**The Centre for Population Neuroscience and Precision Medicine (PONS)
at the Institute of Science and Technology for Brain-inspired Intelligence
(ISTBI), Fudan University, Shanghai (Director: Professor Gunter Schumann)**
is seeking

Full Professors/Associate Professors
and

Postdoctoral research workers

representing key areas of population neuroscience, including neuroimaging analysis, psychology/psychiatry, computer science, epidemiology/environmental systems, and (epi)genomics.

PONS is a newly established centre at ISTBI that thrives to be a worldwide leader in population neuroscience, an emerging discipline investigating the complexity and heterogeneity of behaviour and mental illness on a population level by identifying environmental and genomic factors that shape the structure and function of the human brain.

PONS integrates neuroimaging, cognitive neuroscience, (epi)genomics and epidemiological research with novel tools for environmental assessments, such as ecological momentary assessments using smart phone applications, social media analyses, and satellite-based remote sensing acquisitions. It aims at the identification of markers and brain mechanisms of risk and resilience for mental illness in different environmental contexts, such as pandemics, pollution, climate change, migration or urbanicity. This knowledge will be applied to develop neurobehavioural interventions targeted at causal brain mechanisms for prevention and early intervention of disease on a public health-relevant scale.

PONS is in a unique position to address these challenges. We coordinate a network consisting of cohorts of up to 195.000 people, including >25.000 neuroimaging scans in China, Europe, India and the United States, such as the European **IMAGEN** (https://imagen-europe.com), **STRATIFY** and the Indian **cVEDA** (https://cveda.org) cohort.

PONS works in close partnership with the **Charite** (https://charite.de), one of Europe's largest university hospitals and research institutions, affiliated with Humboldt University and Free University Berlin, which is ranked fifth best hospital in the world and best in Europe (Newsweek 2019/2020).

Our work is embedded in strong international collaborations and partnerships with leading research centres in Europe and the US, for example at Cambridge University, Kings College London and USC in Los Angeles, the TReNDs Centre at Emory University/Georgia Tech/GSU in Atlanta, USA.

ISTBI (https://istbi.fudan.edu.cn/lnen/), established in 2015, is the first scientific research and innovation institution that integrates brain science, artificial intelligence, and brain-like research in China. It leverages Fudan University's multidisciplinary strength in mathematics, computer, information, and life sciences, to carry out original basic research and applied research in brain cognitive mechanisms, neuromorphic simulation, brain-like intelligent algorithms, intelligent diagnosis and treatment of brain diseases, general intelligence and

swarm intelligence. In addition to the PONS Center, ISTBI hosts the Centers for Cognitive Neuroscience, Computational Systems Biology, Artificial Intelligence Algorithms, Neural and Intelligent Engineering, Brain-like Intelligent Transformation and Cooperation, and Human-Computer Interaction. Research of the centres is supported by several technology platforms at its two campuses, Handan and Zhangjian. At its Zhangjian campus ISTBI hosts a Brain Imaging Center with one 7T, one 3T and one 3T-connectome human MRI scanner as well as a 11.7T animal scanner, and a Brain Bank. At its Handan Campus there is a high-performance computing equipment platform, a cognitive neuroscience technology platform, and neural and intelligent engineering platform. ISTBI is leading the science and technology project of 'Basic transformation and application of brain and brain-inspired intelligence' of Shanghai municipality. It is the network unit of the Shanghai Brain Science and Brain-inspired Research Center. ISTBI has formed strong collaborations with Oxford University and Cambridge University.

Fudan University. (https://www.fudan.edu.cn/en/), founded in 1905, is is one of the top five universities in China, and ranked at #34 in QS University Ranking 2021. As a worldwide-leading research university it covers 11 disciplines including medicine and life sciences. In June 2009, Fudan University became the national "overseas high-level talent innovation and entrepreneurship base".

We seek:
Full/Associate Professors for up to five positions, who are scientific and academic leaders of excellent international standards in the fields of neuroimaging analysis, psychology/psychiatry, computer science, epidemiology/environmental systems, or (epi)genomics. Postholders will develop world class research and international leadership in the emerging discipline of population neuroscience through interdisciplinary research, including with other departments at ISTBI, as well as international partners. Postholders will play an integral role in the Shanghai Brain Center by providing a link between clinical and epidemiological cohorts, and basic neuroscience research. To promote international integration, we encourage joint appointments with leading universities abroad and will discuss conditions on an individual basis. We provide sufficient research start-up fees. According to the subject direction and work needs, the Institute will incrementally fund research funds and be equipped with research assistants.
Postdoctoral fellows (i) to develop the framework of a novel psychiatric taxonomy based on quantifiable neurobehavioural measures by relating functional and structural neuroimaging measures as well as (epi-) genomic and environmental characterisations to behavioural symptom groups in both cross-sectional and longitudinal data. The work will involve an exceptional understanding of the neural correlates of behaviour, and extensive experience in the analysis of neuroimaging data using advanced statistics. (ii) to identify risk constellations and neurobehavioral trajectories for mental disorders and their moderation by global environmental challenges. The research will involve comparative analyses of large scale behavioural neuroimaging datasets in Europe, India, China and USA. Applying advanced statistical methods and innovative methodology, such as remote sensing satellite data, the project seeks to investigate how environmental challenges associated with urbanisation, climate change, pollution or pandemics shape brain structure/function and behaviour.
Postdoctoral Profile:

- PhD in psychology, neuroscience, sociology, computer science or a related discipline - awarded, or thesis submitted.

- Experience in imaging genetics and behavioural research.

- Experience in multimodal analyses of behavioural assessments, neuroimaging and –omics data using advanced statistics.

- Evidence of the ability to publish in high-impact scientific journal.

- Excellent written and verbal communication.

- Professional and enthusiastic.

Salary & Benefits:

The university will provide internationally highly competitive salaries and housing allowances, various insurances and housing provision funds in accordance with the relevant national and Shanghai policies. There is an opportunity to work during part of the project at the German site of the PONS centre at the Charite in Berlin, Germany.

Application:

- Applicants should send the application materials to istbi@fudan.edu.cn, and the subject of the email should indicate the position + name. Application information includes:

- Cover letter, including research plan;

- English resume, including a list of published articles and contact information of at least five professors who can serve as certifiers;

- Five representative works (including journal articles, monographs, and patents;

- The highest degree certificate;

Contact information:

For questions, please contact Professor Gunter Schumann, email: gunter.schumann1961@gmail.com and Professor Jia Tianye, email: tianyejia@fudan.edu.cn, Yanting Gong, email: gongyanting9458@163.com