



# 5 JUNE

11.30 A.M.  
ROOM A204  
POVO 1

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## From Vesicles to Synthetic Minimal Cells

Life is a self-sustaining system that continuously proliferates by synthesizing membrane molecules from external raw materials, thereby enabling vesicle growth and division. Such living systems exist in a state markedly distinct from conventional physical systems, and elucidating the fundamental differences between living and non-living matter is a critical step toward understanding the essence of living systems. In this seminar, we will introduce our synthetic minimal cell research and examine the conditions required for sustained proliferation and evolution from the perspective of non-equilibrium statistical mechanics and information thermodynamics. This approach aims to shed light on the physical origin of the fundamental distinction between life and non-life.

CIBIO EXTERNAL SEMINAR



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Dipartimento di  
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