



## Discovery Science Emerging Scholars Lecture

# “The Role of Rhomboid Pseudoproteases in ERADicating Misfolded Membrane Substrates”

My newly-established lab strives to understand the basic biology of endoplasmic reticulum-associated protein degradation (ERAD), a critical pathway which removes misfolded proteins both from the ER membrane and lumen. Exporting misfolded substrates from the ER for later cytosolic degradation is a universal feature of eukaryotic cells. Despite intense efforts, the mechanism of ER export for integral membrane substrates has remained contentious and unclear. Using a self-ubiquitinating substrate (SUS) and the new microarray library to query all yeast genes, I discovered a central factor in protein export, the rhomboid protein Dfm1. Indeed, Dfm1 is required for removing multiple types of misfolded integral membrane substrates. Accordingly, we are interested in studying the mammalian retrotranslocation pathway in both a cellular and organismal context. Knowledge of the proteins involved in the universal and critical process of retrotranslocation will open avenues for therapeutic approaches to attack diseases upregulated in retrotranslocation (cancers), or to ameliorate diseases where proteins are prematurely retrotranslocated (cystic fibrosis).



**Sonya Neal, Ph.D.**

Assistant Professor

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**Thursday**  
**April 9, 2020**  
**4:00 pm**

**1220 MRB III**

**Refreshments will be served!**

This lecture series features the most promising young scientists who are making notable discoveries as postdoctoral fellows or early career faculty.

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