

Personalized Cancer Treatment: A Research Scholar's Work in Progress

Although he enjoyed pharmaceutical research as an undergrad, **Hersh Chandarana** felt pulled toward medical school.

"As a researcher, I knew I could spend my entire career in a lab trying to answer one question. Working as a clinical researcher would give me an opportunity to immediately impact patients' lives," said Dr. Chandarana, adding that he made the right choice in becoming an assistant professor of radiology at New York University Medical School and an attending radiologist at the NYU Langone Medical Center.

"As a clinician I find it gratifying to be able to make a diagnosis and move on to the next question," he said.

Now with the help of the R&E Foundation, Dr. Chandarana is searching for a better answer to a universal oncology question: is the tumor responding to treatment? As the 2010-2012 Siemens Healthcare/RSNA Research Scholar Grant recipient, he is studying the use of an iodine quantification technique with dual-energy CT (DECT) to assess patients undergoing chemotherapy for liver metastases.

Response to liver metastases treatment is currently assessed based on change in the size of the target lesion and the appearance of new lesions.

"With the DECT technique we are able to simultaneously assess lesion vascularity and density with a single CT acquisition," said Dr. Chandarana. "Both of these parameters may change in response to targeted chemotherapy before tumor size."

The goal of the iodine biomarker, he said, is to distinguish responders from non-responders two to three weeks into therapy.

"Siemens developed dual-energy CT precisely to have an impact on patient treatment decisions," said Gregory Sorensen, M.D., C.E.O., of Siemens Healthcare North America.

The type of guidance Dr. Chandarana's research could document illustrates the value of the R&E Foundation Scholar Grant program in improving patient care.



Hersh Chandarana, M.D.

"Siemens Healthcare is pleased to support R&E Foundation Scholars like Dr. Chandarana and the important research he is conducting," said Dr. Sorensen.

The R&E grant is enabling Dr. Chandarana to acquire data that will be useful when applying for future extramural funding—progress that leaves Dr. Chandarana

hopeful about the future of personalized cancer treatment.

"I think radiology will be able to make a contribution to our understanding of both tumor biology and the design of different treatment paradigms," he said. "It's a great time to be asking more questions."

"It's gratifying to be able to make a diagnosis and move on to the next question."

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Grant Recipients Making a Difference

A report by Dianne Georgian-Smith, M.D.



John Ryan, Ph.D., and
Dianne Georgian-Smith, M.D.

Brigham and Women's Hospital
Boston, MA

2008 RSNA Education Seed Grant

"Detection of Breast Cancer—Mammographic Architectural Distortion: Understanding the Perception to Develop Methods for Teaching"

The purpose of this study was to determine the radiographic criteria that compose the mammographic finding of "architectural distortion" and thereby design an educational module to teach trainees how to see this finding.

Studies have shown that the positive predictive value of architectural distortion

"We would like to thank everyone who has donated to the RSNA R&E Foundation, without whom this work would not have occurred."

tion is significant for breast cancer. The problem is that the perception of architectural distortion can be difficult in standard mammography due to either the obscuration by or the mimicking from overlapping tissues.

The goals were:

1. Determine the common criteria;
2. Teach the criteria;
3. Measure trainees' performance before and after the teaching.

Goal 3 resulted in a scientific paper presented at RSNA 2011; the results showed an improvement in the Receiver Operator Curve (ROC) in trainees' performance.

Two educational modules were developed in this project:

1. A self-educational module illustrating the radiographic features of architectural distortion vs. overlapping shadows,

and the diagnostic work-flow to make this distinction; and

2. A self-assessment module to test oneself in the detection of architectural distortion. This practice set of cases is unique in that it provides immediate feedback upon completion with sensitivity, specificity, and area-under-the-curve with the ability to review one's calls vs. the truth.

Future goals will be to make these test-sets available worldwide on the web, leveraging expertise of John Ryan, Ph.D.

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Exhibitors Circle Profile

A Letter from Hologic CEO and President

Customers tell us that the thing that makes Hologic different is our unwavering commitment to improving women's health. With the support of thousands of healthcare professionals and organizations like RSNA, the 5,000 employees of Hologic are focused squarely on developing safe, innovative, and accessible solutions to enrich the lives of women.

Every year, Hologic spends millions of dollars on research and development to deliver more advanced and innovative imaging, intervention, and treatment solutions to save even more lives.

As an extension of our global commitment to women's healthcare, we are pleased to support the RSNA Research & Education Foundation and its efforts to

give the best and the brightest of radiology professionals the funding they need to find new ways of helping people the world over.

Rob Cascella
CEO & President

HOLOGIC™
The Women's Health Company

The Road Not Taken...

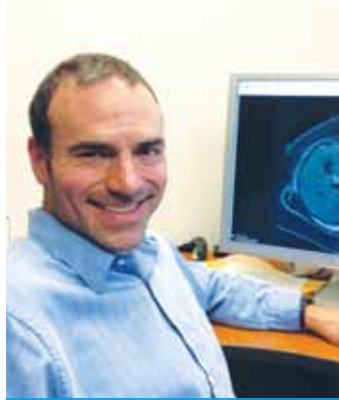
Claude B. Sirlin, M.D., was supposed to become an orthopedic surgeon. Thankfully for the imaging community, he decided to take another career path. He discovered, during his surgical internship, that he loved the challenge and reward of making diagnoses based on imaging findings, and started down a new road toward private practice radiology. Out of necessity, he took a lab job that he expected to be just a stopgap before residency, but it gave him an opportunity to explore research—and he liked it. So, courageously, he changed direction again.

The goal-oriented Dr. Sirlin successfully refocused his career, and in 1996, he received an RSNA Resident Research Grant for his project, *Ultra-sound Contrast Agents for the Improved Delineation of Atherosclerotic Disease*.

Working on the grant under the mentorship of **Robert F. Mattrey, M.D.**, at University of California at San Diego (UCSD),

Dr. Sirlin had found his passion. “The RSNA Grant had a huge impact on my career!” said Dr. Sirlin. He continues to do research at UCSD to this day.

“What a pleasure it was to mentor a potential superstar,” said Dr. Mattrey. “Claude trained as an athlete, had the competitive spirit, great work ethic and dedication, the spark, and great people skills to succeed in academics. He conquered whatever he took on as a challenge and was not satisfied with simple success, he wanted to be the best at what he did. With Claude staying at UCSD, it has allowed me to watch



Claude B. Sirlin, M.D.

him develop into a superb academician, visionary and leader, the ultimate dream of a mentor.”

Since Dr. Sirlin received his first grant of \$25,000 from RSNA, he has gone on to receive nearly \$9 million in additional research support as principal investigator.

Dr. Sirlin is Chief of Body Imaging and Chief of Abdominal MRI in the Department of Radiology at UCSD. He directs the Liver Imaging Group at UCSD, chairs the Liver Imaging Reporting And Data System Committee for the American College of Radiology, and chairs the Radiology Committee for the NIH-funded Non-Alcoholic Steato-hepatitis Clinical Research Network.

Dr. Sirlin’s research focuses on MR imaging of liver cancer and diffuse liver disease. He has published more than 80 papers, 10 book chapters, 100 scientific abstracts, and 80 educational exhibits.

As for the road not taken, surgery’s loss is radiology’s gain.

“The RSNA Grant had a huge impact on my career!”

To learn more about RSNA R&E Foundation grant programs, contact Scott Walter, Assistant Director, Grant Administration at 630-571-7816 or swalter@rsna.org.

MAKE AN IMPACT



YOUR GIFT CAN LEAD TO BIG RESULTS

For every \$1 the R&E Foundation provides in grants, recipients go on to receive over \$30 in additional funding for projects that advance the field of radiology.

To make a gift
RSNA.org/donate
1-630-590-7760



Paying it Forward

Young Radiologist Recognizes the Impact of Giving Back Early in His Career

“Remember where you came from.” This saying hits close to home for **Habib Rahbar, M.D.**, Acting Assistant Professor in the Breast Imaging Section of the Department of Radiology at the University of Washington. Dr. Rahbar knows firsthand the impact that R&E funding has on careers like his.

“As a recipient of a 2010 RSNA Research Fellow Grant, I know how valuable it is for young radiologists who are interested in an academic career to experi-



Habib Rahbar, M.D.

ence the thrill of being awarded support for dedicated research,” said Dr. Rahbar.

“I wanted to do my small part to help ensure such funding opportunities remain in place for others early in their careers.”

Although new to practice and supporting a young family, Dr. Rahbar recently made his first gift to the Foundation

because he wants others to have the same opportunity he was given.

“I wanted to do my small part to help

ensure such funding opportunities remain in place for others early in their careers,” explained Dr. Rahbar. “I believe that it is important for

physicians like me who are new to practice to support research and education grant funding so that radiology continues to attract creative and motivated talent. Our support also sets the example that we are dedicated to the advancement of the specialty.”

Volunteer Profile

Dr. Paul Larson: Everyone Can Be Part of Research through Giving

We interviewed **Paul A. Larson, M.D.**, who was appointed recently to the Individual Giving subcommittee, about his involvement in the R&E Foundation, the importance of research, and why he is a donor.

How did you become involved initially? We started giving to the Foundation more than 20 years ago. One of my friends and associates through the RSNA Associated Sciences Committee, Dr. Sam Hissong, encouraged our increased giving and invited us to the donor reception event. We became Presidents Circle donors in 2002 and did a bequest at about that same time. I have

just this year joined the Individual Giving Subcommittee.

On the importance of research... I believe that all radiologists should contribute to research in some way. The most important way is by doing the research. However, most of us will not be involved significantly, if at all, in performing research. Everyone can support research through the R&E Foundation and other similar funds.

Why do you give to the R&E Foundation? The R&E Foundation is particularly important due to its relatively large size and the expertise available in determining which projects



Paul A. Larson, M.D. and Peg Larson

to fund. It has a great track record of supporting young investigators, many of whom have become leading researchers in radiology.

Interested in volunteering for a Foundation committee, study section, or review panel?

Contact Sena Leach, Assistant Director, Board and Committee Affairs at 630-571-7810 or sleach@rsna.org.

Mentoring: A Critical Component of Successful Research

Mentorship comes in many forms. **Charles R. Thomas, Jr., M.D.**, Chair of Radiation Oncology at Oregon Health & Science University's Knight Cancer Institute, is a strong believer in multiple mentors. "Mentoring is not just a one-person job. I like to use the analogy 'it takes a village to raise a child'—similarly, it takes a village, or community, to put together a successful grant application," he said. Dr. Thomas recognized the potential of one of his medical physicist faculty, **James Tanyi, Ph.D.**, and encouraged Dr. Tanyi to apply for a 2010 RSNA Research Scholar Grant to study quantitative methodol-



James Tanyi, Ph.D., (left) with his mentor Charles R. Thomas, Jr., M.D.

ogy to measure head/neck cancer patient response to combined chemo/radiotherapy. The application was not funded; however, Dr. Thomas remained supportive and directed Dr. Tanyi to

remain vigilant and not be discouraged—the 2011 resubmission was successful. Dr. Thomas concluded, "One of my jobs as a department chair and mentor was to help put together the community that led to Dr. Tanyi's success. No one person does the job of mentoring alone. There are clinical mentors, scientific mentors; rarely is there a single mentor that has the skillset necessary to be effective in all the roles of mentorship. Successful mentorship comes from teams, much like a graduate thesis committee."

► Watch the video interview

Want to learn how **you** can help mentor a grant applicant? Contact Scott Walter, 630-571-7816 or swalter@rsna.org.

Add Leadership to Your Credentials This Year



RSNA has joined with the Association of University Radiologists (AUR), American Roentgen Ray Society (ARRS), Society of Chairs of Academic Radiology Departments (SCARD), and the Association of Administrators in Academic Radiology Departments (AAARAD) in sponsoring the **Academy of Radiology Leadership and Management (ARLM)** to give radiology practitioners the opportunity to develop professionally.

Medical imaging professionals can earn a Certificate of Achievement from ARLM by participating in 50 hours of education—including at least 30 hours in person—across a spectrum of core learning domains, including financial skills, human resources, professional-

ism, legal/contracting, academic mission and more. A minimum of three continuing medical education (CME) hours in each domain is required.

Course curriculum includes important issues facing medical imaging professionals, such as Quality Assessment and Improvement in Radiology, Ethics and Professionalism in Research, Conflict of Interest, Critical Issues Facing the Profession of Radiology, and Clinical Portfolios, among others.

There are no fees beyond costs associated with CME activities—and many of those are free to members of the respective sponsoring societies. Additional information on the program is available at www.radleaders.org.



Congratulations!

Former R&E Trustee receives Diversity Leadership Award

Beverly B. Huckman, the Associate Vice President for Equal Opportunity at Rush University Medical Center in Chicago, IL, was recently honored with the J. Robert Clapp, Jr., Diversity Leadership Award. During her 38-year career at Rush, she has worked tirelessly to advance initiatives and activities that further fairness, diversity and inclusiveness.



Beverly B. Huckman

In her role at Rush, Huckman is responsible for programs related to diversity, equal opportunity, affirmative action, and disability rights, as well as

the mediation of discrimination and harassment complaints in the academic and professional sectors of the institution.

During her tenure, Rush programs in her areas of responsibility have been nationally recognized. Huckman has chaired the Rush Americans with

Disabilities Act Task Force since it was established in 1991. In 2004, Rush received the Henry Betts, M.D., Award for its work in promoting disability rights and

employment advocacy. In 2007, the U.S. Department of Labor honored Rush with the EVE Award for Exemplary Voluntary Efforts in equal opportunity for minorities, women, individuals with disabilities and veterans. At the 2001 Annual Meeting of the Association of American Medical Colleges, Huckman received an AAMC Women in Medicine Silver Achievement Award for substantial contributions to the development of women in academic medicine over the past 25 years.

Beverly B. Huckman served on the R&E Foundation Board of Trustees from 2003 to 2009. She and her husband, **Michael S. Huckman, M.D.**, are Visionary Donors at the Sapphire level.

"I am fortunate to have had many opportunities, professional and volunteer, to live my dreams of furthering education, healthcare, and human rights. The RSNA Research & Education Foundation shares these goals, and I am proud to have served as a Trustee."

Seen and Heard



Past R&E Foundation grant recipient and current Radiology Study Section member **Jeffrey G. Jarvik, M.D., M.P.H.**, was interviewed for the March *Radiology* Podcast about the article, "Lumbar MR Imaging and Reporting Epidemiology: Do Epidemiologic Data in Reports Affect Clinical Management?"

The lead author on the article was **Brendan J. McCullough, M.D., Ph.D.**, the 2011 Cook Medical Cesare Gianturco/RSNA Research Resident Grant recipient.

You can listen to the editor, deputy editors, and authors from current and recent issues of *Radiology* discuss the importance and context of selected articles at <http://radiology.rsna.org>.



A Letter to the Foundation

Why One Donor Added R&E to the List of Causes He Supports

My husband, Dean, and I have always been advocates of giving back to our rural North Iowa community. From volunteering our time as ushers at our high school choral concerts to serving on boards and commissions in the extended region, we have found joy in striving to make our community stronger.

Financial contributions allow us additionally to give both to our local neighborhood and the global community as well. Whether it be to our hometown food pantry, Doctors Without Borders, our favorite ballet company in Minneapolis, or a civil rights advocacy organization in Des Moines, we have striven to use our resources to improve the lives of others.

As I walked past the R&E Foundation booth each day at the RSNA annual meeting this past year, I had the opportunity to reflect on my contributions to the radiological community. I noted that each day at work, I use technology and knowledge that has stemmed from research and education in our field. Someone else's painstaking work informs every decision I make when interpreting the image before



Gary W. Swenson, M.D., (left) with Dean A. Genth

"It has been a pleasure to return a small percentage of my earnings to the very researchers who made my income possible in the first place."

me. Each month, the results of new research come to me in the journals *Radiology* and *RadioGraphics* that modify how I do my work. Each day I benefit from this research, yet with some embarrassment, I realized that my "giving back" to my own community had been inadequate. I remedied that deficiency by donating to the R&E Foundation.

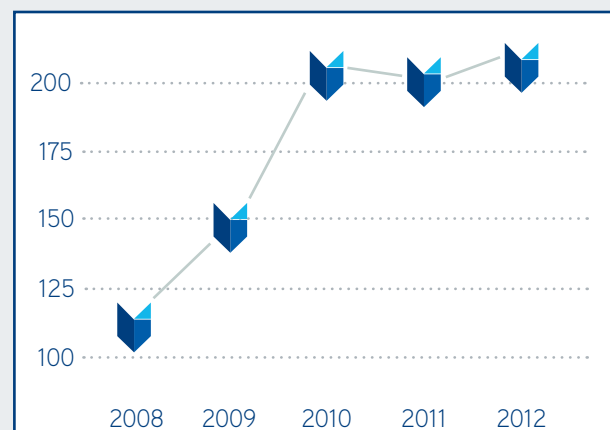
I choose to contribute through automatic monthly donations because I know that in the past, when I relied on annual (or less than annual) contributions, I always tended to be somewhat anemic in my

giving, since the lump sum that seemed appropriate was always more than I was ready to part with in a single payment. By using monthly contributions, the dollar amount is easier to budget, and the total gift ends up being greater than when I was donating sporadically.

It has been a pleasure to return a small percentage of my earnings to the very researchers who made my income possible in the first place.

Grant Applications are In!

Thanks to your donations, the RSNA R&E Foundation remains the premier funding source for medical students, residents, fellows, and scholars applying for their first radiology-based research and education grants. For the third consecutive year, nearly 200 RSNA members applied for these highly sought-after grants. This critical need for funding demonstrates the importance of your donations.



Grant Recipient All-Star

Scott B. Reeder, M.D., Ph.D.

Then... 2006 Agfa HealthCare / RSNA Research Scholar Grant recipient for his project:
Quantification of Hepatic Steatosis with Magnetic Resonance Imaging

Now... Section Chief of Cardiovascular Imaging, and Director of the University of Wisconsin (UW) clinical MRI fellowship. Dr. Reeder is also the Director of the UW Liver Imaging Research Program, an active NIH-funded group that performs research in technical development and translation of new imaging methods to assess liver disease.

CAREER HIGHLIGHTS

Grant Funding:

- \$4.9 million received as principal investigator
- \$6.9 million received as co-investigator

Patents:

- 20 - Author/Co-Author of patents in Magnetic Resonance Imaging

Publications:

- 3 books, 111 papers, 317 abstracts

Presentations:

- 93 (National/International)

“The R&E grant support came at a crucial, early stage of my career, providing me the time to lay the foundation of my research program and to perform early studies necessary to obtain extramural support from the NIH.”

Research interests:

- Development of new MRI methods for quantification of abdominal adiposity, liver fat, liver iron overload and other features of diffuse liver disease
- Quantification of perfusion in liver tumors
- Hemodynamics of portal hypertension
- Use of new contrast agents in liver and biliary diseases.

