



KStyp(NCN)-3/24

Lublin, 03.07.2024

INSTITUTE OF AGROPHYSICS,
POLISH ACADEMY OF SCIENCES IN LUBLIN
IS SEARCHING FOR HIGHLY MOTIVATED CANDIDATES INTERESTED IN SCIENTIFIC WORK
FOR:

PhD FELLOWSHIP (f/m) in the Project:

**„*Splash phenomenon as a mechanism of transportation of soil bacteria*” no. 2022/45/B/NZ9/00605,
financed by National Science Centre within the funding scheme OPUS-23**

1. Requirements:

- a) Master's degree MSc degree in quantitative sciences or engineering sciences;
- b) knowledge of soil physics or microbiology;
- c) good knowledge of English;
- d) ability to use Microsoft Office;
- e) communication and teamwork skills;
- f) readiness for field trips and measurements;
- g) knowledge of laboratory techniques and soil analysis equipment is welcomed;
- h) basic knowledge of graphic image analysis; knowledge of DNA and RNA isolation techniques and performing PCR (qPCR) – are welcomed.

2. Job description:

The Institute of Agrophysics, Polish Academy of Sciences, [Department of Natural Environment Biogeochemistry](#) is looking for **PhD student** in the Doctoral School of Quantitative and Natural Sciences.

PhD thesis proposal:

“*Splash phenomenon as a mechanism of transportation of soil bacteria*”

- The PhD studies will take place for 48 months (from October 1st, 2024) at the Department of Natural Environment Biogeochemistry, Institute of Agrophysics, Polish Academy of Sciences, Lublin, Poland under scientific supervision of prof. DSc Andrzej Bieganski (a.bieganski@ipan.lublin.pl) and substantive supervision of Project's PI – Michał Beczek, PhD (m.beczek@ipan.lublin.pl)
- The doctoral scholarship is co-financed by the National Science Centre, Poland – under the project OPUS-23 (no. **NCN Opus 23 nr 2022/45/B/NZ9/00605**) project and a subsidy from the Minister of Science. The scholarship is guaranteed for a period of 48 months.
- Language of PhD course and thesis: English or Polish.
- **The condition for the Candidate's involvement and payment of the scholarship in the OPUS-23 project under the conditions set out in the Act on Higher Education and Science of 20 July 2018 (Journal of Laws 2023 item 742 as amended) is his/her admission to the Interdisciplinary Doctoral School of Agricultural Sciences.**

Institute of Agrophysics PAS offers a PhD student position (4 years) in a project on the quantitative and qualitative description of the transport of soil bacteria during the splash phenomenon. The topic of the doctoral thesis will be the quantitative and qualitative description of the transportation of soil microorganisms during the splash phenomenon. Soil splash (splash erosion) occurs when falling raindrops cause the detachment and ejection of soil particles displaced over different distances. This phenomenon, which is the first stage of water erosion process, is relatively well studied. However, the mechanism and effect of splash in the context



of microorganism transportation is very poorly understood. Yet, it is obvious that microorganisms can be carried from soil together with the detached and ejected particles.

The research conducted under the project which provides the basis for the doctoral thesis, will be interdisciplinary in nature, dealing with issues in both soil physics and microbiology. With high-speed imaging technique and the use of high-speed cameras, soil splash characterization will be carried out by determining the number of splashed particles, as well as their parameters such as sizes and the range over which they will be carried. The use of modern microbiology research techniques (qPCR, NGS) will allow to determine the number of microorganisms and microbial community composition carried in the splashed soil material. The compilation of achieved results will make it possible to relate the basic processes of particle ejection and their characteristics to the spread of soil bacteria. The obtained knowledge will contribute to a better understanding of microbiota transport in agroecosystems and the results obtained will be complementary to previous studies on microbial transportation by other mechanisms (e.g. soil water, wind). A better understanding of the mechanism of bacterial transportation through the soil splash seems to be essential in the context of understanding the ways and consequently preventing the spread of diseases caused by bacteria not only in relation to plants but also in terms of animal and human infections.

3. Deadline for submitting applications: August 23rd, 2024

4. How to apply: Candidate must send two parallel applications via:

- (1) [Recruitment System of the Institute of Agrophysics PAS](#)
- and
- (2) [Recruitment System of Doctoral School of Quantitative and Natural Sciences](#)

5. Interview: September 2nd, 2024

6. Deadline of the competition results: September 12th, 2024.

7. The successful candidate will receive scholarship for 48 months, under the rules of Act on Higher Education and Science of 20 July 2018 (Journal of Laws of 2023 item 742 as amended) in the amount of PLN 5,000.05 per month, reduced by ZUS due contributions on the side of the scholarship holder and the Institute up to the month of a mid-term evaluation and in the amount of PLN 6,245.11 monthly, reduced by ZUS due contributions on the side of the scholarship holder and the Institute after a positive mid-term evaluation result. **Please be informed the amount stated above also include contributions and benefits payable by the Institute (total scholarship cost), therefore the gross amount of scholarship will be calculated as the above values being reduced accordingly.**

8. Additional information:

- a) The recruitment process is organized as an open competition pursuant to the terms and conditions stated in The Act on Higher Education and Science of 20 July 2018 (Journal of Laws of 2023 item 724 as amended).
- b) After the deadline for submitting applications will expire, the Committee may conduct interviews with candidates. In this case, each candidate will be informed individually about the first stage results, as well as the date of the interview.
- c) The Institute reserves the right to award the fellowship to the candidate ranked 2nd, only if the chosen candidate resigns before signing the fellowship agreement.

We kindly inform that we contact only chosen candidates and also applications that are incomplete, submitted after the deadline or in the different form than required will not be processed.