



RSNA Research & Education Foundation

New Grants Approved for Funding

2018

RESEARCH SCHOLAR GRANT

The Foundation's premier career development grant transitions junior faculty to independent investigators. Funding protects research time to conduct complex projects under the guidance of a mentor and scientific advisor in preparation for NIH funding. The Research Scholar Grant is a two-year grant of \$150,000.

Nicholas Scott Burris, MD | University of Michigan
Hemodynamic Biomarkers of Aneurysmal Degeneration in Type B Aortic Dissection

Jamal J. Derakhshan, MD, PhD | Washington University in St. Louis
Improved Non-contrast Brain Perfusion Imaging Using Integrated Tagging in bSSFP

Ryne Didier, MD | Children's Hospital of Philadelphia
Contrast-enhanced Brain Ultrasound in Extreme Premature Fetal Lambs Maintained by the Extra-uterine Environment for Neonatal Support (Extend): Visibility Studies, Evaluation of Perfusion Parameters, and Assessment of Intracranial Pressure

Christine E. Edmonds, MD | Massachusetts General Hospital
Precision Imaging for Improved Therapeutic Guidance in Breast Cancer

Mai-Lan Ho, MD | Mayo Clinic
Zero Echo-time MRI for Radiation-free Pediatric Bone Imaging

Joseph George Mammarrappallil, MD, PhD | Duke University
Utilization of Hyperpolarized ¹²⁹Xe MRI for Diagnosis of Idiopathic Pulmonary Fibrosis

Avner Meoded, MD | Johns Hopkins University
Comprehensive Omics Approach in the Study of Brain Neuroplasticity in Pediatric Arterial Ischemic Stroke

Sohil H. Patel, MD | University of Virginia
Radiogenomics of Diffuse Cerebral Gliomas

Salil Soman, MD, MS | Beth Israel Deaconess Medical Center
Improving Intracranial Hemorrhage Risk Stratification with Advanced Cerebral Microhemorrhage (CMH) Imaging Using Preconditioned Quantitative Susceptibility Mapping (PQSM) MRI

Man Zhang, MD, PhD | University of Washington
Assessment of Predictive Value of Cervical Stiffness in Preterm Labor and Outcome of Labor Induction Using Transvaginal Shear Wave Elastography

RESEARCH SEED GRANT

Every great discovery starts with a spark. This grant provides seed money to test hypotheses and conduct pilot studies in preparation for major grant applications to corporations, foundations, and government agencies. The Research Seed Grant is a one-year grant of up to \$40,000.

Edson Amaro Junior, MD, PhD | Hospital Israelita Albert Einstein, Brazil
Multi-centric Standard Practices in Quantitative Diffusion Weighted Imaging: Implementation and Evaluation in Clinical Practice in Brazil

Sandeep Singh Arora, MBBS | Vanderbilt University
Improving Breast Cancer Response to Immunotherapy Using Micro-bubble Enhanced Therapeutic Ultrasound in a Highly Aggressive 4T1 Murine Breast Cancer Model

Ji Young Bueth, MD | Johns Hopkins University
Cryoablation-immune Checkpoint Combination Therapy to Improve Anti-tumor Responses in Triple Negative Metastatic Breast Cancer

Amy Robin Deipolyi, MD, PhD | Memorial Sloan Kettering Cancer Center
Role of Anti-tumor Immunity in Modulating the Impact of PI3K Pathway Mutations on Response to Radioembolization in Metastatic Breast Cancer

Laura Heacock, MD, MS | New York University
Abbreviated Breast MRI (AB-MRI) with Golden-angle Radial Compressed-sensing and Parallel Imaging (GRASP): A Short, Comprehensive Breast MRI Exam Ready for Clinical Prime Time

Pedram Heidari, MD | Massachusetts General Hospital
Immune PET Imaging of Cytotoxic Lymphocyte Function in Inflammatory Bowel Disease

Amar Upadhyaya Kishan, MD | University of California, Los Angeles
Genomics of Gleason Score 9-10 Prostate Cancer

Gregory Jon Nadolski, MD | University of Pennsylvania
Clinically Relevant Point of Care Testing to Improve Quality of Solid Tumor Biopsies

Prashant Nagpal, MD | University of Iowa
Comparison of Free-breathing Self-gated 3D Cardiac MRI with Manifold Reconstruction Algorithms and Standard Breath-hold Sequence in Patients with and Without COPD

Rupa Radhakrishnan, MD | Indiana University
Effect of Prenatal Exposure to Opioids on Neonatal Brain Structure and Function

Gelareh Sadigh, MD | Emory University
Patient-reported Financial Toxicity in Multiple Sclerosis: Predictors and Association with Neuroimaging and Medication Non-adherence

RESEARCH RESIDENT/FELLOW GRANT

This grant provides investigators a chance to explore powerful ideas. Working alongside an experienced advisor, trainees gain insight in research methods and techniques; it is a catalyst to pursue research at a critical point in a radiologist's career. The Research Resident/Fellow Grant is a one-year grant of \$30,000/\$50,000.

Shadi Abdar Esfahani, MD, MPH | Massachusetts General Hospital
Imaging HER3-driven Resistance to Anti-receptor Tyrosine Kinase Therapy in Gastric Cancer

Harrison X. Bai, MD | University of Pennsylvania
Utilization of Deep Learning to Predict Characteristics and Treatment Response in Renal Tumors

David Hilton Ballard, MD | Washington University in St. Louis
Image-guided Molecular Profiling of the Renal Cell Carcinoma Immune Microenvironment Using 3D Printing

Michael Sargent Binkley, MD, MS | Stanford University
Inferring Gene Expression Using Cell Free DNA for Prediction of Radiation Pneumonitis After Definitive Chemoradiotherapy of Locally Advanced Non-small Cell Lung Cancer

Zachary Buchwald, MD, PhD | Emory University
The Impact of Corticosteroids on Combined Radiation and anti-PD-L1 in the Control of Oligo-metastatic Melanoma

Lindsay P. Busby, MD, MPH | University of California, San Francisco
Advanced Imaging of Ovarian Cancer Using 68GA-PSMA-11 PET/MRI

Jessica Chan, MD | University of Utah
Detection of Obstructive and Restrictive Lung Disease on Chest Radiography Using Machine Learning and Integrated Pulmonary Function Data

Bryan H. Chang, MD, PhD | University of Pennsylvania
Tracking Engineered T Cell Therapies with an RNA-based Reporter Gene

Stuart E. Samuels, MD | University of Miami
Symptomatic and Functional Impact of Radiation-induced Fibrosis of the Neck in Patients Treated for Head and Neck Cancer

David Shultz, MD, FRCPC | University Health Network
Measuring and Molecularly Defining Intra-tumoral Hypoxia Using FAZAPET/MRI and Pimonidazole in High-risk Sarcoma

Adam Daniel Singer, MD | Emory University
Performance of a Standardized Scanning and Reporting Method for Sonographic Soft Tissue Sarcoma Surgical Resection Bed Surveillance

Ramya Srinivasan, MD | University of California, San Francisco
The Use of Dual and Multi Energy CT for the Detection of Bone Marrow Metastases- A Phantom Study with Preliminary Patient Validation

Sina Tavakoli, MD, PhD | University of Pittsburgh
Quantitative Imaging of 18F-fluoroglutamine and 18F-FDG Uptake in Atherosclerosis: A Metabolic Approach to Immunometabolic Characterization of Macrophages in the Vessel Wall

Leonid Chepelev, MD, PhD | Ottawa University
Deep Learning for Radiological Image Quality Improvement: Impact on the Accuracy of Diagnosis and Organ Segmentation

Florence L. Chiang, MD | The University of Texas Health Science Center at San Antonio
Imaging Biomarker Development in Multiple Sclerosis Using Multi-modality Network Modeling

Dania Daye, MD, PhD | Massachusetts General Hospital
Machine Learning-based Virtual Metastasis Biopsy as an Early Predictor of Tumor Progression and Resistance Mutation Acquisition in Colon Cancer Patients

Adnan Elhammali | The University of Texas MD Anderson Cancer Center
Single Cell Transcriptome Analysis of Radiation Response in Advanced Pancreatic Cancer Patients

Ahsan Farooqi, MD, PhD | The University of Texas MD Anderson Cancer Center
Targeting the Alternative Lengthening of Telomeres Phenotype in Glioblastoma to Enhance Cellular Response to Radiotherapy

Benjamin Freeze, MD, PhD | Cornell University
Regional Brain Atrophy and Network Propagation of Pathology in Prodromal Parkinson Disease

Lewis Dirk Hahn, MD | Stanford University
Segmentation and Quantitative Assessment of Prognostic Features in Type B Aortic Dissection Using Machine Learning

Mark Jeffrey Hoegger, MD, PhD | Washington University in St. Louis
Targeted Alpha Particle Therapy in Lymphoma with Human Anti-CD20 Antibodies

William L. Hwang, MD, PhD | Massachusetts General Hospital
Molecular Signatures of Circulating Tumor Cells to Predict Treatment Response in Muscle-invasive Bladder Cancer

John Kang, MD, PhD | University of Pittsburgh
Combining Genomic and Clinical/Dosimetric Variables to Predict Radiation Toxicity in Localized Prostate Cancer Patients Via Computational Genomics and Machine Learning

Geunwon Kim, MD, PhD | Beth Israel Deaconess Medical Center
Development and Validation of MRI-based Quantitative Fat and Fluid Volumetrics for Lymphedema Staging and Guidance of Liposuction and Lymphatic Reconstruction in Upper and Lower Extremities

Joseph Leach, MD, PhD | University of California, San Francisco
Combined Magnetic Resonance Imaging and Biomechanical Analysis of Abdominal Aortic Aneurysms to Predict Disease Progression

Kathryn Mittauer, PhD | University of Wisconsin-Madison
Evaluation of Gastrointestinal Toxicity for Pancreatic Radiotherapy Using Stereotactic MR-guided Online Adaptive Radiation Therapy (SMART) in Wisconsin Miniature Swine (WMS)

Everett James Moding, MD, PhD | Stanford University
Circulating Tumor DNA Kinetics During Radiation Therapy as a Prognostic Biomarker for Non-small Cell Lung Cancer

Thomas Sheung Chee Ng, MD, PhD | Massachusetts General Hospital
Multiscale, Translational Molecular Imaging to Guide Combination Nano- and Immunomodulatory Therapy in Anaplastic Thyroid Cancer

Matthew Stephen Ning, MD | The University of Texas MD Anderson Cancer Center
The Utility of Intraoperative MRI-guided Interstitial Brachytherapy in Optimizing the Therapeutic Ratio for Gynecologic Malignancies

Suchit Hitesh Patel, MD, PhD | Memorial Sloan-Kettering Cancer Center
Utilizing Next Generation Sequencing and Cardiac MRI to Profile the Transcriptional and Physiologic Pathogenesis of Radiation Induced Cardiac Toxicity in a Mouse Model

Ryan Phillips, MD, PhD | Johns Hopkins University
Inhibition of Centrosome Clustering to Enhance the Interplay Between Radiotherapy and Immunotherapy

Priya Rajagopalan, MBBS | Indiana University
Increased White Matter Hyperintensity in Carriers of Folate Gene Polymorphism: A Novel Gene-amyloid Interaction Pathway

Shushan Rana, MD | Oregon Health & Science University
Endothelial miR-15a Regulation of the Tumor Microenvironment Radiation Response

Praveen Ranganath, MD | The University of Texas Southwestern Medical Center
A Novel Approach to Coronary Calcium Scoring Using Spectral CT Fingerprinting with Coronary CT Angiography

Tara Retson, MD, PhD | University of California, San Diego
A Deep Learning Approach for Identifying Imaging Biomarkers and Outcome Modeling in Chronic Obstructive Pulmonary Disease

Zaid Ali Siddiqui, MD | Beaumont Health System
A Deep Learning Framework for Radiotherapy Delivery in Thoracic Oncology

Mikhail Silk, MD | University of Pennsylvania
Developing Tace 2: Targeting Hepatocellular Carcinoma Cells Through the Unfolded Protein Response, Hypoxia Inducible Factor, and Autophagy Inhibition

Karthik Meenakshi Sundaram, MD, PhD | Vanderbilt University
Evaluating Microbubbles as an Immunotherapy Adjuvant for Breast Cancer

Anna Trofimova, MD, PhD | Emory University
Functional and Structural Brain Connectivity Alterations in Visual Vertigo Syndrome: A Prospective MRI Study of Central Vestibular Impairment in Mild Traumatic Brain Injury

Kang Wang, MD, PhD | University of California, San Diego
Automated Liver Biometry and Fat Quantification in Non-alcoholic Fatty Liver Disease with Convolutional Neural Networks

Ghiam Yamin, MD, PhD | University of California, San Diego
Virtual Reality Application for Evaluating Progression of Early Parkinson's Disease

Felix Yuh-Chern Yap, MD | University of Southern California
The Shapely Renal Mass: Quantitative Contour Evaluation of Renal Cell Carcinoma

Paul Hyunsoo Yi, MD | Johns Hopkins University
Automated Detection and Localization of Large Vessel Occlusion on CTA of the Head Using Deep Learning Systems

RESEARCH MEDICAL STUDENT GRANT

Exposure to radiology research in medical schools ignites a passion for the specialty. With support of the community and a network of mentors, a summer project can turn into a career-long pursuit of research and discovery. The Research Medical Student Grant is a \$3,000 grant, matched by the sponsoring department.

Peter Abraham | University of California, San Diego
Cost-effectiveness of Intraoperative MRI in the Treatment of High Grade Gliomas

Norman Atagu, BSC | Washington University in St. Louis
Construction of a Predictive Model for Future Liver Remnant Hypertrophy After Portal Vein Embolization

Jake Bowling | University of North Carolina
Cranial Nerve Cisternal Segment Enhancement in Multiple Sclerosis: Prevalence on 3.0 Tesla Volumetric T1 MRI and Clinical Implications

Chloe Genevieve Cross, BSC | University of Utah
Quantification of Blood Spinal Cord Barrier Opening After Application of Magnetic Resonance Guided Focused Ultrasound

Brittany DeClouette, BA | University of Southern California
Increased Glutathione Measured by Single Voxel MR Spectroscopy After 6 Months of Ketogenic Diet in Patients with Intractable Epilepsy - Pilot Study

Weimeng Ding | McGill University
Automated Detection and Outcome Prediction of Subarachnoid Hemorrhage Using Advanced Convolutional Neural Networks

Ammoren Edward Dohm, BS | Wake Forest University
Validation of an Imaging-based Mathematical Model for Differentiating Radiation Necrosis From Tumor Progression Following Stereotactic Radiosurgery for Brain Metastases

Brandon Kenneth-Kouso Fields, BA | University of Southern California
Quantitative Magnetic Resonance Imaging (Q-MRI) for the Assessment of Soft-tissue Sarcoma Necrosis, Viable Tumor Volume, and Treatment Response with Comparison to Contrast-enhanced Ultrasound (CEUS)

Chengcheng Gui | Johns Hopkins University
Radiomic Modeling to Predict Risk of Vertebral Compression Fracture After Stereotactic Body Radiation Therapy for Spinal Metastases

Yu-hui Huang, MSc | University of Illinois Health
Characterizing Associations Between T-cell Populations in Hepatocellular Carcinoma and Clinicopathological Features and Outcomes

Amit Jethanandani, MPH | The University of Texas MD Anderson Cancer Center
Predicting Radiation-attributable Changes in the Temporomandibular Joints of Nasopharyngeal Cancer Patients

Kunal Baiju Karani, BA | Cincinnati Children's Hospital Medical Center
Ultrasound-enhanced Cerebrovascular Thrombolysis in an in Vivo Porcine Model

Tae Kyung Kim | Johns Hopkins University
Development and Visual Assessment of a Deep Learning System for Automated Tuberculosis Screening Using Chest Radiographs

Connor Jarrett Kinslow | Columbia University
Targeting IDH1-mutant Gliomas with Radiation Therapy and Glutamine Blockade

Christopher Lau, BS | University of Southern California
Association of CT Texture and Epigenomics in Clear Cell Renal Carcinoma

John E. Miller, BA | University of Alabama at Birmingham
Comparison of Liver Surface Nodularity Score and Ultrasound Elastography for Predicting Cirrhosis Decompensation

Thomas Park, BA | The Medical College of Wisconsin
Does Implementation of an Effective Midline Catheter Program for Vascular Access in a Large Academic Hospital Decrease Rates of Central Line Associated Bloodstream Infections?

Christian Park, BS | Alabama College of Osteopathic Medicine
Ultra Low Dose PET/MRI Imaging of Crohn's Disease Using a Novel Deep Learning Reconstruction Method

Cortlandt Sellers | Yale University
Immune-profiling and Loco-regional Therapy for Hepatocellular Carcinoma

Junjie Shangquan | Northwestern University
Development of HPF-labeled DC Vaccines for Treatment and Prognosis of Pancreatic Cancer

Katie Shpanskaya, BS | Stanford University
Towards Personalized Prognostics in Pediatric Medulloblastoma: Discovery of MRI-based Radiomic Signatures From a Multi-institutional Cohort

Shanmukha Srinivas | University of California, San Diego
Quantification of Hemodynamics of Cerebral Arteriovenous Malformations After Stereotactic Radiosurgery Using 4D Flow MRI

Alex David Waldman | Emory University
Sexually Dimorphic Multiple Sclerosis Pathogenesis and Progression

Amy E Wilson, BA | Medical College of Wisconsin
Transnasal Sphenopalatine Ganglion Block: An Under Utilized Treatment for Migraines

Anthony D. Yao | Rhode Island Hospital
Artificial Intelligence and Emergent Large Vessel Occlusion: Utilize Deep Learning in the Analysis of CT Angiograms to Aid in the Diagnosis of Emergent Large Vessel Occlusion (ELVO)

EDUCATION SCHOLAR GRANT

Innovation in education can transform the way radiologists learn, understand, and care for patients. This grant encourages development of new methods of teaching and evaluation, and enables effective delivery for lifelong learning. The Education Scholar Grant is a one-year grant of up to \$75,000, two year grants will be considered in exceptional cases.

Eric Steven Bartlett, MD, MPH | University of Toronto
North American Assessment of Early Emergency Radiology Competence Via an Online Simulator with PGY2 Diagnostic Radiology Residents

Aritrick Chatterjee, PhD | University of Chicago
An Interactive App with Multi-parametric MRI - Whole Mount Histology Correlation for Enhanced Prostate MRI Training of Radiologists

Jillian Rebecca Gunther, MD, PhD | The University of Texas
MD Anderson Cancer Center
Development of a Contour Evaluation Platform to Improve Radiation Oncology Education

Michael James Potchen, MD | University of Pittsburgh
Practerra - A Portable Radiology Curriculum for Training, Evaluating and Retaining Radiologists for Africa

John R. Scheel, MD, PhD | University of Washington
Reducing Healthcare System Delays Contributing to Late Stage Breast Cancer Diagnosis in Uganda

RSNA/AUR/APDR/SCARD RADIOLOGY EDUCATION RESEARCH DEVELOPMENT GRANT

This grant helps to build a critical mass of radiology education researchers and promotes the careers of those with passion to advance the science of radiology education around the world. The Education Research Development Grant is a one-year grant of up to \$10,000.

Megan Mills, MD | University of Utah
Eye of the Beholder: Quantitative and Qualitative Measures of Radiology Residents' Perceptual Skills

Kawan S. Rakhra, MD | University of Ottawa
The Radiology E-score: Developing a Dedicated Metric for the Evaluation of Educational Scholarly Activity of Academic Radiologists