Andreas Reif
University Hospital of Frankfurt, Frankfurt am Main, Germany

Description of organisation and summary of experience relevant to the project

The Department of Psychiatry, Psychosomatics and Psychotherapy at the University Hospital of Frankfurt (Head: Prof. Dr. A. Reif) is uniquely and ideally suited to carry out translational research in psychiatry. Key research questions revolve around developmental psychiatry (in close collaboration with the Department for Child and Adolescent Psychiatry; Head: Prof. Dr. C.M. Freitag), precision medicine approaches in psychiatry, and translational psychiatry with focus on the pathophysiology of ADHD, bipolar disorder and schizophrenia. On the one hand, there is access to large patient samples, as the Department features 150 in-patient beds, 30 day patients, and large out-patient facilities specialised for patients suffering from ADHD, affective disorders and psychoses. Beyond treatment as usual, there is an extensive and elaborate clinical research framework including early recognition of psychiatric disorders, cognitive remediation, long-term follow-up of patients including neuropsychological /-imaging examinations and fluid biomarkers as also evidenced by participation in multi-site studies such as the recently funded BipoLife network. On the other hand, the Department features a fully equipped laboratory focusing on molecular biology and animal behaviour. On site, high throughput genotyping methods are available. An S2 safety level cell culture laboratory with state-of-the-art microscopy has been used to establish a method to re-program human fibroblasts to hiPSCs, which are then further differentiated into neurons. For preclinical experiments the Department features two laboratories (located at the University's central animal housing facility) that are fully equipped for automatized behavioural assessment of mice. The facilities are run by an excellent staff of scientists with an interdisciplinary background. Genetic manipulation of mice can either be applied by transgenic methods or by stereotaxic delivery of viral vectors (adeno associated virus) as established on site. Taken together, the Department features all pertinent methodological and logistical requirements, along with the necessary personal expertise, to examine the functional consequences of candidate molecule changes on the neurobiological and behavioural level in mice and, at the same time, recruit a substantial number of human risk variant carriers for further characterization, specifically, the harvest of human fibroblasts that then can be further processed on site.