

**IBCH PAS RECRUITMENT PROCEDURE NO. 1/2026/S
FOR THE POSITION OF STUDENT/STIPENDIST**

INSTITUTION: Institute of Bioorganic Chemistry, Polish Academy of Sciences,
Department of Molecular and Systems Biology
CITY: Poznań
POSITION: student/stipendist
POSITIONS AVAILABLE: 1
SCIENTIFIC DISCIPLINE: mathematics, informatics, biological sciences or related
PUBLICATION DATE: **20.02.2026**
APPLICATION DEADLINE: **23.03.2026**
WEBSITE: <https://portal.ichb.pl/>

KEY WORDS: ovarian cancer, spatial transcriptomics, next generation sequencing (NGS), artificial intelligence, bioinformatics, mathematical modeling, image analysis, predictive algorithm

Principal Investigator: Mikołaj Zaborowski, PhD

Research topic: “Algorithm for personalizing ovarian cancer treatment based on a spatial transcriptomic model of tumor tissue with single-cell resolution”

Project description:

Most patients with ovarian cancer will experience a recurrence of the disease, which ultimately leads to a poor prognosis. The aim of the project is to develop an innovative predictive algorithm to determine (A) which patients will benefit from the use of available PARP inhibitor therapies, and (B) what new drugs could be used in the treatment-resistant group. Testing will involve developing a cancer tissue model by analyzing the spatial distribution of RNA expression, morphological features, and intercellular interactions. Data will be obtained using spatial transcriptomics of cancer tissue at single-cell resolution. Transcriptomic profile information at each location will be combined with its morphological characteristics in a 3D model of the tumor tissue. Spatial transcriptomic data and the characterization of tissue morphology will be analyzed using advanced mathematical tools and artificial intelligence techniques to develop a model that predicts which patients will respond to standard ovarian cancer treatment. In the treatment-resistant group, the algorithm will indicate which molecular pathways are disrupted and what alternative drugs could be used.

The Institute of Bioorganic Chemistry of the Polish Academy of Sciences (IBCH PAN), where this project will be implemented, is one of the leading research institutions in the fields of molecular biology, bioinformatics, and biomedicine in Poland. The work will be carried out in a young, interdisciplinary team, offering the opportunity to publish results well. Working on the project provides a great opportunity for growth and gaining experience in the field of (1) innovative spatial transcriptome sequencing techniques, (2) bioinformatic analysis of unique biomedical molecular and imaging data, (3) the application of state-of-the-art artificial intelligence methods for medical predictions, (4) large-scale computations on a high-throughput computing cluster, (5) and the use of advanced mathematical models.

Additional information:

1. Research and doctoral work will be carried out as part of the FIRST TEAM FENG project, call 1/2023 no FENG.02.02-IP.05-0361/23, titled: *“Algorithm for personalizing ovarian cancer treatment based on a spatial transcriptomic model of tumor tissue with single-cell resolution”*.
2. The stipendist will receive a monthly salary of PLN 5,000 gross gross (total employer cost) as part of the scientific scholarship for a period of 30 months with possible extension to 36 months.
3. Position available immediately (depending on the outcome of the competition).

I. Requirements for the candidate:

1. A document confirming student status in mathematics, computer science, biology, biotechnology, or related fields.
2. Interest and experience or knowledge in the application of mathematical modeling, game theory methodology, and graph theory. Interest and experience or knowledge in the application of mathematical methods to model biological or related phenomena are welcome.
3. Documented scientific achievements in the form of co-authorship in publications in recognized scientific journals (from the Web of Science databas) and/or documented participation in scientific projects and/or documented participation in student scientific club initiatives are welcome.
4. Knowledge of the R or Python language and/or MATLAB program is welcome.
5. Willingness to actively expand one's knowledge and skills.
6. Proficiency in spoken and written English, enabling effective communication and preparation of publications.
7. Availability for at least 20 hours per week, in blocks of a minimum of 4 hours.

II. Job Description:

A student of mathematics, computer science, or biology demonstrating knowledge of game theory and graph theory, as well as mathematical modeling methods. Their role will be to significantly contribute to the creation, optimization, and validation of a mathematical model of interactions between molecularly identified cell populations of ovarian cancer.

III. Job Responsibilities:

1. Active involvement in the implementation of the project in the following tasks:
 - 1) Application of game theory and graph theory tools to create a model of interactions occurring between molecularly identified cell populations.
 - 2) Utilization of the developed interaction model to quantify the phenotype of each disease case.
 - 3) Validation of the developed interaction model through the interpretation of results from trained machine learning models.
 - 4) Conducting mathematical simulations of the validated interaction model to better understand evolutionary phenomena promoting tumor development, metastasis, and drug resistance.
 - 5) Participation in the application of image processing techniques aimed at preparing annotations of cancer tissues.
2. Continuous expanding knowledge in the project field from scientific literature.

IV. Required documents:

1. An application to the Director of the ICHB PAN for acceptance to the position of scholarship holder, together with consent to the processing of personal data for the purposes of the recruitment procedure.
2. A document confirming student status in mathematics, computer science, biology, biotechnology, or related fields (certificate).
3. A CV including information on education and potential academic achievements or other scientific activities, if any, including a list of publications published in journals indexed in the Web of Science database, with the Impact Factor (IF) according to WoS and the number of citations.
4. Cover letter.

5. Contact details of referees (optional).
6. Information on completed major-related courses and obtained grades.
7. Information on scientific, teaching, and organizational achievements, including participation in scientific conferences, co-authorship of publications, participation in scientific workshops and student research groups, awards and distinctions, and other activities relevant to the evaluation of the candidate.
8. Information on programming languages known by the candidate.
9. Certificates or other documents confirming the level of English language proficiency, if the candidate possesses them.

V. Applications should be submitted via the eRecruiter portal:

<https://system.erecruiter.pl/FormTemplates/RecruitmentForm.aspx?WebID=703892c48e384b499d656a2fa991f313>

VI. The submission deadline is 23.03.2026.

VII. Selection of candidates:

After an initial review based on the submitted documents, selected candidates will be invited to an interview, as a result of which a candidate recommended for employment shall be appointed. Based on its results, a ranking list of the persons recommended for employment will be drawn up. In the case of resignation of a higher-ranked candidate, the next person on the list will be offered employment. The main criteria that will be taken into account in the selection of candidates are: (i) academic achievements or other scientific activity (publications, scientific or student conferences, participation in research projects, active involvement in student scientific societies); (ii) compatibility of prior experience, if any, with the research tasks planned within the project (in the areas of systems biology, cancer diseases, bioinformatics, or computational biology); and (iii) the student's knowledge in the scope of required skills and fundamental issues related to the project topic (mathematical modeling, game theory, graph theory, machine learning).

VIII. The recruitment procedure shall be concluded no later than on 30.04.2026.

IX. The scholarship holder will be engaged in the implementation of the project on the basis of a scholarship agreement concluded between the scholarship holder and IBCH PAS, on the principles described in the *Regulations for awarding scholarships providing assistance to scholarship holders of the Project under Measure 2.2. First TEAM (FENG 2021-2027) of the Foundation for Polish Science* and internal regulations of IBCH PAS, taking into account the applicable provisions of national law, in particular the Act - Law on Higher Education and Science.

For more details, please contact:

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Information clause:

Pursuant to the stipulations of the regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), further referred to as GDPR, we hereby inform that:

- The Institute of Bioorganic Chemistry, Polish Academy of Sciences, seated in Noskowskiego St. 12/14, 61-704 Poznan; REGON 000849327, NIP 777-00-02-062 is the administrator of the collected personal data (further referred to as the Institute).
- The Administrator appointed a Data Protection Officer, who can be contacted in writing, via traditional mail, by sending a letter to the following address: Z. Noskowskiego St. 12/14, 61-704 Poznan, or by sending an e-mail to: dpo@ibch.poznan.pl.
- The personal data of the candidates is processed for the purposes of fulfilling the tasks of the administrator, associated with conducting the recruitment procedure for a vacant position.
- The legal basis for processing personal data is the Act of 26 June 1974 – The Labor Code, Act of 30 April 2010 on the Polish Academy of Sciences or the consent of the person whose data shall be subjected to processing.
- Your personal data shall be subjected to processing for period of 3 months upon the date of decision of the recruitment committee. Following this period, the data will be irretrievably and effectively destroyed.
- The personal data of the candidates shall not be transferred to any third country.
- The person whose data shall be subjected to processing has the right to:
 - request access to his/her personal data, and to amend it or delete it, pursuant to articles 15-17 of GDPR;
 - limit data processing, in the events stipulated in article 18 of GDPR;
 - data transferring, pursuant to article 20 of GDPR;
 - withdraw consent at any moment, without influencing compliance with the law of the processing that was executed prior to consent withdrawal;
 - file a complaint to the Inspector General for Personal Data Protection.

Providing personal data in the scope stipulated in article 22 (1) of the Act of 26 June 1974 – The Labor Code is mandatory, whereas providing data in a broader scope is voluntary and requires consent for its processing.

Protection for whistleblowers

In the case of reporting violations using a dedicated system for whistleblowers, the reporting person's data will be processed in accordance with applicable provisions on the protection of personal data, including the above-mentioned Regulation (EU 2016/679 of 27 April 2016). We ensure confidentiality and protection of the identity of reporting persons, and that their data will not be disclosed without their consent, unless the law provides otherwise.

Detailed rules regarding the protection of personal data and procedures for reporting violations of the law can be found in our Regulations on internal reporting at the Institute of Bioorganic Chemistry, Polish Academy of Sciences, available at the link: <https://portal.ichb.pl/wp-content/uploads/2024/10/INTERNALREPORTINGREGULATIONS.pdf>



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