Boston MSTAR Scholars Program at Harvard

Program Overview
Our program is designed to give medical students an 8-12 week aging research experience and an introduction to the field of geriatric medicine.

Goals for Research Scholars
Students who participate in the program will:
- Work on an aging related research project with a faculty mentor
- Attend weekly didactic sessions on aging research and geriatric medicine
- Give a formal research presentation to peers and faculty
- Have the opportunity to arrange a clinical aging experience in an outpatient, inpatient, or nursing home setting
- Prepare and submit an abstract to the American Geriatrics Society (AGS) Meeting
- Create lasting relationships with peers and faculty who share your interests in aging research and geriatric medicine

Dates/Timeline
Students must participate in a research project for 8-12 weeks. They should be present in Boston for the duration of the didactic program and MSTAR Scholar’s Day (6/5/2018-7/24/2018). If your academic schedule does not allow you to be present for the first few meetings of the didactic program, we are happy to discuss the possibility of arranging your summer MSTAR schedule around your academic commitments and finding you alternative didactic opportunities. Exceptions will not be made for non-academic scheduling conflicts.

Funding
Funding for this program is provided by the NIH/NIA and is distributed 2-4 weeks after the start of the summer program. The stipend last year was $1948 per month.

Housing
We provide a list of resources to help you find housing; however, students are responsible for finding their own housing.

Application
Applicants interested in the Boston MSTAR program at Harvard should contact the Program Director, Dr. Jane Driver, jdriver@partners.org, and Program Administrator, Leslie Power, lpower@partners.org, early in the process to obtain more information. Application materials and instructions are available at the AFAR website. The deadline for submitting an application to your first choice site is January 26, 2017; however, in order to facilitate mentor pairings (as many research groups have filled their summer spots by February), we will start to review applications whenever we receive them. If your application is not accepted to our program, it will be sent on to your second-choice site. Final decisions on all applications will be made by March 5th, 2017.
Mentorship and Research Projects
Please review our list of recent faculty mentors, research projects and research domains. The most successful mentorship pairings are often the result of a student having a strong research interest and identifying faculty in the Boston research community doing work in that area. Essentially, any Harvard, BU, UMASS or UMISS affiliated faculty can potentially serve as a faculty mentor during your time in the Boston MSTAR program. The key is to find a mentor with a project that can be completed in 8-12 weeks. We are happy to serve as liaisons in this process. Although some faculty volunteer as mentors from year-to-year, every year our pool of mentors changes in a way that reflects our scholars’ diverse research interests.

Please follow the active links in the table below to learn more about each mentor. At Harvard Catalyst you can also perform a key word search to find researchers who share your interests.

Research Mentors and Projects for Summer 2016 and Summer 2017:

<table>
<thead>
<tr>
<th>Projects</th>
<th>Project Type</th>
<th>Mentor</th>
<th>Institution</th>
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</thead>
<tbody>
<tr>
<td>The impact of frailty in the effectiveness of cardioverter-defibrillators for the prevention of sudden cardiac death (SCD) in older patients</td>
<td>Systematic Review</td>
<td>Dr. Ariela Orkaby</td>
<td>VA Boston Medical Center/BWH</td>
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<tr>
<td>The Link between Early Cerebrovascular Hemodynamics and Functional Outcomes after Aneurysmal Subarachnoid Hemorrhage</td>
<td>Physiology Research</td>
<td>Dr. Can Ozan Tan</td>
<td>Cerebrovascular Institute Spaulding Rehab</td>
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<tr>
<td>Cerebrovascular Aging: Assessing the Influence of Deferoxamine with Projection Pursuit Regression</td>
<td>Physiology Research</td>
<td>Dr. Can Ozan Tan</td>
<td>Cerebrovascular Institute Spaulding Rehab</td>
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<td>FRAIL Questionnaire Screening Tool and Short-term Outcomes in Geriatric Fracture Patients</td>
<td>Clinical Research</td>
<td>Dr. Houman Javedan, Dr. Lauren Gleason</td>
<td>Brigham and Women's Hospital</td>
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<tr>
<td><em>Cis P-Tau</em> Directly Links Traumatic Brain Injury with Chronic Traumatic Encephalopathy and Alzheimer’s Disease, but can be Blocked by an Antibody</td>
<td>Bench Research</td>
<td>Dr. Kun Ping Lu</td>
<td>Beth Israel Deaconess Hospital</td>
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<tr>
<td>Biological overlaps, both positive and negative, between cancer and Alzheimer’s disease</td>
<td>Narrative Review</td>
<td>Dr. Jane Driver</td>
<td>VA Boston Medical Center/BWH</td>
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<tr>
<td>Barriers to and Facilitators of Music Therapy Services Received by Elderly Patients</td>
<td>Qualitative Research</td>
<td>Dr. Jennifer Tija</td>
<td>UMASS Medical Center</td>
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<tr>
<td>Preparing for Database Sharing in Clinical Research: Variable Types and Frequencies in the SAGES Study</td>
<td>Narrative Review</td>
<td>Dr. Sharon Inouye</td>
<td>Beth Israel Deaconess Medical Center</td>
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<tr>
<td>Title</td>
<td>Method</td>
<td>Investigator</td>
<td>Institution</td>
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<td>The Minimum Data Set Falls Short on Capturing Falls</td>
<td>Validation Study</td>
<td>Dr. Sarah Berry</td>
<td>Hebrew Senior Life/BIDMC</td>
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<tr>
<td>Advance Care Plan Conversation Guides for Spanish-Speaking Elders</td>
<td>Qualitative Research</td>
<td>Dr. Jennifer Tija</td>
<td>UMASS Medical Center</td>
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<tr>
<td>Feasibility of Quality Improvement for Depression Treatment in Medical Home Care: Findings from the Making Real Progress in Emotional Health Project</td>
<td>Pilot Study/Clinical Research</td>
<td>Dr. Eran Metzger</td>
<td>Hebrew Senior Life</td>
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<tr>
<td>DASH Diet and Risk of Abdominal Aortic Aneurysm in the Physicians' Health Study</td>
<td>Epidemiologic Study</td>
<td>Dr. Luc Djousse</td>
<td>Brigham and Women's Hospital</td>
</tr>
<tr>
<td>The clinical and economic benefits of C-Trac: Nurse Driven Telephone - Based Transitional Care at VA Boston</td>
<td>Clinical Research</td>
<td>Dr. Jane Driver</td>
<td>VA Boston Medical Center/BWH</td>
</tr>
<tr>
<td>Assessing Gait Speed in the Clinic - another vital sign</td>
<td>Clinical Research</td>
<td>Dr. Ariela Orkaby</td>
<td>VA Boston Medical Center/BWH</td>
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<td>Response to Lipopolysaccharide: The impact of aging on surgical outcomes</td>
<td>Clinical Research</td>
<td>Dr. Deborah Culley</td>
<td>Brigham and Women's Hospital</td>
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<td>Pathology-Associated Microglia in Down Syndrome - A Model for looking at Alzheimer’s</td>
<td>Lab Research</td>
<td>Dr. Cynthia Lemere</td>
<td>Brigham and Women's Hospital</td>
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<tr>
<td>Diagnosing Delirium Superimposed on Dementia</td>
<td>Epidemiologic Study</td>
<td>Dr. Edward Marcantonio</td>
<td>Hebrew Senior Life /BIDMC</td>
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<td>Structural Brain Abnormalities and Memory in Seizure Patients</td>
<td>Clinical Research</td>
<td>Dr. Lauren Moo</td>
<td>Massachusetts General Hospital</td>
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<tr>
<td>The Impact of Social Vulnerability on Readmission of Hospitalized Older Patients</td>
<td>Epidemiologic Study</td>
<td>Dr. Houman Javedan</td>
<td>Brigham and Women's Hospital</td>
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<td>Falls Screening in Community - Dwelling Older Adults: Who Are Those at Highest Risk?</td>
<td>Epidemiologic Study</td>
<td>Dr. Jerry Gurwitz</td>
<td>UMASS Medical Center</td>
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<td>Comparison of Simple Frailty Assesments in Predicting Poor Outcomes after Aortic Valve Replacement</td>
<td>Epidemiologic Study</td>
<td>Dr. Dae Kim</td>
<td>Beth Israel Deaconess Medical Center</td>
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<td>Purpose of Life and Longevity - New England Centenarian Study</td>
<td>Epidemiologic Study</td>
<td>Dr. Thomas Perls</td>
<td>Boston University Medical Center</td>
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</tbody>
</table>
Direct Links to Research Mentor Profiles
Dr. Sarah Berry - https://connects.catalyst.harvard.edu/Profiles/display/Person/83697
Dr. Deborah Culley - https://connects.catalyst.harvard.edu/Profiles/display/Person/78120
Dr. Luc Djousse - https://connects.catalyst.harvard.edu/Profiles/display/Person/21551
Dr. Jane Driver - https://connects.catalyst.harvard.edu/Profiles/display/Person/64511
Dr. Jerry Gurwitz - https://profiles.umassmed.edu/display/130278
Dr. Sharon Inouye - https://connects.catalyst.harvard.edu/Profiles/display/Person/73992
Dr. Houman Javedan - https://connects.catalyst.harvard.edu/Profiles/display/Person/32748
Dr. Dae Kim - https://connects.catalyst.harvard.edu/Profiles/display/Person/60119
Dr. Cynthia Lemere - https://connects.catalyst.harvard.edu/Profiles/display/Person/60772
Dr. Kun Ping Lu - https://connects.catalyst.harvard.edu/Profiles/display/Person/78332
Dr. Eran Metzger - https://connects.catalyst.harvard.edu/Profiles/display/Person/37772
Dr. Edward Marcantonio - https://connects.catalyst.harvard.edu/Profiles/display/Person/3871
Dr. Lauren Moo - https://connects.catalyst.harvard.edu/Profiles/display/Person/14968
Dr. Ariela Orkaby - https://connects.catalyst.harvard.edu/Profiles/display/Person/120412
Dr. Thomas Perls - https://www.bumc.bu.edu/bsm/profile/thomas-perls/
Dr. Can Ozan Tan - https://connects.catalyst.harvard.edu/Profiles/display/Person/46409
Dr. Jennifer Tija - https://profiles.umassmed.edu/display/129772

Potential Research Areas – Notably, our volunteer mentors, and the research projects they offer, vary from year to year.

Cognitive Aging
- Atherosclerosis related cognitive impairment
- Development of a rapid, clinical screening tool for cognitive impairment
- Effects of alcohol use on cognition in older adults
- Diagnosis, understanding the basic mechanisms, and developing treatments for Alzheimer’s disease.
- Postmortem studies of Alzheimer’s Disease
- Animal Models of Alzheimer’s Disease

Physiology of Aging
- Cardiovascular physiology during exercise with aging
- Improvement of disability with increased strength through power training.
- Wasting syndromes
- Elucidating the biological and physiological mechanisms related to pain and other sources of physical distress.
- Calcium handling in myocardial cells
- Electrolyte management
- Osteoporosis and physical function
- Autonomic regulation and relationship to falls

End of Life Research
- Understanding of the psychosocial, spiritual, and physical dimensions of quality of life
- Developing and testing strategies for the early detection, prevention, and management of psychosocial and physical symptoms associated with life-threatening illness
Delirium Research
- Interventional trials to treat and prevent delirium
- Animal models of postoperative delirium
- Delirium and pain control in cancer inpatients
- Delirium after cardiac surgery
- Delirium after non-cardiac surgery
- Postoperative Cognitive Dysfunction

Minority Aging
- Multicultural analysis of psychosocial aspects of aging
- Applying community-centered public health practice solutions to eliminate healthcare disparities.
- The Jackson Heart Study (JHS) is a prospective epidemiologic investigation of cardiovascular disease among African-Americans from the Jackson, Mississippi metropolitan area. (note: research conducted in Jackson, MS)

Population Studies
- The Physicians’ Health Study (22,000+ participants) is a randomized double blind placebo controlled trial of aspirin in the reduction of cardiovascular mortality and beta-carotene in the reduction of cancer incidence among male physicians.
- The Physicians’ Health Study II (11,000+ participants) is now testing the balance of benefits and risks of three other widely used, but as yet unproven, supplements for the primary prevention of cardiovascular disease, cancer, and age-related eye disease--vitamin E, vitamin C, and a multivitamin.
- The Nurses’ Health Study is a prospective cohort study of 121,700 female registered nurses to evaluate chronic illness among women.
- The Normative Aging Study Core Program continues to collect data on an aging cohort of veterans. NAS was initially established in 1963, as a longitudinal cohort study of biomedical and psychosocial parameters of aging involving 2280 initially healthy male veterans.
- The Massachusetts Alzheimer’s Disease Research Center is a federally center that conducts state-of-the-art neuroscience research directed towards uncovering the causes treatment and prevention of Alzheimer’s Disease.
- Transcatheter Aortic Valve Replacement (TAVR) Study is a prospective cohort study assembled to assess health status and functional status change in 246 older adults who underwent transcatheter and surgical aortic valve replacement at the Beth Israel Deaconess Medical Center. The aim of the project is to study 1-year clinical and patient-centered outcomes of older adults after procedure.
- The New England Centenarian Study, conducted at Boston University Medical Center, is an epidemiologic cohort study of individuals who are at least 100 years old. The purpose of the study is to identify factors that impact longevity.