

# ***Molecular Neurobiology***

## **Research Summary:**

The Storkebaum lab combines *Drosophila* and mouse genetics to decipher the molecular mechanisms underlying motor neurodegenerative disorders. Our primary focus is on Charcot-Marie-Tooth (CMT) peripheral neuropathy caused by heterozygous mutations in cytoplasmic tRNA synthetases, and on amyotrophic lateral sclerosis (ALS) caused by heterozygous mutations in the DNA/RNA-binding protein FUS.

We use the fruit fly, *Drosophila melanogaster*, as an exploratory genetic model for these diseases, as it is ideally suited to conduct genetic screens, which allow for the identification of putative disease-modifying genes. Identified modifiers are subsequently validated, not only in *Drosophila*, but also in mouse models, as these are the most disease-relevant preclinical models currently available. This approach should allow us to gain novel insights into the molecular pathogenesis, and may result in the identification of therapeutic targets for these incurable neurodegenerative disorders.

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