

Seminar

Dietary and Circadian Cue Dependent Regional Plasticity of Transcriptional Networks & Metabolic Responses in the Small Intestine

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The small intestine regulates systemic physiology by virtue of its ability to transport and allocate dietary nutrients, regulate neuro-endocrine signalling, maintenance of commensal microbiota, etc. However, relatively less is known about the upstream mechanisms regulating the molecular rewiring that drive these functions in the mammalian small intestine in response to dietary inputs. My work sheds light on how plasticity of metabolic sensors can drive transcriptional rewiring in the mammalian small intestine.

Increasing evidence over the past few years, including ours, have described how gene expression differs among the distinct anatomical regions of the small intestine - duodenum, jejunum and ileum. However, there is very little evidence describing the gene regulatory networks that differ across the regions. My current work attempts to explore these basal differences in gene regulatory networks across duodenum, jejunum and ileum and explore how they are altered under different feeding states.

This work thus utilises transcriptomic, metabolomic and biochemical approaches to address how the regional gene regulatory networks in the small intestine undergo rewiring in response to both acute and chronic dietary cues, particularly exploring how these are mediated by metabolic sensing cascades.

Tuesday, Aug 11th 2026

10:30 Hrs (Tea / Coffee 10:15 Hrs)

Auditorium, TIFRH