2020 IHPI/HSR Summer Student Fellowship & Internship Program & Health Equity Summer Research Award - Faculty Projects

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Adrian Diaz	adriandi@umich.edu	Medical School	Either	No	The goal of our study is to characterize the scope of involvement of private equity firms within surgical care. Private equity acquisition of physician practices has been a growing trend over the last 5 years. These firms can have significant influence on both clinical and billing practices within physician's offices. Through utilizing various publicly-available databases, our aim is to assess trends geographically and chronologically within the United States.
Adrienne Lapidos	alapidos@umich.edu	Medical School	Either	Yes	The purpose of the current project is to conduct a three-month research study on the extent to which job descriptions for Community Health Worker (CHW) positions reflect fidelity to the workforce model described by the American Public Health Association (APHA). The selected candidate will have the opportunity to be a coauthor of a published journal article describing this research. Community health workers (CHWs) can play an important role in improving the quality and value of health care. As trained frontline health workers who are trusted members of the population they serve, CHWs generally share a culture, language, and community with their clients. Perhaps the most crucial component of CHW interventions is the shared experiences between CHWs and their clients, which helps reduce social distance and generate trust. Decades of scholarship have emphasized the need to preserve CHWs' deep connections to the people they serve. However, as many states are updating their policies to include sustainable financing of CHW interventions, there is a growing risk of "drifting" or diminishing fidelity to the workforce model described by the APHA. Without fidelity to the model – which states that CHWs should ideally be members of the community served – CHW positions risk losing their unique ingredient and becoming more like traditional social work or case management positions, but lower paid. The IHPI fellow and I will together develop a methodology for sampling, systematically searching, coding, and analyzing CHW job descriptions in order to describe the extent to which they reflect fidelity to the APHA model. We will then write a manuscript for publication in a peer-reviewed journal describing our research. The fellow will therefore have a unique opportunity to be involved with the design and dissemination of a small-scale research study from start to finish, and will have the opportunity to coauthor a peer-reviewed journal article. All work can be completed from home if desired.
Andrew Read	reada@umich.edu	Medical School	Doctoral-level student	No	Development of a machine-learning based prediction tool for earlier detection of gastrointestinal tract cancer, using longitudinal laboratory data, to determine if a machine learning model can predict cancer earlier than traditional regression models. Student would be familiar with use of large datasets, traditional statistical regression models, and use of machine learning techniques using R and/or Python.
Anna Kirkland	akirklan@umich.edu	LSA	Either	Yes	Students will be analyzing health insurance contract documents and recording results about coverage and costs in areas such as transgender coverage, mental health and substance abuse, abortion/contraception, HIV prophylaxis, and infertility. Students may also work on quantitative/qualitative analysis, spreadsheet design, and writing up of results (with co-authorship possibilities where appropriate).

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Anne Fernandez	acfernan@umich.edu	Medical School	Either	No	Our team is conducting two research projects evaluating alcohol and opioid use among surgical patients. The goals of both projects are to improve surgical health outcomes through patient-facing interventions to reduce and prevent addictive behavior. Both projects will be actively recruiting patients during the summer and conducting data analysis. We are using novel methodology to identify and predict addictive behavior by analyzing clinical text notes and structured data from electronic health records. A student interested in this project could potentially take part in our data analysis, natural language processing, help develop and conduct mixed-methods surveys, and recruit participants. Student tasks would depend on skills and interests. We are looking for a highly responsible and detail-oriented individual who is looking to work with our collaborative small team.
Akbar Waljee	awaljee@umich.edu	Medical School	Either	No	Interested in working with "big data"? Our team is seeking a student to assist with the creation of analytic files that will be used by a variety of researchers at the University of Michigan. We work with very large (2+ terabytes) commercial insurance claims datasets, and the student in this role will help our team manage, process, and disseminate this data to our users. This is an opportunity for you to gain real-world experience in the realm of "big data", and be exposed to unique data resources that few students ever get the chance to analyze while in school. We interact with a diverse group of researchers on a daily basis, and the data requests we receive span many disciplines. You will be given an opportunity to choose which project best suites your interests and expertise. In order to be successful in this role, you will need to exhibit curiosity and a strong willingness to learn. Our team
Arvind Rao	ukarvind@umich.edu	Medical School	Either	Yes	This project co-advised by Drs. Arvind Rao (Computational Medicine and Bioinformatics, Biomedical Engg) and Brahmajee Nallamothu (Internal Medicine, Cardiology), we are interested to make assessments of bias and fairness in cardiovascular risk prediction, leveraging modern techniques from computer science and statistics. Algorithms for bias assessment and mitigation will be examined, in addition to understanding the interplay of various performance metrics in AI-based medical decision making. Students with interests in understanding AI fairness in a medical decision making context, and some programming background (eg: basic python) may find this project particularly interesting. In case of questions, please email "ukarvind@med.umich.edu" or "bnallamo@med.umich.edu"
Beth Wallace	brennerb@umich.edu	Medical School	Either	No	This project aims to (a) develop a clinically acceptable protocol for tapering steroids in patients with rheumatoid arthritis, and (b) determine which patients are most likely to taper steroids successfully. Student role would be to assist with chart review and data analysis, with opportunity for authorship on resulting manuscripts. Depending on interest level and the amount of work accomplished, a student might also consider applying to present his/her work at conferences such as the American College of Rheumatology's national Rheumatology Research Workshop. Involved students would work within a multidisciplinary research team including faculty members in Rheumatology and Gastroenterology, statisticians, project managers, and other students from various schools within UM. Work on this project would occur at the AAVA Center for Clinical Management Research, which hosts weekly multidisciplinary conferences and learning activities. Students would be invited to attend weekly and monthly Rheumatology divisional events as well.
Carina Gronlund	gronlund@umich.edu	Institute for Social Research	Either	Yes	Racial and economic disparities in extreme heat health effects have been documented. However, we know very little about the racial and economic disparities in extreme cold health effects. We propose to use log-linear regression models (e.g., proportional hazards, logistic, Poisson) to study these associations in a cohort of Medicare recipients.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Cathryn Lapedis	cathrynb@umich.edu	Medical School	Either	Yes	Pathologists and patients currently rarely meet. Early work suggests that most cancer patients are interested in meeting with their pathologist and seeing a microscopic slide of their tumor because they feel it would allow them to better understand their specific diagnosis, understand the process of diagnosis, and be empowering to know what they are facing. Overall pathologists believe that direct patient interaction would benefit patients, pathologists, and the field as a whole. This summer I will be studying what happens when patients and pathologists meet. I will need a research assistant to help coordinate patient slides, interview patients before and after an interaction with a pathologist, and to follow up 2-3 weeks later with a 10 minute phone call about the interaction. This study will primarily be in men with a new diagnosis of prostate cancer. This is an excellent project for any student interested in health communications, cancer research, patient experience, patient centered medicine, and pathology. You would be closely involved with a pathologist, the urology team, patients, and care coordinators.
Chad Ellimoottil	cellimoo@umich.edu	Medical School	Either	No	Telehealth (virtual care) is the use of technology to improve healthcare delivery. Telehealth includes the use of video visits with patients, mobile health platforms, and wearables. Our Telehealth initiative includes projects that focus on using technology solutions to improve access, cost, quality, and patient experience. We are a fun, multidisciplinary team with many ongoing and upcoming projects. Many of our projects will directly lead to changes with Michigan Medicine's use of virtual care. These projects include survey development and/or big data analysis. Students with methodological experience in these areas, or who are looking to develop methodological experience are encouraged to contact us to discuss a summer project.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Denise Anthony	deniseum@umich.edu	Public Health	Doctoral-level student	Yes	Patients rely on clinical providers in multiple ways, such as for expertise to interpret test results, honesty to disclose conflicts of interest, and confidentiality to use patient information responsibly. In each of these ways, patients' fundamental vulnerability to providers when seeking medical care requires patient trust. Trust in a physician is conceptualized as comprising multiple dimensions (Hall et al. 2002; Mechanic 1998), with each dimension essentially aligning with different aspects of medical care that produce patient vulnerability to the physician (Campos-Castillo & Anthony 2019). Different situational factors can render one dimension more salient than others (Hall et al. 2001; Mechanic 1998). A patient could have trust in one dimension and not another due to characteristics of the patient, physician, their relationship, or aspects of the clinical situation. Patients with marginalized characteristics related to socio-demographic characteristics or health status vary in levels of trust from those with non-marginal characteristics. Some research finds that racial and ethnic minorities have lower levels of certain dimensions of trust in physicians than majority group members (Sewell 2015; Stepanikova et al 2006). Qualitative studies indicate that some black patients do not question a physician's knowledge about medicine; yet, the dark history of the Tuskegee experiment stokes skepticism for why the physician selected certain treatments over others (Peek et al. 2012). Other research shows that patients with stigmatizing health characteristics, and thus concerns about information management, have lower trust in physician confidentiality specifically (Campos-Castillo & Anthony 2019). Still other research suggests that levels of trust in some dimensions but not others may vary based on aspects of the clinical situation, including provider or organizational characteristics (Campos-Castillo 2015; Platt 2019). Few studies, however, examine variations across multiple dimensions of trust at the same time. Varying levels of trust in specific dimensions are important because they have different implications for patient behavior. For example, low trust in confidentiality based on concerns about privacy can impede patient use of health care and hinder disclosure to providers (Campos-Castillo & Anthony 2014; Iott et al 2019; Stablein et al2015). Similarly, patient expectations about unfair treatment that reduce trust in providers inhibits care-seeking (LaViest et al 2003; Trivedi 2006), overall satisfaction (LaViest et al 2000), and engagement with care (Alexander et al 2014). These differential consequences of low levels of trust indicate that it is important to consider how different dimensions of trust influence patient behavior, as well as what characteristics and situations affect levels of trust across dimensions. Using existing survey data, this project seeks (1) to identify how patient characteristics are related to levels of trust
Diane Harper	harperdi@umich.edu	Medical School	Either	Yes	The student must know how to use SEER data bases and link them to Medicare and Medicaid databases - the purpose of the study is to document the incidence and mortality of cervical cancer in women with disabilities (specific definitions) and to document the screening and treatment of those with such diagnoses.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Diane Harper	harperdi@umich.edu	Medical School	Either	Yes	Dr. Diane Harper is working on a series of studies focused on improving cervical cancer screening and reducing the incidence and mortality from cervical cancer. These studies will develop and evaluate study efficacy and implementation of new devices for self-sampling. These studies all will evaluate new molecular markers for testing and work with industry to develop FDA acceptable testing devices. In addition, qualitative and decision-making aspects of screening for HPV instead of the speculum directed Pap test will be evaluated. Qualitative interviews will be carried out in underserved groups including Mid-Eastern North African (MENA), African American, rural Non-Hispanic White women, Native Americans, and women with physical disabilities. Students will assist the study team in literature searches, collection of data, transcription of qualitative interviews, and analysis of quantitative and qualitative data. Students will be responsible for working with the primary investigator and study team.
Donovan Maust	maustd@umich.edu	Medical School	Either	Yes	The summer student would have a strong quantitative background and be interested in a project analyzing complex survey data (i.e., the National Health and Aging Trends Study and National Study of Caregiving). The parent project is an NIA-funded R01 focusing on determinants of potentially inappropriate medical care of patients with dementia. The PI is particularly interested in disparities in care for these older adults, but the summer student could work on a variety of projects depending on their interests.
Ebbin Dotson	edotson@umich.edu	School of Public Health	Either	Yes	The Health Equity Leadership Pipeline Collaborative at the UM School of Public Health is developing a meta-analysis of existing health professions pipeline programs towards the development of a robust pipeline program success measure that will capture a return on investment factor standard to compare across disciplines. In healthcare, student-focused recruitment and retention pipeline programs have been instrumental in addressing provider shortages. They also foster industry and professional commitment to increasing racial and ethnic diversity as a means to address health disparities and health equity. Current program evaluation tools are too varied for comparative analyses. The student researcher will have the opportunity to contribute to the development of the project methodology, including statistical analysis. The student will support data gathering, survey design and dissemination, and program evaluation. In addition, the student will have the option to directly contribute to the development of a publishable manuscript and design content for social media.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Elisa M. Maffioli	elisamaf@umich.edu	Public Health	Either	No	The project responds to a direct request from the National Institute of Health (INS) at the Ministry of Health (MOH) in Mozambique. Malaria-endemic countries such as Mozambique have to decide how much of their limited resources allocate towards national policies. The objective of this project is to support Dr. Eduardo Samo Gudo, Scientific Director at the INS to conduct a cost-effectiveness analysis (CEA) of the existing malaria control programmes. These policies include the distribution of Long-Lasting Insecticidal Nets (LLINs), indoor residual spraying (IRS), Intermittent Preventive Treatment (IPT) for pregnant mothers and children, and integrated Community Case Management (iCCM), including testing and treatment, delivered through Community Health Workers (Agentes Polivalentes Elementares APEs). By evaluating and comparing their costs and health benefits, the analysis will determine the value of each intervention for the INS to invest in, and it will provide evidence on which programmes are resourceful and sustainable solutions for controlling malaria in the country. By using an evidence-based approach to determine funding allocation towards various malaria control strategies, the government will increase its capacity to spend resources more effectively and it will take steps towards improving the economic growth of Mozambique. The project consists of two phases: (1) gathering data on costs and health benefits. The scope is to gather, on the one hand, data on financial and opportunity costs, and, on the other hand, data on the number of malaria cases and information necessary to construct common measurements of disease burden such as Disability-Adjusted Life Years (DALYs). (2) conducting a cost-effectiveness analysis by comparing several policies implemented (LLITNs, IRS, IPT, the use of APEs to provide health promotion, testing and treatment or iCCM) in the country. The analysis will calculate the Incremental Cost Effectiveness Ratio (ICER) which defines the relative difference in cost associated with one strategy versus the difference in effectiveness of the competing alternative. By taking a governmental perspective, the CEA aims at understanding which policies could have the most widespread impact on health outcomes and it will inform policy makers on how to allocate investments across programmes. The student will be in charge of gathering data sources (proprietary from the MOH and publicly available data sources such as Demographic Health Surveys), cleaning and preparing the data for analysis, and conducting preliminary analysis. In addition, the student will help finalizing the literature review and will start drafting the manuscript. The student will interact with the field team based at the International Growth Center (IGC) in Maputo, Mozambique in addition to policy stakeholders in the country. Knowledge of Stata is required.
Geoff Barnes	gbarnes@umich.edu	Medical School	Either	No	Heart failure patients who receive left ventricular assist devices (LVAD) require anticoagulation with warfarin to prevent clot formation that can cause LVAD failure. However, if the level of warfarin anticoagulation is temporarily low, a short-acting "bridging" anticoagulant is needed. This can be done either with an injection at home or an IV infusion in the hospital. We want to compare the injection to IV infusion for safety and efficacy. If injection is shown to have similar safety and efficacy, this could save significant health care resources. We are currently collecting data from 4 hospitals on their management of patients with LVAD. We need assistance with data management and statistical analysis, which will include propensity matching and multi-level modeling. Therefore, we are looking for a masters- or PhD-level student with data management experience who wishes to learn propensity-matching and multi-level modeling work. Our team includes clinical experts with health services training and PhD statistician from CSCAR.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Geoff Barnes	gbarnes@umich.edu	Medical School	Either	No	Management of blood thinners (antithrombotic medications) around surgical procedures can be quite challenging. In 2017, the University of Michigan instituted a new process that alerted clinicians of a referral option at the time a GI endoscopy procedure is ordered for patients who take blood thinners. We are completing data collection for all patients in whom this alert occurred. We aim to explore how well the antithrombotic medications were managed between patients who were referred and not referred to a pharmacist management service. We need assistance with data management and statistical analysis, which will include multivariable logistic regression analysis and multi-level modeling. Therefore, we are looking for a masters- or PhD-level student with data management experience who wishes to learn propensity-matching and multi-level modeling work. Our team includes clinical experts with health services training and PhD statistician from CSCAR.
Geoffrey Hoffman	gjh@umich.edu	School of Nursing	Either	No	This project will examine access to and impact of rehabilitation following stroke and hip fracture for older patients with cognitive impairment. There is belief that older adults with cognitive impairment have more limited self-care ability, which may result in limited referrals for post-acute care for injury and complex conditions. Inpatient rehabilitation facilities are associated with better outcomes than other post-acute care settings (skilled nursing, home health) for conditions requiring rehabilitation, but cognitively impaired individuals may have limited access or may not benefit as much from more structured care when accessing it. This study will explore the extent to which cognitive impairment of older patients hospitalized for hip fracture and stroke is associated with differential discharge dispositions into post-acute care. Additionally the role of discharge setting in self-care and mobility outcomes for these conditions, and whether it varies by patient cognitive impairment status, will be assessed. We seek a master's, doctoral, or medical student to assist with this project – to help with literature review, data analysis (if interested), project management, and writing of the manuscript.
Gina Dahlem	ginayi@umich.edu	School of Nursing	Master-level student	No	Please see link: https://docs.google.com/document/d/1XSKnYkWblCIEGW8RoBkq1V2gNZkJ46obqYKclYAwna4/edit?usp=sharing

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
HwaJung Choi	hwajungc@umich.edu	Medical School	Either	No	Four to five million Americans aged 65 and older have Alzheimer's disease and related dementias (ADRD) As the US population ages, this number is projected to nearly triple by 2050 while fewer caregivers per older adult will be available over the next decades. In the US and other countries, people with dementia typically prefer to reside in their own homes as long as possible. Aging in place is often assumed to be less costly than alternative types of care and to provide better quality of life for older adults with dementia. In community settings, spouses and adult children most often provide in-home care for older family members. However, not all older adults have access to willing and available family caregivers who live nearby and can devote the time and energy required. Potential care availability of family, in turn, influences the type and level of formal and informal care that older adults with dementia receive. Detailed knowledge of potential family care availability for ADRD patients is essential to develop effective dementia care policies and services. Few studies, however, have examined potential family care availability prior to dementia onset, and few have assessed the influence of family care availability on ADRD care during its onset and transitions in care. Specific aims: Aim 1: Determine the availability or "potential supply" of family members of older adults from prior to the onset of ADRD through the period during which older adults have ADRD. Using a nationally representative longitudinal dataset, I will develop highly detailed profiles of potential caregivers including characteristics that are strongly associated with caregiving, such as number of family members, relationship to family members, health status of family members, and spatial distance to the adult with ADRD. I will assess the extent to which the potential family availability for ADRD care differs across demographic and socioeconomic groups. This aim will shed light on the prevalence and characteristics of vulnerable older adults with ADRD who have few or no family care resources. Aim 2: Examine how patterns and levels of potential family care availability influence care utilization, care transitions, and care costs at onset and during the course of ADRD. I will examine trajectories in ADRD care utilization and care costs during the course of ADRD and their associations with potential family care availability. This aim will help to predict healthcare utilization patterns and the timing of transition to a long-term care facility, as well as inform policies to reduce the financial costs. Aim 3: Examine how potential family care availability influences care allocation among family members and the
Ivo Dinov	dinov@umich.edu	School of Nursing	Either	No	The SOCR-IHPI 2020 Internship is focused on developing advanced methods for managing, processing, and visualizing complex, multi-source, incomplete, and heterogeneous biomedical and health datasets.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Jade Burns	curryj@umich.edu	School of Nursing	Either	Yes	Young Men's Health Matters – A Community Engaged Research Project Overview In order to improve healthcare and sexual health outcomes among teenage and young adult males in different community health care centers in urban settings, we hope to explore the current obstacles that young Black males are facing. We will be writing a proposal and organizing one-on-one interviews with young Black men (ages 18-24) to learn more about their experiences and attitudes and mindset on clinic use. From our community group discussions (e.g., non-profits, barbershops) we also will be creating a city-wide wide event during June (Men's Health Month) and collaborating with members of local organizations within the city of Detroit. Our hope is to: (1) understand key behaviors that may be used to promote long-term risk reduction methods in the community with young men (2) make recommendations to healthcare providers for improving health care access for this population. This work will also be essential in encouraging the sexual well-being, clinic use and connect young Black heterosexual males with the appropriate sexual health and other community-based resources as needed. **Location:** The project will take place at Detroit community-based health organization. Working groups with students (grad &undergrad) /interns/ will take place in Ann Arbor and Detroit. **Job Duties**: Students/ Interns may choose from the following : 1. Manuscript writing on secondary data analysis set set regarding the needs and preferences are around sexual reproductive health service use and access to care. 2.Conduct a formalized needs assessment and build relationships with community partners. 3. Analyze Survey and outcome measures for the YMHM Men's Health Event (June) 4. Social Media Analytics and posting/branding 5. Recruitment/Program evaluation 6. In depth interviews

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Jeff Kullgren	jkullgre@umich.edu	Medical School	Either	No	The National Poll on Healthy Aging (NPHA) is a recurring, nationally representative household survey directed by the U-M Institute for Healthcare Policy and Innovation, with funding from AARP and the Michigan Medicine Department of Communications. By tapping into the perspectives of older adults and their caregivers, the NPHA helps inform the public, health care providers, policymakers, and advocates on issues related to health, health care and health policy affecting U.S. adults age 50-80 and their families. Poll results are widely disseminated to elevate the voices of the public, inspire future research, and inform national dialogue. U-M researchers also evaluate the poll data for further insights that are shared via academic channels. The poll is directed by Preeti Malani, MD, and co-directed by Jeff Kullgren, MD and Erica Solway. Dr. Kullgren will be the faculty lead for this internship/fellowship. We are looking for a student with an interest in aging-related research and policy to work closely with all members of the poll team, with responsibilities including but not limited to: •Participate in weekly NPHA team meetings and calls with AARP partners. •Work with IHPI communications team to learn about media dissemination strategies and development of visual abstracts. •Meet with IHPI policy engagement team regarding outreach to policy makers. •Participate in the report drafting/editing process. •Work with the faculty lead, NPHA data analyst, and IHPI investigators to conduct a novel analysis of previously collected NPHA data, on a topic of the student's interest, in order to prepare and submit a manuscript by the end of the summer. Desired qualifications: •Demonstrated interest in aging-related research and policy. •Understanding of basic statistics and analytic approaches. •Excellent oral and written communication skills. •Strong work ethic.
Jeremy Sussman	jeremysu@umich.edu	Medical School	Either	No	We will develop a policy analysis of the possible impact of a cardiovascular polypill for the prevention of heart attacks and strokes. This will use a large dataset that combines surveys from over 50 countries in an analysis that includes microsimulation methods and possibly cost-effectiveness analysis.
Jeremy Sussman	jeremysu@umich.edu	Medical School	Either	No	One of the biggest advances in global chronic disease prevention of the last 20 years is the cardiovascular disease polypill. A polypill is a single pill that includes a fixed dose of a combination of drugs that reduce blood pressure and cholesterol, and sometimes other drugs like aspirin. We plan to use data from a series of large international epidemiologic surveys plus other sources to create a complex microsimulation model (and hopefully a cost-effectiveness model) to estimate the possible international impact of a polypill on global health. Ideal applicants would have interest or skills in complex simulation modeling and/or cost-effectiveness models. I would be the senior investigator on this project. The daily lead will be a current NCSP scholar.
Joel Gagnier	jgagnier@umich.edu	Medical School	Either	No	Systematic review and meta-analyses of cannabinoids in treating pain

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Joelle Abramowitz	jabramow@umich.edu	Institute for Social Research	Either	No	This project explores the effect of extreme heat on morbidity and mortality and the extent to which there are adaptive effects corresponding to official National Weather Service (NWS) heat warning policies. The project will use both time and geographic variation in heat advisory alerts of the NWS to explore how NWS warnings about extreme heat events affect heat-related morbidity and mortality using daily county-level Medicare claims data for hospital admissions for the summer months (May-September) from 2003-2017. This research will inform policy makers of the potential net benefits of heat advisory programs in mitigating morbidity and premature mortality.
Joelle Abramowitz	jabramow@umich.edu	Institute of Social Research	Doctoral-level student	No	The goal of this proposed research is to investigate the relationship between seasonal pollen allergies and mental health. Using national data we will address the following aims: Specific Aim 1: Using Detailed Multiple Cause-of-Death Mortality Data combined with pollen measurements we will estimate the incidence of suicide on days of high pollen. Specific Aim 2: Using a nationally-representative claims database for private insurance we will quantify the extent and types of use of medical services for mental health treatment on days of high pollen. At the center of this research are daily pollen measurements from 26 urban localities across the United States which we have obtained through an exclusive agreement with the American Academy of Allergy, Asthma, and Immunology as part of their National Allergy Bureau (NAB) project. The area of pollen exposure will be defined as the zip code of the collection location, as well as adjacent zip codes. Based on the zip codes affected, we will link the daily pollen levels to daily suicide counts using the restricted Detailed Multiple Cause-of-Death Mortality Data from the National Vital Statistics System of the National Center for Health Statistics (NCHS) for 2006-2017 containing the exact date of death and county identifiers. Separately, we will also link the daily pollen levels to the OptumInsight Claims Database (also known as Clinformatics), available through the IHPI. We will enrich the data using weather data from the National Oceanic and Atmospheric Administration to account for seasonal fluctuations which may impact mental health and probability of suicide. We leverage daily changes in pollen counts to estimate the effect of pollen exposure on suicides and on use of medical services related to mental health using a linear model; we expect our results to show changes in suicide and use of medical care for mental health services attributable to pollen fluctuations net of annual, seasonal, monthly, and day of week variability. The resulting research will contribute to the literature on environmental impact on mental health, particularly for air contaminants.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Jun Li	junwli@umich.edu	Ross School of Business	Either	No	Professors Wally Hopp and Jun Li from the Ross School of Business are seeking master/doctoral level students to assist a research project on mental health. The project is aimed at developing personalized treatments for patients with major depressive disorders. Unlike many other medical fields, heterogeneous treatment effects are poorly understood in mental health. Physicians often follow a trial-and-error approach when prescribing medications, resulting in treatment delays and compromised outcomes. However, improving precision in mental health treatment imposes two critical challenges: lack of well-controlled, large-scale clinical data and reliable health status measures. To tackle these challenges, we will develop causal inference methods to be applied on large-scale observational data. In particular, we will utilize unstructured text data (such as diagnosis reports, progress reports, and discharge reports) to obtain better health outcome measures and to identify micro-level quasi-experiments necessary for making causal inferences. The student will assist with developing the method and analyzing data. The student needs to have experience with causal inference, machine learning and natural language processing methods. Knowledge in mental health is preferable.
Keith Kocher	kkocher@umich.edu	Medical School	Either	No	Emergency Medicine physician-researcher seeking a master's or doctoral level student for research on implementation of new adult chest pain and pediatric asthma evidence-based best practice guidelines and quality improvement (QI) strategies in the emergency department (ED). The project goal is to develop successful methods of translating these new QI initiatives from a multi-center statewide collaborative to front line ED providers. The objective is to understand and evaluate past efforts and develop process improvements for the new initiative roll outs. Additional details about MEDIC can be found here. Responsibilities will include: • Gathering and analyzing feedback from participating hospitals • Designing new and/or revising existing materials to be distributed to 20+ hospitals for new quality improvement initiatives (adult chest pain and pediatric asthma) • Evaluating uptake of new materials Opportunities will include: • Interactions with physicians and QI professionals • Exposure to innovative Collaborative Quality Initiative (CQI) model between hospitals and Blue Cross Blue Shield of Michigan • Participation on scholarly manuscripts and/or posters
Kristi Gamarel	kgamarel@umich.edu	School of Public Health	Medical student	Yes	This project seeks to develop and pilot an HIV prevention intervention to address trauma and violence experienced by transgender women of color in Detroit Michigan.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Laura Saslow	saslowl@umich.edu	School of Nursing	Either	No	This summer we will be writing up the results from two trials examining the potential impact of a very low-carbohydrate, ketogenic diet, one a pre-post study with 20-30 adults with non-alcoholic fatty liver disease and the other a randomized controlled trial (comparing the very low-carb diet to a moderate carbohydrate diet, the DASH diet) with about 100 adults with hypertension and prediabetes or type 2 diabetes. We are looking for a summer student with experience writing research articles and/or experience with statistics, to help with data cleaning and analyses, as well as writing the publication, all with a lot of help and supervision. Another possible project will be to help code qualitative interviews of women with polycystic ovary syndrome following a very low-carbohydrate diet. The goal of these trials, if promising, is to lead to larger, longer trials that may be able to influence policy-level recommendations.
Lauren Gerlach	glauren@umich.edu	Medical School	Either	No	The project involves focus groups with caregivers of older adults who are receiving hospice care. The aim is to learn more about the management of behaviors associated with end of life. The project could benefit from assistance with recruitment for qualitative focus groups, screening and contacting potential study participants, qualitative transcript coding, qualitative data analyses. Dr. Gerlach's email: glauren@med.umich.edu
Lee Schroeder	leeschro@umich.edu	Medical School	Either	No	'Without diagnostics, medicine is blind' (Alain Merieux). Yet, in many low and middle income countries, diagnostics are underfunded and underutilized. There is a growing international recognition that clinical laboratory systems must be strengthened in low and middle income countries to combat epidemic-prone disease, reduce anti-microbial resistance, and address diseases of public health importance. Our group is in year 2 of an NIH R01 with Johns Hopkins University and University of Ghana to map and model the public health laboratory network in Ghana, including thousands of facilities. We will run simulations of the current laboratory system and evaluate the cost-effectiveness of alternative testing strategies with respect to 6 priority conditions: HIV, TB, hepatitis C, bacterial meningitis, yellow fever, and measles. The innovation of this project is that we will be considering interactions of the conditions as they impact the optimal design of the laboratory network. There are several areas where a student might get involved for a summer fellowship/internship. One, by summer 2020 we will have a working model for the laboratory network and TB implemented as the first condition in the disease module. The intern/fellow would be responsible for developing the second condition. This will include parameterization from field data and published sources, simulation, calibration, and analysis of results. Two, in parallel with developing the granular model of the Ghanaian public health laboratory network, we are developing a more abstracted and simple network analysis of an archetypal laboratory network to begin to define the general principles of such systems. The intern/fellow would assist in design and be responsible for simulation and analysis. Three, we are developing a discrete choice experiment (DCE) with surveys of Ghanaian providers (conducted by our Ghanaian staff) that will characterize the likely impact of new diagnostics on patient management, where the intern/fellow will assist in design and be responsible for analysis. We are looking for dynamic students with a passion to improve health in low resource settings through strengthening of laboratory systems. It is expected that each student will take ownership of some aspect of a chosen project with a defined goal (e.g. a manuscript, abstract).

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Lenette Jones	lenettew@umich.edu	School of Nursing	Either	Yes	Dr. Jones is currently conducting several studies to examine brain-behavior connections among African American women with hypertension. She uses tools such as functional magnetic resonance imaging (fMRI), social media, and Qualtrics to conduct her research. Students will assist with recruiting and enrolling participants, mobile application development, literature reviews, analyzing data, and manuscript preparation.
Mary Janevic	mjanevic@umich.edu	School of Public Health	Either	Yes	We are developing and testing a community health worker-led chronic pain self-management program for older African American adults in Detroit, where prevalence of chronic pain and pain-related disability is very high.
Michelle Meade	mameade@umich.edu	Medical School	Either	No	This Project is focused identifying the existing best practices for working with and treating individuals with disabilities that are already being implemented in University of Michigan Clinics. Students will be responsible for shadowing and interviewing clinicians in UM specialty clinics who work with individuals with disabilities and in working with supervising faculty members to identify the strategies, protocols and techniques that facilitate the provision of quality care for individuals with disabilities. Students will have the opportunity collect data and articulate and disseminate best practices to a diverse audience of stakeholders.
Michelle Meade	mameade@umich.edu	Medical School	Master-level student	No	Facilitating the Translation of Health (and Disability) Research for Policymakers. Faculty members at the University of Michigan have access to a wealth of resources that allow them to conduct research and innovate interventions, programs and approaches to improve the health and functioning of individuals with disabilities and chronic conditions. While much of this research may have policy implications, many of the mechanisms to introduce the research to policy makers happen either by informed individuals or through limited (though amazing) opportunities, such as the CHRT Policy fellowship. This project would be about working with faculty members in the U-M Center for Disability Health and Wellness to develop a strategy and plan for an annual day-long policy forum. The objective of this forum would be to bring together U-M researchers and clinicians with policy makers from across Michigan in order to enhance awareness of processes and expertise among all stakeholders and to facilitate the meaningful translation and impact of research.
Michelle Moniz	mmoniz@umich.edu	Medical School	Either	No	This research project aims to evaluate trends in cost-sharing for preterm birth (both maternal and neonatal costs) among women with employer-based health insurance. We will use the Optum Clinformatics Datamart to examine trends in cost-sharing before and after the Affordable Care Act's implementation. We will compare trends among those in high-deductible plans vs. other plan types. The project team is supported by an experienced data manager and statistician. Mentorship will be provided by Dr. Moniz and other IHPI members (Drs. Dupree, Fendrick, Dalton). We will use a "paper sprint" model to collaborate in executing the analysis and crafting deliverables to disseminate findings.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Mike Dorsch	mdorsch@umich.edu	College of Pharmacy	Either	Yes	We have shown that statins are under prescribed in African Americans compared to Caucasians in our own health system. We have created a patient centered clinical decision support system (web application) to help patients understand their risk, educate patients on the therapies that may decrease their risk and share their concerns with their doctor. Our hypothesis is that this tool can decrease health disparities in prescribing statins in our health system. We would like to study this in a pilot over the summer.
Nancy Fleischer	nancyfl@umich.edu	School of Public Health	Either	Yes	We examine the role of tobacco control policies on tobacco-related health equity, including differences by race.
Rachel Solnick	solnick@umich.edu	Medical School	Either	Yes	The objective of this research is to explore the current state of implementation as well as the barriers and facilitators of expedited partner therapy in the emergency department. This is a special interest from a health equity lens because of the racial and socioeconomic disparities in STI burden in the United States, and because of the essential that emergency departments can play as a safety net for a vulnerable population.Responsibilities will include: -Literature review of relevant publications -Conducting interviews, collection, analysis and interpretation of surveys and interviews -IRB and budget management Opportunities will include: -Interactions with emergency department leadership, patients and physicians -Participation on scholarly manuscripts
Raymond De Vries	rdevries@umich.edu	Medical School	Either	No	The evidence is clear: electronic fetal monitoring (EFM) offers no (or very limited) clinical benefit for low risk women, and its use increases the likelihood of unnecessary cesarean delivery. And yet EFM continues to be used in 80+ percent of US births. Using observations on the OB unit, interviews, and focus groups we are examining the reasons for this seeming disregard for evidence. We will be convening a meeting with leaders in field of maternity care to share our results and devise strategies to promote evidence-based use of EFM, publishing our results in academic journals and white papers.
Rebecca Sripada	rekaufma@umich.edu	Medical School	Either	No	Although evidence-based treatment for Posttraumatic Stress Disorder is largely effective, it is unknown what type of treatment works best for whom. The purpose of this study is to use advanced machine learning methodologies to inform Posttraumatic Stress Disorder treatment decision tools and ultimately help answer this critical clinical question.This project will use Natural Language Processing to cull detailed outcome data from the electronic health record of VA patients in order to conduct a sophisticated type of machine learning called Reinforcement Learning. Reinforcement learning can be used to find the optimal individualized regimen at a given decision point as a function of available patient prognostic information, enabling a personalized medicine approach. The summer student will be conducting data analysis.
Sheria Robinson-Lane	grices@umich.edu	School of Nursing	Either	No	I'm working with Ypsilanti Meals on Wheels to assist in rolling out the evidence based CAPABLE program. There is a fantastic opportunity for a student to assist with program data collection, and learn about community health services administration. I am also on the board of the directors for the Ypsilanti Senior Center so there are additional opportunities to work with this group as well.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Shu-Fang Shih	sfshih@umich.edu	School of Public Health	Master-level or doctoral student	Yes	The overall objectives of this project are to understand the needs of preconception and prenatal care among women with disabilities from the patients and healthcare professionals' perspectives, as well as explore the disparities in gaining access to care among women with disabilities. This is community-engagement research, where we will use a mixed-method to identify the needs and provide empirical evidence to support the future design of the strategies so as to improve preconception health and care among women with disabilities, as well as to promote healthy families for this vulnerable group. Students will learn much more about the issues surrounding women with disabilities by literature searching, join the research meeting and work with the faculty from the School of Public Health and Medical School (OB/GYN) on designing the interview outlines, researching the participants' recruitment, stakeholder engagement, qualitative data analysis, as well as designing the surveys. Students will also learn other skills such as reference management, database management, skills in compiling key statistics, and to synthesize the findings during the whole process of training during their internship.
Tammy Chang	tachang@umich.edu	Medical School	Either	Yes	MyVoice is a national text message poll of youth age 14-24. We aim to elevate youth voice to inform health policies in real time to improve the wellbeing of youth. We send 3-5 open-ended text message questions weekly to over 1000 youth and used mixed methods (quant/qual) to quickly analyze and then disseminate our findings to stakeholders including policymakers, youth-serving organizations, and youth themselves. Fellows and interns who work with us have the opportunity to lead a project from beginning to end on a youth policy-related topic of their choice. They will gain knowledge and experience in the development and administration of a national survey, as well as experience in mixed methods analyses for a policy audience.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Tiffany Veinot	tveinot@umich.edu	School of Information	Doctoral-level student	Yes	Motivated by the transition to value-based payment that compensates providers for patient health outcomes, there are growing efforts to capture information on the social determinants of health (SDOH) in healthcare. To improve healthcare performance and address racial disparities in health outcomes, there is a need to translate collected SDOH data into clinical actions. Based on preliminary work, we identified opportunities for cost-sensitive prescribing using clinical information systems, which would involve tailoring of recommendations to patient SDOH and facilitating patient-clinician conversations about cost. This is an important focus since 70% of all US medications include some patient out-of-pocket costs and 24% of people taking a prescription drug have difficulty affording it -- a problem that disproportionately affects African Americans. Higher out-of-pocket medication costs are associated with lower medication adherence, especially for chronic conditions like heart disease. Higher-cost medications disproportionately impact low-income patients, including those who are uninsured or underinsured , who are disproportionately African American and Hispanic. The goal of the proposed study is to inform development of a clinical decision support system (CDSS) that maximizes clinical benefit while constraining out-of-pocket costs for patients with cardiovascular disease. To do so, the study asks how medication costs currently influence prescribing decisions; how current tools do or do not support cost-sensitive prescribing; and how a CDSS for cost-sensitive prescribing could be designed. The summer student fellow will conduct interviews with healthcare providers who care for patients with cardiovascular disease, and patients with cardiovascular disease. The fellow will also analyze data from these interviews. The study is being conducted in partnership with Parkview Health System, a non-profit health system that includes 700 primary care and specialist physicians, 100 clinics and 9 hospitals in northern Indiana and northwest Ohio. The fellowship may involve some funded travel to healthcare sites at Parkview. Findings from this study will inform development of a novel intervention approach to addressing racial disparities in adherence to treatment of cardiovascular conditions, while leveraging the SDOH data that are increasingly gathered to improve healthcare for vulnerable patients.
Tom Valley	valleyt@umich.edu	Medical School	Either	No	We are in the midst of an 8-hospital qualitative study to understand the hospital factors involved in the decision to admit a patient to the intensive care unit. We have interviewed emergency medicine, hospitalist, and intensive care physicians as well as key nursing informants at these hospitals. We also completed surveys and observations of these hospitals. We are now in the process of coding and analyzing transcripts. While the goal of our initial analysis is to examine what hospital factors influence ICU admission decision-making, there are a broad range of questions, which could be answered using the extensive data we have acquired.
Valerie Vaughn	valmv@umich.edu	Medical School	Either	No	This summer project consists of evaluating a new womens peer mentorship intervention that has been designed to improve gender equity in medical school faculty. The summer student will assist with interviewing women about their experiences with bias and with the peer mentorship program. Tasks include background research, development of interview guides, conducting interviews, qualitative data analysis and interpretation, and project management.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Wen Ye	wye@umich.edu	School of Public Health	Doctoral-level student	No	Despite improvements in the management of type 2 diabetes (T2DM), the prevalence of diabetes and its enormous economic consequences continue to increase globally. In 2014, approximately 9% of the world's adult population was estimated to have diabetes, and at least 612 billion US dollars were spent on healthcare for people with diabetes around the world. The constantly evolving treatment landscape, coupled with a lack of long-term studies and/or head-to-head clinical trials, presents significant challenges to healthcare decision makers wishing to evaluate T2DM treatments. One question calling for immediate solution is to find the most cost-effective health care strategy/policy regarding stroke prevention and treatment in T2DM patients. As we look toward the future in management of health care costs in the US, computer disease models are increasingly used for economic evaluations to answer such crucial questions and inform decision makers. One such model is the Michigan Model for Diabetes (MMD), a discrete-state discrete-time micro-simulation model designed to predict the progression of T2DM and its complications, comorbidities, quality-of-life, and costs. Computer simulation models would enable researchers to assess the comparative-effectiveness and cost-effectiveness of alternative strategies for the prevention and treatment of T2DM. In this project, we will use MMD to evaluate clinical outcomes and cost-effectiveness of enhanced levels of implementing seven recommended primary stroke prevention strategies compared to the current level of usual care status of in T2DM patients.
Xingyu Zhang	zhangxyu@umich.edu	School of Nursing	Either	Yes	Previous studies (1,2) from our research group found significant disparities in emergency department outcome among black patients and Hispanics. We found that black and Hispanic patients received lower Emergency Severity Index (ESI) scores, were less likely to receive tests in the ED, were less likely to be admitted to the hospital and/or ICU, and had a higher death rate in the ED and hospital. Some of these findings were in contrast to Asian patients, who, in general, received equivalent or greater ED resources compared to white patients. Further research is needed to understand the underlying causes and long-term health consequences of these racial/ethnic disparities in ED care in order to inform clinical guidelines and policies for eliminating racial differences in this critical area of US healthcare. This summer, we plan to seek more evidence about the disparities using several large ED database including Pediatric Health Information System (PHIS), Healthcare Cost and Utilization Project (HCUP), and National Emergency Medical Services Information System (NEMSIS) database. We intend to understand the severity of the disparities in ED outcome among different states. (1)Zhang X, Carabello M, Hill T, He K, Friese CR and Mahajan P (2019) Racial and Ethnic Disparities in Emergency Department Care and Health Outcomes Among Children in the United States. Front. Pediatr. 7:525. doi: 10.3389/fped.2019.0052 (2)Schrager, J., Patzer, R., Kim, J., Pitts, S., Chokshi, F., Phillips, J., & Zhang, X. (2019). Racial and Ethnic Differences in Diagnostic Imaging Utilization During Adult Emergency Department Visits in the United States, 2005 to 2014. Journal of the American College of Radiology.

Faculty Name	Email	Faculty School Primary Appointment	Master-level, Dortoral, or Medical Student	Do you have a Health Equity Project	Short description of research project
Xingyu Zhang	zhangxyu@umich.edu	School of Nursing	Either	No	Substance use disorders (SUDs) have been an ongoing problem in the U.S. Approximately 2% of all American adults have been diagnosed with SUD each year, while 10.3% have reported having a substance use disorder in their lifetime. The emergency department (ED) plays an important role in treating patients with SUDs. It was reported that there were 4.6 million drug related ED visits alone each year, with around 45% of them being attributed to drug abuse or dependence. This role is only increasing as there has been an 81% increase of drug-related ED visits.Understanding the characteristics and clinical presentation of patients with SUDs visiting the ED is an important step towards improving their care and clinical outcomes. The current literature contains comparatively little data on the care experiences and health care trajectories of patients with SUDs who seek care in ED. Previous studies on ED care delivery among SUD patients lack descriptions that cover the whole process of ED care or do not indicate the patients' health outcomes and medical resource utilization. More research from larger, more nationally representative data on the characteristics and clinical presentation for ED patients with SUDs is needed. By means of a secondary analysis of a large nationally representative dataset, the proposed study aims to estimate ED utilization of patients with SUDs, describe the clinical presentation of patients with SUDs in the ED setting, and examine factors associated with clinical outcomes and medical resource utilization in this population.
Xingyu Zhang	zhangxyu@umich.edu	School of Nursing	Either	Yes	Clinical decision-making is a highly complex cognitive process, which is susceptible to errors, in part due to the inherent uncertainty of the diagnostic process. Patients in emergency departments (EDs) are particularly vulnerable because of time-pressured clinical decision-making in a busy and uncertain environment. Acute appendicitis (AA) is one of the most common surgical emergencies with up to 13 cases detected per 100,000 patients annually in the United States. Despite its high incidence, the diagnosis of appendicitis is missed at a rate of 3.8-15% for children and 5.9-23.5% for adults during emergency department (ED) visits. Appendicitis is the second most common condition among pediatric and third for adult malpractice claims. Accurate identification of ED patients with AA and patients at high risk of misdiagnosis of AA can potentially prevent the occurrence of unnecessary negative health consequence and decrease the healthcare cost. Thorough electronic health record (EHR) chart reviews and technological innovations that employ predictive analytics to accurately identify patients' precise diagnosis and possible diagnosis errors has the potential to improve ED patients' safety. Predictive strategies, including machine learning based techniques, have proven useful in determining patient health outcomes, such as hospitalization and in-hospital death, among ED patients.However, few studies have focused on predictive models to identify patient's diagnosis and potential misdiagnosis. Also, although unstructured data, such as the clinical notes and nursing notes, contain valuable information that can potentially enhance such prediction models, these data are under investigated due to difficulties with extraction, cleaning, and aggregation. However, this free-text information can be utilized via natural language processing (NLP), a method through which text data can be extracted and processed for analysis. NLP has been shown to improve models related to health outcomes. Our research team has done extensive work in developing an ED-based conceptual framework of the diagnostic process, and application of machine leaning and NLP techniques in emergency health outcomes. Our specific aim for this project is to develop predictive models for the diagnosis of AA using machine learning incorporating NLP using the large ED National Survey data and EHR data from Michigan Medicine Hospital.