

**2018 IHPI/HSR Summer Student Fellowship and Internship Program - Faculty Projects**

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<th>Faculty Name</th>
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<th>Master-level or Doctoral-level Student</th>
<th>Short Research Project Description</th>
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<tr>
<td>Joe Dinsmoor</td>
<td>Professor and Director (SOCCR)</td>
<td>Nursing Medicine</td>
<td>Health Behavior and Bio Sciences/Computational Medicine and Bioinformatics</td>
<td>Either</td>
<td>Investigate Big Health Data Analytics: This project will interrogate large, complex, multisource, and incongruent biomedical and health datasets using model-free machine learning methods. Examples of studies that will be examined includes progressive neurodegenerative disorders (e.g., ALS, Parkinson’s, Alzheimer’s). We will use supervised and unsupervised ML, strategies to identify salient features in the data, forecast univariate clinical outcomes, and explicate derived computable phenotypes. Open source software (R) will be used to generate end-to-end analyses protocols that will be shared with the community.</td>
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<tr>
<td>Paola-Larsen</td>
<td>Clinical Lecturer</td>
<td>Medical School</td>
<td>Division of General Internal Medicine</td>
<td>Either</td>
<td>I am currently running a pilot intervention evaluating a physician-pharmacist collaboration to promote safe opioid prescribing in primary care settings. In addition, I am developing a web-based assessment of reasons patients may be resistant to taper opioids and their preferences for tapering strategies. The student will help me with data management and evaluation of the pilot intervention, as well as development and piloting of the assessment which will be done via an online consumer survey platform. I am ideally searching for a student interested in the content (opiod overuse and policy) with some quantitative background in either analysis of intervention data or survey development. The student will have the opportunity to work with other researchers doing opioid related work, attend seminars on the topic, and potentially pursue other projects of interest depending on skills and motivation.</td>
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<tr>
<td>HwaJung Choi</td>
<td>Assistant Research Scientist</td>
<td>School of Public Health</td>
<td>Health Behavior and Health Education</td>
<td>Either</td>
<td>This project will involve preparing for the launch of a pilot randomized trial of a multi-component chronic pain self-management intervention to be implemented in senior centers in Detroit. Tasks will include: finalize assessment tools, helping to prepare RPI application, planning and conducting focus groups, building REDCap database, developing facilitator guide. Summer student applicants should have a strong interest in community-based research, and be willing to travel to Detroit for project planning and should also have an interest in health, older adults, and chronic disease management.</td>
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<tr>
<td>Mario Pappaleo</td>
<td>Assistant Professor</td>
<td>Medical School</td>
<td>Internal Medicine, Division of Metabolism, Endocrinology and Diabetes</td>
<td>Either</td>
<td>Overtreatment with thyroid hormone(i.e., prescription at doses that are too high based on biochemical results) and misuse (i.e., initiation for inappropriate indications) in older individuals may have adverse effects on their health. Very little is known about factors that influence prescribers’ decision-making regarding use of thyroid hormone replacement in older adults. Whether these decisions vary by type of provider is not known. We are conducting a national physician survey targeting primary care physicians, endocrinologists and geriatricians, to obtain information on their knowledge, attitudes and beliefs on thyroid hormone replacement and in older adults. The survey also includes questions on screening and management on hyperlipidemia. The student will be exposed to the principles of survey methodology and be involved in data entry of survey responses using REDCap (training will be provided). There will be opportunity for writing an abstract or a manuscript if the student exhibits strong interest and commitment.</td>
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<tr>
<td>Tammy Chang</td>
<td>Assistant Professor</td>
<td>University of Michigan Medical School</td>
<td>Department of Internal Medicine</td>
<td>Either</td>
<td>MyVoice is a national text message poll of youth age 14-24 years. It was created to collect the real-time thoughts and opinions of youth and currently has over 1000 respondents from around the United States. MyVoice polls youth on a wide-range of policy topics, from health insurance and sex to brain drain and barriers to voting. MyVoice collects both open and closed-ended responses and uses natural language processing and mixed methods to analyze results. Our team includes a large interdisciplinary group of students, physicians, and researchers whose aim is to translate this data into products (infographics, white papers, brief reports, commentaries, manuscripts) that can be used to influence policy.</td>
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<tr>
<td>Haesung Chung</td>
<td>Research Assistant Professor</td>
<td>School of Medicine</td>
<td>Internal Medicine</td>
<td>Either</td>
<td>Project summary: Despite spending far more on health care, health and mortality of the U.S. older adults are falling further behind compared to that of high-income countries. The goal of this project is to identify whether and, if so, the extent to which contextual characteristics explain the poorer health status of older adults in the U.S. compared to their peers in other high-income countries. Our specific aims are the following: (i) Construct comparable local-area contextual measures between the Health and Retirement Study (HRS) and English Longitudinal Study of Aging (ELSA) for 2002-2014; (ii) Assess the extent to which contextual factors measured at a local-area level explain health and mortality differences between the U.S. and England; (iii) Identify local contextual factors that significantly influence health and mortality gaps between the U.S. and England.</td>
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**Job Description:**
- Collect local-area contextual measures of socioeconomic conditions, physical/built environment, climate, and health resources
- Organize variables and file structures in Excel spreadsheets
- Construct contextual data and conduct descriptive analyses
- Create a report summarizing work procedures and describing data source
- Conduct spatial data construction and analysis
We study improving quality of care for patients with painful eye infections through EHR data analysis and prediction modeling as well as image analysis. Our findings can be useful for policymakers exploring the effectiveness of Medicare incentives. and should also vary by teaching and safety-net status (because those hospitals forego more marginal revenue for each avoided readmission). Using administrative level, because penalty levels are less likely to change for high and low performers. Incentives should be highest for hospitals without high or low performance metrics, code to identify the condition that was treated), and therefore not subject to HRRP penalty. Incentives to game HRRP should vary by hospitals' existing performance. We are developing a curriculum designed to teach early career gastroenterologists and other physicians essential principles of practice management, health law, and business that will allow them to successfully transition from medical training into practice and develop into effective healthcare leaders. This knowledge has not traditionally been a part of medical training yet is essential to the day-to-day practice of medicine, both in academic environments and in community practice. As gastroenterologists with advanced degrees in business (Allen) and law (Adams) and expertise in health policy, we would serve as co-mentors for this project. We would be pleased to work with an interested student to select a specific focus area within the larger curriculum that meshes with their area of interest, prior training, and career goals. The student would then assist with developing core curriculum content within this focus area during their summer fellowship/ internship. Once finalized and piloted at the University of Michigan, we intend to disseminate this curriculum nationally through a web-based platform.

We would be happy to discuss this project further with any interested student.

The Friese laboratory is committed to measuring and improving the quality and safety of cancer care. We have three active projects for masters or doctoral-level students to consider (students will select one project). Students from diverse backgrounds and perspectives are encouraged to apply. Excellent oral and written communication skills are required. Quantitative data analysis and data visualization experience is preferred. The three projects are: 1) disseminating results of an intervention study to protect nurses from hazardous drug systems, 2) a mixed-methods study of clinical communication, and 3) diverse document events in patient oncology settings, and 3) Developing a disseminating a novel chemotheraphy safety curriculum to practicing nurses and pharmacists.
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<tr>
<th>Name</th>
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<th>Preferences</th>
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<tbody>
<tr>
<td>Eve Keer</td>
<td>Research Professor of Internal Medicine</td>
<td>Medical School</td>
<td>Internal Medicine</td>
<td><a href="mailto:ekeer@umich.edu">ekeer@umich.edu</a></td>
<td>Previous research experience in psychology, public health, sociology or another health/social science field preferred</td>
</tr>
<tr>
<td>Louis Newburgh</td>
<td>Professor</td>
<td>Medical School</td>
<td>Psychiatry</td>
<td><a href="mailto:leatonma@med.umich.edu">leatonma@med.umich.edu</a></td>
<td>Strong interpersonal skills, detail-oriented, self-motivated, must be familiar and comfortable using social media</td>
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<tr>
<td>Shawna Smith</td>
<td>Research Assistant Professor</td>
<td>Medical School</td>
<td>Psychiatry</td>
<td><a href="mailto:shaemana@umich.edu">shaemana@umich.edu</a></td>
<td>Strong interpersonal skills, detail-oriented, self-motivated, must be familiar and comfortable using social media</td>
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**Project Description**

Through an international collaborative focused on decreasing use of medical services that are not necessary or may be harmful, we are undertaking an analysis that examines the utilization of select potentially unnecessary services in the US and Canada. This project will ask:

1. **To what extent has use of low-value health care services in the U.S. (commercial and VA) changed over time?**
2. **How does utilization rates of these services in the U.S. compare to the rates in Canada?**

Using evidence-based recommendations from sources such as Choosing Wisely and previous studies that have identified low-value services, the study team will construct algorithms to measure use of low-value medical services in the following three areas: 1) Imaging tests (e.g., imaging for non-specific low back pain, preoperative chest radiograph); 2) outpatient procedures (e.g., spinal injections for low back pain, stress testing for stable coronary disease); and/or 3) laboratory tests (e.g., population screening for Vitamin D deficiency, preoperative laboratory tests). In addition to estimating use of select low-value services, regional and provider level variation, patient and provider level predictors of use, and downstream consequence (such as additional testing from incidental findings) will be examined.

This project is seeking a candidate with a strong quantitative analytic background, such as a background in biostatistics, epidemiology, or computer science, to analyze claims-based data. Specifically, the candidate will work with a study team, including a senior-level data analyst, to analyze data from MarketScan. MarketScan data reflect the healthcare experience of employees and dependents covered by the health benefit programs of large employers; these claims data are collected from approximately 100 different insurance companies and third party administrators. The preferred candidate would have experience working with large datasets, relational database, and analytic software such as STATA, R or SAS.

In addition to advancing their analytical and content skills, the student will have an opportunity to co-author the resulting manuscript and to present the work at internal and external venues. Additionally, the student will have an opportunity to attend project team meetings of the Michigan Program on Value Enhancement (MPrOVE) and learn about other projects focused on enhancing value in health care.

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**Training school professionals (e.g., school counselors, social workers) to deliver evidence-based mental health treatments like Cognitive Behavioral Therapy (CBT) to students on-site offers one potential solution for filling this gap. Through a new federally-funded randomized trial, our team will be investigating the best way to support school professional implementation of CBT by providing various forms of implementation support to 200 school professionals at 100 schools across the state of Michigan. This implementation study aims to inform mental health policy in Michigan and beyond, notably by determining the effectiveness of task-shifting mental health services to providers in non-clinical settings and evaluating the clinical and economic outcomes of these efforts (e.g., academic success).**

This project requires frequent (at least weekly) data collection from 200 school professionals regarding their delivery of CBT to students. The student working on this project will collaborate with study investigators and staff (including a web developer) to develop new and innovative data collection tools for tracking day-to-day school professional CBT delivery and for tracking and encouraging school professional engagement with frequent study data collection. These tools may involve active (e.g., tracking worksheets) or passive (e.g., website metadata) data sources, and may utilize web and/or smartphone app-based platforms. (Note that students with web or app design capabilities are welcome to apply for this position, but these skills are not an expected prerequisite.) The student will also work with a group of school professionals to field test and gather feedback on developed tools and, time permitting, will analyze preliminary data collected via these tracking tools.

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**Mood disorders affect 20-30% of school-aged youth, however fewer than 20% of youth in need have access to high quality evidence-based mental health treatment. Training school professionals (e.g., school counselors, social workers) to deliver evidence-based mental health treatments like Cognitive Behavioral Therapy (CBT) to students on-site offers one potential solution for filling this gap. Through a new federally-funded randomized trial, our team will be investigating the best way to support school professional implementation of CBT by providing various forms of implementation support to 200 school professionals at 100 schools across the state of Michigan. This implementation study aims to inform mental health policy in Michigan and beyond, notably by determining the effectiveness of task-shifting mental health services to providers in non-clinical settings and evaluating the clinical and economic outcomes of these efforts (e.g., academic success).**

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We are seeking a detail-oriented, self-motivated intern to work on tasks for three studies focused on sexual violence, risky sex behaviors, and substance use among 18-25 year olds. The aim of these studies is to assess the feasibility and effectiveness of delivering therapeutic interventions targeting these behaviors in various settings, including emergency departments and college campuses. Tasks will vary depending on the candidate's interests, career goals, research experience, and previous exposure to quantitative and qualitative data analysis, but could include: drafting introduction and methods sections of manuscripts; conducting qualitative research on engagement in behaviors to prevent T2DM among Veterans with prediabetes; and carrying out this analysis and prepare results for publication.

INcreasing Veteran Engagement to prevent diabetes (INVENT)

We are currently working on several projects including one that is focused on testing approaches for decreasing the inappropriate use of daily lab testing for inpatients. We are seeking a candidate that has a strong analytic background and experience working with large datasets, relational databases, and analytic software such as R, Stata, or SAS. Our study involves an intervention to help Veterans improve their daily lab orders, and if successful, may be implemented in clinical care to support transformative approaches in evaluation and implementation through the lens of appropriateness.

The Michigan Program on Value Enhancement (MPrOVE) is a multi-pronged strategic initiative supported by Michigan Medicine and the U-M Institute for Healthcare Policy and Innovation (IHPI). Our goal is to prove and improve the value of care at Michigan Medicine by bringing together leaders in research, design, and clinical care to support transformative approaches in evaluation and implementation through the lens of appropriateness.

We are seeking a self-motivated, detail-oriented and personable intern to work on an innovative study that involves integrating an evidence-based violence prevention program for adolescents into two local primary care clinics. Since study recruitment will be underway this summer, the intern's primary responsibility will be assisting the study coordinator with the day-to-day logistics of managing the study. This will involve helping with a wide array of tasks, such as preparing materials for PB interventions; helping the study coordinator develop and implement new procedures and systems as needed; ensuring that study procedures adhere to the approved study protocol; overseeing the accurate completion of study records by recruiters and follow-up staff; conducting recruitment and follow-up activities as needed; assisting with preparation for and attending biweekly PI meetings; and training staff in their job responsibilities at the end of the internship. Depending on the intern's interests, research experience and career goals, opportunities may also be available to help with data cleaning and analysis, literature review, and planning and carrying out other violence-related studies in our lab. We see this project as the perfect fit for a student who is interested in learning more about implementation science and gaining hands-on project management experience in a healthcare setting.

We are conducting a factorial design experiment to evaluate the independent and combined effects of 5 messaging strategies from behavioral economics and health psychology on engagement in behaviors to prevent T2DM among Veterans with prediabetes. For the 3-month intervention period Veterans will receive weekly messages through VA MyHealtheVet Secure Messaging (VA's online patient portal) and monthly messages through US Mail. To measure outcomes, Veterans will be surveyed at baseline and at 3 months.

These research questions would be addressed as part of a broader research and quality improvement project utilizing mixed methods but the focus of this intern would be the quantitative analysis for the above questions. In addition to data analysis, the student would have an opportunity to help prepare the results for publication along with our team. We would also ensure that the student would have opportunities to learn about and get involved in other MPrOVE projects based on interest.

We are seeking a candidate that has a strong analytic background and experience working with large datasets, relational databases, and analytic software such as R, Stata, or SAS. Our student would have the opportunity to work with our statistician James Henderson, PhD and MPrOVE co-director, Anne Sales, PhD, RN to develop and carry out this analysis and prepare results for publication.

We are seeking a detail-oriented and self-motivated intern to work on tasks for three studies focused on sexual violence, risky sex behaviors, and substance use among 18-25 year olds. The aim of these studies is to assess the feasibility and effectiveness of delivering therapeutic interventions targeting these behaviors in various settings, including emergency departments and college campuses. Tasks will vary depending on the candidate's interests, career goals, research experience, and previous exposure to quantitative and qualitative data analysis, but could include: drafting introduction and method sections of manuscripts; conducting qualitative interviews with study participants; assisting with data entry validation checks and survey data cleaning; assessing intercoder reliability for coded focus group and interview transcripts using NVivo; collaboratively developing a plan for resolving qualitative coding discrepancies and resolving identified coding discrepancies according to plan; developing a measures checklist to document citations for survey questions; conducting literature reviews to inform manuscript development; and assisting with day-to-day study tasks (e.g., participant reminders). The candidate will also receive exposure to developed therapeutic interventions through examples of listening to recording sessions, interacting with tailored intervention content delivered via a mobile phone app, and discussing with participants their experience of interacting with the app themselves. To facilitate a close working relationship with the coordinators for each study, and to expand the candidate's experience, we are looking for someone who is willing to put their time between Hurley Medical Center in Flint and North Campus Research Complex in Ann Arbor. This project is ideal for a pre-candidacy doctoral student who is seeking publishing opportunities, or for a master's student who is interested in pursuing a career in research. The candidate's contributions will be instrumental in disseminating research findings which can inform future innovation in the prevention of sexual assault, HIV transmission, and substance use-related consequences among young adults.
We seek an IHPI summer student to conduct the following tasks:

1. Conducting a literature search to identify potential attributes that may contribute to societal valuations of diseases (e.g., life expectancy, prevalence, type of symptoms). To evaluate the possibility of racial bias, we will randomize half of respondents to receive information on the racial/ethnic distribution of the disease as an attribute.
2. Conducting a search of the decision analysis and psychology literature on measuring racial bias.
3. Setting up the logistics of the survey with a survey research firm.
4. If time permits, conducting initial pilot testing of the conjoint analysis tasks.

To explore these possibilities, we propose using conjoint analysis and a survey of the public to elucidate the factors that drive societal valuation of childhood diseases. We are also other potential explanations, including the possibility that society de-prioritizes diseases that primarily cause pain.

One potential explanation for this disparity is racial bias, as sickle cell disease predominantly affects individuals of African-American descent in the U.S. However, there are also other potential explanations, including the possibility that society de-prioritizes diseases that primarily cause pain.

We seek an IHPI summer student to conduct the following tasks:

1. Conducting literature search to identify potential attributes that may contribute to societal valuations of diseases.
2. Conducting a search of the decision analysis and psychology literature on measuring racial bias.
3. Setting up the logistics of the survey with a survey research firm.
4. If time permits, conducting initial pilot testing of the conjoint analysis tasks.
Analysis of the Impact of CORE program at MM

The CORE (Coordinating Optimal Referral Experiences) project consists of two parts: EConsults and Enhanced Referrals. EConsults are asynchronous encounters through the electronic health record from a primary care physician (PCP) to a specialist asking a focused question to allow the PCP to continue providing care for the patient without a formal office visit with a specialist. Enhanced Referrals suggest testing or treatment necessary before placing a traditional in-office referral to a specialist to streamline the workflow and allow the initial meeting to be as productive as possible. The program was developed by the AAMC who have guided Michigan Medicine in collaborating with 6 other academic medical centers across the U.S. The first wave of the project was launched in August 2017 and more than 1600 EConsults have been completed as of January 2018.

The primary goals of the program are to:
- Reduce total cost of care for primary care patients
- Improve quality of care thru enhanced timeliness of specialty input
- Improve patient satisfaction

Project with us could:
- Summarize experience at Michigan Medicine and possibly compare to AAMC database including, but not limited to:
  - Number
  - Type
  - Percent completed (not converted to an in-office visit)
  - Primary and Specialty clinicians involved
  - Process of implementation
  - ROI analysis
- Determine whether initial goals were met
- Analyze primary and specialty clinician satisfaction (incorporate comp model and determine whether this enhances participation). We have completed an initial PCP survey, but still need to develop a specialty clinician survey.
- Analyze financial impact (ROI/cost-savings) of the program or improved efficiency of the system
- Develop 3-5 common conditions or questions for each specialty that could best be answered by eConsult and note current wait time by clinical service line