



BROWN
Alpert Medical School

**Clinical Psychology Training Programs at Brown: A Consortium of the
Providence VA Medical Center, Lifespan, and Care New England
Postdoctoral Fellowship Training Program
Postdoctoral Fellowship Description: RESEARCH FOCUS**

Title: Post-Doctoral Fellowship in Cognitive Neuroscience of Risk and Resilience in Aging and Alzheimer's disease

APA-accredited: ___ YES ___ X ___ NO

Site: Brown University

Supervisor(s): Hwamee Oh, Ph.D.

The goal of this fellowship is to provide training in cognitive neuroscience of risk and resilience in brain aging in large-scale cohort studies. Training goals will be met by participating in NIH-funded research projects that examine the effects of genetic risk and early developmental challenges on neurocognitive mechanisms that may delay the onset of Alzheimer's disease (AD) pathology and moderate the impact of AD pathology on cognitive performance in nondemented older adults. The projects are performed in collaboration with Dr. William Heindel in the Department of Cognitive, Linguistic, and Psychological Sciences (CLPS) and Dr. Stephen Buka in the Department of Epidemiology at Brown University. The study will use behavioral/experimental tasks, neuropsychological testing, survey questionnaires, genetic information, blood biomarkers, and structural and functional magnetic resonance imaging (fMRI) to understand neurocognitive mechanisms underlying the risk for and resilience to AD pathology among nondemented older adults. The program is based in the Laboratory for Cognitive and Translational Neuroscience, directed by Dr. Hwamee Oh, in the Department of Psychiatry and Human Behavior (DPHB) and the Memory and Aging Program (MAP) at Butler Hospital, one of the leading clinical research centers for Alzheimer's disease in the United States. The laboratory is also affiliated with the Carney Institute for Brain Science and Department of Cognitive, Linguistic, and Psychological Sciences at Brown University, providing rich and collaborative training and research environment for innovative brain science with clinical applications.

Eligibility

Applicants with a Ph.D. degree in cognitive neuroscience, neuropsychology, biomedical engineering, computer science, physics or a relevant field are encouraged to apply. Prior experience with human neuroimaging (e.g., task fMRI, rsfMRI, MRI, DTI, ERP, PET), and familiarity with a relevant programming language (e.g., Python, MATLAB, R) are required. A strong background of network neuroscience and computational modeling is desirable. The successful candidate is expected to demonstrate communication skills, motivation and interest in the area of cognitive and brain aging, AD, and/or neuroimaging, and the ability to independently develop research questions and work in collaboration with other team members.

Fellowship Aims

1. To provide the fellow with training in the cognitive and translational neuroscience of risk and resilience factors in the context of cognitive and brain aging and AD.
2. To enable the fellow to develop expertise in multimodal neuroimaging analyses of structural and functional MRI data.
3. To provide the fellow with experience in communicating the results in manuscript or other formats and preparing and submitting grant proposals.
4. To enable the fellow to gain experience working with multidisciplinary team investigating cognitive and brain aging and risk and resilience factors in large-scale datasets.

Fellowship Timeline

The duration of the fellowship is 1-3 years contingent upon satisfactory progress in each of the previous years. Start date will be determined on an individual basis. Anticipated start is July 2021; however, there may be flexibility in the available start date if a suitable candidate is identified before that time.

Research Activity Plan (90%)

Ninety percent of the fellow's time will be devoted to research, academic/didactic, and professional training experiences. The fellow will participate in the following activities:

- Literature review on risk and resilience in the context of cognitive and brain aging and AD
- Developing analytic pipelines for brain network analyses using resting-state fMRI data
- Developing visualization pipelines of network neuroscience results
- Behavioral and fMRI/MRI data collection and data analysis
- Developing automated processing pipelines that integrate large-scale neuroimaging datasets involving structural and functional MR imaging and behavioral and genetic data.
- Manuscript preparation and submission and conference attendance
- Mentoring students and research assistants and participation in grant writing
- Developing an independent line of research and applying for NIH and foundation grants

Didactics Plan (10%)

Post-Doctoral Seminars: The fellow will be required to participate in the post-doctoral research seminar series through the Brown University Postdoctoral Training Program.

Didactics:

DPHB Academic Grand Rounds (monthly)

Postdoctoral Fellowship Training Program:

Core Seminars (monthly, year 1)

CLPS Cognition Seminar (weekly)

Participation in lab meetings (weekly)

Supervision and Evaluation

Supervision will be provided in the form of 2-3 one-hour individual meetings by Dr. Oh on a weekly basis. The Fellow and Dr. Oh will develop individualized training goals and training objectives at the beginning of the fellowship year. Every 6 months for the duration of the fellowship, the fellow and Dr. Oh will provide formal evaluations, and evaluations of the program relative to the goals and learning objectives of the fellowship.

Resource Requirements

Fellow will be provided with the following resources:

- Shared office space
- A personal desktop computer and project specific software
- Internet access
- Telephone
- Conference travel support

Reporting and approval

This fellowship will be part of the Research Fellowship Program (RFP). The position has been discussed and approved by the Training Committee.

Associate Director, Research Fellowship Program

Director, Postdoctoral Fellowship Training Program