MSTAR

Icahn School of Medicine at Mount Sinai

Potential Mentor	Research Interests & Potential Projects
Dr. Melissa Aldridge *melissa.aldridge@mssm.edu* 	Dr. Aldridge is a health services researcher whose body of work examines patterns of hospice use, transitions in care at the end of life, and the financial incentives inherent in the Medicare Hospice Benefit payment structure. Student projects could focus on a wide range of research interests in geriatrics and palliative care, particularly around end-of-life care. Our team utilizes the Medicare Current Beneficiary Survey data, which is a large, population-based dataset that is nationally representative of the US Medicare population (both fee-for-service and Medicare Advantage populations) from 2002-2020. The dataset includes information regarding an individual's demographics, socioeconomic status, clinical and functional characteristics, healthcare use and spending. Potential projects could focus on a specific sample defined by disease (cancer type, dementia, etc.), healthcare service (hospice, home health, hospital use), setting (nursing home, community, assisted living facility) or a specific time period or longitudinal trend. The research mentor is looking forward to meeting and brainstorming projects based on your interest.
Dr. Claire Ankuda *claire.ankuda@mssm.edu* 	Dr. Ankuda is a health services researcher who examines how Medicare payment policies and health system characteristics shape the care of older adults with serious illness and their families. Student projects include examining the end-of-life experience across those from diverse health trajectories, social and demographic groups, and regional settings. This allows for students to examine policy and social factors that shape the quality of care at the end of life. For example, prior research has found lower friend/family reported quality of end-of-life care for decedents in Medicare Advantage plans and ongoing work is examining disparities in quality of care reported by the friends and families of Asian American older adults. In addition, I am interested in the experience of older adults and their families at the onset of new functional disability (needing help with walking or self-care). This is a sentinel event in a person's life, often unobserved by the health system. I'm interested in how place and context shape outcomes after functional disability. ***Please note:*** *Dr. Ankuda is on leave and is scheduled to return after the 2023 application due date.*

Dr. Matthew Augustine
matthew.augustine2@va.gov

Dr. Augustine's research focuses on understanding and enhancing access to care through quantitative and qualitative assessment of ongoing care delivery, including for Veterans and homebound populations. Students will have opportunities to work with VA or non-VA data to evaluate access to primary care and the use of the Emergency Department for vulnerable populations, including but not limited to older adults with multi-morbidity. Students will be able to learn how to work with large datasets, use statistical programs, and apply advanced statistics.

Dr. Abigail Baim-Lance
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Dr. Baim-Lance's research has two focus areas: (1) to study the healthcare experiences of aging, vulnerable, and high healthcare utilizing individuals and populations with chronic complex needs, to develop strategies and systems that better meet their needs; and (2) to use implementation science to identify strategies, factors and processes to help healthcare organizations become patient-centered and patient-partnered to enable a strong, 'co-produced' healthcare system. Dr Baim-Lance focuses on qualitative and mixed methods approaches in her research.

Dr. Kristen J. Brennand
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Kristen Brennand is a stem cell biologist working to bridge the fields of genetics and neuroscience. Her research integrates stem cell-based approaches with CRISPR-mediated genomic engineering strategies, in order to study the impact of patient-specific variants across and between the cell types of the brain. The goal of her research is to uncover the convergence and synergy arising from the complex interplay of the many risk variants linked to brain disease.

Dr. Jerry Chipuk
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Dr. Chipuk studies fundamental mitochondrial biology within the perspective of human disease etiology and treatment. His laboratory has developed multiple model systems, collaborations, and experimental tools to investigate the intersections between mitochondria, cell biology, and disease.

His laboratory's long-term goals are to provide: (1) mechanistic insights of how mitochondrial composition and shape impact on cellular metabolism and commitment to apoptosis, (2) explore how cancer-promoting pathways converge on mitochondrial function to regulate malignancy and chemotherapeutic success, and (3) to reveal novel contributions of the mitochondrial network in tissue homeostasis. Please contact Dr. Chipuk to learn more about potential projects.

Dr. Samuel Cho
samuel.cho@mountsinai.org

Dr. Samuel K. Cho serves as the Chief of Spine Surgery at Mount Sinai West, Director of Spine Surgery Fellowship, and Professor in the Department Orthopaedic Surgery and Neurosurgery at the Icahn School of Medicine at Mount Sinai. The Cho Spine Lab is focused on the utilization of artificial intelligence (AI) and machine learning on big data. Recent projects include predictive analytics of clinical outcomes following spine surgery, automation of radiographic measurements based on spine imaging, development of software to aid in spine surgery. Please contact the research mentor to inquire about opportunities to get involved.

Dr. Stephanie Chow
stephanie.chow@mssm.edu

Dr. Chow's research is looking to evaluate the program effectiveness of a new model of geriatric care. The Acute Life Interventions, Goals & Needs Program (ALIGN) at Mount Sinai is an inter-professional team of 3 clinicians (physician and nurse practitioner) and 2 social workers (social worker and care coordinator), dedicated to offering intensive ambulatory care services to complex elderly patients at high-risk for incurring expensive health care system use.

Please note: *Dr. Chow is on leave and is scheduled to return after the 2023 application due date.*

Dr. Bevin Cohen
bevin.cohen@mountsinai.org

Dr. Cohen is a nurse and epidemiologist whose research focuses on palliative and end-of-life care for vulnerable adults with multiple chronic conditions and infection prevention and control. Potential projects could include qualitative data collection and analysis around patients with palliative care needs, at the end of life, and who do not have decisional capacity.

Dr. Kavita Dharmarajan
kavita.dharmarajan@mountsinai.org

Dr. Dharmarajan's research focuses on integrating components of palliative care to align decision-making in the process of palliative radiation therapy planning for older adults. Please contact Research Mentor for project specifics.

Dr. Nicole Dubois
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Dr. Dubois's lab focuses on understanding human heart development and disease. The lab is using the human pluripotent stem cell (hPSC) model to investigate the cellular and molecular mechanisms of cell fate specification and disease in the early human heart. Please contact the research mentor for potential projects.

Dr. Chris Escobar
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Dr. Escobar has been an attending physician at the Mount Sinai Visiting Doctors Program since 2013. Dr Escobar is interested in quality improvement in health care with a focus in primary care, home based care, hospital to community transitional care as well as clinical innovations. Please contact the research mentor for potential projects.

Dr. Alex Federman
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Dr. Federman’s research focuses on chronic illness self-management among older adults with complex chronic illness and on models of home-based care delivery and self-management support for high needs, high risk older adult populations. Recent projects include: 1) a randomized trial of a community health worker self-management support intervention for older adults with chronic obstructive pulmonary disease; 2) a randomized trial of home-based primary care for homebound older adults; 3) several longitudinal observational cohort studies of older adults with multimorbidity to examine self-management behaviors; 4) a study to develop automated machine learning algorithms that use voice analysis and natural language processing to screen for cognitive impairment in older adults in primary care settings. Please contact the research mentor for potential projects.

Dr. Emily Franzosa
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Dr. Franzosa's qualitative research is at the intersection of health policy and health equity, with a specific focus on supporting frontline healthcare workers delivering care in the home. Projects include qualitative analysis of veterans' home care networks, including the intersection of paid and unpaid care. Please contact the research mentor for potential projects.

Dr. Laura Gelfman
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Dr. Gelfman's research focuses on enhancing access to palliative medicine for patients with heart failure and cancer. Potential projects could include evaluating quality of existing palliative care clinical models including outpatient and inpatient care across serious illness diagnoses.

Dr. Peter Gliatto
peter.gliatto@mountsinai.org

Dr. Peter Gliatto is the Director of the Mount Sinai visiting doctors Program and boarded in internal medicine and hospice and palliative medicine. His research interests are primarily in examining the implementation and impact of our clinical programs. Potential projects include studying telehealth programs.

Dr. Nathan Goldstein
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Dr. Goldstein is a clinician-investigator whose work examines novel models of home-based palliative care for patients with serious illness. We have completed a trial of a novel home-based palliative care interventions for patients with serious illness. Potential student projects include analyzing portions of the data from this trial.

Dr. Patrick Hof
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Dr. Hof's research investigates selective neuronal vulnerability in neuropsychiatric illnesses using classical neuropathological and modern quantitative cell biology methods. Investigation of selective neuronal vulnerability in brain aging and Alzheimer's disease using multiplexing immunofluorescence approaches to quantify markers expression at the regional, laminar and cell type levels of resolution in postmortem human brain specimens. The project involves a deep dive into the fine structural antimony of the human cerebral cortex, advanced microscopy, and use of software analyses based on machine-learning tools.

Work on recent and ongoing projects involves using a similar approach to characterize cellular and synaptic changes in the prefrontal and visual cortex of behaviorally characterized old macaque monkeys. This work is coupled to quantitative 3D electron microscopy analyses of synaptic alterations during aging as well as changes in axonal integrity, myelin structure, glial reaction, and changes in the microvasculature.

Dr. William Hung
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Dr. Hung's research focuses on geriatric models of care to improve care delivery for older adults, including the Mobile Acute Care for the Elderly Team model (MACE).

Recent and ongoing projects include: Geriatrics teleconsultation and education to rural older Veterans: Virtual geriatrics project with a nationwide scope; Medication optimization and deprescribing in older veterans; Teleconsultation to home for medication reconciliation and optimization.

Dr. Fred Ko
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Dr. Ko's research focuses on the biology of frailty and surgery-induced stress and their intersection with adverse outcomes such as physical decline in aged organisms. He is currently PI on a study of frailty among World Trade Center (WTC) first responders. Please contact the Research Mentor for project specifics.

Dr. Lihua Li
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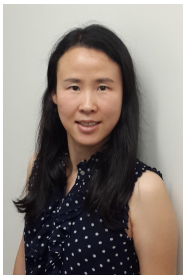

Dr. Li is an experienced biostatistician and health services researcher with expertise in both biostatistics and econometrics, with a focus of the development and application of innovative statistical and economic methods to study cancer and aging related diseases. Her current research includes a variety of research topics that are pertinent to patient health outcomes, healthcare utilization and associated healthcare costs, such as 1) using machine leaning methods to build a prognostic model for type 2 diabetes incidence among patients with gestational diabetes; 2) conducting simulation studies to evaluate the performance of propensity score weighting methods in the setting of survey data 3) examining the pattern of healthcare spending among high-need and high-cost patients; 4) developing innovative statistical methods to identify key morbidities for multi-outcomes among older patients. Please contact the Research Mentor for project specifics.

Dr. Bian Liu
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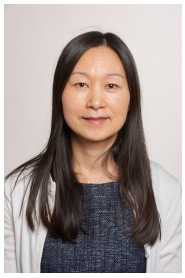

Dr. Bian Liu is a chronic disease epidemiologist. Her research studies the interplay between environmental exposure (e.g. air pollution, heat stress, and neighborhood factors), health behavior (e.g., smoking, diet, and technology use), and health services utilization (e.g. emergency department visits, and hospitalizations, and telehealth use) over the life course. To uncover these relationships, she applies statistical methods, geospatial analytics, and machine learning approaches to large databases, and collaborates with researchers from diverse disciplines. For examples of potential projects, please check out my PubMed profile: https://www.ncbi.nlm.nih.gov/myncbi/bian.liu.1/bibliography/public/

Dr. Charles Mobbs
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Building on studies elucidating mechanisms linking age to age-related diseases, the Mobbs lab has developed a robust drug discovery platform which has already led to the synthesis of novel small orally active drugs to treat age-related diseases including Alzheimer's, stroke, and even COVID-19. Please contact the Research Mentor for project specifics.

Dr. R. Sean Morrison
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Dr. Morrison's current research focuses on improving the management of pain in older adults and on developing and evaluating models of palliative care delivery in hospitals and the community. Please contact Research Mentor for project specifics.

Dr. Jashvant Poeran
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Dr. Poeran is an MD PhD epidemiologist and full-time research faculty. His research focuses on a variety of topics impacting older patients including 1) Orthopaedic Surgery, 2) Sepsis, 3) Hospital Quality Improvement, and 4) Perioperative Care/Anesthesiology. Examples include innovative ways to reduce prescription of high-risk drugs in elderly patients and optimal care strategies for elderly patients undergoing elective (for example hip/knee replacement surgery) and non-elective (fracture repair) orthopaedic surgeries. Dr. Poeran works with a wide variety of existing datasets as well as prospectively collected data and has projects available throughout the year.

Dr. Jennifer Reckrey
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Dr. Reckrey uses both quantitative and qualitative approaches to examine team-based care for those with serious illness living at home. Her work focuses on the role that paid caregivers (i.e., home health aides, personal care attendants, and other direct care workers) play in home-based dementia care and how the care they provide matters for patients, families, and the medical care system. Please contact the Research Mentor for project specifics.

Dr. Perry Sheffield
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Dr. Sheffield's research focuses on threats and solutions related to climate change and human health, with a particular emphasis on vulnerable populations such as children and workers. Current projects are examining hot weather and child health in New York State and air pollution exposures and COVID-19 outcomes by race in NYC.

Dr. Raj Shrivastava
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Dr. Raj Shrivastava is a Professor of Neurosurgery and Otolaryngology (ENT) and Vice Chair for Clinical Affairs for the Department of Neurosurgery at Mount Sinai. He specializes in the diagnosis and treatment of skull base tumors, meningiomas, and pituitary tumors, and he has been active in the advancement and development of these technologies through clinical research. Please contact the research mentor for specific projects.

Dr. Albert Siu
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Dr. Siu served as the Department Chair from 2003-2017. Since that time, he has dedicated himself to building and leading Mount Sinai at Home, the nation's most ambitious program of its kind. Dr. Siu also co-leads Mount Sinai's Claude D. Pepper Older Americans Independence Center (OAIC). Please contact Research Mentor for project specifics.

Dr. Cardinale Smith
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Dr. Smith is a health services and outcomes researcher working at the intersection of oncology and palliative medicine with a special emphasis on minority populations. Please contact Research Mentor for project specifics.

Dr. Christopher Woodrell
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Dr. Woodrell researches the delivery of palliative care to seriously ill patients and their families, with a focus on those facing advanced liver disease and liver cancer. His work is focused on the development of early palliative care interventions for people with hepatocellular carcinoma, the most common type of primary liver cancer, used quantitative, qualitative, and mixed methods approaches. Please contact the Research Mentor for specific projects.

Dr. Carolyn Zhu
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Several potential student projects include: (1) examining the natural history of cognitive and behavioral symptoms in Alzheimer's disease and related dementias using the National Alzheimer's Coordinating Center Uniform Data Set (NACC-UDS), a national database consisting of more than 40,000 participants followed approximately annually from 39 past and present NIH/NIA funded Alzheimer's Disease Centers (ADCs) with detailed, standardized clinical evaluations, genomic data, neuropathology data when available, and now MRI imaging, (2) Medication utilization patterns using Medicare Part D data in participants in the Predictors of Severity in Alzheimer's Disease and Washington Heights-Inwood Community Aging Project (WHICAP) who were clinically diagnosed with Alzheimer's disease and related dementias compared to those without dementia, (3) systematic review of utilization of Alzheimer's Disease Cooperative Study–Activities of Daily Living Scale (ADCS-ADL) in clinical trials and studies. The first two projects requires the student to have had basic training in statistical analysis and programming.