



**POSTER #15**

## **A CLEM APPROACH TO STUDY CAVEOLAE FORMATION AND THEIR RELATIONSHIP WITH OTHER CELLULAR ORGANELLES**

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Caveolin and cavin proteins are the defining components of Caveolae, plasma membrane invaginations linked to a range of cellular processes, such as signaling, lipid homeostasis and endocytosis. Yet, the relationship between caveolae structure and function remains elusive. Moreover, the interaction between caveolae and other cellular organelles is not fully understood. We will present a correlative light and 3D electron microscopy approach to study the mechanism of caveolae formation and the relationship between caveolae and other cellular organelles. We use this approach to understand the relationship between caveolae and mitochondria by visualizing the spatial organization and dynamics of caveolae-mitochondria contact sites. We focus on this interaction due to the significance of mitochondrial function to cell physiology and based on the observation that caveolin was detected in mitochondria and found to affect mitochondrial energy production and stress response. In addition, mitochondrial factors were identified in caveolae, and the two organelles were sporadically observed in close proximity. However, despite this breath of knowledge, the full nature of their relationship remains unclear. Obtaining a better understanding of this basic cellular interaction will help elucidate the connection between mitochondrial function and cell signaling.