

Project Name	Faculty name	Department	Brief description of the general research problem or project	What specific question will the student addressing during their rotation	What is the type of study or curriculum implementation plan?
Gender Differences in Electronic Health Record Communication in Gastroenterologists	Feld, Lauren	Gastroenterology and Hepatology	Do male and female gastroenterologists have different Electronic Health Record inbasket communication demands?	Is there a difference in the quantity and type of inbasket messages received by male and female gastroenterologists? Are there differences in messages from patients? Are there differences in messages from staff?	Review of Epic-generated data from a large gastroenterology practice
Community Intervention Program (CIP)	Fan, Xiaoduo	Psychiatry	Community interventions for people with serious mental illness	Students can become involved in one of our community intervention modules ( <a href="https://www.umassmed.edu/umass-mind/community-programs/community-interventions/">https://www.umassmed.edu/umass-mind/community-programs/community-interventions/</a> ) and join or develop a project related to one of these modules	As students can either join an existing project or design one the specific study type may vary but they are often intervention studies evaluating the efficacy of a specific program or therapy
Reducing racial and ethnic disparities in Emergency Department pain control management through the use of nerve blocks.	Binder, Zachary	Pediatrics	How can the use of nerve blocks reduce racial and ethnic disparities in pain control in the Pediatric Emergency Department.	What data exists to show that there are racial and ethnic disparities in the pain control that pediatric patients receive in the Emergency Department and how can nerve blocks reduce this disparity.	Literature Review followed by write up.
Speech markers and cognitive activities of daily living in Parkinson's disease	Smith, Kara	Neurology	How can speech recordings be used to better understand the impact of speech changes on cognitive experiences of daily living in Parkinson's disease	Do any speech markers predict cognitive daily function level?	Cross sectional cohort study

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Understanding Prognostic Communication in Critically Ill Neurologic Patients	Muehlschlegel, Susanne	Neurology (Div. Neurocritical Care)	How to clinicians derive and communicate prognostic information to families in clinician-family meetings in the ICU? How and why is there variability? Does it predict withdrawal of life-sustaining therapies?	Qualitative and Quantitative data collection and analysis based on existing frameworks.	Prospective observational mixed-methods study (clinical research)
FORCE-TJR- Function and Outcomes Research for Comparative Effectiveness in Total Joint Replacement	Zheng, Hua	Orthopedics	We would like to better understand the clinical and surgical factors, specifically varying total hip replacement (THR) and total knee replacement (TKR) approaches and peri-operative care that may impact patients' functional outcomes.	The student will assist in this national research study. Daily work will include: understanding the emerging importance of collecting PROs including data entry of patient surveys; training in appropriate data collection and abstraction of operative notes from FORCE-TJR registry participants due to adverse events. Students will also be exposed patient retention calling.	Longitudinal cohort study

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<p>Medical language curriculum development: Improving the structure, course materials &amp; resources for the FC460 Medical Language course, which is a 1-month elective available to UMMS medical student in their Advance Studies year. Students may take this elective while focusing on any non-English language other than Spanish.</p>	<p>Chin, Michael</p>	<p>Family Medicine &amp; Community Health</p>	<p>The goal of this project is to improve the structure, course materials &amp; resources for the FC460 Medical Language course, which is a 1-month elective available to UMMS medical student in their Advance Studies year. Students may take this elective while focusing on any non-English language other than Spanish.</p>	<p>How can the FC460 Medical Language course be improved? How can other language training resources be leveraged to improve the FC460 Medical Language course? What published literature exists regarding medical language resources, and how can these resources help improve the FC460 course?</p>	<p>The implementation plan will include the following: week 1 and 2 will include review of relevant published literature, review of current course structure &amp; materials, and taking a condensed version of the FC 460 course. Week 3 and 4 will focus on improving course materials, and possibly considering opportunities for publishing.</p>
<p>Exploring patient and pediatric practice perspectives on the implementation of school-based asthma therapy</p>	<p>Trivedi, Michelle</p>	<p>Pediatrics</p>	<p>How to best implement school-based asthma therapy in low-resourced clinics and among low-income and racial/ethnic minority children and families</p>	<p>What are the barriers and facilitators and best implementation strategies for school-supervised asthma therapy in low-resourced clinics and among low-resourced families</p>	<p>Qualitative Research</p>
<p>Pilot Clinical Trial of School-Supervised Asthma Therapy</p>	<p>Trivedi, Michelle</p>	<p>Pediatrics</p>	<p>Is school-supervised asthma therapy effective at improving asthma health outcomes?</p>	<p>Is school-supervised feasible, acceptable and effective?</p>	<p>Clinical trial</p>
<p>Demographic and academic characteristics of Academic Radiology Department Chairs</p>	<p>Catanzano, Tara</p>	<p>Radiology</p>	<p>To determine if there is bias in recruitment of radiology department chairs</p>	<p>To determine if there is bias in recruitment of radiology leaders e.g. researchers vs educators</p>	<p>Website and CV review of chairs</p>

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Life after 80: A Qualitative Study of Elders' Experiences with Aging	Potts, Stacy	Department of FMCH	What factors contribute to joy in the elder years? Older patients are often unsure what to expect in the late years of their life. This project seeks to explore the experiences of older adults to evaluate themes in terms of physical, mental, and emotional changes and successful coping strategies. Our study will focus on elder adults' experiences transitioning and living through late adulthood (80+ years old).	The student(s) will interview elders to explore what physical, cognitive, and emotional experiences are crucial to understanding late adulthood in the United States.	Qualitative study consisting of individual interviews
Improving equity and postpartum outcomes for those marginalized by racism and socioeconomic disadvantage	Moore Simas, Tiffany	Obstetrics & Gynecology	How do you improve postpartum outcomes, especially those related to hypertensive diseases of pregnancy and perinatal mental health, for those marginalized by racism and socioeconomic disadvantage?	Same as above. This cannot be completed over the summer. This is the beginning of a 5 year PCORI funded study. We will start recruiting in May 2023. The student will be part of initial study efforts. Results will not be available for an extended period of time.	Longitudinal cohort - prospective multi-site step-wedged design
Student Perceptions of Online Anatomy Images	Wink, Alexandra	Radiology	Are there information literacy issues to be addressed in medical students relating to how they use online images in anatomy study?	How do medical students perceive anatomy images found online (e.g., through search engines) in terms of accuracy, and usefulness as a resource?	Student interviews and qualitative data analysis.

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Open ended anatomy curriculum development project	Wink, Alexandra	Radiology	Creation of supplementary anatomy learning materials	Creating a module for anatomy	Will be integrated into the anatomy curriculum.
Tele-Navigation for Lung Cancer Screening	Ito Fukunaga, Mayuko	Medicine	Develop the intervention to improve adherence to follow-up lung cancer screening using health informatics	What are stakeholders' suggestions to improve adherence to follow-up lung cancer screening?	Interveiw, qualitative analysis, co-creation of the implementation strategy
Multiple projects in my lab, including basic science, database studies, clinical trials, and educational studies	Giatsidis, Giorgio	Surgery / Plastic Surgery	Multiple topics related to Plastic and Reconstructive Surgery	Multiple skills will be learnt, ranginf from technical skills to poster design, podium presentation, scientific writing	Multiple projects available from basic science to clinical trials to survey-based studies to database clinical studies
Video Learning in Robotic Thoracic Surgery	Maxfield, Mark	Surgery	Creation of edited videos of robotic thoracic surgery procedures to augment surgical learning for medical students, residents, and surgeons.	Can robotic thoracic operations be edited to facilitate learning?	Creation of edited robotic surgery videos.
Sickle Cell Disease: Quality Metrics to Improve Health Care Delivery	ElHaj, Nura	Pediatric Hematology/ Oncology	Development and implementation of EPIC order sets, clinical note templates, and standard of care clinical practice guidelines to help improve sickle cell disease-related health care delivery.	Does the use of quality metrics based electronic tools help improve health outcomes and resource utilization for pediatric patients with sickle cell disease?	Quality Improvement

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Body composition in Duchenne muscular dystrophy patients with obstructive sleep apnea syndrome	Dy, Fei	Pediatrics	Is body composition a risk factor for development of obstructive sleep apnea in Duchenne muscular dystrophy patients?	Do dual-ex-ray absorptiometry indices (such as body fat, lean tissue and muscle mass) predict obstructive sleep apnea in patients with Duchenne muscular dystrophy	Cross-sectional study based on registry data

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Improving Pediatric Sickle Cell care using QI tools.	Tyrrell, Cornelius	Pediatrics	<p>The children's Medical Center is working on a project to ensure that patients with sickle cell disease are receiving the highest standard of care possible. There are our current standards published with regular evaluation and intervention structures in place for these patients however the implementation of these guidelines here at UMass Memorial has not been fully established. The goal of this project will be 1. to use quality improvement principles in order to establish a baseline for our adherence to standard sickle cell care. 2. Once our baseline is established we will be working to implement some PDSA cycles to improve our adherence to the guidelines. 3. Beyond this we intend on tracking outcome measures in order to evaluate the impact of this work.</p>	<p>1. What percentage of children cared for at UMass Memorial with a diagnosis of sickle cell are receiving care that meets national standards. 2. What is our current state of complication rates for children with sickle cell. 3. Based on the results of these findings the student will help implement changes in order to improve the highest yield interventions. This will involve the use of quality improvement tools and behavior change methods for providers.</p>	<p>The student will be auditing charts to assess baseline and ongoing care for our patients. We anticipate the student to be using excel / redcap's. They will be working with a statistician occasionally. They will be educated regarding sickle cell by the pediatric hematologist oncologist and will be expected to review the national guidelines for these patients. They will also be engaging in the IHI (Institute for Healthcare Improvement) open school to gain an understanding of QI. They will likely also find it useful to review some of the work by Richard Thaler and Cass Sunstein regarding their book Nudge.</p>

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Farm to Health Initiative	Gnazzo, Melanie	Family Medicine and Community Health	Food Insecurity is a major public health concern. The student will implement a distribution of free, locally grown produce to patients at the Family Health Center of Worcester, a federally qualified health center in the central urban area of Worcester. This distribution has been implemented by UMassChan medical students for 8 years; however processes are always being modified to increase the impact of the distribution.	The student will work with a multidisciplinary team of health care professionals to design and implement the 2023 produce distribution. The student will get patient feedback for process improvement. To be prepared for this work, the student will engage with the farm and other local organizations addressing food insecurity in Worcester.	This is a quality improvement project. The process evaluation will be determined based on discussions with the faculty advisor after reviewing data from prior years.
Engaging Older Adults for Digital Research Projects; a Qualitative Study	O'Connor, Laurel	Emergency Medicine	What are the most effective tactics to engage older adults as subjects in digital and technology heavy research projects?	What are barriers and facilitators for the recruitment of older adults in studies involving more sophisticated technology such as wearable and smart devices and digital applications	Qualitative study utilizing focus groups and structured interviews



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Identifying Barriers to the Decarbonization and Electrification of Residential Buildings in MA	Luckmann, Roger	Family Medicine and Community Health	To meet Mass. climate goals 500,000 residential buildings in the state will need to maximize energy efficiency and install heat pumps by 2030. While federal and state incentives are available, there re many barriers to electrifying buidlings including cost, access to reliable information, and logistical challenges. Little is know about the prevalence of these barriers in different populations and regions in the state and even less about residents' opinions on how they could overcome these barriers. This information is essential to identifying the scope of the problem and potential solutions.	Students will identify the most common barriers to residential building electrification expressed by residents of the town of Natick and potential policies that address those barriers.	The student/s will design and convene at least 3 focus groups drawn from the population of the town of Natick with the support of the Natick Office of Sustainability. Basd on findings from the focus groups the stuent/s will develop and pilot a survey aimed at identifying barriers to residential building electrification and potential solutions.
Developing a Scalable Intervention to Prevent Anxiety Disorders in Obstetric Settings	Zimmermann, Martha	Psychiatry	Develop and iteratively refine a multicomponent digital health intervention to prevent perinatal anxiety disorders in obstetric settings.	How can an intervention to prevent anxiety disorders be adapted be adapted for a perinatal population and for digital health for integration into obstetric settings?	Community engagement, user-centered design, and implementation approaches will be used to adapt an Anxiety Sensitivity Intervention for digital health and for integration into obstetric settings to maximize intervention reach.

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Identify barriers to treatment of patients with chronic pancreatitis in the emergency department	Carey, Jennifer	Emergency Medicine	Are there any barriers to care for patients with chronic pancreatitis in the emergency department (for any clinical presentation)? Can we identify these barriers and provide an educational intervention to EM residents to improve the care for these patients? We will utilize simulated scenarios in iCELS to study this topic.	Does treatment of patients with chronic pancreatitis improve after targeted educational interventions?	Mixed methods educational research study
Improving Chronic Disease Outcomes Across the Lifespan by Addressing Structural Racism.	Garg, Arvin	Pediatrics	We will apply an antiracism framework to an existing evidence based SDOH (Social Determinants of Health) screening and referral system and develop a holistic implementation toolkit aimed at reducing bias and mitigating unequal treatment for families of color.	Our goal is to conduct interviews with caregivers of Arabic speaking pediatric patients and with Arabic speaking patients aged 18 years or older to learn more about how non-medical factors (like access to food and housing) and personal characteristics (like race and ethnicity) affect the care they receive from health care providers.	Qualitative Interviews

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Antiracism WE CARE	Garg, Arvin	Pediatrics	How non-medical factors of Arabic speaking patients (like access to food and housing) and personal characteristics (like race and ethnicity) affect the care they receive from health care providers.	How non-medical factors of Arabic speaking patients (like access to food and housing) and personal characteristics (like race and ethnicity) affect the care they receive from health care providers.	Longitudinal cohort study