



Two MSc student positions in computational biology/biophysics are available from mid-March 2024 in the project entitled: **“Co-translational protein folding in the light of ribosome evolution”** led by Tomek Włodarski from the Department of Bioinformatics and founded by the National Science Centre.

Most proteins gain their functional 3D structure during protein folding, a fundamental biological process impacting every aspect of cell function. While this process has been extensively studied in isolated proteins, its mechanism within the cellular context still needs to be understood.

This project aims to bridge this gap by combining bioinformatics and molecular dynamics simulations to extend our understanding of co-translational protein folding. Successful candidates will simulate protein folding on available ribosome structures and analyse how different ribosomes can affect this process. Because ribosome structures have been obtained for only a handful of organisms (~40), we will conduct a genome-wide bioinformatics analysis to uncover and characterise all proteins that build ribosome exit tunnels in different organisms. Equipped with this extensive data and taking advantage of recent progress in machine learning, we will build structural models of some of the most diverse ribosome exit tunnels, which have not yet been studied experimentally. For more detailed insights into our project's scope and vision, visit <https://tomekwlodarski.com/polonez>.

Requirements:

The successful applicant should:

- hold a BSc degree (or equivalent) in Biology, Chemistry, Computer Science, Biotechnology, Bioinformatics or Physics;
- have fluency in spoken and written English;
- have basic programming skills (Python, Linux), understanding of protein sequence and structure
- be well-organised, eager to learn and ready to dive into scientific literature

We offer:

- Participation in courses and conferences;
- Inclusive and supportive work environment;
- Stipend for 16 months (2500 PLN gross per month);

The application must include:

- Curriculum vitae,
- Motivation letter,
- At least one recommendation letter and contact details of the referee/s,

Applications with the title “Application for the MSc project” are welcome at twlodarski@ibb.edu.pl

Application submission deadline: **29th of February 2024**.

Selected candidates will be invited to an online interview in English.

The selection process will be concluded by **15th March 2024**.

During the recruitment process, the Institute of Biochemistry and Biophysics follows the principles set out in the European Charter for Researchers.

All applications must contain the following statement to allow us to process your data: "I hereby give consent for my personal data included in the job offer to be processed for the purpose of recruitment under the Data Protection Act 1997.(Dz. U. 2002 no. 101, item 926 with subs. changes)."