

Iceland and EMBO in numbers^a

- 3
EMBO Members^a
- 1
EMBO Scientific Exchange Grantee^b
1 researcher from an Icelandic institution was awarded a Short Exchange Grant to another institution
- 1
event in Iceland supported by EMBO^b
24 attendees from Icelandic institutions attended EMBO-funded courses and workshops

a At April 2025
b 2020 to 2025

Facts and figures

Iceland has seven universities. The University of Iceland is the largest (14,000 students) and oldest institution and the only one to offer Masters' and PhD study in all major academic disciplines.¹ Around 40% of young adults in Iceland attain a tertiary education.² In 2023, more than 4,000 people in Iceland were employed in R&D work.³

Gross expenditure on research and development (GERD) increased significantly between 2019 and 2023 by 61% to reach 114.5 billion krónur and rising as a percentage of Gross Domestic Product to 2.65%. The main sectors financing GERD in 2022 were business enterprise providing 52.5%, government 25.8% and inward investment 17.7%.³

Life scientists in Iceland have access to a funding from the Icelandic Research Fund and other sources⁴ and through Horizon 2020 projects, European Research Council grants, and Marie Skłodowska-Curie Actions⁵ as well as EMBO.

EMBC Delegates

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The EMBO Programmes are funded by the European Molecular Biology Conference (EMBC), an inter-governmental organization that comprises 31 members states.

Iceland has been an EMBC Member State since 1978.

Key figures

Population: 389,444⁶

R&D spending as percentage of GDP: 2.65%³

People employed in R&D: 4,019³

Universities: 7¹

Horizon 2020 funding:⁵

387 organizations including 113 SMEs involved in H2020 projects

5 ERC Principal Investigators

52 Marie Skłodowska-Curie Actions funded researchers

References

- Study in Iceland: <https://study.iceland.is/study-in-iceland/universities-in-iceland/university-of-iceland>
- Eurostat, Population by educational attainment level, sex and age https://ec.europa.eu/eurostat/databrowser/view/edat_lfse_03_custom_8513677/default/table?lang=en
- OECD, Main Science and Technology Indicators, Belgium: [https://data-explorer.oecd.org/viz?tm=main%20science%20and%20technology%20indicators&pg=0&snb=3&vw=tb&df\[ds\]=dsDisseminateFinalDMZ&df\[id\]=DSD_MSTI%40DE_MSTI&df\[ag\]=OECD.STI.STP&df\[vs\]=1.3&dq=BEL.A.T_RS%2BG_FA%2BG_FON%2BG_FG%2BG_FB%2BT_TT%2BG.PI_GERD%2BPT_B1GQ%2BXDC%2BFTE.&lom=LASTNPERIODS&lq=5&to\[TIME_PERIOD\]=false](https://data-explorer.oecd.org/viz?tm=main%20science%20and%20technology%20indicators&pg=0&snb=3&vw=tb&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD_MSTI%40DE_MSTI&df[ag]=OECD.STI.STP&df[vs]=1.3&dq=BEL.A.T_RS%2BG_FA%2BG_FON%2BG_FG%2BG_FB%2BT_TT%2BG.PI_GERD%2BPT_B1GQ%2BXDC%2BFTE.&lom=LASTNPERIODS&lq=5&to[TIME_PERIOD]=false)
- Icelandic Centre for Research: <https://en.rannis.is/funding/research/icelandic-research-fund/>
- European Commission, Horizon 2020 country profile https://dashboard.tech.ec.europa.eu/qs.digit.dashboard_mt/public/extensions/RTD_BI_public_Country_Profile/RTD_BI_public_Country_Profile.html?Country=IS
- Statistics Iceland: <https://www.statice.is/>

EMBO opportunities in Iceland

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.

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.



Find more EMBO schemes at embo.org/funding

EMBO Courses & Workshops

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

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.



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Focus on Iceland



Perspectives from Eiríkur Steingrímsson

Professor at the University of Iceland, EMBO Member
and EMBC Delegate



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How important is EMBC and EMBO membership for Iceland?

It has played a very important role, especially the Postdoctoral and Scientific Exchange Grants because they allow people to perform research in different places, use technologies and learn new techniques. There are also a number of people who have attended the EMBO Solutions Lab Leadership course and have been in contact with other scientists and formed networks.

What has the election as an EMBO Member meant personally?

It raised my profile and my visibility here in Iceland, but at the same time Icelanders are really not into titles! It is also important when you are asked to review grants or similar tasks.

Why did you move overseas for your PhD?

Iceland is a very small country, at that time focused on fish, and I knew I was not going to be doing any fish research! I got really fascinated by genetics as we had Iceland's first EMBO member Guðmundur Eggertsson who started teaching genetics at the University of Iceland and brought genetic engineering to Iceland in 1977.

No regrets about not researching fish?

None whatsoever, however I do like fly fishing and that is what I do in my time off.

What interested you in molecular biology?

I came from the suburbs of Reykjavík into Eggertsson's genetics class and it really hooked me. His work laid the foundation for the Icelandic biotech community which is now a very important and fast-growing industry. Biotech-pharma in Iceland per capita is four times bigger than in the US. I wanted to do a PhD and eventually ended up at UCLA where I became really interested in developmental biology to understand the genetic regulatory mechanisms involved in development. That was a very exciting time in developmental biology and for me it opened a completely new vision of how life works, but also what is involved in being a scientist.

Did you shift focus after the PhD?

For my postdoc I moved away from *Drosophila* into mouse genetics at the National Cancer Research Institute in Frederick, Maryland, but my wife was working as a postdoc in linguistics in the Netherlands and was offered a position in Iceland. So, in 1997 we moved back to Iceland. This was nice - but at the same time, I did not have the funding or the environment to do the advanced research that I had been doing in the US. It was a massive cultural shock! In the US I had been focused on my own research, but in Iceland I realized that we needed to do basic things such as creating a graduate programme in molecular life sciences and then starting the Biomedical Center which is now an umbrella organization for all the life sciences in Iceland. The funding and support environment then started to change and over time I was able to get funding and get started. It probably took me 10 years more than if I had gotten

a faculty position somewhere in the US. But I kept going! It called for all kinds of organizational skills. For example, trying to get people convinced about creating a Biomedical Center and what they would gain from it, and the graduate programme and so on. It taught me a lot of new skills and I realized I had skills that I just did not think I had.

What is your key research question?

A key property of Melanoma cells is that they metastasize to other sites. If you have residual local Melanoma, it can easily be removed, but if the cells go elsewhere, you have a problem. The important thing for developing clinical treatment options is to understand how the pathways work. The protein that I work in is called MITF (microphthalmia-associated transcription factor) and is very important for deciding whether melanoma cells proliferate or metastasize, so it is important to understand how this protein is regulated and how it mediates its effects.

What advice do you give to high students about a career in the life sciences?

People come to me all the time, especially if they have been studying biology, and I encourage them to find something they enjoy because having fun doing this is the most important thing. I know people who are working in various jobs outside sciences, and they reach my age and dread going to work yet another day. That thought never occurs to me. I look forward to coming to the lab. The other thing is that I am working with young people and working with them when they are trying to find their niche in life is a lot of fun.

Meet scientists from the EMBO communities

Teitur Sævarsson Building new capabilities

PhD student University of Iceland |
Scientific Exchange Grantee

Teitur Sævarsson has a clear message for Icelandic colleagues after completing his EMBO Scientific Exchange Grant: "Definitely apply and don't hesitate," he says. "It is both very simple compared to other grant application processes, and the people at EMBO were extremely helpful."

"It allowed me to go to Oslo and learn new techniques without having substantial financial worries. There was basically no downside to this!"

Sævarsson's PhD studies how differentiation status in Melanoma cancers affect their immunogenicity with a specific focus on immune evasion mechanisms rather than immunostimulatory mechanisms.

He spent three months at the Norwegian Radium Hospital in Oslo learning how to genetically engineer human T-cells to add new T cell receptors. "I can put them in culture with my Melanoma cells and then observe the interaction depending on the differentiation," Sævarsson says. "At that time, nobody here in Iceland knew how to do it, so this brought a 'new' method here although of course it is not novel globally."



On his return, Sævarsson spent several months setting up his new method, developing protocols and successfully testing the technique at his home lab.

"We hope this technique will become more widely used in Iceland," he says. "The dream scenario would be that we introduce more people to the technique and then cooperate to implement this in wider research projects."

Sævarsson grew up on a small farm in the southern region of Iceland and did his undergraduate degree in agricultural sciences before pivoting to cancer research.

"It sounds more random than it actually is," he says. "I went from researching sheep coat color which stems from the melanocytes to studying melanoma which is not that big a stretch."