

**Barnes-Jewish Hospital Foundation / Washington University Institute of Clinical & Translational Sciences
2016 Clinical & Translational Research Funding Program Awardees**

Funding Source	Principal Investigator	Dept/Division	Project Period	Proposal Title	Description
ICTS and MU	Jeffrey Bryan, DVM, MS, PhD, DACVIM	MU- Veterinary Medicine & Surgery	6/1/16-5/31/17	Development of Viroimmunotherapy for Malignant Melanoma	Melanoma is a lethal cancer with rising incidence. Immunotherapy appears to be the most promising treatment strategy. Current treatments are cumbersome and incompletely effective. This proposal seeks to develop a more effective strategy to engage the patient's immune system to fight melanoma. A virus homing to immune cells will stimulate a multi-pronged attack on the tumor in a highly relevant model of melanoma for rapid clinical translation.
BJHF	Thomas Bailey, MD	Department of Medicine: Infectious Diseases	6/1/16-5/31/18	Output HR, Activity, and Sleep Monitoring in Patients at Risk of Hospital Readmission	Heart failure patients are frequently readmitted or visit emergency rooms (ER) after discharge from the hospital. This project seeks to determine whether patterns in activity, heart rate, and sleep patterns, as measured by an affordable consumer health technology (Fitbit) can predict hospital readmission or ER visits. We will use automated methods to analyze the Fitbit data, and we will assess whether this approach is acceptable to patients
BJHF	Randall Bateman, MD	Neurology	6/1/16-5/31/17	Stable Isotope Labeling & Quantitative Mass Spectrometry Imaging of Amyloid-beta	Alzheimer's disease (AD) is a devastating neurological disease for which there is currently no effective therapeutics. Critical to the development of therapeutics that may treat and even cure AD is an understanding the dynamics (the change over time) of amyloid plaques in the human brain. We are using the most advanced imaging technology to answer these questions in patients in order to accelerate drug development and improve patient outcomes.
BJHF	Ryan Calfee, MD, MSc	Orthopaedic Surgery	6/1/16-5/31/17	PROMISING to Understand How Mental and Social Health Impact Orthopaedic Function	This study is designed to define the inter-relationship of multiple health domains including perceived physical function, interpretation of pain, depression, anxiety, and surrounding community health to more effectively understand factors impacting patients' self-reported musculoskeletal function
ICTS	ShiNung Ching, PhD	Electrical and Systems Engineering	6/1/16-5/31/17	Development of EEG Classification Schemes for Disambiguating Coma Etiologies	The proposed research will facilitate the design of new diagnostic tools for determining the cause and prognosis of coma based on analysis of patients' brain electrical activity. The research outcomes will help clinicians better interpret this activity, toward optimizing treatments. The methods enabled by the proposed research could be eventually implemented with simple clinical technologies, leading to widespread dissemination.
BJHF	Gavin Dunn, MD, PhD	Neurological Surgery	6/1/16-5/31/17	Defining the Immunogenicity of Telomerase in TERT-mutant Glioblastoma	Glioblastoma remains a very challenging brain tumor to treat. Because over 80% of these tumors overexpress the telomerase protein due to mutations in the regions that regulate its gene expression, we are pursuing ways to target this protein therapeutically. Our major goal is to characterize whether the immune system can recognize components derived from the telomerase protein.
ICTS	Shabaana Khader, PhD	Molecular Microbiology	6/1/16-5/31/17	S100A8/A9 Proteins as Biomarkers for Pulmonary Tuberculosis	A third of the world's population is latently infected with Mycobacterium tuberculosis with a 5-10% risk for reactivation to PTB. Currently, no diagnostic tools distinguish PTB patients from latently Mtb-infected individuals. In this proposal, we will develop S100A8/A9 proteins as serum biomarkers to identify PTB patients, which will allow us to initiate early therapy, decrease disease burden and halt TB transmission in TB endemic areas.
BJHF	Terrance Kummer, MD, PhD	Neurology	6/1/16-5/31/17	MRI Biomarkers of Hemorrhagic Brain Injury	The key to improving outcomes after subarachnoid hemorrhage lies in improving understanding of how it damages the brain. Unfortunately a great deal of brain injury goes undetected with clinical imaging studies. Therefore, we seek to test novel MRI modalities linked to defined pathologies that can be used to diagnose and monitor brain injury after hemorrhage, and to tie these findings to the behavioral outcomes of greatest relevance to patients.

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ICTS	Jennie Kwon, DO	Department of Medicine: Infectious Diseases	6/1/16-5/31/17	The Fecal Microbiome and Resistome of Patients with Multidrug-Resistant UTIs	The gastrointestinal (GI) tract is a key source of bacteria that contaminate the periurethral area and cause urinary tract infections (UTI). The proposed research will create a biospecimen repository to define the microbial communities that reside in the GI tract of patients with MDRO UTIs. These findings may ultimately result in the development of tools to identify patients at risk for MDRO UTIs, and subsequent prevention interventions.
ICTS	Kian Lim, MD, PhD	Department of Medicine: Oncology	6/1/16-5/31/17	Neutralizing The Innate Immune Defense Of Pancreatic Cancer	Effective therapy is clearly an unmet medical need for pancreatic cancer patients. We have now uncovered the innate immune pathway as an important mechanism that pancreatic cancer cells hijack to survive and resist chemotherapeutics. This proposal aims at (1) investigating how this pathway is activated in pancreatic cancer using novel human cell lines and transgenic mouse models; and (2) testing novel therapeutic strategies targeting this pathway with the ultimate goal of improving the outcomes of pancreatic cancer patients.
BJHF	Jerry Lowder, MD, MSc	Obstetrics & Gynecology	6/1/16-5/31/17	Effect of Estrogen Therapy on the Postmenopausal Inflammatory Bladder State	Post-menopausal women frequently suffer from urinary tract infections and are treated with vaginal estrogen cream, but the appropriate dosing regimen is unknown. We will perform a trial in women and experiments in a mouse model to test the hypothesis that the levels of particular markers of inflammation will be affected by treatment with estrogen cream. If so, these markers can be used to guide treatment and improve quality of life for women.
ICTS	Amit Mathur, MBBS, MD	Pediatrics: Newborn Medicine	6/1/16-12/31/17	Amplitude Integrated EEG (aEEG) in the Management of Neonatal Abstinence Syndrome	Neonatal Abstinence Syndrome (NAS) is a drug withdrawal phenomenon in the first few days of life when an infant's mother has used opiates during pregnancy, and the infant becomes addicted. Current methods of assessing opiate withdrawal are subjective. We will record brain-wave activity using a bedside tool in babies with NAS and compare the results to the current scoring methods in the hope of adding an objective measure to the treatment of NAS.
ICTS	Marvin Meyers, PhD	SLU-Center for World Health and Medicine	6/1/16-5/31/17	Novel Modified Human Epidermal Growth Factor for Treatment of Short Gut Syndrome	This project will develop a modified version human epidermal growth factor (hEGF) to treat patients with short gut syndrome. hEGF has shown promise to help the small bowel absorb nutrients more efficiently after a significant portion of a diseased bowel must be removed surgically. This modified hEGF will be designed to have a longer duration of action in the body for a more controlled and cost-efficient therapy than native hEGF.
BJHF	Jeremiah Morrissey, PhD	Anesthesiology	6/1/16-5/31/17	Prevention of Unnecessary Surgery	Kidney cancer is a silent but fatal disease usually discovered incidentally during abdominal imaging. However, the usual imaging techniques cannot determine if the kidney tumor is cancerous or benign. We will test the ability of two protein biomarkers in urine to differentiate cancerous from benign tumors of the kidney thus saving patients with benign tumors from losing a viable kidney with consequent complications and degraded quality of life.
ICTS	Jacqueline Payton, MD, PhD	Pathology & Immunology	6/1/16-5/31/17	Defining Therapeutic Targets of Epigenetic Deregulation in T Cell Lymphoma	Deregulation of the epigenome, is a major mechanism of cancer pathogenesis. Although T-cell Lymphoma is treated with epigenetic drugs, two-thirds of patients do not respond to these epigenetic drugs, and there is no biomarker that predicts response. Our proposal exploits our existing expertise to define epigenetic signatures that predict response/non-response to epigenetic therapy, with the latter representing potential novel therapeutic targets.
BJHF	Linda Peterson, MD	Department of Medicine: Cardiology	6/1/16-5/31/17	Dietary NO3- Affects Perfusion in Heart Failure with Preserved Ejection Fraction	Patients with "stiff hearts" (heart failure with preserved ejection fraction - HFpEF) often suffer from an inadequate blood supply, even though their major arteries are blockage-free. We hypothesize that the nitrate found in foods such as beets can increase blood supply to the heart. Should this prove correct, our study would support recommendation of dietary nitrate as a novel, relatively inexpensive treatment for this problem in HFpEF patients.
ICTS	Babak Razani, MD, PhD	Pathology & Immunology	6/1/16-5/31/17	Dissecting a Common Genetic Association Signal for Risk of MI in the LIPA Locus	Heart disease remains the leading cause of death in the United States. Recently, commonly occurring genetic changes in LIPA, a cholesterol metabolism gene, have been associated with increased risk of heart attacks. Yet, the basis for this association is unknown. We propose reductions in LIPA function as the underlying mechanism. Understanding this genetic association with heart disease has the potential to uncover new avenues for therapeutic intervention.

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BJHF	Chihiro Sato, PhD	Neurology	6/1/16-11/30/17	Profiling CSF Tau isoforms by Mass Spectrometry for the Diagnosis of Tauopathies	The accurate diagnosis of tauopathies is challenging and can currently only be confirmed by brain autopsy. We recently developed a mass spectrometry-based method to measure tau isoforms in vivo in the human cerebrospinal fluid (CSF). We will profile CSF tau isoforms in tauopathy patients that may facilitate early diagnosis of tauopathies and allow clinicians to more appropriately care for patients.
ICTS and MU	Thomas Spencer, PhD	MU-Animal Sciences	6/1/16-5/31/17	Molecular Signatures of Pregnancy Outcome and Fertility in Women	This project seeks to discover genes important for fertility and those that contribute to infertility. The endometrium from fertile women and those experience unexplained infertility will be biopsied and then the RNA from those endometrial samples sequenced using next generation technologies. The sequences will be used to compare gene expression levels between fertile and infertile women and also to discover markers of pregnancy success and loss. This research is expected to provide a better understanding of origins of infertility and pregnancy loss in women. It is expected to yield new therapies to enhance pregnancy outcome in women undergoing treatment for infertility via assisted reproduction technologies (ART) and to diagnose, treat and prevent infertility and recurrent pregnancy loss.
BJHF	Kaharu Sumino, MD, MPH	Department of Medicine: Infectious Diseases	6/1/16-11/30/17	Accuracy and Reproducibility of Smartphone-based Spirometry Use at Home in Asthma	WING is a new, smartphone-based spirometry (lung function testing device) that monitors lung function at home with low cost. It's pocket-sized sensor connected to the phone measures lung function using an app with video instruction. In this study, we test how accurate WING measures lung function compared to standard spirometry and how precise the measurements are when used with video-instruction at home on day 1 and at 4 weeks in asthma patients.
ICTS	Phillip Tarr, MD	Pediatrics: Gastroenterology	6/1/16-5/31/17	Rapid Bacterial Community Characterization in the Infant Gut	Necrotizing enterocolitis is a major threat to the life and well-being of very low birth weight infants worldwide. Our findings suggest that a specific class of bacteria precipitate this disorder. We will develop a rapid and accurate test to identify children at risk, to better use interventions to prevent this complication by eliminating the harmful bacteria in the gut.
ICTS	Zachary Vesoulis, MD	Pediatrics: Newborn Medicine	6/1/16-12/31/17	Detecting Cerebrovascular Autoregulatory Failure in HIE	We propose a new, non-invasive method for understanding the regulation of blood flow in the brains of newborn infants who are at risk for brain injury due to decreased oxygen levels around the time of birth. This methodology will assess the ability of the brain to dampen fluctuations in blood pressure and enable doctors to better target blood pressure management.
MU	Rebecca Whiting,	MU-Ophthalmology	6/1/16-5/31/17	Long-term Delivery of Therapeutics Using Genetically Modified Autologous Cells	We will test an innovative method for long-term delivery of therapeutic molecules to the central nervous system and retina. Therapeutic efficacy will be tested in a dog model of the neurologic disease CLN2. We expect that treating CLN2-affected dogs with our technology will result in prevention of brain and retinal degeneration and the resulting symptoms. If these studies are successful, the technology can be used in people with CLN2 disease.

**Barnes-Jewish Hospital Foundation / Washington University Institute of Clinical & Translational Sciences
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BJHF	Gautam Dantas, PhD	Pathology & Immunology	6/1/15-5/31/16	Rapid and Accurate Sequencing-Based Diagnostics for Urinary Tract Infections	Urinary tract infections (UTIs) are one of many disorders that are becoming difficult to treat due to increasing prevalence of multi-drug-resistant pathogens due to selection pressure from improper use of antibiotics. UTIs are generally studied as a single pathogen rather than a community of pathogens. We propose a novel sequencing-based method to rapidly diagnose uropathogens directly from urine, and direct more effective antibiotic therapy.
BJHF	Amar Dhand, MD, DPhil	Neurology	6/1/15-5/31/16	Improving Stroke Recovery Using Body Worn Cameras	There is limited understanding of social mechanisms in stroke recovery. This projects studies the use of a novel technology--body worn cameras--to detect meaningful person-to-person interactions. This will help build better social network interventions to improve stroke recovery.

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ICTS	Nico Dosenbach, MD, PhD	Neurology	6/1/15-5/31/16	Beneficial Brain Changes in Pediatric Constraint-Induced Movement Therapy	Keys to unlocking the brain's remarkable capacity for recovery after injury can be found in its complex network architecture. Therefore, we aim to understand how brain network reorganization helps children improve after injury and how rehabilitative therapies can further enhance this process. Using neuroimaging and wearable motion biosensors we seek to identify the brain changes through which constraint-induced movement therapy (CIMT) enhances function in children with one-sided motor deficits.
BJHF	Eric Duncavage, MD	Pathology & Immunology	6/1/15-5/31/16	Quantitative Monitoring of Tumor Burden Using Single-Molecule Sequencing	For many cancer types including myelodysplastic syndrome (MDS) accurate tumor burden monitoring methods are lacking. The goal of this study is to apply novel ultra-sensitive sequencing to series of MDS patients enrolled in clinic trials to determine if cancer-specific gene mutations can be detected at low frequencies in clinical remission samples and if the detection of such low frequency cancer mutations has any effect on patient outcome.
BJHF	Nuri Farber, MD	Psychiatry	6/1/15-5/31/16	High-Dose Ketamine for Treatment-Resistant Depression	Treatment resistant depression (TRD) is a major public health problem. Current therapeutic options for this patient population remain limited. In this study we will examine the effects of a 96-hour infusion of ketamine on participants with TRD. Participants will receive MRI's of the head before and after the infusion and will be followed for 8-weeks after the infusion.
ICTS	Andria Ford, MD, MSCI	Neurology	6/1/15-5/31/16	Blood Flow and Metabolism Underlying Stroke Risk in Pediatric Sickle Cell Disease	Children with sickle cell disease carry a high risk for strokes which cause sudden and lifelong disability as well as an even higher risk of silent strokes which cause cognitive decline. We will perform noninvasive MRIs to measure cerebral blood flow and oxygen metabolism in sickle cell disease children to reveal the mechanisms underlying stroke. We will determine if these MRI measures predict those children who are increased risk of stroke.
BJHF	Brian Fuller, MD, MSCI	Department of Medicine: Emergency Medicine	6/1/15-5/31/16	An ED Ventilator Protocol to Reduce VACs	Ventilator-associated conditions (VACs) represent worsening of lung function in mechanically ventilated patients. They are common, deadly, and expensive. While the mechanical ventilator saves lives, it also can damage lungs. Our data suggests that targeting lung-protection in the emergency department (ED) could prevent VACs and save lives. Our goal is to determine if lung-protective ventilation in the ED reduces the occurrence of VACs.
ICTS	Chyi Hsieh, MD, PhD	Department of Medicine: Rheumatology	6/1/15-5/31/16	Microbes in Inflammatory Bowel Disease	Inflammatory bowel disease (IBD) is a debilitating disease of the gastrointestinal tract that affects about 0.1 - 0.2% of the general population. The cause of IBD is currently unknown, but thought to involve inappropriate immune responses to commensal bacteria. Our goal is to understand the immune response to commensal bacteria during IBD, which may be useful for IBD treatment or prognosis.
ICTS	Xuntian Jiang, PhD	Department of Medicine: Cardiology	6/1/15-5/31/16	CSF Sphingolipids as CNS Biomarkers for Assessing Treatment of NPC Disease	A major barrier to development of effective treatment for Niemann–Pick C (NPC) disease is lack of validated central nerve system (CNS) biochemical measures to evaluate efficacy. In this proposal, we will identify robust CNS biomarkers from sphingolipids in CSF and develop reliable biomarker assays as clinical outcome measure to accelerate assessment of treatment for NPC patients.
BJHF	Kory Lavine, MD, PhD	Department of Medicine: Cardiology	6/1/15-5/31/16	Defining Macrophage Composition and Function in Human Dilated Cardiomyopathy	Heart failure is an important cause of mortality worldwide. Recent studies suggest that some patients have the ability to recover cardiac function. The mechanistic basis for why this occurs remains undefined. Using animal models, we have demonstrated that the failing heart contains distinct macrophage subsets that contribute to inflammation and tissue repair. We hypothesize that the human failing heart contains similar macrophage populations with divergent effects on heart failure progression and cardiac recovery.
BJHF	Eric Lenze, MD	Psychiatry	6/1/15-5/31/16	Fall-Related Injury Prevention: Pharmacogenomics to Improve Antidepressant Safety	This project will address the important question of whether antidepressants known as serotonin reuptake inhibitors (SRIs), cause bone loss, and if so, who is at highest risk and why? This question is of high public health importance because SRI antidepressants are commonly prescribed in older adults. Ultimately this research will tell us whether older adults should receive SRIs based on their risk for bone loss resulting from the medication.

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ICTS	Ta-Chiang Liu, MD, PhD	Pathology & Immunology	6/1/15-5/31/16	The Clinical Relevance of Paneth Cell Phenotype in Pediatric Crohn Disease	There is a need to develop prognosis marker for Crohn Disease (CD). We have shown that the microscopic appearance of Paneth cell, a specialized cell type in the small bowel that maintains the immune balance, correlates with clinical outcome in CD patients with specific genetics. We aim to examine whether the Paneth cell appearance predicts prognosis in all CD patients, thereby allowing us to develop personalized medicine for these patients.
ICTS	Lynda Morrison, PhD	SLU - Molecular Microbiology	6/1/15-5/31/16	In Vivo Inhibition of HSV Replication by the Approved Antifungal Drug Ciclopirox	Herpes simplex virus (HSV)-1 causes a potentially blinding eye disease. We will study whether ciclopirox olamine, a drug approved for treatment of fungal infections, can reduce severity of ocular infections with HSV-1. Because this drug works in a different way than existing treatments for ocular herpes, we will also study whether it may be effective against HSV-1 that has become resistant to current treatments.
ICTS	Stephen Oh, MD, PhD	Department of Medicine: Hematology	6/1/15-5/31/16	Functional Genomics Approaches to Dissect Human Myeloproliferative Neoplasms	To develop more effective therapies for patients with myeloproliferative neoplasms (MPNs), a more refined understanding of the etiology of human MPNs is needed. Our proposed project involves the generation of cell lines from MPN patient cells that can more precisely model the human disease. These cell lines can then be utilized to better define the fundamental derangements that result in the initiation and development of MPNs.
BJHF	Daniel Osei, MD	Orthopaedic Surgery	6/1/15-5/31/16	The Epidemiology of Cubital Tunnel Syndrome	Cubital Tunnel Syndrome is a common, chronic, debilitating condition that interferes with hand function. Currently, we do not know how commonly people are affected, and without this knowledge, our ability to identify and treat the disease is limited. This study is designed to find out what proportion of people are affected by UNE, to find out whether ultrasound is a better test for determining who has cubital syndrome, and to find out what risk factors distinguish people who have cubital tunnel syndrome from people who do not.
BJHF	Rupa Patel, MD, MPH	Department of Medicine: Infectious Diseases	6/1/15-5/31/16	Pre-Exposure HIV Prophylaxis Use Among African American Men Who Have Sex With Men	Human immunodeficiency virus (HIV) prevention now includes using HIV medications to prevent infection before the exposure happens (PrEP) in high-risk populations. We will investigate the percentage of PrEP uptake and the reasons for PrEP uptake among young African American high-risk men who are offered PrEP at 4 different clinics in St. Louis. We will perform surveys and interviews among people who accept and decline PrEP.
ICTS	Stephen Ristvedt, PhD	Psychiatry	6/1/15-12/31/16	Community Based Study of Uptake of a Usual Source of Care by African American Men	Our project will investigate cultural, socioeconomic, and psychological characteristics of St. Louis African American men who do not have a regular place to go for routine health care. We will use this information to design a public health program to increase the number of African American men in St. Louis who have a place to go for routine health care, and thus improve their health.
ICTS	Michael Shoykhet, MD, PhD	Pediatrics: Critical Care	6/1/15-8/31/16	Incidence and Impact of Muscle Wasting in Critically-Ill Children	Severe muscle weakness occurs frequently in critically-ill adults, prolonging hospital stay and reducing quality of life. In critically-ill children, the incidence and severity of muscle weakness are unknown. This project uses a novel application of non-invasive ultrasound 1) to determine the frequency and severity of muscle weakness, and 2) to determine clinical factors that may prevent muscle weakness in critically-ill children.
ICTS	Brad Warner, MD	Surgery: Pediatric	6/1/15-5/31/16	The Effect of Bowel Resection on the Gut Microbiome of Infants with NEC	Surgical removal of a significant length of intestine is often required to treat a condition known as neonatal necrotizing enterocolitis (NEC) which is a disease exclusively involving premature infants. Since the bacteria in the intestine are known to play a role in NEC, bloodstream infections, and ability to digest food, we will determine how small bowel removal affects the bacterial communities of the gut in neonates that have developed NEC.
BJHF	Hong-Shiuann Wu, PhD, RN	Goldfarb School of Nursing	6/1/15-11/30/16	Bright Light on Fatigue in Women Being Treated for Breast Cancer: A Pilot Study	Fatigue is commonly experienced by individuals being treated for cancer and has profound impact on persons' lives. To support the development of a larger study, the proposed study will assess the feasibility of implementing therapeutic bright light in the home setting and estimate its effects on fatigue, sleep/wake disruption, and quality of life in women being treated for breast cancer.

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ICTS	Pamela Xaverius, PhD	SLU - College for Public Health & Social Justice	6/1/15-5/31/16	Pilot Study Estimating the Effect of Well Baby Care on Selected Outcomes	We will conduct a comparative evaluation of selected outcomes from two models of preventive pediatric care: (1) individual care (Usual); and (2) group care (Centering/Parenting). The findings of these effect differences will be used in a larger grant to be resubmitted to Patient Centered Outcomes Research Institute (PCORI). This assessment of effect estimates was recommended in the summary statement for the unfunded, but scored and discussed PCORI proposal.

**Barnes-Jewish Hospital Foundation / Washington University Institute of Clinical & Translational Sciences
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BJHF	Ana Maria Arbelaez, MD, MSCI	Pediatrics: Endocrinology	6/1/14-11/30/15	Hierarchical Brain and Physiological Responses to Hypoglycemia and HAAF in T1DM	Diabetic hypoglycemia (low blood sugar) limits normal sugar control, causes disability and death Previous hypoglycemia decreases a person's hormone and symptoms to a future hypoglycemic episode. The loss of these responses is assumed to reside in the brain. Our goal is determining through imaging the brain regions involved in the loss of these hypoglycemic responses. This may lead to new treatment strategies.
BJHF	Tammie Benzinger, MD, PhD	Radiology: Diagnostic	6/1/14-12/31/15	In vivo Human Tau PET Imaging of Autosomal Dominant Alzheimer's Disease	There are two major pathologies found in the brain in Alzheimer's - amyloid plaques and neurofibrillary tangles. Plaques are deposited up to 15 years before dementia. Tangle deposition may more closely correspond to symptoms, but until now we could only test this through brain biopsies and autopsies. We are using a new compound, T807, to perform brain scans to detect tangles. This project may allow us to improve clinical trials for patients.
BJHF	Carey-Ann Burnham, PhD	Pathology & Immunology	6/1/14-5/31/15	Sequencing- and Culture-Based Evaluation of Skin Flora Following Decolonization	Topical antibiotics routinely prescribed to prevent Staphylococcus aureus infections may also eliminate "beneficial bacteria" on our skin, which may lead to severe infections with other pathogens. The proposed research will establish the methods to study the effects of these treatments on the "beneficial bacteria" and may ultimately result in development of a therapeutic cocktail of organisms which can be applied topically to prevent infections.
ICTS	Sharon Cresci, MD	Department of Medicine: Cardiology	6/1/14-5/31/15	Validation and Further Characterization of Low Frequency Coding Variants in PCG1β	These investigations will study whether genetic differences in a gene known to be involved in physical endurance in animals will have similar effects in humans with cardiovascular disease.
ICTS	Jennifer Duncan, MD	Pediatrics: Critical Care	6/1/14-5/31/15	Impact of Maternal Obesity on Mitochondrial Function in Infant Offspring	Obesity in pregnancy poses serious health risks for the mother and the fetus. Children born to obese mothers are at a greater risk of developing childhood obesity and adult onset diabetes. This study aims to evaluate the impact of maternal obesity on metabolic function in otherwise health infants in order to begin to identify the mother's and infant's most at risk for ongoing health problems and metabolic disease.
BJHF	Emily Jungheim, MD, MSCI	Obstetrics & Gynecology	6/1/14-5/31/15	Lifestyle and Female Reproductive Health	We will use an existing dataset to establish associations between biomarkers of dietary intake and metabolism and biological markers of ovarian reserve in women undergoing treatment for infertility. We will also perform a cross-sectional study of a cohort of women with normal reproductive histories allowing for linkage of female lifestyle factors and biomarkers of dietary intake and metabolism to biological markers of ovarian reserve. The study will help identify modifiable lifestyle factors that contribute to ovarian health in women with normal reproductive histories and in women with infertility. In addition to improving our knowledge of ovarian health for reproduction, this is important as timing of ovarian failure is associated with onset of chronic diseases of aging.
BJHF	Albert Kim, MD, PhD	Neurological Surgery	6/1/14-5/31/15	Molecular Profiling of Tumor Heterogeneity to Predict Clinical Outcomes in Glioblastoma	Glioblastoma (GBM) is a devastating primary brain cancer. Discovering genes that define an individual's GBM will help identify genetic tests that predict a GBM's behavior. Recent evidence shows cancer cells in a tumor consist not only of one kind of cell but many different cells, each with a unique genetic signature, termed "intratumoral heterogeneity." Using advanced genetics, we will identify genetic differences from two distinct biopsy sites in a tumor and create more accurate genetic tests to predict a patient's course.

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ICTS	Gabriel Mbalaviele, PhD	Department of Medicine: Bone & Mineral Diseases	6/1/14-5/31/15	Efficacy of a Novel p38 MAPK Inhibitor in Cryopyrin-Associated Periodic Syndromes	Current drugs for the treatment of diseases known as cryopyrin-associated periodic syndromes are administered by injection, which is expensive. The goal of this project is to determine the efficacy of a new compound for the treatment of these diseases. If this strategy works, the advantage of this compound is that it can be taken by mouth, and is more cost effective.
BJHF	Rizwan Romee, MD	Department of Medicine: Oncology, Bone Marrow Transplant	6/1/14-5/31/15	A Phase 1 Study of Cytokine-Induced Memory-like NK Cells in Patients with Relapsed and Refractory AML	Acute myeloid leukemia (AML) is one of the most common blood cancers and less than half of these patients are cured with current treatment approaches. Recent scientific advances have shown that cytokine activation results in cytokine-induced memory-like (CIML) NK cells with superior anti-leukemia activity. We will translate CIML NK cells into a first-in-human clinical trial for acute myeloid leukemia patients. Correlative studies will evaluate CIML NK cells expansion, survival, activation, and function in patients.
ICTS	Noha Salama, PhD	STLCOP - Pharmaceutical & Administrative Sciences	6/1/14-5/31/15	Targeting Hypoxia to Overcome Pgp-Mediated Drug Resistance in Multiple Myeloma	Over 70% Multiple myeloma (MM) patients eventually become drug-resistant. A major reason for drug resistance is efflux by P-glycoprotein. We will overcome P-gp-mediated resistance by a new strategy, using a novel hypoxia inducible factor (HIF) inhibitor to circumvent P-gp overexpression and re-sensitize relapsed/refractory MM patients. This study will improve clinical trial design with this novel drug combination for treatment of these patients.
ICTS	Gretchen Salsich, PhD, PT	SLU - Physical Therapy and Athletic Training	6/1/14-5/31/16	Task-Specific Movement Pattern Training for Patellofemoral Pain	Patellofemoral joint pain (PFP) is common, persistent and potentially debilitating. Emerging evidence links altered lower limb movement during weight bearing to pain in females with PFP. We will test a novel physical therapy intervention aimed at training people to move correctly during relevant daily activities. Improved movement, pain, function and activity participation will support this potentially cost-effective rehabilitation strategy.
ICTS	Monica Shokeen, PhD	Radiology: Radiological Sciences	6/1/14-5/31/15	C-11 Acetate Molecular Imaging of Myeloma- A Novel Paradigm	Multiple Myeloma (MM) is a blood cancer causing bone lesions. To monitor the localization and evolution of MM, we need imaging techniques, like PET. FDG-PET in MM has limitations, which may depend on metabolism. In our project we will try acetate-PET in a mouse model of MM, compare it to FDG, then verify which detected best the extent of the tumor. We will study the metabolism of MM cells, and whether acetate uptake predicts response to therapy.
ICTS	Christina Stallings, PhD	Molecular Microbiology	6/1/14-5/31/15	Novel Use of Currently Available Compounds to Treat Tuberculosis	Inhibition of Mycobacterium tuberculosis RelMtb enzymatic activity is lethal for the bacteria during infection. We will develop chemical inhibitors of RelMtb activity as a prelude to studying the utility of these compounds as novel tuberculosis treatments. Our investigations will translate our laboratory research into studies that improve human health by providing new tools for the treatment of bacterial infections.
BJHF	Molly Stout, MD, MSCI	Obstetrics & Gynecology	6/1/14-5/31/15	The Vaginal Microbiome And Preterm Birth After Progesterone Prophylaxis	This project will investigate the vaginal microbial communities and inflammatory markers associated with efficacy of progesterone for preterm birth prevention.
ICTS	Ryan Teague, PhD	SLU - Molecular Microbiology & Immunology	6/1/14-5/31/15	Defining Novel Checkpoint Blockade Combinations for Immunotherapy of Metastatic Melanoma in Humanized Mice	Research in our lab is focused on improving T cell immune responses against cancer. Our work in animal models has provided insight into why T cells fail to kill tumors initially, and how these same T cells can be boosted to provide tumor immunity. To enhance clinical relevance, we have generated an innovative humanized mouse model that will enable translation of these laboratory discoveries into improved immunotherapy for patients with cancer.
BJHF	Anitha Vijayan, MD	Department of Medicine: Renal	6/1/14-5/31/15	Biomarkers for the Early and Specific Detection of Kidney Injury	Contrast media is widely used in hospitals for imaging studies. Patients exposed to contrast media may suffer significant kidney injury. The result is increased mortality, prolonged hospital stays, increased dialysis, and chronic kidney disease. Little progress has been made in treating kidney injury over the last fifty years due to an inability to diagnose injury in a timely manner. The overall goal of this study is to develop better tools to diagnose kidney injury in patients exposed to contrast media.
ICTS	Herbert Virgin, MD, PhD	Pathology & Immunology	6/1/14-5/31/15	Microbiome Analysis in Lung Allograft Dysfunction (MALADy)	We will use next-generation shotgun sequencing to study the microbiome, or all of the bacteria, viruses, and fungi, in the lungs of patients after lung transplantation. We will characterize changes in the microbiome that occur during acute or chronic rejection to identify potential new therapeutic targets that may delay or prevent graft failure and improve patient outcomes after lung transplantation.

Funding Source	Principal Investigator	Dept/Division	Project Period	Proposal Title	Description
BJHF	Xiaowei Wang, PhD	Radiation Oncology	6/1/14-5/31/15	Transcriptional Signature to Predict Metastasis in HPV-Positive Oropharyngeal Cancer	Most head and neck cancer patients receive standard therapy. However, clinical outcomes vary significantly and are difficult to predict. Here, we propose to identify a gene signature that can be used to accurately predict head and neck cancer metastasis. In this way, personalized therapies can be applied based on the risk of metastasis, leading to both reduced treatment-related complications and improved survival outcomes.
BJHF	Pamela Woodard, MD	Radiology: Diagnostic	6/1/14-5/31/16	Non-Invasive Detection of Hypoxia in Atherosclerotic Plaque with Cu [64]-ATSM PET-MRI	Cardiovascular disease is the leading cause of death in the United States and throughout the world. Identifying hypoxic and potentially vulnerable plaques at risk for rupture is the focus of this multidisciplinary team, repurposing a currently used oncology PET agent (64Cu-ATSM) to target hypoxic cells and simultaneous use PET-MRI (mMR) to characterize carotid atherosclerosis. The imaging strategy will help identify those with cardiovascular risk.
BJHF	Dmitriy Yablonskiy, PhD	Radiology: Radiological Sciences	6/1/14-5/31/15	Quantitative Evaluation of Changes in the AD Brain Using Advanced MRI	Alzheimer's disease (AD) affects ~5.3 million people in the US and ~30 million people worldwide. A goal of this study is to use new MRI technique developed in PI laboratory for providing new biomarker identifying pathology in the AD brain. Since MRI is much more available modality than current gold standard, PET, this new technique has a potential for improving the quality of patient care, patient outcome and evaluation of new therapeutics.
BJHF	Gregory Zipfel, MD	Neurological Surgery	6/1/14-5/31/15	The Effect of Minocycline on MMP-9 levels and Vasospasm after Subarachnoid Hemorrhage	Cerebral vasospasm-induced delayed cerebral ischemia is the most common and potentially treatable complication related to aneurysmal subarachnoid hemorrhage (SAH). Preclinical studies have shown that metalloproteinase 9 inhibition reduces vasospasm and improves neurological outcomes after experimental SAH. The objective of this project is to investigate the safety profile of minocycline (a MMP-9 inhibitor) in SAH patients, assess the effect of minocycline on MMP-9 expression and activity in serum and CSF following SAH, and begin to determine the effects of minocycline on SAH-induced cerebrovascular deficits.

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BJHF	Amit Amin, MD, MSc	Department of Medicine: Cardiology	6/1/13-5/31/14	Enhancing the Safety of PCI and Improving Patient Outcomes by Reducing Bleeding	Bleeding is a life-threatening complication of PCI, occurring in 2-6% of patients, and even higher at BJH. We propose a collaborative and innovative IT approach to explicitly identify at-risk patients prior to PCI, to aggressively target bleeding avoidance therapies. We hypothesize that this risk-aligned use of bleeding avoidance therapies, replaces standard reactive patient management, with proactive patient management and will reduce bleeding.
BJHF	Anita Bhandiwad, MD	Department of Medicine: Cardiology	6/1/13-5/31/14	Improved Diagnosis of Transplant Coronary Artery Disease by Contrast-Enhanced MRI	In heart transplant recipients, transplant coronary artery disease (TCAD) can be a silent disease, yet it is the greatest obstacle to their long-term survival. The current method of detecting TCAD requires frequent x-ray cardiac catheterization angiograms to detect narrowing of the arteries. This research presents a new MRI technique which may provide earlier, more specific detection of TCAD, thereby allowing better management of the disease.
ICTS	Jonathan S. Boomer, PhD, MT (ASCP)	Department of Medicine: Pulmonary	6/1/13-5/31/14	Reactivation of Endogenous Latent Viruses Drive Immune Suppression in Sepsis	In the US, sepsis carries a 30% mortality rate. Currently, we lack the ability to determine an individual's immune competence and thus to identify those that are immune suppressed and at risk of secondary infections. Thus, this proposal will study how reactivation of latent viruses contribute to immune suppression, identify viable markers of host immune responses and targets for immune therapies that reverse immune suppression in sepsis.
ICTS	Derek Byers, MD, PhD	Department of Medicine: Pulmonary	6/1/13-11/30/14	Immune Cell Targets in Chronic Obstructive Pulmonary Disease	We will isolate human innate lymphoid cells and M2 monocytes and macrophages from the lung tissues of patients with end-stage COPD to better understand their functions as responders in a newly identified pathway of IL-33-IL33R signaling that is increased in chronic airway disease.
ICTS	Vikas Dharnidharka, MD, MPH	Pediatrics: Nephrology	6/1/13-5/31/14	Immune Monitoring to Optimize Superior Allograft Outcomes in Transplantation	We will test the hypothesis that opportunistic viral infections such as CMV and EBV after transplant lead to a progressive scarring called chronic rejection, shortening transplant survival. We will also test if this association is mediated in part by autoantibodies to newly exposed self-antigens in the kidney transplant, induced by TH17 cells activated by the viral infections. Better understanding of this paradigm will improve patient care.

Funding Source	Principal Investigator	Dept/Division	Project Period	Proposal Title	Description
BJHF	Allison King, MD, MPH	Program in Occupational Therapy	6/1/13-5/31/14	Feasibility of Smart Phone Self-Management Among Adolescents with Sickle Cell	This is a single center study to assess the feasibility of using smart phones to improve self-management and to collect patient reported outcomes among adolescents with sickle cell disease.
BJHF	Michael Lane, MD, MSc	Department of Medicine: Infectious Diseases	6/1/13-5/31/14	Improving Safety and Outcomes of Outpatient Parenteral Antibiotic Therapy (OPAT)	We will study the frequency of risk and risk factors for 30 day all-cause and therapy-related readmission among patients discharged from Barnes Jewish Hospital who received outpatient antibiotic therapy (OPAT). We will develop and validate a risk prediction model to prospectively identify patients at greatest risk for OPAT-related readmission. This will allow for the development of strategies to prevent readmission in this at-risk population.
ICTS	Amy Licis, MD	Neurology	6/1/13-5/31/15	Actigraphy Validation in Children with Spastic Quadriplegic Cerebral Palsy	Children with cerebral palsy (CP) have a high prevalence of sleep issues. Actigraphy measures movement to reveal sleep and wake states but it has not been validated in patients with abnormal neuromuscular function. We will compare sleep and wake states measured by actigraphy to sleep and wake states measured by simultaneous polysomnography in twenty 2-17 year old children with CP and twenty 2-17 year old children without CP.
BJHF	Yiing Lin, MD, PhD	Surgery: General	6/1/13-5/31/14	Discovery of Novel Circulating MicroRNAs for the Early Detection of Hepatocellular Carcinoma	As the incidence of hepatocellular carcinoma continues to rise, improved methods for surveillance are needed. MicroRNAs are regulatory molecules and are released by tumors into the blood stream. Using next generation sequencing to perform complete and unbiased characterization of microRNAs in tumor tissue and plasma of patients with HCC, we will identify microRNAs to be developed into a blood-based tumor biomarker for the early detection of HCC.
ICTS	Bess Marshall, MD	Pediatrics: Endocrinology	6/1/13-5/31/14	Sulfonylureas in Type 1 Diabetes Patients	Sulfonylureas are used to re-establish glucose mediated insulin secretion in individuals with neonatal Diabetes. The mechanism by which glucose mediated insulin secretion can be over and under expressed has expanded exponentially by studying the genetic defects of individuals with neonatal diabetes and hyperinsulinism. We propose a pilot study to evaluate sulfonylurea response in Type 1 Diabetic participants without diabetes-associated autoantibodies and use gene sequencing to identify genetic associations in those who have sulfonylurea response.
BJHF	Jason Mills, MD, PhD	Department of Medicine: Gastroenterology	6/1/13-5/31/14	Tamoxifen as an Agent to Reverse Intestinal Metaplasia	Our preliminary data shows Tamoxifen increases gastric stem cell activity and expression of the progastroesophageal gene SOX2 in mice, and correlates with 3-fold decreased prevalence of intestinal metaplasia in the stomach in humans. Our aims are to determine 1) whether Tamoxifen increases SOX2 and decreases CDX2 in human gastric tissue and 2) whether Tamoxifen also correlates with decreased intestinal metaplasia (Barrett's) in the esophagus.
BJHF	Michael E. Mullins, MD	Department of Medicine: Emergency Medicine	6/1/13-5/31/14	Colchicine and Risk of Death	Using Truven Health Analytics MarketScan Commercial Claims Database from 2006-2010, we shall identify patients with gout and patients taking either colchicine or other gout medications based upon the NDC codes for these drugs.
ICTS	Stephen T. Oh, MD, PhD	Department of Medicine: Hematology	6/1/13-5/31/14	Clonal Evolution and Genetic Complexity in Myeloproliferative Neoplasms	Our long-term goal is to define the genetic basis of Myeloproliferative Neoplasms (MPNs) and their progression to secondary acute myeloid leukemia. We will perform whole genome sequencing (WGS) with deep sequencing validation on matched serial samples obtained at both chronic and blast phases. These studies will enhance our understanding of MPN pathogenesis and potentially lead to novel therapeutic approaches to prevent disease progression.
BJHF	Linda R. Peterson, MD	Department of Medicine: Cardiology	6/1/13-7/31/14	Dietary Nitrates for Heart Failure	Heart failure is a disabling and often fatal disease affecting ~5.8 million Americans. Our study in heart failure aims to determine 1) if ingesting beetroot juice containing nitrate molecules will improve exercise performance and if so 2) how nitrate improves exercise performance by examining heart and muscle responses. Improving exercise performance should ameliorate the disability from heart failure, a major public health problem.

Funding Source	Principal Investigator	Dept/Division	Project Period	Proposal Title	Description
BJHF	Varun Puri, MD	Surgery: Cardiothoracic	6/1/13-5/31/14	Predictive Modeling in Lung Cancer	Lung cancer is a major public health problem. Our proposal is designed to develop models to predict long-term post-treatment outcomes in patients with early-stage lung cancer. Decision modeling using prospectively maintained Washington University databases will be utilized to create these tools. The models will be made available to clinicians and the public via the Washington University website via an electronic, user-friendly interface.
ICTS	Dirk M. Spitzer, PhD	Surgery: General	6/1/13-5/31/14	Pharmacologic Evaluation of a Cancer Drug Fully Activated at the Tumor Cell	TRAIL is currently under clinical investigation. Existing TRAIL formulations have limitations that were overcome by us via generating the covalently linked drug platform TR3. Surface tethering of TR3 correlates with improved tumor cell killing. Ovarian cancers express the surface marker CA125, a high affinity receptor for mesothelin. Targeting the mesothelin-TR3 fusion protein to ovarian cancer is substantially more potent than TR3 alone.
ICTS	Phillip Tarr, MD	Pediatrics: Gastroenterology	6/1/13-5/31/14	Predictors of Hemolytic Uremic Syndrome in Children with Bloody Diarrhea	Patients infected with E. coli O157:H7 have a high risk of acute kidney failure. We strive to identify these patients at point of presentation.
ICTS	John E. Tavis, PhD	SLU - Biochemistry & Molecular Biology	6/1/13-5/31/14	Repurposing HIV Integrase Drugs as Hepatitis B Virus RNaseH Inhibitors	Hepatitis B virus infects >350 million people and current therapies cannot cure patients, so new drugs are needed. The HBV ribonuclease H is an essential viral enzyme, but it has not been targeted for drug development. We will exploit enzymatic similarities between RNaseH and integrase enzymes to screen analogs of the anti-HIV integrase drugs Raltegravir and Elvitegravir for anti-HBV activity, with the goal of driving anti-HBV drug development.
BJHF	Nancy Tye-Murray, PhD	Otolaryngology	6/1/13-5/31/14	Promoting Effective Communication with Patients Who Have Hearing Loss	We propose using a real-time captioning system to enhance communication between physicians and older persons who have hearing loss. Using the WUSM Standardized Patient Center, we will compare patient physician interactions with and without captioning. Our long-term goal is to develop and disseminate nationally communications-training programs that teach physicians how to interact with patients with hearing loss when real-time captioning is present and as well as how to communicate when captioning is not available.
ICTS	Gautam Yadama, PhD	School of Social Work	6/1/13-5/31/14	Understanding Dynamics of Sustained Use of Improved Cookstoves	Improved-high efficiency and low emissions-cookstoves offer a solution to the public health challenge attributed to indoor air pollution in developing countries. However, lack of understanding of the socioeconomic context of the user has resulted in poor uptake and sustained use. We will use participatory system dynamics modeling to understand the context and inform strategies for dissemination and implementation of improved cookstoves.
ICTS	Nabeel R. Yaseen, MD, PhD	Pathology & Immunology	6/1/13-5/31/14	Targeting the DEK-NUP214 Oncogene with CRM1 Inhibitors	The DEK-NUP214 fusion oncogene is associated with an aggressive, but understudied form of acute myeloid leukemia (AML). We will determine the effects of DEK-NUP214 on proliferation, self-renewal, differentiation, and global gene expression in primary human CD34+ cells. We will test the hypothesis that the nuclear exporter CRM1 mediates the leukemogenic effects of DEK-NUP214 and determine whether CRM1 inhibitors can counteract those effects.

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BJHF	Walter J. Akers, DVM, PhD	Radiology: Radiological Sciences	6/1/12-5/31/13	Glioblastoma Margin Detection by Improved Fluorescence Guided Surgery Technique	Fluorescence-guided surgery (FGS) has demonstrated improved tumor resection and progression free survival time relative in GBM patients. We propose to improve the sensitivity of fluorescence guided surgery by incorporating real-time imaging and visual overlay onto the surgical field visualized through the surgical microscope. Improved FGS will enable more sensitive and quantitative guidance of GBM resection and improve patient outcomes.
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Funding Source	Principal Investigator	Dept/Division	Project Period	Proposal Title	Description
BJHF	Carlos Bernal-Mizrachi, MD	Department of Medicine: Endocrinology, Metabolism, and Lipid Research	6/1/12-5/31/13	Vitamin D and Cardiovascular Disease in Diabetic African Americans	Vitamin D deficiency is associated with excess cardiovascular disease in diabetics and African Americans (AA). We will treat vitamin D-deficient, diabetic AA with vitamin D3 4000 vs. 600 IU/day to determine whether vitamin D3 supplementation slows carotid intimal thickening, improves vascular endothelial function, and suppresses monocyte adhesion and migration in this population. This research will form the basis for a full-scale trial.
ICTS	Deepta Bhattacharya, PhD	Pathology & Immunology	6/1/12-5/31/13	Early Molecular and Cellular Biomarkers of Human Influenza Vaccine Efficacy	The goal of this project is to identify molecular markers of influenza vaccine efficacy at early time points post-immunization. Current approaches require long-term experimental and epidemiological studies; therefore the identification of novel early biomarkers of efficacy would greatly accelerate vaccine research.
ICTS	Alison Gale Cahill, MD, MScI	Obstetrics & Gynecology	6/1/12-5/31/13	Electronic Fetal Heart Rate Patterns in Preterm Infants and Neurologic Injury	The aims of this study will at once provide first-time evidence of electronic fetal heart rate monitoring (EFM) use in preterm infants, and provide critical pilot data for the teams' future R01 proposal which will prospectively examine the use of EFM in preterm births.
BJHF	Christopher R. Carpenter, MD, MSc	Department of Medicine: Emergency Medicine	6/1/12-5/31/13	Measurement Approaches to Capture and Evaluate "Implementation Strategies"	Developing methods to improve the quality of healthcare delivered is a top priority of the Institute of Medicine, but specific methods to measure and grade implementation strategies do not exist. The biggest weakness in the rapidly evolving world of implementation science is the gap between conceptualization and our ability to assess these interventional models. Our proposal will yield several advantageous byproducts for the Barnes Jewish Hospital Foundation: 1. Congregate and organize transdisciplinary Washington University faculty with interest and expertise in implementation science; 2. provide the infrastructure to develop and field test mixed methods metrics for implementation science; 3. enhance the potential to publish these findings; and 4. optimize external funding chances.
BJHF	Slava Epelman, MD, PhD	Department of Medicine: Cardiology	6/1/12-5/31/13	Prognostic MicroRNA Analysis in Monocytes Following Acute Myocardial Infarction	Ischemic heart disease is the leading cause of death in the US. Animal studies have conclusively demonstrated that infiltrating monocytes orchestrate the healing process after myocardial infarction (MI), however this has not been exploited for clinical utility. We hypothesize microRNAs induced in monocytes following MI will predict which patients will recover myocardial function and which will not. The advantage of this approach is that pathological microRNAs can be targeted using existing technologies.
BJHF	Michael J. Gardner, MD	Orthopaedic Surgery	6/1/12-5/31/13	The Effects of Construct Stiffness on Outcomes in Distal Femur Fractures	The optimal mechanical stiffness of fracture implants is unknown. We have developed a novel device to measure fracture fixation construct intraoperatively. This study involves fully defining the reliability of the device, as well as application in a small group of patients to evaluate possible association between stiffness and clinical outcomes.
ICTS	Sarah L. George, MD	SLU - Internal Medicine: Infectious Diseases	6/1/12-5/31/13	Immunity to Wild-Type Virus and Immunodominant Epitopes After Dengue Vaccination	Dengue is a rapidly spreading mosquito-borne disease which can be fatal. Development of a dengue vaccine is a high priority but it is unclear how well current vaccine formulations induce immunity to natural viruses and key viral antigens. We will test how well serum from people who received a dengue vaccine neutralizes natural viruses and the durability and avidity of antibodies which recognize key immunodominant neutralizes natural viruses and the durability and avidity of antibodies which recognize key immunodominant antigens.
ICTS	Sarah M. Hartz, MD, PhD	Psychiatry	6/1/12-5/31/13	Return of Results in Genetic Studies	There is no system in place for reporting genetic results to study participants in genetic studies. In this study, we will recruit 100 subjects from an ongoing genetic study and we will carefully report the risks for lung cancer, breast cancer, prostate cancer and colon cancer to the participants. We will then assess how they respond to this information. This study lays the foundation for bringing genetic research to individualized medicine.
ICTS	Christina N. Lessov-Schlaggar, PhD	Psychiatry	6/1/12-11/30/13	Cotwin-Control Study of Cigarette Smoking and Brain Reward Processing	This study investigates the neurobiology of smoking behavior using functional neuroimaging and a genetically-informative study of monozygotic and dizygotic twin pairs discordant for smoking. The goal of the study is to dissociate the direct effect of smoking exposure from that of predisposing traits on task-evoked brain reward processing and on functional connectivity of reward-related neurocircuitry.

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BJHF	Amanda L. Lewis, PhD	Molecular Microbiology	6/1/12-5/31/13	Bacterial Vaginosis Sialidases; Roles in Epithelial Association and Preterm Birth	Here we 1) apply biochemical approaches for detection of bacterial vaginosis (BV) using sialidase activity, 2)examine BV sialidases as risk factor for preterm birth, and 3) investigate the role of BV sialidases in bacterial mucus degradation and epithelial colonization.
BJHF	Faidon Magkos, MSc, PhD	Department of Medicine: Geriatrics and Nutritional Science	6/1/12-5/31/13	Effects of Weight Loss on <i>In Vivo</i> Colonocyte Proliferation Rate in Obese Subjects	Sixteen obese postmenopausal women will be randomized to either a low-calorie diet (treatment, n=8) or a weight maintaining diet (control, n=8). Subjects will be studied before and after 3 months, when the treatment group has lost ~5% body weight. Colonocyte proliferation rate will be determined in vivo by using deuterated (heavy) water to endogenously label the DNA of dividing cells, in conjunction with sigmoid colon biopsies.
ICTS	Amit Mathur, MBBS, MD	Pediatrics: Newborn Medicine	6/1/12-5/31/13	Cerebral Monitoring of the Very Preterm Brain	Very preterm infants are at high risk for adverse neurologic outcome. Changes in cerebral blood flow (CBF) and loss of autoregulation during the first 3 days are possible contributors to development of intraventricular hemorrhage, a major source of injury. We propose longitudinal near-infrared spectroscopy and amplitude-integrated EEG to associate blood pressure changes with CBF and brain electrophysiology to assess for brain injury.
BJHF	Ben Palanca, MD, PhD	Anesthesiology	6/1/12-5/31/13	Brain Monitoring During General Anesthesia, Through Diffuse Optical Tomography	The mechanisms of anesthetic action on brain networks remain unclear but have clinical implications. Human volunteers exhibit weakened correlations among brain regions when anesthetized but data on surgical patients under general anesthesia is lacking. Functional connectivity diffuse optical tomography (fcDOT) is a novel and portable light-based technique for imaging brain networks. fcDOT will be used to detect changes in correlated brain activity in surgical patients before, during, and after general anesthesia.
BJHF	Mario Schootman, PhD	Department of Medicine: Health Behavior Research	6/1/12-5/31/13	Timing and Frequency of Surveillance Colonoscopy in Recurrent Colorectal Cancer	This project will compare the effectiveness of the timing and frequency of surveillance colonoscopy on risk of death among CRC patients aged 66 or older using the 2000-2008 large, high-quality, population-based, linked Surveillance, Epidemiology, and End Result-Medicare data and advanced epidemiologic and statistical methods. Results of this project could have a huge impact on patient outcomes, clinical care practices, and financial costs.
ICTS	Yi Su, PhD	Radiology: Radiological Sciences	6/1/12-5/31/13	Quantification of Brain Metabolism Using PET	In this study, we aim to: 1) validating an image-derived AIF estimation technique for quantitative assessment of cerebral blood flow and oxygen metabolism against the "gold standard" arterial sampling procedure using conventional PET scanner (Siemens Exact HR+); and 2) collect pilot brain hemodynamic imaging data using the PET/MR scanner (Siemens Biograph mMR), and compare them to those obtained using a conventional PET scanner.
BJHF	Gregory J. Zipfel, MD	Neurological Surgery	6/1/12-5/31/13	The Effect of Sildenafil of Vasospasm and CBF After Subarachnoid Hemorrhage	Cerebral vasospasm is the most common and potentially treatable complication related to aneurysmal subarachnoid hemorrhage (SAH). Studies have shown that phosphodiesterase V inhibition reduces vasospasm and improves neurological outcomes after experimental SAH. The objective of this project is to investigate the dosing, safety profile and effect of sildenafil (a POE V inhibitor) on vasospasm and cerebral blood flow in patients with SAH.

updated as of 6/20/17 AC