

LINE

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CIRCUITS AND SYSTEMS
NEUROSCIENCE

Using a variety of cellular and molecular tools, combined with electrophysiology and behavior, we are interested in understanding how external stimuli are transformed by our neural circuits to generate behaviors. To date, we have found that “biomarkers” of Alzheimer’s disease present in the degus rodent brain during aging are also present in the retina, affecting its normal physiological function. We are also interested in identifying the mechanisms by which the capacity for neuronal plasticity is altered within different neuronal circuits following stress in developing rodents. Of note, we found a differential participation of AMPA and NMDA receptors. By recording neuronal populations and single cell units, combined with histological and imaging techniques, we are studying the encoding of sensory information in both the retina and brain circuits like cortex and hippocampus. In the olfactory system (olfactory bulb and cerebrum teleost), we investigate the role of ubiquitous field potential oscillations, as well as a new regulatory pathway mediated by nitric oxide. Finally, we are interested in investigating the cellular and molecular mechanisms that underlie specific neurological diseases, such as mood disorders, in order to provide new knowledge that will facilitate the development of new therapies for the treatment of these diseases.

PRINCIPAL INVESTIGATORS

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Dr. Chiayu Q. Chiu, the first Researcher Leader of CINV-Tandem Max Planck Research Group also participate in this Line.

SELECTED RECENT PUBLICATIONS

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