



The Jacobs Center
Genetics and Social Science Series

DR. ELISABETH BINDER

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**Molecular mechanisms of gene x stress interactions:
Implications for psychiatric disorders**

Epidemiological studies indicate a combined contribution of genetic and environmental factors in the risk for disease, including gene by environment interactions (GxE). In particular, adverse life events -- occurring from pregnancy to adulthood -- are major risk factors for a number of psychiatric disorders and their long term impact is likely moderated by genetic factors. Elucidating the mechanisms by which the interplay of genetic and environmental factors shape risk and resilience to disease may help understand the biology of psychiatric disorders. This presentation will focus on one putative biological mechanism: the ability of glucocorticoids (GC), released in response to stress, to trigger a cascade of adaptive genomic and non-genomic processes through glucocorticoid receptor (GR) activation. This presentation will include data from human longitudinal cohorts with information on prenatal stress, human hippocampal cell lines as well as from epidemiologic and clinical samples. It will highlight how genetic variants together with the environment moderate the genome by altering gene transcription as well as epigenetic mechanisms, including DNA methylation and 3D chromatin structure and how these may relate to altered cellular function, developmental trajectories and increased risk for psychiatric disorders.

Finally, this presentation will describe how identifying such sequences of events may allow the redefinition of current diagnostic categories with possibilities for new preventive and therapeutic approaches in psychiatry.

Friday, May 5, 2017 - 11:00 h

At the Jacobs Center for Productive Youth Development
Andreasstrasse 15, 4th floor, AND 4.19, 8050 Zürich

*Individual meetings with Dr. Elisabeth Binder are available,
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