



Seminar Announcement

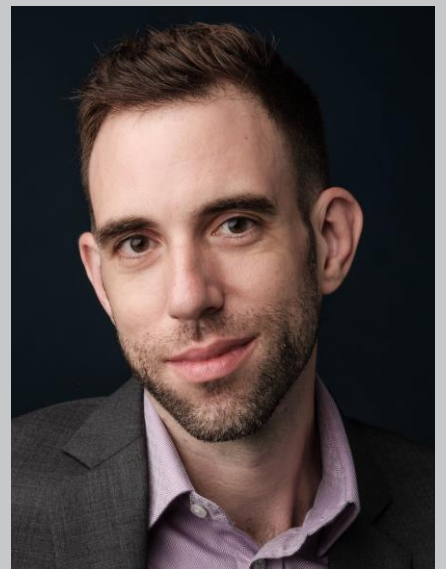
Endoplasmic reticulum stress response deploys divergent transcriptional programs depending on the source of stress

Date: 16 October 2020, Friday

Time: 4pm

Venue: Classroom 1, SBS

Membrane integrity at the endoplasmic reticulum (ER) is tightly regulated, and its disturbance is implicated in metabolic diseases. Using an engineered sensor that activates the unfolded protein response (UPR) exclusively when normal ER membrane lipid composition is compromised, we identified pathways beyond lipid metabolism that are necessary to maintain ER integrity in yeast and in *C. elegans*. To systematically validate yeast mutants that disrupt ER membrane homeostasis, we identified a lipid bilayer stress (LBS) sensor in the UPR transducer protein Ire1, located at the interface of the amphipathic and transmembrane helices. Furthermore, transcriptome and chromatin immunoprecipitation analyses pinpoint the UPR as a broad-spectrum compensatory response wherein LBS and proteotoxic stress deploy divergent transcriptional UPR programs. Together, these findings reveal the UPR program as the sum of two independent stress responses, an insight that could be exploited for future therapeutic intervention.



Speaker:

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