

## **BCH 252 Seminar Series**



**Dr. Joseph Genereux, Assistant  
Professor of Chemistry, Department of  
Chemistry, UC Riverside**

**Seminar Title: "Quantifying Mistargeted  
Secretory Protein in Living Cells"**

**Abstract:** Secretory proteins are canonically targeted to the endoplasmic reticulum (ER). During ER stress, preemptive quality control (preQC) protects the ER by preventing nascent protein import into the ER, presenting a threat to cytosolic proteostasis. This process has been difficult to observe in living cells, where mistargeted protein populations can be small compared to the amount of properly targeted protein. We have demonstrated that peroxidase proximity labeling is an effective approach for quantifying mistargeted secretory proteins in the cytosol. In combination with mass spectrometry, our approach is simple, quantitative, and inherently multiplexed. Using this approach, we have identified factors sufficient to induce protein mistargeting, including the poorly characterized ER Hsp70 Hspa13, as well as a previously unreported pathway for triaging secretory protein degradation in the cytosol.

**ZOOM Link:** <https://ucr.zoom.us/j/92569273073>

**Meeting ID:** 925 6927 3073

**Passcode:** 689525

**Tuesday, February 7th, 2023**

**12:00 p.m. - 12:50 p.m. PST**

**Hosts: Dr. Richard Debus & Dr. Russ Hille**