



# Seminar series

**Thursday  
5 March 2020  
1.00 pm**



## **Valérie Hilgers**

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### **Regulation and function of nervous system specific mRNA isoforms**

The production of alternative RNA variants contributes to the tissue-specific regulation of gene expression. In the nervous system, a systematic shift towards more distal 3' processing sites generates hundreds of messenger RNAs with substantially extended 3' ends. These complex patterns of alternative RNA processing have been reported across metazoans and are crucial for proper nervous system development and function. In our lab, we use the model system *Drosophila* to study the mechanism of synthesis, the regulation, and the function of neuron-specific mRNA isoforms.

We discovered that the distinct mRNA 3' end signature of neurons is entirely dependent on the activity of two highly conserved RNA-binding proteins, ELAV and FNE, and describe a novel mode of functional rescue to safeguard the neuronal transcriptome.

Neuron-specific mRNA isoforms typically harbour an extended 3' untranslated region (3' UTR), which confers a unique potential for posttranscriptional regulation. We study the involvement of these transcript regions in the targeted localization of mRNAs, as well as their role in synaptic function in vivo.

Host: Prof. Dr. Patrick Cramer  
Place: Max Planck Institute for Biophysical Chemistry,  
Department of Molecular Biology  
T4, 2<sup>nd</sup> floor, Seminar Room