Ph.D. Candidacy proposal:

Chris Neufeldt

Tentative exam dates June 28-30

Nup358 dependant sumoylation as a negative regulator of host immune responses.

Several nuclear pore proteins (Nup’s) have been observed to change in response to immune stimulation and viral infection. Recent findings have indicated an increase in Nup358 transcript levels upon interferon treatment of primary macrophages and HCV infection of HUH7.5 cells. Taking into account Nup358’s previously described function as a SUMO E3 ligase, and the observations that sumoylation of several immune related transcription factors causes their inactivation: I propose that Nup358 is acting as a negative regulator of immune responses. My first aim will be to specifically look at Nup358’s ability to facilitate sumoylation of immune factors that have previously been show to be sumo modified. My second aim will involve an in vivo look at the effects of Nup358 on specific immune responses; utilizing changes in Nup358 levels as well as mutant Nup358. Finally I will utilize Hepatitis C virus to further characterize the role Nup358 is playing in immune responses and in viral infection.

Project 2

A Role for Nuclear pore proteins in positive strand RNA viral infection

All positive