



JAGIELLONIAN UNIVERSITY
IN KRAKÓW



POLISH NATIONAL AGENCY
FOR ACADEMIC EXCHANGE

Assistant Researcher

Project: *Principles of information decoding in developmental systems*

(NAWA, Polish Returns, PPN/PPO/2018/1/00011/U/00001)

Principal investigator: Dr Marcin Zagórski

Development of multicellular organisms is a remarkably reproducible process. During development cells are exposed to chemical cues that determine cell fate with positional precision of a few cell diameters. How this reproducibility is achieved is a fundamental question in biology that is still poorly understood. The proposed project addresses this question by applying methods of theoretical physics to model specific biological systems. As a result, factors affecting information decoding in developmental systems will be identified. Identification of these factors can have substantial impact in studies in a broad range of tissues and stem cell systems.

Requirements:

- MSc in physics, mathematics, computer science or similar.
- Interest in the interdisciplinary aspect of the project.
- Experience with numerical solvers (C++, Python, or Mathematica).
- Good communication skills.
- Experience in complex systems or biological networks will be an asset.

Research tasks:

- Proposing and analyzing models of developing tissue in the framework of theoretical physics.
- Making model predictions that can be verified experimentally in selected biological systems.
- Participation in overall scientific activity of the research group.

We offer:

- Interdisciplinary research at the interface of physics and biology. More at <http://zagorskigroup.com/>
- Research projects jointly with experimental labs (Austria, UK).
- Research visits in foreign institutions and participation in international conferences.

Terms of employment: Full time employment for initial 24 months with possible extension

Starting date: July 2020

Application should consist of scientific CV, list of publications and one recommendation letter. The documents should be submitted to marcin.zagorski@uj.edu.pl. The application deadline is **28th June 2020**, and results will be announced in the following week.