



# Foundation FOCUS

A QUARTERLY PUBLICATION OF THE RADIOLOGICAL SOCIETY OF NORTH AMERICA RESEARCH & EDUCATION FOUNDATION

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## 2018 Funding Tops \$4 Million

In April, the R&E Board of Trustees (BOT) approved \$4 million in grant funding for 2018. With over 250 grant applications submitted for the fifth consecutive year, the Foundation has maintained its position as the primary funding source for researchers and educators in radiology.

“Obtaining research funding is challenging, and with National Institutes of Health (NIH) pay lines often in the single digits, it can be discouraging to new investigators,” said R&E BOT Chair N. Reed Dunnick, MD. “Receiving a grant from the R&E Foundation is an excellent way for these new investigators to either start – or further – their research careers.”

Because of the generous support of our donors, 35 percent of grant applications across the Foundation’s various grant programs were approved for funding. In 2018, funding for new and continuing grants will be directed to individuals within 54 institutions.

Funding R&E grants remains a very attractive investment; surveys of past grant recipients show every dollar awarded by the Foundation results in 50 additional dollars in subsequent grant funding from other sources. With this high return on investment, the \$4 million awarded by the Foundation today could translate to \$200 million to advance radiology.

Research Seed Grant applicants really shined

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*On behalf of the Board of Trustees, I would like to express our deepest appreciation for the generous contributions received from our individual, private practice group and industry partners who make the work of the R&E Foundation possible. You have invested wisely in our future. Thank you.”*

**N. Reed Dunnick, MD**

Chair, R&E Foundation BOT

this year and are the most successful group of applicants with an impressive 41 percent funding rate. The Research Seed Grant provides seed money to test hypotheses and conduct pilot studies in preparation for major grant applications to corporations, foundations and government agencies. It is the “leg up” innovative researchers pursuing high-risk, high-reward projects need. These 16 new recipients are sure to bring their innovative ideas to fruition.

“On behalf of the Board of Trustees, I would like to express our deepest appreciation for the

generous contributions received from our individual, private practice group donors and our industry partners who make the work of the R&E Foundation possible. You have invested wisely in our future. Thank you,” said Dr. Dunnick.

### SUCCESS RATE OF 2018 RESEARCH GRANT APPLICATIONS



# Now Accepting Pre-Applications for New Education Grants

The R&E Foundation is currently seeking grant pre-applications for its two new education grant offerings: the Education Innovation Grant and the Education Development Grant.

The overarching goal of these new grants is to enhance education for the benefit of radiology faculty as educators, radiologists and radiology support personnel through the creation of educational content, educational products or other innovative means.

View the RFAs with details on scope, eligibility and expected outcomes at [RSNA.org/Foundation](http://RSNA.org/Foundation). The deadline for pre-applications is September 3, 2018.

## Education Innovation Grant

Amount: up to \$175,000 per year for up to 3 years (\$525,000 maximum)

### Topic:

- ▶ Point-of-Care Education

## Education Development Grant

Amount: \$30,000–\$100,000 per year for up to 3 years (\$300,000 maximum)

### Topics:

- ▶ Imaging Cancer
- ▶ Patient Education
- ▶ Physician Burnout
- ▶ Gender, Racial and Ethnic Diversity in Radiology Leadership



## Important Dates and Deadlines

☐ **September 3, 2018**

Deadline for Pre-applications (Required)

☐ **February 15, 2019**

Deadline for Full Applications

☐ **July 2019**

Begin Date for Funded Education Grants

This new and exciting grant program is a fresh approach to radiology education, designed to facilitate the development and delivery of new and innovative educational products for RSNA to share with its members. By addressing current and future needs in radiology education and the opportunity for large, multi-year, multi-institutional grants of up to \$525,000, the resulting educational products will certainly have powerful, widespread and enduring impact.

Contact Scott Walter, MS, at [swalter@rsna.org](mailto:swalter@rsna.org) or 630-571-7816 for more information.



Marc D. Kohli, MD

## Monthly Donations Are Simple, Seamless and Secure

In the increasingly digital world, many of us conduct most, if not all, of our financial business online. Not only do we make online transactions daily, but we can also set up recurring payments to make life easier. Charitable giving should be no different!

Over the last year, RSNA has worked diligently to improve the Foundation's online donation webpage, [RSNA.org/Donate](http://RSNA.org/Donate). The refreshed page is redesigned for mobile optimization and enhanced to include a monthly donation option—a great way to support the Foundation.

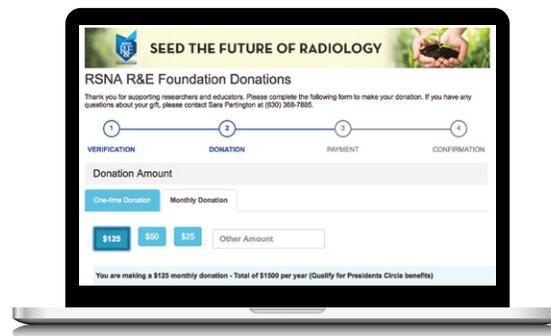
**Marc D. Kohli, MD**, member of the R&E Foundation Individual Giving Subcommittee, uses the monthly giving option to simplify his giving.

“I support the Foundation because I’ve witnessed the positive impact R&E grants have had on many of my colleagues and our field. The new monthly giving option takes the work out of giving. It’s simple and seamless!” he said.

Making a monthly gift is a simple and convenient way to support the Foundation. Making or increasing a charitable gift may sound cumbersome, but giving a small amount each month can make it more manageable. For example, becoming a Presidents Circle donor has never been easier. By making a \$125 monthly gift, you can join a progressive community of supporters with an annual gift that totals \$1,500 and gives you access to Presidents Circle benefits throughout the entire year.

By making a monthly gift you are ensuring that the R&E Foundation receives your support all year long in a manner that is comfortable for you.

For questions about your giving options, please contact Ashley Koman at [akoman@rsna.org](mailto:akoman@rsna.org) or 1-630-590-7773.



## Your Donations Seed the Future of Radiology

**Joseph Scott McNally, MD, PhD**, used his 2014–2016 Bayer HealthCare/RSNA Research Scholar Grant to investigate carotid intraplaque hemorrhage to determine if it is a more effective indicator of stroke risk than traditional stenosis.

Intraplaque hemorrhage indicates plaque inflammation and originates from leaky plaque microvessels. Dr. McNally and his team used dynamic contrast enhanced-MRI (DCE-MRI) to determine carotid plaque permeability, an *in vivo* marker of active plaque inflammation. Using quantitative immunohistochemistry, the researchers investigated if carotid plaque permeability correlated with local angiotensin pathway receptors and carotid oxidase expression. They also studied if carotid plaque permeability correlated with systemic oxidative stress as measured by the serum glutathione redox state.

The project had much higher clinical impact than anticipated on the patients referred for stroke etiology workup. “The team developed high resolution full head and neck vessel wall MRI for both clinical and research use and, in doing so, we saw a large growth in clinical scan volume to approximately five scans each week,” Dr. McNally said. “Vessel wall MRI has uncovered many

unsuspected stroke sources and has better delineated cases of active vessel wall plaque and vasculitis and allows much earlier treatment decisions to be made.”

While the study found that angiotensin levels did not correlate with carotid intraplaque hemorrhage, even after including potential confounders of angiotensin receptor blockers or angiotensin converting enzyme inhibitors, it did lead to surprising results that have prompted Dr. McNally to seek future grant funding for additional research. To date, Dr. McNally has received \$300,000 in subsequent grant money as principal investigator and is well on his way to becoming an independently funded investigator, a goal of the Research Scholar Grant program.

“As with much scientific research, the original focus of my RSNA-funded work led to another discovery,” said Dr. McNally. “Surprisingly, we found one of the main predictors of carotid intraplaque hemorrhage volume was low vitamin D status, which may regulate local plaque inflammation. Future clinical studies are needed to determine if vitamin D can decrease carotid plaque vulnerability and prevent future strokes.”

SEED THE FUTURE



“As with much scientific research, the original focus of my RSNA-funded work led to another discovery.”

Joseph Scott McNally, MD, PhD



# And the Grant Recipient Survey Says!

Every five years, the Foundation conducts a survey of past grant recipients to assess the effectiveness of the grant program. The survey questions are designed to provide useful information on the outcomes of the Foundation's grants and the effect they have on recipients' careers, the radiologic sciences and clinical care.

In 2017, several impressive accomplishments and noteworthy findings were shared by 525 respondents.

An R&E grant can be a catalyst for a career in research and education, a critical first step for future funding and a pathway to leadership in organized radiology. Here is a breakdown of post-grant successes and achievements along with a few examples of the clinical impact of R&E funded grants and subsequent research pursued by grant recipients:



**Susie Y. Huang, MD, PhD**

**2007 RSNA Research Medical Student Grant**

*Designing Active Feedback-enhanced Contrast for Improved Lesion Detection by MRI*

**2014 Philips Healthcare/ RSNA Research Resident Grant**

*Ultra-high Gradient Diffusion MRI for Characterizing Axonal Pathology in Multiple Sclerosis*

"We have demonstrated in a pilot study that high-gradient diffusion MR imaging can be used to characterize axonal pathology in patients with MS, with results that agree with known trends from histopathology showing increased axon diameter and decreased axon density in MS lesions when compared with normal-appearing white matter. We are now working to translate high-gradient diffusion MRI techniques to study axonal damage and myelin integrity in larger scale studies of patients with MS. By developing a better imaging test for axonal damage, we expect to clarify the role of axonal damage in MS as it relates to disease progression. We anticipate this work to have significant clinical impact by paving the way to larger, longitudinal studies using high-gradient diffusion MRI to elucidate the interplay between myelin loss and axonal damage in MS. High-gradient diffusion MRI promises to provide insight into the biology of MS and may ultimately offer an outcome measure for evaluating MS therapies in clinical trials and clinical practice.

"I currently serve as a member of the Radiology Research Trainee Grant Study Section, and as a past grant recipient, I understand how important the initial investment from the R&E Foundation is in providing young investigators with protected research time, supplies and resources to apply for federal grant funding and build a broader program of research. This perspective has informed my experience as a grant reviewer for the RSNA, which has been immensely gratifying. The grant review process is a way to give back to the community that launched my career and more importantly, to encourage the next generation of radiologists pursuing cutting-edge research in imaging science."

123		Number of past grant recipients that are now department chairs or division heads.
52		Average number of peer-reviewed manuscripts each grant recipient publishes in high-impact journals, including <i>Radiology</i> and <i>RadioGraphics</i> .
\$3.3 Million		Average amount of subsequent, extramural funding R&E grant recipients receive.
50:1		The ratio of extramural grant dollars earned for every \$1 awarded by the R&E Foundation—an extremely high return on investment!
405		Patents*
230		Licenses*
38		Commercial Companies*

\*Resulting directly from R&E-funded grants.

**Edwin H. Oei, MD, PhD****2014 Hitachi Medical Systems/RSNA Research Seed Grant**  
*Quantitative Dynamic Contrast-enhanced MRI for Studying Bone Perfusion*

“The work developed during the granted research project has led to the development of quantitative DCE-MRI methods for application in bone. This method can be widely applied in a variety of research settings and in the clinical environment whenever quantitative assessment of blood flow in bone is necessary. This grant has contributed greatly in consolidating my career in clinical research on quantitative imaging of bone and joint diseases.”

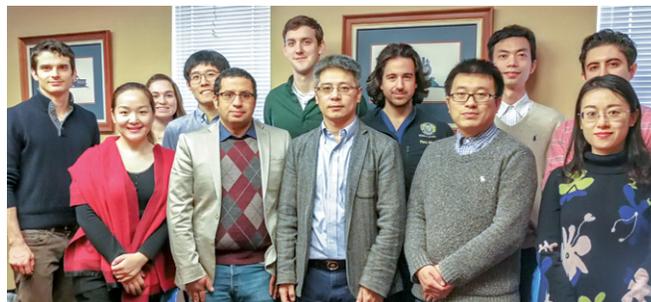
**Hsiang-Jer (Jack) Tseng, MA, MD****2012 RSNA Research Medical Student Grant**  
*Comparative Study of Doxorubicin-loaded Drug Eluting Beads: An in vitro Evaluation*

“The drug eluting microspheres that I studied using my RSNA grant is on the way to becoming commercialized. I want to thank the RSNA R&E Foundation for the support of this research study, which has helped spark my interest in radiology.”

**Shandong Wu, PhD, MSc****2015 GE Healthcare/RSNA Research Scholar Grant**  
*Breast DCE-MRI Contrast Enhancement Heterogeneity and Breast Cancer Risk*

“The preliminary results generated from the RSNA grant showed that the breast MRI-derived features, especially those quantifying contrast enhancement heterogeneity, are associated with the risk of developing breast cancer, independent of mammographic breast density. The related findings have been published in two journal papers: *Breast Cancer Research* and *Scientific Reports*. It has great potential to improve current clinical risk models by incorporating such imaging-based risk biomarkers to more accurately predict the breast cancer risk in breast cancer MRI screening.”

Leveraged by this RSNA award, Dr. Wu has received his second NIH R01 grant on breast imaging and artificial intelligence study that is further advancing his research career. Together with other support, Dr. Wu founded and currently directs the Intelligent Computing for Clinical Imaging (ICCI) lab, at the University of Pittsburgh, which has grown into a team of more than 10 members with a diverse and interdisciplinary background in radiology, machine/deep learning, pathology, biology and biostatistics. Dr. Wu is very grateful for the RSNA research scholar award and truly appreciates the funding support from the donors.



Dr. Wu's ICCI Lab Team. (L to R, front row): Bingjie Zheng, MD; Aly Mohamed, PhD; Shandong Wu, PhD, MSc (PI); Lei Zhang, PhD; and Ruimei Chai, MD. (L to R, back row): Giacomo Nebbia, PhD student; Kadie Clancy, PhD student; Degan (Oliver) Hao, MSc; Ryan Hausler, MSc student; Esmaeel Dadashzadeh, MD, MSc student; Wenshan He, MD; and Dooman Arefan, PhD.

The success of R&E grant recipients is fueled by the generosity of individuals, private practice groups and companies coming together to fund the future of radiology, enhance healthcare and improve patient outcomes—and the impact of the Foundation's grants will grow as the number of funded grants increases.

Thank you donors, for supporting these innovative researchers and educators in producing these incredible results!

## The Best Charitable Gifts to Make in 2018

With the introduction of tax reform this year, you may be looking at your finances and wondering how you can contribute to the R&E Foundation while enjoying financial benefits for yourself. Here are some smart ways you can give in 2018:

- ▶ **Donate appreciated stock.** With a strong stock market, consider donating your appreciated stocks to the R&E Foundation and eliminate capital gains tax.
- ▶ **Name the R&E Foundation as a beneficiary of retirement plan assets.** These assets remain taxable when distributed to a loved one, but are tax-free when given to a nonprofit.
- ▶ **Give from your IRA (if age 70 or older).** Regardless of whether you itemize your taxes, this gift helps you fulfill your required minimum distribution and is not considered taxable income. Ask your tax professional for more information.

Please contact Bob Leigh at 630-590-7760 or [rleigh@rsna.org](mailto:rleigh@rsna.org) if you would like to discuss the giving strategies that will work best for you and your family.

# Presidents Circle Donors Fund Named Research Resident Grant



Pavel Rodriguez, MD, PhD

Established in 2001, the RSNA Presidents Circle program was created to encourage RSNA members and friends to support the future of the radiologic sciences by giving back to their profession on an annual basis.

Annual donations of \$1,500, \$2,500 or \$5,000 qualify an individual to join this dynamic community of Foundation supporters. More than

200 members strong, the RSNA Presidents Circle demonstrates the power of a community dedicated to the future of radiology and related scientific disciplines.

Donations from Presidents Circle members are also used to fund a specially named Research Resident grant each year.

**Pavel Rodriguez, MD, PhD**, recently shared the impact of his 2016 Presidents Circle Research Resident grant. “The RSNA grant helped fund a project that allowed me to complete a clinical trial in conjunction with other seed funding,” he said. “The grant was invaluable because it provided partial support for a very large study that was funded in part by four other seed/pilot sources. I finished enrollment for this 12-week, double-blinded, randomized trial towards the end of my graduate school while I focused my PhD dissertation defense on the data that supported the launch of that trial.



“I will use the publications from this study to help me apply for future funding from NIH and other sources as

I strive to gain traction in my research career. The work funded by this grant will also open doors as I apply for academic positions in the future. My goal is that this will further the field of functional neuroradiology as intended by the Foundation,” said Dr. Rodriguez.

To learn more about the Presidents Circle or join this dedicated group of supporters, visit [RSNA.org/Donate](https://rsna.org/Donate) or contact Ashley Koman at [akoman@rsna.org](mailto:akoman@rsna.org) or 1-630-590-7773.

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Pavel Rodriguez, MD, PhD

## Volunteer for a Foundation Committee



Kitt Shaffer, MD, PhD and Janet R. Reid, MD

R&E Foundation volunteers are essential to the Foundation's success. Foundation projects are developed and implemented by a committed group of individuals dedicated to advancing the future of radiology.

From the R&E Fund Development Committees, whose members work to develop and recommend fundraising programs, to the members of the study sections and review panels who work to review, evaluate and score grant applications, to the Foundation's Public Relations Committee whose members work to promote the Foundation's achievements, there are a number of ways RSNA members can get involved and lend their expertise, time and talent to the R&E Foundation.

A comprehensive list of R&E Committees can be viewed at [RSNA.org/Governance](https://rsna.org/Governance). If you would like to take an active role in advancing the future of radiology, or if you would simply like to learn more about these outstanding volunteer opportunities, contact Sena Leach at [sleach@rsna.org](mailto:sleach@rsna.org) or 1-630-571-7810.

# Grant Recipient Gives Back in Service, Support and Gratitude

**Vincent P. Mathews, MD**, has held many roles throughout his career in radiology, and credits others for the success and opportunity he's experienced. "I have been fortunate to work in great places and with great people over the years. Radiology has given me the opportunity to be a clinician, a researcher, an educator and a leader in varying ratios at different times, and has always been both challenging and rewarding. I am grateful to my mentors, colleagues and trainees who have made my career so enjoyable and my wife and sons who have been so supportive," he said.

Early in his career, Dr. Mathews received the 1990 Covidien/RSNA Research Fellow Grant. "Receiving this two-year fellowship allowed me to devote significant time to research with my mentor **R. Nick Bryan, MD, PhD**, at Johns Hopkins University. That experience launched my academic career, and my relationship with Nick continues to have a great influence on me both professionally and personally," he said.

During the 2017 RSNA annual meeting, Dr. Mathews and his wife Laura increased their R&E Foundation support by making a commitment to the Inspire-Innovate-Invest Campaign as Silver



Vincent P. Mathews, MD

Centennial Pathfinders. Their commitment was made in memory of the late **William G. Bradley Jr., MD, PhD**. "When I began my radiology residency at Indiana in 1986, Bill Bradley was already a giant in the field of MR, and I learned a great deal from his papers and books," he said.

"Later I had the opportunity to get to know him personally while serving on various committees. His optimism and love of life were always apparent

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*I have been fortunate to work in great places and with great people over the years. Radiology has given me the opportunity to be a clinician, a researcher, an educator and a leader in varying ratios at different times, and has always been both challenging and rewarding. I am grateful to my mentors, colleagues and trainees who have made my career so enjoyable and my wife and sons who have been so supportive.”*

**Vincent P. Mathews, MD**

in every interaction we had over the years. His commitment to the R&E Foundation and the future of radiology were second to none, and my wife **Laura** and I believed this was an appropriate way to honor Bill's memory.”

Dr. Mathews currently serves as chair of the department of radiology at the Medical College of Wisconsin. There he is able to witness the positive impact R&E grants have on his institution, such as affording junior faculty the time to develop their research and supporting medical student summer research projects, thereby exposing them to radiology as a future career.

Looking forward, Dr. Mathews hopes radiologists will embrace the changing landscape of the field. "Radiology has benefited so much from technology and innovation historically, and the current rapid development of machine learning applications is another great opportunity for radiologists to find ways to use technological advances to make us more effective in caring for our patients. We need to be leaders in applying these tools in a way that continues to make radiology an attractive field for current and future radiologists.”

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*Receiving this two-year fellowship allowed me to devote significant time to research with my mentor **R. Nick Bryan, MD, PhD**, at Johns Hopkins University. That experience launched my academic career, and my relationship with Nick continues to have a great influence on me both professionally and personally.”*

**Vincent P. Mathews, MD**



## Start a Conversation About Giving at Your Practice Group

A practice group has a profound and direct impact on the community. From simple screenings to more complex diagnostic procedures, the work performed by private practitioners has a positive influence on the lives of their patients. Practice groups can extend that influence even further by supporting the RSNA R&E Foundation through the Visionaries in Practice (VIP) Program.

Designed to give private practices the opportunity to support radiologic research and enhance patient care, the VIP Program puts medical imaging specialists on the forefront of the specialty's growth and development. A practice group's annual contribution of \$10,000 or more will pay that group dividends as a benefactor of the specialty's growth and development long into the future.

Because of changes currently taking place in the healthcare

sector, it is critical to ensure radiology remains a leader in imaging research. As a VIP donor, your practice group can do its part to improve the quality of patient care across all medical subspecialties through an investment in science and technology.

Ready to take the first step in making your practice group VIP? Here are the best ways to advocate for radiology's future at your practice group today:

- ▶ **Start a conversation.** Talk to your practice group leadership about including the VIP Program on an upcoming meeting agenda.
- ▶ **Share promotional materials with your colleagues.** Visit the following website to download materials to share with your practice group members through email: [RSNA.org/Foundation-VIP](http://RSNA.org/Foundation-VIP).
- ▶ **Speak with Foundation staff.** We want to help you find the best ways to promote the VIP Program at your practice group. Contact Bob Leigh at 1-630-590-7760 or [rleigh@rsna.org](mailto:rleigh@rsna.org).



### Three Easy Ways to Give



VISIT  
[RSNA.org/Donate](http://RSNA.org/Donate)



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