MBI Capstone Mentors Directory

The following is the listing of past primary mentors for MBI student capstone projects from the Classes of 2017 – 2021.

Adam Landman, MD, MS, MIS, MHS
Brigham and Women's Hospital
alandman@bwh.harvard.edu
https://www.brighamandwomens.org/about-bwh/leadership/adam-landman

Students Mentored

Tamim Alganam, 2018 “Retrospective Usage Data Analysis of Wateen Application”

David Rubins, 2019 Effect of Default Order Set Settings on Telemetry Ordering

Heather Lyu, 2019 “Development and Implementation of a Web Based Dashboard App to Track Patients on a Non-Operative Small Bowel Obstruction Treatment Pathway”

Lin Shen, 2020 “Clinical decision support system, using expert consensus-derived logic and natural language processing, decreased sedation-type order errors for patients undergoing endoscopy”

Adam Wright, PhD
Brigham and Women's Hospital
*moved to Vanderbilt

Students Mentored

Erik Doty, 2017 Pain: A Retrospective Look at Hospital Pain Levels and the Effect on Patient Outcomes

Wenyu Song, 2017 Comparison of three clinical phenotypes by using genetic variations in Partners Biobank dataset

Boyi Yang, 2019 Development of Deep Learning Algorithms to Categorize Free-text Notes Pertaining to Diabetes: Convolution Neural Networks Achieve Higher Accuracy Than Support Vector Machines

Nabil Aounallah, 2019 A Database of Patient and Physician Characteristics from the US National Ambulatory Medical Care Survey

Rumana Rashid, 2019 “t-SNE facilitates visualization of CDS alert-time-series data to inform more targeted anomaly detection development and relationships between alerts”
Andrew Beam, PhD
HSPH
andrew_beam@hms.harvard.edu
http://beamlab.org/

Students Mentored

Salem Karani, 2020 “Fast Multi-Modal Regression of Affect Extracted from Facial Images and Audio

Andrew Capraro, MD, BCH
BCH
andrew.capraro@childrens.harvard.edu
https://connects.catalyst.harvard.edu/Profiles/display/Person/60517

Students Mentored

Melissa Van Cain, 2019 The Impact of a Prescription Drug Monitoring Program on Pediatric Opioid Prescribing in the Emergency Department

Artem Sokolov, PhD
HMS
Artem_Sokolov@hms.harvard.edu
https://scholar.harvard.edu/artem-sokolov/home

Students Mentored

Pradeep Mangalath, 2020 “CoRaS: Cox proportional hazards and random survival forest methods for identifying drug repurposing candidates to treat breast cancer"

Charles Berde, MD, PhD
BCH
charles.berde@childrens.harvard.edu
http://www.childrenshospital.org/research/labs/berde-lab

Students Mentored

Gloria Carolina Donado Rincon, 2019 Developing a Pediatric Chronic Pain Data Repository

Chirag Patel, PhD
DBMI
Chirag_Patel@hms.harvard.edu
https://www.chiragjgroup.org/
**Students Mentored**

**Kajal Claypool, 2017** Large Scale Meta-Analysis of Changes in Gene Expression Associated with Physical Activity Implicates CREBF

**Chen Dong, 2019** The Associations of NO2 and PM10 on Lung Functions, Physiological Measurements, and Hematological Parameters

**Jiaqi Xie, 2019** Association of Cardiac-Wide Complications to Repeated Fasting Glucose Measurements

**Usman Tahir, 2020** “The Assessment of N-Terminal Pro-BNP as a Biomarker of Risk for Cardiovascular Disease: Insights from the Jackson Heart Study and Malmo Diet and Cancer Study”

---

**David Bates, MD**
BWH
dbates@bwh.harvard.edu
https://connects.catalyst.harvard.edu/Profiles/display/Person/449

**Students Mentored**

**Harvey Chin, 2020** “A Machine Learning Model for Predicting Medication Error and Ensuring Medication Accountability using EHR Data”

---

**Eliezer Van Allen, MD**
DFCI
eliezerm_vanallen@dfci.harvard.edu
https://vanallenlab.dana-farber.org/

**Students Mentored**

**Nisarg Patel, 2019** Genomic Correlates of Response to Immune Checkpoint Blockade in Head and Neck Squamous Cell Carcinoma

**Anran Tang, 2020** "Discovery of nocoding cancer driver mutations based on functional conservaation"

**Xiaoou Wang, 2021** "Evaluating pathogenic germline mutations as determinants of response to cancer immunotherapy"
Emad Eskandar, MD,  
MGH  
eeskandar@partners.org  
https://www.hms.harvard.edu/dms/neuroscience/fac/Eskandar.php

Students Mentored

Shaun Patel, 2018 “Identifying a Closed-Loop Neurophysiological Signal of Impulsive Decision-Making”

Fabienne Bourgeois, MD, MPH,  
BCH  
fabienne.bourgeois@childrens.harvard.edu  
http://www.childrenshospital.org/directory/physicians/b/fabienne-bourgeois

Students Mentored

Chase Parsons, 2018 “Use of a Confidential Note Type in a Pediatric Hospital”

Finale Doshi-Velez, PhD  
SEAS  
finale@seas.harvard.edu  
https://finale.seas.harvard.edu/

Students Mentored

Ming Yu Lu, 2019 Sensivity Analysis of Deep Reinforcement Learning among Septic Treatment

Heng Li, PhD  
DBMI/DFCI  
heng_li@hms.harvard.edu  
https://hlilab.github.io/

Students Mentored

Jiazhen Rong, 2021 "Somatic Mutations Calling on Mitochondria from scATAC-Seq of Chronic Lymphoblastic Leukemia"
Henning Tiemeier, PhD  
HSPH  
tiemeier@hsph.harvard.edu  
https://www.hsph.harvard.edu/henning-tiemeier/  

Students Mentored

Ivan Sanchez Fernandez, 2019 Feature selection and prediction of attention deficit hyperactivity disorder with structural and functional magnetic resonance imaging

Iona Ghiran, MD  
BIDMC  
ighiran@bidmc.harvard.edu  
https://connects.catalyst.harvard.edu/Profiles/display/Person/27055  

Students Mentored

Ben Illigens, 2018 “Accelerated large-scale quantification of red blood cell flickering motion”

Isaac Kohane, MD, PhD  
DBMI  
Isaac_Kohane@hms.harvard.edu  
http://zaklab.org/courses.htm  

Students Mentored

Dianbo Liu, 2020 “Multi-step construction of scalable risk calculators for prediction of severe mental illness and critical clinical outcomes using medical claims and EHR”

Maria Nakhoul, 2020 “Understanding the Underlying Mechanisms and Benchmarking for Drug Repurposing”

Jared Hawkins, PhD, MMSc  
BCH (CHIP)  
Jared.Hawkins@childrens.harvard.edu  
https://scholar.harvard.edu/jaredhawkins/bio  

Students Mentored

Iris Braunstein, 2021 "Hypothesis Generation for Under-Applied Uses of At-Home Metabolite Monitoring Tool"
Jayashree Kalpathy-Cramer, PhD  
MGH  
kalpathy@nmr.mgh.harvard.edu  
https://www.nmr.mgh.harvard.edu/user/8165

**Students Mentored**

**Szu Yeu Hu, 2018** “Optic discs segmentation using convolution neural network”

**Cheng Che Tsai, 2020** “Radiomics on Double-baseline Brain MRI of Glioblastoma Multiforme: feature repeatability assessment improves overall and progression-free survival prediction”

**Liu Luwei, 2021** "Deep Learning and Grad-CAM Based Approach for Detection of Intracranial Hemorrhage"

Jean Zhao, PhD  
DFCI  
Jean_Zhao@dfci.harvard.edu  
https://zhaolab.dana-farber.org/?_ga=2.7559666.1911084779.1580332765-1092579429.1580332765

**Students Mentored**

**Sheng Zhong, 2020** “Identification of Clusters, Driver Fusion Genes/Proteins of Breast Cancer Brain Metastases (BCBMs) and Related Signaling Pathway, Biological Process Analysis”

Jesse Boehm, PhD  
Broad Institute  
boehm@broadinstitute.org  
http://www.boehmlab.org/

**Students Mentored**

**Niklas Rindtorff, 2019** Living biosensors: predicting dependencies from living tumor samples by single-cell, label-free imaging

John Brown Miller, MD  
MEEI  
john_miller@meei.harvard.edu  
https://www.masseyeandear.org/find-a-physician/m/miller-john

**Students Mentored**

**Ashley Kras, 2019** “Transfer learning accurately classifies retinal images from the UK Biobank”
John Brownstein, PhD  
BCH  
john.brownstein@childrens.harvard.edu  
http://www.childrenshospital.org/research/researchers/b/john-brownstein

Students Mentored

Edwin Reyes, 2018 “Identifying Textual Patterns in Clinical Trial Patient Recruitment”

Michael Sauthier, 2020 “ePaO2 : A Continuous and Noninvasive Method to Estimate PaO2 in Pediatric Critical Care”


Jonathan Hron, MD  
BCH  
jonathan.hron@childrens.harvard.edu  
http://www.childrenshospital.org/directory/physicians/h/jonathan-hron

Students Mentored

Colby Uptegraft, 2020 “Digitizing U.S. Air Force Medical Standards for the Creation of a Readiness Decision Support System”

JP Onnela, PhD  
HSPH  
onnela@hsph.harvard.edu  
https://www.hsph.harvard.edu/onnela-lab/

Students Mentored

John Torous, 2018 "Using Patients’ Personal Smartphones to Inform Risk of Relapse in Schizophrenia: An Exploratory Pilot Study"

Kenneth Mandl, MD, MPH  
BCH  
kenneth.mandl@childrens.harvard.edu  
http://www.childrenshospital.org/research/researchers/m/kenneth-mandl

Students Mentored

Jonathan Levin, 2020 “Identifying Phenotypes and Outcomes in Children Born Preterm using large claims data”
Parker Bannister, 2021 "Assessing the Prospective Utility of Flat FHIR as a Scalable Standard for Bulk Analysis of Patient-Reported Outcomes"

Kun-Hsing Yu, MD, PhD  
DBMI  
Kun-Hsing_Yu@hms.harvard.edu  
https://khyulab.github.io/  

Students Mentored

Eliana Marostica, 2020 "Unraveling Renal Cell Carcinoma Subtypes and Prognoses by Integrative Histopathology-Genomics Analysis"

Chenyue Lu, 2021 "Leveraging Convolutional Neural Networks Towards Glioblastoma Multiforme (GBM) Histopathology Annotations"

Leina Essakalli Houssaini, 2021 "Multi-modality Data Analyses for Serous Ovarian Cancer"

Li Zhou, MD, PhD  
BWH  
lzhou@bwh.harvard.edu  
http://mterms.bwh.harvard.edu/our-team/  

Students Mentored

Sunny Mahesh, 2020 “Natural Language Processing to Improve Feature Selection and Temporal Relationship Identification for Pharmacoepidemiology Studies”

Qi Zhang, 2021 "Using Natural Language Processing to Identify COVID-19 and Hydroxychloroquine Related Topics in Social Media"

Maha Farhat, MD, PhD  
DBMI  
Maha_Farhat@hms.harvard.edu  
https://scholar.harvard.edu/mahafarhat  

Students Mentored

Avika Dixit, 2018 “Genotypic clustering does not imply recent tuberculosis transmission in a high prevalence setting: A genomic epidemiology study in Lima, Peru”

Chang Ho Yoon, 2020 “A convolutional deep neural network to predict antimicrobial resistance in Mycobacterium tuberculosis: increasing interpretability through genomic saliency maps”
Jessica El Halabi, 2020 “Clostridioides difficile Disease among privately insured patients in the United States.”

Ruojun Wang, 2020 “Alteration of skin microbiome in patients with acne and rosacea”

Yu Zhang, 2021 "Mining gene expression profiles: transcriptomic signatures as M. tuberculosis drug resistance markers"

Marinka Zitnik, PhD
DBMI
marinka@hms.harvard.edu
https://zitniklab.hms.harvard.edu/

Students Mentored

Jingyi Liu, 2021 "Discovery of disease-drug off-label indication based on network representation learning"

Kathleen Sucipto, 2021 "Denoising Biological Networks with Graph Neural Networks"

Stone Chen, 2021 "Hyperbolic Representation Learning for Gene Ontology"

Yujie Shao, 2021 "Representation learning on heterogeneous graph for potential contraindications discovery"

Marvin Harper, MD
BCH
Marvin.Harper@childrens.harvard.edu
http://www.childrenshospital.org/directory/physicians/h/marvin-harper

Students Mentored

Joshua Herigon, 2020 “Using natural language processing to optimize case ascertainment of acute otitis media in a large, state-wide pediatric practice network”

Nils Gehlenborg, PhD
DBMI
nils@hms.harvard.edu
http://gehlenborglab.org/

Students Mentored

Undina Gisladottir, 2019 “Data-Driven Visualization of Personal Risks to Enable Shared Decision Making During Informed Consent of Surgical Patients”

Paul Avillach, MD, PhD
DBMI and BCH
Paul_Avillach@hms.harvard.edu
https://avillach-lab.hms.harvard.edu/

Students Mentored

Jumanah Alshenaifi, 2019 “Mapping the pleiotropy of autistic spectrum disorders in Simon Simplex Collection (SSC) through PheWAS”

Ramy Arnaout, MD, PhD
BIDMC
arnaout@alum.mit.edu
http://arnaoutlab.org/#top

Students Mentored

Harry Burke, 2019 Immune repertoire diversity with similarity

Roger Mark, MD, PhD
MIT
rgmark@mit.edu
https://lcp.mit.edu/People

Students Mentored

Chih-Ying Deng, 2019 Multi-label Classification of MIMIC-CXR reports using traditional neural network and transfer learning

Shawn Murphy, MD, PhD
MGH, DBMI
murphy.shawn@mgh.harvard.edu
http://www.mghlcs.org/shawn-murphy

Students Mentored

Eric Yamga, 2020 “Screen and Scope phenotyping: an hybrid approach to electronic health record phenotyping using unsupervised machine learning and knowledge expertise using Heart Failure as a case study”
William J Lane, MD, PhD  
Brigham and Women's Hospital  
wlane@partners.org  
http://bwhpathology.partners.org/CV.aspx?pathologistName=WJL11

Students Mentored

William Gordon, 2018  “A comparison of calculated Panel Reactive Antibody (cPRA) scores between a national population and a local platelet donor pool in patients undergoing hematopoietic stem-cell transplantation”

X. Shirley Liu, PhD  
DFCI/HSPH  
xsliu@jimmy.harvard.edu  
http://www.dfhcc.harvard.edu/insider/member-detail/member/xiaole-shirley-liu-phd/

Students Mentored

Peter Shen, 2019  Tumor immune microenvironment characterization with deep neural networks predicts cancer immunotherapy response