Title: Innovative Approaches to Study E3 Ligase Substrate Specificity Using *C. elegans* Models (NCN/OPUS).

Supervisor: Wojciech Pokrzywa, PhD, DSc
Institute: International Institute of Molecular and Cell Biology in Warsaw
Laboratory: Laboratory of Protein Metabolism
www: pokrzywalab.com

Project description:

The project focuses on the molecular mechanisms governing protein stability via ubiquitin E3 ligases, which play a critical role in maintaining proteostasis and are implicated in various neurological disorders. The PhD student will develop novel *Caenorhabditis elegans* animal models to enable, for the first time, tissue-specific in vivo identification of substrates of selected E3 ubiquitin ligases. The project combines molecular biology, proteomics, genetic engineering, and cellular imaging to address fundamental questions in protein degradation pathways.

Aim:

To design and establish innovative *C. elegans* models for tissue-specific identification of E3 ligase substrates. These tools will provide unprecedented insight into substrate targeting mechanisms and will be of significant value to the broader *C. elegans* research community. The models will also be used to study protein turnover in diverse physiological contexts, including development, aging, and stress responses.

Requirements:

- Master's degree in biology, biotechnology, biochemistry or related field
- Good knowledge of basics of molecular and cell biology
- Basic hands-on experience in at least one of the fields: molecular biology, cell biology, genetic engineering, fluorescent microscopy, proteomics
- Knowledge of the biology and maintenance of *C. elegans* will be an advantage
- Written and spoken fluency in English
- Willingness to learn and take new challenges, ability to work independently, analytical thinking
- Good interpersonal skills and a collaborative attitude

Number of positions available: 1

Contact: wpokrzywa@iimcb.gov.pl