NIH POSTDOCTORAL POSITION AVAILABLE
Statistical Analysis and Modeling in Neuroimaging Studies

A postdoctoral position focusing on statistical analysis and modeling in neuroimaging is available starting immediately within the Magnetic Resonance Physics of Aging and Dementia (MRPAD) Unit at the National Institute on Aging (NIA) of the National Institutes of Health (NIH), located in Baltimore, Maryland. This role offers an outstanding opportunity to contribute to groundbreaking research utilizing large, longitudinal datasets from the NIA and prominent external sources such as ADNI, DIAN, UK Biobank, and studies from Wisconsin, Florida, etc.

Research Responsibilities:
- **Statistical Study Design:** Plan and execute statistical studies utilizing statistical techniques such as linear regression, linear mixed-effects models, generalized additive models (GAM), structural equation modeling (SEM), and cross-lagged panel models.
- **Longitudinal Data Analysis:** Apply complex statistical methods to analyze time-series data from aging and dementia studies.
- **Predictive Modeling and Machine Learning:** Develop and implement machine learning algorithms to predict disease trajectories and outcomes.
- **Multivariate Statistics:** Employ techniques such as principal component analysis, factor analysis, and cluster analysis to understand multivariate relationships in neuroimaging data.
- **Data Integration:** Combine neuroimaging data with genetic, proteomic, and metabolic data to elucidate underlying mechanisms of aging and disease progression.
- **Publication and Dissemination:** Summarize research findings for publication in peer-reviewed journals and presentation at international conferences.
- **Teaching and Mentoring:** Contribute to the training and mentoring of junior researchers and students within the unit. Lead workshops and seminars on statistical techniques and neuroimaging analysis to foster a learning environment within the MRPAD Unit.

Qualifications:
- **Education:** PhD in statistics, biostatistics, data science, machine learning, or a closely related field.
- **Statistical Software Proficiency:** Advanced skills in R, MATLAB, Python, or another relevant statistical programming language.
- **Experience with Longitudinal and Multivariate Data:** Demonstrated ability to handle complex, longitudinal datasets and conduct multivariate statistical analyses.
- **Familiarity with Neuroimaging:** Experience with neuroimaging data is preferred but not required.
- **Strong Communication Skills:** Excellent written and verbal communication skills for presenting complex statistical concepts and findings.
- **Collaborative and Independent Research Skills:** Ability to work effectively both independently and as part of a multidisciplinary research team.

About the MRPAD unit:
The MRPAD Unit focuses on biophysical and physiological studies of the human CNS. Our mission is centered on establishing insightful connections between functional and structural

changes associated with normative aging and age-related diseases. We aim to develop accurate pre-symptomatic biomarkers to aid in differential diagnosis, characterize disease progression, and facilitate the development of therapeutics.

About NIA:
NIA is equipped with state-of-the-art, whole-body 3T Philips MR7700 and 7T Siemens Terra X MRI scanners, which are dedicated to imaging research. Also, a 7T 30 cm Bruker AV3HD Biospec horizontal bore scanner and 600 MHz Bruker AV Neo NMR spectrometer with microimaging capabilities are available for pre-clinical studies. In addition, NIA offers unique computational resources, such as the NIH High-Performance Computing (HPC) environment and our new neuroimaging analysis core facility, which empowers analysis of acquired data.

The successful candidate will be appointed as an IRTA Postdoctoral Fellow for US citizens or as a Visiting Fellow for non-citizens. The initial appointment guarantees a stipend for two years, including family health insurance coverage, with the possibility of annual renewal upon mutual agreement, up to a maximum of five years. The funding for this position is not dependent on the availability of grant funding.

To apply, interested individuals should email their CV to both Dr. Mustapha Bouhrara, Chief of the MRPAD Unit at bouhraram@mail.nih.gov, and Dr. Zhaoyuan Gong, Senior Research Scientist of the MRPAD Unit at zhaoyuan.gong@nih.gov.

The NIH is an equal opportunity employer, and applicants from all backgrounds, including minorities and women, are strongly encouraged to apply.