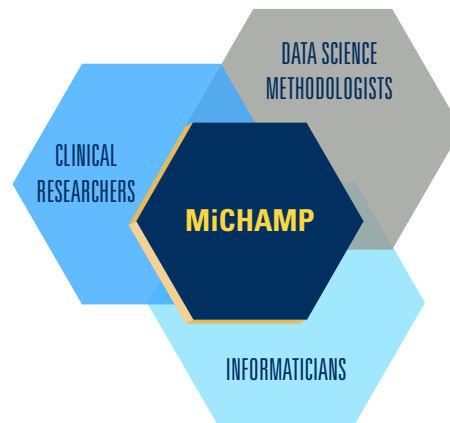


About the Center

The Michigan Integrated Center for Health Analytics and Medical Prediction (MiCHAMP) is an initiative launched in September 2016 by Brahmajee Nallamothu, MD, MPH, Professor of Internal Medicine. MiCHAMP is composed of faculty investigators from six U-M Schools and Colleges [Medicine; Engineering; Nursing; Public Health; Literature, Science & the Arts (Statistics); Pharmacy] and CSCAR, and is affiliated with the Institute for Healthcare Policy and Innovation (IHPI).



The primary goal of this multidisciplinary research collaborative is to harness existing national, regional and local healthcare data sets to develop medical prediction models that address complex clinical problems. Through rich interactions with data science methodologists, informaticians, and clinical researchers, investigative teams aim to transform patient care to improve quality and decrease healthcare costs.

In January 2017, MiCHAMP was awarded a \$1.25 million Health Sciences grant from the Michigan Institute for Data Science (MIDAS) for its proposal “From Big Data to Vital Insights”. Principal Investigators for this grant include Drs. Nallamothu (MM/VA), Marcelline Harris (SON), Jenna Wiens (COE-EECS), and Ji Zhu (LSA) with close clinical partnerships from Akbar Waljee (MM/VA) and Michael Sjoding (MM). The MIDAS Health Sciences grant focused on a core methodological problem that currently limits health research—**exploiting patterns in data that evolve over time for novel discovery and prediction**. Although healthcare produces an extraordinary amount of patient information, patterns of disease trajectories are frequently overlooked in favor of simplistic “snapshots” reflecting only a single moment in time. By incorporating more complex information about changes over time, we hope to improve medical prediction models. Our work in the MIDAS Health Sciences grant addresses two pressing healthcare problems: (1) **acute respiratory distress syndrome (ARDS)** (i.e., sudden lung injury resulting from critical illness) and (2) **chronic hepatitis C virus (HCV) infection** (i.e., a long-term infection that may lead to cirrhosis). In addition, a critical and unique aspect of MiCHAMP is to develop a novel computational platform to enable the sharing, reusing, and remixing of data and models.

MiCHAMP is active in other areas as well. Investigators are tackling diverse problems ranging from diagnosis (i.e., an automated and computer-assisted coronary angiogram interpretation tool), therapies (i.e., predicting effects of blood pressure treatments), and policy (i.e., estimating out-of-pocket patient expenditures). Ultimately, MiCHAMP seeks to push for new tools in data science to become an established part of health research at Michigan Medicine.

HARNESSING DATA TO
UNVEIL DISCOVERIES &
TRANSFORM HEALTH.

MiCHAMP

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