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| **Research Theme: Computational Biology; Functional Genomics** |
| **PhD Research Project Title:**  **Apoptotic like - programmed cell death (AL-PCD) in *Emiliania huxleyi*** |
| **Scholarship category (Please indicate the source of funding for this project):**  **SBS Research Student Scholarship (for SBS faculty only)** |
| **Principal Investigator/Supervisor: A/Prof Rebecca CASE** |
| **Co-supervisor/ Collaborator(s) (if any):** |
| **Project Description**  **a) Background:**  Apoptosis is thought to be restricted to animals, and multicellular organisms, however, the Case group has recently identified it in the abundant microalga, *E. huxleyi*. AL-PCD in E. huxleyi was first thought to be a response to viruses, however, the Case research team have shown it is a response to bacterial infection. Current research is focused on elucidating the cellular and genetic interaction between E. huxleyi and various Roseobacteraceae species.  **b) Proposed work:**   * Manipulative aquarium experiments on using this unique host-pathogen model * Use of bioactive/pathogen deficient mutants (collaboration with JGI) in manipulative experiments to explore characterise a candidate virulence effector secreted through T4SS * Transcriptomics * PAM fluorometry (PSII function) * Various microscopy and flow cytometry techniques to characterized the cell growth, differentiation and cell death processes   **c) Preferred skills: computation work on data analysis would be a big plus, but not indispensable**   * Undergraduate degree in cell biology or biology * Experience in one or more of the following: cell biology, molecular biology, bioinformatics, -omics |
| **Supervisor contact:**  **If you have questions regarding this project, please email the Principal Investigator:**  rj.case@ntu.edu.sg |
| **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> |