











## 2021-2022 Early Career Program Participants

Name	Headshot	School/ Department	Phenotype / Track	Email	Project description
Abraham Jaffe, MD		BUSM/ Surgery	Clinician Educator	<a href="mailto:abraham.jaffe@bmc.org">abraham.jaffe@bmc.org</a>	This project is focused on difficult conversations that take place within the surgical context and aims to developing resources to help surgeons engage in these difficult conversations with patients and provide care consistent with patient goals and values. I have been participating in a serious illness conversation program (SICP) training to gain further training and experience in difficult conversations and have found this extremely helpful in conducting the myriad of difficult conversations that are a daily part of my role as a surgeon. However, I have found that oftentimes the training and scenarios available in this and other palliative care or related fields do not always resonate in a surgical context, where they have the potential to be very valuable and impactful. This project, therefore, aims to develop surgery-specific resources to help surgeons engage as effectively and comfortably as possible when having these difficult conversations. The first aim of the project is to better understand current practices within the BUSM/BMC department of surgery regarding difficult conversations. Next, I seek to establish a training program for residents/faculty geared towards increasing comfort and effectiveness in holding difficult conversations. Third, I plan to develop criteria for clinical scenarios where it could be beneficial for surgeons to engage in difficult conversations and utilize additional resources. Lastly, I will study the effectiveness of these resources.
Alexis Gallardo Foreman, MSN		BUSM/ Medicine, Pulmonary	Clinician Scientist	<a href="mailto:agforema@bu.edu">agforema@bu.edu</a>	The COVID-19 pandemic's impact in the United States has exposed long-standing inequities by race, ethnicity, and income. The CDC reports the COVID-19 death rates among Black communities is 1.9x higher and 2.3x higher among the Hispanic/Latino community compared to White, Non-Hispanic persons. Contributing to these poorer outcomes is the far greater likelihood Black and Latino Americans live in poverty and reside in neighborhoods with overcrowded households, air pollution, and inadequate access to health care. <sup>4</sup> The long-term sequelae of COVID-19 are unknown, but evidence from previous COVID-19 outbreaks demonstrates impaired pulmonary and physical function, reduced quality of life and emotional distress. Many COVID-19 survivors who require critical care may develop psychological, physical and cognitive impairments. There is a clear need for guidance on the rehabilitation of COVID-19 survivors. In an effort to address these needs, a group of providers at Boston Medical Center, a safety net hospital who predominately serves these disparate communities, has stepped up to offer a Multidisciplinary COVID Survivor Clinic to improve the overall health outcomes brought on by COVID-19. This project will focus on the outreach to communities of color, efforts to address any potential barriers to participation and ultimately assess the participants' experience and benefit from participation.
Anica Law, MD, MS		BUSM/ Medicine, Pulmonary	Clinician Scientist	<a href="mailto:anicalaw@bu.edu">anicalaw@bu.edu</a>	Recent studies suggests that critically ill patients treated at safety net hospitals have higher hospital mortality. However, our preliminary data suggests that hospital mortality rates among the critically ill are impacted by hospital discharge practices - hospitals who have standing partnerships with long-term care facilities increasingly shift mortality to out-of-hospital settings, decreasing in-hospital mortality rates, with unchanged 30-day mortality. If safety net hospitals differ in the ability to discharge patients to long-term care, then prior findings of increased safety net hospital critical illness mortality may be spurious. On the other hand, poor access to quality long-term care facilities may further exacerbate disparities. We will use Medicare data to link inpatient and outpatient data to (1) better characterize differences in 30-day mortality between safety net and non-safety net hospitals, (2) describe variation in mortality across safety net hospitals and the factors contributing to such variation, and (3) evaluate strategies undertaken by high-performing safety net hospitals to overcome unique challenges faced by safety net hospitals.




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<b>Anissa Dickerson, MSN, MPH</b>		BUSM/ OBGYN	Clinician Scientist	<a href="mailto:anissa.dickerso&lt;br/&gt;n@bmc.org">anissa.dickerso n@bmc.org</a>	My proposed project is connected to my work as the Co-Director of the Refugee Women's Health Clinic. It is a collaborative project with my Co-Director, Dr Wu, in developing a Refugee and Immigrant Health Elective for OBGYN Residents and other trainees. I'm interested in being able to expand this elective to NP students and Nurse Midwifery students once the residency elective is fully developed and operational for the OBGYN residents. I visualize being able to eventually offer the elective to FM Residents interested in reproductive care related to refugee and immigrant health. The trainees will be involved in various seminars, meetings, and clinical work related to the RWHC mission. Some of these experiences include trainings on asylum affidavits and hands on experience performing and writing asylum affidavits under the guidance of one of our RWHC providers, education sessions related to social, legal and immigration challenges for this population, working with a provider in the Civil Surgeon Clinic, working with the case managers and social workers who provide services to the women in the RWHC, workshops on advocacy for refugee and immigrant patients, working with community partners to better understand needs and gaps in care, provide care through our RWHC mobile clinic that provides obstetric and basic gynecologic care in the community. My portion of this project will focus on trainings related to obstetrics and developing community based partnerships.
<b>Bailey Chang, MD</b>		BUSM/ Medicine, GIM	Clinician Educator	<a href="mailto:Bailey.chang@&lt;br/&gt;bmc.org">Bailey.chang@ bmc.org</a>	I earlier used the word "trivia" according to its current meaning, referring to random knowledge of limited practical use. However the word has a much more storied history; the "trivium" initially comprised basic classical disciplines of rhetoric, grammar, and logic. Whether we are aware of it or not every clinician uses techniques such as the trivium to educate, persuade, and ultimately support his patients and to communicate with colleagues. Much effort has been devoted to standardizing communication between providers, such as the venerable HPI and the SOAP note and up to the more modern developments of IPASS. These efforts should duly be recognized in improving outcomes. In the primary care world much of our efforts are dedicated to effectively communicating information to our patients and persuading them to make educated decisions regarding their health. They may hail from many backgrounds and we may have known them for minutes or years. My goal is, with the collaboration of other faculty in GIM and potentially the Wheelock College of Education and Development, to identify modern analogues of the classical disciplines mentioned above which can be incorporated into a curriculum for medical students, residents, and faculty alike to enable them to better communicate with their patients and improve their understanding.
<b>Charlene Julien, MSN, MSPS</b>		BUSM/ Family Medicine	Clinician Scientist	<a href="mailto:cjbhatt@bu.edu">cjbhatt@bu.edu</a>	The project I hope to work on in the ECP is evaluating whether there is a proportional relationship between the degree of liver fibrosis (scarring) in BMC Family Medicine patients with Non-alcoholic Fatty Liver Disease (NAFLD) and the severity of depression as measured by the PHQ-9 questionnaire. This investigation aims to assist clinicians when treating patients with diagnosed depression in busy primary care settings conduct appropriate screenings and treatments for possibly undiagnosed NAFLD. The current research notes that there is a link between NAFLD and Depression but there is no discussion on whether degrees of each disease is proportional (ex. Moderately Severe Depression (PHQ-9 score of 15-19) with possible presence of F3 fibrosis (Severe fibrosis/liver scarring) and my investigation would contribute to the conversation by including data on race/ethnicity, gender as well as insurance type status (commercial vs. State (Medicaid/MassHealth) vs. Federal (Medicare) vs. Private Pay. The insurance type will serve as a proxy for socioeconomic status.



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<b>Chloe Ciccariello, MD</b>		BUSM/ Medicine, GIM	Clinician Educator	<a href="mailto:Chloe.ciccariello@bmc.org">Chloe.ciccariello@bmc.org</a>	The US health system is famous for its high costs and low returns, prompting a movement toward “value-based care”. This has led to the creation of vertically integrated systems that are financially accountable for a set number of patients, called Accountable Care Organizations. Approximately 50% of patients at GIM are enrolled in an ACO. However, clinics operate largely as they did in the fee-for-service era and the ACO is struggling to meet its financial goals. This top down payment reform must be coupled with changes to the care delivery model, and this shift in culture and practice must start at the level of the individual provider. In order to be a successful provider in a capitated payment model, one needs access to one’s own data. What percentage of one’s panel is getting admitted to the hospital each month? Which patients have elevated A1cs? Both Epic and Arcadia (a software that pulls in insurance claims data) collect an abundance of such data, but the feedback to clinicians could be improved. Therefore, I plan to work with the GIM Population Health team and the BMC IT department to design a system of feeding quality data (from both the EMR and insurance claims) back to clinicians in an easily digestible dashboard.
<b>David Freccero, MD</b>		BUSM/ Orthopaedic Surgery	Clinician Educator	<a href="mailto:David.freccero@bmc.org">David.freccero@bmc.org</a>	I plan to study the feasibility and impact of a weight loss referral program to optimize a patient with end-stage arthritis for total joint replacement. I plan to manage a randomized clinical trial evaluating patients with obesity and end-stage hip or knee arthritis treated with either bariatric weight loss surgery or medical management through referral to Endocrinology with focus on lifestyle management and nutrition optimization.
<b>Debashree Saxena, DScD, CAGS, FICD</b>		GSDM/ General Dentistry	Clinician Educator	<a href="mailto:saxena@bu.edu">saxena@bu.edu</a>	By carrying out a survey among for the program directors – Periodontology, Fixed, Removable, Endodontics, Pedodontics and Oral Surgery regarding their experience and steps taken to modify, innovate & incorporate different teaching methodologies while navigating through Pandemic COVID-19 and survey among the students on their clinical and didactic learnings. Impediments and challenges faced during incorporation of the methodologies. How it affected their learnings- overall grades, licensing exam success rate and preparedness to practice in private practice. (tentative project in mind may change if there is any conflict of interest)
<b>Elizabeth Doran, MD</b>		BUSM/ Family Medicine	Clinician Educator	<a href="mailto:elizabeth.doran@bmc.org">elizabeth.doran@bmc.org</a>	Group Well-Child care is an approach to the delivery of well child care that has been implemented and published on in many locations. It offers the benefit of creating a community of parents with similarly-aged children, who meet together with the same provider on a regular basis over the first year of life. Benefits include parent-driven conversation, peer-to-peer guidance, and increased time with the provider (allowing more opportunities for anticipatory guidance). Our patients at BMC oftentimes have complex social circumstances, and group-care can facilitate the dissemination of peer-expertise – empowering parents to navigate the complexity of early childhood with the support a provider as well as a peer community. My plan is to institute group well-child visits at Melnea Cass (this is assuming that we are back to group-models of care, which are currently suspended with COVID).




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Emily Swisher-Rosa, MSN		BUSM/ OBGYN	Clinician Educator	<a href="mailto:Emily.SwisherRosa@bmc.org">Emily.SwisherRosa@bmc.org</a>	I would lead establishment of a breastfeeding medicine clinic in the OB/Gyn department at Boston Medical Center. The focus would be on breastmilk supply as well as complex pain, though we would have room for additional visit types as needed. The approach to breastfeeding support is often not well evidence-based, and it can be confusing and distressing to new parents as they attempt to navigate what can be a challenging time. We know that a woman's milk supply is affected by a combination of endocrine and physiological factors which must be identified to assess the etiology of a given problem. Complex pain in breastfeeding can also be a deterrent to long-term breastfeeding success, and it needs to be managed with adequate evidence and skill. The clinic would further be poised to offer prenatal specialty consultation to patients with comorbidities known to put them at greater risk for supply issues, including breast reduction or implantation surgery, PCOS, thyroid disorders, GDM/DM, and other endocrine issues such as hyperprolactinemia and pituitary adenomas. It would help set them on the path to successful breastfeeding, and would continue to provide comprehensive, consistent support throughout the early postpartum period – ideally, in collaboration with Family Medicine and Pediatrics.
Erica Holland, MD		BUSM/ OBGYN	Clinician Scientist	<a href="mailto:erica.holland@bmc.org">erica.holland@bmc.org</a>	While the rates of substance use disorder in pregnancy are rising dramatically, no consensus exists in the obstetric community regarding urine drug screening for pregnant women. This project aims to 1) improve provider knowledge around the history, ethics, and utility of prenatal drug testing, and 2) increase provider awareness of the effect that implicit bias can have on prenatal drug testing through the development of a webinar/e-learning module. The module will reflect an ethics-based framework for approaching urine drug testing of pregnant women. Pre- and post-module evaluations will assess its efficacy.
Esteban Toledo-Carrión, MD		BUSM/ Psychiatry	Clinician Educator	<a href="mailto:Esteban.Toledo-Carrion@bmc.org">Esteban.Toledo-Carrion@bmc.org</a>	In my clinical work, I have noticed a general lack of knowledge or resources on working with Latinx patients. Sometimes this population, which encompasses a large variety of experiences (including but not limited to those dealing with immigration, trauma, culture, religion, etc) is represented monolithically rather than each individual's experience being seen as unique. The goal of my project would be to teach medical students a model for identifying important factors in treatment, some more general and some patient-specific, to enhance cultural competency with this population.




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<b>Estefany Flores-Godaire, CNM, MPH</b>		BUSM/ OBGYN	Clinician Scientist	<a href="mailto:Estefany.Flores-Godaire@bmc.org">Estefany.Flores-Godaire@bmc.org</a>	Centering Pregnancy or group prenatal care has been shown to improve health outcomes of birthing people in pregnancy and postpartum, as well as provide better health outcomes for families as a unit. Time is spent in each session targeting specific child birth education topics such as breastfeeding, contraception, and postpartum care that has been shown to be beneficial for clients. This model of care, married with the midwifery model of care has continued potential benefits if offered to higher risk expecting clients, such as those with GDM. The aims would be broken down into (1) designing and implementing a GDM, diet controlled in Centering program and (2) looking at several specific aims such as recruitment and retention of a group of 6-10 expectant birthing persons diagnosed with GDM at 24-28wk, attending 6 GDM Centering sessions focused on group nutrition goals, >80% blood glucose compliance, target total weight gain per initial BMI; that all birthing persons to complete a 6wk postpartum glucose test and be discharged to or referred to PCP for continued care. This project will enable me to continue my long wishes to work birthing persons with GDM, increase access to evidence-based models of care for racial/ethnic populations disproportionately affected with GDM, and continue research into the effects of providing this access and reducing adverse health outcomes in already marginalized populations.
<b>Ivania M Rizo, MD</b>		BUSM/ Medicine, Endocrinology	Clinician Scientist	<a href="mailto:ivania.rizo@bmc.org">ivania.rizo@bmc.org</a>	Prior data from BMC has noted race, sex, age, and presence of comorbidities as predictors of weight loss post bariatric surgery. African Americans are reported to lose less weight, have more weight regain, and have a greater increase in hemoglobin A1c after RYGB. I will look at the referral practices to BMC medical weight management and weight loss surgery clinics. The initial goal is to build a weight loss surgery and weight management database. After I build a database, I will conduct a retrospective review of all patients enrolled in the weight loss surgery and weight management programs at BMC from 2015 to 2020 and evaluate the differences in referral practices for those patients who meet eligibility for WLS. Are there significant racial/ ethnic differences in the referral practice to these clinics? Ultimately, I hope to work on increasing the referrals for all of our patients to weight loss surgery and earlier in the disease process to optimize weight loss outcomes. A second aim that is not within the 1-year timeline is to develop a registry that includes elements of social determinants of health (SES) such as zip codes for SES, neighborhood stress index, self-reported income, occupation, education level, and neighborhood rates of poverty in each the weight management and weight loss surgery groups. It is essential to begin to incorporate SES data when discussing racial disparities.



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Jean Liew, MD, MS		BUSM/ Medicine, Rheumatology	Clinician Scientist	<a href="mailto:jliew@bu.edu">jliew@bu.edu</a>	Inflammatory back pain is the predominant feature of axial spondyloarthritis (axSpA), which affects more than 1% of US adults and can cause significant disability. In prior studies, up to a quarter of patients with axSpA were using opioid medications chronically. Despite the rise in biologic use for the management of axial spondyloarthritis (axSpA), many still do not experience a meaningful improvement in symptoms, including inflammatory back pain. The management of chronic pain is not addressed in the current axSpA management guidelines and recent studies have indicated that up to a quarter of individuals with axSpA have been prescribed chronic opioids. We propose to characterize trends in opioid prescriptions over time among individuals with axSpA, and to evaluate the impact of TNFi use and physical activity, two potentially modifiable interventions, on opioid use. First, in Aim 1, we will use three complementary real world databases to describe changes in trends of opioid prescriptions before and after the approval of TNFi among individuals with AS. In Aim 2, we will assess the impact of early TNFi initiation on chronic opioid use in a large longitudinal administrative database that includes laboratory and pharmacy dispensing data. In Aim 3, we will assess the impact of physical activity on chronic opioid use, while accounting for the complexity of disease activity changes over time. The findings from these proposed aims are expected to inform future guidelines on therapy in axSpA and impact clinical prescriptions of opioids and other axSpA therapies.
Jenna Titelbaum, OD		BUSM/ Ophthalmology	Clinician Educator	<a href="mailto:Jenna.Titelbaum@bmc.org">Jenna.Titelbaum@bmc.org</a>	My project looks into identifying the barriers for pediatric patients to receive glasses in hopes to improve glasses compliance and therefore visual outcomes. This will include all pediatric patients at Boston Medical Center seen by Pediatric Optometry who have active glasses prescriptions and will include those children with and without insurance coverage for glasses. A survey will be given to all guardians willing to participate to further explore what these barriers may be. Although COVID has added another barrier, there are various barriers that existed beforehand. With this information providers can better guide families in getting glasses whether it is after receiving the initial prescription or getting a new pair of glasses after the current pair breaks or gets lost. This will help to ensure patients will have glasses at the time of their follow-up visit, which makes the appointment more fruitful and therefore improves visual outcomes.
Kim Vanuytsel, PhD		BUSM/ Medicine, Hematology-Oncology	Basic Scientist/ Translational	<a href="mailto:kimvan@bu.edu">kimvan@bu.edu</a>	Several gene editing strategies aimed at induction of fetal hemoglobin (HbF) are currently being explored as a potentially curative approach for sickle cell disease (SCD), a disorder in which red blood cells sickle and obstruct blood flow due to the polymerization of adult beta globin. While these developments are truly exciting, their safety and efficacy will require thorough validation. One aspect that remains underexplored is the stratification of outcomes across the diverse patient population suffering from SCD. This is especially relevant given that the unique genetic context of a patient partially determines the severity of their clinical course and response to treatment. Using a SCD patient-specific induced pluripotent stem cell (iPSC) platform we will validate the efficacy of novel therapeutic gene editing strategies across a diverse SCD patient population. iPSCs present an unlimited source of material that can be differentiated into erythroblasts that capture the exact genetic background of a patient and thus make an excellent pre-clinical screening tool. Upon introduction of HbF modifying gene edits, we will investigate fetal hemoglobin induction in these patient-specific iPSC-derived erythroid cells to study differences in response based on genetic background. These studies will help predict the safety and efficacy of a particular therapeutic approach in a given genetic background prior to engaging in costly and invasive treatments.



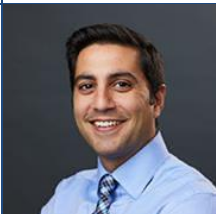
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<b>Kirsten Austad, MD, MPH</b>		BUSM/ Family Medicine	Clinician Scientist	<a href="mailto:Kirsten.austad@bmc.org">Kirsten.austad@bmc.org</a>	Episiotomy, the surgical incision of the vagina and perineal body to enlarge the vaginal outlet at the time of fetal delivery, was once the most common surgical procedure in obstetrics. In 1979, for example, two-thirds of all vaginal deliveries in the United States involved an episiotomy. The theoretical benefits, including prevention of severe perineal injury and faster second stage of labor to prevent stillbirth and adverse neonatal outcomes, has led to its popularity in low- and middle-income countries (LMICs) where obstructed labor is a major cause of mortality. However, rigorous evaluation has called the ability of this surgical intervention to prevent adverse maternal/neonatal outcomes into question. A Cochrane systematic review of 12 studies concluded that restrictive use of episiotomy leads to better outcomes, including a decreased incidence of third- and fourth-degree laceration, as compared to routine use. High-quality evidence has not found any clear indications for episiotomy. The World Health Organization to recommend against routine/liberal use of episiotomy and favors restricted use. I propose to use data from an NIH-funded prospective pregnancy cohort the Maternal Newborn Health Registry, which includes longitudinal data from eight LMICs. The project's goals are to provide an update in trends in the use of episiotomy across a diverse sample of LMICs and to evaluate the relationship between episiotomy use and maternal-child predictors and clinical outcomes.
<b>Kyle Schoppel, MD</b>		BUSM/ Pediatrics	Clinician Educator	<a href="mailto:Kyle.schoppel@bmc.org">Kyle.schoppel@bmc.org</a>	I am hoping to complete a project studying the development of a standardized Pediatric Emergency Medicine curriculum for Emergency Medicine (EM) resident physicians at Boston Medical Center. The curriculum will include a combination of a recurring standardized didactic lecture schedule in addition to recurring medical simulation sessions. These simulation sessions will include a combination of Boot-camp style sessions in addition to simulated pediatric critical resuscitations. Phase 1 will be the curriculum development phase. We will perform a needs assessment by surveying current BMC EM resident physicians regarding deficiencies in their PEM curriculum. In order to develop the simulation portion of the curriculum, we will begin by using recently published, open access, pediatric simulation scenarios for EM resident physicians. We will run simulation sessions with the current EM resident physicians. and survey participants to elicit feedback in order to determine which cases will be important to incorporate into the larger multimodal/longitudinal curriculum. Once we have devised our longitudinal, multimodal, curriculum we will begin Phase 2. Phase 2 will be an assessment of our curriculum using data from pre and post surveys of our EM resident physicians, self-efficacy surveys and performance assessment during simulated pediatric critical resuscitations.
<b>Mara Murray Horwitz, MD, MPH</b>		BUSM/ Medicine, GIM	Clinician Scientist	<a href="mailto:Mara.MurrayHorwitz@bmc.org">Mara.MurrayHorwitz@bmc.org</a>	I propose to develop a handover template to facilitate postpartum care transitions between obstetric and primary care, in particular for patients who have CVD risk newly revealed by one of several pregnancy complications that are associated with future CVD (so-called "pregnancy-related CVD risk indicators"). My project takes a 3-step approach: (1) understand the information needs of clinicians across the postpartum care spectrum at BMC and affiliated community health centers; (2) collaboratively design a postpartum handover template for patients with 1 or more pregnancy-related CVD risk indicator(s); and (3) pilot test the handover template at a single clinic at BMC, and assess feasibility and clinician and patient experiences, to inform a rigorous study of the clinical impacts of a handover intervention at scale.




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<b>Margot Rogers, MD</b>		BUSM/ Medicine, GIM	Clinician Educator	<a href="mailto:Margot.Rogers@bmc.org">Margot.Rogers@bmc.org</a>	My project will work to implement and evaluate a standardized musculoskeletal curriculum for the Boston Medical Center primary care residents. Typically, the residents have received a variety of lectures on musculoskeletal topics but there has been little effort to ensure each resident receives the same teaching for the highest yield topics over their three years. My curriculum will implement a set of 6-9 lectures over the course of each resident's training. Each lecture will be on a specific high yield musculoskeletal topic, and will include a pre- and post-lecture evaluation completed by the resident. Each lecture will include didactic and practical portions, and will be taught by myself or other GIM, Sports Medicine, or Orthopedic faculty. The topics for this curriculum include knee exam/pathology, shoulder exam/pathology, low back pain, hip pain, musculoskeletal injection, and musculoskeletal ultrasound. Another goal of the project is to increase the amount of training our residents receive in musculoskeletal injections and ultrasound. With each of the sessions including surveys for the residents, it will leave the opportunity to discern the impacts we are making on resident education and comfort with each of these topics, and may provide publishing opportunities for each session held.
<b>Michael Cohen, MD</b>		BUSM/ Otolaryngology	Clinician Educator	<a href="mailto:Michael.cohen@bmc.org">Michael.cohen@bmc.org</a>	Methods of assessing resident knowledge, and surgical residents' technical skills, are constantly evolving. Everyone can agree that end of rotation assessments are inadequate as the sole mechanism of feedback, since this denies residents the opportunities to address weakness and improve them, and leaves them potentially unaware of strengths. It is also suboptimal for faculty, who may not recall specific experiences with individual residents which can form the foundation of effective and relevant feedback. The department of Otolaryngology has long used point-of-care assessments in both the clinical and operating room settings. These have traditionally been completed on paper, and while effective are cumbersome for faculty to complete, require residents keep track of, and are difficult for resident to go back and review. We recently participated in a trial of an electronic, app-based evaluation program. While ultimately we felt this did not provide enough flexibility to give the level of feedback we desired, it had the effect of increasing feedback and evaluation experiences for our residents and was felt to be easier to use by both residents and faculty. We are now in the process of developing our own assessment tool which will be electronic but allow for more specific feedback. My proposed project will be assisting in the development of this assessment tool and studying its effectiveness through evaluating resident and faculty satisfaction, level of use compared.




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<b>Michael Smith, MSc, PA-C</b>		BUSM/ Physician Assistant Program	Clinician Educator	<a href="mailto:msmith64@bu.edu">msmith64@bu.edu</a>	My planned project is borne out of experience as a Physician Assistant in orthopedic surgery. Over the past 18 years, I have come to see the importance of teamwork and mutual respect in the surgical services. It is my anecdotal experience that those surgeons most liked and admired by other healthcare providers and staff are ones who played team sports while growing up or in college. Many surgeons played sports in their developing years, but those who played on team sports (football, hockey, rowing) were ones universally liked and admired. Conversely, those who were simply respected for their position, but not liked; those who maintained a "top down" type of type dynamic, were one who played individual sports (skiing, tennis). It is my hypothesis that those surgeons who best develop and maintain a cohesive surgical team, where all members feel important and respected, learned this skill by being involved in team activities during youth. It is my assertion that these surgeons learned that for a team to succeed, not any one individual can be the focal point all the time. What I plan to do is to set up a study whereby I can poll numerous healthcare staff about who among the surgical staff seems to embody the traits of positive leadership, effective teamwork, and respectful support for staff and then poll those surgeons to see if indeed they had played team sports while growing up.
<b>Miriam Harris, MD, MSc</b>		BUSM/ Medicine, GIM	Clinician Scientist	<a href="mailto:Miriam.harris@bmc.org">Miriam.harris@bmc.org</a>	Women who inject drugs and trade sex for goods and services (sex work) are at particularly high risk for HIV and have been found to have almost double the 5-year HIV incidence relative to other women who inject drugs (12% vs. 7%). HIV prevention through antiretroviral pre-and post-exposure prophylaxis (PEP & PrEP) is a promising, potentially empowering, HIV prevention strategy for sex workers who inject drugs (SSWID). However, PrEP trials have shown mixed efficacy results among women due to inadequate adherence. Additionally, real-world uptake among SSWID has been low (<2%). Therefore, research that focuses on addressing factors that limit PEP and PrEP uptake and adherence among SSWID is needed. The central aims of this study are to 1) explore experiences with and preferences for PEP and PrEP uptake and adherence among (N=30) women ≥18yrs who report injection drug use and sex work in the past year, and to 2) Identify potential barriers and facilitators to offering PEP and PrEP in substance use bridge clinics through key informants (N=15) interviews. I will triangulate findings from key informants with findings from AIM 1 to identify adaptations needed for PEP and PrEP intervention for SSWID. This study will provide key pilot data for a K award proposal that will seek to implement a larger adapted PEP PrEP intervention for SSWID. This study aligns with the NIH's goal to prevent new infections and transmission of HIV among people who use drugs and their sexual and/or injection.
<b>Nathan Cardoos, MD</b>		BUSM/ Family Medicine	Clinician Educator	<a href="mailto:Nathan.cardoos@bmc.org">Nathan.cardoos@bmc.org</a>	The goal of this project is to increase patient access to primary care sports medicine through targeted outreach to clinics both within the BMC network and external to it. Access to high-quality care for musculoskeletal injuries and concussion, as well as to cutting-edge regenerative therapies for chronic soft tissue and joint conditions, can help to reduce morbidity, alleviate chronic pain and decrease days of lost work or school. These services are currently underutilized, particularly by vulnerable populations.




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Nicole Spartano, PhD		BUSM/ Medicine, Endocrinology	Clinician Educator	<a href="mailto:spartano@bu.edu">spartano@bu.edu</a>	Funding for my first R01 will begin this summer, at which time I will begin the planning and pilot testing phase of this study. For this Early Career Development Program project, I am looking for guidance and mentoring in the process of study management, hiring and mentoring, and pilot testing our study methods. I also plan to develop a strategy to submit a Career Development grant, such as offered by the American Heart Association.
Rachel Cannon, MD, MSc		BUSM/ OBGYN	Clinician Educator	<a href="mailto:Rachel.cannon@bmc.org">Rachel.cannon@bmc.org</a>	This project's aim is to create and implement an advocacy curriculum for the OBGYN residents at BMC. In alignment with the mission of BMC, exceptional care without exception, the OBGYN residency program is committed to teaching residents how to care for a diverse patient population. Part of that education includes a commitment to advocacy as physicians to address disparities in care and champion for change. Our department has an advocacy committee that has provided department-wide advocacy exposure and training through a series of presentations that happen during our dedicated education time over the summer. The nurse midwife on this committee, Katharine Hutchinson, and I would like to take the work done by this committee and expand it into a formalized advocacy curriculum for the OBGYN residents. I would use my time in this program for curricular development and implementation. To appropriately develop this curriculum, we need time to review prior literature and what other residency programs have done, perform key stakeholder interviews, and learn about adult learning best practices. We will use this information to develop the curriculum and then plan to implement it with the 20 OBGYN residents in our program. After implementation we will evaluate the program and plan to publish these results as well as disseminate them to our BMC community.
Rachel Epstein, MD, MSc		BUSM/ Medicine, ID	Clinician Scientist	<a href="mailto:rachel.epstein@bmc.org">rachel.epstein@bmc.org</a>	My proposed project involves utilizing advanced causal inference methods to measure the role of the perinatal care venue in the hepatitis C virus (HCV) and opioid use disorder (OUD) care cascades. We have effective medications to treat both HCV and OUD; however, screening and treatment rates are far below current recommendations and necessary to reach HCV elimination and opioid overdose goals. Perinatal care, in accessing women at a time they may not otherwise interact with the healthcare system, may represent a unique venue to increase screening and treatment for HCV and to increase treatment initiation and retention for OUD. I propose to compare HCV and OUD linkage to care and treatment rates in reproductive age women with and without a past 2-year pregnancy from 2015-2020 in the national TriNetX database, which includes electronic health record data on millions of women. By matching women and adjusting for key variables such as prenatal care adequacy, sociodemographic factors, and prior substance use and treatment variables, I will attempt to isolate the effect of perinatal care on the HCV and OUD care cascade outcomes. The data from this project can then help inform interventions to improve HCV and OUD care for women and will help populate a decision model that will form the foundation of a career development award to simulate the effects of such interventions during the perinatal care on opioid overdoses and HCV transmission at a population level.

## 2021-2022 Early Career Program Participants

Name	Headshot	School/ Department	Phenotype / Track	Email	Project description
<b>Simran Grover, MSD, CAGS, FICD</b>		GSDM/ General Dentistry	Clinician Educator	<a href="mailto:simran@bu.edu">simran@bu.edu</a>	HARNESSING THE POWER OF 3D PRINTING AS AN EDUCATIONAL TOOL. As dental education continues to evolve, incorporating the latest digital technology across the curriculum enables us to cultivate innovative mindsets in our students and residents, ensuring they will graduate prepared to be leaders in an ever-evolving field. By integrating 3D printing widely across our curriculum, the goal is to guarantee our students and residents are fluent with this technology and the variety of ways it can be used to improve patient care. Boston University Henry M. Goldman School of Dental Medicine incorporated the latest 3D printing technology in order to remain on the forefront of the guidelines of the Commission on Dental Accreditation, "Dental schools should utilize the application of technology in dental education programs to improve patient care and to revolutionize all aspects of the curriculum, from didactic courses to clinical instruction".
<b>Stephanie Bissonnette, DO, MPH</b>		BUSM/ Neurology	Clinician Educator	<a href="mailto:bissonna@bu.edu">bissonna@bu.edu</a>	My academic project involves utilizing mixed methods to develop culturally competent educational videos for our non-English speaking patients who are being newly diagnosed with Parkinson's disease (PD). While PD effects people of all races and ethnicities, it is more common in Caucasian patients. However, our Parkinson's Disease and Movement Disorder clinic has seen approximately 119 under-represented patients based on language, race, or ethnicity in the past year. There are limited resources available, especially in languages other than English, for these patients to learn more about their disease and to help them make decisions regarding the complex medication regimens that are required to successfully treat Parkinson's disease. I therefore propose to evaluate the experience and decision making factors of our non-English speaking PD patients through 1 hour interviews. Simultaneously, I will survey the beliefs of movement disorder specialists on the important concepts they feel patients need to understand at the time of diagnosis. The data from providers and patients will then be analyzed qualitatively and used to inform the development of culturally competent educational videos. These videos will then be evaluated by focus groups from the target populations to determine their usability.
<b>Tara Bouton, MD, MPH&amp;TM</b>		BUSM/ Medicine, ID	Clinician Scientist	<a href="mailto:tcbouton@bu.edu">tcbouton@bu.edu</a>	Previous tuberculosis (TB) dogma was that drug resistance mutations lead to a fitness cost, creating weak TB strains that would be poorly transmitted. However, with >70% of rifampin resistant/multi-drug resistant (RR/MDR) TB strains now occurring due to transmission in high burden settings, the global community recognizes that Mycobacterium tuberculosis (Mtb) has developed fit drug resistant strains. RR compensatory mutations (CM) have been identified in the rpoA and rpoC genes. These mutations have been proven to restore fitness to RR Mtb strains in vitro, and in vivo by increasing transmission in humans. While RRCM have clearly increased RR-TB transmission, the contribution of HIV co-infection to the global expansion of RR/MDR-TB is unknown. Immunocompromised people living with HIV (PLWH) may be more susceptible to less-fit, RR-TB strains and then, due to increased bacterial burden, may be more likely to host the evolution of Mtb's CM and of further second-line TB drug resistance. In this CFAR funded project, we will whole genome sequence serially positive, banked RR-TB isolates from 164 individuals with and without HIV, who are initiating RR/MDR TB treatment, 82 of whom developed second-line TB drug resistance. We will investigate RRCM prevalence in PLWH compared to those without HIV, both at baseline and in a subsequent sample. Our findings will be the foundation of future grants investigating HIV's impact on RR-TB evolution.

## 2021-2022 Early Career Program Participants

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Vonzella Bryant, MD		BUSM/ Emergency Medicine	Clinician Educator	<a href="mailto:vonzella.bryant@bmc.org">vonzella.bryant@bmc.org</a>	Increasing diversity in the field of medicine has proven to improve healthcare outcomes and beneficial to the work environment as well. I want to continue to work on best practices for underrepresented in medicine groups (URG) recruitment and creating a supportive work and learning environment. I want to start writing publications and creating curriculum for this with an added goal of being promoted to be an Associate Professor.
Wan-Ju Wu, MD, MPH		BUSM/ OBGYN	Clinician Educator	<a href="mailto:Wan-Ju.Wu@bmc.org">Wan-Ju.Wu@bmc.org</a>	My project will consist of two parts. First, I plan to adapt and implement a global health curriculum for the BMC OB/GYN residency program. This curriculum will be integrated into the existing OB/GYN didactics. Second, I plan to work with Anissa Dickerson, CNM (my co-director of the Refugee Women's Health Clinic) to develop a four-week structured Refugee Women's Health elective that residents may opt to participate in. The overall goal is to improve access to global health education in the OB/GYN residency program. These initiatives will form the foundation upon which we hope to initiate a global health track in the OB/GYN residency in the future. The global health curriculum will focus on topic-specific areas as well as emphasize principles for decolonization of global health. We hope to push trainees to critically discern our individual roles in global health equity, both domestically and internationally. For the Refugee Women's Health elective we plan to train residents in clinical care of women who are recent immigrants, refugees, or asylum seekers. Trainees will develop an understanding of the social and legal issues faced by this population and develop skills to be a physician advocate. My collaborator will work to develop core competencies in obstetrics care for this patient population as well as build community-based partnerships. Residents will have the opportunity to shadow at community-based organizations to better understand available local services.
Xuejing Chen, MD, MS		BUSM/ Ophthalmology	Clinician Scientist	<a href="mailto:Xuejing.chen@bmc.org">Xuejing.chen@bmc.org</a>	This study aims to determine the safety of a novel vitreous substitute for vitreoretinal surgery. For 50 years, retinal detachment surgeries were performed with inert fluorinated gases and silicone oil. These vitreous substitutes can cause a number of complications, limit post-operative vision, and require uncomfortable post-operative patient posturing. We have a hydrogel formulation developed with biopolymer engineers at Tufts University that we posit may replace silicone oil and gases without their limitations. My goal is to assess this new hydrogel with silk proteins in an in vivo rabbit vitrectomy model. This project is a 2-week survival study with 6 rabbits looking at the safety of the hydrogel in the vitreous cavity. We will do vitrectomy surgery with baseline and post-operative examinations to assess the intraocular pressure, post-operative inflammatory response and optical clarity of the eye. Additionally, we will run electroretinogram tests, which measure the electrophysiologic function of retinal cells, before surgery and at 2 week post-operatively. At the end of the 2 weeks, the rabbits will be sacrificed and their retinal histology examined. A Boston University IACUC protocol has already been submitted. My goal is to use this 2-week survival study as pilot data for a larger NIH grant with the biopolymer engineers to evaluate in vitro and in vivo safety and efficacy of the hydrogel for vitreoretinal surgery on a larger scale