



Postdoctoral Researcher in Lipid/Microfluidics Nanoscience

Bionanoscience and Biochemistry Laboratory (Heddle Lab) Malopolska Centre of Biotechnology, Krakow, Poland

We are now recruiting a postdoctoral scientist to join our team to design and build DNA-membrane protein nanomachines for use in artificial cells. The project offers the opportunity to gain experience in a new area of synthetic biology, which will become increasingly important in the future. It also offers the chance to work in a dynamic, international team working closely with partners across the world and the successful applicant will have the opportunity to spend some time at the lab of Ilia Platzman (<https://www.is.mpg.de/spatz/platzman>) at the Max Planck Institute of Medical Research in Heidelberg, Germany.

You will be part of the Heddle lab (www.heddlelab.org), a newly established, innovative lab carrying out ambitious research aimed at designing and building artificial biological nanomachines using DNA, protein and lipid building blocks. We are located in a state-of-the-art laboratory, based at the new Malopolska Centre of Biotechnology, in the beautiful city of Krakow, Poland

Details of Project: The successful candidate will join a FNP "TEAM" project that aims to design and build novel DNA-based nanomachines able to interact with specific proteins and help construct artificial cells. Your contribution will be: **1.** Production and purification of liposomes **2.** Production of giant unilamellar vesicles (GUVs) using a state of the art microfluidics system. **3.** Optimization of a microfluidics, GUV production system for interaction with DNA origami and designed proteins. **4.** Time-dependent measurement of the function of designed DNA/protein based nanomachines inside GUVs. **5.** Working with other members of the team to interact DNA devices with proteins and lipids. **6.** Separation and purification of modified GUVs and their downstream analyses. **7.** Structural studies of designed membrane protein complexes (using cryo-EM with expert collaborators). **8.** Working with microscopists (AFM) and structural biologists to image DNA machines alone and in complex with proteins. **9.** Working closely as a bridge between the collaborating groups (Poland and Germany)

Requirements

1. Should have a PhD in chemical engineering, molecular biology, biochemistry, biophysics or related discipline
2. Should have extensive, demonstrated expertise in working with microfluidics, particularly for biological samples
3. Must be less than 5 years since awarding of PhD (not including allowed career breaks)
4. Experience working with lipids/membrane proteins/DNA nanostructures would be advantageous but not obligatory
5. Experience in structural biology, particularly cryo EM will be advantageous but not obligatory
6. Have good skills of work management and experimental record keeping
7. Should be able to work well in a multidisciplinary team
8. Have good written and oral communication skills in English

Important Dates

- Application Deadline: February 28th 2018 Start Date: April 1st 2018 or as soon as possible thereafter

Our Offer

- 30-month postdoctoral research position with generous, *internationally competitive* remuneration
- Discounted membership of sports facilities ("Multisport", <https://www.benefitsystems.pl/en/for-you/multisport/>)
- Subsidised social events (theatre tickets, hotels etc)
- Excellent training: In our diverse group you will be able to network with international researchers, experience and learn new skills including in DNA origami design, enzyme biochemistry, structural biology, protein design etc.

How to Apply

Send applications to jonathan.heddle@uj.edu.pl applications should be marked "FNPostdoc3" and include the following:

1. Copy of PhD certificate
2. Contact details of a minimum of two referees including a former academic supervisor
3. Motivation Letter
4. CV
5. Your application must include the following statement: "I hereby give consent for my personal data included in my application to be processed for the purposes of the recruitment process under the Personal Data Protection Act as of 29 August 1997, consolidated text: Journal of Laws 2016, item 922 as amended."

The best candidates may be interviewed shortly after the application deadline.

