

Introducing Medical Students to IR Research

Reed Omary, MD, SIR Foundation Research Policy Committee Member



Interventional radiologists can substantially impact on the career choices of medical students by interacting with them when they are still at an impressionable age. I base this upon personal experience—my decision to enter radiology and subsequently IR was because of interacting with Bob Vogelzang, MD, when I was a third-year medical student.

Given the nationwide shortage of interventional radiologists, it is important for SIR members to reach out to medical students. In an effort to get a better grasp what draws medical students into IR research, I interviewed three rising third-year medical students to get their perspectives. Jim Gehl from Northwestern University and Shalin Patel from the University of Pennsylvania were each recipients of this year's SIR 2005 Constantin Cope Medical Student Research Award, and Brad Barnett from Johns Hopkins University was just awarded the Howard Hughes Medical Institute (HHMI) Medical Student Research Award. He will be taking the next year off from medical school to perform research in the laboratory of Aravind Arepally, MD, at Johns Hopkins University in Baltimore, MD.

RO: When did you first hear of SIR? Are you a member or currently applying to be one?

JG: I first became aware of SIR at the beginning of my summer research project through interactions with my research mentor and thought that membership as a medical student would be a good way to become more familiar with the specialty. That has proven to be true, and I just renewed my student membership for the second year.

BB: I first heard about SIR when Dr. Aravind Arepally emailed me about the HHMI opportunity. I am not currently a member but am planning on applying to be a member in the near future.

RO: What attracted you to performing IR-related medical research?

JG: I have thought that I might be interested in pursuing a career in academic radiology, and was anxious to engage in research. I specifically pursued IR-related research because it presented an opportunity to gain exposure to many different aspects of biomedical research, including procedural skills, image processing and analysis, and manuscript writing.

RO: How did you seek out an IR research experience? Who was your mentor?

SP: Dr. Scott O. Trerotola gave a talk about the field to all the first year medical students. I was impressed with the procedures the IR doctors were able to perform, and that sparked my interest in doing a research project in IR. I met with my mentor, Dr. Michael Soulen, because I was interested specifically in oncology and IR treatments for cancer patients, which is one of Dr. Soulen's areas of expertise.

BB: I first approached Dr. Aravind Arepally after Dr. Philippe Gailloud, an interventional neuroradiologist, recommended him. He spoke very highly of Dr. Arepally in terms of both interventional technique and personality. Fortunately, Dr. Arepally had a project for me to assist in that summer. During the summer of 2004, we developed an anastomotic device and an MR-trackable delivery system that could be utilized to create a mesocaval shunt under MR guidance.

RO: What motivated you to take time off for research?

BB: As a medical student, one commonly feels on the sideline of the action. Taking a year off will not only allow me to reaffirm my interest in IR but will allow me to play an integral role in something that could make a significant impact in a number of patients' lives.

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Publication of UAE FIBROID Registry Results

The SIR Foundation is pleased to announce that two manuscripts resulting from analyses from the UAE FIBROID Registry were published in the July 2005 issue of the *Journal of Obstetrics and Gynecology*. The manuscripts, entitled "Prospective Data Collection of a New Procedure by a Specialty Society: The FIBROID Registry" and "The Fibroid Registry for Outcomes Data (FIBROID) for Uterine Embolization: Short-Term Outcomes," address topics relating to the methodology used in developing this comprehensive registry, baseline characteristics, and short-term (30-day) outcomes.

The results reported from the registry thus far have been impressive. Future manuscripts reporting on the long term outcomes of the registry are currently being planned and drafted, including a manuscript reporting the results of the one-year follow-up data which has also been submitted to the *Journal of Obstetrics and Gynecology*. To view the abstracts published in the *Journal of Obstetrics and Gynecology* and see a list of the core and participating sites and investigators, please visit the SIR Foundation Web site at www.SIRFoundation.org. ♦

Transatlantic Effort to Study Treatments for Asymptomatic Carotid Stenosis

The SIR Foundation's CAIRR network, in collaboration with CIRSE, is currently developing a pivotal research trial aimed at studying patients with asymptomatic high grade carotid artery stenosis treated with medical therapy alone or combined with carotid revascularization. This project, named the Transatlantic Asymptomatic Carotid Intervention Trial (TACIT), will enroll 2,400 patients and will involve investigators from the United States and European countries.

TACIT will enroll asymptomatic patients who have documented carotid artery stenosis and no prior neurologic event. Patients will be randomized with either medical therapy alone, medical therapy with carotid artery stenting, or medical therapy with carotid endarterectomy and will be closely monitored for medical compliance and reduction of cardiovascular risk factors. All patients will have quality of life measures performed, and cost effectiveness data will be collected.

"The development of TACIT addresses a major global healthcare concern," says Barry Katzen, MD, the U.S. Principal Investigator for TACIT. "Despite the fact that strokes are the leading cause of adult disability in developed countries, and that most strokes are

caused by carotid disease which is often asymptomatic prior to a debilitating event, there has been no definitive investigation looking at modern medical therapy compared to invasive therapy, either surgery or intervention," he says. ❖

TACIT EXECUTIVE COMMITTEE

Barry Katzen, MD <i>U.S. Principal Investigator</i>	Alison Halliday, MD
Matthew Thompson, MD <i>E.U. Principal Investigator</i>	Michael Jaff, MD
J.P. Mohr, MD <i>U.S. Neurology Study Chair</i>	Johannes Lammer, MD
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INTERVENTIONAL ONCOLOGY SYMPOSIUM *continued from page 1*

the success of SIR Foundation's previous Innovation and Research in Interventional Radiology (IR)² meetings that aim to facilitate cross disciplinary interaction to explore future needs and identify research opportunities to expand interventional oncology.

The symposium as a whole presents a unique opportunity for clinical practitioners, interventional radiology researchers, clinicians and researchers in other specialties, members of industry, and representatives from government agencies to be exposed to the latest clinical and research developments in this rapidly changing field. Clinical areas to be discussed during the symposium include transarterial chemoembolization, ablation, image guidance, post treatment findings, and complications for tumors in the liver, kidney, lung and skeletal systems. Research areas include tumor biology and imaging, animal models for image guided cancer therapy, image guidance (registration, robotics, and real time), materials science and drug delivery, new strategies in tumor ablation, and catheter directed therapies. "Interventional oncology is experiencing a growth explosion. Multidisciplinary collaboration is essential to refine new procedures and improve techniques," said Michael C. Soulen, MD, Interventional Oncology Symposium Program Co-Chair and SIR Foundation Research Education Division Chair.

This is third in the SIR Foundation's educational (IR)² conference series. This year, an estimated 60,000 RSNA attendees will be able to benefit from comprehensive sessions on interventional oncology. The increased prominence of interventional oncology fits in with the SIR Foundation's mission of driving and promoting cutting-edge research.

A preliminary program for the Interventional Oncology Symposium is available online at www.sirfoundation.org/2005_ir2-oncologymtg.shtml; visit that site to find out more or to register. ❖

What: Interventional Oncology Symposium: SIR Foundation and RSNA

Where: McCormick Place, Chicago, IL

When: November 28–December 2, 2005

CME: 30.75

Course Chairs: Michael C. Soulen, MD (SIR Foundation) and Gerald D. Dodd III, MD (RSNA)

Claudication Interventions Trial Funded by NIH

FIVE-YEAR MULTICENTER TRIAL WILL EXPLORE TREATMENT OPTIONS FOR DISABLING DISEASE

SIR member Timothy Murphy, MD, has just received an award from the National Heart, Lung and Blood Institute to conduct the first randomized clinical trial funded by the National Institutes of Health (NIH) to examine interventional therapy for claudication. The overall objective of the trial, “Claudication: Exercise vs. Endoluminal Revascularization” (CLEVER), is to optimize physical functioning, increase activity levels, and reduce cardiovascular disease risk in older individuals with peripheral arterial disease. “Claudication is a common problem in our aging population, and there are over 2 million claudicants in the United States,” explains Murphy, an associate professor of diagnostic imaging at Brown Medical School. “Claudication is an important healthcare concern because it can significantly reduce the quality of life and the ability of those with the disease to be active which can lead to obesity and increased mortality.”

Claudication is often under-recognized and under-treated, and there is no consensus on what is the most appropriate treatment for the condition. The results from CLEVER will help answer how

to best treat patients with claudication. CLEVER has been designed to test whether aortoiliac stenting combined with pharmacotherapy improves maximum walking duration better than a supervised exercise rehabilitation with pharmacotherapy for people with aortoiliac artery obstruction. Exploratory analyses will also look at demographic and biochemical risk factors for atherosclerosis. CLEVER will enroll approximately 250 patients over 28 months. ❖

Interested in being a study site for CLEVER?

Study investigators are looking for interested sites to participate in CLEVER. CLEVER will enroll approximately 250 patients with aortoiliac insufficiency and intermittent claudication. Patient recruitment will take place over 28 months, and patients will be followed for 18 months.

Interested sites are encouraged to send an email to info@SIRFoundation.org and a study investigator will contact you.

SIR Foundation Grant Recipient Aims to Create Medical Advances for IR



*Grant recipient
John F. Angle, MD*

Project Title: siRNA Intervention of Neointimal Growth in Hyperlipidemic Apolipoprotein E-Deficient Mice

Recipient: John F. Angle, MD
University of Virginia

Purpose: Restenosis in arteries after injury is often caused by an overgrowth of tissue in the vessel wall, a process called neointimal hyperplasia. The purpose of this grant is to investigate if we can stop the growth of the cells that cause neointimal hyperplasia using small interfering RNA (siRNA). Our goal is to evaluate the ability of siRNA to silence gene expression in vivo and to assess the applicability of this approach in preventing neointimal formation using a mouse model. The carotid artery of a mouse that forms atherosclerosis (hyperlipidemic apoE-deficient (apoE^{-/-})) will be injured to stimulate the production of neointima. We will

target the vascular cell adhesion molecule (VCAM)-1 which is overexpressed in injured vessels and promotes neointimal growth. We hope to determine whether systemically or locally administered VCAM-1-specific siRNA silences gene expression, reduces VCAM-1 production, and inhibits neointimal growth after carotid artery intimal injury in apoE^{-/-}-mice.

Looking Ahead: Restenosis remains the most significant challenge limiting the success of angioplasty and stenting. RNA interference with siRNA silences genes with a high degree of specificity and represents a potential molecular therapy for post-angioplasty/stenting restenosis. The development of a siRNA that slows neointima formation could be used after angioplasty and stenting to prevent restenosis. Ideally, this research could lead to the development of balloons or coated stents that extrude siRNAs that prevent neointima hyperplasia. ❖