

The Environmental Research Initiative (ERI): Life sciences research for planetary and human health



About ERI

Save our planet

To sustain life on earth, we must protect our most vital resource – the environment – and safeguard the ecosystems which connect all life forms and also provide clean air, safe water, and healthy food. With climate change exacerbating society's challenges at an unprecedented rate, we need to join together and act with great urgency because the future of humanity depends on it.

Find solutions through life sciences

Life sciences must lead the way forward. From microbes that can degrade pesticides and plastic to marine plankton that removes CO₂, the study of living organisms can help us find novel solutions to pressing environmental challenges. There is still a gold mine of potential solutions to be discovered by molecular biologists.

Empower the brightest minds

The idea behind ERI is simple: **it is a bold initiative to drive cutting-edge research on environmental issues using any aspect of modern molecular biology at EMBL.** We recruit pioneering scientists to tackle environmental challenges using any aspect of modern molecular biology, and empower them to realise their scientific ideas with EMBL's unrivaled research expertise and cutting-edge technologies.

European Molecular Biology Laboratory (EMBL)

Europe-wide, global impact, infinite curiosity.

Established in 1974, EMBL is Europe's life sciences laboratory. As an intergovernmental organisation with 28 member states, EMBL employs 2000 people with more than 110 independent research groups and service teams covering the whole spectrum of molecular biology at six sites in Barcelona, Grenoble, Hamburg, Heidelberg, Hinxton, and Rome.

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Our proposal for an ERI Fellowship

ERI seed funding has already enabled exciting catalyst projects to fight marine and land pollution (see p.3). These projects have successfully demonstrated what EMBL scientists can do for the planet, paving the way for novel and sustainable science-based solutions to tackle global challenges. With decades of experience in training pre- and postdoctoral researchers at EMBL, we are poised to support ambitious scientists to use their curiosity and talents for the benefit of the planet.

Through dedicated ERI Fellowships, we would like to support promising researchers from around the world to build “green” careers and refine their research talents for the environment. ERI fellows will work on solution-oriented research projects using EMBL’s world-class molecular biology infrastructure, expertise, and mentorship to address environmental issues.

Why you may want to support an ERI Fellowship

EMBL cannot do it alone. We need the support of visionary partners – philanthropists, foundations, and corporations – to launch ERI Fellowships. By supporting ERI Fellowships, you will be giving postdoctoral researchers the opportunity to tackle the world’s greatest environmental challenges through life sciences research.

Your donation will:

- provide **financial support for for postdoctoral researchers to focus on solution-oriented environmental research at EMBL**
- support the **next generation of environmental scientists through professional training and development in life sciences research**
- connect you closely to **exciting, meaningful research and the scientists who do it**
- pave the way for **scientific breakthroughs to tackle global environmental issues**
- lead to a **deeper fundamental understanding of how molecular biology can improve planetary and human health**, catalysing further scientific discoveries

Join us for a healthier planet

- ERI Fellowships focus on environmental issues like marine and land pollution and conservation, bioremediation, and biodiversity.
- Gifts in the following amounts support 1 fellowship, including basic laboratory supplies:
 - » €160,000/2 years
 - » €240,000/3 years
 - » €340,000/4 years
- Fellows will be postdoctoral researchers and supported by an EMBL Group Leader
- Opportunities for secondments, partnerships, and to establish the fellowship in your name (or company), in memory of a loved one, or in honor of someone are possible.

Contact



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ERI impact so far

ERI has already enabled environmental research projects that combine scientific creativity and the latest technologies to combat marine and land pollution. These 1-year proof-of-concept projects led by EMBL scientists between 2021–2023 succeeded in developing new protocols and methodologies – enabling the preservation of marine ecosystems and the development of greener chemical alternatives. ERI Fellowships would allow these projects to advance further and give the opportunity for scientists to explore other new and innovative environmental research ideas.

Fighting pesticide pollution with microbes



Goal: Revolutionising how we manage pesticide pollution

Purpose: Harnessing microbes to break down pesticides

Achievement: Through the creation of an extensive chemical library of over 1,000 agricultural pesticides, an unprecedented environmental research tool has been established. This offers us the potential to employ microbial agents as a biologically-driven solution to ease the removal of pesticide contamination, paving the way for more effective monitoring and more environmentally-friendly chemical alternatives. [Watch the video.](#)

Tackling plastic pollution through X-ray technology



Goal: Revealing the impact of nanoplastics on our ecosystems

Purpose: Leveraging advanced X-ray technology for deeper insights

Achievement: By utilising cutting-edge X-ray technology at EMBL, a refinement of the methods to study nanoplastics entering both marine environments and human bodies has been achieved. This pivotal insight sheds light on the potential threats posed to marine ecosystems and human well-being and offers hope for solutions. [Watch the video.](#)

Enhancing artificial hormone detection in wastewater



Goal: Transforming wastewater pollution monitoring

Purpose: Advancing detection of artificial hormones through computational models

Achievement: Through this project, a significant step has been taken towards refining the detection and identification of synthetic hormones within wastewater. [Watch the video.](#)

Unveiling the power of microbial mats in pollutant degradation

Goal: Revolutionising how we remove ocean pollutants

Purpose: Exploring microbial mats as tools to break down pollutants

Achievement: Through pioneering spatial -omics techniques at EMBL, deeper insights into the capabilities of microbial mats – nature's 'vacuum cleaners' – to degrade pollutants such as oil, microplastics, and heavy metals have been made possible. This newfound understanding fuels the advancement of targeted bioremediation techniques to combat chemical pollutants in our oceans. [Watch the video.](#)

Harnessing plankton to combat marine pollution

Goal: Preserving marine ecosystems through innovative pollution control

Purpose: Evaluating the impact of pollutant absorption on plankton communities

Achievement: Pioneering analytical methodologies enables EMBL scientists to take a comprehensive look at how plankton, transported by tides and currents, absorb pollutants and influence their own communities. This will help researchers to develop plankton-based indicators, crucial tools in combating marine pollution and safeguarding the vitality of marine ecosystems. [Watch the video.](#)

EMBL scientists on the impact and importance of ERI



“Thanks to ERI, I could work on environmental topics while at EMBL. Tackling the problem of nanoplastic pollution meant learning novel practices and considering the needs and limitations to translate our fundamental research to real-world challenges. As a result, this enriched my research at EMBL and encouraged me to advance my career at an institution with a strong focus on environmental research, where I can continue researching both natural substances and pollutants in marine environments.” – **Dr. Stefano Da Vela, Hochschule Bremerhaven and Alfred Wegener Institute**



“Planktonic species are incredibly important when it comes to ecosystem stability: they support life in the ocean, and therefore us. Understanding the interactions between their survival and chemical pollution is of prime importance to protect planetary health. ERI support has enabled us to kickstart a fruitful collaboration that explores uncharted areas at the interface of phytoplankton, their microbiome, and marine chemical pollution. Most importantly, it has given me the necessary push to take a risk I may have otherwise not taken.” – **Dr. Flora Vincent, EMBL Group Leader**



“The ERI project allowed me to step outside my usual science bubble (studying antibodies) and utilise our advanced technology to study the potential threat of nanoplastics. These initial experiments have enabled me to build up a network with various experts, leading to a partnership, for example, with the Technical University of Munich developing new automated methods for analysing nanoplastics.” – **Dr. Melissa Graewert, EMBL Staff Scientist**



“I started ERI because I see a tremendous chance in bringing EMBL’s world-leading know-how in the life sciences to the pressing problems of our times. For over 30 years at EMBL, I’ve witnessed first-hand what EMBL’s Nobel Prize-winning expertise in the life sciences and unique mentoring culture can do for young talented scientists. This is precisely why EMBL is the ideal place to help lay the groundwork for finding solutions to global challenges. Join me to support pioneering scientists to find new and creative solutions through life sciences research as the most effective way to preserve our environment.” – **Prof. Matthias Hentze, EMBL Director**

(Testimonials from EMBL scientists who worked on ERI-funded catalyst projects described on page 3.)