

Israel and EMBO in numbers

64 EMBO Members^a

- 5 Haifa
- 14 Jerusalem
- 35 Rehovot
- 1 Sitrya
- 9 Tel Aviv

29 EMBO Young Investigators^a

- 1 Beer-Sheva
- 2 Haifa
- 5 Jerusalem
- 20 Rehovot
- 1 Tel Aviv

9 EMBO Postdoctoral Fellowships

were awarded to scientists joining laboratories in Israel.^b

- 1 Haifa
- 1 Kfar Saba
- 1 Ramat-Aviv
- 1 Ramat Gan
- 4 Rehovot
- 1 Tel Aviv

19 Scientific Exchange Grants

19 scientists from Israeli institutions were awarded EMBO Scientific Exchanges Grants to another institution^b

8 events

in Israel^b
722 attendees from Israeli institutions attended EMBO-funded courses and workshops worldwide

EMBC Delegates

Dr. Iris Eisenberg,
Prof. Joel Sussman,
Mr. Barak Gatenyo (*Advisor*)
Ministry of Innovation, Science and Technology

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

Israel is a founding EMBC Member State.

EMBO opportunities in Israel

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

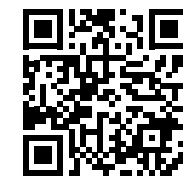
supports group leaders in the early stages of setting up their independent laboratories for a period of four years. Networking is a key aspect. Application deadline: 1 April.

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.

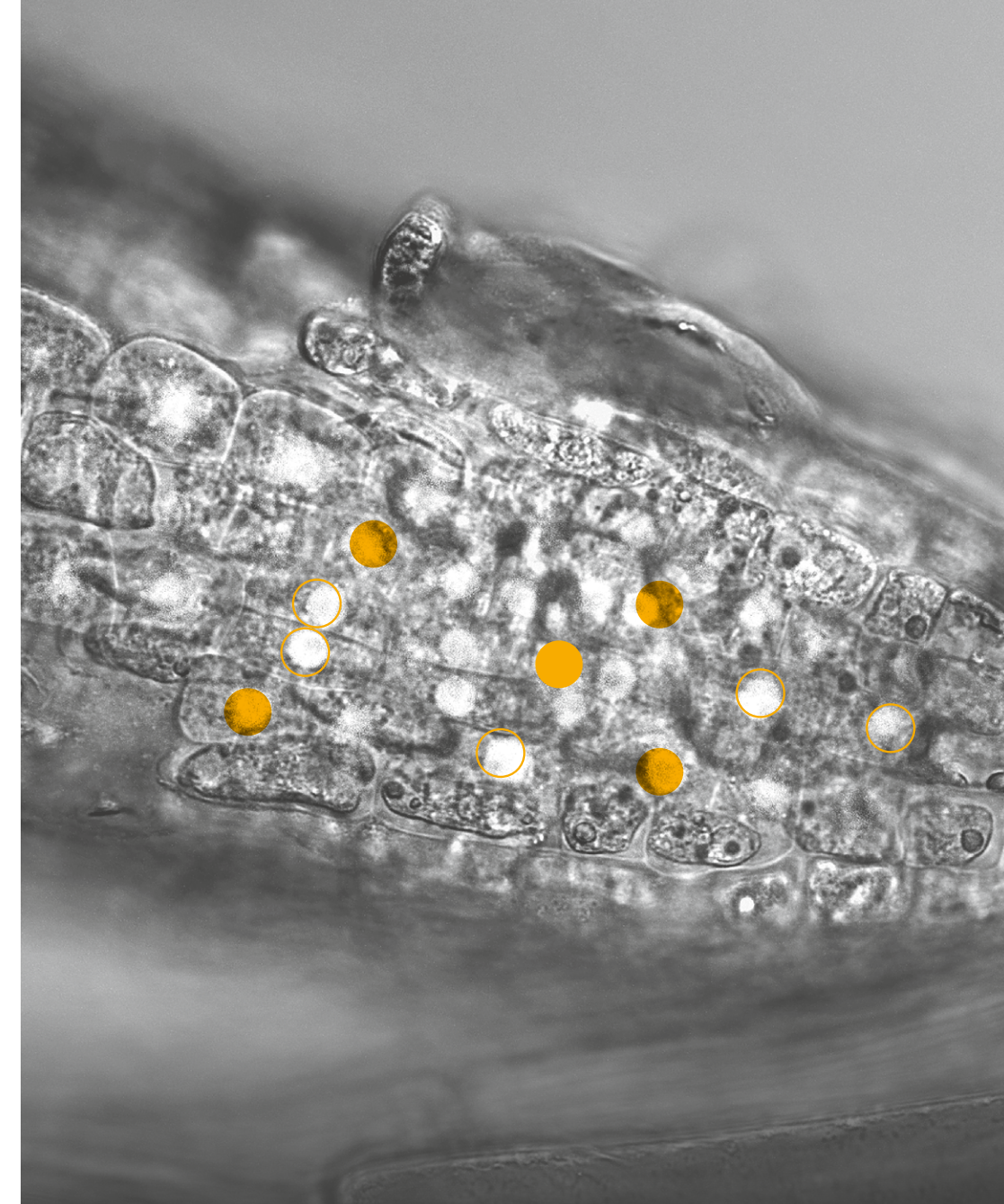


Find more EMBO schemes at embo.org/funding



Find the most recent version of this brochure and also more foci on other EMBC Member States and EMBO/EMBC global partners at embo.org/the-embo-communities/embo-communities-by-country

embo.org
Information as of June 2025
Contact: communications@embo.org
Cover: Original image courtesy of EMBO Member Paula Duque and Romana Yanez



Focus on Israel

Facts and figures

The State of Israel has nine universities¹ with the Technion – Israel Institute of Technology being the oldest, founded in 1912 under the rule of the Ottoman Empire, thirty-six years before the state of Israel was founded. Technion welcomed its first class in 1924 and initially provided training in architecture and civil engineering before extending its research programmes to life sciences, computer science, nanotechnology and energy, amongst other fields of study².

With 50.3% of 25–64-year-olds having attained tertiary education, Israel ranks as one of the highest countries among OECD and partner countries. International doctoral graduates in the field of natural sciences, mathematics and statistics account for 45.5% of the total number of doctoral graduate students, compared to an OECD average of 22.8%³.

4,928 patents were granted to Israeli residents in 2023⁴.

Life scientists in Israel have access to several sources of research funding. The main governmental funder is the Israel Science Foundation (ISF), itself funded by the Council for Higher Education (CHE), which is the official authority for higher education in Israel.

Researchers may apply to other Israeli governmental agencies, such as the Israel Cancer Research Foundation (ICRF), or binational funds from U.S.-Israel and Germany-Israel cooperation agreements. International funding can be accessed through grants from Horizon Europe projects, Marie Skłodowska-Curie Actions as well as EMBO.

Key figures

Population: **10.05 million**⁶

Civilian R&D spending as percentage of GDP: **6.3%**⁶

People employed in R&D in the Business sector: **137,607**⁶

People employed in R&D in the higher education sector: **11,603**³

Universities: **9**¹

Horizon Europe funding:⁸

2,061 organizations including 541 SMEs involved in H2020 projects

445 ERC Principal Investigators

302 Marie Skłodowska-Curie Actions funded researchers

References
1. Study in Israel: <https://studyisrael.org.il>
2. Technion – Israel Institute of Technology: <https://www.technion.ac.il/en/>
3. OECD, Education GPS: <https://gpseducation.oecd.org>
4. WIPO, Intellectual property statistical country profiles 2023: <https://www.epo.org/en/about-us/statistics/statistics-centre/#/countrydashboards>
5. Dutch Research Council: <https://www.nwo.nl/en>
6. Central Bureau of Statistics: <https://www.cbs.gov.il/en/cbsNewBrand/Pages/default.aspx>
7. Study in Israel: <https://studyisrael.org.il>
8. 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=IL



Perspectives from Ron Milo

Professor, Weizmann Institute of Science, Department of Plant and Environmental Sciences | Dean of Education, Weizmann Institute of Science | EMBO Member | EMBO Young Investigator Programme Alumni



With a background in physics, you switched to life sciences during your graduate studies. Can you tell us more about it?

I wanted to address climate change, which I consider the most pressing challenge of our lifetime and make an impact on environmental issues. Electrical engineering was not the most appropriate solution to this, so I transitioned into molecular and systems biology.

Fast forward twenty years or so, our lab tackles sustainability challenges from multiple avenues. One major focus is geared towards carbon fixation pathways in bacteria, teaching *E. coli* to feed itself with CO₂. Another key area of our work involves quantifying the global biomass of mammals and birds to better understand our impact on the biosphere. Ultimately, we are trying to create a holistic view of global

biosphere and measure the profound changes driven by human activity during the age of the Anthropocene.

Can you tell us more about this? How is humanity's impact on the biosphere measurable?

One of our current projects is leading a global census of birds - both wild and domesticated - by integrating diverse datasets to determine their relative biomasses. We found that the total biomass of domesticated birds surpasses that of wild birds, which opens up more avenues for both natural and social sciences on the Anthropocene. These figures help us better grasp ecological scales and dynamics, offering a powerful narrative about our impact on the natural world. We have conducted similar work on mammals, showing that domestic and human biomass vastly outweighs all wild species combined.

Recognising that these figures would otherwise be invisible, we have invested significant effort to translate this data into accessible and engaging formats. These visualisations have appeared in public exhibitions such as “Fixing Our Broken Planet” show at the Natural History Museum in London and have inspired collaborations with artists and educators. One project even inspired a new type of opera by artist Joana Moll based on our study comparing the weight of human-made objects to living biomass.

What motivates you to keep working with the public?

I am driven by curiosity and the joy of understanding the natural world through numbers. It feels like solving a complex, beautiful puzzle. This motivation led me to co-author *Cell Biology by the Numbers* with Rob Phillips, the Fred and Nancy Morris Professor of Biophysics and Biology at the California Institute of Technology. This book, freely available online, explores fundamental biological questions, such as how fast ribosomes work or how big is a mammalian cell. It has been used online by over a million people, beyond the 10,000 that bought the book, showing how helpful it is to give public access by authors.

Another highlight is a project, published in the EMBO Journal, that we nicknamed the “Rubisco Olympics.” Rubisco is the enzyme responsible for capturing CO₂ from the air, essentially serving as the gateway from inorganic to organic carbon. We synthesized different Rubisco variants from across the tree of life and tested their rate in a competitive framework. It was a fun and rigorous approach to address questions with real implications for climate and agriculture.

And ultimately, there is the mission itself. The topics we study, such as climate change, biodiversity loss and sustainability, are the most urgent challenges facing humanity. That is what keeps me going.

How has your engagement with EMBO shaped your work and what does its role mean for science in Israel and beyond?

EMBO has been a very special organization that facilitates interdisciplinary collaborations and meaningful connections. Just a couple of weeks ago, I returned from an EMBO workshop in Lisbon focused on harnessing biology for climate resilience. It brought together scientists from across the globe, Africa, Asia, Europe and the Americas. The diversity of perspectives led to for incredibly rich and thought-provoking discussions.

What also stands out to me is the human dimension and the relationships with students and colleagues built through the EMBO Programmes. I find it deeply rewarding to connect with life scientists across the globe. These interactions often evolve into long-term friendships, scientific partnerships and ongoing sources of personal and professional inspiration.

Meet scientists from the EMBO communities



Alina Pushkarev Thinking out of the box

**EMBO Postdoctoral Fellow,
Humboldt University of Berlin**

“If I could offer you only one tip for the future: talk to former members of the lab, listen to them and then make your own opinion”, states Alina Pushkarev. Currently finishing her postdoc with Prof. Peter Hegemann in Berlin, Germany, thinking outside of the box seems like second nature to the former EMBO Postdoctoral Fellow. “The lead investigator’s personality and character are the main factors I consider while choosing labs”.

The EMBO Postdoctoral Fellowship programme allowed Alina to conduct her research with peace of mind. She completed a PhD in a marine microbiology laboratory led by EMBO Member Oded Bèjà at Technion. During her PhD, she authored several papers including a publication in Nature about a novel type of rhodopsin, a light-sensing protein. She then moved to Germany where she has been working on the expression and characterization of crustacean rhodopsins to understand how animals such as the mantis shrimp are capable of sensing light outside of the human visual spectrum.

“I am grateful for the support that EMBO offered me”, Alina notes, “especially when it comes to soft skills training. Researchers often take on managerial roles without having received any kind of training on team management, leadership or mentorship.”

“And then,” Alina carries on, “there is EMBO. EMBO steps in and shows you that interpersonal skills are learnable, which provides instant results at any point of your career.”

Moving forward, Alina intends to return to Israel and establish her lab in the North. She will continue to investigate aquatic organisms, as well as the light-sensitive proteins that have ecological and medical relevance.

“Rhodopsins exist in different microbes,” she explains. “You find them in humans, in algae, in different prokaryotes and as well as in viruses. Algae may require these proteins as they swim away from or towards light. But viruses? Why would they need them? There is still a lot to learn.”



Mor Nitzan Sparking creativity to further interdisciplinary research

**Associate Professor,
Hebrew University of Jerusalem |
EMBO Young Investigator**

Mor Nitzan moved back to Israel from the United States in 2020 after completing her fellowship work as a John Harvard Distinguished Science Fellow and James S. McDonnell Fellow at Harvard University. She then started her lab at the Hebrew University of Jerusalem where she combines her expertise in computer science, physics, and computational biology. “Israel has a fantastic scientific community”, she says, “where interdisciplinary science is very much encouraged. To be able to communicate and collaborate across disciplines was an important factor in my career move.”

Nitzan initially heard about the EMBO Young Investigator Programme through word-of-mouth and excellent

recommendations from alumni of the EMBO programme. She decided to apply for it to strengthen collaborations across disciplines and provide better opportunities for her group team members. And in late 2024 was successfully selected. “I am grateful for this opportunity and looking forward to creative and out of the box brainstorming with fellow scientists”, Nitzan states.

A physicist by training, Nitzan established her computational lab at the intersection of three faculties, within the School of Computer Science and Engineering, the Racah Institute of Physics and the Faculty of Medicine. Her group members are similarly coming from different backgrounds and aim to better understand how cells encode multiple layers of spatial and temporal information, and how to efficiently decode that information from single-cell data. One of the main research angles intends to better understand how populations of cells are organized in space and time, which mechanisms control such spatial-temporal organization, and how can they be perturbed to alternative configurations.

“Living at the border of several disciplines and being connected to many communities is crucial for our creative processes, the questions we ask and the approaches for making progress in these areas”, explains Nitzan.



Sheila Roitman A Resilient Journey Through Science

**EMBO Postdoctoral Fellow,
Max Planck Institute for Biology,
Tübingen, Germany**

Sheila Roitman’s first application to the EMBO Postdoctoral Fellowship programme was not successful. She decided to review her proposal and eventually convinced the selection

committee members that she had the skills and expertise to take her project where she wanted to. “Failure did not deter me from getting back to work,” underlines Sheila. “I knew that I was a strong candidate, but so were many other applicants. It took dedication and commitment to get where I am at right now.”

With scientific roots in agricultural studies and marine microbiology, Sheila strives to tackle food security through scientific discoveries. She completed her PhD at Technion in EMBO Member Oded Bèjà’s laboratory and decided to complement her knowledge of aquatic viruses with the microbes that are infecting or living with agricultural plants. She now studies the role of microbes and phages in *Arabidopsis* at the Max Planck Institute for Biology in Tübingen, Germany.

“The *Arabidopsis* is a model plant when it comes to agricultural crops”, she mentions. “It resembles seasonal yearly crops in its lifestyle. While the Department of Molecular Biology’s focuses on genomics and genetics, it allows me to build a strong foundational knowledge of these fields through this plant.”

“The EMBO Postdoctoral Fellowship has been an incredibly supportive experience in that regard,” she adds. “The last two and a half years have been difficult, and I was for example pleasantly surprised to learn about the childcare grants available through EMBO. Not many other institutions provide these opportunities, on top of the training and networking opportunities that are more commonly known.”

Looking ahead, Sheila plans on bringing her multidisciplinary expertise to the field of agricultural studies. She hopes to conduct her research at the intersection of basic and applied sciences and to make an impact in a world where 80% of the global population is at risk from crop failures and hunger.