

<b>Research Theme: Computational Biology; Functional Genomics</b>
<b>Research Project Title: Unravelling metabolic pathways of Singapore flora</b>
<b>Principal Investigator/Supervisor: Asst. Prof. Marek Mutwil</b>
<b>Co-supervisor/ Collaborator(s) (if any):</b>
<p style="text-align: center;"><b>Project Description</b></p> <p><b>a) Background:</b> Plants form the basis of our food, materials, and medicine, but our understanding of them stems mainly from focused studies on a handful of model plants and crops. The tremendously diverse kingdom of plants still holds many uncharacterized genes, pathways, metabolites, and other traits needed to understand their role in the ecosystem and to better repurpose plants to our needs. These deficiencies is mainly due to the lack of gene functional data, expertise in analyzing such data, and lack of access to sufficient plant diversity.</p> <p><b>b) Proposed work:</b> We propose to generate gene expression and metabolite atlases for numerous plants found in Singapore. Together with publicly available data, we will comprise a first-ever comprehensive compendium of gene expression and metabolism for the plant kingdom. We will use a combination of experimental and computational approaches to elucidate the function and evolution of genes, pathways, metabolites, organs, and other traits. This will be a one of a kind approach to understand how plants and their specialized metabolism evolved</p> <p><b>c) Preferred skills:</b> Python programming or other programming language, strong interest in computational biology</p>
<p style="text-align: center;"><b>Supervisor contact:</b> <b>If you have questions regarding this project, please email the Principal Investigator:</b> mutwil@ntu.edu.sg</p>
<p style="text-align: center;"><b>SBS contact and how to apply:</b> Associate Chair-Biological Sciences (Graduate Studies) : <a href="mailto:AC-SBS-GS@ntu.edu.sg">AC-SBS-GS@ntu.edu.sg</a> Please apply at the following: <b>Application portal:</b> <a href="https://venus.wis.ntu.edu.sg/GOAL/OnlineApplicationModule/frmOnlineApplication.ASPX">https://venus.wis.ntu.edu.sg/GOAL/OnlineApplicationModule/frmOnlineApplication.ASPX</a></p>