

## **Emergence and Self-Organisation in Biological Systems**

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Isolated systems tend to evolve towards thermal equilibrium, a special state that has been a research focus in physics for more than a century. By contrast, most processes studied in living and life-like systems are driven and far from thermal equilibrium. A fundamental overarching hallmark of all these processes is the emergence of structure, order, and information, and we are facing the major challenge of identifying the underlying physical principles. Two exciting problems are the self-organised formation of spatio-temporal patterns and the robust self-assembly of complex structures. In both fields, there have been recent advances in understanding the underlying physics that will be reviewed in this talk.