RSNA R&E Foundation Announces 2014 Grant Recipients

The RSNA Research & Education (R&E) Foundation funded 94 grants totaling $3.6 million. This represents a 25 percent funding rate and the highest amount ever awarded by the Foundation. The Foundation’s Board of Trustees thanks the Vanguard companies, individuals and private practices whose generous contributions have made the following grants possible.

**RESEARCH SCHOLAR GRANT**

Stephen R. Bowen, Ph.D.
University of Washington
Multimodality Quantitative Molecular Imaging for Personalized Radiation Therapy of Lung Cancer Through Differential Tumor Dose Escalation and Functional Lung Avoidance

Wolf E. Heberlein, M.D.
University of Arkansas for Medical Sciences
IRE-based Multi-modality Loco-regional Tumor Therapy for Pancreatic Cancer

Charles Y. Kim, M.D.
Duke University Medical Center
Trans-arterial Embolization of Hypervascular Liver Tumors with Electrically Conductive Particles for Modulation of Percutaneous Radiofrequency Ablation Zone Size and Configuration

Michael A. Ohliger, M.D., Ph.D.
University of California, San Francisco
Non-invasive Monitoring of Liver Inflammation and Fibrosis Using Hyperpolarized Carbon-13 MRI

Sean Sung hun Park, M.D., Ph.D.
Mayo Clinic, Rochester
11C-Choline PET/CT Image-Guided Stereotactic Ablative Radiotherapy (IG-SABR) in Oligometastatic Prostate Cancer

Habib Rahbar, M.D.
University of Washington
Improving Treatment Outcomes of Ductal Carcinoma in Situ with Breast MRI

Haris Iqbal Sair, M.D.
The Johns Hopkins University
Intrinsic Language Network Assessed with Resting State Functional Magnetic Resonance Imaging: Potential Role in Presurgical Mapping

Atul Bhanudas Shinagare, M.D.
Brigham and Women’s Hospital, Harvard Medical School
Optimization of Chest CT Utilization in Patients with Advanced Ovarian Cancer

Janice S. Sung, M.D.
Memorial Sloan Kettering Cancer Center
Clinical Utility of Whole Breast Screening Ultrasound in Patients Undergoing Digital Breast Tomosynthesis

Sarah Beth White, M.D.
Medical College of Wisconsin
Magnetically Triggered Oxaliplatin Release for the Treatment of Colorectal Liver Metastasis

Junqian Xu, Ph.D.
Icahn School of Medicine at Mount Sinai
Development of Whole Spinal Cord Functional Assessment with Multiband Magnetic Resonance Imaging

**RESEARCH SEED GRANT**

Mohamed Abazeed, M.D., Ph.D.
Cleveland Clinic
Integrative Radiogenomics and Precision Therapy in Squamous Cell Lung Cancer

Ayaz Aghayev, M.D.
Brigham and Women’s Hospital, Harvard Medical School
The Gravitational Gradient in Abdominal Aortic Aneurysms

Michael M. Zeineh, M.D., Ph.D.
Stanford University
Multimodal MRI to Detect Brain Injury in Athletes

**ASNR/RSNA Research Scholar Grant**

Jeff L. Zhang, Ph.D.
University of Utah
Real-time Monitoring of Renal Hypoxia and Hypoperfusion with Quantitative MRI

**AGFA Health Care**

Sunnybrook Health Sciences Centre, University of Toronto
CT Myocardial Tissue Characterization: Utility in CTA Bypass Graft Assessment

**TOSHIBA**

Michael M. Zeineh, M.D., Ph.D.
Stanford University
Multimodal MRI to Detect Brain Injury in Athletes

Ayaz Aghayev, M.D.
Brigham and Women’s Hospital, Harvard Medical School
The Gravitational Gradient in Abdominal Aortic Aneurysms

Jalal B. Andre, M.D.
University of Washington
Arterial Spin Labeling - A Novel and Accurate MRI Metric to Predict Clinically Significant Vasoospasm Following Aneurysmal Subarachnoid Hemorrhage
Amy Marie Fowler, M.D., Ph.D.
University of Wisconsin-Madison
Impact of Endocrine-resistant Estrogen Receptor-alpha Variants on [18F] Fluoroestradiol Imaging of Breast Cancer

PHILIPS

Brian Andrew Hrycushko, Ph.D., M.S.
The University of Texas Southwestern Medical Center
Local Hypothermia as a Radioprotector During Prostate Stereoelectric Body Radiotherapy

Jacob L. Jaremko, M.D., Ph.D.
University of Alberta
3D Ultrasound of Infant Hips: Toward an Understanding of Normal Development and Improved Detection of Hip Dysplasia

Eugene Jon Koay, M.D., Ph.D.
The University of Texas MD Anderson Cancer Center
Predicting Gemcitabine Delivery in Pancreatic Cancer with Principles of Mass Transport

PHILIPS

Wen Ling, Ph.D.
University of Pittsburgh
Selective and Quantitative Detection of Proteoglycan in disc by iTIP gagCEST

Gregory Jon Nadolski, M.D.
Hospital of the University of Pennsylvania
Near Infrared Fluorescence Imaging of Matrix-Metalloprotease-2 Activity as a Biomarker of Vascular Remodeling in Hemodialysis Access

Edwin H.G. Oei, M.D., Ph.D.
Erasmus MC, University Medical Center Rotterdam, Netherlands
Quantitative Dynamic Contrast-enhanced MRI for Studying Bone Perfusion

Akhiresh Keshav Sista, M.D.
Joan and Sanford I. Weill Medical College of Cornell University
Assessment of a Multi-variable Physiologic Profile’s Ability to Determine Catheter-directed Thrombolysis Efficacy in Real-time using a Porcine Model of Submassive Pulmonary Embolism

FUJIFILM

Joel M. Stein, M.D., Ph.D.
Hospital of the University of Pennsylvania
Glioblastoma Radiosensitization with Polymeric Micelles Containing Gold and Iron Oxide Nanoparticles

Aida Lui Tam, M.D.
The University of Texas MD Anderson Cancer Center
Developing an Electroporation and Nanoparticle-based Therapeutic Platform for Bone Metastases: Evaluation of Local Delivery Strategies to Optimize Intratumoral Nanoparticle Uptake

Tokihiro Yamamoto, Ph.D.
University of California, Davis
CT-based Pulmonary Gas Exchange Imaging for Personalized Radiotherapy

PHILIPS

Hamza Alizai, M.D.
Resident at The University of Texas Health Science Center at San Antonio
Research conducted at New York University School of Medicine
Identification of Novel Biomarkers of Bone Strength and Fracture Risk via High Resolution, High Field MRI

Jacob D. Brown, M.D., Ph.D.
University of California, San Francisco
A Novel Image-guided Pain Treatment: Selective Deletion of Nociceptors by Intraganglionic Injection of Resiniferatoxin

Joseph Robert Evans, M.D., Ph.D.
University of Michigan
Investigating the Role of SCHLAP1, a Novel Long Noncoding RNA, in Prostate Cancer Radioresistance

Matthew G. Geeslin, M.D., M.S.
University of Virginia
Evaluation of Spiral-based 3D MR Thermometry for Brain Applications of MR-guided Focused Ultrasound in a Porcine Model

TOSHIBA

Leading innovation

Kate Hanneman, M.D.
Stanford University School of Medicine
Combined Positron Emission Tomography-Magnetic Resonance Imaging for the Diagnosis of Cardiac Sarcoïdosis

Ralph Schlaeger Charitable Foundation
Research Fellow Grant

Susie Yi Huang, M.D., Ph.D.
Massachusetts General Hospital, Harvard Medical School
Ultra-high Gradient Diffusion MRI for Characterizing Axonal Pathology in Multiple Sclerosis

Jana Ivanidze, M.D., Ph.D.
Joan and Sanford I. Weill Medical College of Cornell University
Blood Brain Barrier Permeability and Molecular Markers of Inflammation: Interplay and Significance for the Development of Global Cerebral Edema in Patients with Aneurysmal Subarachnoid Hemorrhage

Kate Hanneman, M.D.
Stanford University School of Medicine
Combined Positron Emission Tomography-Magnetic Resonance Imaging for the Diagnosis of Cardiac Sarcoïdosis

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Blood Brain Barrier Permeability and Molecular Markers of Inflammation: Interplay and Significance for the Development of Global Cerebral Edema in Patients with Aneurysmal Subarachnoid Hemorrhage

Jesse Jones, M.D.
University of California, Los Angeles
MRI Surveillance of Induced Pluripotent Stem Cells for Stroke Using Gadolinium Nanoparticles

Nima Kokabi, M.D.
Emory University School of Medicine
Disparities in Utilization of Contemporary Interventional Radiology-based Locoregional Therapies for Unresectable Hepatocellular Carcinoma and Impacts on Survival: a SEER-Medicare Population Study

Kyungmouk Steve Lee, M.D.
Joan and Sanford I. Weill Medical College of Cornell University
Catheter-directed Intraproctal Delivery of Cell Therapy for Liver Regeneration: a Feasibility Study in a Large Animal Model of Cirrhosis

Stephanie Markovina, M.D., Ph.D.
Washington University
Squamous Cell Carcinoma Antigen in Cervical Cancer Prognostication and Response to Therapy

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Christopher Maroules, M.D.
The University of Texas Southwestern Medical Center
Quantification of Volumetric Pulmonary Perfusion Using 3D Arterial Spin Labeled Perfusion MRI: Feasibility and Evaluation in Pulmonary Arterial Hypertension

Prince Research Resident Grant

Nina Nabavizadeh, M.D.
Oregon Health & Science University
Noninvasive, In Vivo Contrast-enhanced Ultrasound and Molecular Imaging of Early Microvascular Changes Following High-dose Radiation Therapy

Kazim Narasin, M.D.
University of California, San Diego
MRI Tracking of Cellular Immunotherapy using Natural Killer Cells and Perfluorocarbon Tracers

Kristin Kelly Porter, M.D., Ph.D.
The Johns Hopkins University
Application of 4D Phase Contrast MRI as a Non-invasive Measure of Treatment Response in Patients with Pulmonary Hypertension

James Spencer Clayton Ronald, M.D., Ph.D.
Duke University Medical Center
Identification of Novel Alternative Splicing Biomarkers of Hypoxia in Breast and Lung Tumors

James Eric Schmitt, M.D., Ph.D.
Hospital of the University of Pennsylvania
Imaging Genomic Analysis of the 22q11 Deletion Syndrome

Nima Nabavizadeh, M.D.
Prince Research Resident Grant

Jennifer Elaine Soun, M.D.
Duke University Medical School
Task-free Presurgical Mapping of Eloquent Cortex using fMRI at Ultrahigh Field Strength (7T) MRI in Patients with Medically Refractory Epilepsy

Silver Anniversary Campaign Pacesetters Research Fellow Grant

Michael C. Veronesi, M.D., Ph.D.
University of Chicago
In Vivo Fate Mapping of Magnetic Nanoparticles in the Brain Following Intranasal Administration using MRI

Alexander Michael Vezeridis, M.D., Ph.D.
University of California, San Diego
In Vivo Ultrasound Imaging and Diagnosis of Implanted Medical Device-related Infections using Microbubbles Targeted to Biofilm

BSNAs Presidents Circle Research Resident Grant

John-Paul J. Yu, M.D., Ph.D.
University of California, San Francisco
Studies on the Effects of Combined Treatment with Metformin and a Dual mTORC1/2 Inhibitor, AZD8055, in Tumor Control of Glioblastomas

RESEARCH MEDICAL STUDENT GRANT

Daniel Arteaga, B.A.
Vanderbilt University
Characterizing Perfusion Territory Dynamics and Vessel Wall Morphology in Patients at Risk for Stroke

Jamaal Benjamin, Ph.D.
The University of Texas Southwestern Medical Center
Enhancing Prognostic value of Computed Tomography (CT) Enterography in IBD Diagnosis

Wilfred Dang, B.H.Sc.
University of Ottawa
What is a Good Quality History and How Does it Affect Accuracy of Interpretation of Acute Abdominal CT?

Samantha Delapena, B.S.
University of Southern California Keck School of Medicine
Contrast Enhanced Ultrasound for Evaluating Antiangiogenic Treatment in Hepatocellular Carcinoma

Philips Healthcare/RSNA Research Medical Student Grant

Adnan Elhammali, B.S.
Washington University
Metabolic Rewiring in PI3K Activated Cervical Cancer

Edward M. Lawrence, B.S.
Enrolled at Albert Einstein College of Medicine
Research conducted at Memorial Sloan-Kettering Cancer Center
Establishing Tumor Heterogeneity in Patients with Metastatic High-grade Serous Ovarian Cancer (HGSOC); Correlating In Vivo Imaging Phenotypes with Histopathology and Immunohistochemistry

Boshen Liu, B.S.
University of Mississippi Medical Center
Rapid Bone Density Screening of Routine CT Images using Color Enhanced Detection (CED)

Tara Martinez, B.S., R.N.
University of Mississippi Medical Center
Use of a Phantom to Develop Imaging Protocols to Quantify Liver Surface Nodularity on CT Images from Multiple Different CT Scanners

Gwendolyn J. McGinnis, B.S.
Oregon Health & Science University
Suppression of the T cell Response and Enhancement of Detrimental Effects of Radiation on the Brain

Kelly Michaelsen, Ph.D.
Geisel School of Medicine at Dartmouth College
Comparing X-ray and Optical Imaging for Breast Density Determination

Leslie A. Modlin, B.A.
Stanford University School of Medicine
Circulating Tumor DNA as a Novel Biomarker for Metabolic Tumor Volume in Non-Small Cell Lung Cancer

Megha Nayyar, B.A.
University of Southern California Keck School of Medicine
Role of Imaging in Active Surveillance of Renal Masses: A Systematic Review of the Literature

Chulhyun Park, B.S.
University of California, San Diego
Medical Center
Effects of Intravenous Gadoxetate Disodium and Flip Angle on Hepatic Proton-Density Fat Fraction Estimation with Multi-echo MR Imaging at 3T
Vezeridis
Benjamin Lawrence
Axial Load Lumbar Intervertebral Disc Changes with Novel T1rho Sequence for In-Vivo Detection of Surgeons Columbia University College of Physicians and Surgeons David Xu, B.A.
Resonance Imaging Enhanced Ultrasound and Magnetic Resonance Imaging Using High-Resolution Dynamic Contrast-Enhanced Ultrasound and Magnetic Resonance Imaging
Developmental Venous Anomalies Structure and Metabolism in the Region of Quantitative Multimodal Analysis of Brain Medical School Massachusetts General Hospital, Harvard Medical School Dmitriy Timerman, B.S.
Adenocarcinoma Nude Mouse Model Tumoral Response in a Pancreatic Gemcitabine Nanoparticle Formulation on Evaluation of Effects of Electroporation and Combination Low-Energy High Intensity Focused Ultrasound (LOFU) and Radiation Therapy (RT): Preclinical Evaluation of Autologous In Situ Vaccination in a Mouse Model of Spontaneously Metastatic Melanoma Arif Rashid, B.S.
Enrolled at University of Pittsburgh School of Medicine; Research conducted at Johns Hopkins Hospital Applying Diffusion Tensor MRI after Radiation Therapy of Pediatric Brain Tumors to Establish Dose Constraints and Predictive Image Biomarkers in the Hippocampus and Periventricular Regions Julia Talley, B.S.
The University of Texas Health Science Center at Houston Evaluation of Effects of Electroporation and Gemcitabine Nanoparticle Formulation on Tumoral Response in a Pancreatic Adenocarcinoma Nude Mouse Model Dmitriy Timerman, B.S.
Massachusetts General Hospital, Harvard Medical School Quantitative Multimodal Analysis of Brain Structure and Metabolism in the Region of Developmental Venous Anomalies Justin R. Tse, B.S.
University of California, Los Angeles Predicting Hepatocellular Adenoma Subtype with Quantitative and Qualitative MRI Features Shri Vyas, B.A.
Duke University School of Medicine Characterization of Early Anti-Angiogenesis Treatment Effects in Colorectal Carcinoma Using High-Resolution Dynamic Contrast-Enhanced Ultrasound and Magnetic Resonance Imaging David Xu, B.A.
Columbia University College of Physicians & Surgeons Novel T1rho Sequence for In-Vivo Detection of Lumbar Intervertebral Disc Changes with Axial Load

James Yoon, B.A.
University of Southern California Keck School of Medicine Analysis of 18F NaF PET-CT Tumor Response Assessment of Skeletal Metastases from Prostate Cancer

Chung Yao Yu, B.A.
University of Southern California Keck School of Medicine Performance of PET Radiotracers in Biochemical Recurrence of Prostate Cancer

Derek Zachman, B.A., M.S.
Oregon Health & Science University Mechanisms of Endothelial-dependent Hematopoietic Stem Cell Repair Following Ionizing Radiation Injury

Marcus Zuo, B.S.
Medical College of Wisconsin Cost-effectiveness of Endovascular vs. Open Surgical Repair for Popliteal Artery Aneurysms

**EDUCATION SCHOLAR GRANT**

Abigail Tripp Berman, M.D.
University of Pennsylvania Design and Analysis of Radiation Oncology Trials (DART): A National Clinical Trials Biostatistics and Epidemiology Curriculum with Online Self-Assessment Modules (SAM)

Maciej A. Mazurowski, Ph.D.
Duke University School of Medicine Improved Education in Digital Breast Tomosynthesis using Machine Learning and Computer Vision Tools

**PHILIPS**

Jonathon A. Nye, Ph.D.
Emory University School of Medicine Problem-based Educational Material for Medical Physics Residency Training

Dominique Penninck, D.V.M., Ph.D.
Cummings School of Veterinary Medicine at Tufts University The Development of Video-based Clinical Ultrasound Teaching Tools and the Construction of a Web-based Educational Program

**Canon**

Anders Persson, M.D., Ph.D.
Linköping University, Sweden RadSim: Simulation Based Training Program for CT Protocol, Iterative Reconstruction and Dual Energy Applications

Derek Harwood-Nash Education Scholar Grant

Sonia Marie-Aurore Pujol, Ph.D.
Brigham and Women’s Hospital, Harvard Medical School Interactive Tutorial for Teaching Radiologic Anatomy and its Variations

Sarah Carlson Shaves, M.D.
Eastern Virginia Medical School Redefining the Radiology Curriculum in Medical School: Vertical Integration and Global Accessibility

GE Healthcare

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

Andrea Schwarz Doria, M.D.
The Hospital for Sick Children, University of Toronto Towards Building Capacity to the Research Training of Future Leaders in Radiology: A Pilot International Outreach Educational Program

George L. Shih, M.D., M.S.
Joan and Sanford I. Weill Medical College of Cornell University Open Source Radiology Resident Educational Mobile Dashboard App To Measure Clinical Experience

Nikhil G. Thaker, M.D.
The University of Texas MD Anderson Cancer Center Designing and Implementing an Innovative Prostate Brachytherapy Training Program Using an MRI Phantom-Based Simulator