

Body



UCSF colleagues Dr. Martin Kampmann ^[1] and Dr. James Fraser ^[2] were awarded a New Frontier Research Award from the Program for Breakthrough Biomedical Research to pioneer a new technology platform. Using deep mutational scanning for the first time in human neurons, they will investigate how sequence variation in proteins affects their aggregation and toxicity, processes relevant to neurodegenerative diseases. Specific mutations in proteins such as tau and alpha-synuclein are known to cause heritable forms of diseases like Alzheimer's disease and Parkinson's disease. The proposed platform will make it possible to systematically uncover the significance of all possible mutations. Biophysical and structural approaches will be used to further characterize the behavior of mutant proteins. Together, these approaches will yield a mechanistic understanding of the underlying processes and may pave the way for new therapeutic strategies. Dr. Kampmann and Dr. Fraser have previously conducted deep mutational scanning in budding yeast as part of a class for first-year Biophysics, Bioinformatics, and Chemistry/Chemical Biology graduate students. ^[3] Postdoctoral fellow Dr. Avi Samelson ^[4] will be spearheading the project in the Kampmann Lab.

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Links

- [1] <http://kampmannlab.ucsf.edu>
- [2] <http://fraserlab.com>
- [3] <http://kampmannlab.ucsf.edu/pubs-2017>
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