The DZNE site Goettingen, is a natural science institute for scientific research emphasising on neurodegenerative diseases. The main focus of scientific research is to understand the underlying mechanisms leading to neurodegenerative diseases, in particular Alzheimer’s disease. Based on this, the DZNE site Goettingen, will expedite the development of biomarkers as well as therapeutic approaches for dementia. One central aim is to analyze the influence of gene-environment interaction for sporadic neurodegenerative diseases in view of the fact that especially complex neurodegenerative diseases such as Alzheimer’s disease are multifactorial and polygenetic. The etiology of such diseases is significantly influenced by environmental factors. Gene-environment interaction is key-regulated and mediated by epigenetic processes such as DNA-methylation, histone-modification and non-coding RNA, so the deregulation of epigenetic processes is decisively involved in the pathogenesis of neurodegenerative diseases.
This may lead to identification of new effective therapeutic strategies and therefore, DZNE site Goettingen, is segmented in four fields of research:

1. The identification of disease-allied epigenetic signature by analyzing patient’s material as well as suitable animal models. Complete genomes and epigenomes will be examined for example by using new methods as “massive parallel sequencing”.
2. Complex interaction of epigenetic processes, genetic risks and proteome homeostasis will be analyzed by system biological approaches as well as computer-based methods.
3. By using the most modern methods of
molecular biology, structure biology and molecular imaging, the disease processes will be investigated in a mechanistic way.

4. This field of research is dedicated explicitly to the translation of the research outcome into clinical application.

Contact and map to DZNE Göttingen