

Investigating She3 Protein Localization and Function in *Candida albicans*

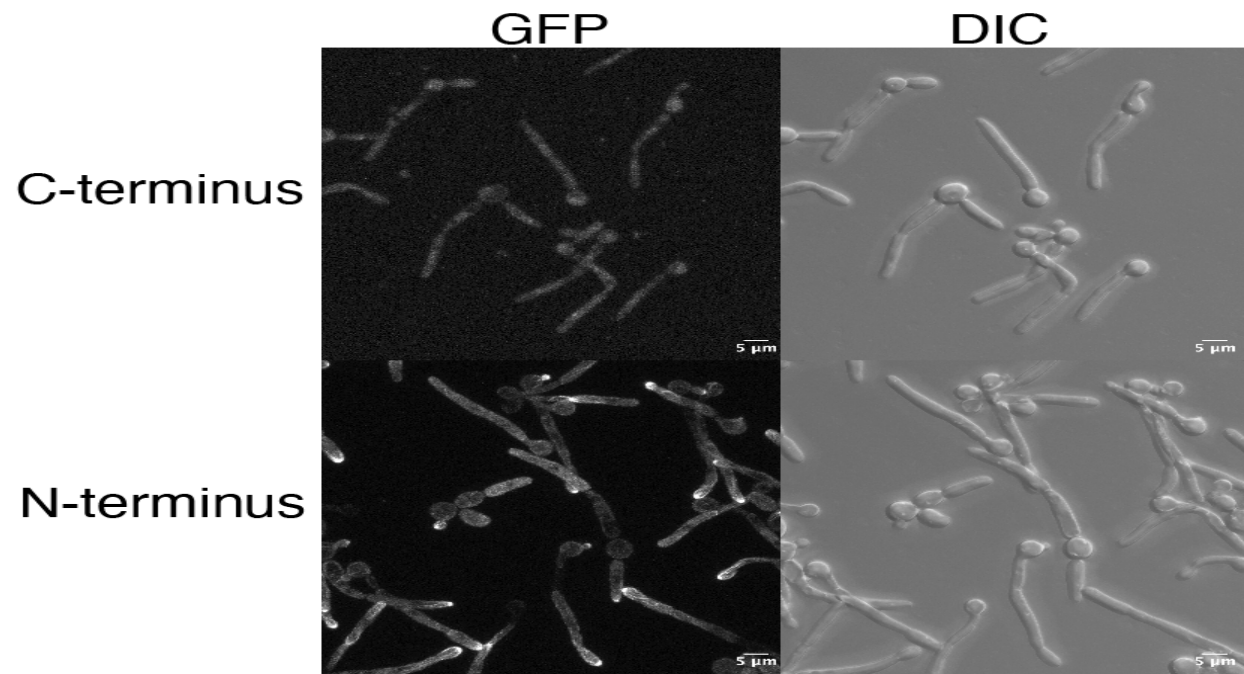
Mukudzei Seremani, Class of 2028

This summer, I worked in Professor Anne McBride's lab to investigate the localization and role of the She3 protein in *Candida albicans*. She3 is an RNA-binding protein involved in the asymmetric transport of mRNAs and plays an important role in hyphal development and cell polarity in fungi. Our project aimed to understand where She3 localizes in yeast and hyphal cells and to determine whether tagging the protein at the N- or C-terminus affects its function.

To begin, I reviewed key literature and used AlphaFold and SnapGene to plan a GFP-tagged version of She3. I designed and ordered primers, carried out PCR and HiFi assembly, and cloned the constructs into plasmids. After confirming successful cloning and transformation in *E. coli*, we prepared yeast strains for expression analysis. I performed a Western blot to verify protein production and used fluorescence microscopy to observe She3 localization during hyphal induction.

A key part of my project included troubleshooting multiple molecular biology techniques such as PCR optimization, gel purification, and DAPI staining. I also learned how to perform immunoprecipitation and zinc staining to detect protein-protein interactions. Despite challenges with DAPI staining, we successfully visualized She3 expression and began comparing its localization between the two tagging strategies.

This experience sharpened my lab skills, taught me how to design and troubleshoot experiments independently, and deepened my understanding of fungal cell biology. I'm grateful to have contributed to a broader understanding of mRNA localization mechanisms and their role in fungal morphogenesis.



Faculty Mentor: Professor Anne McBride