



## PhD Positions at the CRG in Barcelona

### Building a Cell: From Active Matter to Biological Function

#### The Institute

The Centre for Genomic Regulation (CRG) is an **international biomedical research institute of excellence**, based in Barcelona, Spain, with more than 400 scientists from over 40 countries. The CRG provides an interdisciplinary research environment with high-end technology platforms.

#### The Surrey Lab

The lab of Thomas Surrey is interested in the question of **biological self-organization**, studying how the cytoskeleton of living cells builds itself. The goal is to understand in a quantitative manner biological network behaviour based on **physico-chemical principles**. The lab uses a **bottom-up synthetic biology** approach and has pioneered a number of novel microscopy-based in vitro reconstitutions that provide insight into the molecular mechanisms underlying microtubule cytoskeleton organization, dynamics and function.

See also: <https://www.crg.eu/en/programmes-groups/surrey-lab>

#### The PhD Projects

Several projects are available addressing questions of **cytoskeleton self-organization and dynamics**. A combination of advanced biochemical in vitro reconstitutions, biophysical methods, modern microscopy (down to single molecules), microfabrication and computer simulations will be used to understand the design principles of cytoskeleton organization during the cell cycle. The lab is currently particularly interested in the mechanism of microtubule nucleation and its regulation, the role of motor proteins such as dynein and kinesins for mitotic spindle assembly, the effects of molecular crowding for active matter self-organization and the control of all these processes by mitotic kinases and phosphatases. Using the mitotic spindle as an example, the PhD projects will contribute to a better mechanistic understanding of how biological function emerges from active matter.

#### Whom would we like to hire?

- You have a good training and keen interest in biophysics, biochemistry, bioengineering and/or mechanistic cell biology
- You are curious and enthusiastic about finding novel solutions to challenging problems
- You have demonstrated talent for experimentation in a lab research project
- You have excellent organizational and writing skills
- You enjoy working in an interdisciplinary, ambitious and creative environment

**Informal Enquiries:** [thomas.surrey@crg.eu](mailto:thomas.surrey@crg.eu)

**Start Date:** flexible, before October 2024

#### Application Procedure

Applications should be submitted to the **CRG PhD programme** website:

<https://www.crg.eu/en/content/training-phd-students/crg-international-phd-fellowships-programme>

**Deadline:** 10 January 2024

