



## Chemistry Department e-Seminar

Friday, 26.11.2021 at 15:40 using Zoom

Meeting ID: 991 2884 6962

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### Identification of Host Pathways Involved in Botulinum Neurotoxin Poisoning of Motor Neurons



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**Abstract:** In this talk, I will first provide an overview of my research program. We carry out three lines of research in the field of molecular neurobiology, utilizing embryonic stem cell and induced pluripotent stem cell-derived neuronal models. These are i) enhancement of neurotrophin signaling against neurodegenerative conditions, ii) examining whether neurotrophin receptor signaling and Estrogen receptor signaling work in concert, potentially in a sex-specific manner, in neuroprotection in the context of neurodegenerative diseases, and iii) Botulinum Neurotoxin (BoNT) research and drug discovery. This seminar will mainly focus on our efforts on the BoNT studies. These toxins target motor neurons and can cause life-threatening disease botulism. Currently, there are no drugs to inhibit BoNTs once they are internalized into the cells. I will discuss our efforts on the elucidation of critical molecular mechanisms involved in intoxication and/or recovery. Better understanding of the neuronal processes involved in BoNT intoxication and/or clearance can lead to development of effective countermeasures against these toxins