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.

Harrison X. Bai, MD | Rhode Island Hospital
Deep Learning-based Response Assessment and Outcome Prediction for Transarterial Chemoembolization Treatment of Hepatocellular Carcinoma

Joseph M. Caster, MD, PhD | University of Iowa
Utilizing Hypofractionated Radiation, PARP Inhibition, and T-cell Checkpoint Inhibitors to Stimulate Adaptive Anti-tumor Immune Responses in Colorectal Tumor Models

Benjamin H. Kann, MD | Massachusetts General Hospital
An Imaging-based, Artificial Intelligence-driven Platform for Pretreatment Identification of Extranodal Extension in Head and Neck Cancer

Iman Khodarahmi, MD, PhD | New York University
Optimization of the Radiofrequency Pulse Polarization for Reduction of Metal Related Artifacts in 3T Magnetic Resonance Imaging of the Hip Arthroplasty Implants

Andreas M. Rauschecker, MD, PhD | University of California, San Francisco
Human-interpretable AI-based Quantitative Metrics for Primary CNS Lymphoma Prognosis

Hersh Sagreiya, MD | University of Pennsylvania
Automated Hepatic Fat Quantification Using Machine Learning

Hiram Shaish, MD | Columbia University
Utility of Multiparametric MRI with Advanced Sequences and Radiomics for Predicting Success of Sperm Fine-needle Aspiration (FNA) Mapping in Patients With Non-obstructive Azoospermia

Sreeharsha Tirumani, MBBS, MD | University Hospitals Cleveland Medical Center
Integrating ADC Values and MR Fingerprinting With Clinical Parameters in the Evaluation of PI-RADS 3 Lesions: Utility in Predicting Clinically Significant Prostate Cancer

Brent D. Weinberg, MD, PhD | Emory University
Automated Longitudinal Imaging Tracking Tools to Guide Clinical Decision Making in Brain Tumor Patients
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.

John Conklin, MD, MSc | Massachusetts General Hospital
Optimization and Clinical Evaluation of a 2-minute Brain MRI Exam for Evaluation of Acute Intracranial Pathology in Emergency and Inpatient Settings

Steven Y. Huang, MD | The University of Texas M.D. Anderson Cancer Center
Development of a Bioresorbable Mesenchymal Stem Cell-loaded Radiopaque Polymer to Improve Rates of Arteriovenous Fistula Maturation and Long-term Patency

Maxim Itkin, MD | University of Pennsylvania
Quantification of Lymph Flow in the Thoracic Duct Using Dynamic CT Lymphangiography

Stephanie Y. Jo, MD, PhD | University of Pennsylvania
DOT1L and Osteoarthritis: Towards a Precision Medicine Approach to Osteoarthritis

Dae Hee Kim, MD | Memorial Sloan Kettering Cancer Center
Interplay of Circulating Effector T-cell Populations in the Systemic Tumor Microenvironment After Liver-directed Locoregional Therapies on Metastatic Melanoma

Ryan M. Kohlbrenner, MD | University of California, San Francisco
Pharmacokinetic Comparison of Selective Prostatic Arterial and Intravenous PSMA Radioligand Infusions in Treatment-naïve Prostate Cancer Patients

Christopher D. Malone, MD | Washington University in St Louis
Harnessing Cerenkov Emission From Yttrium-90 (Y-90) as a Source of Photodynamic Therapy to Enhance Radioembolization for Liver Tumors

Eric D. Miller, MD, PhD | The Ohio State University
Utilization of Dynamic Digital PET for Prediction of Histopathologic Response Following Neoadjuvant Chemoradiation for Esophageal Cancer

S. Ali Nabavizadeh, MD | University of Pennsylvania
Dynamic Contrast-enhanced and Ferumoxytol-enhanced MRI to Predict the Reliability of Circulating Tumor DNA Detection in Adult Patients with Glioblastoma

Amanda R. Smolock, MD | The Medical College of Wisconsin, Inc
Histotripsy as a Technique for Vein Occlusion

Joseph N. Stember, MD, PhD | Memorial Sloan Kettering Cancer Center
Eye Tracking with Speech Recognition to Semi-automate Deep Learning from Clinical Interpretation: Application to Brain Metastases

Shamar J. Young, MD | University of Minnesota
Immunomodulatory Effects of Radioembolization: A Prospective Study of Peripheral Monocyte Modulation, Immune Cell Infiltration, and Cytokine Variation

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.

Julie Y. An, BS | University of California, San Diego
Using Electronic Alerts to Improve Compliance of Imaging-based HCC Surveillance in At-risk Patients: A Prospective, Randomized Controlled Trial

Evan DC Calabrese, MD, PhD | University of California, San Francisco
MR Imaging Deep Learning and Radiomics Features for Guiding Individualized Therapy in Diffuse Gliomas

Jason Chiang, MD, PhD | University of California, Los Angeles
Computational Modeling of Combination Transarterial Embolization and Microwave Ablation Therapy Using 4D Flow MRI in an in Vivo Porcine Liver Model

Alan Chu, MD, PhD | University of Pennsylvania
Improved Localization and Quantification of Disease in Frontotemporal Lobar Degeneration With High-resolution MRI at 7 Tesla
Brendan C. Cline, MD | Duke University
Safety and Endocrine Sequelae of Particle Embolization of the Pancreas in a Porcine Model

Philip G. Colucci, MD | Joan & Sanford I. Weill Medical College of Cornell University

Mohammad Fakhri, MD | Washington University in St Louis
Improving Resting-state fMRI Localization Precision for Presurgical Eloquent Cortex Mapping

Joseph A. Frankl, MD | University of Texas Southwestern Medical Center
Comparison of Quantitative Molecular Imaging to a Tissue-based Gold Standard for Brown Adipose Tissue Activity

Colbey W. Freeman, MD | University of Pennsylvania
Detection of Brain Perfusion Abnormalities in a Porcine Model of ECMO With Contrast-enhanced Ultrasound

Peter Goff, MD, PhD | University of Washington
DNA Damage Response Inhibitors & Radiation for Merkel Cell Carcinoma Immunogenic Cell Death

Brian Hurt, MD, MS | University of California, San Diego
Probabilistic Visual Augmentation of Radiographs: Enhancing Physician Interpretation with Deep Learning

Angela Y. Jia, MD, PhD | Johns Hopkins University
A Pilot Study of HPV E7-specific Soluble T-cell Receptor Radiopharmaceutical Therapy

Matthew D. Li, MD | Massachusetts General Hospital
Automated Assessment of Change in Pulmonary Edema on Chest Radiographs Using a Siamese Neural Network

Ece Meram, MD | University of Wisconsin, Madison
A Quantitative Angiographic Technique for Characterizing Flow Through Normal and Stenotic Iliofemoral Arteries

Christopher L. Newman, MD, PhD | Indiana University School of Medicine
Assessing Cortical Bone Porosity With Magnetic Resonance Imaging in Animals with Chronic Kidney Disease

Charlie C. Park, MD, MS | Emory University
Assessment of Hemodynamic Flow Patterns in Patients with Internal Carotid Webs Compared to Patients with Atherosclerotic Plaques: A 4D Flow MRI Study

Kelli B. Pointer, MD | University of Chicago
Non-canonical NF-κB Signaling Promotes Faster Tumor Growth and Metastases that can be Inhibited Through Blockade of p52 Signaling

Thomas A. Reher, MD | University of Wisconsin
Multi-compartment Diffusion Weighted Imaging Across the Lifespan in Healthy Aging and Alzheimer’s Disease

Quaovi H. Sodji, MD, PhD | Stanford University
The Complement C3a Inhibits Natural Killer Cell Cytotoxic Activity and Infiltration into the Tumor Microenvironment of Pancreatic Cancer

Jae Ho Sohn, MD | University of California, San Francisco
Longitudinal Risk Stratification of Pulmonary Nodules in National Lung Cancer Screening Data Using Gated Recurrent Unit

Jennifer A. Stanley, MD, PhD | Washington University in St Louis
Exploiting Radiation Induced Anti-tumor Immunity in Advanced-stage and Metastatic Ovarian Cancer

Lisa Sudmeier, MD, PhD | Emory University
Characterization of Cd8+ T-cells in Brain Metastases and Correlation with Response to Stereotactic Radiosurgery

Veena Venkatachalam, MD, PhD | Massachusetts General Hospital
Using Live Cell Fluorescence Microscopy to Study the Effect of Common p53 Mutations on Cell Fate in Response to Ionizing Radiation
**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.

<table>
<thead>
<tr>
<th>Name</th>
<th>University/Medical School</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bita Behrouzi</td>
<td>Geisel School of Medicine at Dartmouth</td>
<td>Prognostic Value of Longitudinal MRI Radiomic Features in Glioblastoma Before, During, and After Radiation Therapy</td>
</tr>
<tr>
<td>David Cao</td>
<td>University of Chicago</td>
<td>CT Radiomic Features of Lymph Node Metastases in Head and Neck Cancer</td>
</tr>
<tr>
<td>Nathan Chai</td>
<td>Yale University</td>
<td>A Machine Learning Model for the Prediction of HCC Recurrence After Thermal Ablation Using Imaging and Clinical Features</td>
</tr>
<tr>
<td>Shin Mei Chan, BS</td>
<td>Yale University</td>
<td>Virtual Reality for Interventional Radiology: Global Training Applications</td>
</tr>
<tr>
<td>Kevin Chen, BS</td>
<td>The Washington University</td>
<td>Urine Tumor DNA as a Biomarker for Bladder-sparing Approaches to Muscle-invasive Bladder Cancer</td>
</tr>
<tr>
<td>Monica Cheng</td>
<td>Indiana University School of Medicine</td>
<td>Novel Molecular Imaging Approach for Whole Body Tumor Perfusion Assessment</td>
</tr>
<tr>
<td>Rachel Choi</td>
<td>Yale University</td>
<td>Deep Learning Derived Imaging Biomarkers for Breast Cancer Outcomes</td>
</tr>
<tr>
<td>Corbin D. Ester</td>
<td>Massachusetts General Hospital</td>
<td>Deep Learning for Determining Diagnostic Image Quality and Hip Alignment on Ultrasound of Infants With Suspect Developmental Dysplasia of the Hips (DDH)</td>
</tr>
<tr>
<td>Feyisope R. Eweje, BS</td>
<td>University of Pennsylvania</td>
<td>Deep Learning Model for MR-based Classification of Bone Lesions: Extensions to Clinical AI Applications</td>
</tr>
<tr>
<td>Alexey Gurevich, BS, MS</td>
<td>University of Pennsylvania</td>
<td>Characterization and Modulation of the Embolic-associated Immune Landscape Within Hepatocellular Carcinoma</td>
</tr>
<tr>
<td>Celina Hsieh</td>
<td>Rhode Island Hospital</td>
<td>Deep Learning for Fully-automated Assessment of Treatment Response Following Trans-arterial Chemoembolization for Hepatocellular Carcinoma</td>
</tr>
<tr>
<td>Tina Q. Huang</td>
<td>University of California, Los Angeles</td>
<td>Cost-effectiveness of Surveillance Versus Prophylactic Cranial Irradiation for Extensive-stage Small Cell Lung Cancer</td>
</tr>
<tr>
<td>Prayash Katliwala, BSC</td>
<td>University of Alberta</td>
<td>Inter-reader and Intra-reader Reliability of the O-RADS Risk Stratification and Management System Amongst Less Experienced Radiologists Practicing in a North American Institution</td>
</tr>
<tr>
<td>Young Joon Kwon, BS, MS</td>
<td>Icahn School of Medicine at Mount Sinai</td>
<td>Machine Learning Based Compression Algorithm for Greater Public Health Outreach of Radiological Resources</td>
</tr>
<tr>
<td>Kaitlynn J. Motley, BS</td>
<td>University of Maryland</td>
<td>Predicting Outcome After Renal Trauma Using Voxelwise Measurements of Laceration and Associated Bleeding Features</td>
</tr>
<tr>
<td>Brennan Olson, BA</td>
<td>Oregon Health &amp; Science University</td>
<td>Evaluation of Automated Vessel Detection Software for Upper and Lower GI Bleeds</td>
</tr>
<tr>
<td>Leland Pung, MEng</td>
<td>Duke University</td>
<td>Establishment and Validation of Cervical Vertebrae Muscle Wasting as a Marker of Sarcopenia for Patients with Head and Neck Cancer</td>
</tr>
<tr>
<td>Simone Raiter</td>
<td>Rosalind Franklin University</td>
<td>Creating a Timeline of Immune Response to DEB-TACE to Optimize Combined Therapy with Immune Checkpoint Blockade in an Animal Model of HCC</td>
</tr>
<tr>
<td>Diwash Thapa, BS</td>
<td>University of North Carolina</td>
<td>Development of a Low Dose 3D Spinal Imaging Prototype with Carbon Nanotube X-ray Sources</td>
</tr>
</tbody>
</table>
Thi My Linh Tran, BS | Warren Alpert Medical School of Brown University

*Prediction of Outcomes of Acute Ischemic Stroke Based on CT Angiography (CTA) and Digital Subtraction Angiography (DSA) before Mechanical Thrombectomy Using Machine Learning*

Nathan M. Velarde | University of California, San Francisco

*Determining Predictors of When Systematic Transrectal Ultrasound Guided Biopsy Adds Value to the Detection of Clinically Significant Prostate Cancer*

William D. Wagstaff, Jr | University of Chicago

*Elucidating the Impact of Short Regulatory RNA on Acquired Vemurafenib Resistance and Radiosensitivity in Human Melanoma Cell Lines*

Ryan Wahidi | Washington University in St. Louis

*Quantification of PCR in Peripheral Muscle Using Cest for Patients With Type II Diabetes Mellitus*

Alexander D. Wong, BSc, MPH | Dalhousie University

*Development and Validation of a Deep Machine Learning Tool for Automated Intraventricular Hemorrhage Segmentation and Volume Measurement Using 3D Convolutional Neural Networks*

Ianto L. Xi | University of Pennsylvania

*Deep Learning for Differentiation of Steatohepatitis and Steatosis*

Maria Zhu, MSc | University of British Columbia

*Assessment of CT Perfusion Software at Variable Acquisition Times to Predict Final Infarct Volume*

**EDUCATION DEVELOPMENT GRANT**

To enhance education for the benefit of radiology faculty as educators and radiologists or radiology support personnel through creation of educational content, educational products or other innovative means. Grants from $30,000 (minimum) to $75,000 (maximum) per year for up to 3 years projects are available.

Andrea S. Doria, MD | The Hospital for Sick Children

*Towards Enhancing the Value of Imaging by Communicating With Data: Developing the Next Generation of LQ2 (Qualitative-quantitative Leaders)*

**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.

Fabian M. Laage Gaupp, MD | Yale University

*Development and Evaluation of an Accredited Interventional Radiology Training Program in Tanzania*

**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.

Gabrielle W. Peters, MD | Yale University

*High Yield Physics Video Series (Hi-Phy) Pilot from a Multi-institutional Collaboration*