

BIOCHEMISTRY SEMINAR SERIES

Midstream Presentation - Spring 2021



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Quinlan Group

“Utilizing *Drosophila melanogaster* to understand the role of actin dynamics in oogenesis”

The process of egg development, oogenesis, is highly conserved and is crucial for producing offspring. *Drosophila melanogaster* have long served as a model system to understand aspects of egg development including stem cell and germ cell development, meiosis, cell migration, intercellular signaling and mRNA localization. The Quinlan lab studies actin dynamics in the *Drosophila* oocyte. An essential component of oogenesis in *Drosophila* is the presence of a cytoplasmic actin meshwork that persists during mid-oogenesis. This complex actin network is built by the collaboration of actin nucleators, Spire and Cappuccino (Spir and Capu). The composition, organization, stabilization, and removal of the mesh remains unclear. This is in part due to the requirement of actin binding proteins in early oogenesis and an inability to visualize the transition stage, because egg chambers expire *ex vivo* just prior to the removal of the mesh.

In this talk, I will discuss progress that I have made in overcoming these obstacles. I have been developing a long-term *in vivo* imaging method of oogenesis *Drosophila melanogaster* that will allow us to observe and characterize the transition phase. I am also using candidate-based and unbiased genetic screens to identify other key components of the actin mesh. From this work we hope to gain a detailed understanding of the actin mesh that can translate to studies in other organisms and allow for a greater understanding of dynamic actin rearrangements during development.

Friday, May 7, 2021

via Zoom

3:30 pm

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