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| **Research Theme: Computational Biology; Functional Genomics** |
| **PhD Research Project Title:**  Population genomics view to the speciation history of South East Asian flora |
| **Principal Investigator/Supervisor: Asst.Prof. Jarkko Salojarvi** |
| **Co-supervisor/ Collaborator(s) (if any): Gillian Khew NParks** |
| **Project Description**  **a) Background:**  **South East Asia is one of the biodiversity hotspots on Earth. There have been several contributing factors to this biodiversity such as migration from Indian raft and Sahul/Australia, followed by subsequent merging with the existing proto-Malesian flora, as well as fluctuating sea levels which have merged or isolated large land masses. Altogether, SEA region provides a perfect “living laboratory” for studying how speciation occurs and how biodiversity is created.**  **We have recently sequenced the genomes of Bukit Timah flowering plants, which provides a genomic view into the local biodiversity and its evolutionary history. The first set of 500 genomes has been frozen and a first publication is in progress. However, we have additional sequencing data of ca. 300 species encountered later during plant collection process.**  **b) Proposed work:**  **You will establish draft genomes of the ca 300 species from Bukit Timah which were not included in the first round of analyses and estimate their joint phylogeny and speciation times. Population genetics models are able to estimate a rough population history for the species even from a single representative. You will combine this information with other population genetics modeling tools and available historical environmental to study the connection between population size and speciation events to test whether speciation is associated with small population sizes or, in contrast, external gene flow and connectivity with other land areas and populations have a major contribution through interspecific hybridization events.**  **c) Preferred skills: Prior experience on data analysis of sequencing data, preferably in a Linux environment would be a big plus, but not indispensable.** |
| **Supervisor contact:**  **If you have questions regarding this project, please email the Principal Investigator:** |
| **SBS contact and how to apply:**  Associate Chair-Biological Sciences (Graduate Studies) : [AC-SBS-GS@ntu.edu.sg](mailto:AC-SBS-GS@ntu.edu.sg)  Please apply at the following:  **Application portal:** <https://venus.wis.ntu.edu.sg/GOAL/OnlineApplicationModule/frmOnlineApplication.ASPX> |