



## RSNA Research & Education Foundation

### New Grants Approved for Funding

2022

#### 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. Two-year grant of \$150,000.*

**Amit Gupta, MBBS, MD** | University Hospitals Cleveland Medical Center *Lung T1 Mapping and Non-Contrast MR Angiography: A Noninvasive Method for Assessment of Pulmonary Vasculature and Perfusion Abnormalities in Patients with Chronic Thromboembolic Pulmonary Hypertension*

**Lewis Dirk Hahn, MD** | University of California San Diego *Deep Learning-Based Prediction of Chronic Thromboembolic Pulmonary Hypertension*

**Leslie Lamb, MD** | Massachusetts General Hospital *Strategy to Reduce Disparities in Breast Cancer Risk Assessment Using Artificial Intelligence*

**Yoo Jin Lee, MD** | University of California, San Francisco *Imaging of Active Myocardial Fibrosis Using <sup>68</sup>Ga-FAP-2286*

**Kirti Magudia, MD, PhD** | Duke University *Optimizing Preoperative Assessment and Postoperative Management of Bariatric Surgery Patients with Fully Automated, High Throughput and Normalized Ct-Based Body Composition Analysis*

**Devarati Mitra, MD, PhD** | MD Anderson *Prediction of Radiation Therapy-Associated Toxicity To Correct a Race-Based Disparity*

**Marwan Moussa, MD** | Beth Israel Deaconess Medical Center *Combinational Thermal Ablation and Nanodrug Immunomodulation to Promote Anti-Tumor Immunity*

**Amanda Rose Smolock, MD** | The Medical College of Wisconsin, Inc *Understanding the Effect of Histotripsy on Tumor Hypoxia in a Pancreatic Cancer Model*

**Scott Michael Thompson, MD, PhD** | Mayo Clinic Rochester *Intraindividual Comparison of Hepatic Intraarterial Versus Systemic Intravenous <sup>68</sup>Ga-PSMA PET/CT in Patients with HCC*

**Angela Tong, MD** | New York University Grossman School of Medicine *Added Value of Quantitative MR Imaging to Radiologists and Deep Learning Based Computer Aided Detection of Prostate Cancer on Prostate MRI*

**Christian Balthasar van der Pol, MD** | Christian Balthasar van der Pol, MD *Liver Imaging Reporting and Data System (LI-RADS) Diagnostic Test Accuracy Individual Patient Data (IPD) Meta-Analysis*

**Michael C. Veronesi, MD, PhD** | Indiana University *Development of Neuroimaging Biomarkers Using Simultaneous FET PET and MR CEST for Combination Therapy Against Glioblastoma*

**Vivek Yedavalli, MD** | Johns Hopkins School of Medicine *Deep Learning Models Using Baseline Comprehensive CT Stroke Collateral Imaging in Cerebral Angiographic Collateral, Post Procedural Hemorrhagic Transformation, and Clinical Outcomes Predictions for Increasing Endovascular Thrombectomy Eligibility in the Late Time Window*

## 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. One-year grant of up to \$40,000.*

**Erin F. Alaia, MD** | New York University Grossman School of Medicine *Clinical Utility of Knee and Hip MRI for Atraumatic Pain in Patients Aged 50 and Older: A Comparative-Effectiveness Based Analysis*

**Scott M. Bugenhagen, MD, PhD** | Mallinckrodt Institute of Radiology *Absolute Perfusion Reserve: Theory and Measurement of a New Metric for Coronary Lesion Grading*

**Adam Fang, MD** | University of Maryland School of Medicine *Development and Integration of an Inferior Vena Cava Filter Alert System Using a Novel Natural Language Processing Tool To Identify Eligible Patients for Filter Retrieval*

**Peter Goff, MD, PhD** | University of Washington *Inhibiting the Replication Checkpoint To Augment the Immunogenicity of Radiotherapy*

**Pankaj Gupta, MD** | Postgraduate Institute of Medical Education and Research, Chandigarh *Deep Learning Radiogenomics for Individualized Therapy in Unresectable Gallbladder Cancer*

**Jorge D. Oldan, MD** | University of North Carolina – Chapel Hill *18-Fluorofuranylnorprogesterone (FFNP) PET/CT as a Potential Biomarker of Response to Progesterone Therapy in Complex Atypical Hyperplasia (CAH) and Grade 1 Endometrial Cancer (EC)*

**Jessica Huang Porembka, MD** | University of Texas Southwestern Medical Center *Understanding the Impact of Temporary Testing-Related Health Utilities and Social Determinants of Health on Lung Cancer Screening Participants*

**Harjit Singh, MD** | Johns Hopkins University *Assessment of Indeterminate Biliary Strictures Using Ultrahigh-Resolution Optical Coherence Tomography*

## 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. One-year grant of \$30,000/\$50,000.*

**Arman Avesta, MD** | Yale School of Medicine *Developing Capsule Networks for Brain Image Segmentation*

**Mark Barahman, MD, PhD** | University of California, San Diego *Proton Density Fat Fraction Estimation with Point of Care Nuclear Magnetic Resonance Technology*

**Krister Barkovich, MD, PhD** | University of California, San Diego *Developing a Novel Tumor-Targeting Dual NIRF/MRI Imaging Nanoparticle for Longitudinal Molecular Cancer Imaging*

**Soha Bazayr, MD** | University of Maryland Baltimore *Ultra-High Dose Rate Sparing of Lung Tissue During Radiation Therapy*

**Joshua Brown, PhD** | Emory University *Chemical Exchange Saturation Transfer MRI in Non-Lesional Temporal Lobe Epilepsy Imaging*

**Marwan Moussa, MD** | NYU Grossman School of Medicine *Pilot Study of an Organ-Based Cancer Screening Electronic Application Tool To Improve Cancer Screenings for Sexual and Gender Minority Persons*

**Jeremy N Ford, MD, MBA** | Massachusetts General Hospital *Blood-Brain Barrier Water Exchange in Alzheimer Disease*

**Colbey W. Freeman, MD** | University of Pennsylvania  
Going with the Flow: A Comparison of Brain Perfusion Detected by Ultrasound Microvascular Imaging, Contrast-Enhanced Ultrasound, and Microspheres in a Porcine Model

**Matthew Gallitto, MD** | Columbia University  
*Focused Ultrasound-Enhanced STAT3 Inhibition and Radiosensitization for Diffuse Midline Glioma*

**Ruoqi Gao, MD** | The University of Texas Southwestern Medical Center  
*Targeted Acoustic Activation of Systemic Immunomodulating Nanodroplets as a Novel Immunotherapeutic Platform*

**Elmira Hassanzadeh, MD** | Massachusetts General Hospital  
*Protocol Optimization for Resting State fMRI Under Anesthesia*

**Samuel Jang, MD** | Mayo Clinic – Rochester  
*Contrast-Enhanced Ultrasound and Shear Wave Elastography in Patients Receiving Lymphaticovenous Anastomosis Surgery in the Upper Extremities*

**Noah Kastelowitz, MD, PhD** | Stanford University School of Medicine  
*Circulating Cell-Free RNA as a Predictor of Radiation Therapy Toxicity*

**Cody Keller, MD** | University of California, San Diego  
*Optimization of Quantitative Ultrasound Fat Fraction Estimation in Advanced Nonalcoholic Fatty Liver Disease and Nonalcoholic Steatohepatitis*

**Behnaz Khazai, MD** | Yale University School of Medicine  
*PET Biomarker for Synaptic Density Changes After Radiation Therapy*

**Sean Koerner, MD** | University of Pittsburgh  
*Graduated Spatially Fractionated Radiotherapy: A Novel Technique to Potentiate Immunotherapy Response*

**Min Lang, MD** | Massachusetts General Hospital  
*An Ultrafast 3-Minute MR/MRA Protocol Using Novel MR Acceleration and AI-Assisted Reconstruction Techniques for Evaluation of Acute Ischemic Stroke*

**Matthew D. Lee, MD** | NYU Langone Health  
*Correlation of MRI With Intraoperative 5-Aminolevulinic Acid Fluorescence and Stimulated Raman Histology in Glioblastomas*

**Ningcheng Li, MD** | Oregon Health & Science University  
*Chronic Post-Thrombotic Venous Biomechanical Changes and Impact on Response to Venous Intervention*

**William Lo, MD, PhD** | Washington University in St Louis  
*Integrin-Targeted PET Imaging and Therapeutics To Predict and Mitigate Radiation-Induced Pulmonary Fibrosis*

**Jennifer Ma, MD** | Memorial Sloan Kettering Cancer Center  
*Radiotherapeutic and Tumor Microenvironmental Determinations of Response to Immune Checkpoint Blockade in DNA Repair-Deficient Breast Cancer*

**Gohar Shahwar Manzar, MD, PhD** | The University of Texas MD Anderson Cancer Center  
*Evaluating and Optimizing Radiotherapy Immunoconditioning to Enhance CAR-NK Cell Therapy for Head and Neck Cancer*

**Marcela Marsiglia, MD, PhD** | Massachusetts General Hospital  
*Assessment of the Diameter and Flow of the Ophthalmic and Ciliary Arteries in Patients with Advanced Dry Age-Related Macular Degeneration Using 7 Tesla MRI*

**Aram S. Modrek, MD, PhD** | New York University Grossman School of Medicine  
*DNA Damage Drives Genome Reorganization in Glioblastoma*

**Sujoy Mukherjee, MD** | The University of Texas Southwestern Medical Center  
*Liver Health Outcome of Longstanding Hepatic Steatosis: A Longitudinal Cohort Study of the Dallas Heart Study Population*

**Veit Sandfort, MD** | Stanford  
*Minimizing Human Labeling Effort in Cardiovascular Deep Learning Segmentation to Enable Comprehensive Risk Assessment in Type B Aortic Dissection*

**Michael Vincent Sherer, MD** | University of California, San Diego  
*Improving Contouring Training for Radiation Oncology Residents via Implementation of Novel Curricular Elements Using an Interactive Online Contouring Platform*

**Nadia Solomon, MD** | Yale New Haven Hospital  
*Postmortem Imaging for Investigation of Disease Pathophysiology, Mechanisms of Injury, and Cause of Death*

**David J. Tischfield, MD, PhD** | University of Pennsylvania  
*Functional Metabolic Imaging for HCC Subtyping and Response Prediction*

**Ophir Vermesh, MD** | Stanford University School of Medicine  
*Engineering Genetically Encoded Synthetic Reporters for Dual Breath- and Imaging-Based Early Cancer Detection*

**Gregory J. Wehner, MD, PhD** | Mallinckrodt Institute of Radiology  
*Predicting Permanent Pacemaker Implantation After Transcatheter Aortic Valve Replacement from Aortic Annulus Shape Models Derived From Pre-Procedural Computed Tomography*

**John Raymond Zech, MD, MA** | New York Presbyterian – Columbia  
*Personalized Detection of Pediatric Upper Extremity Fractures Using Deep Learning-Based Object Detection*

## 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. Grant of \$3,000, matched by the sponsoring department.*

**Emily Avery, BA** | Yale School of Medicine  
*Deep Learning Assessment of Admission CTAs for Prognostication of Acute Large Vessel Occlusion Stroke*

**Ernest Barral, BS** | Duke University Hospital  
*Evaluation of Short- and Long-Term Clinical Outcomes in Patients Following Intervention for Pulmonary Embolism*

**Joseph A. Behnke, PhD** | Emory University  
*Assessment of White Matter Microstructural Integrity in Postconcussion Vestibular Dysfunction (PCVD) Using Diffusion Tensor Imaging (DTI) and Neurite Orientation Dispersion and Density Imaging (NODDI)*

**Drew Bergman, BA** | Dartmouth-Hitchcock Medical Center  
*Epigenetic Mechanisms of the FLASH Radiotherapy Effect*

**Rahul Chandrupatla, BS** | University of California, San Diego  
*Deep Learning Visualization and Quantification of Mechanical Dyssynchrony in Cardiac MRI*

**Gunvant Chaudhari, BS** | University of California, San Francisco  
*Modeling Risk of Progression to Lung-RADS 4 From a Benign Lung Cancer Screening CT Using Imaging and Clinical Data*

**Michelle Clark, BA** | Memorial Sloan Kettering Cancer Center  
*Predicting Lung Adenocarcinoma Histology Subtypes Using Deep Learning Methods*

**Jamie Clarke** | University of Miami  
*Amplified Imaging of the Pediatric Brain*

**Erin Gaudette, BSc, MSc** | Dalhousie University Faculty of Medicine  
*Development of a Multi-Parametric Model To Distinguish Between Pseudoprogression and Progression of Glioblastoma Multiforme*

**Amanda Gong, BA** | The University of California, Los Angeles  
*Deep Learning in RECIST Oncology Response Assessment: Automated New Lesion Detection*

**Prateek C. Gowda, BS** | Johns Hopkins University  
*Understanding the Hemodynamics Behind the “Beats-of-Stasis” Embolization Endpoint Using a Multiparametric “In Vitro” Model of Transarterial Embolization*

**Lindsey Greenlund, BS** | University of Minnesota  
*Comparison of Myeloid Derived Suppressor Cells in Tumor Tissue and Peripheral Blood in Head and Neck Cancer Patients*

**Daniel Grits** | Cleveland Clinic

*A Comparative and Correlative Evaluation of Early to Late-Stage Osteoarthritis in Human Knee Cartilage Utilizing Clinical and Preclinical MRI Imaging (3T & 7T) With Histopathology and Immunohistochemistry As the Standard*

**Amir Hasani** | National Institutes of Health

*Similarities and Differences of Lung Cysts in LAM and BHD Using Radiomics and Machine Learning on High-Resolution CT scan*

**Janson Kappen** | University of Western Ontario

*Visualization Tools to Aid Vascular Assessment in Pancreatic Adenocarcinoma Staging CT*

**Mihir Khunte, BS** | Rhode Island Hospital

*Development and Clinical Validation of Fully Automated Artificial Intelligence Pipeline for Longitudinal Tracking of Kidney Health on Magnetic Resonance Imaging*

**Michael Kozuch, MPH** | The Medical College of Wisconsin, Inc

*Impact of a Standardized Vertebral Compression Fracture Management Pathway on Healthcare Resource Utilization and Opioid Use*

**Soryan Kumar** | Rhode Island Hospital

*Deep Reinforcement Active Learning for Post-Treatment Brain Tumor Segmentation with Quality Estimation*

**Andrew Lancaster** | Johns Hopkins University

*A Deep Learning-Based Multi-Task Artificial Intelligence System for Quantitative Medical Image Analysis of Thoracic Abnormalities on Chest CT*

**Jonathan Lee, BS** | Keck School of Medicine of USC

*Predicting Bone Density from Spine CT and Demographic Data With a Multimodal Regression Network*

**Zachary Miller** | University of Wisconsin-Madison

*Improving MRI Detection of Pulmonary Nodules Using High Resolution, End-Inspiratory Breath Held 3D UTE Lung Imaging*

**Arif Musa, MS** | University of California Irvine Medical Center

*(EMPOWER) Evaluating Medical Student Participation, Observation, and Workstation Education in Radiology: Implementing a Hybrid Learning Model in Diagnostic Radiology Electives*

**Daniella Portal, BS** | Rutgers Cancer Institute of New Jersey

*Evaluating the Role of Adaptive Radiation Planning on Reducing Pneumonitis in Patients with Non-Small Cell Lung Cancer*

**Divya Ramakrishnan, BS** | Yale School of Medicine

*PACS-Based Volumetric Analysis to Improve Outcome Prediction in Pediatric Neuro-Oncology Clinical Trials*

**Alex G. Raman, MS** | University of Southern California

*A Federated Learning System for Radiologic Image Segmentation*

**Ashwin Reddy** | Rhode Island Hospital

*Artificial Intelligence for Pancreatic Cancer Evaluation and Outcome Prediction from Imaging and Clinical Data*

**Sylvia Rhodes, BA** | University of Pennsylvania

*Improving Submission Quality of Clinical Trials That Use Molecular Imaging or Therapy: Findings of the University of Pennsylvania Radiation Research Safety Committee*

**Arrix Ryce, MSc** | Emory University School of Medicine

*Interpretable Machine Learning for Management of Abdominal and Pelvic Injuries Caused by Blunt Trauma: A Feasibility Study With the Trauma Quality Improvement Program Registry*

**Jeremy Stephan** | Rush University Medical Center

*Derivation and Validation of an Algorithm for Predicting Major Adverse Health Events Following Low-Dose CT Lung Cancer Screening*

**Walter Zhao** | Case Western Reserve University

*Enhancing Robustness of Magnetic Resonance Radiomics Using Quantitative MR Fingerprinting*

## EDUCATION PROJECT AWARD

*This project award is intended to recognize and highlight the impact of educators by providing supplemental funding of up to \$20,000 for new or ongoing education projects.*

**Masis Isikbay, MD** | University of California, San Francisco

*Standardized Web Based Call Preparation Curriculum for Diagnostic Radiology*

**Leanne Yuanci Lin, MD** | University of Michigan Hospital

*Applications for 3D Models and Augmented Reality for Patient Education and Outreach*

**Jordan David Perchik, MD** | University of Alabama at Birmingham

*Artificial Intelligence Literacy: Developing a Multi-Institutional Infrastructure for AI Education*

**Sidak Pannu, MD** | Dartmouth Hitchcock Medical Center

*DartRad – A Radiology Education Portal by Medical Students for Medical Students*

**Kareem Rayn, MD** | New York Presbyterian Hospital - Columbia University Irving Medical Center

*Transition to Independent Practice Curriculum Year (TIPCY)*

## DEREK HARWOOD-NASH INTERNATIONAL EDUCATION SCHOLAR GRANT

*Innovation in education can transform the way radiologists learn, understand, and care for patients. This grant funds investigators looking to affect radiology education around the world. One-year grant of up to \$75,000; two year grants will be considered in exceptional cases.*

**Toma Omofoye, MD** | MD Anderson Cancer Center

*Development of a Customized Interactive Web-Based Global Breast Imaging Curriculum With Self-Assessment for Radiologists in Low- and Middle-Income Countries*

**Katrina A. McGinty, MD** |

University of North Carolina, Chapel Hill  
*International Peer Learning: The Future of Global Imaging Education*

## 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 a passion to advance the science of radiology education. One-year grant of up to \$10,000.*

**Jonathan Martin, MD** | Duke University School of Medicine

*Development of a Series of Didactic Portable Radiology Escape Rooms for Undergraduate Medical Education*