

PhD or PostDoc Position

for longitudinal disease trajectory modelling in
neurological diseases
(e.g. Alzheimers' Disease, Long COVID)

The Hertie Institute for Clinical Brain Research (HIH), together with the University of Tübingen's Neurology Hospital, forms the Center of Neurology. It is dedicated to basic and translational research in neurological diseases. Together with the several other leading neuroscience institutes, it is part of the TuebingenNeuroCampus (TNC), here working closely together also with the German Center for Neurodegenerative Diseases (DZNE). Scientists in the more than 100 active research groups of the TNC pursue theoretical, system-neuroscientific, molecular, and clinical research approaches in their entire breadth using a wide range of methods.

The research division „Translational Genomics of Neurodegenerative Diseases“ of Prof Synofzik is currently looking for a

PhD or PostDoc

About us

The research division „Translational Genomics of Neurodegenerative Diseases“ of Prof. Synofzik focuses on translational research in neurodegenerative diseases, particularly dementias, motor neuron diseases, and genetic ataxias. Special emphasis is placed on early and preclinical stages of these diseases (e.g., subjective cognitive decline in Alzheimer's; presymptomatic frontotemporal dementia; mild stages of Long-COVID). Prof. Synofzik coordinates multiple large trans-European consortia on translational trial-readiness research and participates in Long-COVID research. He leads several national and international longitudinal cohort studies, providing access to multimodal progression datasets of large patient cohorts (500-1000 subjects) with clinical, neuropsychological, imaging, and biomarker data. We offer excellent projects and training in translational research focused on disease progression and therapy development.

With access to extensive multimodal datasets and expertise in clinical, digital-motor, and molecular outcome modeling, our group is dedicated to trial-relevant analyses. This is supported by a wet lab team employing advanced molecular biomarkers for stratification, progression, and target engagement; which directly feed into our large-scale longitudinal datasets

The PhD/PostDoc project

You will be integrated in several translational projects as the lead person to model longitudinal multimodal disease trajectories in some of the - currently most intriguing and impactful - neurological diseases, leveraging large-scale datasets combining clinical, neuropsychological, imaging, and biomarker data.

Your primary focus will be modeling disease trajectories and predictive power of blood biomarkers in the earliest preclinical stages of Alzheimer's Disease - subjective cognitive decline (SCD)- to predict conversion to mild cognitive impairment (MCI) and eventually Alzheimer's Dementia (AD). You will compare - and assess their predictive value- to clinical, neuropsychological and imaging variables to understand why some individuals progress to MCI and AD while others do not. Additionally, you may explore predictive biomarkers for atypical neuropsychological presentations of AD.

In parallel, you will study disease trajectories in post-COVID patients, identifying factors leading to Long-COVID syndrome versus recovery. Using longitudinal datasets, you will analyze clinical, neuropsychological, imaging, and biomarker data to uncover why some individuals develop and sustain Long-COVID while others recover fully.

In all projects, you will work collaboratively with our team and close national and international collaboration expert partners in the respective fields. You will report the results and progress at conferences and scientific journals.

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Your background

- You have a Master's degree/PhD in Neuroscience, Cognitive Science, Psychology, Bioinformatics, Medical Informatics, or related life sciences.
- Strong statistical training and experience, ideally already having worked with types of statistical longitudinal modelling of clinical or other human cohorts (e.g. linear mixed effect models)
- Strong interest in acquiring and advancing methodological skill sets in multimodal longitudinal disease trajectory modelling, with strong translational and clinical focus
- You are well-acquainted with working independently, and finding solutions for hard-to-crack methodological challenges
- You should have good communication skills, attention to detail, and flexibility to work both independently and collaboratively.
- Very good proficiency in English (oral and written) is mandatory.

We offer

We offer exciting, interdisciplinary translational project lines in the field with direct impact on trial-readiness and clinics. You will work with large-scale multimodal longitudinal datasets from fascinating patient cohorts, and shape the field with your own high-impact publications. You will receive the scientific autonomy to design your own research questions and develop novel methodological approaches. Moreover, no data collection or project applications are required, and teaching responsibilities are not a necessary part of the role.

This allows you to fully focus on research and begin with your research projects directly after onboarding.

You will be part of leading national and European research consortia, with strong international collaborative advancement of state-of-the-art methods. PhD supervision is provided in a collaborative, international environment with affiliation to the Graduate Training Center of Neuroscience.

If you are coming from the field of psychology, you will also have the opportunity - based on your preferences - to actively conduct standardized neuropsychological assessments of dementia patients (e.g., AD, FTD) at preclinical and clinical stages as part of our clinical assessment and study team.

This position offers the option for partial remote work ("home office") and some flexibility in working hours, taking into account your preferences.

The position is available immediately. Salary will be determined according to the German collective wage agreement in public service (TVL 13). Appointment is full time and will be initially for three years with the possibility of extension. We give priority to severely disabled applicants with essentially equal qualifications.

Application

If you are interested in this project, please send your full application within one PDF file. This should include:

- Cover letter outlining (i) how you meet the requirements for the position, (ii) relevant details of your past research projects, and (iii) an explanation of how your previous experience lends itself to this PhD research project. (~750-1000 words).
- Curriculum vitae
- Names and email addresses of two professional references (e.g., current or previous research advisors).
- transcripts, your master's thesis and/or publications.

Please send this PDF to:

Mrs Selina Reich (Research Division Prof. Synofzik):
selina.reich@uni-tuebingen.de

Deadline: 28.02.2025

Matthis Synofzik

Head, Research Division Translational Genomics of
Neurodegenerative Diseases

Department of Neurodegenerative Diseases, Hertie Institute for
Clinical Brain Research