

SRF Mentor	Primary Academic Affiliation	Research Summary
Joyce Balls-Berry, PhD	Epidemiology	<p>Dr. Balls-Berry is a psychiatric epidemiologist. Her primary research focus is evaluating the application of community-engaged research principles in diverse populations. Secondly, she is interested in how community-engaged research can be applied to increase health equity. Dr. Balls-Berry has also focused her research on determining the best approaches for the inclusion of diverse populations into health research.</p> <p><a href="http://www.mayo.edu/research/faculty/balls-berry-joyce-e-ph-d/bio-00055146">http://www.mayo.edu/research/faculty/balls-berry-joyce-e-ph-d/bio-00055146</a></p>
Suzette Bielinski, PhD	Epidemiology	<p>Suzette J. Bielinski, Ph.D., is a cardiovascular genetic epidemiologist whose research focuses on identifying molecular biomarkers of cardiovascular disease. Specifically, she is interested in identifying genetic and protein biomarkers associated with heart disease, including heart attacks, heart failure and abnormal heart rhythms, that can be used clinically to improve risk prediction and identify tailored treatment and prevention strategies.</p> <p><a href="http://www.mayo.edu/research/faculty/bielinski-suzette-j-ph-d/bio-00096979">http://www.mayo.edu/research/faculty/bielinski-suzette-j-ph-d/bio-00096979</a></p>
Thomas Burghardt	Biochemistry & Molecular Biology	<p>Several inheritable skeletal muscle diseases cause muscle weakness. Inheritable cardiac diseases present variable maladies thought to be roughly correlated to either gain or loss in myosin function. Gene sequencing has associated several myosin motor mutations with skeletal, heart and smooth muscle diseases, leading to hypotheses relating myosin function anomalies with specific maladies that are investigated in the laboratory of Thomas P. Burghardt, Ph.D.</p> <p><a href="http://www.mayo.edu/research/faculty/burghardt-thomas-p-ph-d/bio-00026467">http://www.mayo.edu/research/faculty/burghardt-thomas-p-ph-d/bio-00026467</a></p>
Cheryl Conover, PhD	Medicine	<p>Insulin-like growth factor (IGF) system</p> <p><a href="http://www.mayo.edu/research/faculty/conover-cheryl-a-ph-d/bio-00078237">http://www.mayo.edu/research/faculty/conover-cheryl-a-ph-d/bio-00078237</a></p>
David Cook, MD	Internal Medicine	<p>The training of physicians is receiving increased national attention. More effective and efficient ways are needed to teach students, postgraduate trainees and physicians in practice. Also needed are ways to assess their strengths and weaknesses in order to certify competence and identify areas for remediation.</p> <p>This is the focus of Dr. Cook's research efforts — how to teach and assess physicians so that they can provide the highest-quality care to patients.</p> <p><a href="http://www.mayo.edu/research/faculty/cook-david-a-m-d-mhpe/bio-00027574">http://www.mayo.edu/research/faculty/cook-david-a-m-d-mhpe/bio-00027574</a></p>

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Stephen Ekker, PhD	Biochemistry & Molecular Biology	The zebrafish genetics laboratory of Stephen C. Ekker, Ph.D., is focused on one major next step in the post-genomics era: the assignment of genes and gene sets critical in vertebrate patterning and organogenesis. <a href="http://www.mayo.edu/research/faculty/ekker-stephen-c-ph-d/bio-00096027">http://www.mayo.edu/research/faculty/ekker-stephen-c-ph-d/bio-00096027</a>
Tom Foley, MD	Radiology	I am interested in the application of new echocardiographic imaging modalities. <a href="http://www.mayo.edu/research/faculty/foley-david-a-m-d/bio-00026187">http://www.mayo.edu/research/faculty/foley-david-a-m-d/bio-00026187</a>
Erik Hess, MD	Emergency Medicine	Dr. Hess is an emergency medicine physician and health services researcher with an interest in emergency cardiovascular care. The long-term goal of Dr. Hess' research program is to improve the diagnosis, management efficiency and patient experience of care for acute cardiovascular conditions in the emergency setting. <a href="http://www.mayo.edu/research/faculty/hess-erik-p-m-d/bio-00027980">http://www.mayo.edu/research/faculty/hess-erik-p-m-d/bio-00027980</a>
Yasuhiro Ikeda, DVM, PhD	Biochemistry/Molecular Biology and Pediatrics	Induced pluripotent stem (iPS) cell, Gene and cell therapy for diabetes, Gene therapy for hypertensive heart diseases <a href="http://www.mayo.edu/research/faculty/ikeda-yasuhiro-d-v-m-ph-d/bio-00093677">http://www.mayo.edu/research/faculty/ikeda-yasuhiro-d-v-m-ph-d/bio-00093677</a>
Grazia Isaya, MD, PhD	Biochemistry & Molecular Biology	Mechanisms that enable the cell to take advantage of the high energetic yield of oxidative phosphorylation (OXPHOS) in spite of the concomitant production of reactive oxygen species (ROS). <a href="http://www.mayo.edu/research/faculty/isaya-grazia-m-d-ph-d/BIO-00027613">http://www.mayo.edu/research/faculty/isaya-grazia-m-d-ph-d/BIO-00027613</a>
Bruce D. Johnson, PhD	Physiology & Biomedical Engineering	Heart and lung interactions under various conditions (e.g., hypoxia, high altitude, exercise) and in various populations (e.g., heart failure, health, lung disease, aging). <a href="http://www.mayo.edu/research/faculty/johnson-bruce-d-ph-d/BIO-00083819">http://www.mayo.edu/research/faculty/johnson-bruce-d-ph-d/BIO-00083819</a>
Michael Joyner, MD	Biochemistry & Molecular Biology, Clinical and Translational Sciences	Human response to various forms of physical and mental stress during activities such as exercise, hypoxia, standing up and blood loss. <a href="http://www.mayo.edu/research/faculty/joyner-michael-j-m-d/bio-00078027">http://www.mayo.edu/research/faculty/joyner-michael-j-m-d/bio-00078027</a>
Zvonimir Katusic, MD, PhD	Molecular Pharmacology & Experimental Therapeutics	Human cerebral blood vessels, projects are focused on morphological, functional and biochemical characteristics of cerebral vasculature. <a href="http://www.mayo.edu/research/faculty/katusic-zvonimir-s-m-d-ph-d/bio-00077509">http://www.mayo.edu/research/faculty/katusic-zvonimir-s-m-d-ph-d/bio-00077509</a>
Iftikhar Kullo, M.D.	Medicine	Biomarkers of cardiovascular risk, the use of new methodologies in refining cardiovascular risk stratification, including novel biochemical and genetic markers and noninvasive tests of arterial function and structure. <a href="http://www.mayo.edu/research/faculty/kullo-iftikhar-j-m-d/bio-00084951">http://www.mayo.edu/research/faculty/kullo-iftikhar-j-m-d/bio-00084951</a>

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Shaji Kumar, M.D.	Medicine	<p>The research of Shaji Kumar, M.D., focuses on development of novel drugs for treatment of myeloma. Dr. Kumar's research team evaluates the in vitro activity of novel drugs that, based on their mechanisms of action, are likely to have activity in the setting of myeloma. Promising drugs are brought into the clinic through early-stage clinical trials in Phase I or II studies.</p> <p><a href="http://www.mayo.edu/research/faculty/kumar-shaji-k-m-d/bio-00027411">http://www.mayo.edu/research/faculty/kumar-shaji-k-m-d/bio-00027411</a></p>
Amir Lerman, M.D., Ph.D.	Cardiovascular Diseases	<p>My research is focused on studying coronary physiology and the role of the endothelium in regulating coronary vascular tone</p> <p><a href="http://www.mayo.edu/research/faculty/lerman-amir-m-d/bio-00078051">http://www.mayo.edu/research/faculty/lerman-amir-m-d/bio-00078051</a></p>
Lilach Lerman, MD, PhD	Biochemistry & Biomedical Engineering	<p>Renovascular Disease Research Laboratory, which focuses on the development and application of techniques to study renal and cardiovascular physiology and pathophysiology in animal models and in humans.</p> <p><a href="http://www.mayo.edu/research/faculty/lerman-lilach-o-m-d-ph-d/BIO-00078109">http://www.mayo.edu/research/faculty/lerman-lilach-o-m-d-ph-d/BIO-00078109</a></p>
Carlos Mantilla, M.D., PhD	Anesthesiology and Physiology	<p>The control of breathing in humans; long-term goal is to develop rational and effective therapies for the treatment of diseases that impair the ability to breathe independently.</p>
Robert McBane, M.D.	Cardiovascular Diseases	<p>Individual propensity for arterial thrombosis and variables governing this propensity. The relationship between atherosclerosis and arterial platelet-rich thrombosis is complex and poorly understood. Among individuals with atherosclerosis, the clinical presentation of the disease varies broadly.</p> <p><a href="http://www.mayo.edu/research/faculty/mcbane-robert-d-m-d/bio-00026529">http://www.mayo.edu/research/faculty/mcbane-robert-d-m-d/bio-00026529</a></p>
Christopher McLeod, M.B., Ch.B., Ph.D.	Cardiovascular Diseases	<p>He has two primary research interests, both in the fundamental direction of exploring ventricular arrhythmias. One central theme is investigation of ventricular arrhythmias and their association with sudden cardiac death in adults with congenital heart disease.</p> <p><a href="http://www.mayo.edu/research/faculty/mcleod-christopher-j-m-b-ch-b-ph-d/bio-20090237">http://www.mayo.edu/research/faculty/mcleod-christopher-j-m-b-ch-b-ph-d/bio-20090237</a></p>
Thomas P. Olson, M.S., Ph.D.	Cardiovascular Diseases	<p><a href="http://www.mayoclinic.org/biographies/olson-thomas-p-m-s-ph-d/bio-20140044?_ga=1.238669315.2065191008.1431613261">http://www.mayoclinic.org/biographies/olson-thomas-p-m-s-ph-d/bio-20140044?_ga=1.238669315.2065191008.1431613261</a></p>
Rowlens Melduni, MD	Cardiovascular Diseases	<p>Diastolic dysfunction is associated with an increasing stretch in pulmonary veins due to increased left atrial pressure and is thought to be one of the pathophysiologic mechanisms for the initiation of atrial fibrillation. Our long-term goal is to explore pathophysiologic mechanisms and predictors of atrial fibrillation and facilitate the</p>

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		development of innovative diagnostic and therapeutic approaches to atrial fibrillation.
Sanjay Misra, MD	Radiology	Understanding the mechanisms of hemodialysis graft failure. <a href="http://www.mayo.edu/research/faculty/misra-sanjay-m-d/bio-00085024">http://www.mayo.edu/research/faculty/misra-sanjay-m-d/bio-00085024</a>
Christina Pabelick, MD	Anesthesiology and Physiology	Cellular mechanisms that regulate structure and function of airways in health and disease. <a href="http://www.mayo.edu/research/faculty/pabelick-christina-m-d/bio-00027256">http://www.mayo.edu/research/faculty/pabelick-christina-m-d/bio-00027256</a>
Y.S. Prakash, MD, PhD	Physiology & Biomedical Engineering	As an anesthesiologist, physiologist and electrical/biomedical engineer, Dr. Prakash's longstanding interest has been in lung diseases, with the intent of developing novel therapies and approaches to treat diseases such as asthma in children and adults (especially in women), and more recently pulmonary hypertension. <a href="http://www.mayo.edu/research/faculty/prakash-y-s-m-d-ph-d/BIO-00083390">http://www.mayo.edu/research/faculty/prakash-y-s-m-d-ph-d/BIO-00083390</a>
Carmen Radecki Breitkopf, PhD	Health Services Research	Understanding and reducing disparities in health that may result from patient-related factors, including socio demographics, English language proficiency, and cultural beliefs about health and disease. <a href="http://www.mayo.edu/research/faculty/radecki-breitkopf-carmen-ph-d/bio-00055044">http://www.mayo.edu/research/faculty/radecki-breitkopf-carmen-ph-d/bio-00055044</a>
Martin Rodriguez-Porcel, M.D.	Medicine	To non-invasively study the biology of gene and cell therapies for cardiovascular applications using Molecular Imaging strategies. To non-invasively assess the biological pathways involved in atherosclerosis. <a href="http://www.mayo.edu/research/faculty/rodriguez-porcel-martin-g-m-d/bio-00027288">http://www.mayo.edu/research/faculty/rodriguez-porcel-martin-g-m-d/bio-00027288</a>
Robert Simari, MD	Biochemistry & Molecular Biology, Virology and Gene Therapy	Understanding the vascular response to injury and thrombosis, the development of novel peptide- and cell-based therapies, and the Development of biologic heart valves. <a href="http://www.mayo.edu/research/faculty/simari-robert-d-m-d/bio-00078102">http://www.mayo.edu/research/faculty/simari-robert-d-m-d/bio-00078102</a>
Virend Somers, MD, PhD	Molecular Neuroscience	Neural and vascular mechanisms in circulatory control in health and disease. <a href="http://www.mayo.edu/research/faculty/somers-virend-m-d-ph-d/bio-00027756">http://www.mayo.edu/research/faculty/somers-virend-m-d-ph-d/bio-00027756</a>
Daniel Tschumperlin, Ph.D.	Physiology/Biomed Engineering	The research of Daniel J. Tschumperlin, Ph.D., focuses on the respiratory system and how the structure, function and mechanics of the lung are regulated in health and disease.

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		<a href="http://www.mayo.edu/research/faculty/tschumperlin-daniel-j-ph-d/bio-20013669">http://www.mayo.edu/research/faculty/tschumperlin-daniel-j-ph-d/bio-20013669</a>
Hector Villarraga, MD	Medicine	Relation of Myocardial Mechanical Function with Arterial and Ventricular Elastance in a Normal Population.
David Warner, M.D.	Pediatric Anesthesiology	<p>The overall research goal of David O. Warner, M.D., is to improve the health of patients who need surgery and patients who have chronic pain. He also works with the Mayo Clinic Center for Clinical and Translational Sciences (CCaTS) to train the next generation of researchers who will make discoveries to improve human health.</p> <a href="http://www.mayo.edu/research/faculty/warner-david-o-m-d/bio-00026260">http://www.mayo.edu/research/faculty/warner-david-o-m-d/bio-00026260</a>
Richard Weinshilboum, MD	Molecular Pharmacology & Experimental Therapeutics	<p>Richard Weinshilboum, M.D. studies pharmacogenomics — the role of inheritance and individual variation in DNA sequence or structure in drug response. The goal is to develop safer and more effective drug therapy to treat diseases that range from cancer to depression.</p> <a href="http://www.mayo.edu/research/faculty/weinshilboum-richard-m-d/BIO-00025916">http://www.mayo.edu/research/faculty/weinshilboum-richard-m-d/BIO-00025916</a>
Xiaolei Xu, PhD	Biology and Medicine	<p>Directs the Zebrafish Genetics Laboratory, which studies cardiac diseases using zebrafish as a vertebrate model. Dr. Xu's lab has generated the first embryonic and adult zebrafish models for cardiomyopathies.</p> <p>By leveraging unique genetic tools offered by zebrafish, Dr. Xu and his colleagues are using these models to elucidate molecular mechanisms of cardiomyopathy and develop novel therapeutic strategies.</p> <a href="http://www.mayo.edu/research/faculty/xu-xiaolei-ph-d/bio-00092623">http://www.mayo.edu/research/faculty/xu-xiaolei-ph-d/bio-00092623</a>