

Position Announcement: Post-Doctoral Research Associate (Neuroscience/Computational Neuroimaging)

Lab Name: Medical Imaging Informatics & Artificial Intelligence (MedAI) Team

Position Title: Post-Doctoral Research Associate (Neuroscience & Computational Neuroimaging)

Reports to: Principal Investigator (Duygu Tosun)

Mentorship Team: Dr. Duygu Tosun (UC San Francisco – Radiology), Dr. Oliver Robinson (Imperial College London – Molecular Epidemiology)

Location: UCSF (Requires ability to work independently in a remote/virtual collaborative environment)

Position Definition:

The Medical Imaging Informatics & Artificial Intelligence ([MedAI](#)) team at UCSF is seeking a talented, highly motivated full-time Post-Doctoral Research Associate to actively drive the computational neuroscience modules of the [ATLAS](#) (Amyloid-to-Tau Latency Assessment Score) Consortium. Funded by the prestigious [Dementia Frontiers Fund](#), this trans-Atlantic initiative brings together world-leading experts across the US, UK, and Spain to develop dynamic, time-to-event prognostic frameworks for Alzheimer's Disease.

As a primary analytical driver on this team, you will apply advanced multi-modal, systems biology approaches to shift the field from static biomarker staging to predicting individualized disease progression. You will leverage massive, harmonized global datasets – encompassing longitudinal fluid biomarkers (plasma, CSF), brain MRI (T1, FLAIR), PET, multi-omics, and neuropathology – to build machine learning-based models that predict disease tempo at a single-case level.

Given the geographically distributed nature of this international consortium, this role requires exceptional independence, self-direction, and the ability to thrive in a remote, virtual collaborative environment.

Essential Functions:

- **Multi-Modal Data Integration:** Collaborate seamlessly with an international team of biostatisticians and multi-omics postdocs to integrate neuroimaging and latency models with systemic biological aging and high-dimensional proteomic networks.
- **AI-Driven Pathology Imputation:** Train and deploy advanced artificial intelligence and machine learning (AI/ML) classifiers on structural MRI (T1-weighted and FLAIR) to non-invasively impute the presence of hidden, co-

occurring neurodegenerative pathologies against autopsy-confirmed ground truth datasets.

- **Scientific Dissemination:** Serve as a lead/first author on critical methodological and clinical publications. Communicate complex findings clearly to domestic and international collaborators and present at major global conferences (e.g., AAIC, CTAD, ADPD).
- **Patient & Public Integration:** Participate in our Community-Scientist Partnership Group (CSPG) panels to learn how to ethically and empathetically translate complex computational prognostic predictions into patient-centered clinical tools.
- **Data Stewardship:** Maintain high levels of quality control across all complex, harmonized datasets and organize confidential project materials.

Job Requirements:

- Minimum education: PhD or equivalent doctorate in neuroscience, neuroimaging, computational biology, bioengineering, or closely related field, awarded within the past three years.
- Minimum experience: 2-5 years of relevant research experience in the field
- Required skills: Demonstrated expertise in complex statistical analysis, machine learning/artificial intelligence, project management, and scientific research. Exceptional written and oral communication, organization, planning, and problem-solving skills.

Preferred Qualifications:

- Extensive experience analyzing Alzheimer's Disease neuroimaging and fluid biomarkers, with a strong understanding of neurodegenerative disease pathophysiology.
- Proven experience in machine learning-based computational modeling (e.g., Bayesian inference, LASSO, deep learning architectures).
- High competence in handling, harmonizing, and analyzing large, complex datasets (e.g., ADNI, ADSP-PHC).
- Advanced coding proficiency in Bash, MATLAB, Python, and/or R.
- A strong, demonstrated publication record and the ability to work independently.
- Excellent organizational skills with meticulous attention to detail and the ability to quickly prioritize work assignments to meet grant deadlines.

Career Development & Mentorship

The postdoctoral scholar will have the opportunity to work directly with a highly synergistic international team spanning computational neuroimaging, multi-omics, epidemiology, translational genomics.

The ATLAS Consortium is designed as a high-impact incubator for the next generation of dementia research leaders. You will be supported by a structured Individual

Development Plan (IDP) reviewed quarterly, gain cross-disciplinary training at the intersection of computational neuroimaging and bioinformatics, and receive fully sponsored opportunities to present your findings on international stages. The postdoc will be trained in conducting and presenting research, building regular collaboration with leading biostatisticians and neuroscientists, publishing papers in application and methodology, and creating software for dissemination. Furthermore, the postdoc will be offered mentored opportunities to participate in grant writing as desired to foster their trajectory toward independent research leadership.

Working Conditions/Environment:

We offer a casual yet highly professional work environment where attention to detail and the ability to meet deadlines are absolute requirements. The Post-Doctoral Associate must be adaptable and comfortable working closely with a prolific, high-energy Principal Investigator and a globally distributed team with complex scheduling needs. All employees are obligated to meet the highest ethical standards with respect to accuracy, conflicts of interest, intellectual property rights, data confidentiality, and respect for information sources and readers. Work involves sustained posture in a seated position and prolonged use of a computer terminal.

Application Instructions

To apply, please email pamela.thropp@ucsf.edu with the subject line "ATLAS NeuroPostdoc" and include the following:

- Most recent CV
- A writing sample (e.g., a published or an arXiv paper)
- Contact information for 2–3 references