



Spring 2025

**Biochemistry and Molecular Biology
Brown Bag Series**

Rangarirai Makuku

Graduate Student

*“E3 Ligase Crosstalk: The interplay
between FBXL16 and FBXO45 in regulating ER α
Stability in ER+ Breast Cancer”*

Tuesday, March 25, 2025

11:00 AM

Location 125 Oelman Hall

Lab: Weiwen Long, Ph.D.



Abstract

Breast cancer is the most prevalent non-skin malignancy among women in the United States. Estrogen receptor alpha (ER α) plays a critical role in the initiation and progression of estrogen receptor-positive breast cancer (ER+ BC). Selective estrogen receptor degraders (SERDs), such as fulvestrant, are commonly used to treat metastatic ER+ BC; however, resistance to these therapies remains a significant challenge. F-box protein 45 (FBXO45), an E3 ubiquitin ligase, has been shown to mediate ER α degradation, yet its functional role in ER+ BC is not well understood. Previously, we demonstrated that another F-Box protein, F-box and leucine-rich repeat protein 16 (FBXL16), stabilizes ER α in ER+ BC, though the precise mechanism underlying this effect remains unclear. Our preliminary results suggest that FBXL16 regulates ER α stability possibly by inhibiting FBXO45's E3 ligase activity, thereby preventing ER α degradation in ER+ BC.