

Malta and EMBO in numbers^a

- 1 EMBO Member^a
- 1 EMBO Installation Grantee^b
- 1 EMBO Postdoctoral Fellow^b
- 1 EMBO-funded courses or workshops in Malta^c
194 researchers from outside Malta attended events in the country
9 researchers from Maltese institutions attended events abroad

EMBC Delegates

Dr. Melissa Formosa
University of Malta

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

Malta has been an EMBC Member State since 2016.

2 researchers at Maltese institutes received a **Scientific Exchange Grant** for study abroad^c

^a Maltese citizen
^b Former Fellow or Grantee working in Malta
^c 2020–25

Key figures

Population: 563,443¹⁰

R&D spending: 0.64% of GDP⁶

Researchers employed in R&D: 2,125⁵

Patents: 20⁷

Higher education institutions: 4²

Horizon Europe funding:⁹

201 organizations including 48 SMEs involved in Horizon Europe activities

1 ERC principal investigators

34 Marie Skłodowska-Curie Actions funded researchers

References

1. Malta Tourism Authority: <https://www.visitmalta.com/en/>
2. European Commission: <https://euryldice.eacea.ec.europa.eu/eurypedia/malta/higher-education>
3. University of Malta: <https://www.um.edu.mt/about/history/>
4. Eurostat: https://ec.europa.eu/eurostat/databrowser/view/edat_ifse_03_custom_8513677/default/table?lang=en
5. Eurostat: https://ec.europa.eu/eurostat/databrowser/view/tsc00003/default/table?lang=en&category=t_scitech.t_rd
6. Eurostat: https://ec.europa.eu/eurostat/databrowser/view/rd_e_gerdtot/default/table?lang=en
7. European Patent Office, Patent Index 2024: <https://www.epo.org/en/about-us/statistics/statistics-centre/#/countrydashboards>
8. Xjenza Malta: <https://xjenzamalta.mt/open-funding-schemes/>
9. European Commission, Horizon Europe country profile: https://dashboard.tech.ec.europa.eu/qs_digit_dashboard_mt/public/extensions/RTD_BI_public_HE_Country_Profile/RTD_BI_public_HE_Country_Profile.html?Country=MT
10. National Statistics Office: <https://nso.gov.mt/>

EMBO opportunities in Malta

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

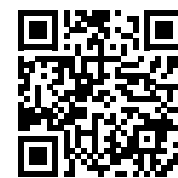
supports group leaders in the early stages of setting up their independent laboratories for a period of four years. Networking is a key aspect. Application deadline: 1 April.

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.



Find more EMBO schemes at embo.org/funding



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Information as of June 2025
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Facts and figures

The Republic of Malta is a parliamentary democracy consisting of three islands in the Mediterranean Sea. A popular tourist destination, Malta is home to extensive archaeological sites including some of the oldest free standing temples in the world.¹ There are four higher education institutions in Malta², including the University of Malta which is the country's oldest and largest.³ Around 42% of Maltese adults attain a tertiary education.⁴ In 2023, Malta recorded more than 2,100 researchers working in R&D.⁵ Gross expenditure on research and development (GERD) increased by 64% between 2019 and 2023 to reach 131 million Euro or 0.64% of Gross Domestic Product. The main sectors financing GERD in 2023 were business enterprise providing 58% and the higher education sector with 40%.⁶ The European Patent Office granted 20 patents to residents of Malta in 2024.⁷ Life scientists in Malta have access to funding from Xjenza Malta⁸, through Horizon Europe and Marie Skłodowska-Curie Actions⁹, as well as EMBO.



Focus on Malta



Perspectives from Panagiotis Alexiou

ERA Chair, Bioinformatics for Genomics in Malta,
University of Malta | Former EMBO Installation Grantee



Why did you choose to move to Malta?

The English language was a big thing for me as it is easier to live in a country where you can speak the language. I also saw the potential here. It is a small country and there is a lot to do to bring the country up to speed with respect to the rest of Europe. If I went to a more developed country, there is only so much you can do, while you can have a much greater impact in a country that is catching up.

What advice would you give to colleagues about the EMBO Programmes?

I would tell them to definitely apply because they are great programmes with an easy application process. Having access to that network of people is great. You get to meet the same people year after year and see the development of their projects. You build trust and people help each other and build collaborations. Science conferences are usually thousands of people but with EMBO you have a community.

What is your current focus of research?

I chair a project called Bioinformatics for Genomics in Malta under the Horizon Europe Widening programme with the goal of developing the field of bioinformatics. I have built a team of bioinformaticians, and we support research across all the faculties and centres at the University of Malta. I also give seminars to promote bioinformatics.

I have my own research which applies machine learning to different molecular biology questions mostly having to do with RNAs and transcriptomics.

How important is bioinformatics for research in Malta?

I have been here now for a bit over two years and the field of bioinformatics has developed a lot. Malta went from very little bioinformatics research to a community of several students and postdocs. It is a small country, so it is a small field, but it is very dynamic and active. The big thing I have seen over the past 20 years is that biology has become a data-driven

field. With high throughput sequencing and other technologies, we are producing so much data in biology that it is literally impossible to analyze without having a computational approach. Bioinformatics used to be a bit of a side project and bioinformaticians were seen as technicians, but it is now more central.

What do you see as the potential impact of artificial intelligence on biology?

I am training models to do specific research, for example microRNA target prediction. This is a big field and will get bigger because we have a lot of data and can build bigger models. I am also working to use AI to automate processes of scientific discovery, such as an AI system that can do the research discovery itself. That will be a huge challenge over the next three years or so, but we do not have an event horizon beyond three years because of how fast the field is moving. These are definitely interesting times! We are travelling so fast that it is hard to see whether the direction we are going makes sense, although unfortunately I do not think there is a mechanism to pull the brake. I am trying to manage or mitigate the things I can. You have probably seen all the AI slop that is being produced in writing, and I do not want this to happen to science.

Does AI have a role in health, for example personalized medicine?

The difficulty with personalized medicine is not so much the machine learning part as much as the huge issues of sensitivity when dealing with medical data – ethics, security and standardization of the data.

There could be an AI interface – not ingesting the data but an interface for workflows such as vetting the security process to remove the drudge work. It is a legal and ethical minefield. I am in a project here at the University, collaborating with the Faculty of Laws, trying to produce a draft law for consideration by the Maltese Government about how to manage biobanking data and compliance with GDPR and local law.

Meet scientists from the EMBO communities

Emma Spiteri Transferring new skills

PhD student, University of Malta |
former Scientific Exchange Grantee



Born, raised and educated in Malta, it was a natural decision for Emma Spiteri to continue her postgraduate studies at the University of Malta. Her EMBO Scientific Exchange Grant (SEG) placement in Rome enabled her to learn new skills to apply in her home lab.

“I would strongly encourage other students in Malta to apply for this grant. It is an exceptional opportunity to access expertise, technologies and collaborations which might not be available locally,” she says.

Spiteri is in the second year of her PhD studies. The EMBO SEG funded a two-week visit to the laboratory of Carmine Carbone at the Università Cattolica del Sacro Cuore in Rome. “The EMBO grant was a turning point in both my research and professional development,” she says.

Spiteri says her research is at the intersection of cancer biology and bioinformatics. “My focus is on pituitary neuroendocrine tumors which are the second most common type of primary brain tumors,” Spiteri says. “I am applying a multiomics approach to explore genes and cells within these tumors.”

She used the EMBO exchange to gain hands-on experience in the field of spatial transcriptomics using Xenium. This activity also exposed her to new wet lab learning opportunities.

“The collaboration with the Carbone lab is ongoing and we are working on a joint publication,” she says. “It is a technique that I hope to eventually bring to the University of Malta more widely.”

Why did you study abroad before returning to Greece for your PhD?

I decided on Scotland for my undergraduate degree in 1999 because Dolly the sheep had been recently cloned as the first animal from adult somatic cells in Scotland, and I wanted to study genetics. The University of Aberdeen had a really good program in genetics, but it was a big change going from Athens to the North of Scotland! I finished my PhD in Greece at the height of the Global Financial Crisis and my lab had a collaboration with a group at the University of Pennsylvania. So I moved there for a postdoc and stayed for almost seven years before coming back to Europe for a position at CEITEC in the Czech Republic. After that I received a grant to move to Malta to develop bioinformatics here.

How important was the EMBO Installation Grant for your career?

It is not a huge amount of money, but it is very versatile which is really helpful when you are setting up your lab. But the key point of the grant is the community it connects you to. The EMBO Young Investigators Network has been amazing! I go to sectoral meetings and meet all these people who are already very good scientists, and I have started collaborations with people I met there. I am quite involved in the Network and have co-organized a bioinformatics sectoral meeting. It was probably my best grant in terms of the impact it had on my career.