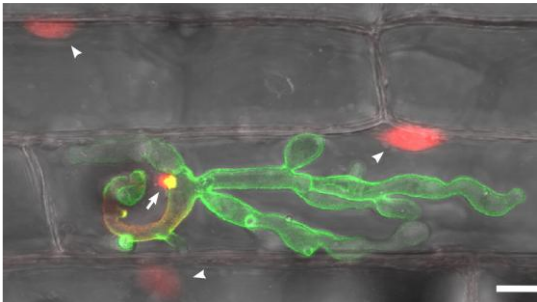




Research Theme: Cell biology / Functional genomics
PhD Research Project Title: Heterogeneity of pathogen cells during colonization
Scholarship category (Please indicate the source of funding for this project): SBS Research Student Scholarship (for SBS faculty only)
Principal Investigator/Supervisor: Dr. Tang Bozeng
Co-supervisor/ Collaborator(s) (if any):
<p style="text-align: center;">Project Description</p> <p>a) Background: To cause disease, fungal pathogens undergo highly sophisticated morphogenesis. It begins when spores land on the surface of plants and differentiate into specialized structures called appressoria, which generate enormous turgor pressure to physically penetrate the host cell. The pathogen then forms invasive hyphae that suppress plant immunity, facilitate nutrient uptake, and colonization cross the entire host tissue. This process is tightly associated with multiple biological pathways—G-protein signaling, autophagy, organelles transport, and secretion of virulence proteins. However, how these pathways are orchestrated at the single-cell level during morphogenesis—and how their key components are controlled both spatially and temporally—remains unclear.</p> <p>b) Proposed work: In this program, we will provide intensive training in fungal genetics, cell biology, and bioinformatics to dissect the heterogeneity of fungal pathogen cells during infection. We will spearhead single-cell studies of fungal pathogenesis to achieve high-resolution insights and identify novel molecular targets for preventing crop diseases caused by these pathogens.</p>  <p>c) Preferred skills: Strong interests in plant pathology; A strong curiosity about science; Experience of bioinformatics is a plus, but not compulsory</p>
<p style="text-align: center;">Supervisor contact: If you have questions regarding this project, please email the Principal Investigator: bozeng.tang@ntu.edu.sg</p>
<p style="text-align: center;">SBS contact and how to apply: Associate Chair-Biological Sciences (Graduate Studies): AC-SBS-GS@ntu.edu.sg</p>



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