

**Invitation to M.Tech. Thesis Defense of Anmol Aggarwal: September 07, 2023 (Thursday): 11:00 AM – 12:00 PM IST**

In Partial Fulfillment of the Requirements for the Degree of

**M.Tech. CB**

**Anmol Aggarwal (MT20334)**

Will defend her thesis

**Title: “**Decoding the molecular basis of Iterative Stress Response (ISR)**”**

IIIT-D Faculty and Students are invited

**Date: September 07, 2023 (Thursday)  
Time:** **11:00 AM – 12:00 PM IST**

**Meeting Link:** <https://meet.google.com/mvn-vduk-qvw>

**Examiner: Internal:   Debarka Sengupta**

**External/~~Internal~~: Tarini Ghosh**

**Advisor: Gaurav Ahuja**

**Co-Advisor NA**

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**Abstract**

Across evolutionary history, every organism has developed the ability to adapt to fluctuations in environmental conditions, thereby striking a balance between efficient growth and survival. In the case of yeast, when exposed to mild stress, it triggers an enhanced tolerance towards subsequent and magnified stresses. This adaptive response showcases yeast's ability to proactively prepare for future challenges, enhancing its survival and adaptability in a dynamic environment. Former studies have demonstrated this phenomenon with varied intensity and exposure to stress, elucidating the genetic and molecular processes that underpin cellular adaptation to elevated temperatures. In an effort to comprehend the genomic expression responses of the budding yeast Saccharomyces cerevisiae, we conducted a novel experiment where thermal stress was given to yeast in a pulsing manner at fixed intervals. We could identify a subpopulation within cells given conventional heat shock with more than 60% proportion in Pulsed samples. A comparative analysis of gene profiling showed that prominent HSPs differentially expressed in cells undergoing thermal stress in a pulsed manner behave exactly opposite in the case of regular thermal-stress population, denoting yeast’s ability to preserve the direction of transcriptome regulation and regulate it’s intensity with recurring stress stimuli.