

Foundation Focus

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A quarterly publication of the Radiological Society of North America Research & Education Foundation

25 YEARS OF BUILDING A STRONG FOUNDATION

PART I. THE BEGINNING

Twenty-five years ago money for radiologic research was scarce. Most government funding in the 1980's was given to physicians in surgery and internal medicine long before radiology was a recognized medical specialty.

RSNA Leadership took note of the need, and, in 1984, The Research and Education Fund (now Foundation) was established with an initial endowment of \$1 million to support programs designed to catalyze the work of promising young investigators in the field of radiology. Less than two years later, in 1986, the first grants were awarded.



The 1983 Board of Directors endorsed a recommendation to set up a scholarship fund which would become the R&E Foundation.

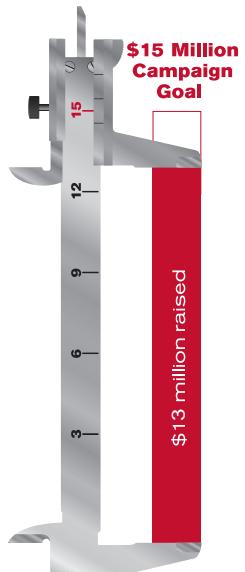
Back row, from left: Richard E. Buenger, M.D.; James J. McCort, M.D.; Malcolm D. Jones, M.D.; E. Robert Heitzman, M.D.; Robert E. Campbell, M.D.
 Front row, from left: Douglas W. MacEwan, M.D., President-elect; Luther W. Brady Jr., M.D., Chair; Richard G. Lester, M.D., President

WHAT A CELEBRATION IT WILL BE!

The final year of the Silver Anniversary Campaign has arrived. In this issue we profile several grant recipients to show you how your donations are being put to use.

As the Campaign end draws near, the \$15 million goal is in sight, but everyone's help is needed to push us over the top.

We thank you for continued support.



Recent Grant Recipient Pioneers Research

Kontos Explores Tomosynthesis to Improve Breast Cancer Risk Estimation

THE EXPERIENCE OF APPLYING COMPUTER science methods to medical images motivated Despina Kontos, Ph.D., to work more extensively and closely in the field of medicine. She decided to pursue postdoctoral training in radiology in order to integrate her computer science background with radiologic science and clinical research, and develop the core competencies required to evolve into an independent scientist in the forefront of translational medical research.

Dr. Kontos learned about RSNA R&E Foundation grants from her postdoctoral mentors at the University of Pennsylvania—Andrew D.A. Maidment, Ph.D., Predrag R.

Bakic, Ph.D., and Emily F. Conant, M.D.—who also received RSNA R&E Foundation grant support.

In 2006 Dr. Kontos was awarded an Agfa HealthCare/RSNA Research Fellow Grant, and in 2007 she received a Siemens Medical Solutions/RSNA Research Fellow Grant. Over the past two years with the funding provided by the R&E Foundation, Dr. Kontos has been investigating the potential advantages of digital breast tomosynthesis in improving breast cancer risk estimation.

Dr. Kontos' ultimate goal is to develop an automated Computer-Assisted Risk Estima-

tion (CARe) model for breast cancer based on tomosynthesis parenchymal analysis. Tomosynthesis CARe could be used to identify women at high risk for developing breast cancer, so that customized screening protocols and individualized risk reduction strategies may be implemented.

"The R&E Fellowship Grant allowed me to develop sufficient preliminary evidence to submit additional grant applications. I successfully submitted a Komen Fellowship award that has secured funding to continue my research for the next two years," said Dr. Kontos.

CONTINUED ON PAGE 2

RECENT GRANT RECIPIENT—CONTINUED FROM PAGE 1

The significance of the R&E grants to Dr. Kontos' scientific career was two-fold.

First, the completed research and training plan gave her the opportunity to undertake postdoctoral training in a cutting-edge research environment, like the University of Pennsylvania, under the guidance of excellent mentors. Second, the grant allowed her to explore a new research direction and develop sufficient preliminary evidence to submit larger grant applications. Dr. Kontos recently submitted her first application for an NIH grant.

Dr. Kontos' research studies funded by the RSNA R&E Foundation have helped pioneer the development of tomosynthesis imaging biomarkers and are among some of the first to explore the potential advantages of tomosynthesis parenchymal analysis for improving breast cancer risk estimation.

"The RSNA R&E grants are very important for the future of radiology, because they allow residents and fellows to have protected time to fully engage in research. This support is critical to promote the

GRANT RECIPIENT AT A GLANCE

Name: Despina Kontos, Ph.D.

Grant Awards: 2006 Agfa HealthCare/ RSNA Research Fellow Grant & 2007 Siemens Medical Solutions/ RSNA Research Fellow Grant

Looking Back at 2008:
Presented for the first time at RSNA in the Arie Crown Theater, as part of the Breast Series Multisession Course.



exploration of new research directions and to assist the transition of young researchers into independent investigators."

VANGUARD COMPANY PROFILE

Providing Grants for Promising Researchers Like Kontos for 20 Years

Funding the Future in a Constantly Evolving Market

AGFA HEALTHCARE HAS OVER A CENTURY OF healthcare experience related to diagnostic imaging and has been a pioneer in the healthcare IT market since the early 1990's. Agfa has been a Vanguard company since 1989 endowing Scholar and Seed Grants as well as the International Visiting Professor Program.

Today, Agfa Healthcare offers its customers an extensive portfolio of information system solutions, including HIS, CIS, RIS, PACS, CVIS, solutions for reporting, enterprise scheduling, decision support, and data storage as well as CR, print solutions, film and associated products. Over the years, Agfa

HealthCare has demonstrated its capacity for successfully supporting its customers' technological challenges, and transitioning them from analog to digital to IT solutions.

Healthcare providers are continuously aiming for higher quality, faster service, better outcomes, and increased patient satisfaction. To meet these ever increasing clinical and patient demands, they are rapidly evolving and adopting new solutions, leading to more efficient, streamlined and cost-effective care. "Agfa Healthcare understands that the healthcare mar-

ket is in constant evolution and we are proud to be a long-time supporter of the RSNA and the R&E Foundation, advancing research and education that will help enhance the delivery of care," said

Ray Russell, General Manager, Corporate Healthcare, Operations and Marketing, Agfa HealthCare, North America.

At RSNA 2008, Agfa HealthCare showcased its advanced DX-S™ solution, a groundbreaking CR system that fills the gap in the current range of Direct Radiography solutions by providing a unique combination of image quality, speed and flexibility that exceeds traditional CR solutions. Agfa HealthCare also showed its IMPAX® Data Center, a vendor neutral enterprise imaging

infrastructure that allows healthcare facilities to efficiently manage and share clinical imaging infor-

AGFA
Agfa
HealthCare

mation; clinical applications such as Registration-Fusion, X-Ray Angio Analysis; and OrthoGon™ advanced orthopaedic measurement tools integrated with its IMPAX RIS/PACS solution.

A Personal Connection to the Specialty

DR. PHAN HUYNH'S LIFE HAS BEEN A JOURNEY. Over thirty years ago he faced struggles as a Vietnamese boat refugee, and today he is an accomplished radiologist residing near Houston, Texas, with his wife, Tiffany, and two beautiful boys.

Dr. Huynh is the Medical Director of the Women's Center at St Luke's Episcopal Hospital. He recently joined the Silver Anniversary Campaign Pacesetters, who have all pledged to support the future of radiology. "There is no more crucial time to support the Foundation. The R&E Foundation and its grant programs have a great track record in finding talented young researchers and educators. As any financial advisor may state in these difficult economic times, we have to see our focus clearly and invest for the best long term return," said Dr. Huynh.

At the beginning of his career, fascinated with the advances of interventional radiology, Dr. Huynh found a mentor in Charles J.

Tegtmeier, M.D. Dr. Tegtmeier was an innovator, teacher, and skilled clinician, who taught Dr. Huynh the importance of quality imaging while seeking perfection from both himself and the people working with him.

During Dr. Huynh's residency, a family member was diagnosed with breast cancer. It was from that point that he changed his emphasis to breast imaging. "I was blessed to have trained with Dr.

Ellen Paredes, who always emphasized teaching and clinical excellence," said Dr. Huynh. "My practice is 100% breast imaging. I witnessed the transformation to full-field digital mammography, the expanded use of breast ultrasound and MRI, and anticipate better detection and diagnostic tools in the future."

By supporting the Silver Anniversary Campaign, Dr. Huynh is helping to fund the future of radiology. He believes that the future of radiology is boundless, with technological advances in breast imaging in the near



Phan Huynh, M.D., finds the most rewarding part of his day is interacting with his patients to calm their fears.

future to include the dissemination of digital tomosynthesis, breast CT, and MR spectroscopy. He also looks forward to the world of molecular imaging.

"I train residents and fellows and enjoy academic activities, but the most rewarding experience is my daily interaction with patients to calm their fears regarding breast cancer," said Dr. Huynh.

"I am a firm believer that our specialty can only flourish through a strong research and education foundation. There is no better organization than the RSNA R&E Foundation in helping all radiologists secure our place in medicine. Let's give back by moving the specialty forward," said Dr. Huynh.

Campaign Pacesetters Reach \$1 Million Mark

48 Campaign Pacesetters have each pledged \$25,000 to the Silver Anniversary Campaign, totaling over \$1 million to endow a Research Fellow Grant. The Campaign goal of \$15 million is challenging and will only be achieved with the full support of the entire radiologic community. Pacesetter pledges are still being accepted, and your gifts since the start of the Campaign in 2005 can be applied to your pledge.

We would like to recognize our newest Silver Anniversary Campaign Pacesetters:
Anne C. Roberts, M.D. & John E. Arnold, M.D.
William M. Angus, M.D., Ph.D.
Nancy & John AufderHeide, M.D.
Tiffany & Phan T. Huynh, M.D.
Solveig & Seymour H. Levitt, M.D.
Ronald B. Schilling, Ph.D.
Allen F. Turcke, M.D.
Edith Ann & Carl J. Zylak, M.D.

To learn more about the benefits or to become a Pacesetter before the Campaign's end in 2009 contact Karena Rybarczyk, Assistant Director of Fund Development, at 630-590-7742 or krybarczyk@rsna.org.



“Supporting research is critical to our future as radiologists and our mission of patient care. All of us have benefited from past research and have a duty to help fund our future.”

Cynthia and Leonard M. Glassman, M.D.
Campaign Pacesetters

Legislation Makes it Easier for You to Support the Future of Radiology

The Emergency Economic Stabilization Act of 2008 allows donors over age 70 ½ to make direct gifts from IRAs to qualified charities of up to \$100,000. The donation is not subject to the standard gift limitation of 50% of your gross income. In addition, individuals who are required to take a minimum withdrawal but do not need additional income can satisfy the distribution requirement with a transfer to charity.

To qualify:

- The donor must be 70 ½ years of age or older.
- The transfers must go directly from the IRA to the qualified charities.
- Gifts cannot exceed \$100,000.
- Gifts must be outright.

Other Considerations:

- The gift must be to a public charity and not to a donor advised fund, a private foundation, or a supporting organization.
- Charitable remainder trusts and charitable gift annuities do not qualify.
- The new rule applies only for the 2009 tax year and no charitable income-tax deduction is allowed.
- The rule only applies to traditional IRAs and Roth IRAs, and not to 401(k) plans or other types of deferred compensation plans.

Please contact your personal tax advisor to determine the effect of these new rules on your specific tax situation. If you have questions on giving to the R&E Foundation, contact Karena Rybarczyk, Assistant Director of Fund Development at 630-590-7742.

VANGUARD COMPANY PROFILE

Committed to Developing New Technologies

DEVELOPMENT OF NEW PRODUCTS AND ideas keeps Philips Healthcare a leader in the industry. To stay in this position, Philips understands the importance of ongoing research and education. Philips Healthcare has been a longtime supporter of the R&E Foundation, as a Vanguard company for nearly 20 years.

Philips Healthcare is committed to developing technologies to enhance solutions for women's specific conditions and diseases, such as breast cancer. At RSNA 2008, Philips unveiled the Achieva 3.0T TX MRI scanner, which is designed for demanding applications such as breast imaging. The new system enhances image quality and provides up to 40 percent greater scanning speed.

Philips offers the radiologist a portfolio of breast imaging solutions that includes: MammoDiagnost DR, iU22 Breast Ultrasound, MR Elite Breast, and GEMINI TF Big Bore PET/CT. Each modality provides performance for increased diagnostic capability and tools that enhance workflow.

With more diagnostic power at

their disposal, the surge in information has made it increasingly difficult for radiologists to interpret, synthesize and manage patient information. The Philips iSite PACS

enterprise-wide image and information management solution aims to have all modality images, prior data and patient information available at a single work spot.

Vanguard supporters of the R&E Foundation like Philips Healthcare are helping fund the R&D that keeps radiology in the forefront of medicine. Over the years, Philips has funded over 70 research and education grants. Each year the company supports 5 different grant projects, launching the careers of radiologists who will develop the next wave of technologies and solutions.

PHILIPS

sense and simplicity

"We must maintain our leadership position in both research and education. The R&E Foundation provides the ability for innovation to flourish and to translate that innovation into actionable service through education."

Paul J. Chang, M.D.
Campaign Pacesetter



Persistence Pays Off for One Grant Recipient Who Now Pays It Forward

JULIA R. FIELDING, M.D., Associate Professor, and Director, Section of Abdominal Imaging, at the University of North Carolina at Chapel Hill makes it a point to give back to the R&E Foundation every year. She has lectured nationally and internationally on different imaging topics, and most recently was a lecturer for the Gynecologic Imaging refresher course at RSNA 2008.

Growing up in Detroit, Dr. Fielding was an aspiring ballerina, with a passion for the arts. For her undergraduate studies she attended the University of Michigan. Her second passion was chemistry and related sciences, which ultimately influenced her decision to attend medical school at the University of Pittsburgh.

To further her academic career, Dr. Fielding applied for an RSNA R&E Foundation Research Seed Grant; unfortunately her first grant application was not funded. To Dr. Fielding's surprise her application was returned with constructive remarks. She welcomed the suggestions, and re-submitted the following year. She was awarded a 1996 RSNA Research Seed Grant. Realizing that very few radiologists were working on the

GRANT RECIPIENT AT A GLANCE

Name: Julia R. Fielding, M.D.

Grant Award: 1996 RSNA Research Seed Grant

Giving Back: Dr. Fielding traveled to South America this past summer teaching and empowering women, patients, and doctors about healthcare and international aid opportunities.



female urinary tract, Dr. Fielding decided to build her career around this work.

With the help of the RSNA grant-writing class, and the data from her Foundation Seed Grant, Dr. Fielding went on to receive NIH funding. She also attended a seminar sponsored by RSNA on grant writing in Washington, DC, where Elias Zerhouni, M.D., spoke. "It was a real turning point for me. I wrote the successful K grant application within 6 months after that lecture series," she said. "I learned how to translate an idea to a set of deliverables, write a budget and work with a multidisciplinary team. These have all been valuable skills in my academic

career," said Dr. Fielding. Her current research focuses on benign and malignant disease of the genitourinary tract.

An engaging style of teaching earned her the title "teacher of the year" at both Brigham and Women's Hospital and the University of North Carolina at Chapel Hill. She advises young researchers to find mentors outside their field, to broaden their horizons.

Attending the RSNA annual meeting for over 18 years, Dr. Fielding has seen tremendous growth in not only the size of the meeting, but also the span of research. Looking to the future of radiology, Dr. Fielding lives by her words, "Be grateful and pay it forward. Teach to the next generation."



"As radiologists we all benefit from the advancement of our practice. Now is the time for us to 'give back' and show our commitment by contributing to the Foundation."

Alice and Ernest J. Ferris, M.D.
Campaign Pacesetters

NEWS

Henry P. Pendergrass, M.D., Remembered

Henry P. Pendergrass, M.D., age 83, passed away September 20, 2008. Dr. Pendergrass was a friend, mentor, and stalwart supporter of RSNA. He served as President of RSNA in 1978, and was a founding trustee of the Research and Education Fund. He was honored in 1984 as an RSNA Gold Medalist. Along with his wife, Carol, Dr. Pendergrass took a leading role in supporting the R&E Foundation as a member of the Presidents Circle and as a Silver Anniversary Campaign Pacesetter. Dozens of friends and colleagues have remembered Dr. Pendergrass by contributing to support radiologic research and education in his honor.

2009 Research & Education Board of Trustees Announced

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EXHIBITORS CIRCLE PROFILE

Medtronic—Adding Intra-operative Imaging to Enhance Surgical Navigation

MEDTRONIC HAS SUPPORTED THE R&E Foundation since 2007 as a Platinum level Exhibitors Circle company. "Since the R&E Foundation's inception in 1984, our corporate partners, like Medtronic through the Exhibitors Circle program, have donated col-

lectively over \$375,000 in support of grant programs. Through their generosity, supporting companies also know they are investing in their company's future growth. New products, new technologies, new tools and new treatments are waiting to be discovered. There is nothing more critical to the future of radiology than support for additional scientific inquiry now that ultimately results in improved patient

care," said Stephen Thomas, Ph.D., Chair, RSNA R&E Corporate Giving Subcommittee.

As demonstrated for the first time at RSNA 2008, Medtronic offered an Advanced Visualization planning tool, StealthViz™, that takes multi-modality data—MRI, DTI, fMRI, MEG, CTA, MRA—and builds 3D "maps" of a patient's anatomy providing immediate and critical navigation information during surgery.

Both the PoleStar® Surgical MRI System and the O-arm® 2D/3D Imaging System interface automatically with the Medtronic StealthStation® navigation system to provide real-time image updates throughout surgery. The navigation display provides feedback through multi-planar images that allow surgeons to map out a surgical plan and then accurately follow the optimal path.

Information provided by intra-operative imaging may improve patient outcomes by increasing surgical accuracy and enabling verification of achievement of surgical goals, which, in turn, may reduce the need for revision surgeries. The O-arm® System transmits 30 percent less radiation in 3D mode than a CT scan of similar anatomy, decreasing exposure for both the patient and the OR staff. The system's ability to provide a pre-closure 3D scan also may eliminate the need for post-op CTs.

"Medtronic Navigation continually seeks to provide solutions to surgeons by reinvesting 11 percent of our annual revenues in Research & Development," says Jim Cloar, VP & General Manager, Medtronic Navigation. "For this reason, we are attracted to and support the mission of the RSNA R&E Foundation."



"The R&E Foundation Seed Grant played a huge role in my career. It established me as a clinical investigator very early on and has led to other NIH grants totaling nearly \$3 million."

Deborah Levine, M.D.
1995 Research Seed Grant Recipient



Grant Recipient Highlights

62 Researchers and Educators were provided grants in 2008 through your support. Every dollar you donate helps secure grant funding, research, and the future of radiology.

A glimpse of projects your donations are currently supporting:

Alexander R. Guimaraes, M.D., Ph.D.

Bayer HealthCare Pharmaceuticals/ RSNA Research Scholar Grant
Massachusetts General Hospital
Evaluation of Magnetic Nanoparticle-Enhanced Magnetic Resonance Imaging in Clinical Auto-immune Diabetes

Gaurav Gupta, B.S., M.S.

RSNA Research Medical Student Grant
Stanford University School of Medicine
Investigating the Tolerance of the Spinal Cord to CyberKnife Radiosurgery

Arash Jaber, H.B.Sc.

RSNA Research Medical Student Grant
University of Toronto
Maturation of the Arteriovenous Fistula for Hemodialysis: Tracking the Process by Ultrasound Monitoring

Aleksandrs Kalnins, B.A.

RSNA Research Medical Student Grant
University of Washington School of Medicine
Cost-Outcomes Analysis and Decision-Tree Modeling in the Investigational Vertebroplasty Efficacy and Safety Trial (INVEST) and the Carpal Tunnel Syndrome Diagnosis and Treatment Trial

Steven H. Lin, M.D., Ph.D.

RSNA Research Resident Grant
The Johns Hopkins University School of Medicine
The Role of REPRIMO and REPRIMO-like Gene Silencing in the Radioresistance of GI Malignancies

Akash Nanda, M.D., Ph.D.

Philips Healthcare/ RSNA Research Resident Grant
Harvard Radiation Oncology Program, Massachusetts General Hospital
Molecular Targeted Radiation Therapy for Lung Cancer

Kristen O'Donnell, B.S.

RSNA Research Medical Student Grant
Oregon Health & Science University
Assessment of Post-Prostatectomy Clinical Target Variation and Critical Structure Dosing During Intensity-Modulated Radiation Therapy

Eleanor Ormsby, M.D., M.P.H.

Hitachi Medical Systems/ RSNA Research Resident Grant
University of California at Davis
In Vivo Validation of PET Labeling of Liposomal Particle Shells with Optical Imaging in Ultrasound-Enhanced Delivery to Prostate Cancer

Bippan Sangha, B.S.

RSNA Research Medical Student Grant
University of British Columbia
The Effect of Varying Arterial Input Function on Cerebral Perfusion Assessment in Acute Ischemic Stroke

Steve How-Han Sheh, B.S.

RSNA Research Medical Student Grant
Albert Einstein College of Medicine
Is Computed Tomography Necessary for All Patients with Suspected Pulmonary Embolism? A Retrospective Look Comparing the Morality and Morbidity of Patients Diagnosed with PEs via CTPA and V/Q

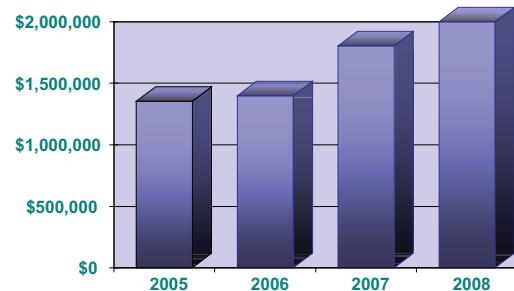
Faisal A. Siddiqui, Ph.D.

RSNA Research Medical Student Grant
Oregon Health & Science University
Prostate Cancer Screening and Staging by Dynamic-Contrast-Enhanced Magnetic Resonance Imaging (DCE-MRI) Pharmacokinetics

Phuoc T. Tran, M.D., Ph.D.

RSNA Research Fellow Grant
Stanford University School of Medicine
Investigations on the Differential Oncogene-Dependency of MYC Versus K-Ras Murine Primary Lung Tumor Model Systems

R&E Grant Funding awarded



R&E Grant Funding is increasing as a result of the Silver Anniversary Campaign

Antonio Carlos Westphalen, M.D.

GE Healthcare/ RSNA Research Scholar Grant
University of California, San Francisco
Advanced MR Imaging After External Beam Radiation Therapy of Prostate Cancer

Jürgen K. Willmann, M.D.

Bayer HealthCare/ RSNA Research Scholar Grant
Stanford University School of Medicine
Development and Validating of a Multitargeted Contrast Agent for Contrast-Enhanced Ultrasound Imaging of Tumor Angiogenesis in Early-Stage Pancreatic Cancer

Eddy Shih-Hsin Yang, M.D., Ph.D.

RSNA Research Resident Grant
Vanderbilt University Medical Center
Neuroprotection via Enhanced Repair of Radiation-Induced DNA Damage by GSK3 β Inhibitors

David Yousem, M.D., M.B.A.

Philips Healthcare/ RSNA Education Scholar Grant
Johns Hopkins Medical Institution
Developing a Curriculum for Teaching the Business of Radiology

James B. Yu, M.D.

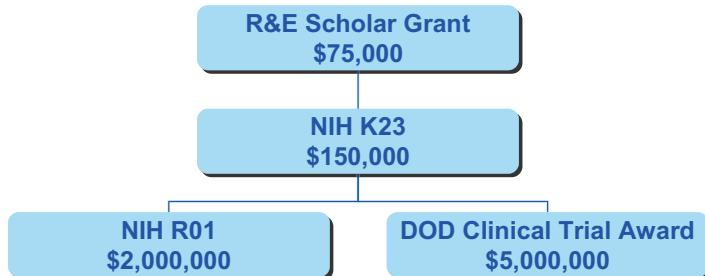
RSNA Research Resident Grant
Yale School of Medicine
The Promise of Intensity Modulated Radiation Therapy for Head and Neck Cancer: Patterns of Care, Access to Treatment, and Functional Outcomes

A complete listing of grant projects can be found at RSNA.org/Foundation

Quality Results: Preliminary Findings from the 2008 Grant Recipient Survey

A SURVEY WAS CONDUCTED this past year of more than 600 RSNA R&E Foundation grant recipients. The results revealed the grants have significant bearing on the recipients' subsequent funding, research breakthroughs, peer-reviewed publications, academic careers and mentorship.

R&E grants serve as a springboard for future funding.



- Nearly 70% of survey respondents received extramural funding after receiving the R&E grant.
- On average, for every \$1 granted by the Foundation, grant recipients received over \$30 of subsequent funding, often from NIH, NIBIB, NCI and other federal sources.
- With a 30:1 return on investment, R&E Foundation grants have enabled nearly \$850 million of research in the radiological sciences.
- Recipients have published over 9,000 peer-reviewed articles in journals including *Radiology*, *RadioGraphics*, *JAMA*, *Stroke* and *Circulation*.
- Over 80% of respondents serve as mentors to educate and shape future generations of radiologists.



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1984 - 2009

The R&E Foundation
Celebrates 25 Years

Look Forward...
Give Back