PROGRESS IN NEUROSCIENCE PINS

Seminar Series of the
Brain & Mind Research Institute
Weill Cornell Medical College (WCMC)
&
The Graduate Program in Neuroscience of
WCMC and Sloan Kettering Institute

Thursday, 2/26/15, 4 PM, coffee at 3:45 PM
Weill Auditorium

"Pathways to Parkinsonism"

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Abstract:

Genetics has been shown to contribute to the etiopathogenesis of Parkinson's disease (PD) in several ways, including Mendelian genes and risk factors for sporadic disease nominated by GWAS. I will focus on one gene, LRRK2, that is important in both familial and sporadic PD. We have shown that LRRK2 is an enzyme and outlined how mutations affect this activity. We have also worked on the cell biology of LRRK2 and shown some ways in which it is regulated and what it does in a cellular context, which is to promote vesicle turnover by autophagy. My talk will outline not just what we've learned about LRRK2, but also how integrated multiple large scale datasets can support investigations into human disease.

Recent relevant publications:

Skibinski, G, Nakamura, K, Cookson, M. R., Finkbeiner, S, "Mutant LRRK2 Toxicity in Neurons Depends on LRRK2 Levels and Synuclein But Not Kinase Activity or Inclusion Bodies." J Neuroscience (34)418-433, (2014).

Chia, R et al "Phosphorylation of LRRK2 by casein kinase 1 regulates *trans*-Golgi clustering via differential interaction with ARHGEF7." Nature Communications, 5(5827):DOI10.1038 (2014)

Beilina, A. et al "Unbiased screen for interactors of leucine-rich repeat kinase 2 supports a common pathway for sporadic and familial Parkinson disease" PNAS (2013).

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