### Luxembourg and EMBO in numbers

Luxembourg has been an EMBC Member State since 2007.

#### **EMBC** Delegate

**Stéphanie Schott** Ministry of Higher Education and Research

EMBO Member

#### EMBO Courses & Workshops

(2014 – 2024) 96 Luxembourg attendees at EMBO Courses & Workshops throughout Europe

#### EMBO Postdoctoral Fellows

EMBO opportunities in Luxembourg

#### EMBO Postdoctoral Fellowships

fund internationally mobile researchers for a period of up to two years\*. Applications open all year around.

#### EMBO Scientific Exchange Grants

fund research exchanges of up to three months. The grants facilitate collaborations with research groups with expertise, techniques, or infrastructure that is unavailable in the applicant's laboratory. Applications open all year around.

#### EMBO Advanced Collaboration Grants\*

fund exchange visits of group leaders with scientists from EMBC Member States to develop or carry out collaborative projects, or to prepare joint grant proposals. Application deadline: 31 August 2024.

#### **EMBO New Venture Fellowships**

help early career scientists to explore topics outside their current area and enter a new research direction. They fund research visits of up to three months. Application deadline: 31 October 2024.

#### EMBO Core Facility Fellowships

support training for staff of core facilities that provide services to research institutions or universities. They fund international exchanges of up to one month. Application deadline: 31 December 2024.

embo.org | Information as of June 2024 Contact: communications@embo.org Cover: Original image courtesy by EMBO Member François Nédélec

#### The EMBO Young Investigator Programme

supports group leaders in the early stages of setting up their independent laboratories for a period of four years. Networking is a key aspect. Application deadline: 1 April.

#### **EMBO Installation Grants\***

support group leaders establishing their laboratories in Luxembourg and becoming part of an international young investigator network. Application deadline: 15 April.

#### **EMBO Courses & Workshops**

stimulate exchanges of the latest scientific knowledge and provide training in experimental techniques. Application deadlines: 1 March and 1 August.

#### EMBO Press\*

publishes five journals that serve the global life science community: The EMBO Journal, EMBO Reports, EMBO Molecular Medicine, Molecular Systems Biology, and Life Science Alliance, which is published in partnership with Rockefeller University Press and Cold Spring Harbor Laboratory Press. EMBO is waiving the Article Processing Charge (APC) for Open Access publication in the EMBO Press journals for scientists working in Luxembourg provided they are not covered by a Springer Nature Open Access Agreement and do not have scientific publishing support or alternative funding available.

Find more EMBO schemes at embo.org/funding.

\* Luxembourg is one of the participating countries in the increasing participation schemes running until the end of 2024 The aim of the schemes is to increase participation in the EMBO Programmes throughout Europe.

## Focus on Luxembourg



#### What has the EMBO role been in your career?

EMBO's international networking is very important not only for the ideas and understanding and visions that it helps you develop. It also enables you to realize those ideas with partners and the wider network.

For young scientists it can be sometimes challenging to understand and work with other scientists in different countries. But it's extremely instructive. EMBO makes up a big European network, and you meet other scientists, you exchange research outcomes, and you formulate ideas together. It's an exchange of ideas that mature collectively.

Veronika Horkova

The importance of

loving what you do

the Luxembourg Institute of Health

Veronika Horkova's love of immunolo-

gy began as an undergraduate and she

hasn't lost the passion for the subject.

"Immunology was considered one

of the toughest courses, but I didn't

EMBO Postdoctoral Fellow at

#### What advice would you give for a successful career in the **Iife sciences**?

Take your opportunities! My next step was never planned but when I decided what I wanted to do, I was really 'all in'! Opportunities will open – they always do – and my advice is to grab them. Even if it scares you, when there is an opportunity to step up, you should simply do it. To only worry about your career, rather than have a broader vision of what you want to achieve, is probably a very counterproductive approach. The world needs some people who are happy to stay where they are, but if there is a door there, at least look what's on the other side of it.



# disease.

## **Perspectives from Ulf Nehrbass**

Chief Executive Officer of the Luxembourg Institute of Health | EMBO Member

What drives you as a scientist? I am trying to find ways to apply the best part of fundamental research to medicine. For example, when I started the Institut Pasteur in Korea, we infected human macrophages directly with mycobacteria that cause tuberculosis, and then we screened the library of drugs to see what effectively kills the tuberculosis inside but leaves the macrophage intact. That led to the identification of Q2O3 to be tested in clinical trials as an efficacious compound against tuberculosis, and also against drug-resistant tuberculosis.

In Luxembourg we do precision medicine using large cohorts. We link clinical research and hospitals, and use data to stratify patients, to identify the right drug for the right patient. At the moment, the integrating scientific topic is immune homeostasis. We look at diseases where the immune system is either too active or too inactive.

#### How do you drive this research forward?

What is very important for us in Luxembourg, because it is a small country, is to collaborate closely with the near abroad. We have strategic collaborations, and our partners invest their own money into joining Luxembourg in the precision medicine effort that we are undertaking right now.

We very much standardize the way we generate patient data in the region to start to better understand the potential of precision medicine, and how we can apply Artificial Intelligence in health. In the past these efforts were not very successful because retrospective data do not have the quality to generate meaningful results.

Accordingly, it's very important when you're going to get smart people to engage and on board that there is a clear vision. It must be ambitious but feasible.

## Meet scientists from the **EMBO** communities

have to struggle because it was just a natural fit," she says. "You must be curious and love the thing that you do because in immunology there are so many things that we don't know! There is so much to explore still - it's just fascinating."

Horkova's EMBO Fellowship enabled her postdoctoral position at the Luxembourg Institute of Health.

"We are trying to help our body to fight infections, cancer or whatever comes your way by redirecting the way cells use their energy sources," she says. "We are exploring how different T cell subsets use their metabolic pathways to accommodate their function. I'm specifically looking at crossroads between glycolysis and oxidative metabolism, studying how altering the pyruvate flux alters the T cell function."

Her institute has a clear translational as well as basic research function, but Horkova says her work is still at an

early stage. "Our research might help us understand how to manipulate the T cell response in autoimmunity or towards various challenges like infections or cancer," she says. "Can we modulate what function we need the T cells to accommodate? Nudge them towards the necessary response and help our immune cells to fight against the challenges?"

Her advice to young scientists is to be persistent and find the right support. "You have to love it and you have to find a good team around you."

#### Bora Tastan From Türkiye to Luxembourg

EMBO Postdoctoral Fellow at the Luxembourg Centre for Systems **Biomedicine (LCSB), University of** Luxembourg | Former Scientific **Exchange Grantee** 

Bora Tastan's EMBO Fellowship enabled his move to Luxembourg to continue his research into the underlying mechanisms of neurodegenerative diseases including Alzheimer's

"NLRP3 inflammasome activation is part of our innate immune system. We still don't completely understand how and why this contributes to pathologies and subsequent neurodegeneration," he says. "I believe that our investigations will provide valuable

mechanistic insights, which could turn into potential therapeutic targets for the treatment or management of these devastating conditions and disorders."

After undergraduate and PhD studies in Izmir, he was attracted to Luxembourg's vibrant and multicultural research environment and the country's reputation for the quality of the work-life balance.

"The whole country is multicultural. You really feel that Luxembourg is a melting pot of these diverse cultures," he says. "The government is also investing in infrastructures and research, and working in the Luxembourg Centre for Systems Biomedicine is an amazing opportunity."

Tastan is passionate about making a difference to society from his work. "My motto in life is seeing the world not as it is, but as it should be. My EMBO Fellowship is making this motto become reality," he says.

"When talking with younger scientists, I'd really like to emphasize the importance of international opportunities in shaping a successful career in the life sciences. You see new edges and new angles to your research and expand your scientific personality."