

# 4th International Course on Multiscale Integration in Biological Systems

November 4-10, 2021

Link Teams to access seminars online: [4th course on Multiscale integration in Biological System](#)

	Thursday, November 4	Friday, November 5		Monday, November 8	Tuesday, November 9	Wednesday, November 10	
	<b>Statistical / Dynamical Systems</b> Chairs AM: Pascal Martin PM: Pierre Sens	<b>Collective effects / Mechano biology</b> Chairs AM: Pascal Silberzan PM: Hervé Isambert		<b>Control in biology / Systems biology</b> Chairs AM: Pascal Martin PM: Mathieu Coppey	<b>Machine learning / Image analysis</b> Chairs AM: Mathieu Coppey PM: Pierre Sens	<b>Evolution</b> Chairs AM: Aleksandra Walczak PM: Pascal Hersen	
9h00 - 10h30	<b>Frank Jülicher</b> Max Planck Institute, DE Physics of Active Droplets	<b>Guillaume Salbreux</b> University of Geneva, CH Connecting scales in tissue morphogenesis		<b>Yannick Rondelez</b> ESPCI, FR Bottom-up experimental models of cellular networks	<b>Hervé Isambert</b> Institut Curie, FR Unsupervised learning of biological and clinical networks	<b>Anne-Florence Bitbol</b> EPFL, CH Inferring interaction partners and evolutionary constraints from protein sequences	<b>COURSES</b> Live-streaming & recorded
10h30 - 11h00	<b>Coffee-break</b>	<b>Coffee-break</b>		<b>Coffee-break</b>	<b>Coffee-break</b>	<b>Coffee-break</b>	
11h00 - 12h30	<b>Kinneret Keren (online)</b> Technion - Israel Institute of Technology, IS Physical aspects of Hydra Morphogenesis	<b>Wilson Poon (online)</b> University of Edinburgh, UK Towards a physics of death: understanding nature's "circulatory economy"		<b>Mustafa Khammash</b> ETH Zürich, CH An Introduction to Control Theory and Cybergenetics	<b>Christophe Zimmer</b> Institut Pasteur, FR Introduction to deep learning and application to multiscale cellular imaging	<b>Guy Bunin</b> Technion - Israel Institute of Technology, IS Calculating properties of diverse ecological communities	
12h30 - 14h00	<b>Lunch</b>	<b>Lunch</b>		<b>Lunch</b>	<b>Lunch</b>	<b>Lunch</b>	
14h00 - 15h00	<b>Claude Loverdo</b> Sorbonne University & CNRS, FR Interactions of antibodies and bacteria in the digestive tract	<b>Isabelle Bonnet</b> Institut Curie, FR Competition between normal cells and cells expressing an oncogene	<b>WEEKEND BREAK</b>	<b>Pascal Hersen</b> Institut Curie, FR Dynamic Control of Gene Expression	<b>Cédric Allier</b> CEA LETI, FR Deep learning for cell analysis: from image to quantitative representation	<b>Gilles Charvin</b> IGBMC & CNRS, FR Stress homeostasis – Insights from single-cell analysis	<b>SEMINARS</b> Live-streaming & recorded
15h00 - 15h30	<b>Coffee-break</b>	<b>Coffee-break</b>		<b>Coffee-break</b>	<b>Coffee-break</b>	<b>Coffee-break</b>	
15h30 - 16h30	<b>Yolanda Schaerli (online)</b> University of Lausanne, CH Synthetic gene regulatory networks for spatiotemporal pattern formation	<b>Jean-Léon Maître</b> Institut Curie, FR Mechanics of blastocyst morphogenesis		<b>Peter Swain (online)</b> University of Edinburgh, UK Less is more: controlling glucose transport in yeast	<b>Julien Mozziconacci</b> MNHN, FR Deep learning for genomics	<b>Salima Rafai</b> CNRS, Grenoble University, FR Flowing Active Suspensions: Plankton as a model active particle	
16h30 - 16h45	<b>Break</b>	<b>Break</b>		<b>Break</b>	<b>Break</b>		
16h45 - 17h15	Flash talks	Flash talks		Attendee presentations (15' each)	Attendee presentations (15' each)		<b>ATTENDEE PRESENTATION &amp; POSTERS</b> In-Person only
17h15 - 18h15	Attendee presentations (15' each)	Posters					
18h15 - 21h00		Social Activity					

**Lectures:** Amphi Curie (sanitary pass verified) and live streaming (Microsoft Teams) / **Coffee Break:** Salle Joliot / **Lunch & Social activity:** Cour Lhomond (tent) / **Posters:** Green Cafe.