

22nd Solvay Public Lectures

Sunday 21 April 2024 - Flagey (Studio 4)



Prof. Tony Hyman

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Anthony Hyman is Director and Research Group Leader at the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden (Germany). He has a PhD degree from Cambridge University where he was working in the group of Nobel Laureate Sydney Brenner. He moved then as a postdoctoral researcher at the University of California in San Francisco, was subsequently group head at the European Molecular Biology Laboratory EMBL in Heidelberg before becoming one of the founding directors of the Max Planck Institute in Dresden. Anthony Hyman is a world leader in molecular cell biology and genetics. His work has been recognized by many awards and prizes, among which the Gottfried Wilhelm Leibniz Prize - Germany's most prestigious research award - in 2011 "for his work on microtubules and cell division", the Körber European Science Prize - one of the world's highest endowed prizes - in 2022 "for the groundbreaking discovery of a completely new state of biological matter: condensates" and the Breakthrough Prize in Life Sciences in 2023 "for discovering a fundamental mechanism of cellular organization mediated by phase separation of proteins and RNA into membraneless liquid droplets".

The social life of a cell

Abstract: Ever since Hooke looked down a microscope and saw structure that reminded him of monk's cells in a monastery, biologists have been fascinated by how cells organise their lives. We now know that a cell is full of billions of individual components that have to work together in a robust and efficient manner to for instance produce energy, or to make decisions based on the outside world. But, much like our society, these components do not function as individuals, but as collectives. And like us, they have a social life. But what does the social life of a cell look like?

In this lecture we will explore how physics has helped illuminate these long standing questions and show how diseases emerge when the social life begins to fail.