

## MGH Next-Gen StARR Participating Faculty and Research Focus

### Department of Medicine

- Antonis Aroundas, 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
- Ibrahim Domian, MD, PhD (Cardiology) – Heart failures and regenerative therapies
- 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
- Sekar Kathiresan, MD (Cardiology) – Human genetics to understand heart attack and improve preventative cardiac care
- 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 (Rheumat) – Chemokines, lipid chemoattractants, immune cell trafficking, and human translational immunology
- Rajeev Malhotra, MD, MS (Cardiology) – Molecular mechanisms of calcification development in vessel walls
- Fernando Martinez, MD (DPCCM) – COPD, interstitial lung disease, lung transplantation, and lung volume reduction
- 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
- Boyd 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 Aquirre, MD, PhD (*Cardiology*) – Molecular imaging and microscopy techniques to study myocardial infarction and heart failure
- Amin Arnaout, MD (*Nephrology*) – Platelet activation and therapeutic targeting
- 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
- Pradeep Natarajan, MD, MMSc (*Cardiology*) – Genetic drivers of human atherosclerosis using genetic epidemiology
- Hamid Sabet, MD (*Radiology*) – Radiation detection and imaging
- Elsie Taveras, MD, MPH (*MGHfC*) – Obesity prevention and treatment; examining racial/ethnic disparities