

SIR Foundation Board Update and Goals 2009-2012

The SIR Foundation Board of Directors convened on November 11, 2008, in Chantilly, VA, in conjunction with the SIR Executive Council meeting. The Board's major focus at this meeting was to strengthen infrastructure, refine and finalize the 2009-2012 strategic plan, and review and discuss the Foundation's current and future programming.

Two new divisions were added to the Foundation's structure at this Board meeting. A new Data Integration Division, to be chaired by Jeanne LaBerge, MD, will be charged with integrating available data sources and defining research needs in various areas of strategic priority as defined by the Foundation Board. A Development Division was created from the existing Development Committee. The members of this division are responsible for the Foundation's Discovery Campaign, the Annual Fund and the creation of a comprehensive and enduring development program. This effort is being chaired and led by Fred Keller, MD, FSIR, who, through his tireless commitment to SIR Foundation, has personally raised just under \$700,000 for the Discovery Campaign. Dr. Keller and the Discovery cochair, Anne Roberts, MD, FSIR, are leading the efforts to meet the \$2.5 million Discovery Campaign membership phase goal. To learn more about why you should contribute to the Discovery Campaign, please go to the Campaign Web site and view the video on the left hand side of the page: www.SIRFoundation.org/discovery.

During the strategic planning session, three main goals were established for the Foundation. The first goal is to increase the quality and effectiveness of research efforts. The Foundation aims to do this by promoting increased collaboration with PhD scien-



Jeanne LaBerge,
MD



Fred Keller, MD,
FSIR



Anne Roberts,
MD, FSIR

tists, revising the grant review process to include peer review of proposed Foundation programs and projects, and developing a more diverse portfolio of grants targeting a variety of clinical and basic research needs. The second goal is to increase the involvement of IRs in research. This will be accomplished through the creation of educational efforts aimed at private practice IRs, designing a research course during the SIR Annual Scientific Meeting and linking research projects with Practice Quality Improvement (PQI) projects. The final goal is to increase funding for the Foundation so that it can meet these objectives. The Foundation's Discovery Campaign is currently in the membership phase and has, to date, received \$1.5 million in contributions from the membership.

With less than \$900,000 needed to meet the groundbreaking Discovery Campaign membership phase goal, all SIR members are encouraged to make a personal stretch commitment to this important effort as soon as possible. Please email development@SIRfoundation.org or go to www.SIRFoundation.org/discovery to make your personal contribution commitment today. ❖

SIR Foundation Pilot Research Grant Summaries

Each year, the SIR Foundation funds grants for researchers of all levels. The Pilot Research Grant Program is designed to fund research in areas identified by the SIR Foundation as being important to the advancement of interventional radiology and patient care. The Pilot Research Grant generally addresses a specific hypothesis in order to generate data used to justify or strengthen subsequent applications to national peer-reviewed funding agencies. In 2008, the SIR Foundation awarded four Pilot Research Grants.



Robert Lewandowski, MD
(Northwestern University)

Robert Lewandowski, MD, of Northwestern University is conducting research titled, "Magnetic Resonance Imaging (MRI)-Guided Transcatheter Delivery of Targeted Nanocomposites in a Rabbit Model of Pancreatic Cancer." In ongoing studies, Dr. Lewandowski has developed an animal model of pancreatic cancer. VX2 tumor cells were implanted in the pancreata of six New Zealand white rabbits. MRI and digital subtraction angiography were performed three weeks following tumor implantation. Using anatomic reference images for comparison, diffusion-weighted (DW) and transcatheter intra-arterial perfusion (TRIP) MRI

continued on page 21

scans were then performed to assess changes in water mobility and changes in tumor perfusion. With these functional MRI parameters, regions of central necrosis were delineated from viable tumor cells at the periphery by larger ADC values on DW-MRI and reduced perfusion values with TRIP-MRI. These results were correlated with pathology, confirming that functional MRI can be used to differentiate necrotic from viable tumor cells in an animal model of pancreatic cancer. These functional MRI parameters will be used as surrogate functional endpoints when testing future novel transcatheter pancreatic therapies.



**James R. Stone, MD, PhD
(University of Virginia)**

James R. Stone, MD, PhD, of the University of Virginia was awarded a Pilot Research Grant to explore the utility of Sorafenib as an adjuvant therapy to transarterial chemoembolization (TACE) in a rodent model of hepatocellular carcinoma (HCC). One of the outlined goals of the current study is to employ a preclinical model of HCC that incorporates direct malignant transformation of hepatocytes. To this end, rodents are receiving diethylnitrosamine (DEN) and a choline deficient diet for four months, after which screening for the presence of HCC lesions will be performed with ultrasound. Those animals demonstrating HCC solid nodule formation will be randomized to three groups, which will include TACE+Sorafenib, TACE alone and untreated HCC. A fourth normal control group will be included as well. TACE will be administered through the gastroduodenal artery retrograde cannulation model. Prior to treatment and at the conclusion of the study, tumor burden will be assessed across all groups using a small-animal Siemens-Bruker 7T magnet. Additionally, at the conclusion of the study, tissue will be evaluated with routine H&E stains for overall tissue morphology, TUNEL stains to evaluate for presence of apoptosis and CD31 for microvessel density analysis.



**Robert F. Short, MD, PhD
(University of Virginia)**

Robert F. Short, MD, PhD, is taking advantage of his background in nanotechnology and the molecular imaging capabilities at the University of Virginia to improve our understanding of vascular malformations and derive better therapies. Using a novel rodent model developed as part of his Ph.D. work (under advisor William E. Shiels, DO, Nationwide Children's Hospital, Columbus, OH), he is studying lymphangiogenesis in vivo during development of lymphatic vascular malformations in animal models. Dr. Short is attempting to characterize development of the lymphatic malformations combining high-field strength MRI (7 tesla) with nanoparticle contrast agents targeting the lymphatics.

Concurrent optical imaging using quantum dots (nanomaterials with unique highly photostable fluorescent properties) allows investigation of derangements in lymphatic flow/function in real time. The advantage of the imaging techniques under development is that once formation of the lymphatic malformations is characterized, the same animals and imaging methods are then used to evaluate image-guided therapies. The project aims to first compare the efficacy of different conventional sclerotherapy agents (ethanol, doxycycline, OK-432), as well as to investigate new treatment methods including ultrasound-mediated drug delivery and high-intensity focused ultrasound. Additionally, Dr. Short hopes that improving our ability to image and target the lymphatics will impact oncologic interventions in general. He ultimately envisions not only being able to noninvasively identify cancerous nodes but also to guide ablation procedures more precisely: "Imagine if we could see exactly how far a tumor has sprouted lymphatics before attempting RFA. We could burn not just the tree-trunk but make sure we get all the branches." Dr. Short hopes that this research will eventually lead to improved treatments for vascular malformations, and provide momentum both for the use of molecular imaging for minimally invasive outcome measures and further translation of nanotechnology advances into clinical success.



Edward W. Lee, MD, PhD (UCLA)

Edward W. Lee, MD, PhD, under the mentorship of Stephen Kee, MD, in the interventional radiology department of UCLA Medical Center, is studying the novel tumor ablation method called irreversible electroporation (IRE, or "NanoKnife") on head and neck tumors using a VX2 tumor model. IRE is a technique that uses a strong electric field to produce cellular wall disruption which ultimately creates focused complete cell death in milliseconds. In Dr. Lee's previous work, he has shown that IRE-ablated zones can be monitored in real-time using ultrasound and CT.

Minimally invasive and targeted therapies such as tumor ablation and chemoembolization are widely utilized to treat various malignancies. However, current knowledge in treating head and neck tumors with tumor ablation is somewhat limited. Therefore, Dr. Lee's study will evaluate efficacy of IRE on head and neck tumor ablation and effectiveness of tumor ablation on decreasing lymphatic metastases of head and neck tumors. Also, he will evaluate the preservation of peri-tumoral vital structures (carotid artery, jugular vein, vagus nerve and upper airway) in IRE treatment. Finally, he will further elucidate the pathophysiological pathway of IRE using various cellular and genetic markers.

In continuation from this study, he will compare the effectiveness of IRE versus conventional thermal ablation such as radiofrequency ablation and high-intensity focused ultrasound on head and neck tumors. ❖

Registry for Interventional Oncology Procedures to Launch

The interventional oncology (IO) registry (<https://registry.sirfoundation.org/registry/logon.aspx>) is a Web-based registry designed to initially collect 30-day safety data from multiple centers. Five sites performed user acceptance testing in April 2008, and the registry was operational by May 2008. In less than three months, 117 cases were entered from six active sites.

The IO registry is a product of contributions from more than 12 expert interventional radiologists and will ultimately expand to other practitioners around the globe. Phase one of the registry is a 30-day safety study of ablations performed on tumors located in the lung, kidney and bone. Phase two of the registry will allow for long-term follow-up for efficacy, additional anatomical areas of treatment and additional methods of treatment. In phase three, measures of quality of life, performance status, image archive, and survival or outcomes analysis will be added.

The IO registry data will enable large multicenter studies to be performed, which will help to ensure that IO is guided by high-quality evidence-based medicine. Currently, there are many gaps in our ability to provide adequate data regarding interventional oncologic procedures to our patients and referring clinicians. This is due in large part to the lack of an organized system for data accrual. The production of a registry under the SIR Foundation will enable us to follow the model of other physician specialists such as cardiologists, who have used registries to better define and refine their treatments as well as to generate standardized reports of safety, efficacy, outcomes, resource utilization and patterns of practice.

The IO registry will support physicians by serving as a tool and shared resource. The goals of the registry are to provide standardized collection of data for a variety of purposes including, but not limited to, the following:

- ▶ Increased access to data for increased publications amongst approved investigators
- ▶ Multicenter trials for safety, efficacy, outcomes, quality of life studies, etc.
- ▶ Evaluation of combined therapies
- ▶ Collecting and quantifying resource utilization
- ▶ Patterns of practice studies
- ▶ Quality assurance



- ▶ Credentialing
- ▶ PQRI
- ▶ Evidence-based practices and education
- ▶ Reimbursement opportunities
- ▶ Standardized reporting

IO Registry Steering Committee

George Holland, MD—Chair
Lahey Clinic

S. Nahum Goldberg, MD
Beth Israel Deaconess Medical Center

Matt Callstrom, MD, PhD
Mayo Clinic

Gary Dorfman, MD
Weill Medical College of Cornell University

Damian Dupuy, MD
Brown University Rhode Island Hospital

Debra Gervais, MD
Massachusetts General Hospital

Peter Littrup, MD
Karmanos Cancer Institute

Stephen Solomon, MD
Memorial Sloan Kettering Cancer Center

Executive Council Meeting *continued from page 2*

- ▶ Structured reporting for IR procedures is being explored by Sanjoy Kundu, MD, FSIR. We have currently recruited a small group of volunteers and will be setting up a working group to continue to explore this option. If you would like to volunteer, please contact Debbie Katsarelis at Debbie@SIRweb.org. Some points for consideration include:
 1. It's a way to distinguish IRs with PCPs as the leaders and innovators of these procedures and measure their satisfaction. We need to know what they want in an IR report.
 2. It allows IRs to be distinguished on the basis of quality assurance and referring clinician satisfaction with reports.
 3. It is optional now but may become mandatory in the future for accreditation and pay-for-performance initiatives.
 4. It allows us to perform data mining for the registries and large-scale research projects.
- ▶ Mike Darcy, MD, FSIR, SIR Foundation chair, gave the Foundation Board report, which is summarized on page 20 of this issue of *IR News*.
- ▶ Suresh Vedantham, MD, was introduced as the newly appointed councilor-at-large tasked with incorporating a service line focus into SIR's work and strategic planning.
- ▶ Dr. Siragusa gave an update for the Education Division. Dr. Siragusa presented an action item for the EC to approve modified program requirements. The APDIR updated the program document and added some specifics to address the recommendations to strengthen fellows' training based on the PAD Task Force recommendations. The EC approved the document with minor edits. The resulting final document will be presented to the Radiology Residency Review committee for their consideration when they meet to revise the Fellowship Program Requirements. Updates were also presented on the currently in-progress Clinical Practice Webinar series as well as the planned stand-alone conferences on Y-90 Radioembolization Therapy and on Intra-Arterial Stroke Therapy.
- ▶ Dr. Mauro provided an update on the ACR ABR and education training pathways. With the class entering DIRECT in 2010, the sequence must change such that the final PGY6 year is the fellowship. This will be optional until that time. ❖



APPLY NOW

Deadline Approaching for Student and Radiology Resident Summer Research Grants

Feb. 1, 2009

Student Research Grant
Radiology Resident Research Grant

The following Statement of Ownership form is printed annually in compliance with U.S. postal regulations

Statement of Ownership

Required by 39 U.S.C. Form 3526
 Title of Publication: IR News
 Publication No. 1051-6468
 Number of issues published annually: 6
 Annual subscription price: \$22

Complete mailing address of known office of publication:
 Society of Interventional Radiology,
 3975 Fair Ridge Pkwy.,
 Suite 400 North, Fairfax, VA 22033

Contact: Brian Haefs

Complete mailing address of the headquarters or general business office of publisher: Society of Interventional Radiology, 3975 Fair Ridge Pkwy., Suite 400 North, Fairfax, VA 22033

Full names and complete mailing address of publisher, editor and managing editor:
 Publisher: Society of Interventional Radiology, 3975 Fair Ridge Pkwy., Suite 400 North, Fairfax, VA 22033
 Editor: Rony Avritscher, MD, c/o Brian Haefs, Society of Interventional Radiology, 3975 Fair Ridge Pkwy., Suite 400 North, Fairfax, VA 22033
 Managing Editor: Brian Haefs, Society of Interventional Radiology, 3975 Fair Ridge Pkwy., Suite 400 North, Fairfax, VA 22033
 Owner: Society of Interventional Radiology, 3975 Fair Ridge Pkwy., Suite 400 North, Fairfax, VA 22033

Extent and Nature of Circulation	Avg. No. Copies Each Issue During Preceding 12 months	Actual No. Copies of Single Issue Nearest to Filing Date (July 2008)
Total No. Copies	4,750	4,800
Paid and or Requested Circulation		
1. Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541	4,701	4,727
2. Paid In-County Subscriptions	0	0
3. Sales through dealers and carriers, street vendors and counter sales	0	0
4. Other classes mailed through the USPS	0	0
Total paid and or requested circulation	4,701	4,727
Free distribution by mail (samples, complimentary and other free copies)	0	0
Free distribution outside mail (carriers or other means)	0	0
Total Free Distribution	0	0
Total Distribution	4,701	4,727
Copies not Distributed	49	73
Total	4,750	4,800