22nd annual celebration
November 20, 2017

Eleanor and Miles Shore 50th Anniversary Fellowship Program for Scholars in Medicine

HARVARD
MEDICAL SCHOOL

HARVARD
School of Dental Medicine

Eleanor and Miles Shore 50th Anniversary Fellowship Program for Scholars in Medicine 2017 Annual Reception

4:00 p.m. **Arrival & Light Refreshments**

4:30 p.m. **Welcome**

Nancy J. Tarbell, MD
Dean for Academic & Clinical Affairs

Historical Perspective

Eleanor G. Shore, MD, MPH
Senior Consultant to the Office of Academic & Clinical Affairs

Maureen T. Connelly, MD, MPH
Dean for Faculty Affairs

Presentation of Awards

George Q. Daley, MD, PhD
Dean of the Faculty of Medicine

Carol K. Bates, MD
Associate Dean for Faculty Affairs

5:15 p.m. **Reception**

The 50th Anniversary Fellowship Program for Scholars in Medicine was established in 1995 to celebrate the admission of women to Harvard Medical School, to acknowledge the important contributions that women have made to the School, and to enhance the quality and diversity of the Faculty of Medicine. The program was renamed in 2004 to honor the efforts of Dr. Eleanor Shore, former Dean for Faculty Affairs, and Dr. Miles Shore, Bullard Professor of Psychiatry, Emeritus, on behalf of the 50th Anniversary Program for Scholars in Medicine.

2017 Recipients

Ana Paula Abreu Metzger, MD, PhD

Instructor in Medicine | Brigham and Women's Hospital
Brigham and Women's Hospital Faculty Career Development Award
Mentor: Ursula B. Kaiser, MD, Professor of Medicine, Brigham and Women's Hospital
Project Title: Deciphering the Molecular Mechanisms by Which MKRN3 Regulates Puberty Initiation

Project Description: Puberty is the process of physical and psychological changes through which a child's body matures into an adult body capable of sexual reproduction. What triggers puberty initiation remains as one of the great mysteries of human biology. Our group recently discovered that MKRN3 is associated with early puberty. Mutations in MKRN3 are the most common genetic cause of central precocious puberty. The goals of this project are to better understand the molecular mechanisms by which MKRN3 functions in the hypothalamus. These studies will lead to new insights into how MKRN3 contributes to early puberty initiation.

Mobolaji Oluwaseun Ajao, MD

Instructor in Obstetrics, Gynecology and Reproductive Biology | Brigham and Women's Hospital
Brigham and Women's Hospital Obstetrics and Gynecology Foundation Fellowship
Mentor: Jon I. Einarsson, MD, PhD, MPH, Associate Professor of Obstetrics, Gynecology, and Reproductive Biology, Brigham and Women's Hospital
Project Title: Developing an Outpatient Surgical Protocol for a Combined Laparoscopic and Vaginal Repair of Pelvic Organ Prolapse with or without Concomitant Anti-Incontinence Procedure

Project Description: Symptomatic pelvic organ prolapse is a very common condition that can significantly impact quality of life with disturbances in voiding and sexual function. Although other management options exist, the definitive and most durable treatment is surgical with pelvic reconstruction and suspension of the prolpasing structures. Approximately 100,000 inpatient hysterectomies are performed annually in the US for this indication. The goal of this project is to assess the outcomes of patients undergoing these procedures in minimally invasive fashion, compare to hospitalized patients and develop a safe protocol for outpatient surgical management.

Trevor E. Angell, MD

Instructor in Medicine | Brigham and Women's Hospital
Brigham and Women's Hospital Department of Medicine Fellowship
Mentor: Erik K. Alexander, MD, Professor of Medicine, Brigham and Women's Hospital
Project Title: Assessment of Circulating Immune Suppressor Cells for Predicting Treatment Response in Thyroid Cancer
Project Description: Thyroid cancer is common and predicting recurrence remains difficult. The human immune system plays an important role in cancer and one cell type, myeloid-derived suppressor cells (MDSC), have been found in the blood of patients with thyroid cancer. This study will investigate how MDSC levels in the blood predict the outcomes of thyroid cancer patients, including if their cancer progresses, recurs, or if they die from their disease. By understanding the importance of MDSC levels, we may give doctors a new tool to provide more individualized care to thyroid cancer patients.

Natasha M. Archer, MPH, MD

Instructor in Pediatrics | Boston Children's Hospital and Dana-Farber Cancer Institute
Dana-Farber Cancer Institute Fellowship
Mentor: David G. Nathan, MD, Robert A. Stranahan Distinguished Professor of Pediatrics and Professor of Medicine, Dana-Farber Cancer Institute
Project Title: Sickle Hemoglobin Protection Against Plasmodium Falciparum
Project Description: Sickle hemoglobin (HbS) protects individuals with sickle cell trait from malaria, the deadly infection caused by Plasmodium falciparum. Several mechanisms for this partial protection have been suggested. My hypothesis is that impaired hemoglobin digestion secondary to polymerized HbS results in poor parasite growth thus conferring resistance to the disease. In this application, I propose to confirm this growth defect, establish that the molecular basis for HbS malaria protection is the slower P. falciparum parasite digestion of polymerized HbS and identify the essential proteases involved in HbS digestion when polymerization is prevented.

Nicole Baumer, MD

Instructor in Neurology | Boston Children's Hospital
Boston Children's Hospital Department of Neurology Faculty Development Fellowship
Mentor: William Barbaresi, MD, Professor of Pediatrics, Boston Children's Hospital
Project Title: Development of a Prospective, Longitudinal Database to Study Risk Factors, Diagnosis, and Treatment of Co-Occurring Neurodevelopmental Conditions in Individuals with Down Syndrome
Project Description: The goal of this project is to create a prospective, longitudinal clinical database to characterize neurodevelopmental profiles in children with Down syndrome. Comprehensive medical, neurodevelopmental, and psychological information will be gathered from clinical visits, neuropsychological evaluations, and electronic surveys with parent and teacher report of development, medical, and behavioral symptoms. We intend to use this database to answer clinical questions related to symptoms, risk factors, and treatments associated with co-occurring neurodevelopmental conditions, such as Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD) in children with Down syndrome (DS).

Marta Bianciardi, PhD

Assistant Professor of Radiology | Massachusetts General Hospital
Claflin Distinguished Scholar Award
Mentors: Lawrence Wald, PhD, Professor of Radiology, Massachusetts General Hospital
Bruce Rosen, MD, PhD, Professor of Radiology, Massachusetts General Hospital
Aleksandar Videnovic, MD, Associate Professor of Neurology, Massachusetts General Hospital
Project Title: Imaging individual brainstem nuclei and pathways in sleep disorders
Project Description: The aim of this project is to provide in living humans a structural neuroimaging atlas of brainstem nuclei that regulate arousal and motor functions, and are crucially involved in the progression of sleep and neurodegenerative disorders. The developed atlas will be used to evaluate -with previously unmet precision- the localization of brainstem lesions and the integrity of brainstem connectivity pathways underlying arousal and motor mechanisms in a premotor model of Parkinson's disease (PD), namely REM sleep behavior disorder (RBD). This will prove useful for RBD assessment and therapeutics research, and for the evaluation and treatment of PD at early stages.

Carolina Bibbo, MD

Instructor in Obstetrics, Gynecology and Reproductive Biology | Brigham and Women's Hospital

Brigham and Women's Hospital Obstetrics and Gynecology Foundation Fellowship

Mentor: Julian N. Robinson, MD, MBBS, Associate Professor of Obstetrics, Gynecology and Reproductive Biology, Brigham and Women's Hospital

Project Title: Re-Establish the Fetoscopic Laser Ablation Program and Strengthen Fetal Therapy for Multiple Gestations

Project Description: My goal is to acquire the necessary skills to be able to re-launch the fetoscopic laser ablation program at our institution and further strengthen the fetal intervention program related to multiple gestations. Twin-to twin transfusion syndrome affects 10-15% of monochorionic-diamniotic twin pregnancies and fetoscopic laser ablation of anastomotic vessels in the shared placenta is the standard of care. Currently, there are no specialized centers in Massachusetts that offer this treatment. Laser equipment is already available at our institution and I plan to gain hands-on experience at other fetal centers.

Somnath Bose, MBBS

Instructor in Anaesthesia | Beth Israel Deaconess Medical Center

Beth Israel Deaconess Medical Center Department of Anaesthesia John Hedley-Whyte Research Fellowship

Mentors: Samuel M. Brown, MD, MS, Associate Professor of Medicine, University of Utah

Daniel Talmor, MD, MPH, Edward Lowenstein Professor of Anaesthesia, Beth Israel Deaconess Medical Center

Project Title: Relative Importance of Outcome Measures in Acute Respiratory Distress Syndrome (ARDS): A Stakeholders' Perspective

Project Description: Acute Respiratory Distress Syndrome (ARDS) is a global health problem. It accounts for ~3.6 million hospital days and over 100,000 survivors annually in US alone. ARDS is associated with significant mortality, short and long term morbidity. There is scant literature regarding the hierarchy of preferred outcome measures among ARDS survivors and their caregivers. We propose to conduct a prospective cohort study consisting of structured interviews with survivors of ARDS and their caregivers to understand what patients and their caregivers value beyond "survival benefit". This would aid researchers select endpoints in accordance with key stakeholders' preferences for future trial designs.

Thea Brennan-Krohn, MD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: James Kirby, MD, Associate Professor of Pathology, Beth Israel Deaconess Medical Center
Project Title: Antimicrobial Synergy for Carbapenem-Resistant Enterobacteriaceae
Project Description: Carbapenem-resistant Enterobacteriacae (CRE) are among the most drug-resistant bacteria known and are increasing in frequency worldwide. Treatment options for these pathogens are highly limited at present, but there is evidence that patients have better outcomes when treated with more than one antibiotic in combination. However, testing for such antimicrobial synergy in the lab is challenging and is not available in the clinical setting. My project involves the development of new methods to test for synergy and investigation of the effects of drug combinations in a mouse model of CRE infection.

Steven Chen, MD, MPH

Instructor in Dermatology | Massachusetts General Hospital
Massachusetts General Hospital Dermatology Service Faculty Career Development Fellowship
Mentors: Thomas D. Horn, MD, MBA, Professor of Dermatology, Part-time, and Professor of Pathology, Part-time, Massachusetts General Hospital
David E. Fisher, MD, PhD, Edward Wigglesworth Professor of Dermatology and Head of the Department of Dermatology, Massachusetts General Hospital
Project Title: A Comparison of Patient and Provider Satisfaction, Biopsy Utilization, and Cost between Resident-Led and Attending-Led Dermatology Clinics/Support for MHPEd from the MGHIHP
Project Description: This project compares self-reported satisfaction scores between patients and providers in regards to experiences in a resident-led dermatology clinic compared to traditional attending-led clinics. Furthermore, biopsy rates and cost will also be compared.

Peter Davis, MD

Instructor in Neurology | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: Mustafa Sahin, MD, PhD, Professor of Neurology, Boston Children's Hospital
Jurriaan M. Peters, MD, PhD, Assistant Professor of Neurology, Boston Children's Hospital
Project Title: Brain Network Biomarkers of Epilepsy Development in Tuberous Sclerosis Complex
Project Description: This research will identify changes in neural connectivity that anticipate and reflect the development of epilepsy in infants with Tuberous Sclerosis Complex (TSC). Early risk stratification of infants with TSC opens a window of opportunity to intervene before epilepsy onset with disease-modifying treatments, potentially averting the development of epilepsy or minimizing its detrimental effect on brain development. In addition, improving our ability to noninvasively measure changes in brain development and connectivity in individuals with TSC could advance our understanding of neurodevelopmental disorders, such as autism, that frequently occur in TSC.

Laura E. Dichtel, MD

Instructor in Medicine | Massachusetts General Hospital
Harvard Medical School Fellowship in Honor of Jeffrey S. Flier, MD
Mentor: Karen K. Miller, MD, Professor of Medicine, Massachusetts General Hospital
Project Title: The Growth Hormone and Insulin-like Growth Factor-1 Axis in Nonalcoholic Fatty Liver Disease and Nonalcoholic Steatohepatitis
Project Description: Nonalcoholic fatty liver disease (NAFLD) is highly prevalent, present in approximately 80% of obese individuals. Nonalcoholic steatohepatitis (NASH) is the progressive form of the disease characterized by liver inflammation and fibrosis. NASH-related cirrhosis is expected to be the leading indication for liver transplant by the year 2020, however, the pathophysiology of NAFLD and NASH are poorly understood. Growth hormone has lipolytic and anti-inflammatory properties, and the goal of this project is to determine its effect on liver fat, inflammation and fibrosis in NASH. I hope to further our understanding of this disease and identify novel therapies where few currently exist.

Angela Feraco, MD, MMSc

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Joanne Wolfe, MD, MPH, Associate Professor of Pediatrics, Boston Children's Hospital and Dana-Farber Cancer Institute
Project Title: The Day 100 Talk: A Pilot Feasibility Study of a Communication Intervention Targeting the Early Treatment Period in Pediatric Oncology
Project Description: Receiving a diagnosis of childhood cancer is overwhelming and initial discussions may not adequately facilitate illness understanding and family adaptation. Although families report greater capacity to engage with illness information and a desire to regroup with their interdisciplinary oncology team (IOT) 1-3 months following cancer treatment initiation, no framework exists and practices are variable. To address this missed opportunity, we developed and are testing a communication intervention, the "Day 100 Talk" (D100), which includes an IOT training program and conversation tools that guide a structured in-depth conversation during the early treatment period.

Jose Figueroa, MD, MPH

Instructor in Medicine | Brigham and Women's Hospital
Brigham and Women's Hospital Faculty Career Development Award
Mentor: Ashish K. Jha, MD, MPH, Professor of Medicine, Harvard Medical School, and K.T. Li Professor of International Health, Harvard T.H. Chan School of Public Health
Project Title: Impact of Value-Based Care on Vulnerable Populations
Project Description: Recently, the US introduced the Hospital Readmissions Reduction Program, which is a national pay-for-performance program that penalizes hospitals for higher-than-expected readmission rates. Little is known about the effect of this program on racial and ethnic minorities, which historically have had higher rates of readmissions. This project will investigate the impact of this policy on readmission rates among racial/ethnic minorities and the hospitals that serve them. In addition, using a national survey, it seeks to identify effective hospital strategies that are promising for improving readmission rates among minority patients.

Esther Freeman, MD, PhD

Assistant Professor of Dermatology | Massachusetts General Hospital

Claflin Distinguished Scholar Award

Mentor: Maryam Asgari, MD, MPH, Associate Professor of Dermatology, Massachusetts General Hospital and Associate Professor of Population Medicine, Harvard Pilgrims Health Care Institute

Project Title: Kaposi's Sarcoma Despite AntiretroviralTreatment for HIV

Project Description: In many parts of sub-Saharan Africa, AIDS-related Kaposi's sarcoma (KS) is the most commonly reported malignancy in HIV-infected adults and one of the most common cancers in the overall population. Antiretroviral therapy has significantly improved survival after a diagnosis of KS, but despite these successes, antiretroviral therapy is not tantamount to cure for KS. This study investigates a novel group of KS patients in Kenya that has only recently been identified: patients whose HIV disease is well controlled on antiretroviral therapy who develop this cancer despite treatment.

Kathryn J. Gray, MD, PhD

Instructor in Obstetrics, Gynecology and Reproductive Biology | Brigham and Women's Hospital

Brigham and Women's Hospital Obstetrics and Gynecology Foundation Fellowship

Mentor: Richa Saxena, PhD, Associate Professor of Anaesthesia, Massachusetts General Hospital

Project Title: Genetic Risk Factors for HELLP Syndrome

Project Description: Preeclampsia is a severe, pregnancy-specific disorder, with a heritable component, that leads women to develop elevated blood pressure and increased urinary protein and can only be cured by delivery of the fetus. Given that both maternal and fetal genetic factors influence disease risk, we propose to perform genetic sequencing on paired maternal-fetal samples from pregnancies affected by HELLP syndrome (a severe subtype of preeclampsia characterized by hemolysis, elevated liver enzymes, and low platelets) in order to identify novel variants that will lead to improved understanding of the disease.

Katie Greenzang, MD, EdM

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Jennifer Mack, MD, MPH, Associate Professor of Pediatrics, Dana-Farber Cancer Institute
Project Title: Parental Worries and Consideration of Late Effects of Pediatric Cancer Treatment
Project Description: Currently, over 80% of children with cancer will become long-term survivors, but 2/3 of survivors experience side effects of cancer or its treatment that impact their health and quality of life long after cure. Though pediatric oncologists consider long-term health effects when designing new treatments, we know little about how parents think about potential long-term health effects when making treatment decisions, nor do we understand which long-term side effects are most worrisome to families. In this study, we aim to learn how parents consider the late effects of cancer treatment when making treatment decisions for their children.

Amit Grover, MB, ChB

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital Division of Gastroenterology and Nutrition Shore Fellowship
Mentors: Victor L. Fox, MD, Associate Professor of Pediatrics, Boston Children's Hospital
Richard J. Grand, MD, Professor of Pediatrics, Boston Children's Hospital
Project Title: Pain in pediatric acute pancreatitis
Project Description: The focus of this proposal is to further characterize an important and understudied aspect in the management of pediatric acute pancreatitis, pain. The ongoing epidemic of opioid abuse in the US has prompted concern and action at all levels of health care. Currently, the standard of care across many institutions is to provide opioids as first line analgesia in acute pancreatitis. Whether or not this is necessary is the focus of this study; we hope to demonstrate that alternatives, or opioid-sparing therapies may serve as a safer and better tolerated alternative.

Viswanath Gunda, PhD

Instructor in Surgery | Massachusetts General Hospital
Massachusetts General Hospital Department of Surgery Faculty Development Fellowship
Mentor: Sareh Parangi, MD, Professor of Surgery, Massachusetts General Hospital
Project Title: Combining BRAF Targeted Therapy and Immune Checkpoint Inhibitors to Treat Thyroid Cancer
Project Description: Some patients with aggressive and recurrent thyroid cancer do not respond well to current treatments. Targeted therapy with inhibitors against oncogenic mutant protein BRAFV600E show promise, but unfortunately have relatively short-lived effects due to development of resistance. Our work shows that inhibition of BRAFV600E significantly increases immune cell migration into tumors. However, this migration is not accompanied by a significant immune response due to an immunosuppressive microenvironment within in the tumor. Our project proposes to combine BRAF inhibitors with immune "checkpoint" inhibitors (anti-PD-1/ PD-L1 and anti-CTLA-4) to evaluate if combinatorial treatments have synergistic effects in treating aggressive thyroid cancer.

Marilyn Mei-See Heng, MD

Instructor in Orthopedic Surgery | Massachusetts General Hospital
Massachusetts General Hospital Orthopaedics Shore Fellowship
Mentor: Mark Vrahas, MD, Former Professor of Orthopaedics, Massachusetts General Hospital
Project Title: UnFractured – Management of the Post-Discharge Period to Promote Better Quality of Care and Reduce Geriatric Fracture Patient Readmission Risk
Project Description: MGH's Orthopaedic Trauma division has developed a program for elderly fracture patients (age 65+) centered on a surgeon-led, geriatric nurse-practitioner run intervention designed to guide patients and their families through not just the inpatient process but also to connect with the patient after hospital discharge and liaise with family, skilled nursing facility providers, homecare agencies, and the patient's primary care physician. This project will evaluate the impact of this program aimed at managing the post-acute care recovery period on improving the patient experience after fracture surgery and decreasing the strain on the health care system seen with re-admissions to ED/hospital.

Patricia C. Henwood, MD

Instructor in Emergency Medicine | Brigham and Women's Hospital

Brigham and Women's Hospital Department of Emergency Medicine Faculty Development Fellowship

Mentors: Ingrid Bassett, MD, MPH, Associate Professor of Medicine, Massachusetts General Hospital

Edward W. Boyer, MD, PhD, Lecturer on Emergency Medicine, Part time, Brigham and Women's Hospital

Project Title: Ultrasound findings concerning for extra-pulmonary tuberculosis in Rwandan HIV patients

Project Description: The broad goal of this project is to develop a model to predict extra-pulmonary tuberculosis using focused assessment with sonography in HIV-associated tuberculosis (FASH) point-of-care ultrasound findings. This would be an innovative way to address the World Health Organization's call for more rapid diagnostic methods to identify tuberculosis (TB) in resource-limited settings with high HIV prevalence. The goal of this initial investigation is to conduct a prospective observational cohort study of HIV patients presenting for emergency care at Rwanda's national government referral hospital who have symptoms concerning for extra-pulmonary tuberculosis (EPTB) and a FASH exam incorporated into their clinical care.

Jennifer E. Ho, MD

Assistant Professor of Medicine | Massachusetts General Hospital

Claflin Distinguished Scholar Award

Mentors: Thomas J. Wang, MD, Professor of Medicine, Vanderbilt University

Anthony Rosenzweig, MD, Evelyn and James Jenks and Paul Dudley White Professor of Medicine in the Field of Cardiology, Massachusetts General Hospital

Project Title: Cardiometabolic Disease and Risk of Incident Heart Failure with Preserved Ejection Fraction

Project Description: Congestive heart failure is the most common cause of hospital admissions in adults over the age of 65 years. About half of patients with heart failure have a stiff heart, (called heart failure with preserved ejection fraction), as opposed to a weak heart (called heart failure with reduced ejection fraction). Best treatments for a stiff heart remain unclear. Our research aims to understand how health conditions like obesity and diabetes may lead to the development of heart failure with preserved ejection fraction.

Gabriela S. Hobbs, MD

Instructor in Medicine | Massachusetts General Hospital
Massachusetts General Hospital Department of Medicine Fellowship
Mentor: Ann Mullally, MD, Assistant Professor of Medicine, Brigham and Women's Hospital
Project Title: Understanding and Reversing Immune Dysfunction in Myeloproliferative Neoplasms
Project Description: The myeloproliferative neoplasms (MPN) are a rare group of bone marrow cancers. In the last decade there has been remarkable progress in understanding their disease biology. Despite this, the only curative therapy for MPNs is a bone marrow transplant, a procedure many patients are not eligible for. The use of immunotherapy in some cancers has led to remarkable responses but has not been studied in MPN. The purpose of this project is to understand the state of the immune system in MPN. The ultimate goal of this research is to test an immunotherapy drug in patients with MPN.

Brooke E. Howitt, MD

Assistant Professor of Pathology | Brigham and Women's Hospital
Brigham and Women's Hospital Department of Pathology Fellowship
Mentor: Marisa R. Nucci, MD, Professor of Pathology, Brigham and Women's Hospital
Project Title: Molecular Profiling of Neuroendocrine Carcinomas of the Endometrium
Project Description: Neuroendocrine carcinomas of the endometrium are uncommon, malignant tumors that are highly aggressive and associated with high mortality rates. These tumors are often associated with more common forms of endometrial carcinoma, but have not been fully characterized at the molecular level. The goals of this study are to identify the molecular alterations characteristic of endometrial neuroendocrine carcinomas, including any known targetable mutations, to evaluate how the neuroendocrine carcinoma component compares to co-existing endometrial adenocarcinoma of other types, and to compare the identified molecular profiles to neuroendocrine carcinomas of other sites, particularly lung, which have been well-studied at the molecular level.

Susie Huang, MD, PhD

Assistant Professor of Radiology | Massachusetts General Hospital

Claflin Distinguished Scholar Award

Project Title: Characterization of Axonal Injury and Myelin Integrity in Multiple Sclerosis Using Ultra-High Gradient Diffusion MRI

Project Description: The goal of this work is to translate ultra-high gradient MRI techniques to study axonal damage and myelin integrity in multiple sclerosis (MS). We hypothesize that disability progression in MS is primarily driven by axonal damage rather than myelin loss. We will measure alterations in axon size, packing density and myelin thickness using ultra-high gradient MRI in the white matter of patients with relapsing-remitting and progressive MS and correlate these alterations with clinical assessments of disability. We expect that alterations in axon size and packing density will correlate more closely with clinical disability than changes in myelin thickness.

Joel Hudgins, MD

Instructor in Pediatrics | Boston Children's Hospital

Boston Children's Hospital Pediatric Emergency Medicine Faculty Development Fellowship

Mentor: Florence Bourgeois, MD, MPH, Assistant Professor of Pediatrics and Assistant Professor of Emergency Medicine, Boston Children's Hospital

Project Title: Developing a Research Program Focused on Policies and Prescribing Practices for Controlled Substances among Children Treated in Ambulatory Settings

Project Description: Controlled substance abuse has become an epidemic within the health care system, affecting both adult and pediatric patients in significant ways. As part of work within the Shore Fellowship, we will focus on improving safe prescribing practices for controlled medications used to treat children and adolescents in the ED. I aim to leverage my experience and familiarity with large databases to better understand the epidemiology of treatment with controlled substances, including the growing problem of pediatric opioid overdoses and exposures.

Andreia Ionescu, PhD

Assistant Professor of Developmental Biology | Harvard School of Dental Medicine

Harvard School of Dental Medicine Fellowship in Honor of Aina M. Auskaps, DMD

Mentor: Vicki Rosen, PhD, Professor of Developmental Biology and Head of the Department of Developmental Biology, Harvard School of Dental Medicine

Project Title: Isolation and Characterization of a Chondrocyte Progenitor Population with Relevance to Osteoarthritis

Project Description: Osteoarthritis (OA) is a painful joint disease characterized by progressive and irreversible deterioration of articular cartilage. There is no cure for OA and the two major challenges to be overcome are: 1) halting cartilage damage before disease progression begins and 2) stimulating the low regenerative capacity of the articular cartilage. The goal of this proposal is to isolate and characterize a cartilage sub-population with stem-like characteristics in hopes of shifting the course of the disease from cartilage degradation to cartilage regeneration.

Joshua Joseph, MS, MD

Instructor in Emergency Medicine | Beth Israel Deaconess Medical Center

Beth Israel Deaconess Medical Center Department of Emergency Medicine Fellowship

Mentor: Leon D. Sanchez, MD, MPH, Associate Professor of Emergency Medicine, Beth Israel Deaconess Medical Center

Project Title: A Discrete Event Simulation Model of Emergency Department Throughput

Project Description: Long wait times in the Emergency Department are closely linked to increasing morbidity. While studies have showed that small improvements in triage and door-to-doctor times can affect outcomes, little is known about how staffing patterns can be improved to help reduce these delays. We propose to use discrete event simulation, a technique from operations research, to create a web application that can forecast potential delays from historical data. The model will be adaptable to the characteristics of different hospitals, and will generate staffing patterns that closely match providers to patient arrivals, minimizing delays and balancing providers' workloads.

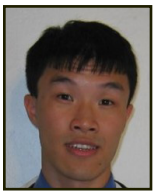
Jaehyun Jung, PhD

Instructor in Ophthalmology | Massachusetts Eye and Ear
The Alice J. Adler Fellowship of the Schepens Eye Research Institute
Mentor: Eliezer Peli, OD, MSc, Professor of Ophthalmology, Massachusetts Eye and Ear
Project Title: The Best Field Expansion Configuration for Using Multiplexing Prism for Homonymous Hemianopia
Project Description: Homonymous hemianopia is the loss of half visual field on the same side in both eyes which occurs as a result of traumatic brain injury or stroke. The fitting of a prism in one eye for homonymous hemianopia has been used to expand the visual field while the fellow eye sees the normal view. However, competition between the totally different views from two eyes (rivalry) reduces the utility of the aid. We propose to test novel field expansion configurations to determine which configuration provides better performance for detecting hazards using multiplexing prisms that show the shifted and see-through views together.

Veronica E. Klepeis, MD, PhD

Instructor in Pathology | Massachusetts General Hospital
Massachusetts General Hospital Department of Pathology Fellowship
Mentors: John R. Gilbertson, MD, Associate Professor of Pathology, Massachusetts General Hospital
David N. Louis, MD, Benjamin Castleman Professor of Pathology and Head of the Department of Pathology, Massachusetts General Hospital
Project Title: Improving Data Quality in the Gross Pathology Laboratory
Project Description: In anatomic pathology, diagnostic reports have historically been written in free-text form, limiting utility of pathology data for downstream data analysis and clinical decision support. We recently implemented structured data capture for histologic diagnosis and would like to expand this functionality to gross diagnoses, which document important specimen data, including margin status, tumor size, consistency and sampling. We propose that natural language processing can be used to analyze previously signed out pathology reports to efficiently develop comprehensive organ/site-specific templates for complete and structured gross diagnoses. The outcome would be improved data quality, with an ultimate positive effect on patient care.

Pui Y. Lee, MD, PhD

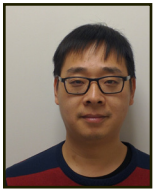


Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Peter A. Nigrovic, MD, Associate Professor of Medicine, Brigham and Women's Hospital
Project Title: Mechanism of Inflammation in Systemic Vasculitis Caused by Deficiency of Adenosine Deaminase 2
Project Description: Systemic vasculitis is characterized by inflammation of blood vessels leading to organ dysfunction. Recently, a hereditary form of vasculitis was discovered in patients with mutations in the gene encoding adenosine deaminase 2 (ADA2). Deficiency of ADA2 is characterized by early-onset strokes in addition to peripheral vessel inflammation. Through studying a novel ADA2 mutation in a Boston Children's patient, we aim to understand how the absence of ADA2 is linked to blood vessel inflammation. Defining the basis of inflammation is critical to optimize treatment of ADA2 deficiency and will provide insight into mechanisms of vascular injury in systemic vasculitis.

Juan Manuel Leyva-Castillo, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Raif Salim Geha, MD, James L. Gamble Professor of Pediatrics, Boston Children's Hospital
Project Title: Regulation of Skin-Derived Dendritic Cell Functions by Innate IL-4
Project Description: Atopic dermatitis (AD) is the most common and severe type of skin inflammation in infants. AD is characterized by abnormal response to innocuous environmental factors, dry skin and itching. Mechanical injury induced by scratching in AD patients further impairs the skin barrier and exacerbates their inflammation. However, if both events are related and how this happens is unknown. Using AD mouse models concomitantly with mouse lines with deficiency of molecules selectively in dendritic cells (DCs), the sentinels of the immune system, we will investigate how IL-4, induced by mechanical injury, affects skin DCs to drive allergic skin inflammation.

Yang Li, PhD



Instructor in Biological Chemistry and Molecular Pharmacology | Boston Children's Hospital

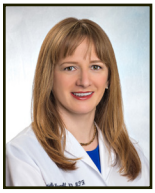
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship

Mentor: Hao Wu, PhD, Asa and Patricia Springer Professor of Structural Biology, Professor of Biological Chemistry and Molecular Pharmacology, Harvard Medical School and Boston Children's Hospital

Project Title: Elucidating the Mechanisms of NLRP3 Inflammasome Assembly and Regulation

Project Description: NLRP3 is a representative member of NLR family proteins, which comprise the biggest family of inflammasomes. Autosomal dominant mutations of NLRP3 are related to auto-inflammatory diseases, named cryopyrin-associated syndrome (CAPS), and sterile inflammation by NLRP3 causes or contributes to many human diseases such as gout, cardiovascular diseases and Alzheimer's disease. In this project I aim to investigate the auto-inhibition and activation mechanism of NLRP3, and elucidate the detailed interactions between ASCCARD and caspase-1CARD that mediate NLRP3 inflammasome formation. Meanwhile, I plan to identify small molecule inhibitors that are capable of interfering with inflammasome assembly.

Danielle Margalit, MD, MPH



Assistant Professor of Radiation Oncology | Brigham and Women's Hospital

The Peter Mauch Radiation Oncology Fellowship for Junior Faculty

Mentor: Daphne Haas-Kogan, MD, Radiation Oncology Professor, Harvard Medical School and Head of the Department of Radiation Oncology, Brigham and Women's Hospital, Children's Hospital, and Dana-Farber Cancer Institute

Project Title: Minimizing Painful Mucositis from Head and Neck Radiation Therapy by Reducing Unwanted Radiation Scatter Dose from Dental Restoration Material

Project Description: Radiation therapy (RT) to the head and neck (H&N) can cause painful mouth sores that limit oral intake and necessitate opioid pain-medication use. Dental restorations may increase the severity of mouth sores during RT due to electron scatter from the dental material to the adjacent mucosa which can be up to 150% of the prescribed dose. We will quantify the radiation scatter created by modern dental materials and determine the optimum thickness of a mouth guard to minimize scatter to normal tissue. We will demonstrate the feasibility of integrating mouth guard fabrication for use during H&N RT to prevent painful mouth sores.

Robert P. Marlin, MD, PhD, MPH

Instructor in Medicine | Cambridge Health Alliance
Cambridge Health Alliance Department of Medicine Fellowship
Mentors: David H. Bor, MD, Professor of Medicine, Cambridge Health Alliance
Richard J. Pels, MD, Assistant Professor of Medicine, Cambridge Health Alliance
Project Title: Writing a History of the Coordinated Care Program for Political Violence Survivors at Cambridge Health Alliance

Project Description: I propose to write a manuscript on the history of the Coordinated Care Program for Political Violence Survivors (CCPPVS) at Cambridge Health Alliance. Launched in 2006, the CCPPVS provides access to medical, mental health, legal, dental, housing, and vocational services for refugees, asylum seekers, asylees, trafficking victims, domestic violence survivors, and their family members. We work with a wide network of services focusing on the needs of immigrants and emphasize the role of communication between clinicians, non-clinical service providers, and patients. This manuscript will also lay the foundation for an application to the Office of Refugee Resettlement for program funding.

Marcela Maus, MD, PhD

Assistant Professor of Medicine | Massachusetts General Hospital
Claflin Distinguished Scholar Award
Project Title: Design and Evaluation of Re-Directed T Cells for Multiple Myeloma
Project Description: This project aims to develop a new kind of treatment for the blood cancer multiple myeloma. We are using engineered immune cells called T cells, and re-directing them to recognize and eliminate myeloma tumor cells. One advantage of using immune cells as therapies is that they have the potential to cure disease. We propose to engineer immune cells to recognize two targets on myeloma cells, so it is harder for the tumor cells to escape the immune cells. We will test our strategy in test tubes in mouse models, and if successful, move this into a study in patients.

Maria Mavrikaki, PhD

Instructor in Psychiatry | McLean Hospital
McLean Hospital Fellowship
Mentor: Elena Chartoff, PhD, Assistant Professor of Psychiatry, McLean Hospital
Project Title: Unraveling Novel Sex-Dependent Epigenetic Mechanisms Underlying Stress
Project Description: Women are twice as likely as men to be diagnosed with mood disorders, raising the possibility that there are biologically based sex differences underlying stress response. In our preliminary studies, we found that epigenetic factors called microRNAs are differentially regulated following adolescent social isolation stress in male and female rats. In this study, I suggest to investigate the effects of those stress- and sex-regulated microRNAs on gene expression and identify potential sex-dependent pathways underlying stress response; those findings could ultimately help us identify novel sex-dependent pharmacotherapies.

Caroline Mitchell, MD

Assistant Professor of Obstetrics, Gynecology and Reproductive Biology | Massachusetts General Hospital
Dorothy Rackemann Fellowship established by the Vincent Memorial/Massachusetts General Hospital
Mentor: Ramnik Xavier, MB, BCH, Kurt J. Isselbacher Professor of Medicine in the Field of Gastroenterology, Massachusetts General Hospital
Project Title: Origin of Gut Microbiota in Neonates
Project Description: The OriGiN study evaluates maternal influences on the early infant gut microbial community, including the effects of mode of delivery, maternal microbial communities, maternal antibiotics, and breastfeeding. We enrolled 190 families at the time of delivery and collected maternal samples at the time of delivery and infant stool samples in the first and second weeks of life. We will compare the links between maternal microbes and infants' microbes by mode of delivery: vaginal, elective c-section and emergent c-section using metagenomic sequencing, adjusting for maternal and infant antibiotic treatment and breastmilk vs. formula feeding.

Gita Mody, MD, MPH

Member of the Faculty of Surgery | Brigham and Women's Hospital

Brigham and Women's Hospital Department of Surgery Junior Fellowship in Honor of Robert T. Osteen, MD

Mentors: Carole Mitnick, ScD, Associate Professor of Global Health and Social Medicine, Harvard Medical School

Michael T. Jaklitsch, MD, Associate Professor of Surgery, Brigham and Women's Hospital

Raphael Bueno, MD, Professor of Surgery, Brigham and Women's Hospital

Project Title: Outcomes of Pulmonary Resection for Patients with MDRTB

Project Description: I will facilitate an academic and professional collaboration with thoracic surgeons in Latin America. As part of a longstanding relationship of the Peruvian Ministry of Health with the non-governmental medical volunteer organization Partners In Health and their sister organization Socias En Salud, patients with tuberculosis have been treated in a multidisciplinary fashion for over 20 years. Recently, due to concerns for transmission of tuberculosis to healthcare workers, surgical services for patients with tuberculosis have been curtailed. I along with an infectious disease physician and a pulmonologist from Brigham and Women's Hospital, an epidemiologist from Harvard Medical School, and thoracic surgeons from Hipolito Unanue Hospital in Lima serve as advisors to the redesign of the operating room and postoperative wards. In the process, we identified clinical research questions for patients requiring pulmonary resection for tuberculosis, including how to improve outcomes and the referral process.

Rose L. Molina, MD, MPH

Instructor in Obstetrics, Gynecology and Reproductive Biology | Beth Israel Deaconess Medical Center

Beth Israel Deaconess Medical Center Department of Obstetrics and Gynecology Fellowship

Mentors: Michele Hacker, ScD, MSPH, Associate Professor of Obstetrics, Gynecology and Reproductive Biology, Beth Israel Deaconess Medical Center

Theresa Betancourt, ScD, MA, Associate Professor of Child Health and Human Rights, Harvard T.H. Chan School of Public Health

Project Title: Understanding Informed Consent and Shared Decision-making in Prenatal and Obstetric Care in Spanish-speaking Women with Limited English Proficiency: A Mixed Methods Study

Project Description: Shared decision-making in prenatal and obstetric care can be complex as obstetricians navigate counseling women about risks to them and their babies while addressing women's desires for their childbirth. Women with limited English proficiency (LEP) may experience less shared decision-making than their English-proficient counterparts due to language and health literacy barriers. The purpose of this mixed methods study is to 1) compare understanding about the obstetric informed consent between Spanish-speaking women with LEP and English-proficient women, and 2) identify barriers and facilitators of shared decision-making among Spanish-speaking women with LEP. Results from this study will inform an intervention to improve shared decision-making in obstetric care for women with LEP.

Daniele Djenaba Ölveczky, MS, MD

Instructor in Medicine | Beth Israel Deaconess Medical Center
Beth Israel Deaconess Medical Center Department of Medicine Fellowship
Mentor: Richard M. Schwartzstein, MD, Ellen and Melvin Gordon Professor of Medical Education and Director of the Academy, Harvard Medical School and Professor of Medicine, Beth Israel Deaconess Medical Center
Project Title: Standardization of the Inclusion of Race, Religion, Gender, Sexual Preference and Ethnicity into Graduate and Undergraduate Medical Education Curricula
Project Description: To provide high quality individualized care, we must address sensitive topics such as race, religion, sexual preference, gender and ethnicity. Many educators feel inadequately prepared to educate learners on these sensitive topics. Trainees also report inadequate exposure to this material. The aim of this project is to develop: 1) tools to assess the clinical cases currently being used for teaching residents and medical students by obtaining standardized input from patients, students, residents and faculty, 2) guidelines and strategies to incorporate these sensitive topics into various teaching venues and 3) workshops to train faculty to implement the guidelines and enhance their skills.

Yangming Ou, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Patricia Ellen Grant, MD, Professor of Radiology and Pediatrics, Boston Children's Hospital
Project Title: Developing Neonatal Brain Atlases to Standardize MRI Interpretation of Neonatal Brain Injury
Project Description: MRI is the gold standard to detect neonatal brain injury, but human interpretation of neonatal brain MRI has 20-50% uncertainty. We propose to develop multi-modal, age-specific and normative neonatal brain MRI atlases. The constructed atlases, first of its kind, can quantify normal brain development in space and in time. They will offer a quantitative and objective means to decouple injury-induced brain changes and normal brain development. They will open doors for a generic artificial intelligence algorithm to be able to detect various types of neonatal brain injuries all as outliers to normal.

Louisa J. Palmer, MBBS

Instructor in Anaesthesia | Brigham and Women's Hospital
Brigham and Women's Hospital Department of Anaesthesiology, Perioperative and Pain Medicine Faculty Development Fellowship
Mentor: Gyorgy Frendl, MD, PHD, Associate Professor in Anaesthesia, Brigham and Women's Hospital
Project Title: Chlorhexidine Bathing in the ICU: Comparison of Pre-Impregnated Chlorhexidine Washcloths vs Hibiclens Methods
Project Description: Daily bathing is part of the routine for all ICU patients. In 2013 Climo et al published a multicenter, cluster-randomized, crossover study using washcloths impregnated with chlorhexidine (CHG) versus nonantibacterial washcloths. The results showed that infection rates were significantly reduced in patients bathed with CHG washcloths. Based on these results, BWH switched to daily bathing of ICU patients with CHG-impregnated washcloths but this was at a greatly increased cost. It is cheaper to bathe patients with Hibiclens, a 4% CHG soap. This project compares the effect on skin bacteria and skin CHG levels of bathing healthy volunteers with each method.

Bhavana Priyadharshini, PhD

Instructor in Surgery | Massachusetts General Hospital
Massachusetts General Hospital Department of Surgery Faculty Development Fellowship
Mentor: Laurence Turka, MD, Harold and Ellen Danser Professor of Surgery, Massachusetts General Hospital
Project Title: Regulation of Cell Metabolism by the Adaptor Protein MyD88
Project Description: Patients undergoing bone marrow transplantation face a critical roadblock on their way to recovery with a condition called graft versus host disease (GVHD). It is a reaction typically instigated by donor immune T lymphocytes that view the recipient patient's body as foreign and attack it. Our recent data indicate an unconventional role for an adaptor protein called "MyD88" in mediating the survival of activated T lymphocytes via the control of their metabolic requirements. My project dissects the underlying mechanisms by which MyD88 controls cellular metabolism in T lymphocytes, and how it can be harnessed to ameliorate the condition of GVHD.

Alia Qureshi, MS, MD

Instructor in Surgery | Beth Israel Deaconess Medical Center
Beth Israel Deaconess Medical Center Department of Surgery Fellowship
Mentor: Richard D. Cummings, PhD, Professor of Surgery, Beth Israel Deaconess Medical Center
Project Title: Pilot Study to Assess the Utility of Global Quantitative Phosphoproteomic Profiling for Measuring Signaling Perturbations in Barrett's Epithelium

Project Description: Barrett's esopohagus (BE) is the strongest known risk factor for the development of esophageal cancer (EAC). EAC incidence has increased 6 fold over the last 3 decades and has a poor survival rate once diagnosed; 11-15 %, 5 year survival. Many patients who have BE may not progress to EAC, however a small fraction will, 0.5% per year. While this is an area of active research, little is known as to the molecular mechanism(s) that underlies this neoplastic progression. There is mounting pressure to identify a molecular means to sort "progressors from non-progressors." This project aims to interrogate the molecular mechanisms that underlie BE using state of the art phos-pho proteomics and mass spectroscopy technologies to examine all the cellular proteins involved within a given cell. By performing mass spec. comparative analysis on normal esophageal epithelium, BE epithelium and EAC specimen, we hope to uncover involved pathways that underpin the cellular and molecular changes in the progression of BE to EAC.

R. Grant Rowe, MD, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: George Q. Daley, MD, PhD, Dean of the Faculty of Medicine and Caroline Shields Walker Professor of Medicine, Harvard Medical School, and Professor of Biological Chemistry & Molecular Pharmacology and Professor of Pediatrics, Boston Children's Hospital
Project Title: Modeling Splicing Factor Mutations in Myelodysplastic Syndrome Using Induced Pluripotent Stem Cells
Project Description: The myelodysplastic syndromes (MDS) are a group of pre-cancerous blood disorders that can occur at any age and which are associated with significant mortality when progression to leukemia occurs. Our laboratory maintains a longstanding interest in engineering blood cells from pluripotent stem cells to model blood disease. We have in hand pluripotent stem cell lines bearing mutations in splicing factor genes commonly seen in MDS. Our proposal aims to generate diseased MDS blood cells from these pluripotent cells with the goal of reproducing MDS in culture in a setting where we can screen for novel active drugs.

Margaret Samuels-Kalow, MD, MPhil, MSHP

Assistant Professor of Emergency Medicine | Massachusetts General Hospital

Massachusetts General Hospital Department of Emergency Medicine Fellowship

Mentor: Carlos A. Camargo, Jr., DrPH, MD, Professor of Emergency Medicine and Professor of Medicine, Massachusetts General Hospital

Project Title: A Brief Medication Safety Intervention for Families Being Discharged from the Pediatric Emergency Department

Project Description: Acetaminophen and ibuprofen are two of the most commonly used pediatric medications, but approximately one third of parents leave the emergency department without understanding how to safely dose these medications for their children. Using detailed qualitative interviews with parents, we have developed a brief medication safety intervention to improve appropriate medication dosing. We are conducting a randomized controlled trial of the intervention for parents of children being discharged from the emergency department.

Jocelyn Silvester, MD, PhD

Instructor in Pediatrics | Boston Children's Hospital

Boston Children's Hospital Division of Gastroenterology and Nutrition Shore Fellowship

Mentor: Ciarán P. Kelly, MD, Professor of Medicine, Beth Israel Deaconess Medical Center

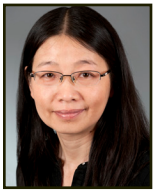
Project Title: Novel Biomarkers of Celiac Disease Activity

Project Description: Celiac disease is characterized by immune mediated damage of small intestinal mucosal epithelial cells. The only treatment is lifelong adherence to a gluten-free diet, which promotes mucosal recovery. Inadvertent gluten exposure is likely to be common as gluten is ubiquitous and tasteless. Many persons with celiac disease may not have symptoms to signal gluten exposure; nevertheless, persistent mucosal damage is associated with increased risk of bone fractures and some cancers. My work involves identification of novel biomarkers of celiac disease activity that are less invasive and more sensitive than currently available serum autoantibody and light microscopy approaches.

Shannon Stott, PhD

Assistant Professor of Medicine | Massachusetts General Hospital
Claflin Distinguished Scholar Award
Project Title: A microfluidic liquid biopsy to predict post-resection response in pancreatic cancer
Project Description: Pancreatic ductal adenocarcinoma is a highly aggressive disease where increasing our knowledge of predictive biomarkers will significantly improve our ability to provide optimal treatment for patients. Utilizing innovative microfluidic technologies and advanced sequencing methodologies, I aim to develop a blood based test for the prediction of treatment outcomes in patients with invasive pancreatic cancer. This work will be done in patients with resectable pancreatic cancer enrolled in clinical trials at MGH. This study will result in the development of new technology but more importantly, it will help define a role for a liquid biopsy for the prediction of treatment outcomes.

Ye Sun, MD, PhD



Instructor in Ophthalmology | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Lois E. H. Smith, MD, PhD, Professor of Ophthalmology, Boston Children's Hospital
Project Title: A Novel Inflammatory Regulator Controls Retinopathy of Prematurity
Project Description: Abnormal retinal blood vessel growth in preterm infants, called retinopathy of prematurity (ROP), is a common cause of blindness in children. ROP affects the vision of affected preterm patients throughout their life. Current ablation surgery is invasive and only partially effective in preventing their vision loss. To develop novel preventative treatment, we are focused on key regulators that globally integrate altered macrophage function and inflammation in the eye to control neovascularization. We propose a novel strategy to prevent ROP through a critical regulator of tissue inflammation, a likely candidate in controlling ocular abnormal vessel growth.

Jeffrey R. Swanson, MD

Instructor in Anaesthesia | Brigham and Women's Hospital
Brigham and Women's Hospital Department of Anaesthesiology, Perioperative and Pain Medicine Faculty Development Fellowship
Mentor: Douglas Shook, MD, Assistant Professor of Anaesthesia, Brigham and Women's Hospital
Project Title: Perioperative Ultrasound Curriculum for Anaesthesia Residents in the PACU

Project Description: This is an educational project that will teach different applications of perioperative ultrasound to anaesthesia residents on their rotation in the post anaesthesia care unit (PACU). The residents will go through an innovative 2 week curriculum with components in cardiac, lung and abdominal ultrasound. The curriculum infrastructure includes online learning, simulation training, performing ultrasound exams on patients, test questions and feedback on their exams. Additionally, there is an educational content delivery software to track progress and assess the value of the curriculum to improve competency in perioperative ultrasound.

Norman Taylor, MD, PhD

Assistant Professor of Anaesthesia | Massachusetts General Hospital
Massachusetts General Hospital Department of Anaesthesia Fellowship
Mentor: Emery N. Brown, MD, PhD, Warren M. Zapol Professor of Anaesthesia, Massachusetts General Hospital
Project Title: The Analgesic Effects of Neural Dopamine

Project Description: The dearth of effective pain treatments remains a significant public health problem, which is compounded by the epidemic of opioid addiction and overdose deaths. Neural dopamine circuits provide a novel target to treat pain, but the way they work is poorly understood. Our preliminary studies demonstrate that D-amphetamine, a drug used to treat ADHD, is equally effective as morphine in treating thermal pain in mice. Our goal is to understand what neurons D-amphetamine is modulating in order to demonstrate that this medication is a safe, and effective pain treatment which prevents the opioid-induced side effects of respiratory depression and sedation.

Jay Thiagarajah, MD, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Wayne I. Lencer, MD, Longwood Professor of Pediatrics, Boston Children's Hospital
Project Title: The Regulation of Aquaporin-3 Signaling in the Colonic Epithelium
Project Description: The epithelial cells that line the colon are critically important to maintaining its normal function and preventing inflammation. Hydrogen peroxide is an important signal molecule that is produced in the gut and is transported by the channel protein aquaporin-3. This project looks at how transport of hydrogen peroxide through aquaporin-3 changes the signaling response of the colon epithelial cells to microbes, injury and inflammation. This research aims to better understand the role of hydrogen peroxide signaling in the intestine, and may provide new therapeutic targets for treatment of intestinal inflammatory disorders.

Jorge Velarde, MD, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Michael Wessels, MD, John F. Enders Professor of Pediatrics and Professor of Medicine, Boston Children's Hospital
Project Title: Structure and Function Studies of LL-37 Binding to CsrS of Group A Streptococcus
Project Description: Invasive group A streptococcal (GAS) infections such as necrotizing fasciitis and streptococcal toxic shock cause significant morbidity and mortality. The CsrRS two-component signaling system of GAS is thought to play a major role in virulence. LL-37, a human antimicrobial peptide, can paradoxically lead to increased expression of virulence factors through this two-component system. We have evidence for a direct binding interaction between LL-37 and the extracellular domain of the CsrS receptor. Our study seeks to better understand the mechanism by which the receptor in this system binds to LL-37 and leads to upregulation of virulence.

Gustavo E. Velásquez, MD, MPH

Instructor in Medicine | Brigham and Women's Hospital
Dr. Lynne Reid/Drs. Eleanor and Miles Shore Fellowship
Mentor: Carole D. Mitnick, ScD, Associate Professor of Global Health and Social Medicine, Harvard Medical School
Project Title: Safety of Bedaquiline, Delamanid, Clofazimine, Linezolid, Fluoroquinolones, and Pyrazinamide in Patients with Rifampin-Resistant Tuberculosis
Project Description: In 2015, more than 500,000 new patients required treatment for multidrug-resistant tuberculosis (MDR-TB). Less than a quarter of them received appropriate treatment. Those who did suffered side effects similar to those caused by cancer chemotherapy. This could all change with the advent of two new drugs, bedaquiline and delamanid. Regimens containing these drugs are being studied in a new trial called endTB. The proposed project will be embedded in endTB and will explore whether side effects are less common with the new regimens and whether levels of the drugs detectable in blood can predict who will experience side effects.

Carley Vuillermin, MBBS, FRACS

Instructor in Orthopedic Surgery | Boston Children's Hospital
Boston Children's Hospital Musculoskeletal Career Development Fellowship
Mentor: Peter Waters, MD, John E. Hall Professor of Orthopedic Surgery and Head of the Department of Orthopedic Surgery, Boston Children's Hospital
Project Title: Shoulder Outcomes in Patients with Brachial Plexus Birth Palsy
Project Description: Brachial plexus birth palsy results from an injury to the brachial plexus nerves during birth. These nerves move the shoulder and hand. Many patients will recover from the injury completely or almost completely however some patients have persistent weakness or paralysis and require surgical care for the best functional outcome. The shoulder is one of the areas that may require surgical treatment for persistent weakness, subluxation or even dislocation. This project is investigating improved methods for predicting which babies with brachial plexus birth palsy will require surgical care of their shoulder and also investigating factors predicting improved outcomes following surgical care including the selection of the best surgical treatment of the shoulder for each child.

Michael J. Worley, Jr., MD

Assistant Professor of Obstetrics, Gynecology and Reproductive Biology | Brigham and Women's Hospital
Brigham and Women's Hospital Obstetrics and Gynecology Foundation Fellowship
Mentor: Ross S. Berkowitz, MD, William H. Baker Professor of Gynecology, Brigham and Women's Hospital
Project Title: Improving surgical and oncologic outcomes among women undergoing cytoreductive surgery for advanced-stage ovarian cancer
Project Description: Among patients with advanced-stage ovarian cancer, survival is most heavily influenced by the outcome of cytoreductive surgery. The purpose of the current project is to evaluate areas of improvement that can be made in patient selection, preoperative counseling and post-operative care of patients undergoing cytoreductive surgery. These areas were selected with the goal of improving survival and patient satisfaction, as well as decreasing treatment-related complications.

David M. Wu, MD, PhD

Instructor in Ophthalmology | Massachusetts Eye and Ear
Massachusetts Eye and Ear Fellowship
Mentor: Constance Cepko, PhD, Bullard Professor of Genetics and Neuroscience, Harvard Medical School and Professor of Ophthalmology, Massachusetts Eye and Ear
Project Title: Transcriptome Profiling to Understand RPE degeneration
Project Description: The role of the retinal pigment epithelium cell (RPE) is to nurture photoreceptors. In some eye diseases, the RPE becomes stressed and dies. As RPE cells are caretakers for the cells responsible for sight, this leads to blindness. We will take snapshots of gene expression from RPE cells as they begin to get sick from eye disease. This can tell us how the RPE is responding to stresses in the eye, and we may find clues explaining what makes the RPE cells sick. This may lead to new interventions to save the RPE and vision.

Jennifer Yeh, PhD

Assistant Professor of Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Lisa Diller, MD, Professor of Pediatrics, Dana-Farber Cancer Institute
Project Title: Evaluating the Future Impact of Precision Medicine in Pediatric Oncology
Project Description: Genetic markers for anthracycline-related cardiotoxicity may provide the basis for guiding initial therapy choice and follow-up care for children with cancer. By developing a flexible decision-analytic modeling framework capable of capturing the wide spectrum of short- and long-term health outcomes (ranging from initial disease control to treatment-related late toxicity in adulthood) and incorporating genetic risk factors, this project aims to evaluate the clinical benefits and risks associated with genetic testing at time of cancer diagnosis in the era of cancer genomics.

Jessica Young, PhD

Assistant Professor of Population Medicine | Harvard Pilgrim Health Care Institute
Harvard Pilgrim Health Care Institute Department of Population Medicine Robert H. Ebert, MD, Fellowship
Mentor: Emily Oken, MD, MPH, Professor of Population Medicine, Harvard Pilgrim Health Care Institute
Project Title: Estimating Effects of Time-Varying Acid Suppressive Regimens on Pneumonia
Project Description: One well-understood limitation of observational studies relative to randomized control trials is the need to adjust for confounding by baseline risk factors for disease. However, for questions about the effect of following time-varying treatment strategies, time-varying confounding is an additional problem that is often ignored or handled incorrectly at the statistical analysis stage. This study will apply an alternative to standard regression—the parametric g-formula—to estimate the effects of different time-varying acid-suppressive medication strategies on risk of pneumonia using available data on patients who have undergone mechanical ventilation in Brigham and Women's Hospital. In contrast to standard regression, this approach can appropriately adjust for time-varying confounders themselves affected by past treatment. To assess potential impact of model misspecification bias associated with practical implementation of the parametric g-formula, a novel simulation study will also be conducted.

Ivan Zanoni, MD, MPH

Assistant Professor of Pediatrics | Boston Children's Hospital Boston Children's Hospital Division of Gastroenterology and Nutrition Shore Fellowship

Project Title: Modulation of Neutrophil Functions by Type III Interferons Against IBDs

Project Description: IBDs are driven by genetic predisposition, and by aberrant responses directed against commensal bacteria. The immune system plays a fundamental role in the development of these disorders. Of the immune cells involved, neutrophils play very critical roles, but exactly how they contribute to IBD pathogenesis is still intensely debated. We propose to elucidate how type III interferons (IFNs) modulate neutrophil functions and exert a protective role against IBD development. We have discovered that type III IFNs reduce the tissue-damaging functions of neutrophils, and our preliminary findings suggest that type III IFNs could serve as potential therapeutic agents to dampen IBD.

2017 Recipients in Their 2nd Year of Funding

Vassilios Bezzerides, MD, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: Jane Newburger, MD, Commonwealth Professor of Pediatrics, Boston Children's Hospital
William T. Pu, MD, Professor of Pediatrics, Boston Children's Hospital
Project Title: Use of iPSCs and Optogenetics for Risk Stratification of Patients with CPVT
Project Description: The proper timing of the heart beat is critical for normal cardiac function. Certain mutations in key proteins can disrupt the normal synchronized pattern of rhythm in the heart, leading to life-threatening arrhythmias. These inherited forms of heart disease can strike unpredictably at any age but are particularly devastating when they occur in children. Catecholaminergic polymorphic ventricular tachycardia (CPVT) is a potentially life-threatening arrhythmia syndrome with unpredictable outcomes. We seek to capitalize on new advancements in stem cell biology, optogenetics, and biomaterials to improve our ability to predict clinical outcomes in patients with inherited arrhythmia syndromes.

Catherine A. Brownstein, MEM, MPH, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: Alan H. Beggs, PhD, Sir Edwin and Lady Manton Professor of Pediatrics, Boston Children's Hospital
Christopher A. Walsh, PhD, MD, Bullard Professor of Pediatrics and Neurology, Boston Children's Hospital
Project Title: Genetic Basis of Rare Mendelian Disorders with Application to Sudden Unexplained Death in Pediatrics and Interstitial Cystitis
Project Description: This project aims to determine the genetic basis of rare conditions, focusing on the disorders referred to BCH's Manton Center for Orphan Disease Research. We will utilize a next generation sequencing and chromosomal microarray approach to determine the causative genetic variants, with functional validation whenever possible. We will also apply this approach and infrastructure to a large and previously inaccessible population base of infants who have died from SIDS, and then to a condition that is more common in the population, interstitial cystitis (prevalence 197 per 100,000 women and 41 per 100,000 men).

Grace Chan, MD, MPH, PhD

Assistant Professor of Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: Michael S.D. Agus, MD, Associate Professor of Pediatrics, Boston Children's Hospital
Christopher Duggan, MD, MPH, Professor of Pediatrics, Boston Children's Hospital and Professor in the Department of Nutrition, Harvard T. H. Chan School of Public Health
Project Title: Burden of Antibiotic Resistance on Neonates from Developing Societies (BARNARDS) in Ethiopia
Project Description: We are conducting a prospective cohort study of 5000 mother-newborn pairs in Addis Ababa, Ethiopia to identify the etiologies of neonatal sepsis, antibiotic resistance patterns, and estimate the association between maternal risk factors and neonatal sepsis. Newborns will be followed over the first 28 days of life; those with suspected signs and symptoms of sepsis will have blood cultures obtained. We will conduct antibiotic sensitivity testing among positive blood culture isolates. Results will be used to improve antibiotic treatment and management of sick newborns.

Julia Inpei Chu, MD, MPH

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: Sung-Yun Pai, MD, Associate Professor of Pediatrics, Dana-Farber Cancer Institute
David A. Williams, MD, Leland Fikes Professor of Pediatrics, Boston Children's Hospital and Dana-Farber Cancer Institute
Project Title: Development of a Gene Therapy Model for DOCK8 Deficiency
Project Description: Dedicator of cytokinesis 8 (DOCK8) is a critical cytoskeletal intracellular protein identified as a cause of a primary immunodeficiency (PID). Prognosis for DOCK8 deficiency is dismal unless treated by hematopoietic stem cell transplantation (HSCT) which carries significant morbidity and mortality. Gene therapy (GT) has emerged as an attractive option for PIDs such as Wiskott - Aldrich syndrome or X-linked Severe Combined Immunodeficiency. We are using a self-inactivating alpharetroviral vector expressing human DOCK8 to develop a GT model for DOCK8 deficiency both in vitro and in vivo (mice) which will hopefully lead to a clinical trial in the future.

Natalie Collins, MD, PhD

Instructor in Pediatrics | Boston Children's Hospital and Dana-Farber Cancer Institute

Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship

Mentor: W. Nicholas Haining, MBBCh, Associate Professor of Pediatrics, Dana-Farber Cancer Institute and Boston Children's Hospital

Project Title: Molecular Mechanisms of Immune Evasion

Project Description: Immune checkpoint blockade has changed the landscape of cancer therapy, but some patients fail to respond, and we do not know why or how to predict who will benefit. Tumors acquire beneficial mutations that result in propagation within the tumor. Given the importance of the immune system in cancer control, a subset of these tumor-acquired mutations likely cause immune evasion. I have tested all cancer-associated mutations for the ability to confer immune resistance and have identified mutations that, when present, confer resistance to immunotherapy. These mutations are targets for novel therapies and can serve as biomarkers of response to immunotherapy.

Dahlene Fusco, MD, PhD

Instructor in Medicine | Massachusetts General Hospital

Claflin Distinguished Scholar Award

Mentors: Ramnik Xavier MD, PhD, Kurt J. Isselbacher Professor of Medicine in the Field of Gastroenterology, Massachusetts General Hospital

Raymond Chung, MD, Associate Professor of Medicine, Massachusetts General Hospital

Project Title: Interferon Effectors as a Platform for Antiviral Design against Flaviviridae

Project Description: We currently lack adequate treatment, vaccines, and vector control measures for flaviviral infections including dengue and Zika viruses. Current animal models for dengue and Zika viruses are highly immunocompromised, limiting relevance for studies of human pathology. Our work is focused on identification of host genes required for interferon, a human cytokine, to control flaviviral infections. Using RNAi to decrease gene expression, we identified 56 human genes that are required for interferon to suppress dengue, the dengue interferon effectors. We are now using a knockout mouse for the interferon effector HELZ2, to study dengue, then Zika, pathology in vivo.

Andrew Hong, MD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: William C. Hahn, MD, PhD, Professor of Medicine, Dana-Farber Cancer Institute
Project Title: Elucidating Mechanisms Driving Renal Medullary Carcinomas to Deliver a Rational Approach to Cancer Directed Therapy
Project Description: Renal Medullary Carcinoma is a rare cancer that carries a very poor prognosis. This cancer occurs in adolescents/young adults and affects patients primarily with sickle cell trait. We developed one of the first patient derived models of this rare cancer. While we are exploring the biology of this disease, there is a clear need for new therapeutic approaches. We have applied functional genomics (e.g. suppression with RNAi and knockout with CRISPR-Cas9) with small-molecule screens to identify vulnerabilities of this cancer. When we integrated these orthogonal screens, we have identified several druggable pathways for which we plan to validate.

Alisa Khan, MD, MPH

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: Christopher Paul Landrigan, MD, MPH, Professor of Pediatrics, Boston Children's Hospital and Associate Professor of Medicine, Brigham and Women's Hospital
Mark Schuster, MD, PhD, William Berenberg Professor of Pediatrics, Boston Children's Hospital
Project Title: Family Engagement in Safety
Project Description: Between 44,000-440,000 patients die yearly in the US due to medical errors, making medical errors a leading cause of death. Dr. Khan's previous work showed that parents can be a valuable source of information about medical errors, but are not traditionally included in safety efforts. In this study, she seeks to better understand parent and provider perceptions of hospital safety culture and family engagement in safety efforts. She will also explore relationships between these outcomes and miscommunications, parent-reported errors, parent/provider experience, and parent activation. This work will inform future interventions to engage families in hospital safety reporting efforts.

Gina Kruse, MD, MS, MPH

Instructor in Medicine | Massachusetts General Hospital
Claflin Distinguished Scholar Award
Mentor: Nancy Rigotti, MD, Professor of Medicine, Massachusetts General Hospital and Professor of Population Medicine, Harvard Pilgrim Health Care Institute
Project Title: A Text Messaging Program to Help Smokers Quit: The GetReady2Quit Program
Project Description: Among US smokers, 52% try to quit each year but less than one-third use medication or counseling in their quit attempt. Text messaging shows promise as a way to address this treatment gap. Text messaging can supplement clinicians' efforts by offering assistance to smokers between office visits. For this research, we will first collect qualitative data from smokers in primary care in order to develop a motivational smoking cessation text messaging intervention. We will test the effectiveness of the intervention on smoking outcomes in a pilot randomized trial among primary care patients.

Julie Levison, MD, MPhil, MPH

Instructor in Medicine | Massachusetts General Hospital
Claflin Distinguished Scholar Award
Mentor: Margarita Alegría, PhD, Professor of Medicine, Massachusetts General Hospital
Project Title: An intervention to overcome obstacles to retention in HIV care for Hispanic immigrants
Project Description: Immigrants comprise 40% of new HIV infections in U.S. Hispanics. Interventions to address early engagement and retention in HIV care are sparse, and have not been adequately studied in Hispanic immigrants, a growing and underserved population. I will develop and test a community health worker/ fotonovela (drama-based story) intervention to improve consistent attendance in HIV primary care for Latino immigrants. The central hypothesis is that the culturally familiar format of the fotonovela in the context of the social support and health system navigation provided by the CHW can address key psychosocial, informational, and logistical barriers to HIV care in Latinos.

Sara Looby, PhD

Assistant Professor of Medicine | Massachusetts General Hospital
Claflin Distinguished Scholar Award
Project Title: Cardiovascular Disease Risk in HIV-infected Women: Sex-Specific Mechanisms of Risk and Risk Reduction among REPRIEVE Trial Participants
Project Description: The REPRIEVE trial is a multisite, international randomized controlled trial testing whether statin therapy reduces the risk of cardiovascular disease (CVD) among 6500 men and women with HIV and low to moderate traditional CVD risk. My project, which is fully integrated into the main REPRIEVE trial, will determine whether immune activation contributes uniquely to CVD among HIV-infected women across the reproductive aging spectrum. A key component of the methodology entails launching an evidence-based education/awareness campaign to educate women on HIV and heart disease, and enhance clinical research participation among women with HIV in clinical trials like REPRIEVE.

Ji Miao, PhD

Assistant Professor of Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: Joseph Majzoub, MD, Thomas Morgan Rotch Professor of Pediatrics and Professor of Medicine, Boston Children's Hospital
Morris White, PhD, Professor of Pediatrics, Boston Children's Hospital
Project Title: Targeting Nuclear Receptor Co-Regulator for the Treatment of Metabolic Disorders
Project Description: The prevalence of metabolic syndrome-related disorders such as non-alcoholic fatty liver disease, hypertriglyceridemia, and obesity has reached over 30% among US adults. Nuclear hormone receptors and their co-regulators play an essential role in regulating all aspects of lipid metabolism, dysregulation of which underlies these metabolic disorders. Though previous studies have linked consumption of fructose to the development of these disorders, the underlying mechanisms are unclear. Based on our data, we propose a novel mechanism of regulation of lipid metabolism via autophagy through nuclear receptors and co-regulators, which will provide insights into the pathological development of metabolic disorders linked to fructose.

Heikki Nikkanen, MD

Instructor in Emergency Medicine | Mount Auburn Hospital
Mount Auburn Hospital Department of Emergency Medicine Faculty Development Fellowship
Mentors: Gary Setnik MD, FACEP, Assistant Professor of Emergency Medicine, Mount Auburn Hospital
J. Stephen Bohan, MD, FACEP, Associate Professor of Emergency Medicine, Brigham and Women's Hospital
Project Title: Application of Operations Research in Improving Care of the Emergency Department Patient
Project Description: Research in the field of operations in medicine has burgeoned in the last decade, with analytic techniques previously only used in industry and clinical trials being applied to the movement of patients through hospital systems. I will attend an advanced course in ED operations. Using current literature and best practice as a framework, I will lead the department through a series of discrete improvement projects. I hope to add to the existing fund of knowledge by answering specific questions around the relationship between the flow of patients in the ED and the operations of related units in the hospital.

Sang Won Park, PhD

Assistant Professor of Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentor: Joseph Majzoub, MD, Thomas Morgan Rotch Professor of Pediatrics and Professor of Medicine, Boston Children's Hospital
Project Title: BRD7's Role in the Development of Obesity and Type 2 Diabetes
Project Description: Obesity is associated with a number of serious medical complications, including insulin resistance and type 2 diabetes. We have discovered that the expression levels of a protein called bromodomain-containing protein 7 (BRD7) are significantly reduced in the liver of obese mice and acute restoration of BRD7 levels reveres type 2 diabetic features in severely obese and type 2 diabetic mouse models. This project seeks to determine whether reduced BRD7 level is a major contributor for the development of type 2 diabetes and asks whether targeting to upregulate BRD7 protein levels may constitute a therapeutic strategy to treat type 2 diabetes.

Gayle Pouliot, MD, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: Alejandro Gutierrez, MD, Assistant Professor of Pediatrics, Boston Children's Hospital
Stuart H. Orkin, MD, David G. Nathan Professor of Pediatrics, Dana-Farber Cancer Institute
David A. Williams, MD, Leland Fikes Professor of Pediatrics, Boston Children's Hospital and Dana-Farber Cancer Institute
Project Title: Investigating the Fanconi/BRCA Pathway in T-cell acute lymphoblastic leukemia (T-ALL)
Project Description: T-cell acute lymphoblastic leukemia (T-ALL) is an aggressive cancer with a peak incidence in adolescents that is in need of new therapies. Sequencing the DNA of a group of 40 patients with T ALL identified that ~22% had mutations in the Fanconi/BRCA1 DNA repair pathway. Recent studies show that heterozygous loss of this pathway may sensitize cells to replication-induced stress and in particular to replication inhibitors such as hydroxyurea. We will use animal models to study the role of this pathway in the formation of T-ALL and to assess whether Fanconi/BRCA mutant T-ALL is sensitive to replication inhibitors.

Christina Psaros, PhD

Assistant Professor of Psychiatry | Massachusetts General Hospital
Claflin Distinguished Scholar Award
Project Title: Treating depression and improving adherence to PMTCT among women in South Africa: A pilot study
Project Description: Large scale studies document rates of HIV as high as 40% in South African antenatal clinics. Targeting the health of HIV-infected pregnant women is important in its own right, but is also essential to minimize the risk of transmission of HIV from mother to infant. Depression is a robust predictor of non-adherence to antiretroviral therapy, an essential component of preventing mother-to-child transmission (PMTCT) of HIV protocols. PMTCT programs are effective, however, utilization is suboptimal. The proposed study seeks to develop a scalable depression and adherence intervention. In a setting where there is a dearth of mental health providers or antidepressant medication, identification of such an intervention is critical.

Yakeel Quiroz, PhD

Instructor in Psychology in the Department of Psychiatry | Massachusetts General Hospital

Claflin Distinguished Scholar Award

Mentor: Reisa A. Sperling, MD, Professor of Neurology, Massachusetts General Hospital

Project Title: Brain Pathology and Cognitive Decline in Autosomal-Dominant Alzheimer's Disease

Project Description: This project will use cognitive measures and molecular imaging with positron emission tomography (PET) to investigate the relationship between markers of brain pathology and cognitive decline in preclinical Alzheimer's disease (AD). In particular, this project will include the study of a genetic model of AD, in the world's largest cohort of a single early-onset AD-causing mutation (PSEN1 E280A), with a known, well characterized risk for clinical dementia. This research will provide new understanding of how amyloid and tau pathology impact cognitive function very early in the disease process, and their role in subsequent neuronal death.

Sari L. Reisner, ScD

Assistant Professor of Pediatrics | Boston Children's Hospital

Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship

Mentor: Mark Schuster, MD, PhD, William Berenberg Professor of Pediatrics, Boston Children's Hospital

Project Title: Advancing US Transgender Health Research

Project Description: Transgender people, who have a current gender identity or expression different from their assigned sex at birth, represent a highly stigmatized, traditionally marginalized, and underserved patient population in medicine and public health efforts. This project aims to understand health disparities faced by transgender people and conduct epidemiologic research to improve evidence-based provision of clinical care to this patient group. Led by an openly transgender member of the Harvard Medical School faculty, this project will ultimately increase the visibility of transgender health needs and advance the field of transgender health by promoting gender diversity at Harvard Medical School and beyond.

Lauren Wisk, PhD

Instructor in Pediatrics | Boston Children's Hospital
Boston Children's Hospital OFD/BTREC/CTREC Faculty Career Development Fellowship
Mentors: S. Jean Emans, MD, Mary Ellen Avery Professor of Pediatrics, Boston Children's Hospital
Elissa R. Weitzman, ScD, MSc, Associate Professor of Pediatrics, Boston Children's Hospital
Project Title: Building an Empirically-Derived Screen to Detect Vulnerability to High Health Care Burden for Youth with Chronic Medical Conditions
Project Description: This work seeks to empirically evaluate a model of vulnerability for youth with chronic medical conditions that includes individual psychosocial risk, parent/household stress, and financial burden associated with a child's chronic disease as key predictors of disease-specific health outcomes and youth self-care behaviors. The ultimate goal is to create a novel, brief screening tool that can be incorporated into a clinical dashboard/intake form and will facilitate the identification of youth who are most vulnerable to adverse outcomes and need intervention and psychosocial support beyond that provided in routine clinical care.

2017 Fellowship Recipients by Institution

** Denotes fellows in their second year of funding*

Beth Israel Deaconess Medical Center

Department of Anaesthesia John Hedley-Whyte Research Fellowship
Somnath Bose, MBBS

Department of Emergency Medicine Fellowship
Joshua Joseph, MS, MD

Department of Obstetrics, Gynecology and Reproductive Biology Fellowship
Rose L. Molina, MD, MPH

Department of Medicine Fellowship
Daniele Djenaba Olveczky, MS, MD

Department of Surgery Fellowship
Alia Qureshi, MS, MD

Boston Children's Hospital

Department of Neurology Faculty Development Fellowship
Nicole Baumer, MD

Division of Gastroenterology and Nutrition Fellowship
Amit Grover, MB, ChB
Jocelyn Silvester, MD, PHD
Ivan Zanoni, MD, MPH

Musculoskeletal Career Development Fellowship
Carley Vuillermin, MBBS, FRACS

OFD/BTREC/CTREC Faculty Career Development Fellowship
Vassilios Bezzerides, MD, PhD*
Thea Brennan-Krohn, MD
Catherine A. Brownstein, ME, MPH, PhD*
Grace Chan, MD, MPH, PhD*
Natalie Collins, MD, PhD*
Peter Davis, MD
Angela Feraco, MD, MMSc
Katie Greenzang, MD, EdM
Andrew Hong, MD*
Julia Inpei Chu, MD, MPH*
Alisa Khan, MD, MPH*
Pui Y. Lee, MD, PhD
Juan Manuel Leyva-Castillo, PhD
Yang Li, PhD
Ji Miao, PhD*

Yangming Ou, PhD
Sang Won Park, PhD*
Gayle Pouliot, MD, PhD*
Sari L. Reisner, ScD*
R. Grant Rowe, MD, PhD
Ye Sun, MD, PhD
Jay Thiagarajah, MD, PhD
Jorge Velarde, MD, PhD
Lauren Wisk, PhD*
Jennifer Yeh, PhD

Pediatric Emergency Medicine Faculty Development Fellowship
Joel Hudgins, MD

Brigham and Women's Hospital

Department of Anaesthesiology, Perioperative and Pain Medicine Faculty Development Fellowship
Louisa J. Palmer, MBBS
Jeffrey R. Swanson, MD

Department of Emergency Medicine Faculty Development Fellowship
Patricia C. Henwood, MD

Department of Medicine Fellowship
Trevor E. Angell, MD

Department of Pathology Fellowship
Brooke E. Howitt, MD

Department of Surgery Junior Fellowship in Honor of Robert T. Osteen, MD
Gita Mody, MD, MPH

Dr. Lynne Reid/Drs. Eleanor and Miles Shore Fellowship
Gustavo E. Velasquez, MPH, MD

Faculty Career Development Award
Ana Paula Abreu Metzger, MD, PhD
Jose Figueroa, MD, MPH

Obstetrics and Gynecology Foundation Fellowship
Mobolaji Oluwaseun Ajao, MD
Carolina Bibbo, MD
Kathryn J. Gray, MD, PhD
Michael J. Worley, Jr., MD

The Peter Mauch Radiation Oncology Fellowship for Junior Faculty
Danielle Margalit, MD, MPH

Cambridge Health Alliance

Cambridge Health Alliance
Robert P. Marlin, MD, PhD, MPH

Dana-Farber Cancer Institute

Dana-Farber Cancer Institute Fellowship
Natasha M. Archer, MPH, MD

Harvard Pilgrim Health Care Institute

Department of Population Medicine Robert H. Ebert, MD, Fellowship
Jessica Young, PhD

Harvard School of Dental Medicine

Fellowship in Honor of Aina M. Auskaps, DMD
Andreia Ionescu, PhD

Massachusetts Eye and Ear

Massachusetts Eye and Ear Fellowship
David M. Wu, MD, PhD

Massachusetts General Hospital

Claflin Distinguished Scholar Award
Marta Bianciardi, PhD
Esther Freeman, MD, PhD
Dahlene Fusco, MD, PhD*
Jennifer E. Ho, MD
Susie Huang, MD, PhD
Gina Kruse, MD, MS, MPH*
Julie Levison, MD, MPhil, MPH*
Sara Looby, PhD*
Marcela Maus, MD, PhD
Christina Psaros, PhD*
Yakeel Quiroz, PhD*
Shannon Stott, PhD

Department of Anaesthesia Fellowship
Norman Taylor, MD, PhD

Department of Emergency Medicine Fellowship
Margaret Samuels-Kalow, MD, Mphil, MSHP

Department of Medicine Fellowship
Gabriela S. Hobbs, MD

Department of Pathology
Veronica E. Klepeis, MD, PhD

Department of Surgery Faculty Development Fellowship
Viswanath Gunda, PhD

Dermatology Service Faculty Career Development Fellowship
Steven Chen, MD, MPH

Dorothy Rackemann Fellowship established by the Vincent Memorial/MGH
Caroline Mitchell, MD

Harvard Medical School Fellowship in Honor of Jeffrey S. Flier, MD
Laura E. Dichtel, MD

Massachusetts General Hospital Department of Surgery Faculty Development Fellowship
Bhavana Priyadharshini, PhD

Massachusetts General Hospital Orthopaedics Shore Fellowship
Marilyn Mei-See Heng, MD

McLean Hospital

McLean Hospital Fellowship
Maria Mavrikaki, PhD

Mount Auburn Hospital

Department of Emergency Faculty Development Fellowship
Heikki Nikkanen, MD*

Schepens Eye Research Institute

Alice J. Adler Fellowship of the Schepens Eye Research Institute
Jaehyun Jung, PhD

Selection Committees

Thanks are due to these individuals for their service and assistance with the growth of the fellowship and the selection of fellowship recipients.

2017 Academic Promise Evaluation Committee

Carol K. Bates, MD, Associate Dean for Faculty Affairs, Harvard Medical School, and Associate Professor of Medicine, Beth Israel Deaconess Medical Center

Jack D. Burke, MD, MPH, Professor of Psychiatry and Head of the Department of Psychiatry, Cambridge Health Alliance

Emmanuel Buys, PhD, Associate Professor of Anaesthesia, Massachusetts General Hospital

Maureen T. Connelly, MD, MPH, Dean for Faculty Affairs, Harvard Medical School, and Assistant Professor of Population Medicine, Harvard Pilgrim Health Care Institute

John L. Dalrymple, MD, Dr. Mark and Karen Lawrence Director of Assessment, Professionalism and Humanism in Medicine, Harvard Medical School and Associate Professor of Obstetrics, Gynecology and Reproductive Biology, Beth Israel Deaconess Medical Center

S. Jean Emans, MD, Mary Ellen Avery Professor of Pediatrics and Faculty Director of the Office of Faculty Development, Boston Children's Hospital

German O. Gallucci, DMD, Raymond J. and Elva Pomfret Nagle Associate Professor of Restorative Dentistry and Biomaterials Sciences and Head of the Department of Restorative Dentistry and Biomaterials Sciences, Harvard School of Dental Medicine

Chenghua Gu, PhD, Associate Professor of Neurobiology, Harvard Medical School

Neena Haider, PhD, Associate Professor of Ophthalmology, Schepens Eye Research Institute, Massachusetts Eye and Ear

Margaret A. Kenna, MD, MPH, Professor of Otolaryngology, Boston Children's Hospital

Daniela Kroshinsky, MD, Associate Professor of Dermatology, Massachusetts General Hospital

Mary Loeken, MS, PhD, Associate Professor of Medicine, Joslin Diabetes Center

Joelle Lomax, PhD, Program Director for Faculty Appointments, Office for Faculty Affairs, Harvard Medical School

Mary Francis Lopez, PhD, Assistant Professor of Pediatrics, Boston Children's Hospital

Jonathan Matsui, PhD, Program Director for Faculty Appointments, Office for Faculty Affairs, Harvard Medical School

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Ann Poduri, MD, Associate Professor of Neurology, Boston Children's Hospital

Kathryn Rexrode, MD, Associate Professor of Medicine, Brigham and Women's Hospital

Nancy Rigotti, MD, Professor of Medicine, Massachusetts General Hospital

Laura E. Riley, MD, Charles Montraville Green and Robert Montraville Green Associate Professor of Obstetrics, Gynecology and Reproductive Biology

Frederick J. Schoen, MD, PhD, Professor of Pathology and Health Sciences and Technology, Brigham and Women's Hospital

Priscilla J. Slanetz, MD, Associate Professor of Radiology, Beth Israel Deaconess Medical Center

Caren G. Solomon, MD, MPH, Associate Professor of Medicine, Brigham and Women's Hospital

Sulpicio De Guzman Soriano, MS, MD, Professor of Anaesthesia, Boston Children's Hospital

Lawrence C. Tsen, MD, Associate Professor of Anaesthesia, Brigham and Women's Hospital

Nicole J. Ullrich, MD, PhD, Associate Professor of Neurology, Boston Children's Hospital

Bethany Westlund, PhD, Associate Dean for Faculty Affairs, Harvard Medical School

Catherine Ju-Ying Wu, MD, Associate Professor of Medicine, Brigham and Women's Hospital

2017 Personal Need Evaluation Committee

Carol K. Bates, MD, Associate Dean for Faculty Affairs, Harvard Medical School, and Associate Professor of Medicine, Beth Israel Deaconess Medical Center

Maureen T. Connelly, MD, MPH, Dean for Faculty Affairs, Harvard Medical School, and Assistant Professor of Population Medicine, Harvard Pilgrim Health Care Institute

Dagmara Cotti, PhD, Program Director for Faculty Appointments, Office for Faculty Affairs, Harvard Medical School

Yvette Jusseaume, Director of Academic Appointments Data Management, Office for Faculty Affairs, Harvard Medical School

Joelle Lomax, PhD, Program Director for Faculty Appointments, Office for Faculty Affairs, Harvard Medical School

Caren G. Solomon, MD, MPH, Associate Professor of Medicine, Brigham and Women's Hospital

Gail Williams, Director of Administration, Office for Faculty Affairs, Harvard Medical School

Bethany Westlund, PhD, Associate Dean for Faculty Affairs, Harvard Medical School

Fellowship Honorees

Alice J. Adler, PhD

Dr. Adler was a biochemist at Schepens Eye Research Institute from 1976 to 2001. In January of 1985 she was promoted to Senior Scientist and in 2001 she became Emeritus Senior Scientist/Scientific Advisor. Her work focused on components of the retina and mechanisms of vision. Dr. Adler was the first scientist to identify retinol binding that transports Vitamin A to the space between the photoreceptors, which is needed to create rhodopsin, the visual pigment. Retinal binding also transports Vitamin A to the retinal pigment epithelial cells that store retinol and convert it to a form that the photoreceptors can use. Dr. Adler further identified xanthophyll-binding proteins in the human retina and proposed that they bind to the same site on microtubules (the latter bind taxol, a compound used to treat breast cancer). Her work included studies of age-related macular degeneration and was critical to our understanding of retinal diseases.

Aina M. Auskaps, DMD

Dr. Auskaps was the first woman to earn the degree of DMD from Harvard School of Dental Medicine in 1955. Prior to coming to Harvard, Dr. Auskaps earned a DDS degree in her home country of Latvia. She requalified in Germany in 1945. Dr. Auskaps started at HSDM as a faculty member conducting research in the Department of Biochemistry and Nutrition. Once her DMD degree was completed she returned to the department once again as faculty. Dr. Auskaps also served as the first woman president of the HSDM Alumni Association and received the Distinguished Alumni Award in 1983. She maintained a private family practice for 45 years out of her home in Jamaica Plain, MA. An extensive interview of Dr. Auskaps is available at the Harvard Countway Archives for Women in Medicine.

Jane D. Claflin

Jane Claflin is an extraordinary benefactor and dedicated volunteer leader at Massachusetts General Hospital where she has served as trustee, fund-raiser, friend, and cheerleader. She is the force behind the MGH programs that support women in their professional careers and a major reason the MGH opened a backup child care center. The MGH met Jane Claflin in the late 1950s soon after she, her husband Morton Claflin, and their two sons moved to Boston. One of Mrs. Claflin's passions has been to ensure that the MGH is a welcoming, comfortable, friendly, and supportive place for women. In 1993, she helped create the Women in Academic Medicine Committee, serving as its chair. Her work led to the formation in 1997 of the Office for Women's Careers to support, recruit, and retain women faculty members. Mrs. Claflin focused attention on the difficulty women had in sustaining research productivity during their child-rearing years, which too often limited career advancement. The MGH's Executive Committee on Research responded to the call by establishing funding for junior women faculty to help them through this critical period. The awards were named the Claflin Distinguished Scholar Awards in honor of their greatest champion.

Robert H. Ebert, MD, DPhil, AM

As Dean of Harvard Medical School from 1965 to 1977, Dr. Ebert increased recruitment and enrollment of minority students, established affiliations between HMS teaching hospitals and neighborhood health centers, and created the Division of Health Sciences and Technology, a combined MD-PhD program run collaboratively by MIT and HMS. In 1969, he founded Harvard Community Health Plan, the nation's first academic health maintenance organization. After earning his medical degree from the University of Chicago, he served as a Marine Corps physician, and was one of the American doctors who went to Nagasaki to treat Japanese suffering from radiation sickness and related illnesses after the United States dropped an atomic bomb on that city. Upon his return from the war, Dr. Ebert taught at the University of Chicago. In 1964, he was recruited to Boston to serve as Chief of Medical Services at Massachusetts General Hospital. A year later, he was selected to lead Harvard Medical School. After stepping down as dean of HMS, Dr. Ebert became president of the Milbank Memorial Fund, a foundation that supports projects in medicine and health. In 1992, he helped establish the HMS/ Harvard Community Health Plan Department of Ambulatory Care and Prevention as a joint project between the school and the HMO.

Jeffrey S. Flier, MD

Jeffrey S. Flier became the 21st Dean of the Faculty of Medicine at Harvard University on September 1, 2007. His term as Dean ended in 2016 after nine years. Flier, an endocrinologist and an authority on the molecular causes of obesity and diabetes, had previously served as Harvard Medical School Faculty Dean for Academic Programs and Chief Academic Officer for Beth Israel Deaconess Medical Center, a Harvard teaching affiliate. Flier is one of the country's leading investigators in the areas of obesity and diabetes. His research has produced major insights into the molecular mechanism of insulin action, the molecular mechanisms of insulin resistance in human disease, and the molecular pathophysiology of obesity. An elected member of the Institute of Medicine and a fellow of the American Academy of Arts and Sciences, his honors also include the Eli Lilly Award of the American Diabetes Association, the Berson Lecture of the American Physiological Society, and honorary doctorates from the University of Athens and the University of Edinburgh. He was the recipient of the 2003 Edwin B. Astwood Lecture Award from the Endocrine Society and, in 2005, he received the Banting Medal from the American Diabetes Association, its highest scientific honor.

John Hedley-Whyte, MD, MBBCh

Dr. Hedley-Whyte is currently the David S. Sheridan Professor of Anaesthesia and Respiratory Therapy at the Boston VA Medical Center. He served on the faculty at Beth Israel Hospital from 1961 to 1988 and was Chair of the Department of Anaesthesia from 1967 to 1988. A pioneer in modern respiratory physiology and a member of the HMS community for more than 50 years, Hedley-Whyte contributed to the creation of an academic anaesthesia department at Beth Israel and an independant anaesthesia department separate from the surgical department at HMS. His most recent work has focused on patient safety.

Peter M. Mauch, MD

Dr. Mauch came to Harvard Medical School as a resident in radiation oncology in 1975 and was a member of the Harvard Medical School Faculty for nearly 40 years. His lab work, the study of hematopoietic stem cells, was supported by NIH R01 funding for over 20 years and his clinical work in the treatment of patients with Hodgkin lymphoma began when he was a resident. He published over 350 papers and was a co-editor of 6 books. Promoted to full professor in 1999, Dr. Mauch mentored numerous medical students and residents. He gave educational sessions at annual meetings and served as the first chair of the American Society of Radiation Oncology (ASTRO) outcomes committee and chair of the ASTRO Educational Sessions for 6 years. He also served on the Radiation Study Section and contributed to both the oral and written boards for the American Board of Radiology. His efforts included helping young faculty develop their careers in academic medicine.

Robert T. Osteen, MD

Dr. Osteen is Senior Surgeon, Associate Professor of Surgery, and Associate Chairman of the Department of Surgery at the Brigham and Women's Hospital. Dr. Osteen joined the faculty of Harvard Medical School in 1975 and has since received numerous prizes for excellence in teaching. At the Brigham and Women's Hospital, he oversees the Surgery department's education program, chairs the hospital's Cancer Committee, and acts as the Cancer Liaison Physician to the Commission on Cancer of the American College of Surgeons. He has contributed to the development of several clinical programs, including the Dana-Farber Cancer Institute's Autologous Bone Marrow Transplant Program, a program for breast conserving surgery, and techniques for implantation and chemotherapy administration through an intra-arterial infusion pump. Through the Commission on Cancer, he helped to develop a National Cancer Database that collects information from approximately 75% of the patients with cancer throughout the United States annually.

Dorothy Rackemann

At Harvard Medical School, Dorothy Rackemann (1918–1996) was the Administrative Assistant to the Dean from 1968 to 1978 and the Assistant Registrar from 1978 to 1991. She also held key roles in both the Vincent Memorial Hospital and The Vincent Club. The former, a free-standing hospital for women established in Boston in 1891, was the precursor of the Vincent Department of Obstetrics & Gynecology at Massachusetts General Hospital. The Vincent Club, founded a year later, remains the fundraising arm of the Vincent organization. Miss Rackemann, as she was known—and "Dodie" as she preferred—served as both President of The Vincent Club and President of the Vincent Memorial Hospital Board of Trustees. Active at the Vincent for more than 50 years, she was described as a "tremendous force in nurturing, clarifying and strengthening the ties between the Vincent and the Massachusetts General Hospital."

Lynne M. Reid, MD, MBBS

Dr. Lynne M. Reid is the S. Burt Wolbach Professor of Pathology, Emeritus at Harvard Medical School. After training in Australia, she moved to London and was the first person to serve as Dean of the Cardiothoracic Institute at London University. She came to Harvard in 1976 as Head of the Department of Pathology at Boston Children's Hospital. Her research interests included lung growth and how it is affected by childhood diseases including cystic fibrosis, scoliosis, and respiratory distress syndrome. She also studied chronic bronchitis, emphysema, and pediatric pulmonary and arterial hypertension. The Lynne M. Reid papers are at Countway Library in the Archives for Women in Medicine. Dr. Reid has generously made personal donations to the fellowship program on a nearly annual basis since the start of the program.

Eleanor G. Shore, MD, MPH

Dr. Eleanor G. Shore served as the Dean for Faculty Affairs at Harvard Medical School from 1989 to 2005 and has since served as Senior Consultant to the Office of Academic and Clinical Affairs. She trained at Harvard Medical School during the postwar "experimental" era, between 1945 and 1955, when women were admitted on a trial basis. She worked as a primary care physician at the Harvard University Health Services for many years. She served as Assistant to the President of Harvard University for Health Affairs for 8 years during Derek Bok's term as president. Later she served as Deputy Director of the Harvard Medical School Center of Excellence in Women's Health. In 1995 in her role as Dean, she launched the 50th Anniversary Fellowship Program for Scholars in Medicine, which commemorates the admission of women to Harvard Medical School; the program was renamed to honor Drs. Eleanor and Miles Shore in 2004. In 2001, the Association of American Medical Colleges awarded Dr. Shore the History Maker Award for her work to make medical career structures more equitable. Dr. Shore has generously made personal donations to the fellowship program on a nearly annual basis since the start of the program.

Miles F. Shore, MD

Dr. Miles F. Shore, Bullard Professor of Psychiatry, Emeritus was Superintendent and Chief of the HMS Department of Psychiatry at the Massachusetts Mental Health Center from 1975 to 1993. In that role he was responsible for a comprehensive program of research, teaching, and patient care focusing on patients with serious mental illnesses cared for by the public sector. A system of care was developed featuring community programs to replace inpatient care in large institutions. Since 1993, he has been a Visiting Scholar at Harvard Kennedy School, teaching courses on the history of mental health policy, leadership, and health policy for physicians. For twelve years he chaired the Promotion and Review Board assessing the progress of HMS students in successfully completing the MD degree. He continues to write on issues of patient safety and disrespect in the culture of medicine. As a strong supporter of faculty development, he has personally contributed to the fellowship program on a nearly annual basis since the program began.

Thank you
to all of the affiliates, departments, and individual donors who have supported more than 900 fellows through the last 22 years of the program