

Comprehensive Seminar

How urbanisation shapes avian physiology and energy budgets

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Urban environments impose multiple anthropogenic stressors on animals, including artificial light at night (ALAN), altered thermal regimes driven by the urban heat island (UHI) effect, and rapid land-use and land-cover change (LULC). These stressors interact to reshape the energetic and thermal landscape in which birds operate, influencing metabolic rate, thermoregulatory effort, hormone profiles, activity patterns, and overall energy allocation. Although we understand somewhat the behavioural and demographic changes animals show across urban gradients, the underlying physiological pathways that mediate these responses are less known. We are now exploring how these stressors collectively restructure the metabolic phenotype such as basal metabolic rate and summit metabolism, which defines how individuals meet daily energy demands, and whether urbanisation systematically shifts the thermal and energetic limits of birds. With this, we aim to assess how cities shape physiological performance and to highlight the potential consequences for avian resilience and survival in rapidly changing environments.

Wednesday, Dec 17th 2025

14:30 Hrs (Tea / Coffee 14:15 Hrs)

Seminar Hall, TIFRH