

Widening Country Success Story

“The most important aspect of a successful application is to be on the same page with your future supervisor at the host institution.”

Name of the fellow: Simonas Juzenas
Country of the host: Lithuania
Project Acronym: droplet-small-seq
Project start and end date: 1.09.2021 – 29.11.2023
Type of MSCA, Horizon 2020: Individual Fellowship



What is your project about and why is the topic important for science advancement?

The project is about the development of multidisciplinary approaches on high-throughput droplet-based single-cell small and long RNA sequencing technologies and its application to investigate the regulatory roles of non-coding RNAs in cell fate decision during differentiation. In short, the ultimate goal is to develop high-throughput, cost-efficient and easy-to-use single-cell RNA-seq technologies for simultaneous profiling of both non-coding and coding RNAs at single-cell resolution.

Why is your project important for society?

When it comes to non-coding RNAs, especially, small RNAs, many aspects of their biology in single cells are still unknown. For example, are they fine-tuning the effect of transcription factors or do they function as independent regulators of gene expression? Are small RNAs specific to a given cell type, and if so, what are their targets? These questions, and many others will be tackled using our method, and finding answers, in the long term may have clinical and therapeutic implications, as small RNAs can be targeted to manipulate cell functions. Also, our

platform could be adapted (with minor modifications) to other biological systems, such as microorganisms, whose RNA molecules lack polyadenylation, and thus could benefit broader areas of biotechnology, microbiology, and others. Since our target audience is the scientific community, we present our method in conferences, and we also share our story with media outlets.

Why did you choose a widening country as a host?

To put it simply, my choice of Lithuania stems from the fact that it's my homeland. After completing my postdoc in Germany at Kiel University under the supervision of Prof. Andre Franke, naturally, I decided to seek a path to become an independent scientist in Lithuania. Although not a popular choice, Lithuania is a very good place to work and live, as the relatively low cost of living, access to free healthcare and education, and beautiful natural landscapes offer a high quality of life.

How did you find your host organisation?

Actually, I first found Prof. Linas Mazutis, and it so happened that he leads a research group at the Institute of Biotechnology, Vilnius University. I knew that L. Mazutis is working on microfluidics-based technologies for nucleic acid sequencing and wanted to join his group in order to develop a droplet-based single-cell small RNA sequencing method, because I have been working on microRNA research since my doctoral studies and was missing such a method myself.

What kind of support did you get?

I received a lot of support regarding conceptualisation and writing the application from my supervisor Prof. Linas Mazutis, who is a former MSCA fellow and now alumni. I also received a lot of help from the host institution's (Vilnius University) Department for Research and Innovation regarding communication, collecting required materials, etc. The guidelines provided by the European Commission, as well as by the Net4MobilityPlus project, were invaluable in the process of writing a successful application.

What tips can you give other researchers who would like to apply for MSCA?

In my opinion, the most important aspect of a successful application is to make a good team and to be on the same page with your future supervisor at the host institution. Your expertise and that of your supervisor should complement, and not duplicate, each other. Interdisciplinary skills, especially, are an advantage, since they greatly expand the possibilities of your research. The MSCA fellowship is about helping you advance as an independent researcher, which means that it is not only about the research, but also about your training, two-way

knowledge transfer, as well as your supervision, which are equally, or even more important.

More information on the project:



The Marie Skłodowska-Curie Actions (MSCA) support researchers at all stage of their career across all disciplines. The MSCA also support cooperation between industry and academia and provide innovative trainings and career developments.

The MSCA Individual Fellowships (IF) provide opportunities to researchers of any nationality to acquire and transfer new knowledge and to work on research and innovation in Europe and beyond.

The MSCA-NET project is the MSCA NCP project to facilitate the transnational cooperation to achieve a consistent and harmonised level of NCP support. The scientific community can also profit from our project to support their MSCA application.

