopy, as well as exploration of some of the theoretical underpinnings of spin diffusion in solids. After completing an MD at Harvard Medical School in 1996, he made the transition from spectroscopy to imaging, joining the Cardiac MR Center directed by Dr. Warren Manning at Beth Israel Deaconess Medical Center. Later that year, he introduced the SiMultaneous Acquisition of Spatial Harmonics (SMASH) technique, and he has been involved ever since in the ongoing development of parallel imaging. Dr. Sodickson is currently an Assistant Professor of Radiology and Medicine at Harvard Medical School and Director of the Laboratory for Biomedical Imaging Research at Beth Israel Deaconess Medical Center. Characterizing and extending the limits of performance of parallel MRI continue to be cornerstones of research in his laboratory. This work involves a combination of RF coil array design, algorithm development for image reconstruction, and clinical testing in close collaboration with clinical colleagues. Other research interests include noninvasive characterization of the electromagnetic properties of tissue. Dr. Sodickson has served on the ISMRM Scientific Program Committee. He is a reviewer for *Magnetic Resonance in Medicine* and the *Journal of Magnetic Resonance Imaging,* and is a member of the MR Engineering and Cardiac MR Study Groups. Having derived great benefit and enjoyment from productive collaborations between basic researchers, clinical practitioners, and industry, Dr. Sodickson is passionately committed to the building and nurturing of interdisciplinary teams. It is his belief that the ongoing vibrancy of our Society and our field relies upon the serendipitous connections that arise when diverse minds come into contact.

ISMRM Board of Trustees and Board Motions

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**Executive Committee*

BOARD MOTIONS, MAY 2004

It was moved, seconded, and carried to accept the consent agenda.

It was moved, seconded, and carried to adopt the recommendations in the Audit Subcommittee report.

It was moved, seconded, and carried to endorse the International Workshop on Biomedical MR.

It was moved, seconded, and carried to approve the Study Group on Brain Function.

It was moved, seconded, and carried to elect Dr. Martin Prince and Dr. Kim Butts as Board representatives on the Study Group Review Committee.

It was moved, seconded, and carried to support the proposal for SMRT to have student members.

It was moved, seconded, and carried to support the SMRT recommendation to approve seeking RCEEM status within ARRT.

It was moved, seconded, and carried that manuscript submission to *JMRI* becomes electronic using Manuscript Central.

It was moved, seconded, and carried to accept the Goals and Objectives emerging from the Strategic Planning Committee as the framework for the new Strategic Plan.

It was moved, seconded, and carried to take US$350,000 from unrestricted net assets to go into the Board-Designated Reserve, which will then total US$1,850,000.

It was moved, seconded, and carried to adopt the new schedule of registration fees proposed by the Finance Committee.

It was moved, seconded, and carried to increase by 100 the number of pages for *MRM* in 2004.

It was moved, seconded, and carried to appoint Dr. Leon Partain for a further three-year term as Editor of *JMRI*.

It was moved, seconded, and carried to acknowledge Dr. Felix Wehrli for his outstanding service as Editor of *MRM*.

It was moved, seconded, and carried to appoint Dr. Daniel Sodickson to be the new Web Editor.

It was moved, seconded, and carried that members of the Awards Committee shall not nominate or write supporting letters for awards candidates.

It was moved, seconded, and carried to take US$150,000 from the Scientific and Educational Reserve and allocate it to Student Stipends for 2005.

It was moved, seconded, and carried to endorse the Gordon Conference on MRI.

It was moved, seconded, and carried to approve an ISMRM-sponsored workshop of the White Matter Study Group.

It was moved, seconded, and carried that it is strongly recommended that all Study Group workshops are ISMRM sponsored.

It was moved, seconded, and carried that ISMRM provides underwritten financial support for non-ISMRM invited speakers for Study Group-initiated sponsored ISMRM workshops.

It was moved, seconded, and carried that ISMRM assures financial responsibility for all budgeted expenses for Study Group-initiated sponsored ISMRM workshops as soon as the target registration revenues and sponsorship revenues have been met.

It was moved, seconded, and carried to approve the draft budget for FY 2005.

ISMRM STRATEGIC PLANNING 2004

Seven years ago, the ISMRM Board of Trustees started the initiative to create a Strategic Plan for the Society. The first Strategic Planning Committee, headed by Gary Glover, met under the guidance of a professional facilitator, Jack Schlegel, and formulated a detailed Strategic Plan including Vision, Mission, Values, Goals and Objectives. This document has served the ISMRM in an excellent way as the main driver for its actions and strategies, for the way it has organized its committee structure, and to provide a reference framework for many difficult decisions over the past several years. The Board has regularly re-examined the Strategic Plan, and devised new strategies to reach the Objectives formulated in the Plan.

Since the external society in which we operate is changing, and MR research and applications continue to evolve rapidly and spread geographically, the Board decided to have a fresh look at the overall Strategic Plan. In this changing environment, the process of refreshing the plan is a very important one. It affirms or modifies the Society's agenda of work for the next few years, and thus sets the stage for aligning all staff and volunteer work, budget, and structures with the refreshed plan.

An Ad Hoc Strategic Planning Committee was appointed by Michael Moseley, consisting of 16 ISMRM members from North America, Europe, Australia and Asia, with various professional backgrounds and different levels of experience in ISMRM, including Gary Glover who had also served on the first Strategic Planning Committee. Jack Schlegel agreed to function again as the facilitator.

Previous discussions in the Board, Zoomerang membership surveys, a previous SWOT (Strength, Weaknesses, Opportunities and Threats) analysis, and the original Strategic Plan were used as preparation material for the committee. In addition, thoughtful discussion papers were written by Walter Kucharczyk, Michal Neeman and Dick Ehman on three central questions:

"What is the role of ISMRM in clinician training?"

"What is the role of ISMRM in supporting MR education in areas of the world in which MR is just emerging?"

"What are the potential implications of splinter groups for the ISMRM and what position should the ISMRM take with regard to those groups?"

The committee met on the weekend of 16-18 April 2004 in Coconut Grove, Miami, Florida, together with Jane Tiemann, under the excellent guidance of Jack Schlegel. Following an initial general discussion and a look at the Vision, Mission and Values statements, three breakout groups were formed to discuss one central question and two of the seven initial Goals. Each group was asked to (a) delete any objectives that had been completed or should no longer be a part of the new plan; (b) modify any current Objectives so that they would be more focused and achievable in the new plan; and (c) add new Objectives that should be part of ISMRM's new plan, being as specific and focused as possible.

The three groups reported back to the entire committee, and by the end of the weekend the group had formulated a proposed new Strategic Plan that contains many strongly modified and even completely new Objectives with rather minor modifications in its original Vision, Mission and Values statements, and its seven major Goals. This Plan was presented to the Board of Trustees at its meeting on 16 May in Kyoto. The Board approved the Plan, which has now been passed along to the various committees of ISMRM for implementation. A copy of the complete Strategic Plan may be found on page 17.

On behalf of the ISMRM, we would like to thank Jack Schlegel for his outstanding guidance and enthusiasm throughout this planning process, Jane Tiemann for great preparation and her excellent perspective from the Central Office, and all the committee members who prepared so well and worked so hard and with so much humor throughout the planning weekend despite the very long travel and time zone differences for many of them.

— Walter Kucharczyk
ISMRM President

Chrit T. Moonen
Chair, Strategic Planning Committee

Strategic Planning Committee

Chrit T. Moonen, Ph.D., Chair
Isabelle Berry, M.D., Ph.D.
Sebastián Cerdán, Ph.D.
Richard L. Ehman, M.D.
Gary H. Glover, Ph.D.
Joseph V. Hajnal, Ph.D.
Cindy T. Hipps, B.H.S., R.T.(R)(MR)
Walter Kucharczyk, M.D.
Kelvin O. Lim, M.D.
Weili Lin, Ph.D.
David J. Lomas, M.D.
Yukio Miki, M.D., Ph.D.
Michael E. Moseley, Ph.D.
Carolyn E. Mountford, D.Phil.
Michal Neeman, Ph.D.
John F. Schlegel, Pharm.D., C.A.E. *(ex officio)*
Shih-Chang Wang, M.D.

International Society of Magnetic Resonance in Medicine (ISMRM)
Strategic Planning Workshop – 17-18 April 2004
Coconut Grove, Florida

ISMRM Strategic Plan: 2004-07

Vision

The ISMRM aspires to be the premier international society working to promote innovation, development, implementation, and communication of magnetic resonance science in medicine and other related fields.

Mission

ISMRM is an international, interdisciplinary group united by a common interest in the science, technology and application of magnetic resonance in medicine and related fields. It represents basic and clinical scientists developing new magnetic resonance techniques and applications, clinicians with a strong interest in magnetic resonance science and applications, and technologists seeking to improve their understanding of magnetic resonance. The Society serves its membership directly as well as practitioners and their patients, regulatory and governmental agencies, and industry. The Society provides a forum for magnetic resonance science in medicine, fosters the development of new science and its application to health care, communicates new developments in magnetic resonance science, provides a range of educational opportunities, and promotes the field.

Values

ISMRM is committed to:

- Basic and clinical scientific excellence
- Improving health care
- Encouraging diversity, including multidisciplinary and international participation
- Education

Goals

1. Foster innovation, research and development in basic and clinical magnetic resonance science.
2. Provide high quality educational programs.
3. Develop strategies for effectively serving the international medical magnetic resonance community, while recognizing regional differences.
4. Implement the most effective methods for ISMRM communications to support interaction, information, and education.
5. Develop programs that will promote public awareness and provide consultative expertise on magnetic resonance related issues.
6. Expand ISMRM and its interactions with individuals and other organizations.
7. Assure that ISMRM operates in an efficient and effective manner.

Three Year Objectives: 2004-07

An asterisk indicates priority attention for year-one implementation of the strategic plan.
MR = magnetic resonance

Goal 1: Foster innovation, research and development in basic and clinical magnetic resonance science.

1.1 Provide an annual meeting and other forums for scientific exchange which identify new frontiers and foster excellence.
1.2 Identify threats and develop mechanisms to assure that scientific exchange is maintained.
1.3 Improve members' ability to raise research funding.
1.4 Develop mechanisms to assure high quality in the selection of work presented.
1.5 Develop programs to attract clinicians to MR.
1.6 Develop programs that increase the bidirectional exchange between clinicians and basic scientists.

*See **Stratgetic Plan** page 19*

from page 18

Goal 2: Provide high quality educational programs.

2.1 Provide educational programs at basic and advanced levels during the Annual Meeting.

2.2 Provide programs of basic MR education for new entrants, particularly as a means of encouraging participation in ISMRM activities.

2.3 Use education as a means of increasing membership and attendance at ISMRM meetings and functions.

2.4 Educate members about other fields of emerging relevance to MR.

2.5 Continuously examine the Society's methods of providing and delivering educational materials to members.

2.6 Develop programs that will make ISMRM pre-eminent in the provision of education concerning advanced and emerging MR in medicine.

Goal 3: Develop strategies for effectively serving the international medical magnetic resonance community, while recognizing regional differences.

*3.1 Identify and prioritize the needs of established and emerging MR communities.

3.2 Plan activities to satisfy the needs of established and emerging MR communities.

3.3 Establish and utilize criteria for the allocation of resources to satisfy the needs of established and emerging MR communities.

3.4 Establish mechanisms for implementing programs for established and emerging MR communities and identifying funding to support these programs.

3.5 Disseminate and communicate programs and activities for established and emerging MR communities.

3.6 Evaluate the international outreach program.

Goal 4: Implement the most effective methods for ISMRM communications to support interaction, information and education.

4.1 Conduct trials of new methods for education, communication, and interaction.

4.2 Identify regional communications capabilities, including technology and language.

4.3 Optimize appropriate communication choices by program objectives and region.

*4.4 Make the ISMRM website more dynamic and relevant to members, external bodies, and the public.

4.5 Create media liaison and publicity mechanisms.

4.6 Enable wider access to ISMRM journals.

*4.7 Re-examine the number, scope, and format of ISMRM journals.

4.8 Improve the "impact factor" of ISMRM journals.

4.9 Review self-publication of ISMRM journals.

4.10 Improve bidirectional communications between the ISMRM Board and membership.

Goal 5: Develop programs that will promote public awareness and provide consultative expertise on magnetic resonance related issues.

5.1 Promote increased support for basic and clinical MR research and applications.

5.2 Provide information to the general public.

5.3 Provide expertise and leadership to policy-making bodies.

5.4 Investigate the advisability and feasibility of an ISMRM role in professional accreditation.

5.5 Record the history of MR.

Goal 6: Expand ISMRM and its interactions with individuals and other organizations.

6.1 Provide a framework by which groups interested in emerging research and other themes can achieve their goals within ISMRM.

6.2 Provide for the needs of trainees in clinical and basic sciences.

6.3 Promote multidisciplinary interactions.

*See **Stratgetic Plan** page 20*

from page 19

6.4 Be the Society of choice for MR modality-oriented professionals.

6.5 Engage the corporate world to further mutual goals.

6.6 Investigate the feasibility of creating a research and training endowment.

6.7 Understand the implications of aggressively increasing the membership of ISMRM.

6.8 Increase interactions and coordination with other organizations relevant to scientific exchange and education.

Goal 7: Assure that ISMRM operates in an efficient and effective manner.

7.1 Institutionalize the strategic planning process, which plans on a three-year horizon and refreshes that horizon on an annual basis.

7.2 Link operations, committee work, and the budget to the strategic plan.

7.3 Assure that financial and human resources are available and appropriate to implement the strategic plan.

*7.4 Rationalize the Board and committee structure, roles, responsibilities, and accountability against the strategic plan on an annual basis.

7.5 Evaluate ISMRM leadership roles, responsibilities, and tenures and modify as appropriate.

7.6 Implement a leadership development program (including the Society's history, operations, and strategic plan) that increases the effectiveness of ISMRM leaders.

*7.7 Develop guidelines for site selection for the Annual Meeting.

7.8 Develop an ISMRM executive office succession plan.

Implementing the Strategic Plan

1. Assign each Objective in the plan to a specific committee and/or staff.
   - Assigned Objectives are the new charges for each committee (in lieu of presidential charges)
   - Sunset committees without assigned Objectives
   - Committees or staff develop Strategies (the action steps needed) to accomplish the assigned Objective(s). These Strategies define each committee's or staff's approach and anticipated resource needs (dollars, volunteer time, and staff time) for implementing the assigned Objective(s).
2. The Board develops/approves the budget based upon committee/staff requests balanced against resources available. A committee's or staff's approach may need to be modified based upon available resources, and the Board so notifies the committee and staff by the budget approved to support the committee's and staff's work.
3. Committee and staff work is then confined to achieving the assigned Objective(s). New ideas brought forth by committees and staff are set aside and taken up at the time of the annual refreshing (updating) of the Strategic Plan, or after review and approval by the Board.
4. The Board undertakes all its work in the context of the Strategic Plan, even structuring Board meeting agendas on the basis of the Goals (and Objectives where possible).
   - Committee and staff reports to the Board are limited to primarily brief status reports on implementation of the assigned Objectives.
   - Board items that are not of an urgent nature are set aside and taken up at the time of the annual refreshing of the Strategic Plan.
5. Committees and staff are formally engaged in the annual process of refreshing the Strategic Plan to a new three-year horizon each year.

CALL FOR NOMINATIONS AND AWARDS NOMINATIONS

Call for Nominations

The Nominating Committee of the International Society for Magnetic Resonance in Medicine invites members of the Society to submit suggested nominations for the office of Vice President and for the six members of the Board of Trustees to be elected in 2005. These suggestions must be received by noon local time on **8 November 2004**, at the Society's Central Office. After this deadline the Nominating Committee shall compile a list of not more than three nominees for each position on the ballot, including any nominees suggested by the Nominating Committee itself. The nominees for the vacant positions will further be chosen to ensure the general balance in representation on the Board of Trustees of discipline and geographical distribution. This year the nominees for the Office of Vice President will be basic scientists.

Nominations by members independently of the Nominating Committee shall require a petition of fifty (50) Full Members in good standing of the Society and must be received by midnight local time on **31 December 2004**, and shall include the written agreement of the proposed candidate for his/her nomination, state the office for which such candidate is nominated, and a brief biography (single paragraph).

The nomination, and subsequent selection, of appropriate individuals who are willing to commit time and energy to the ongoing governance of the Society is critical to its future health. The general membership is encouraged to help in this task.

Suggested nominations should be submitted to:

Peter S. Allen, Ph.D.
Chair, Nominating Committee
International Society for Magnetic Resonance in Medicine
2118 Milvia Street, Suite 201
Berkeley, CA 94704, USA
Tel: +1 510 841 1899
Fax: +1 510 841 2340
E-mail: info@ismrm.org

Call for Awards Nominations

The Awards Committee of the International Society for Magnetic Resonance in Medicine invites members of the Society to submit the names of potential nominees for the awards of the Society. Based on these proposals from the membership, the Awards Committee will recommend the names of the Award winners to the Board of Trustees. Awards will be bestowed at the 2005 Scientific Meeting of ISMRM.

Gold Medal

This medal is awarded for major research contribution to the field of magnetic resonance within the scope of the Society. Proposals must include a nominating letter detailing the 5 to 10 most significant and most cited publications of which the nominee is an author, two seconding letters, and the curriculum vitae of the candidate. Electronic files of the documents must accompany the submission and may be submitted separately to jane@ismrm.org.

Silver Medal

This medal is awarded for outstanding contributions to the operation, effectiveness, or good reputation of the Society. Proposals must include a nominating letter detailing specific contributions of the nominee, two seconding letters, and the curriculum vitae of the candidate. Electronic files of the documents must accompany the submission and may be submitted separately to jane@ismrm.org.

Fellow of the Society

This distinction is conferred on those who have made a significant and substantial contribution to research in a field within the Society's purpose or who have contributed in a significant manner to the development of the Society and/or any of the Predecessor Societies. Proposals must include a nominating letter detailing specific contributions of the nominee, two seconding letters, and the curriculum vitae of the candidate. Electronic files of the documents must accompany the submission and may be submitted separately to jane@ismrm.org.

All awards proposals must be received in the Society's Central Office by **1 September 2004**. Send completed material to:

Michael E. Moseley, Ph.D.
Chair, Awards Committee
International Society for Magnetic Resonance in Medicine
2118 Milvia Street, Suite 201
Berkeley, CA 94704, USA

STUDY GROUP UPDATE

Study Group Meetings during the ISMRM Annual Meeting in Kyoto

Despite various organizational challenges, the success of the Study Groups clearly shows their importance for the ISMRM Annual Meeting attendees. Indeed, Study Groups, because of their narrow focus on a limited subject area, can react very fast to new developments and adapt their meeting accordingly. Traditionally, Study Groups have also been very active in organizing state-of-the-art workshops. It looks like this trend will increase even further.

In Kyoto all Study Group meetings were reduced to 90 minutes instead of the usual 120 minutes, due to space constraints at the Kyoto International Conference Hall. In addition, some overlap could not be avoided, since only three time slots were available for all fourteen study groups (a 15th on functional MRI has been added recently).

Recent data from the Zoomerang membership survey indicated that our members prefer "hot topic" discussion meetings, and most Study Groups are moving in that direction. With respect to governance issues, Study Groups are moving toward a system in which the elected officials will have one year of training as an official-elect to become more familiar with individual group issues.

In general, all Study Groups reported successful meetings despite some overlap and competition from some User Group meetings. The Study Group on Molecular and Cellular Imaging held its first meeting. The estimated attendance for the other groups was as follows:

- Musculoskeletal: 30 attendees
- Combined Dynamic NMR Spectroscopy/Psychiatric MRS/I: 50 attendees.
- Cardiac MR: 60 attendees.
- High Field Systems and Applications: 70 attendees.
- Interventional MR: 50 attendees.
- White Matter Diseases: 70 attendees.
- MR of Cancer: 90 attendees.
- MR Engineering: 90 attendees.
- Hyperpolarized Noble Gas MRI: 65 attendees.
- Flow & Motion: 50 attendees.
- Diffusion and Perfusion: 130 attendees.
- MR Drug Research: about 50 attendees.
- Molecular & Cellular Imaging: 100 attendees.

Thanks go to all Study Group organizers for putting together outstanding programs that offer more value to the ISMRM's Annual Meeting.

— Chrit T. Moonen
ISMRM President-Elect

Current Issues in Brain Function

During the Kyoto ISMRM meeting the Board of Trustees approved the establishment of a new study group **'Current Issues in Brain Function.'** This study group will fill an obvious gap in the existing study group structure. It aims to further the development and application of MRI and MRS for the understanding of brain function by providing a forum for the discussion of current issues related to the measurement of brain function, with emphasis on MR methods but also in relation to other modalities. The activities of the study group will concentrate on the following areas:

1. To explore differences in current interpretation and models of brain function and their basis.
2. The contribution of MRI/MRS to our fundamental understanding of brain function.
3. MR approaches to measuring physiologic parameters associated with brain activity.
4. The impact of knowledge gained from modalities other than MR on MR studies of brain function and vice-versa.
5. To better understand how changes in brain activity and function manifest themselves in MR signal changes.

The study group will provide a forum for ISMRM members interested in these topics in which scientific advances will be discussed and controversial aspects explored. It will do this by means of a short meeting during ISMRM, regular workshops (at least bi-annually) and web-based discussions. The scientific activities of the group shall be explicitly organized so as to foster discussion.

Once fully operational, the study group governing committee will have six members. In the initial period up to the Miami meeting of the study group, the organizers will act as follows: Todd Constable (Secretary), Rolf Gruetter (Program Director), David Norris (Chair). At the end of this year elections will be held for the offices of: Chairperson-Elect, Secretary-Elect, and Program Director-Elect, who will assume these functions at the Miami Meeting.

At next year's ISMRM Annual Meeting we will hold a scientific discussion on ***"The Nature of the Negative BOLD Effect,"*** and organization is already in progress for a workshop in Switzerland during the Summer of 2006.

ISMRM members wishing to become members of the study group should contact Anne de Lemos [anne@ismrm.org] directly.

— David Norris,
Current Issues in Brain Function Study Group Chair

NEWS FROM THE 2005 SCIENTIFIC PROGRAM COMMITTEE

In May 2005, the ISMRM Annual Meeting will be held in Miami Beach, Florida. The attractive setting makes it even more imperative that the Scientific Program Committee (SPC) come up with a spectacular scientific program to rival it! To this end, we have been hard at work.

For the plenary sessions, we are extremely fortunate that we will have Dr. Britton Chance, University of Pennsylvania, speaking as our Lauterbur lecturer on Monday, 9 May, and Dr. Jürgen Hennig, University of Freiburg, speaking as our Mansfield lecturer on Thursday, 12 May. The initial plenary session following Dr. Chance's presentation on Monday will focus on the theme of MR in a Multidisciplinary World, particularly in neuropsychiatric, cancer, and cardiac applications, where alternative techniques to MR play important complementary, and sometime competitive, roles. For the remainder of the week, the theme of the plenary sessions will be *"MR at Different Scales,"* where the focus will move from the level of chemicals (Tuesday) to cells (Wednesday), to organs (Thursday), and finally, to whole body imaging (Friday), signifying the impressive span of MR application.

Several of the initiatives launched in recent years will be adopted more fully in Miami, including video capture of scientific sessions (when approved by speakers), which will be available on the web to registered attendees, and electronic posters that will enable presenters at the meeting to display dynamic video formats.

The Miami Beach meeting will also debut a NEW initiative of the SPC, a week-long course in clinical MRI that is targeted toward radiologists, trainees, and technologists called **Clinical MRI: From Principles to Practice.** The aim of this program is to provide an intensive one week educational and scientific program in MRI, taught by some of the world's best teachers in MR. The program starts with a new educational program on Saturday, *Clinical MRI: From Physical Principles to Practical Protocols,* which will provide an introduction to physical principles of MR with a view toward understanding routine clinical protocols on a system-by-system basis. On Sunday, attendees will have a choice of day-long educational programs to choose from (including musculoskeletal MR, advanced Body MR, cardiac MR, among others). Then throughout the week, in parallel with the scientific sessions, educational and clinical science programs will provide the clinically-oriented attendee with a chance to review clinical material through focused problem-solving didactic sessions and hands-on workshops. By attending this course, attendees will be taught practical clinical MRI by some of most experienced MR clinician scientists in the field, while also learning about the latest scientific advances being made in this rapidly changing modality. More details of this program are given below.

The SPC is extremely excited about the meeting in Miami. As always, we welcome your input. Please e-mail us with your ideas and comments and keep checking this website for updates on the program.

— Vivian S. Lee, Chair, Scientific Program Committee

CLINICAL MRI: FROM PRINCIPLES TO PRACTICE at the ISMRM ANNUAL MEETING, 7-13 MAY 2005

Weekend	Program	Alternative
Saturday, May 7	Clinical MRI: From Physical Principles to Practical Protocols	Select from Educational Course Offerings
Sunday, May 8	Select from Educational Course Offerings	
Monday-Friday	**Program**	**Alternative**
07:00 – 08:00 (T-F)	*Morning Categorical Courses:* ■ Cardiovascular MRI ■ Technical Advances and their Impact in Body MRI ■ Technical Advances and their Impact in MSK MRI ■ Answering Clinical Questions with fMRI/DTI/PWI	*Morning Categorical Courses:* ■ Quantitative Neuro MR ■ New Developments in MR Hardware ■ MRS & MRI at High Field ■ Echo Management
08:00 – 09:30	Plenary Sessions	
10:30 – 12:30	Clinical Track Educational Program*	Clinical Categorical Courses** or Scientific Sessions
	Gold Member Symposia or Lunch on your own	
13:30 – 15:30	Clinical Track Educational Program*	Clinical Science Focus Sessions or Poster Sessions
16:00 – 18:00	MRI Physics for Clinicians	Scientific Sessions

* Clinical Track Educational Programs will feature Clinical Problem Solving Conferences on common, but challenging clinical topics across the range of applications—neuro, spine, body, cardiac, vascular, and musculoskeletal imaging– as well as hands-on vendor-supported Protocol Optimization Workshops.

** Clinical Categorical Courses will include: 3T for Body Imaging; MR for Cancer; MRI in the Mother, Fetus, and Newborn; Hot Topics; Cardiovascular MR in the Clinical Setting; and the SMRT/ISMRM Joint Forum: Protocol and Pulse Sequence Optimization.

2005 Young Investigator Awards

The International Society for Magnetic Resonance in Medicine announces the competition for the Young Investigator Awards for the Thirteenth ISMRM Meeting in Miami Beach, Florida, USA, in May 2005. Two awards will be given, the W.S. Moore Award in Clinical Science and the I.I. Rabi Award in Basic Science.

The **W.S. Moore Award** is given for original **clinical** research in magnetic resonance. This includes studies of applications of established MR methodologies, using either human or animal subjects. Examples include manuscripts reporting new applications of MR contrast agents, optimization of scanning protocols, new clinical applications of MRI, or results of clinical trials.

The **I.I. Rabi Award** is given for original **basic** research in magnetic resonance, such as reports of new MR methodologies.

The competition is open to clinical and basic scientists at the undergraduate, graduate, postgraduate, resident, and fellow levels working in MR research in academia, industry, or research institutions. Applicants must have had no more than the equivalent of five years' full-time postdoctoral or post-residency research, as documented by a curriculum vitae and letter of confirmation from their supervisor, mentor, or department head.

To be considered for either award, the applicant must submit a single manuscript describing original work in the field of MR in medicine, as well as a one-page abstract of the work via the ISMRM electronic submission website. The applicant must be the sole or primary author of this work. The manuscript may not have been submitted elsewhere prior to the submission deadline, with the exception of manuscripts submitted to one of the Society's journals (*JMRI* or *MRM*). Manuscripts previously submitted to either Society journal, but not yet published, are eligible for consideration. (This may result in a delay in publication, since YIA finalists and winning papers will be published after the Society's meeting in May 2005.)

The Young Investigator Awards Committee will select up to three finalists for each award. The finalists' manuscripts will be submitted to *JMRI* or *MRM* for journal review for publication. The remaining manuscripts will be returned to the authors. All abstracts will automatically be considered for the ISMRM Thirteenth Scientific Meeting in Miami Beach. The finalists will make both oral and poster presentations at the Thirteenth Scientific Meeting. The winners will be selected on the basis of the scientific quality and originality of their abstracts, manuscripts, and presentations and will be named before the close of the Meeting.

HOW TO APPLY:

Applications must include the following:

- Complete original manuscript, **with electronic version in pdf format**, printed and doublespaced throughout (including tables, footnotes, references, and figure captions), prepared on one side of 8.5 x 11 in. or A4 white paper, with 1-in. or 2.5-cm margins on all sides. All pages should be numbered consecutively, including references, tables, and figure legends. Three sets of original images and an electronic version of images in eps format must accompany the manuscript;
- A *curriculum vitae;*
- A printout of the electronically submitted abstract, with an electronic version in pdf format;
- A statement, with an electronic version in pdf format, from the applicant's mentor, supervisor, or department head certifying the originality and independence of the work and that the applicant meets all the criteria for the competition. The statements should discuss the candidate's specific contribution to the work with an estimate of the percentage of the contribution made by the candidate (which should be substantial).

(**Note:** The YIA Competition is completely separate from the Student Stipend Program. Any YIA applicant interested in the Student Stipend Program must apply to that program separately.)

DEADLINE:

Manuscripts must be received no later than **Wednesday, 3 November 2004.** The balance of the application materials must be received no later than **Friday, 19 November 2004.**

Young Investigator Awards Check Sheet

Send completed Checksheet and all materials to:

Robert J. Gillies, Ph.D., *Chair*
Young Investigator Awards Committee
International Society for Magnetic Resonance in Medicine
2118 Milvia Street, Suite 201
Berkeley, CA 94704 USA

Applicant Name _____

Institution _____

Address _____

_____

City _____

State/Province _____

Country _____

Postal Code/Zip+4 _____

Contact Phone Number _____

Home Phone Number _____

E-mail Address _____

Supervisor _____

I am entering the (check one)

☐ W.S. Moore Award Competition
☐ I.I. Rabi Award Competition

I would like my manuscript reviewed for publication in (check one)

☐ *Magnetic Resonance in Medicine*
☐ *Journal of Magnetic Resonance Imaging*

ENCLOSED:

☐ Original Manuscript and an electronic version in pdf format
☐ *Curriculum Vitae*
☐ Abstract and an electronic version in pdf format
☐ Supervisor's Letter and an electronic version in pdf format

PLEASE CHECK!

☐ Yes. I have indicated both the Award for which I am competing and the Journal for which I wish my manuscript to be reviewed on my manuscript's title page.

If I am not selected as a finalist, consider my abstract for the ISMRM Thirteenth Scientific Meeting and Exhibition.

☐ Yes ☐ No

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NO. DATE RECEIVED

Professional Certification for MR Scientists

In April 2004, ISMRM officially became a sponsoring organisation of the American Board of Medical Physics (ABMP), the body that maintains the board speciality certification in Magnetic Resonance Science. It also maintains a similar certification in Medical Health Physics. The other sponsoring organisations of ABMP are the American Association of Physicists in Medicine (AAPM), the American Academy of Health Physics (AAHP) and the American College of Medical Physics (ACMP).

Certification is a mechanism by means of which most professions, e.g., physicians, attorneys, engineers, etc., regulate themselves and provide a mark of professional competence, which extends beyond that of an academic qualification, for the guidance of governmental, commercial, private organisations, and others. The MR Scientist Diploma of the ABMP, which is a unique professional qualification, is designed to address several of the potential concerns of those who, without such a qualification to use as a yardstick, have little in the way of clear guidelines for assessing the suitability of an MR scientist for working on human subjects. Such people include not only members of the general public, but also the health care administrator, the agency inspector, the review board committee, and possibly even the collaborating physician. Some of their more significant concerns relate to the competence of the MR Scientist to minimize the risk of injury to the persons being scanned and to those in the vicinity of the scanner; to provide the most current opinions on the efficacy of various sequences to the pathology under investigation; and to ensure the highest level of measurement precision and accuracy. As the application of MR procedures to human subjects progresses through an ever increasing level of pulse sequence sophistication, accompanied by the exploitation of higher magnetic field strengths, faster and stronger gradients, and greater radiofrequency power, a professional qualification ensuring the highest level of competence in those that influence patient safety and procedural efficacy becomes more and more attractive for health care administrators and third-party payers that have no means to evaluate the details of magnetic resonance. For example, a potential target for the sights of such an administrator could be the MR Scientist who takes the responsibility for the conduct of MR research protocols on patient subjects, whose overall health care is ultimately the responsibility of the hospital employing that administrator. The concern does not have to be because routine patient management decisions could be affected by the research protocol, but instead, because of the small but finite probability of an unanticipated occurrence leading to litigation. Such sensitivities can be particularly acute when the MR research laboratory is separate from the MR suite in which all routine diagnostic work is carried out at the hospital, and when the research MR hardware is not identical to that routinely used in hospital MR suites.

The ABMP initiative to instigate and administer a board specialty certification of MR Scientists stems from its belief that professions themselves are the best suited to regulate their own standards of competence. In agreeing to sponsor the ABMP, the Board of Trustees of ISMRM was acting on its strongly held opinion that our Society was, arguably, the most suited to determine the standards of competence that MR Scientists should meet. The sponsoring action was thought by the Board of ISMRM to be particularly timely and to place our Society in the vanguard of an emerging worldwide trend. It was not simply to cater to the climate for litigation in North America, as might be thought from the illustrative example used above, but to anticipate the increasing governmental tendency to regulate, as seen for example in both North America and in Europe. A Society like ours, which spans all continents, will be ideally placed to inform and to influence regulatory bodies in individual countries, based upon its globally integrated credentialling and scientific experience. Credentialing bodies, such as ABMP, have been shown to project a moderating and normalizing influence over governmental tendencies to impose regulations for public benefit without providing adequate resources to cover them. Finally, it should also be realized that the currency of professional certifications can be acceptable outside the geographical jurisdiction in which they were awarded.

The certification in MR Science is a new certification pathway recently introduced by the ABMP. Its examination structure bears some similarities to that of the certification in Medical Physics offered by the American Board of Radiology (ABR), but is markedly different in its curriculum. For example, the intimate understanding of radiation therapy physics or x-ray imaging physics characteristic of the ABR certification pathways are not required in the pursuit of the ABMP MR Scientist certification. Instead, the knowledge areas demanded are based on relevance to magnetic resonance in the human subject and include, in addition to the detailed understanding of magnetic resonance physics and hardware principles, a rudimentary grasp of human anatomy, physiology and biochemistry as they influence the outcome of MR procedures in the human subject. The detailed curriculum is being reviewed, subsequent to the integration of ISMRM into the group of sponsoring organizations, and is anticipated in its final form in the fall of 2004.

The structure of the examination, which will be covered in more detail on the ABMP web site (www.abmpexam.com) in the fall of 2004, is in three parts, namely, a written Part 1, designed to determine the competence of the candidate in some of the more fundamental aspects of medical physics; a written Part II, designed to determine the competence of the candidate in the specialty area of the physics of magnetic resonance applied to the evaluation of

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human structure and function; and an oral Part III, designed to determine the candidate's knowledge and ability to address the practical challenges faced in the specialty area of magnetic resonance applied to human subjects. Parts I & II may be taken together or individually. Candidates must pass both Parts I & II before taking Part III.

While the objectives of Parts II and III may be regarded as self-explanatory by an MR audience, that of Part I would, no doubt, benefit from a little amplification. The more fundamental aspects of medical physics as it relates to *in vivo* magnetic resonance will include an appropriate grounding in atomic and nuclear physics, the relevant mechanisms of chemistry and biochemistry, some fundamental techniques from the appropriate areas of mathematics and statistics, the basic concepts of anatomy and physiology leading to some fundamental medical biophysical phenomena, and the basic science of common imaging modalities leading to an appreciation of modern radiological practice.

The timing and venue of the examinations will ultimately be arranged to be convenient to both candidates and examiners alike. The Part I and Part II examinations will next be held in conjunction with the Seattle meeting of the AAPM on 23 July 2005. In the future we anticipate that some examinations will be held at the same location as, and concurrent with, the annual meetings of the ISMRM.

— Peter S. Allen & Terry M. Button,
Co-Chairs MRI Committee of ABMP
Geoffrey D. Clarke,Chair ABMP

Workshop Report

Quantitative Cerebral Perfusion Imaging Using MRI: A Technical Perspective

The ISMRM Workshop on *Quantitative Cerebral Perfusion Imaging Using MRI: A Technical Perspective* was held 21-23 March 2004 at Venice International University (VIU) on the island of San Servolo located in the Venetian lagoon in Venice, Italy. The workshop organizing committee consisted of Fernando Calamante from University College London in London, England, Thomas Conturo from Washington University in St. Louis, USA, Susumu Mori from Johns Hopkins University in Baltimore, USA, and Alberto Bizzi (local organizer) from Istituto Neurologico Carlo Besta in Milan, Italy.

This was the second workshop of the Diffusion/Perfusion Study Group, the first ISMRM workshop devoted to perfusion MRI, and the first international workshop on technical aspects of perfusion MRI. The aims of this workshop were to facilitate critical discussion of current methods of quantitative cerebral perfusion imaging in humans using MRI, to review the field as it stands, to evaluate the different methodologies, to describe new and recent developments, and to assess the clinical applications of cerebral perfusion MRI. The workshop focused on cerebral perfusion MRI because of the unique technical and tracer-kinetic issues in cerebral perfusion MRI. The workshop also focused primarily on the two most common methods for quantitative cerebral perfusion MRI: Dynamic Susceptibility Contrast (DSC) and Arterial Spin Labeling (ASL). The workshop was also designed to present the most current information and techniques.

The 151 registrants were from 15 countries; 58 were from North America while 93 were from outside North America. Of the registrants, 56 (37%) registered as students/post-docs, and 44 (29%) were non-members of the ISMRM. The high number of student attendees speaks to the timeliness and attractiveness of the field of cerebral perfusion MRI, and suggests that the field will continue to grow and thrive.

Venice, one of the most interesting cities in the world.

The workshop was structured as nine oral sessions divided between three DSC sessions, two ASL sessions, and four combined DSC-ASL sessions. The quality of the invited and proffered talks was extremely high, as reflected in the workshop evaluations. The ***dedicated DSC sessions*** first covered the theory of the method, with an invited talk by Valerij Kiselev describing theory and simulations of T_2 and T_2* effects in DSC. This was followed by a proffered paper by Erbil Akbudak discussing theory and experimental observations of the quadratic ΔR_2* effect of gadolinium (Gd) in blood. The next proffered paper was by B. Jensen on tests of the internal consistency of DSC perfusion measurements, which concluded that differences in the inherent T_2 or T_2* responses in blood and tissue lead to significant errors in blood flow measurements. The next talk by C. Quarles presented theoretical signal relations and corrections for contrast extravasation in brain tumors with disrupted blood brain barrier. The last proffered talk by Adriana Barbacaru presented theoretical expressions for the T_1 effects of gadolinium and demonstrated T_1-based measurement of cerebral blood volume. The DSC session on arterial input function (AIF) measurement had an invited talk by Tom Conturo on phase-based AIFs, and relative blood and tissue scale factors relating signal to Gd concentration for phase and ΔR_2* DSC signals. This was followed by an invited talk by Matthias van Osch on complex signal methods of reducing partial volume effects, and pitfalls in measuring

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AIFs in pixels adjacent to arteries (such as in local AIF measurements). The two talks were followed by a lively 10-minute question-and-answer period involving both speakers. Next a proffered paper by Melanie Kotys discussed SNR characteristics and optimal doses for phase and magnitude AIFs. This was followed by a paper by S. Christensen on semi-automated means of assigning an AIF for each major vascular territory in the brain, and a paper by Fernando Calamante describing identification of pixels for local AIF measurement using independent component analysis. The third DSC session was on deconvolution methods. Leif Østergaard discussed tracer kinetic principles, different deconvolution methods, model-dependent approaches of measuring blood flow, flow heterogeneity, and various perfusion indices that can be calculated. Fernando Calamante discussed the effects of bolus dispersion and delay between the more proximal site of AIF measurement and the more distal site of arterial supply to the tissue. He presented a model of the transfer functions between AIFs at the neck and brain that can be used to study these errors and to test different deconvolution methods. Proffered papers by F. Zanderigo and Irene Andersen discussed different numerical methods to improve the deconvolution of the AIF from the tissue curve. A paper by Ona Wu discussed tissue characterization in acute stroke using perfusion parameters, and discussed numerical issues for deconvolution in this patient population. George Newman ended the session by describing a constant Gd infusion T_2* approach to measuring CBV in conjunction with bolus-injection CBF measurements.

The first ***dedicated ASL session*** covered the theoretical basis of ASL and different approaches for magnetically labeling arterial water. David Alsop presented an overview of the MR physics and physiological basis of ASL perfusion measurements, including the two general approaches of continuous water inversion and pulsed water inversion, and methods for background suppression. Eric Wong then described ASL methods that use pulsed labeling of arterial water, particularly related to quantitation and effects such as magnetization transfer and slice profiles. He also discussed the more recent technique of velocity-selective ASL. Proffered papers described models for the inversion efficiency of the double adiabatic inversion method (Michael Gach), models for the velocity effects on inversion efficiency in continuous ASL (R. O'Gorman), and flow territory mapping by spatially selective arterial labeling (Jeroen Hendrikse). The second ASL session covered data analysis and quantification. Rick Buxton discussed methods and data analysis for quantitation of CBF using ASL, particularly from the perspective of the underlying physiology of blood and water. He emphasized the need in pulsed ASL for creating a tagged bolus of magnetization in arterial blood that is well defined in space, which is improved by the QUIPSS II method. Laura Parkes then discussed the importance of different compartment models for the behavior of magnetized water in blood and tissue, including the effects of permeability, mixing, exchange times, etc. Proffered papers by Harold Moller, Alison Campbell, and N. Johnson presented various aspects of arterial transit times and ASL parameter settings in normal young and elderly subjects and in patients with Alzheimer's disease.

The first ***combined DSC/ASL session*** covered validity testing, comparison studies, and other methods. Leif Østergaard gave an overview of approaches to validating DSC perfusion measurements. James Ewing presented animal results testing the validity of ASL CBF against quantitative autoradiography (QAR) using iodoantipyrine, and proposed that the ASL method has high enough accuracy in rats that it could be considered a gold standard. Proffered papers discussed hypercapnea validity studies (U. Noeth), and the use of the novel agents ^{17}O (Gheorghe Mateescu) and ^{129}Xe (J.-N. Hyacinthe). The second combined DSC/ASL session discussed basic science applications. Afonso Silva discussed using ASL CBF imaging for functional imaging in rats. He presented data on the relation between the BOLD signal and the ASL CBF changes, and he showed that the ASL signal responds to a stimulus more rapidly than the BOLD signal responds, such that the ASL signal

Workshop participants Tom Conturo, Dunja Memisevic, Melanie Kotys, Erbil Akbudak, Peter Barker, and Doris Lin.

can resolve time differences in the response in superficial and deep cortex. David Thomas then discussed basic science studies of cerebral ischemia in small animals using ASL, including blood flow and transit time differences in different brain regions, the use of a double-echo FAIR method to measure blood flow and blood volume changes, the time course of perfusion changes after artery occlusion, and diffusion-perfusion mismatch. A proffered paper by ManKin Choy showed CBF and MR angiographic changes in response to permanent bilateral carotid occlusion, with a decrease in CBF acutely followed by chronic renormalization in the setting of normal diffusion. The authors suggest that the findings may extend to vaso-occlusive disease and other causes of chronic hypoperfusion in humans. G. Vanhoutte presented experiments using both ASL and DSC in a genetically engineered mouse model of amyotrophic lateral sclerosis. Josef Pfeuffer presented ASL-based functional MRI in the primate brain at 7T at 500 microns in-plane resolution, which showed tight localization of blood flow changes to the gray matter ribbon. The next proffered paper was by Rasmus Birn, who presented DSC studies of gadolinium washout dynamics that could be used to infer the biological sources of the latency of the BOLD response in fMRI studies. The final proffered paper in that session was by Torben Lund, who presented simultaneous EEG and ASL measurements in humans. Those results suggested that the presence of a negative resting correlation between BOLD signal and EEG intensity in the alpha band (8-13 Hz) that occurs in the occipital and parietal areas is likely due to true decreases in local cerebral perfusion during increases in EEG intensity. The third combined

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DSC/ASL session discussed clinical applications. Greg Sorensen discussed perfusion MRI in acute stroke, particularly in use of DSC in practical clinical settings. David Alsop presented work on clinical applications of ASL in the brain, particularly in the areas of stroke, dementia, brain tumors, and pediatrics. This talk and others at the workshop discussed the limitation of ASL relative to DSC in measuring slow flow in stroke, due to rapid T_1 decay of labeled magnetization. He discussed that, conversely, ASL can have advantages over DSC for perfusion imaging of brain tumors, where disruption of the blood brain barrier can alter the gadolinium contrast agent kinetics and signal effects. A proffered paper by Laura Biagi presented measurements of the age dependence of ASL CBF measurements in different brain regions from 4 to 78 years. She found a sharp discontinuity in CBF values between juvenile and adult ages. She also presented measurements of the effect of anesthesia on CBF measurements in children. Maria Miranda presented ASL CBF measurements in full-term and premature infants, demonstrating higher CBF in the premature group at term-equivalent ages. K. Schmainda presented biophysical studies of tumor neovascularity using dual gradient-echo/spin-echo (GE/SE) DSC measurements. The ratio of GE vs. SE CBF measurements correlated with tumor grade, possibly due to a dependence of this ratio on tumor neovascularity. The fourth combined DSC/ASL session was on new imaging methods. Jeff Duyn discussed parallel imaging, and presented high-resolution DSC and ASL perfusion images in humans at 3T using SENSE-EPI with a 16-channel brain coil. The spatial resolution was 1.5x1.5x2.0 mm for DSC and 1.5x1.5x3.0 mm for an 11-minute ASL study, and the image quality was high for both methods. The first proffered talk by Guillaume Duhamel presented single-shot susceptibility-insensitve whole-brain fMRI using ASL with ~6 second ASL frames, 10 frames per task block, and 16 task-control scans (total activation study of 20 minutes at 3.9x3.9x3.9 mm using SENSE with a 4-channel array coil). Matthias Guenther then presented single-shot 10-slice 3D GRASE ASL acquired in 2 minutes at 2.3x3.4x5 mm. The final proffered talk of the workshop was by S. Talagala, who presented whole-brain continuous ASL results with acquisition times ranging from 20 seconds (4x4x3 mm) to 10.5 minutes (1.5x1.5x3.0 mm) using a 16-channel receiver coil.

The combined poster session included a wine and cheese reception.

The session moderators kept the sessions on time and helped stimulate the discussions. Session moderators were (alphabetical): Jeffrey R. Alger, Emmanuel L. Barbier, Peter B. Barker, Alan Connelly, Alexander J.S. de Crespigny, John A. Detre, David G. Gadian, Cecile B. Grandin, Peter Jezzard, Jussi Perkiö, Ona Wu, Frank Q. Ye, Jianhiu Zhong, as well as some of the invited speakers.

The 31 proffered talks were chosen from the submitted abstracts. The organizing committee would like to thank David Alsop and Eric Wong for their very hard work in helping with abstract review and scoring. There were also dedicated poster sessions with ample time for attendees to carefully read all 41 posters. One poster session was dedicated to the 26 DSC posters, one poster session was dedicated to 15 ASL posters, and one poster session covered all posters for those that could not see all the posters during the dedicated sessions. The combined poster session also included a wine and cheese reception. Overall, the numbers of accepted abstracts were fairly evenly distributed between the two topics of the workshop (30 ASL, 39 DSC, and 3 ASL/DSC), indicating the balance of work that is ongoing in these two exciting research areas.

The invited papers from the workshop will be published in an upcoming issue of *Journal of Magnetic Resonance Imaging (JMRI)*. The full list of sessions, speakers, and moderators can be viewed on the workshop website: www. ismrm.org/workshops/Perfusion_Imaging/ (click on "Program").

We would like to acknowledge the ISMRM staff, and in particular Jane Tiemann who was the on-site ISMRM representative, as well as Bob Goldstein, Roberta Kravitz, Anne de Lemos, Sheryl Liebscher, and Kristina Minear. We would also like to acknowledge the help of Dr. Francesca Nisii of Venice International University for help with organizing the conference logistics. Finally, we wish to thank the ISMRM Corporate Members for general support. We also thank the following Perfusion Workshop sponsors: Siemens Medical Solutions, Pfizer Inc., Tyco Healthcare/Mallinckrodt, Sun Microsystems Inc., SurgiVet Inc., and InvivoMDE.

— Tom Conturo and Fernando Calamante on behalf of the Organizing Committee

MR in Drug Development: From Discovery to Clinical Therapeutic Trials

The first workshop of the MR in Drug Development Study Group was held in early April, in McLean, Virginia, USA. There were almost 100 participants from the US and various countries in Europe. The make up of the audience was a combination of representatives from academia, government (NIH and FDA), and numerous facets of industry (pharmaceutical, instrument manufacturers, Contract Research Organizations). The meeting was a first in that it was cosponsored by the Center for Drug Evaluation and Research, FDA, their first such co-sponsorship since the announcement of their new imaging initiative. In addition, there were generous donations from Perceptive Informatics, Beacon Bioscience, VirtualScopics, and the Society of Non-Invasive Imaging in Drug Development.

The meeting began with a spirited presentation by Richard Hargreaves from Merck, on *"Drug Discovery and Development: Applications for Imaging."* Dr. Hargreaves provided a stimulating presentation on the Merck use of imaging as well as his own attitude as to how imaging could be best utilized to advance drug development. There was a lengthy discussion, on completion of his presentation, which really help set the tone for the rest of the meeting. A presentation was made by Marielle Delnomdedieu (Pfizer) on NMR metabonomics for safety and efficacy measures. She provided an outstanding overview of what is required to develop a new technology such as metabonomics such that it can be used as a tool to promote decisions in both safety and efficacy. Based on the discussion, this was recognized as a technology that has great promise and is well on its way to being a valuable decision maker, as was illustrated by a story of the development of the vasculitis. John Waterton (AstraZeneca) used MR imaging in cancer research as an example of translational research. The parameters determining whether a biomarker can be used to assess value of a new oncologic therapy is relevant to all therapeutic areas. Dr. Waterton discussed two translation paradigms; 1) what issues that must be addressed to translate a diagnostic clinical trial tool, 2) use of MRI for preclinical and clinical settings. He presented data on different MRI methodologies, including Dynamic Contrast-Enhanced MRI, MR spectroscopy, and standard structural MR measures. Applications were in various stages of clinical development. Deborah Burstein (Beth Israel Deaconess Medical Center) presented on the use of MRI in Drug Discovery in Osteoarthritis. The need for strong clinical/preclinical endpoints in this disease are absolutely essential to the development of appropriate therapies, and MR approaches are considered to be the methods of choice. Cartilage morphology based on T1-weighted MRI is quite advanced. Another approach that has great promise but is not as well developed is dGEMRIC (delayed Gadolinium Enhanced MRI of Cartilage). This monitors more closely the changes in "chemical" composition of the cartilage and is associated with the pathology. The final presentation in the first session was by Steven Warach (NINDS, NIH) on the use of MR technologies in diagnosis of stroke and its application in clinical therapeutic trials. The use of diffusion and perfusion MRI in stroke research is extremely powerful and essential to the development of stroke-related therapeutic agents. While the technology has shown great success and recognition of the success, the development of therapies has lagged behind. It usually is the other way around. This session was greeted with strong praise including remarks such as "one of the best sessions I have ever attended" and "refreshing speakers."

The second session was a collection of four quite different proffered papers. As described in the comments by one of the attendees "very eclectic – *in vitro* MRS [Klawitter et al.], phMRI [Li], *in vivo* ^{31}P MRS [Serkova et al.], DWI and DSCE-MRI [Jordan et al.], which made this very enjoyable." Due to the diverse nature of attendees, there was a subsequent diversity in the abstracts that were submitted but this demonstrated the diversity of attendees.

The afternoon session was organized by the Society of Non-Invasive Imaging in Drug Development. Three speakers were supplied by the Society to cover alternative imaging methodologies. Michael Tweedle (Bracco) presented on MR contrast reagents, in particular, modified Gd ligands. These agents are under development but may be applicable to a variety of therapeutic areas including cardiovascular and oncology. Their limitation is primarily sensitivity of detection and their applicability is yet to be proven. Ray Gibson (Merck) gave an excellent overview on the use of radiotracers in the evaluation of pharmaceuticals. The emphasis of his presentation was on the use of radiotracers for PET and SPECT, in receptor population mapping. He gave a solid overview of the pros and cons of using this technology as well as the technical demands that are required in order to use the technology appropriately. The final presentation in this session was by Terry Matsunaga (ImaRx) on the use of microbubbles in ultrasound research. Terry provided a very good chemical and physical overview of the use of the bubbles. The approach can be used diagnostically for molecular imaging as well as therapeutic imaging. It is an expanding area of imaging research that also has applications for drug delivery. This is a very promising imaging approach, which is being developed in a number of therapeutic areas. The session was well received and considered by the attendees to have an excellent range of topics that made for a break from the general tone of the meeting.

There was a poster session with an additional seven presentations of high standard. These also covered a diversity of topics, further demonstrating the vast arena of MRI applications in drug discovery and development.

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David Vernon from IBM started the Saturday session. The first half of his presentation was an interesting overview of how IBM perceives the process of drug development. There was an IBM presentation in the second half of his presentation. This was followed by two outstanding presentations on the use of MRI in clinical therapeutic trials. The strongest use of MRI in clinical therapeutic trials is for multiple sclerosis (MS). Joe Frank (NINDS, NIH) provided an outstanding overview of all of the various aspects related to the use of MRI in MS clinical therapeutic trials. He showed how MRI provides a biomarker that is considered by regulatory bodies as a surrogate for the disease. The extensive information that has been necessary to prove this was provided. Multiple MRI measures have been shown to correlate with different aspects of the pathology of the disease. The second presentation was by Chun Yuan (University of Washington) on the use of MRI of atherosclerosis in imaging trials. The extensive validation that Dr. Yuan has done for this technique, including correlation of histology to the MRI scans, demonstrates that the MRI provides a non-invasive approach to measure quantitatively changes in the chemical composition of carotid arterial plaques. This technique is considered to be the next important methodology after some of the ultrasound approaches for monitoring therapeutic effects in clinical trials.

Two examples of future directions in MRI technologies were provided; Greg Lanza (Washington University) discussed the advancing nanoparticle technology arena. The approach is being developed for commercial application specifically in the arena of vascular diseases. These particles can be modified to target specific molecular pathways, such as the integrins in proliferating neovasculature, which provides an approach for monitoring biochemical pathways in a non-invasive manner. The approach has been shown to be very promising in animal models, but has very limited application in the clinic at present. Bill Dow (Metaprobe) presented on some new approaches for MRI contrast agents, specifically targeted Gd probes considered to be "smart" as they are capable of monitoring dynamic activities such as enzymes and gene expression. While there was considerable discussion of the hurdles to implementing this methodology, if it does prove itself, it will be a new direction in MRI clinical research.

The second proffered session had presentations by Al Johnson (Duke University) and Zahi Fayad (Mt. Sinai). Dr. Johnson presented his exciting work on MR histology. The spectacular images and animations of the visible mouse captivated the audience. The advances in this technology are extremely progressive and are a testament to Dr. Johnson's laboratory's efforts. Dr. Fayad's presentation was an excellent follow up to Dr. Yuan's earlier talk. He not only covered MRI, but also multidetector CT and the use of a novel MR contrast reagent. The applications he showed related to preclinical and clinical measures showing the rapid advancement of the imaging applications for plaque imaging. The final session on the regulatory perspectives had an interesting mix of speakers. Ajaz Hussain (CDER/FDA) provided an overview of the FDA's product quality procedure as an example of how an imaging procedure can change the regulatory process. He provided the history of the Product Analytical Technology Initiative, a cooperative effort between industry, academia and federal government, and how imaging methodologies were a major player in making this revolution in manufacturing possible. Jerry Collins (CDER/FDA) unveiled the new imaging initiative that the FDA has begun in order to enhance the use of imaging as a surrogate endpoint in clinical trials. Dr. Collins presented some slides on behalf of Janet Woodcock, the Director of CDER, as well as a series of his own slides on imaging which showed that the FDA has an increasing appreciation of the use of imaging in clinical trials. The third presentation by Paul Workman of the Cancer Research Center, provided a perspective on how the UK is developing a coordinated research approach to improve the drug development and registration process for oncology. This novel approach demonstrates that consortia involving representatives from various parts of the scientific community can work together to help improve this process, resulting in a speeding up of the drug development process and improved drug candidates.

The meeting closed with an open panel discussion with representatives from the instrument manufacturers (Philips, Siemens, GE) and the imaging contract research organizations (VirtualScopics, Perceptive Informatics, BioImaging Technologies). This spirited interaction demonstrated that there is a lack of understanding between the various "players" in imaging clinical trials. Cecil Charles (Duke University) chaired the session and maintained a high level of discussion, which came to the conclusion that there needs to be an open exchange between the various participants resulting in some form of document that can be used to aid in directing the regulatory bodies on what the scientific community considers the important issues regarding using imaging in clinical therapeutic trials. It was so well received that one suggestion was to begin the meeting with the panel as many attendees had already departed.

This workshop was a success based on the responses of the attendees and presenters. It was concluded that there need to be more such meetings to cover a variety of different topics related to MR and Drug Development. It was delightful to see comments such as "this is an eye opening experience for me to see industrial application of MR. I enjoyed it very much!" The outstanding efforts of the ISMRM staff ensured that this meeting went along very smoothly and was well received by all who attended. The future looks bright for this study group.

— David S. Lester, Chair
ISMRM Workshop in MR in Drug Development: From Discovery to Clinical Therapeutic Trials

From The SMRT President

The SMRT 13th Annual Meeting held in conjunction with the ISMRM 12th Scientific Meeting in Kyoto, Japan, was a great experience for all in attendance! It was wonderful to see such a diverse group of individuals in the Land of the Rising Sun. James Stuppino, SMRT Program Chair, and Julia Lowe, SMRT Education Chair, did an outstanding job with the program. Keeping with our theme, *"Rising to Excellence,"* more than 160 technologists from 22 different countries attended the poster walking tour and the 2-day didactic educational meeting. Over 40 posters were on display this year throughout the meeting. The SMRT/ISMRM Joint Presentation, *"Managing MR Artifacts and Pitfalls"* was hosted by John Christopher, SMRT Executive Board Member and Co-Organizer. (John's report is on page 25.)

The SMRT is successfully maintaining the budget required for operations. Anne Sawyer-Glover has done an outstanding job over the past three years keeping up with our finances. She has been working with Laurian Rohoman, SMRT Treasurer 2004-2007, to make the transition a smooth one. Anne was instrumental in making our Kyoto meeting successful with her leadership in gaining corporate sponsorship. Without the financial help of our corporate sponsors, we would not be able to offer the quality educational opportunities that we offer. We are very thankful for their support!

Nanette Keck, SMRT Program Chair 2004-2005, is already in motion planning the SMRT 14th Annual Meeting in Miami Beach. She has already confirmed that Drs. Crues and Kressel will present at the meeting for a reunion appearance! The SMRT established its most prestigious award in their honor in 1991 and awards the Crues-Kressel Award to technologists with outstanding achievements in MR technologist education. The Program Committee is working on other exciting topics and ideas for the Annual Meeting. It promises to be a meeting to remember!

As we explore new avenues to increase membership, we are continuing with the membership drive "Each One, Reach One" initiated by Maureen Ainslie, SMRT Past President. Even though our membership has grown tremendously over the past few years, there are many more MR technologists working in the routine ranks everyday that need the quality MR education the SMRT offers. Todd Frederick, SMRT Membership Chair 2004-2005, has already begun brainstorming new ideas to help reach technologists in MR training as a way to help educate them and keep them interested in the field of MR.

The SMRT continues to support our Local Chapters. Judy Wood is the SMRT Local Chapters Committee Chair 2004-2005. When asked by Julie Strandt-Peay, SMRT *Signals* Editor, how I became involved in the SMRT, I reflected back. The Atlanta Chapter was instrumental in my becoming involved in the SMRT. I am very grateful to that chapter, which continues to provide me with an exceptional educational experience every year!

The SMRT Publications Committee, chaired by Gregory Brown, continues to publish educational materials for the membership. Julie Strandt-Peay is the Editor of the *Signals* newsletter distributed in print and online. Anne Sawyer-Glover has become Editor of the *SMRT Educational Seminars* home study program. I would like to thank Kelly Baron for her dedication to the home study program and for the past five years as editor! Kelly is awesome, and SMRT members continue to enjoy all the rewards of the past issues. I look forward to many more issues of the home studies as led by Anne and her committee.

Regional Seminars play an important role in the SMRT's mission to offer quality MR education! Already in this fiscal year, which ends in September, there will be a total of seven Regionals. Cindy Comeau has done an outstanding job chairing this committee over the past year! As of the end of May, James Stuppino, SMRT Regionals Chair 2004-2005, has six Regionals planned for the next fiscal year: Southeast (Atlanta, Georgia); Northeast (New York, New York); Northeast (Boston, Massachusetts); President's (Charleston, South Carolina); and West (Stanford, California).

The External Relations Committee, chaired by Maureen Hood, helped maintain relationships with many other healthcare organizations. This year plans were made at the RSNA Associated Sciences Consortium Planning Meetings for RSNA 2004. The SMRT has been charged with planning one day of the mini-symposium for 2004 on the topic *"Image Guided Therapeutics."* Work continues on the CARE Act as developed through the Alliance for Quality Medical Imaging and Radiation Therapy. Maureen Hood was also instrumental in writing *"How to become an MR Tech,"* as featured on the website of the Health Professions Network. Maureen Hood is to be commended for her professional dedication to the SMRT over the past three years. Julie Lowe, RT(R)(MR), recently accepted the position as External Relations Committee Chair. She is excited about the three-year commitment and is working with Maureen for a smooth transition.

The SMRT is fortunate to have highly motivated, professional individuals who are willing to serve the SMRT membership in the above capacities. Even though I cannot mention every person's name that serves on various committees, they are equally important to the success of the SMRT. We have much to do this year and it will take all of us working together to get the tasks at hand done. I am honored to serve as the SMRT President with this group of professionals. I am also proud to be a member of this organization.

— Cindy T. Hipps, SMRT President

SMRT Policy Board, Executive Committee, and Ex-Officio Members.
(Seated l. to r.) Anne Sawyer-Glover, Julia Lowe, Laurian Rohoman, Karen Bove-Bettis, Cindy Hipps, Maureen Ainslie, Muriel Cockburn, Silke Bosk, and Julie Strandt-Peay. (Standing l. to r.) Judith Wood, Carolyn Bonaceto, John Christopher, James Stuppino, Todd Frederick, Mark Spooner, Andrew Cooper, Scott Kurdilla, Gregory Brown, Bobbie Burrow, and Maureen Hood. (not pictured: Cindy Comeau, Denise Davis, William Faulkner, Marcia Gervin, Gina Greenwood, Nancy Hill Beluk, John Koveleski, and Wendy Strugnell).

2004 SMRT and ISMRM Joint Presentation: Managing MR Artifacts and Pitfalls at the ISMRM Annual Meeting

We had tremendous success this year with the joint forum; an unofficial count of 250 attendees, a new record! The forum by design is a grand collaboration of energy and talent between the ISMRM and SMRT, which continuously promotes the highest quality of education in the MR field. This year's session was specifically designed to attract a broad audience from both organizations with a topic to interest all, artifacts. There are many mechanisms that cause a wide range of artifacts, both intrinsically and extrinsically, and it is very important that we all are able to identify and understand the cause of these artifacts. For the physicists, understanding the origin of certain artifacts is essential so they may better address hardware/software issues or pulse sequence designs. It is imperative for the technologist to be able to identify and comprehend the source of an artifact so they may be able to avoid the cause altogether and know how to correct for them. It is crucial the physician understands these artifacts and is able to identify them to avoid any misinterpretations. This succession signifies the common ground all these professionals stand on and the mutual collaboration between them only strengthens the foundation we all learn on and solidifies the spirit of this joint forum.

With this in mind, we had a very distinguished line-up of speakers from around the world representing four different countries: Australia, the U.K., the U.S., and Japan. Gregory Brown, who is the SMRT Publication Committee chair, gave a great presentation on the technical perspective of MRI artifacts. He was followed by David Firmin, who offered an excellent talk on the physics of cardiac and blood-flow

(l. to r.) John M. Christopher, David N. Firmin, Kim Butts, Gregory C. Brown, and Katsuyoshi Ito.

artifacts. The next to talk was William Bradley, who gave a dynamic lecture on the neuro and cardiac pitfalls of MR imaging. Following him was Katsuyoshi Ito, who presented an extremely informative talk on body and cardiac pitfalls. With very little overlap, each talk complemented the group as a whole and all were captivating and well done. There was also a nice touch added by the moderator in the way he opened and closed the forum in Japanese (western style), which reflected the politeness and respectfulness of our Japanese hosts in the beautiful city of Kyoto. This truly was a wonderful experience for me.

I would like to graciously thanks all our speakers, Kim Butts who was co-organizer of this forum, Jeffrey L. Duerk, and everyone involved in this forum from the ISMRM and SMRT for donating their time and energy for the success of this endeavor. *Doomo arigatoo gozaimasu.* Thank you very much.

— John M. Christopher
Forum Co-Organizer, SMRT Executive Committee Member

ISMRM Workshop Announcement

Advances in Experimental and Clinical MR in Cancer Research

16-18 October 2004

Britannia Hotel Manchester, Manchester, England, UK

The workshop program will feature the latest advances in the application of MR to cancer research, with presentations from established scientists as well as new investigators leading the field. In addition to invited scientific presentations, the program will include educational lectures, presentations of proffered papers and poster sessions. The Negendank Memorial Lecture will be on advanced MRS methods in clinical assessment of cancer treatment. There will also be a roundtable discussion on the prospects of molecular imaging by MR and how specific MRI/MRS can become in detection of cancer diagnosis and treatment response *in vivo*.

A goal of this workshop is to continue the example set by our previous workshops of highlighting emerging young scientists, who can be too often bypassed in favor of their senior colleagues. A further emphasis will be on participation by graduate students.

SESSION TOPICS

Oral Sessions

- MRI and MRS in Drug Discovery and Development
- Clinical Oncology MR Trials
- Molecular and Cellular Imaging of Cancer
- Targeted Contrast Agents in MRI of Cancer
- MRI and MRS in the Assessment of Therapeutic Response and Toxicity

Poster Sessions

- Functional and Molecular Assessment of Cancer by MRI
- MRS of Cancer

AUDIENCE DESCRIPTION

This workshop is designed for basic researchers (MR and pharmaceutical scientists), post-doctoral and graduate students, clinical investigators (radiologists, oncologists, and pharmacologists), and residents and fellows, with interest in *in vivo* MR methodological development and applications to basic and clinical cancer research, and *in vivo* MR methodological development and applications to drug development. It should be attractive to researchers from the level of graduate students to established investigators, and clinicians interested in new developments in cancer research and drug development. This includes basic researchers in laboratories using *in vivo* MRS/MRI or other MR methods in drug development or cancer research and clinical investigators and clinicians in radiology, oncology, or pharmacology.

EDUCATIONAL OBJECTIVES

Upon completion of this workshop participants should be able to:

- Describe the use of *in vivo* MR methods in oncology drug development;
- Define the potential role of the *in vivo* MR methods in clinical oncology trials;
- Describe recent advances in molecular imaging of cancer;
- Identify the present state of targeted contrast agent use in molecular and cellular imaging of cancer;
- Describe the information provided by *in vivo* MR methods in the assessment of cancer treatment response and its associated toxicity;
- Predict the nature of future MR methods used in experimental and clinical imaging of cancer.

WORKSHOP ORGANIZING COMMITTEE

Zaver Bhujwalla, Ph.D., Johns Hopkins University, Baltimore, Maryland, USA
Jeffrey Evelhoch, Ph.D., Pfizer Global Research & Development, Ann Arbor, Michigan, USA
Risto A. Kauppinen, M.D., Ph.D., University of Manchester, Manchester, England, UK
Martin O. Leach, Ph.D., Royal Marsden NHS Trust, Sutton, England, UK
Pat Price, M.D., Christie Hospital, Manchester, England, UK
Wilburn E. Reddick, Ph.D., St. Jude Children's Research Hospital, Memphis, Tennessee, USA
Ian Stratford, Ph.D., University of Manchester, Manchester, England, UK

WORKSHOP SPEAKERS*

Joseph J. H. Ackerman, Ph.D., Washington University, St. Louis, Missouri, USA
Zaver Bhujwalla, Ph.D., Johns Hopkins University, Baltimore, Maryland, USA
Kevin Brindle, D.Phil., University of Cambridge, Cambridge, England, UK
Jeff W. M. Bulte, Ph.D., Johns Hopkins University, Baltimore, Maryland, USA
Robert J. Gillies, Ph.D., University of Arizona, Tucson, Arizona, USA
Jerry D. Glickson, Ph.D., University of Pennsylvania, Philadelphia, Pennsylvania, USA
John R. Griffiths, M.B.B.S., D.Phil., St. George's Hospital Medical School, London, England, UK
Pek-Lan Khong, M.D., The University of Hong Kong, Hong Kong, China
Patricia LoRusso, D.O., Wayne State University School of Medicine, Detroit, Michigan, USA
Teresa M. McShane, Ph.D., D.V.M., Pfizer Inc., Groton, Connecticut, USA
Michal Neeman, Ph.D., The Weizmann Institute of Science, Rehovot, Israel
Sarah J. Nelson, Ph.D., University of California at San Francisco, San Francisco, California, USA
Harish Poptani, Ph.D., University of Pennsylvania, Philadelphia, Pennsylvania, USA
John C. Waterton, Ph.D., AstraZeneca, Cheshire, England, UK

*Partial List

CREDIT HOURS AVAILABLE

The International Society for Magnetic Resonance in Medicine designates this continuing medical education activity for up to **15.25 Category 1** credits towards the Physician's Recognition Award of the American Medical Association.

INTERNATIONAL SOCIETY FOR ISMRM MAGNETIC RESONANCE IN MEDICINE

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Aging Connections: Advanced MRI of Age-Related White Matter Changes in the Brain

21-23 October 2004

The Conference Center at Harvard Medical School, Boston, Massachusetts, USA

This workshop will address MRI-detectable changes in the aging brain pertaining both to normal aging and age-related pathological states, with particular emphasis on the cerebral white matter. Age-related pathological conditions of the brain include a large group of diseases that pose challenges in terms of diagnosis and interpretation and that are increasingly making use of MRI as a source of surrogate markers of disease progression. Age-related pathologies discussed in this workshop will specifically include neurodegenerative and neuroinflammatory conditions impacting cognition and motor performance in the elderly. This disease group encompasses Alzheimer's Disease, cerebrovascular diseases, and other improtant pathologies. The varied pathogenic mechanisms involved offer a unique framework to improve our understanding of how histopathological alterations determine physical MR properties.

The relevance of both conventional and advanced MR techniques, as well as image analysis will be emphasized in two special technology workshop sessions including case studies. Poster sessions will be targeted to enhance the exposure and participation of younger scientists and students.

SESSION TOPICS

Oral Sessions

- Definitions of Normal Cerebral Aging
- Histopathology and MRI of Age-Related Disease States
- Clinical Expression and MRI Correlates of Age-Related Cerebral Disease
- Interventions and Surrogate Markers in Age-Related Cerebral Disease

Technology Workshops

- High-Resolution Brain Morphometry
- Perfusion MRI
- Parametric MRI: T_2, T_1, MTR
- Functional MRI
- Diffusion Tensor MRI and Tractography
- MR Spectroscopy

Poster Sessions

- White Matter Aging
- Advances in White Matter Imaging

EDUCATIONAL OBJECTIVES

Upon completion of this workshop participants should be able to:

- Explain the use of *in vivo* MR methods to characterize white matter changes in the brain;
- Describe the main histological and MRI findings in normal and disease states of the aging brain;
- Design *in vivo* human experiments using advanced quantitative MR methods;
- Evaluate the potential role of advanced MR-based measurements as surrogate markers of disease in clinical treatment trials of age-related diseases.

WORKSHOP ORGANIZING COMMITTEE

Charles R.G. Guttmann, M.D., (Chair)
Rohit Bakshi, M.D.
Ronald J. Killiany, Ph.D.
Dominik S. Meier, Ph.D.

WORKSHOP SPEAKERS*

Marilyn S. Albert, Ph.D.
David C. Alsop, M.D., Ph.D.
Rohit Bakshi, M.D.
Frederik Barkhof, M.D., Ph.D.
George Bartzokis, M.D.
Franz Fazekas, M.D.
Massimo Filippi, M.D.
Oded Gonen, Ph.D.
Steven M. Greenberg, M.D., Ph.D.
Robert I. Grossman, M.D.
Charles R.G. Guttmann, M.D.
Gwendolyn L. Kartje, , M.D., Ph.D.
Ronald J. Killiany, Ph.D.
Paul M. Matthews, M.D., Ph.D.
Joseph McGowan, Ph.D.
Dominik S. Meier, Ph.D.
J. Ross Mitchell, Ph.D.
John P. Mugler III, Ph.D.
Robert V. Mulkern Jr., Ph.D.
Lawrence P. Panych, Ph.D.
Reinhold Schmidt, M.D.
Jack H. Simon, M.D., Ph.D.
A. Gregory Sorensen, M.D.
Yaakov Stern, Ph.D.
Mark A. Van Buchem, M.D.
Peter Van Zijl, Ph.D.
Steven Warach, M.D.
Simon K. Warfield, Ph.D.
Howard L. Weiner, M.D.
Michael W. Weiner, M.D.
Carl-Fredrik Westin, Ph.D.
Leslie Wolfson, M.D.

AUDIENCE DESCRIPTION

The goal of this workshop is to bring together clinicians and MR researchers (neurologists, neuroscientists, gerontologists, radiologists, physicists, and computer scientists) to discuss findings in a variety of important neuro-degenerative and neuroinflammatory diseases.

CREDIT HOURS AVAILABLE

The International Society for Magnetic Resonance in Medicine designates this continuing medical education activity for maximum of **21 category 1** credits towards the Physician's Recognition Award of the American Medical Association. Each physician should claim only those credits actually spent in the educational activity.

CALL FOR PAPERS

The deadline for receipt of abstract submissions for both digital and paper abstracts is **Friday, 20 August 2004.**

STUDENT/FELLOW POSTER AWARD COMPETITION

Three awards will be given to outstanding work in the field by a trainee (student, fellow, or resident).

FOR FURTHER INFORMATION, PLEASE CONTACT ISMRM

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INTERNATIONAL SOCIETY FOR ISMRM MAGNETIC RESONANCE IN MEDICINE

Mark Your Calendar!

ISMRM IMPORTANT DATES AND DEADLINES

1 SEPTEMBER 2004	Deadline for receipt of nominations for Gold Medal, Silver Medal, and Fellow of the Society.
16-18 OCTOBER 2004	ISMRM Workshop on Advances in Experimental and Clinical MR in Cancer Research Manchester, England, UK
21-23 OCTOBER 2004	ISMRM Workshop on Aging Connections: Advanced MRI of Age-Related White Matter Changes in the Brain Boston, Massachusetts, USA
3 NOVEMBER 2004	Deadline for receipt of manuscripts for the Young Investigator Awards competition.
8 NOVEMBER 2004	Deadline for receipt of nominations for Vice President, and for six members of the Board of Trustees of the Society.
17 NOVEMBER 2004	Deadline for receipt of Abstract submissions.
22 NOVEMBER 2004	Deadline for receipt of Educational Stipend applications.
22 NOVEMBER 2004	Deadline for receipt of E.K. Zavoisky Stipend applications.
17 JANUARY 2005	Deadline for receipt of Proffered Papers for the SMRT 14th Annual Meeting.
31 JANUARY 2005	Deadline for receipt of New Entrant Stipend applications.
31 JANUARY 2005	Deadline for receipt of Applications for the 2005 ISMRM/GE Healthcare MRI Fellowship Competition.
25 MARCH 2005	Deadline for Advance Registration for the ISMRM Thirteenth Scientific Meeting & Exhibition.
22 APRIL 2004	Full Text version of the *Proceedings* is available online to preregistered attendees only.
7-13 MAY 2005	**ISMRM 13th SCIENTIFIC MEETING & EXHIBITION, MIAMI BEACH, FLORIDA, USA**

Other Meetings of Interest Go to: www.ismrm.org/dates/

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 your tax-deductible 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

INTERNATIONAL SOCIETY FOR ISMRM MAGNETIC RESONANCE IN MEDICINE

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