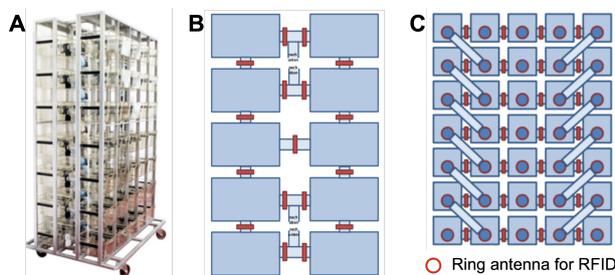


We are looking for **2 Ph.D. students** for our project **THE MOUSE IN THE SUPERMARKET**.

Candidates should bring an interest in brain plasticity, a background in (neuro-) biology and experience in (bio-) mathematics or informatics and – or vice versa.

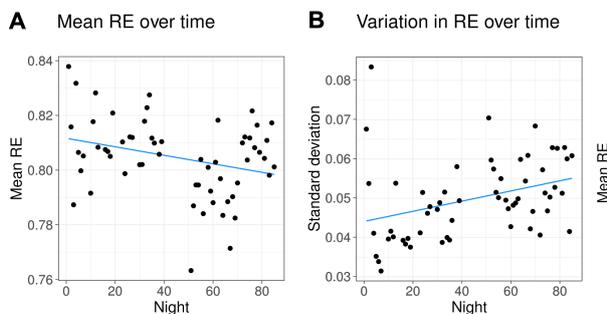
Why are individuals different and age differently? Which part of that individuality is dependent on our own activities and actions? To address that question we study how activity-dependent plasticity in the adult hippocampus contributes to structural and functional individuality. Our hypothesis is that this individualization is a key factor is maintaining the brain flexible, adaptive and resilient over the course of life.

We use a unique, highly acclaimed experimental set-up that allows us the continuous behavioral monitoring of large cohorts of mice over months (*upper Figure*).



With this tool we discovered that even when the genetic background and the nominal outer environment are kept constraint, variability increases and individuality emerges (*lower Figure*). Developing stable behavioral trajectories correlates with the generation of new neurons in the adult hippocampus ('adult neurogenesis') as prominent sign of activity-dependent brain plasticity and other measures, e.g. in epigenetics, behavior and MRI imaging.

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The project's funny title arises from the name of our collaborative grant (VolkswagenStiftung) that brings together the team in Dresden with expert groups in Saarbrücken (where Antonio Krüger and his team at the German Center for Artificial Intelligence use the tracking of people and goods to develop the supermarket of the future) and Berlin (where Ulman Lindenberger

and Andreas Brandmaier develop methods for the analysis and modeling of longitudinal studies). In your Ph.D. you will be part of this collaboration and spent time at the partner labs.

The research group "Adult Neurogenesis" is led by Gerd Kempermann. He is professor at the CRTD and the head of the Dresden site of the German Center for Neurodegenerative disease (DZNE). Medical doctor by training, he did his postdoc with Fred H. Gage at the Salk Institute in La Jolla, where he discovered that both environmental enrichment and physical activity increase adult hippocampal neurogenesis. He has authored and co-authored more than 150 publications, that have attracted more than 25 000 citations.

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