

Qlife Quantitative Biology Winter School Series

ACTIVE MATTER IN BIOLOGY

FEBRUARY 14TH-18TH, 2022 - PARIS

LECTURERS & SPEAKERS

Carles BLANCH MERCADER, Paris
Mathieu COPPEY, Paris
Serge DMITRIEFF, Paris
Carine DOUARCHE, Orsay
Jens ELGETI, Jülich
Nikta FAKHRI, Cambridge USA
Erwin FREY, München
Irene GIARDINA, Roma
Kinneret KEREN, Haifa
Karsten KRUSE, Genève
Lisa MANNING, Syracuse
François NEDELEC, Cambridge UK
Ignacio PAGONABARRAGA, Barcelona
Pierre RONCERAY, Marseille
Guillaume SALBREUX, Genève
Hervé TURLIER, Paris
David ZWICKER, Göttingen

SCIENTIFIC COMMITTEE CHAIR

Pascal HERSEN, Paris

COORDINATOR

Patrick CHARNAZ, Paris

The course will explore Active Matter in biological systems across scales, from self-organization and assembly at the protein level to cellular motility and collective motions at larger scales. It will show how the principles of active matter are critical to describe the functioning of cellular processes and the emergence of complex behaviors in living systems. Specifically, the courses will cover the following key topics: out-of-equilibrium and active systems in biology (such as self-organization of the cytoskeleton and cellular motility), collective behaviors at different scales (from active cellular nematics and tissue dynamics to swarm of animals), phase transition and membrane-less organelles in cells.

The course will bring together thought leaders in dialogue with the next generation of early career scientists to advance the integrative study of active matter in biology. It will include hands-on digital workshops every afternoon. The students will choose between blocks of workshops ("Physical simulations of cytoskeletal dynamics with Cytosim" or "Mechanics and growth of tissues" ; "Physics of microswimmers" or "Chemically controlled phase separation»)

Common lunches and dinners with the speakers and instructors will foster informal discussions. The winter school is limited to 24 participants. It is open to Master 2 and PhD students, as well as postdocs, engineers and junior scientists with backgrounds in life science, chemistry, physics, computer science or mathematics.

Basic experience in file manipulation under Unix/Linux and in Python or R programming is required.

Additional information is available on:

<https://www.enseignement.biologie.ens.fr/spip.php?article245>

APPLICATION DEADLINE DECEMBER 5TH, 2021

REGISTRATION FEES: 150 €*

- Registration link: <https://forms.office.com/r/wZbDS1qQkW>
- In addition, provide a CV, a 1 page motivation letter (*including justification for travel grant if requested*) and a supporting letter from a supervisor with "Qlife ActMatter winter school 2022-LASTNAME" as subject header to qlife.events@psl.eu

* Fees cover food and lodging from Monday morning to Friday afternoon.
Some travel grants will be available.



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