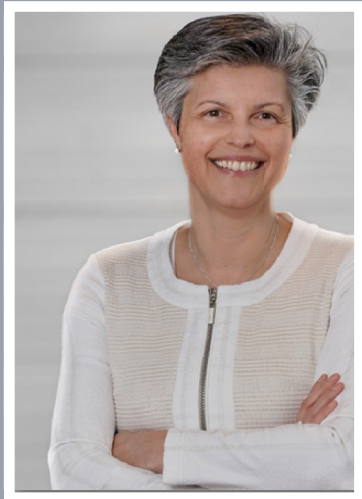


**KEYNOTE
SEMINAR SERIES**

Invitée par Barbara Bardoni :

Pr. Barbara Franke
Radboud University



**From Big Data to biological pathways
in psychiatric neurodevelopmental dis-
orders - attention-deficit/hyperactivity
disorder as an example**

Among persons with attention-deficit/hyperactivity disorder (ADHD), some thrive, but most have difficult lives, characterized by social and professional problems as well as mental and somatic comorbidity. The current concept of ADHD is highly controversial, with discussions in society about over- and underdiagnosis in different population groups (e.g. females across the lifespan and adults), labeling and overmedicalizing children, and stigma attached to the diagnosis. A lack of objective (bio)markers reduces trust in the diagnosis.

To better understand what ADHD is biologically, molecular research of this condition has been ongoing for over 30 years. The finding that ADHD is a heritable condition formed an important milestone. However, ADHD - like many other psychiatric conditions - is polygenic and multifactorial in its etiology. In 2019, the first genome-wide significant genetic risk loci for ADHD were published. Building on such research, and thanks to newly available technology and Big Data, the pace of discovery in the biological research has increased tremendously over the past few years, as I will discuss in my lecture.

The identification of genetic risk loci is clearly only a first step in understanding biological pathways. In my lab, and often in collaboration with local and (inter)national colleagues, we use a set of complementary data science and experimental approaches to extract biological meaning from the findings of large-scale gene-finding studies. This set includes bioinformatics approaches, research in animal and human cellular model systems, as well as neuroimaging genetics analyses. In this presentation, I will take you along a number of examples of studies using such approaches and discuss the resulting insights into the biological mechanisms involved in ADHD across the lifespan and its co-occurrence with other conditions.

Barbara Franke is Professor of Molecular Psychiatry at Radboud University in Nijmegen, The Netherlands. She is the head of the Department of Medical Neuroscience at Radboud University Medical Center (Radboudumc) and a member of the Strategy Board of the Donders Institute for Brain, Cognition and Behaviour. She is an elected fellow of the Royal Netherlands Academy of Arts and Sciences, the Royal Holland Society of Sciences and Humanities, and Academia Europaea.

**Vendredi 06 septembre 2024 à 11h
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