MGH Next-Gen StARR Participating Faculty and Research Focus

DEPARTMENT OF MEDICINE

- Antonis Armoundas, PhD (*Cardiology*) – Cardiac arrhythmias from myocyte to whole organ levels
- Jodie Babitt, MD (*Nephrology*) – Molecular and cellular mechanisms in iron homeostasis
- Aaron Baggish, MD (*Cardiology*) – Cardiovascular adaptations to exercises in health, disease, and human performance
- Saumya Das, MD, PhD (*Cardiology*) – Blood markers to predict heart failures and arrhythmias
- Patrick Ellinor, MD, PhD (*Cardiology*) – Molecular basis underlying abnormalities of heart rhythm and function
- Jose Florez, MD, PhD (*Endocrinology*) – Genetic research in diabetes
- Steven Grinspoon, MD (*Endocrinology*) – Neuroendocrine strategies to reduce cardiovascular and metabolic risk
- Jennifer Ho, MD (*Cardiology*) – Mechanisms of heart failure and cardiometabolic disease
- Farouc Jaffer, MD, PhD (*Cardiology*) – Molecular imaging approaches to image high-risk plaques and blood clots
- Robert Levine, MD (*Cardiology*) – Imaging to explore mechanisms of valvular heart disease
- Douglas Levy, PhD (*GIM*) – Economic determinants and consequences of tobacco use
- Gregory Lewis, MD (*Cardiology*) – Metabolics of right ventricular-pulmonary vascular interactions during exercise in heart failure
- Janet Lo, MD (*Endocrinology*) – Endocrine disease, cardiovascular disease and inflammation
- Steven Lubitz, MD, MPH (*Cardiology*) – Clinical and genetic aspects of heritable cardiac arrhythmias
- Andrew Luster, MD, PhD (*RheumAI*) – Chemokines, lipid chemoattractants, immune cell trafficking, and human translational immunology
- Rajeev Malhotra, MD, MS (*Cardiology*) – Molecular mechanisms of calcification development in vessel walls
- Benjamin Medoff, MD (*DPCCM*) – Pathogenesis of pulmonary inflammation in asthma, COPD, lung transplant rejection, and viral infections
- Nancy Rigotti, MD (*GIM*) – HIV/AIDS treatment outcomes in sub-Saharan Africa, HIV/ AIDS and aging, and implementation science of HIV/AIDS care delivery in sub-Saharan Africa
- Anthony Rosenzweig, MD (*Cardiology*) – Cell growth, death, and regeneration in the heart and heart failure
- David Scadden MD (*Hematologic Malignancies*) – Stem cell therapies for blood disease and cancer
- Ravi Shah, MD (*Cardiology*) – Epidemiologic investigation in obesity and cardiometabolic risk
- David Sosnovik, MD (*Cardiology*) – Molecular imaging in the myocardium
- Melissa Suter, PhD (*DPCCM*) – Development and translation of novel optical diagnostic tools for pulmonary airways and lungs
- Ahmed Tawakol, MD (*Cardiology*) – Diagnostic imaging and novel therapeutics for atherosclerosis
- B. Taylor Thompson, MD (*DPCCM*) – Molecular epidemiology of ARDS and sepsis
- Anne Thorndike, MD, MPH (*GIM*) – Behavioral interventions to prevent disease and promoting exercise and nutrition at the workplace
- Jatin Vyas MD, PhD (*ID*) – Pulmonary innate immune response to fungal pathogens
- Christiane Wrann DVM, PhD (*Cardiology*) – Beneficial effects of exercise on metabolism and the brain
- Jing-Ruey Joanna Yeh, PhD (*Cardiology*) – Acute myeloid leukemia and inhibition of COX

OTHER MGH DEPARTMENTS

- Fernando Camargo, PhD (*Harvard Stem Cell Institute; HSCI*) – Adult stem cell biology, organ size regulation, and cancer
- Peter Caravan, PhD (*Radiology*) – Development of imaging probes and their application in detecting pathological changes
- Joseph Cotten, MD, PhD (*Anesthesia*) – Respiratory physiology and anesthetic mechanisms
- Georges El Fakhri, PhD (*Radiology*) – Cardiac perfusion, mitochondrial function, and medical imaging
- Katia Georgopoulos, PhD (*Dermatology*) – Follicular stem cells maintenance and differentiation
- Udo Hoffmann, MD (*Radiology*) – Value and accuracy of cardiac CT for atherosclerosis
- Jeff Huffman, MD (*Psychiatry*) – Psychiatric illness on patients with cardiac disease
- Choukri Mekkaoui, PhD (*Radiology*) – MRI in myocardial infarction
- Lance Munn, PhD (*Radiation Oncology*) – Blood vessel structure and function in normal and pathological conditions
- Matthias Nahrendorf, MD (*Radiology*) – Immunity in atherosclerosis and heart failure
- Roy Perlis, MD, MSc (*Psychiatry*) – Genetic discovery to understand the effect of antidepressants on cardiac rhythms
- Jayaraj Rajagopal, MD (*Regenerative Medicine*) – Lung epithelial homeostasis and regeneration after tissue injury
- Jesse Roberts, MD (*Anesthesia*) – Pulmonary vascular disease in pediatric patients
- Richa Saxena, PhD (*Anesthesia*) – Preeclampsia and predicting cardiovascular disease
- Filip Swirski, PhD (*Systems Biology*) – Inflammation in infectious, cardiovascular, and metabolic diseases
- Guillermo Tearney MD, PhD (*Pathology*) – Non-invasive, high resolution optical imaging methods for disease diagnosis
- Marco Vidal Melo MD, PhD (*Anesthesia*) – Bioengineering techniques to study cardiopulmonary function
- Tilo Winkler, PhD (*Anesthesia*) – Effect of bronchoconstriction on regional ventilation to determine how ventilation defects emerge
- Binglan Yu, PhD (*Anesthesia*) – Blood transfusion and blood substitutes

BROAD INSTITUTE

- Paul Blainey, PhD – Molecular, optical, and microfluidic technology for probing cell function
- Todd Golub, MD – Leukemia and classification of human cancer using gene expression analysis
- Stuart Orkin, MD – Molecular genetics of blood cell development and stem cells

POTENTIAL MENTORS THAT WOULD NEED TO BE ADDED TO THE R38 GRANT

- Aaron Aguirre, MD, PhD (*Cardiology*) – Molecular imaging and microscopy techniques to study myocardial infarction and heart failure
- Xingbin Ai, PhD (*Pediatrics*) – Contribution of damaging exposure in infancy and early childhood to negative long-term airway function
- Amin Arnaout, MD (*Nephrology*) – Platelet activation and therapeutic targeting
- Christopher Celano, MD (*Psychiatry*) – Behavioral intervention to promote adherence in heart failure
- Sammy Elmariah, MD, MPH (*Cardiology*) – Valve calcification and progression of aortic stenosis
- Lida Hariri, MD, PhD (*Pathology*) – high resolution optical imaging for early detection and diagnosis of pulmonary diseases
- Jonathan Hoggatt, PhD (*HSCI*) – Stem cell niche regulatory mechanisms that govern tissue regeneration, particularly regulation by macrophages
- David Lagares, PhD (*DPCCM*) – Organ regeneration and fibrosis following tissue injury
- James Meigs, MD, MPH (*GIM*) – cause and prevention of type 2 diabetes and cardiovascular disease
- Pradeep Natarajan, MD, MMSc (*Cardiology*) – Genetic drivers of human atherosclerosis using genetic epidemiology
- Hamid Sabet, MD (*Radiology*) – Radiation detection and imaging
- Suman Srinivasa, MD (*Endocrine*) – Inflammation and cardiometabolic disease in HIV
- Elsie Taveras, MD, MPH (*MGHfC*) – Obesity prevention and treatment; examining racial/ethnic disparities
- Shannon Tessier, PhD (*Surgery*) – Suspended animation for transplantation and preservation techniques for blood-based diagnostics
- Osman Usta, PhD (*Surgery*) – Supercooling of red blood cells
- Raiyan Zaman, PhD (*Radiology*) - Design and development of novel multimode imaging system for early detection and characterization of vulnerable atherosclerotic plaques in coronary arteries
- Markella Zanni, MD (*Endocrine*) - Immune and hormonal processes predisposing aging women to myocardial infarction and heart failure