

**Invitation to M.Tech. Thesis Defense of Amit Samal: August 17, 2023 (Thursday): 05:00 PM – 06:00 PM IST**

In Partial Fulfillment of the Requirements for the Degree of

**M.Tech. CB**

**Amit Samal (MT21224)**

Will defend her thesis

**Title: “Meta-analytic investigation of gut microbial community structure identifies a panel of stability-promoting microbiome members consistently reduced with gut inflammation”**

IIIT-D Faculty and Students are invited

**Date: August 17, 2023 (Thursday)
Time:** **05:00 PM – 06:00 PM IST**

**Meeting Link:** [meet.google.com/sng-dqwg-trz](Invitation%20to%20MTech%20Thesis%20Defense%20Amit%20Samal.docx)

**Examiner: Internal:   N. Arul Murugan**

**~~External~~/Internal: Jaspreet Kaur Dhanjal**

**Advisor: Tarini Shankar Ghosh**

**Co-Advisor NA**

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**Abstract**

Inflammatory Bowel Diseases (IBD), encompassing Crohn's Disease (CD) and Intestinal Tuberculosis (ITB), present similar clinical symptoms but require distinct treatment strategies. This study investigates microbiome and mycobiome alterations in both diseases (ITB \& CD) and compares the dysbiosis concerning the controls. The study also investigates the critical role of non-bacterial components, like fungi, in differentiating both diseases. The level of dysbiosis is dissected through a network of co-abundant modules for a set of diagnostic biomarkers and validated globally using >5,400 gut profiles. The central role of disease-specific depleted core microbiomes was verified by analyzing the reproducibility of these taxa in depleted groups across many available disease data sets. The Core Indian gut microbiomes are identified to get the health status of a disease subject. Subsequent investigation of these markers across greater than 5,000 longitudinal gut microbiomes from 12 diverse studies reveals consistently strong positive associations between the abundance of these markers and the long-term stability of the gut microbiome. Our study, for the first time, identifies and highlights the role of specific central taxa as putative protectors against gut inflammation and in promoting the long-term stability of the gut microbiome. These findings can potentially advance the development of specific microbial consortia probiotic supplementations addressing inflammation-associated gut dysbiosis.