A postdoctoral researcher in cancer biology

Job purpose:

The Dioscuri Centre at the Institute of Physical Chemistry PAS, Warsaw, is seeking a full-time post-doctoral researcher to work on heterogeneous response to cancer chemotherapy in *in vitro* models of cancer. The candidate will investigate differences in single-cell response of normal and cancer cells to chemotherapy, and how the response correlates with phenotypic, non-genetic heterogeneity prior to treatment. The project will help to better understand why chemotherapy fails, quantify the contribution of different mechanisms leading to resistance, and drive better, predictive mathematical models of cancer treatment.

This post is funded by the POLS grant "Phenotypic heterogeneity in cancer chemotherapy" carried out in collaboration with Professor Hesso Farhan, the Institute of Basic Medical Sciences at the University of Oslo, and the Institute of Pathophysiology, Medical University of Innsbruck in Austria.

Main responsibilities:

1. Undertaking research projects in pursuit of goals agreed with the supervisor. This will involve deciding (with the supervisor) on the detailed direction of the research, formulating a strategy for day-to-day research work, implementing the strategy (without close supervision) and reporting progress to the supervisor and other research team members.

2. Communicating research strategies and results to team members and collaborators through talks and discussions, as well as learning about others' research through seminars and journal clubs.

3. Assisting with supervision of junior researchers (Master and PhD students), where appropriate.

4. Writing reports and scientific papers.

5. Attending and presenting at workshops and conferences.

The candidate is expected to work closely with experimentalists from Prof. Hesso Farhan's group (Innsbruck, Austria), which will include collaborative research visits to Innsbruck.

Line manager/supervisor. Dr Bartlomiej Waclaw, Dioscuri Centre Leader.

Person Specification (Knowledge, Skills and Experience Needed for the Job)

Essential

- PhD in biology, bio-medicine, or biological physics
- Hands-on experience with microscopic optical imaging
- Very good academic achievements as evidenced by peer-reviewed publications and talks/poster presentations at international conferences.
- Ability to draft (in English) scientific papers for academic journals.
- Ability to communicate (in English) complex information clearly, orally and in writing.

- Ability to think creatively, propose and develop new ideas.
- Capability of working without close supervision, exercising a high degree of initiative and demonstrating a pro-active approach to work.
- Ability to develop and maintain effective working relationships.

Desirable

- Experience in *in vitro* cancer models (cell cultures, spheroids, organelloids)
- Experience in live-cell optical imaging (epi-fluorescent, confocal), ideally using automated, computer-controlled microscopes or image cytometers
- Experience with CRISPR-Cas9 or other methods suitable for genetic engineering of human cell lines
- Experience in cross-disciplinary and / or collaborative research projects.
- Ability to communicate with researchers or other project partners from other scientific backgrounds, especially with computer/mathematical modellers
- Ability to adapt to new ideas and willingness to approach new challenges and adjust plans to suit new priorities.
- Ability to work hard and organise work so as to perform multiple tasks simultaneously.
- Ability to maintain a clean and well-organised laboratory environment and to set up and maintain a well-organised digital repository of experimental data and protocols.
- Potential for career advancement as an independent researcher.

Career perspectives

The position is for a maximum of 2 years (duration of the POLS grant). Bridge funding may be provided at the end of the funding period to apply for an independent research fellowship. The successful candidate will benefit from working in an international, interdisciplinary research group, a newly refurbished cell culture lab equipped with automated epifluorescent microscopes, and separate office space. The candidate will work closely with other experimentalists and modellers from the Dioscuri Centre and collaborating groups, in particular with Prof. Farhan's group and the Department Evolutionary Theory, MPI for Evolutionary Biology, Ploen.

Application procedure.

A complete application should include the following items:

- motivation letter
- professional curriculum vitae
- list of publications
- personal data processing consent
- in addition, two letters of reference from previous supervisors/employers should be arranged to be sent directly to rekrutacja@ichf.edu.pl

All documents (including the reference letters) should be emailed to rekrutacja@ichf.edu.pl quoting "Rekrutacja nr 41/2021" in the subject line. We reserve the right to not consider incomplete applications or applications submitted to a different email address than rekrutacja@ichf.edu.pl

Short-listed candidates will be invited for an in-person interview or a conference call (Zoom or Skype).

Informal enquires may be addressed to Bartek Waclaw bwaclaw@ichf.edu.pl

Application deadline: 17 September 2021, 17:00 CET

Interviews: late September 2021

Job start date: 1 October 2021 or later at a mutually agreed date.

About the Dioscuri Centre

The Centre's main objective is to better understand the growth and evolution of pathogenic cells in human diseases from the chemistry and physics viewpoint. While most of the group works on bacterial infections, the Centre is also developing a research programme in cancer biology. In particular, we would like to improve the knowledge of mechanisms that lead to resistance to cancer chemotherapy. The members of the Centre use experimental *in vitro* models, computer simulations and mathematical theory to create data driven, quantitative models of bacterial infections and cancer. We anticipate that these models can help to develop new treatment modalities. To facilitate translation from the bench to the bedside, the Centre will collaborate with biomedical researchers and with industrial partners.

The Centre is co-funded by the Polish Ministry of Science and Higher Education and the German Federal Ministry of Education and Research, with additional support coming from NAWA and POLS.

The Centre is located in the Institute of Physical Chemistry (IPC, Polish: IChF), Polish Academy of Sciences, Warsaw, Poland.

About IPC

IPC is one of the top research institutes in Poland, ranked A+ by the Ministry of Science and Higher Education (top 5% of research units in PL). IPC publishes ~200 papers/year which generate over 7500 citation/year. 30% of papers are published in journals with IF>5: Nature Chemistry, Nature Physics, Science, Phys. Rev. Letters, JACS, Ang. Chemie Int. Ed., Nucl. Acid Research, and many others. IPC employs ~340 staff (physicists, chemists, biologists, biotechnologists) and is strongly committed to interdisciplinary research. IPC attracts talented students and experienced researchers from Poland and beyond (30% PhDs and 20% of PIs come from abroad). In acknowledgment of its efforts to enhance working conditions, the European Commission has awarded IPC the "HR Excellence in Research Award".

IPC has been very successful in attracting external funding from Polish and European funding agencies (>100 projects), for example the CREATE project (H2020; 2.5 M€), interdisciplinary International PhD studies (NaMeS project, CO-FUND, H2020; 2.3 M€) and the postdoctoral fellowship programme PD2PI (CO-FUND, H2020, 1.4 M€), the International Center for Translational Eye Research (ICTER, ~10M€), and the Dioscuri Centre (1.5M€). IPC has a strong record of collaboration with industry, developed culture of fostering spin-off companies, and international patents.

Additional information:

https://dioscuricentrebacteria.com/
https://bartekwaclaw.wordpress.com
http://ichf.edu.pl/home_en.html

Personal data protection

By submitting the application, you give the Institute of Physical Chemistry consent to process your personal data for the purpose of the recruitment process.

The controller of your personal data is the Institute of Physical Chemistry of the Polish Academy of Sciences with its registered office in Warsaw, NIP: 5250008755 (the "Institute"). The Institute will process your data for the purpose of carrying out scientific and research activities, providing services and contact with the Institute, on the basis of a contract (in connection with the performance of the contract or in order to take action on your request before the contract is concluded – Article 6, paragraph 1, letter b) of GDPR), the legitimate interest of the Institute (Article 6, paragraph 1, letter f) of the GDPR) and legal provisions (Article 6, paragraph 1, letter c) of the GDPR) - depending on the circumstances.

You have the right to: request access to your data, receive a copy of it; rectify (correct) it; delete it; limit its processing; transfer it; lodge a complaint to the supervisory body; withdraw your consent for processing at any time (withdrawal of consent does not affect the lawfulness of the processing carried out prior to its withdrawal) or to lodge an objection to data processing. More information is available on the Institute's website:

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