Meet scientists from the EMBO communities

Elin Org
Big data, big connections

Associate Professor of genomics and microbiomics, University of Tartu, and EMBO Installation Grantee

Elin Org studies the interaction between the human microbiome and health. Based at the Molecular and Cell Biology Centre at the University of Tartu, she sees the Estonian Bighton, which contains genomics information from over 200,000 individuals, together with national health records, and microbiome data from 1,500 individuals, for her research. This wealth of data is proving to be very valuable. “We can track the effects, for example, regular medication intake on the microbiome, and investigate correlations of microbiome changes with diseases. Such a large and rich data set is hard to find elsewhere,” she explains.

“International researchers also see the opportunity we have,” says Org, who collaborates with colleagues from across Europe. An EMBO Installation Grantee in 2019, she was first elected as an EMBO Member in 2011 and has been intimately involved with EMBO funding opportunities for his fellow Estonian scientists. “EMBO offers several very valuable fellowship and grant opportunities to his fellow Estonian scientists. It’s like a catch-22: if you don’t have enough educated people in the private sector, it will never grow to the point where it needs more of them. Also, the number of students has gone down, which means that the number of academic staff cannot go up, rather it is decreasing. We want young people, they go abroad and work elsewhere, but do not have career possibilities in Estonia.”

Elin Org is interested in medicinal proteins. “We study the structural and functional aspects of proteins that associate with copper and zinc ions, to understand how they obtain and transport metals,” he explains. “Metal metabolites in the cell, and the disturbances associated with them, are known factors in degenerative diseases such as Alzheimer’s and Wilson’s disease,” he adds. “A better understanding of how metalloproteins transport ions and interact with enzymes could lead to new therapies for these devastating diseases.”

Palipa Kumam
Innovative research at TalTech and beyond

Professor of Proteomics, Tallinn University of Technology, and EMBO Member

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Palipa Kumam is Professor of Proteomics at the Tallinn University of Technology, or TalTech, for short. “With the exception of medicine and the humanities, the majority of specialists is represented here - engineering, science, business - but with a strong technological component. In interdisciplinary work is encouraged to spark innovation, a mindset found not just in the Estonian society and research community. “Estonians are innovative and love to find digital or e-solutions,” says Palipa. “Fields like biostatistics are doing well in Estonia. For this type of research, you don’t need much - just large scale data in the cloud - the data facilities don’t have to be in the same place, or even in the country. Expertise and intellectual contribution are what is important.”

While funding in Estonia is still modest compared to that of the future of Estonian science, “Remember, we are still a young country and have had a difficult history. Estonia has no natural resources, as it is understood that the only way to grow our economy is through scientific innovations. The funding situation for research and higher education is now improving and that is a good feeling.”

With only around 5,000 researchers, the scientific community in Estonia is small. “It’s an informal network,” Palipa says. “But it means that collaborations can easily be set up.” Estonian researchers are also actively looking beyond the borders to build international collaborations and apply for funding from sources such as the European Union and the European Research Council itself. “Our Centre for Molecular Medicine Estonia has been an EMBO Member since 2011 and has been intimately involved with EMBO funding opportunities for his fellow Estonian scientists. “EMBO offers several very valuable fellowship and grant opportunities to his fellow Estonian scientists. It’s like a catch-22: if you don’t have enough educated people in the private sector, it will never grow to the point where it needs more of them. Also, the number of students has gone down, which means that the number of academic staff cannot go up, rather it is decreasing. We want young people, they go abroad and work elsewhere, but do not have career possibilities in Estonia.”
Estonia and EMBO in numbers

EMBO Postdoctoral Fellowships support scientists to carry out research for a period of up to two years. International mobility is a key requirement.

New: An interview by an EMBO Member or Young Investigator is now guaranteed to researchers applying to work in Estonia, provided their application passes initial screening for overall quality. These will thereby enter the final shortlist.

EMBO Scientific Exchange Grants support new, international collaborations, enabling the transfer of expertise unavailable in the applicant’s laboratory. They fund research visits of up to three months. Applications open all year around.

EMBO New Venture Fellowships help early career scientists to explore topics outside their current area and discuss their latest discoveries. Application deadlines: 1 March and 1 August.

EMBO Lecture Courses provide funding for lecture courses to train PhD students and postdoctoral researchers in participating countries such as Estonia. Application deadline: 1 March 2022.

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. Applications open all year around.

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 of the programme. Application deadline: 1 April.

EMBO Advanced Collaboration Grants are a new scheme for group leaders in participating countries such as Estonia who wish to visit scientists in other EMBO Member States to develop or carry out collaborative projects, or to prepare joint grant proposals. This scheme will start accepting applications by December 2021.

EMBO Practical Courses provide training in new techniques for researchers as well as core facility staff. Application deadlines: 1 March and 1 August.

EMBO Workshops bring together scientists to present and discuss their latest discoveries. Application deadlines: 1 March and 1 August.

EMBO Lecture Series provide funding for lecture series to train PhD students and postdoctoral researchers in participating countries such as Estonia. Application deadline: 1 March 2022.

EMBO Press publishes free journals that serve the global life science community. The EMBO Journal, EMBO Reports, EMBO Molecular Medicine, Molecular Systems Biology, and Life Science Alliance, published together with Rockefeller University Press and Cold Spring Harbor Laboratory Press.

EMBO opportunities in Estonia

Focus on Estonia

EMBO has a strong educational system with a high level of secondary and higher education attainment. There are fees for bachelor and master degree programmes.

The University of Tartu is the largest university in Estonia, and one of the oldest universities in Northern Europe. Tallinn University of Technology is Estonia’s only university of technology. The Estonian University of Life Sciences in Tartu is renowned for its agriculture and forestry.

Estonia is a digital society, reflected in its R&D with a focus on smart specialisation and automation – and the use of big data to create solutions for real-life situations, such as climate change and environmental issues.

The University of Tartu is a public-law legal entity. R&D expenditure was 1.6% of GDP in 2019, an increase of 14.9% on 2018. Expenditure on R&D was around 4.5 million euros in 2019, an increase of almost 26%. Researchers in Estonia are increasingly in securing funding from international sources, partly through Horizon Europe, the EU’s new programme for Research, Innovation, and Science. The programme, which includes the European Life-sciences Infrastructure for Biological Information (ELIXIR), is driven by the business sector.

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Estonia has 374,700 researchers – 1,050 new EMBO Members and Young Investigators to give EMBO from Estonia.

Professional Bridge Event Institutions: Estonia and the Baltics

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