SCIENCE WITHOUT BORDERS, IMPACT WITHOUT LIMITS

Annual Report 2025

cost
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

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MESSAGE FROM THE PRESIDENT

Collaborative science, transformative impact

"Collaboration is our strength, and sustained networks are our competitive advantage."

Prof. Åse Gornitzka,
President of the COST Association

European R&D collaboration stands at the centre of a period of geopolitical turbulence, facing decisions that will shape the future. A vision of Europe with research and innovation at its heart risks being undermined. Long-standing assumptions about global scientific collaboration can no longer be taken for granted. Short-term pressures threaten to take precedence over the long-term investment in knowledge and preparedness that Europe's future depends on. Support for open science appears to be eroding, while growing political polarisation risks weakening democratic processes.

Across Europe, our scientists still produce excellent research, drive innovation, and address societal challenges. However, they are also competing globally with limited, short-term resources. In such an environment, collaboration is essential. And what a difference networks can make!

COST sends a clear and consistent message on this: research and innovation can only compete and flourish when supported by open networks, long-term commitment and meaningful partnerships.

Through its networks, COST strengthens European research infrastructures by connecting laboratories, datasets, methodologies and expertise. In practical terms, this means that a researcher in a smaller university or laboratory can access knowledge and facilities that would otherwise remain out of reach.

The impact of these networks goes far beyond academia. COST Actions contribute to policy development at national and European levels. By bringing together researchers, innovators, policymakers and stakeholders, they ensure that evidence informs decision-making. This is particularly visible in areas aligned with key European priorities and the European Research Area. When networks are structured and inclusive, they become trusted sources of expertise.

Scientific collaboration also delivers tangible results. Networks supported by COST contribute to the development of new products, innovative methodologies and patent applications. The active involvement of industry ensures that research findings are not limited to publications but move towards applications. At the individual level, networking through COST enhances skills and supports the career development of researchers and innovators in Europe and beyond.

Looking ahead to FP10, Europe faces strategic choices. If we want our research institutions to drive knowledge and innovation, they must be strong, and this requires investment in people and networks. Excellence cannot flourish in isolation. It grows where researchers are connected across borders, disciplines and sectors.

COST embodies this philosophy. By supporting collaborative science, by widening participation and by encouraging openness, COST helps research institutions build resilience. Resilience is precisely what Europe needs to realise its vision for research and innovation in the context of global competition.

In an increasingly complex world, the answer is clear: collaboration is our strength, and sustained networks are our competitive advantage.

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INTRODUCTION FROM THE DIRECTOR

2025: a record-breaking year for proposals

"Together, we are creating an environment in which people and ideas can grow, achieving an impact that extends beyond Europe."

Dr Ronald de Bruin,
Director of the COST Association

Looking back at 2025, I am proud to report that it was another year of growth, engagement and measurable impact for COST.

Our 2025 Open Call received the highest number of proposals ever, marking a 29% increase compared with 2024. More than 50,000 main and secondary proposers participated in the Open Call, and for the first time, all 42 COST Member countries were represented as main proposers. This broad participation shows that COST continues to serve as a trusted and accessible platform for researchers and innovators across Europe and beyond. Strong gender balance was maintained, and 55% of proposals combined two or more scientific fields, confirming that collaboration across disciplines is now the norm rather than the exception.

In autumn 2025, we launched 70 new COST Actions. These new networks reflect the core principles that define COST. 37% of the main proposers come from Inclusiveness Target Countries, reinforcing our commitment to widening participation across Europe. One in three main proposers is a young researcher or innovator, ensuring that the next generation plays a leading role in shaping research agendas. 48% of main proposers are women, and more than half of the new Actions are interdisciplinary.

The value of COST is also reflected in the feedback from our community. In 2025, 89% of COST Action participants recognised the essential role of COST in spreading scientific and technological knowledge. 87% stated that COST enables scientific breakthroughs, while 86% confirmed that participation enhances the careers of young researchers.

These figures show that networking is not simply about meeting peers; it is about exchanging ideas, building trust and opening doors.

The success stories presented in this report bring these results to life. They illustrate how these principles translate into real-world outcomes, from scientific breakthroughs and career development to innovation and societal benefit. Behind every figure stands a community of dedicated researchers turning collaboration into impact: contributing to EU priorities, transforming fragmented knowledge into shared, open and accessible infrastructures, creating a successful pre-portal to follow-up European funding, and advancing market-ready solutions.

This impact can be seen across a wide range of disciplines. From health and environment to archaeology, aerospace and chemistry, COST Actions are a driving force behind innovation, policies, tools and networks that last far beyond the project's lifetime.

Supporting this broad and diverse community requires a flexible and cost-effective framework. COST, therefore, continues to operate efficiently and responsibly, ensuring that resources are used to maximise the value of cross-border research networking.

Together, we are creating an environment in which people and ideas can grow, achieving an impact that extends beyond Europe.

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2025 IN NUMBERS

Annual Report 2024 ↓

Annual Report 2023 ↓

Annual Report 2022 ↓

Financial overview

COST is financed as a Coordination and Support Action through Multi-Annual Specific Grant Agreements concluded within a seven-year Framework Partnership Agreement under Horizon Europe

Funding for COST is allocated under Work Programme 11: Widening Participation and Strengthening the European Research Area. The total EU contribution under the second Multi-Annual Specific Grant Agreement (SGA) amounts to EUR 120 million.

During the first period of this Multi-Annual SGA, covering 1 November 2024 to 31 October 2025, the total budget amounted to EUR 54,800,437.76.

COST operates as a global framework whose core mission is to support the networking of researchers and stakeholders from public and private institutions, non-governmental organisations, industry, and SMEs. Its activities are implemented on a multi-annual basis through COST Actions, which run for four years and are delivered under decentralised management via the COST Grant System.

2025 IN NUMBERS

€ 120 M

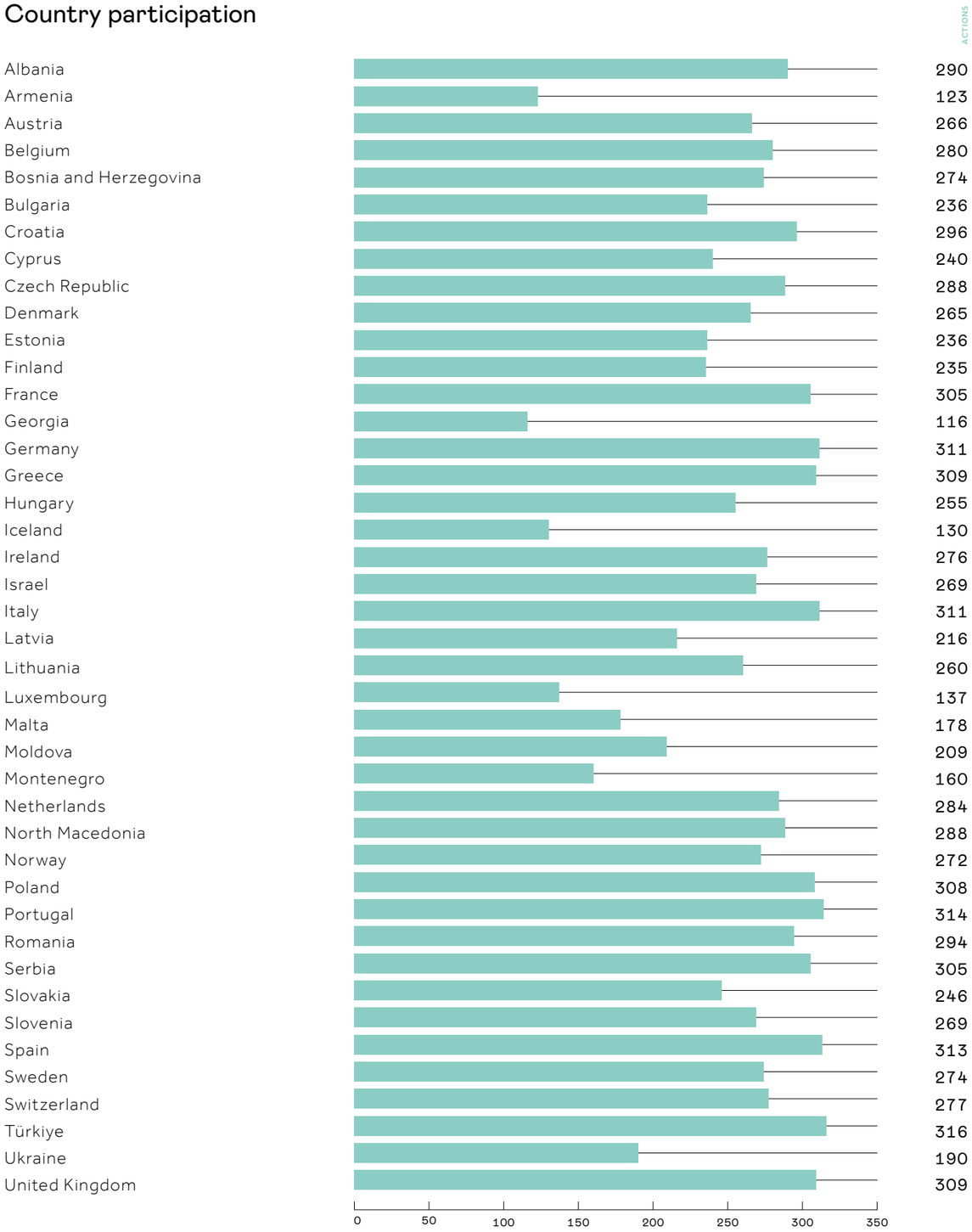
COST budget in Horizon Europe
(for a 2-year period)

€ 150 k

Average annual budget
of a COST Action

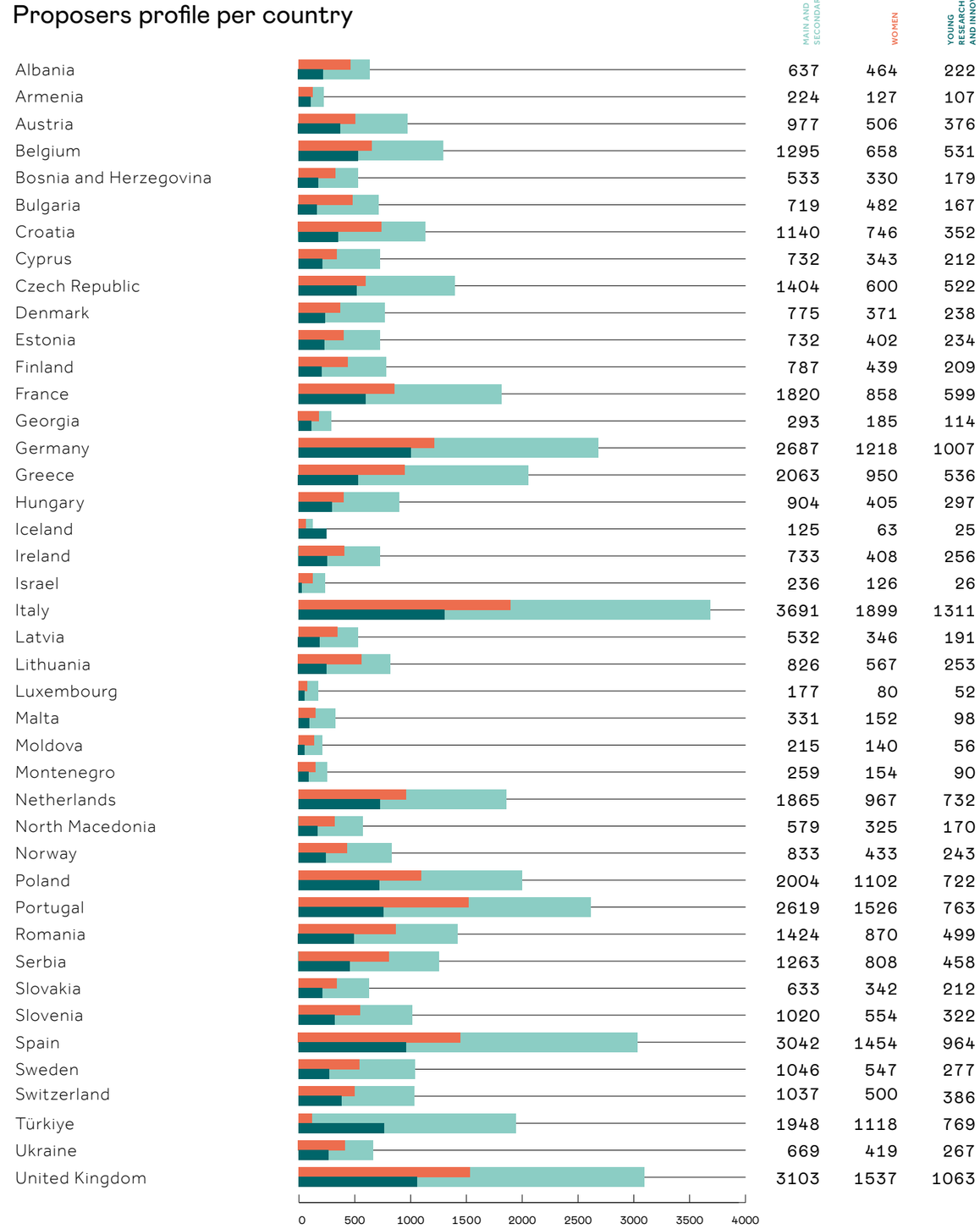
2025 IN NUMBERS

Country participation



2025 IN NUMBERS

Proposers profile per country



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OPEN CALL 2025 RESULTS

increase of **29%**

compared to the 2024 Open Call

The highest number of proposals ever submitted!

50,993

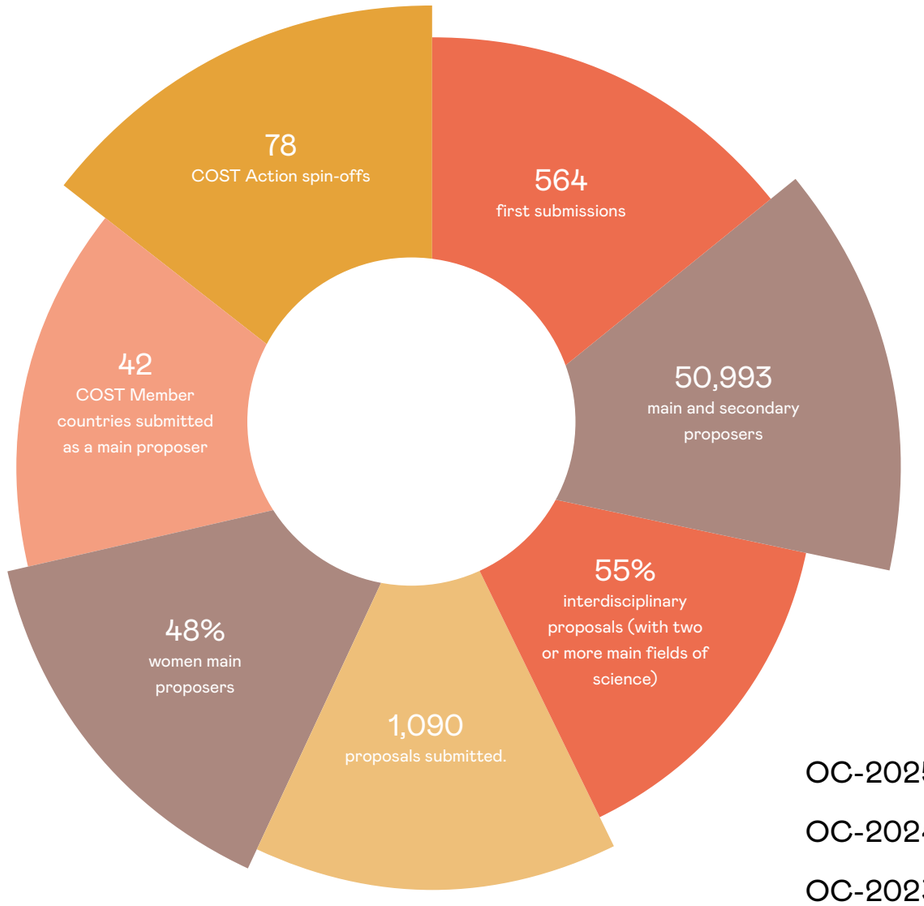
main and secondary proposers

100%

COST Member countries submitted as a main proposer

55%

interdisciplinary proposals having two or more main fields of science



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2025 HIGHLIGHTS

January

Launching the Cross-Cutting Activity on career development for young researchers

The primary aims of the Cross-Cutting Activity on career development for young researchers are to create a community of practice, improve communication, and ensure consistent human resources strategies across Europe. The project will run until November 2026.

February

LIVE BLOG: gender equality month 2025

Many COST Actions shared their activities to celebrate achievements and raise awareness on the issues that must be addressed to achieve equality.

March

COST at MCAA Annual Conference in Krakow

The Annual Conference and General Assembly is the flagship event bringing together hundreds of participants from across the world and different fields of expertise in research, science policy, and industry to discuss topics relevant to the research and innovation sector.

April

COST National Coordinators interactive workshops

The COST National Coordinators (CNCs) took part in three interactive workshops aimed at strengthening their role and impact. They explored ways in which CNCs could better support their national research communities within the COST Programme and discussed practical ideas for promoting COST more clearly and effectively. They also considered how to create stronger synergies by collaborating more closely across countries and roles.

May

70 new COST Actions approved

COST's governing board, the Committee of Senior Officials, confirmed the funding of 70 new COST Actions. The Actions cover topics as wide and varied as gastrointestinal cancers, seed priming to boost crop resilience, science diplomacy, cultural heritage conservation, processing food waste into sustainable fibres, and comics for science.

June

Seven new COST Innovators Grants approved

To explore their innovation potential, seven COST Actions have been awarded one-year COST Innovators Grants (CIGs). The new CIGs started their activities on 1 November 2025.

2025 HIGHLIGHTS

July

The 2025 survey - high trust in COST from the research community

The latest COST Association Customer Satisfaction Survey confirms that COST continues to play a key role in European research, maintaining high levels of trust and satisfaction among its stakeholders.

August

Summer break

September

New research networks begin

In autumn 2025, 70 new COST Actions began their networking journey. During this period, COST hosted a vibrant mix of new researchers and innovators alongside many long-standing members of the COST community, strengthening connections across generations and disciplines.

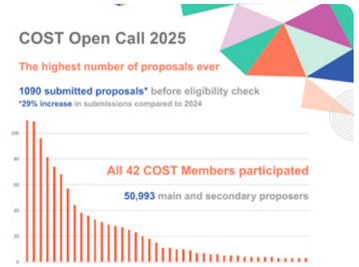
2025 HIGHLIGHTS

October

COST Connect with the Joint Research Centre

The first-ever COST Connect workshop, organised in collaboration with the European Commission's Joint Research Centre (JRC), took place in Ispra, Italy. This event brought together COST Actions and JRC researchers working in areas such as cancer research, health technologies, biotechnology, disease prevention and mental health. Participants explored synergies, shared insights on science for policy, and discussed common challenges facing their research fields.

November



COST Open Call attracts record submissions

The Open Call for new COST Action proposals marked a record-breaking year, with the highest number of submissions ever received, representing a 29% increase compared to the 2024 Open Call. Almost 51,000 researchers took part as main and secondary proposers, with all COST Member countries represented among the main proposers. The Call also showed positive progress in inclusiveness, with a higher number of women acting as main proposers, and strong interdisciplinarity, as 55% of the proposals covered two or more main fields of science.

December

From research to relation: international scientific networks, the quiet diplomats

COST contributed to the 2nd European Science Diplomacy Conference (EUSciDip2025). Prof. Lynda Hardman, Chair of the COST Scientific Committee, underlined that when research and industry are well connected, they can share goals, pool resources and respond more effectively to real needs, allowing ideas to move faster and further. The event also marked the presentation of the COST Action 'Science in Diplomacy Network' (SiDnet) by Action Chair Dr Gianluigi M. Riva, the first COST Action dedicated to science diplomacy.

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SUCCESS STORIES

COST Actions facilitate collaboration between researchers, industry and policymakers across borders, helping to transform EU initiatives into tangible results. They connect ideas, people and data to accelerate the transition of solutions from laboratories to society.

The two success stories below illustrate how this works in practice with regard to the EU Green Deal, environment, and Europe's climate, food, and sustainable industry goals.

Raising awareness of greener chemistry

The COST Action 'Mechanochemistry for Sustainable Industry' (MechSustInd) is a powerful example of how collaboration can support Europe's ambition for a low-emission, circular, and resource-efficient industry. By rethinking how chemicals are produced, the Action helped place mechanochemistry at the centre of Europe's transition to greener manufacturing.

Mechanochemistry replaces heat and solvents with mechanical energy to trigger chemical reactions. This simple but revolutionary approach has the potential to reduce waste and emissions while improving safety and efficiency across multiple industrial sectors.

The Action generated significant scientific results, contributing to over 200 research outputs, including publications in leading journals and open-access platforms. It also produced an educational book on practical mechanochemistry and created a database of experimental facilities, expertise, and skills within the network to encourage collaboration.

Direct contact with industry partners was particularly successful. Several companies opened their facilities to COST members, offering access to specialised equipment and large quantities of chemicals for testing and training purposes. This cooperation has bridged the gap between academic research and industrial application, providing scientists with hands-on experience of real production processes.

While the Action produced technical results such as new mechanochemical reactors and analytical devices, Dr Evelina Colacino, the Action Chair from the University of Montpellier in France, believes that its most valuable outcome was a change in mindset: *"For me, the most tangible output is the awareness we've raised around using mechanochemistry as a disruptive technology to make organic chemistry more sustainable."*

When the Action began, many companies regarded mechanochemistry as *"strange or irrelevant"* for its implementation in organic synthesis. Through consistent communication, workshops, and collaboration, this perception has shifted dramatically.

COST ACTIONS SUPPORT EU PRIORITIES

"Now, companies are curious. They want to know what this technology can do. That change in attitude is a long-lasting impact."

Action members at the International Conference on Mechanochemistry, 2022

FROM COST TO A €7.7 MILLION PROJECT

This growing confidence led directly to the Horizon Europe project IMPACTIVE, a €7.7 million initiative which aims to make pharmaceutical production greener.

For science communicator Dr Fernando Gomollón-Bel, who is now a full partner in IMPACTIVE, the COST Action opened a door to a vibrant and collaborative research community.

According to Fernando, *"COST created a community strong enough to continue its collaborations. That's its real power."*

Fernando also highlighted the growing importance of mechanochemistry in the wider scientific community, citing the COST Action as a model of cooperation across Europe: *"COST is a great catapult for creating strong networks of collaboration. It helped turn an idea into a real European innovation ecosystem."*

YOUNG SCIENTISTS, BIG IDEAS

Beyond its scientific achievements, MechSustInd was above all about people. COST inclusive networking approach gave young researchers the tools, confidence, and visibility to help lead Europe's green transition.
Many young scientists, particularly those from less research-intensive countries, gained access to new collaborations, facilities, and training opportunities that would otherwise have been out of reach. Working group leaders reflect on this human dimension.
Dr Ivan Halasz, of the Ruder Boskovic Institute in Croatia, said: *"We built a collaborative community that enabled experts from diverse fields to share perspectives and shape new approaches in process engineering. It was particularly rewarding to see young researchers gain the tools, networks, and confidence to pursue innovative directions."*

Dr Bilge Baytekin of Bilkent University in Türkiye adds: *"Action gave me my identity as an organic chemist back, and of course, it planted new, captivating research questions in my mind. I find working on green and sustainable chemistry very motivating. The chemistry of our project is for a good cause!"*
The Action Chair Evelina Colacino is particularly proud of the Action's impact on young scientists: *"The first international prize for a young scientist in mechanochemistry came from our collaboration with the European Young Chemists' Network. We showed that young scientists can build careers in this field."*

This strong and inclusive community nurtured new talent and laid the foundation for establishing mechanochemistry as a recognised discipline within the global scientific landscape.

According to Evelina, "*training a new generation of scientists in mechanochemistry is an unprecedented achievement for the field. Thanks to the COST Action, more and more academic institutions around the world are now implementing the teaching of mechanochemistry in undergraduate and graduate curricula, and five Action training schools are now a 'source of inspiration'.*"

BUILDING BRIDGES FOR A LASTING LEGACY

The Action helped create the first Working Party on Mechanochemistry within the European Chemical Society (EuChemS) and collaborated with the International Union of Pure and Applied Chemistry (IUPAC) to develop international standards and terminology. These steps give mechanochemistry the structure and visibility needed for industrial adoption.

COST ACTIONS SUPPORT EU PRIORITIES

"COST allowed us to raise awareness about mechanochemistry and make the network sustainable," says Evelina, *"We now have an IUPAC task group setting definitions, EuChemS recognising mechanochemistry as a professional network, and an international association continuing our mission. That's an extraordinary legacy."*

Today, mechanochemistry is no longer just a research topic. Thanks to the COST Action MechSustInd, it has become a recognised tool for achieving the European Green Deal and the European Mission to make industry climate-neutral and resource-efficient.

READ MORE

→ 'Mechanochemistry for Sustainable Industry' (MechSustInd)

Dr Evelina Colacino, Chair of MechSustInd Action

"Academia has done its job. Now it's time for industry and policymakers to build on that foundation. COST paved the way."

SeaWheat: Europe's Green Gold Beneath the Waves

WHAT ULVA CAN DO NATURALLY

Ulva, also known as sea lettuce, is a fast-growing green seaweed that naturally absorbs nutrients such as nitrogen and phosphorus from the water. These nutrients often come from fish farms or coastal runoff and can cause problems like algal blooms and oxygen loss in the sea. Because it grows fast and is so efficient at removing nutrients, Ulva is now being used more often in fish farming and wastewater treatment as a sustainable way to recycle nutrients. It is also rich in protein, fibre and natural compounds that can be turned into food, animal feed or eco-friendly materials. This means Ulva is not only good for the environment but also offers economic benefits.

THE SEAWHEAT FAMILY AND SCIENTIFIC RESULTS

COST Action 'Tomorrow's 'wheat of the sea': *Ulva*, a model for an innovative mariculture' (SeaWheat) brought scattered research in seaweed into a single European network. Under the leadership of Professor Muki Shpigel from the University of Haifa, Israel, 440 scientists, innovators and policymakers from 53 countries produced 46 peer-reviewed articles and four major review papers. Training schools, workshops, and short-term scientific missions have disseminated practical knowledge in cultivation methods, bioremediation, and compound extraction.

It led to the launch of EULVA: European Ulva Taxonomy Initiative, a pan-European research platform that now links around 80 scientists, institutions and small companies to map Ulva's genetic diversity and coordinate follow-up studies in genomics, biochemistry and ecology.

"Our most outstanding achievement was creating a truly pan-European community where none existed before," said Muki Shpigel. *"By the end of the project, it had become a real interdisciplinary family."*

COST ACTIONS SUPPORT EU PRIORITIES

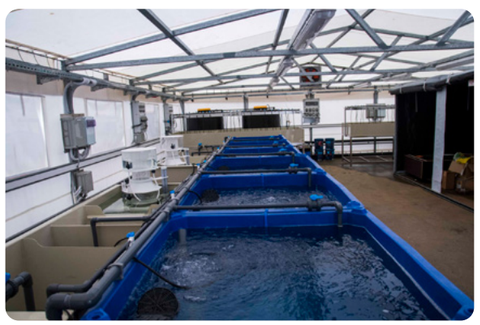
EDUCATION, OUTREACH AND FOLLOW-UP PROJECTS

SeaWheat combined research, communication and learning to keep the work relevant to society. The Action produced animated films in 14 languages for children and adults, as well as a digital Ulva recipe book in six languages. They also created an 18-episode 'Lunch with Ulva' webinar series, which introduced Ulva to academics, chefs, teachers and policymakers. Exhibitions, school talks and taste tests helped change public perceptions, transforming seaweed from a nuisance into a valuable resource.

"Our dynamic and inclusive community may have helped to change the perception and value of seaweed in Europe," said the Action Chair proudly.

The Action's outreach efforts led to follow-up projects and several Horizon Europe proposals.

"Our network has already led to collaborative projects such as NOVAFOODIES at the EU level, as well as multiple national initiatives. Several more proposals are in the pipeline for open calls such as Circular Bio-based Europe and Farm to Fork," said Ioannis Tzovenis, the Action SME Platform Leader. *"We have developed practical tools to support this growing community, such as the SEEK search engine for accessing information on Ulva science and technology. We have also set up dedicated communication channels, such as LinkedIn and WhatsApp groups, to enhance ongoing collaboration."*



Morris Kahn Marine Research Station. Photo H. Nativ

FARMS, FOOD AND INDUSTRY

Together, the SME Platform and the research outputs made it easier to transfer laboratory knowledge into real-world pilots and products. Sea- and land-based fish farms and research stations demonstrated the fundamental concept of nutrient recycling and validated business models that integrate environmental services with value-added products.
The SME Platform grew into a meeting place for 17 companies working in aquaculture, food, biotechnology and environmental services. These companies gained visibility at SeaWheat events and found new ways to collaborate with researchers on innovative products, from snacks and animal feed to biodegradable materials.

"Participating in the COST Action SeaWheat provided an invaluable opportunity to strengthen our network of partnerships," said Dr Rui Pereira of A4F, a company originally created to operate in the microalgae sector. *"It created several opportunities for knowledge sharing and trust building among SMEs and researchers that will be fruitful in the coming years."*

YOUNG RESEARCHERS AND INNOVATORS

Training opportunities were central to SeaWheat Training schools and short-term scientific missions provided young researchers and innovators with practical skills that were not always available at their home institutions, while also connecting them with laboratories across Europe. These exchanges enabled participants to contribute to major reviews and ongoing projects while placing them in contact with companies through the SME Platform. *"These opportunities helped me to deepen my knowledge of macroalgae aquaculture and connect with professionals across Europe,"* said Ignacio Moreu, a PhD candidate at the University of Málaga. *"Many of these connections have already turned into collaborations across Europe and even worldwide."*

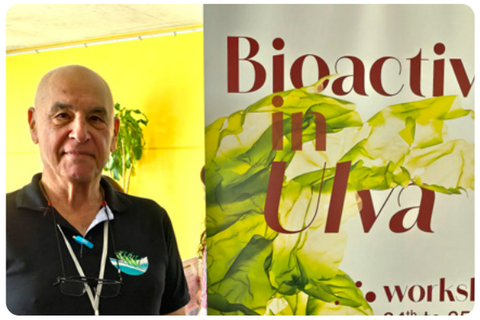
"I greatly benefited from the training activities of SeaWheat," added Kristoffer Larsen-Ledet, a PhD student at Aarhus University. *"They allowed me to learn scientific methods and skills that were not possible at my home institution. It has greatly increased the quality of my research and inspired me to adopt new methodologies at my home institution."*

A CLEAR BENEFIT FOR SOCIETY AND SUSTAINABLE DEVELOPMENT

SeaWheat combined science, outreach, training and industry to turn research into practical solutions for Europe's sustainable blue economy. By promoting Ulva cultivation as both a biofilter and a resource for food and materials, the Action supported cleaner seas, sustainable aquaculture and climate resilience. Its research and outreach directly contribute to the EU Mission for restoring ocean and water health and show how a simple plant can link environmental protection with economic opportunity.

READ MORE

→ 'Tomorrow's 'wheat of the sea': *Ulva*, A model for an innovative Mariculture' (SeaWheat)



Prof. Muki Shpigel, Chair of SeaWheat Action

"Our most outstanding achievement was creating a truly pan-European community where none existed before. By the end of the project, it had become a real interdisciplinary family."

COST ACTIONS INFRASTRUCTURE KEEPS KNOWLEDGE ALIVE

Some COST Actions leave behind more than strong networks. They create shared infrastructure and open databases that continue to support research, practice and collaboration long after the Action ended.
The following two stories illustrate how COST has helped to transform scattered knowledge into durable and accessible European resources.

A Shared Memory for Europe's Rarest Plants

Europe's rarest plants often grow in places that people rarely visit, such as cliffs, rocky islands and narrow riverbanks. Their low visibility does not make them less important, but it does mean that conservation efforts are often highly local, led by small teams responding to specific threats in specific places. Over time, valuable knowledge about plants has been recorded in local reports, personal notebooks or short-term project outputs rather than being shared widely.

The COST Action 'An integrated approach to conservation of threatened plants for the 21st century' (ConservePlants) has addressed this issue by creating a practical, lasting solution: a shared, open database that compiles Europe's expertise in conserving endangered plant species.

BUILDING A HOME FOR CONSERVATION KNOWLEDGE

Before the COST Action ConservePlants, useful information for conservationists existed, but it was difficult to find and often incomplete or limited to certain countries or types of action. Dr Maja Lazarević, Associate Professor at the University of Belgrade and coordinator of the conservation actions database within the ConservePlants, clearly describes this challenge. She explains that existing databases often contained *"only some basic information, were not updated regularly, and were confined to specific geographic regions or types of action."*

Dr Maja Lazarević, Coordinator of the conservation actions database, ConservePlants Action

COST ACTIONS INFRASTRUCTURE KEEPS KNOWLEDGE ALIVE

"At a time when the state of biodiversity is constantly deteriorating, we urgently need to share knowledge and experience, rather than letting it remain scattered or inaccessible."

Maja Lazarević also highlights a deeper problem. Much conservation work never reaches scientific journals and is therefore *"often not publicly or easily accessible."* Consequently, valuable experience from past projects risks being lost or repeated.

To address this issue, ConservePlants has created a dedicated database of conservation actions for threatened plant species. The database defines conservation actions as concrete activities carried out to help threatened plant species survive in the wild. Currently, the database contains around 3,500 conservation actions from 32 European countries, covering over 900 plant taxa from nearly 100 plant families, with records dating from the year 2000 onwards.

For each action, the database records the location of the activity, the institutions involved, the funding source, the conservation status of the species, details of in situ measures in the wild and ex situ measures such as seed banks, and information on monitoring and success evaluation.

The database, which is hosted by the Faculty of Biology at the University of Belgrade and jointly operated with partners from the University of Coimbra, is openly accessible. Maja Lazarević stresses that *"any interested person can access the database, whether they are planning new conservation measures, making decisions on species or habitat protection, or preparing assessments for the International Union for Conservation of Nature (IUCN) Red List of Threatened Species or the IUCN Green Status of Species."*

Furthermore, the database has been designed as a long-term interactive resource. Registered users can upload information about new conservation activities, allowing the content to grow over time. As Maja underlines, *"the idea is to regularly update the database in the future, to monitor plant conservation activities across Europe in the long run and to promote best practices for the benefit of biodiversity."*

TURNING EVIDENCE INTO ACTION

As the network expanded, ConservePlants also encouraged researchers to take a fresh look at plant conservation in Europe. Professor Marta Galloni of the University of Bologna, Science Communication Coordinator of the ConservePlants Action, highlights that several collaborative studies revealed important gaps in existing knowledge.

Prof. Marta Galloni, Science Communication Coordinator, ConservePlants Action

COST ACTIONS INFRASTRUCTURE KEEPS KNOWLEDGE ALIVE

"Within the COST Action, multiple networks have been established, which would not have been possible without the collaboration of so many researchers and practitioners."

FROM RESEARCH TO REAL LIFE

Dissemination and communication were central to the ConservePlants Action. As well as scientific publications, materials about CITES plants of Europe and practical guidelines for conservation managers, the network invested heavily in training and outreach activities.

Professor Galloni notes that the training schools and workshops covered a wide range of topics, including pollination ecology and genetics, theory and techniques of plant translocations, to citizen science and cryo-preservation. These events brought researchers and practitioners together, allowing them to share methods, compare experiences and learn from real conservation cases across Europe.

One example is the work using the SHARP (Species' Habitat, Demography, Threats and Responses) approach, a method designed to identify weak points in a plant's life cycle. Professor Galloni explains that *"the results allowed us to identify critical gaps in life-cycle knowledge for appropriate conservation actions."* These findings were published in an international peer-reviewed journal, ensuring that they could inform future conservation planning beyond the lifetime of the Action.

Another major effort focused on analysing national 'Red Lists of vascular plants' from partner countries. This analysis showed that Europe's most threatened plant species are often found in just one country, meaning their survival depends on conservation efforts in that one location. It also revealed significant knowledge gaps in regions of high biodiversity, such as the Balkan Peninsula. These insights directly shaped Action activities, including a training school in Montenegro that supported the establishment of a national Red List of vascular flora.

Through this work, the Action also contributed to wider European resources. These include a publicly available database that brings together Red Lists from 4 countries and a comprehensive dataset of floral traits and other variables of rare and threatened plant taxa from EU countries. This dataset may help researchers better understand extinction risks and could serve as a basis for conservation purposes, as outlined in a recently published paper in the Biological Conservation journal.

A particularly creative outcome of collaboration among young researchers from different countries was a series of children's books entitled 'Stories about endangered plants'. Created within the Action, these books translate complex conservation challenges into simple stories to help children and families understand the importance of protecting plant diversity.

BUILT TO LAST

By facilitating collaboration between researchers and practitioners on a European scale, the COST Action ConservePlants has transformed disparate efforts into a formal consortium. It has brought together data, people and ideas, creating tools that will support plant conservation long after the Action itself has ended.
At its core, the database ensures that conservation knowledge is neither lost nor forgotten. Instead, this knowledge will remain open and accessible, ready to inform future decisions. For Europe's rarest plants, this shared memory may be vital for their survival.

However, for Marta Galloni, the real strength of the Action lies in its people. As she reflects: *"The best outcome was seeing all members show great interest in questioning previous knowledge and exchanging new field and laboratory methodologies. Such positive feedback came not only from early-career researchers, but also from senior ones, and active collaborations among partners are still ongoing, even though many have not been formally established."*

COST ACTIONS INFRASTRUCTURE KEEPS KNOWLEDGE ALIVE

What began as a COST-funded network has grown into a community that continues to collaborate across borders and disciplines. In this way, ConservePlants illustrates the added value of COST support.

READ MORE

→ *'An integrated approach to conservation of threatened plants for the 21st century' (ConservePlants)*

From Ancient Threads to Digital Platforms

Every piece of fabric has a story to tell. The colours, patterns and weaves of each piece reveal centuries of craft, trade and cultural exchange. Some of these stories are hidden in the mineralised textiles of Pompeii, while others lie in the ancient silk routes that once connected Asia and Europe, or in the wool and dyes that clothed everyone from kings to ordinary people.

The COST Action 'Europe through textiles: network for an integrated and interdisciplinary humanities' (EuroWeb) connected people studying these stories. From archaeologists and conservators to fashion historians and textile artists, EuroWeb created a network where knowledge could travel as freely as fabrics once did.

REDISCOVERING EUROPE THROUGH TEXTILES

Through conferences, workshops and training schools, the Action demonstrated that textiles had a significant impact on nearly all aspects of European history. Researchers gathered in Pompeii to learn how to handle and document fragile, mineralised textiles. They explored the influence of Asian textiles on European industry between 1200 and 1900. In their sessions on Textiles and the Dead, they investigated what burial cloths can reveal about ancient beliefs. The Sailing Textiles conference examined the role of textiles in navigation and trade, while a training school on knitting, knitwear and wool revisited these long-standing European traditions. Another training school, Dyeing with Natural Dyes, demonstrated how traditional techniques can inspire sustainable practices today.

EuroWeb was also showcased at the Festival of the New European Bauhaus in Brussels, where it organised a hands-on LAB event as part of the Fair section. This participation helped highlight the Action's alignment with the New European Bauhaus values of sustainability, creativity and inclusivity.

Every event revealed new insights, showing how textiles can serve both as evidence of the past and as a source of inspiration for the future.

COST ACTIONS INFRASTRUCTURE KEEPS KNOWLEDGE ALIVE

Medieval nubian costumes in the Louvre Museum, ©Paulina Matusiak & Eddy Wenti

HOW TEXTILE HERITAGE IS WEAVING THE FUTURE

Led by Dr Agata Ulanowska from the University of Warsaw, the project developed open digital platforms that continue to evolve long after its conclusion.

"EuroWeb generated a substantial body of new knowledge and approaches, as evidenced by more than 50 peer-reviewed publications," said Dr Ulanowska. *"It also developed several open-access infrastructures that remain active and continue to grow."*

The 'Digital Atlas of European Textile Heritage', for example, is a unique repository that already documents thousands of textiles, tools, seals, workshops and archaeological sites. This interactive platform visualises the many layers of Europe's textile heritage throughout history.

Another useful resource is the 'Textile and Clothing Terminology Online' platform, which compiles rich vocabularies relating to fabrics and garments in ancient and modern languages. Through language, it highlights how much of Europe's textile heritage is shared and rooted in centuries of cultural exchange. It is also a valuable research tool, facilitating understanding between scholars and craftspeople from different countries.

EuroWeb also ensured that this knowledge reached beyond academia. The Action's website and YouTube channel host publications, lectures, and training materials, making this facet of European cultural heritage widely accessible and already used as an educational and outreach resource.
"These resources are widely used and continue to attract interest from professionals and the general public," said Agata Ulanowska proudly.

Agata Ulanowska, Chair of EuroWeb Action

> "EuroWeb developed several open-access infrastructures that remain active and continue to grow."

HERITAGE MEETS SUSTAINABILITY

Building on EuroWeb's foundations, the COST Innovators Grant HERITEX-HUB, led by Dr Francisco B. Gomes of the University of Lisbon is transforming historical knowledge into a valuable resource for a more sustainable textile and fashion industry.

According to Dr Gomes: *"Making textile heritage visible can inspire innovation. By showcasing sustainable practices from the past, we give today's makers tools to develop greener approaches in a competitive market."*

"EuroWeb acted as an incubator for projects that address sustainability and heritage preservation directly," said Francisco Gomes. *"HERITEX-HUB draws data, knowledge, and inspiration from textile heritage research for more sustainable textile and fashion futures, bridging academic insight with policy and industry needs."*

HERITEX-HUB has connected researchers, designers, entrepreneurs, and small businesses. It has offered practical resources such as factsheets on natural materials and traditional techniques, storyboards to inspire creative design, and the Digital Atlas of European Textile Heritage, mapping sustainable textile know-how across Europe.

"The network is also developing a matchmaking platform to connect local crafts and modern production chains, promoting sustainability from the ground up", explained Francisco. *"At a time when people are growing increasingly aware of the negative impact of how we consume textiles and fashion, historic and traditional examples can show that there are alternatives."*

Francisco B. Gomes, Chair of HERITEX-HUB, speaking at the 2024 Festival of the New European Bauhaus

EMPOWERING PEOPLE THROUGH COLLABORATION

For both Agata Ulanowska and Francisco Gomes, the impact of COST extended far beyond research outcomes.
"Participating in EuroWeb was a great, though occasionally exhausting, experience that has significantly advanced my career," said Agata. *"I gained international recognition and met fantastic colleagues with whom I now collaborate. EuroWeb also raised awareness of COST Actions at my university, showing how impactful they can be."*

"I joined EuroWeb as a young postdoctoral researcher and will leave HERITEX-HUB as a consolidated researcher with a permanent position," added Francisco. *"The opportunities that COST provides for training, leadership, and collaboration are truly transformative."*

A SHARED EUROPEAN FABRIC

Every fabric holds a story. Thanks to the COST Action EuroWeb and the COST Innovators Grant HERITEX-HUB, those stories continue to inspire new ideas, sustainable practices, and a shared sense of European identity.

From studying mineralised textiles in Pompeii to building digital platforms for future generations, these two COST projects have shown that Europe's textile heritage is not a relic of the past but a living resource.

"The results from EuroWeb, and in part also from HERITEX-HUB, have been tremendously beneficial for textile heritage researchers and a much wider range of stakeholders," concluded Dr Gomes. *"We hope that making knowledge about textile heritage more accessible will empower people and offer them tools to make informed, sustainable choices."*

READ MORE

→ 'Europe through textiles: network for an integrated and interdisciplinary Humanities' (EuroWeb)

→ HERITEX-HUB

COST ACTIONS INFRASTRUCTURE KEEPS KNOWLEDGE ALIVE

COST NETWORKS LEAD TO LARGE EUROPEAN PROJECTS

By bringing researchers together to share data, align methods, and build trust, COST creates strong teams that are ready to apply for larger EU funding. The three stories that follow show this clearly: COST networks lead to spin-off projects and extra funding through programmes such as Marie Skłodowska-Curie Actions, the European Research Council, and Horizon Europe, turning collaboration into long-term impact for society, science, and innovation across Europe.

Understanding Why We Move and Why We Don't

A GROWING CRISIS

Across Europe, people are becoming less physically active. This is an especially worrying trend when we consider children and adolescents, whose inactivity levels remain alarmingly high. The consequences are serious, with rising obesity, heart disease and diabetes putting a strain on individuals and healthcare systems*.

In response to this urgent issue, the COST Action 'Determinants of physical activities in settings' (DE-PASS) investigated why people choose to be active or inactive across different life stages and environments, such as homes, schools and workplaces. Led by Professor Ciaran Mac Donncha from the University of Limerick in Ireland, the Action transformed fragmented data into actionable evidence for policymakers.

Its legacy lives on through the Marie Skłodowska-Curie (MSCA) Doctoral Network INDEEP, led by DE-PASS members. This demonstrates that DE-PASS paved the way for sustained European collaboration and tangible change.

BRIDGING GAPS THROUGH COLLABORATION

Since its launch, DE-PASS has created a multidisciplinary network of 236 researchers and policymakers from 43 countries. By connecting experts in behavioural science, public health, education, and urban planning, the Action became an effective knowledge transfer platform where scientific evidence meets real-world decision-making.

A significant achievement of DE-PASS was the development of a comprehensive measurement toolkit for studying the determinants of physical activity, now available in ten languages. Alongside consensus definitions of key terms and a concept map of adolescent physical activity determinants, this toolkit gives researchers and policymakers a shared framework to work from.

According to the Action Chair Prof. Mac Donncha: *"A key conclusion of DE-PASS is that, upon rigorous examination and review of existing published evidence, few convincing associations were found between measured determinants and physical activity behaviours, or between changes in determinants during interventions and activity outcomes."*

*Source: Physical activity in the EU: policies that make people happier.

COST NETWORKS LEAD TO LARGE EUROPEAN PROJECTS

The network also reached a consensus among policymakers on the key determinants to prioritise when promoting adolescent physical activity, including the availability of indoor and outdoor facilities, personal beliefs about physical activity, and inclusive school programmes.

Perhaps most impressively, DE-PASS harmonised data collection across ten European countries. Information was gathered from 362 families and around 1,000 individuals through a combination of questionnaires and device-based measurement tools. The final stage of data exploitation is underway, and the resulting dataset will be one of the most comprehensive in Europe. It will provide an invaluable foundation for future research.

"No other database of this nature and complexity exists," said Professor Mac Donncha. *"The DE-PASS database will be expanded and exploited through the DE-PASS-linked Marie Skłodowska-Curie Doctoral Network and by those involved in DE-PASS' data collection efforts."*

"No other database of this nature and complexity exists. The DE-PASS database will be expanded and exploited through the DE-PASS-linked Marie Skłodowska-Curie Doctoral Network and by those involved in DE-PASS' data collection efforts."

Prof. Ciaran Mac Donncha, Chair of DE-PASS Action

FROM DE-PASS TO INDEEP

The success of the Action and the strong collaboration within its network led directly to the creation of the MSCA Doctoral Network 'Intervention on the Determinants of, and Expertise in, Physical Activity Behaviours' (INDEEP).

INDEEP originated from one of DE-PASS' working groups, which focused on harmonising European data collection. Recognising the challenge of collecting comparable data across countries, the DE-PASS team set a goal to secure future EU funding for PhD students and postdoctoral researchers. This long-term vision has now become a reality through INDEEP.

With funding of €2.75 million, INDEEP brings together eight institutions from six countries and supports ten doctoral researchers. The project provides a toolbox to help researchers and practitioners develop effective, evidence-based strategies to increase physical activity. As Professor Mac Donncha noted, *"INDEEP builds directly on the achievements of DE-PASS. It takes our determinant knowledge, integrates it with behaviour change theory, and applies it through co-creation with communities to create real solutions."*

COST NETWORKS LEAD TO LARGE EUROPEAN PROJECTS

A NETWORK OF DEDICATION AND FRIENDSHIP

For Professor Mac Donncha and the Vice-Chair, Professor Laura Capranica, leading the DE-PASS Action was deeply satisfying on a personal level, as well as being scientifically rewarding. Reflecting on his experience, Professor Mac Donncha said: *"The most rewarding aspect was working, problem-solving, and celebrating with the work group leaders and members of our network. It was the most fulfilling period of my career. As Chair, I am privileged to have worked alongside such a talented and committed group of individuals. Together, we have created a foundation that will continue to advance the understanding of physical activity behaviours for years to come."*

Professor Laura Capranica, added: *"One of the most rewarding aspects of coordinating DE-PASS has been witnessing young researchers grow in confidence through collaboration and shared learning. The collective effort that led to major achievements such as the INDEEP MSCA Doctoral Programme shows how DE-PASS has fostered a culture of mentorship and excellence, transforming collaboration into tangible career development opportunities and societal impact."*

DE-PASS training school, University of Limerick, 2023

COST AS A STEPPING STONE

The Action DE-PASS is a good example of how COST Actions serve as vital stepping stones for European research collaboration. What began as a network to understand why people move has grown into a major research initiative that trains young researchers, develops new methods, and continues to attract EU funding. As Professor Mac Donncha concludes: *"DE-PASS showed how COST creates the environment where ambitious ideas can grow. It connects people, builds capacity, and lays the foundation for lasting European impact."*

The future is ambitious: plans are underway to expand the DE-PASS database, publish key findings, and apply for new European funding to create a comprehensive longitudinal network for harmonised physical activity data.
"A roadmap to apply for European research funding to support a new DE-PASS network and comprehensive longitudinal data collection will be central to the future agenda."

READ MORE

→ 'Determinants of Physical Activities in Settings' (DE-PASS)

COST NETWORKS LEAD TO LARGE EUROPEAN PROJECTS

iNEAL COST Action: Digging into the Past to Build the Future

OUR NEANDERTHAL HERITAGE

Did you know that there were once several Neanderthal groups, but only some of them encountered modern humans and had offspring? This means some people today still carry a fraction of the original Neanderthal genome. The Neanderthals were the first truly pan-European human population. Traces of them span more than 250,000 years and can be found across Europe. However, until recently, our understanding of them was fragmented: different countries had their own datasets, and scientists specialising in archaeology, anthropology, genetics and geology often worked in isolation.

To unite this knowledge, the COST Action 'Integrating Neanderthal Legacy: From Past to Present' (iNEAL) brought together experts from across the continent. They shared data, aligned their research methods, and created a more complete picture of who the Neanderthals were and how they lived.

iNEAL hands-on scientific training in various methodologies

CONNECTING MINDS AND RECONSTRUCTING THE PAST

"The Action developed a shared database and research guidelines, helping researchers across Europe work with the same standards", explained Professor Ivor Janković, Chair of the Action from the Institute for Anthropological Research in Croatia. A major result was the Catalogue of Neandertal Sites, listing 127 archaeological sites across the continent. "*This publication is already being used by scholars",* said Ivor Janković. "*And we're committed to continuing data collection for a future update that will serve as a starting point for all Neanderthal research."*

But iNEAL went further. Recognising that Neanderthal heritage is also a cultural legacy, it connected scientists with museum professionals, educators, and the tourism sector. Workshops at the Neanderthal Museum in Mettmann, Germany, and the Archaeological Museum in Zagreb explored how to bring prehistory to different audiences. *"There is not just one public",* said Ivor. "*Each group has its own way of engaging with the past. Our aim is to teach local children and adults alike about their own legacy and its importance. That is the best way to preserve and protect these sites."*

To help smaller institutions, iNEAL produced free posters and teaching materials about Neanderthal life and legacy. The team also created an Education Kit and Guidelines for Best Practices to help teachers adapt the story of Neanderthals to local languages and cultures.

COST NETWORKS LEAD TO LARGE EUROPEAN PROJECTS

Prof. Ivor Janković, Chair of iNEAL Action

“The iNEAL Action played a significant role in laying the groundwork for the ERC Synergy Grant.”

FROM COST COLLABORATION TO ERC SYNERGIES

The collaboration built through iNEAL laid the foundation for new research and major funding. One direct result was the ERC Synergy Grant ‘Last Neanderthals: The physical, cultural, and bio-genetic landscape of the last Neanderthals’, worth nearly €10 million.

The project combines cutting-edge techniques such as radiometric dating, ancient DNA analysis, and computer simulations to explore how Neanderthals and early Homo sapiens interacted, and what finally caused Neanderthals to disappear.

“The iNEAL Action played a significant role in laying the groundwork for the ERC Synergy Grant”, said Ivor. *“It started collaborations across Croatia, Montenegro, the Czech Republic, and Türkiye and provided valuable experience in communicating science to the public.”* iNEAL’s interdisciplinary spirit also empowered young researchers to launch their own projects.

One example is Dr Pere Gelabert, who participated in iNEAL’s Working Group on paleogenomics. His experience in the Action helped him secure the ERC Starting Grant ‘SHADOWS’. *“As a biologist, it was a wonderful opportunity to enter into archaeological questions and broaden my perspective”,* said Pere. *“In SHADOWS, we now want to understand why sedimentary DNA differs from the animal bones we find at Palaeolithic sites and what that tells us about how humans, Neanderthals, and animals interacted.”*

COST NETWORKS LEAD TO LARGE EUROPEAN PROJECTS

CONTINUING THE LEGACY: COST AS A CATALYST

Beyond its scientific results, the Action iNEAL also created an environment where ideas could grow into major projects and long-term collaborations.

“Fruitful discussions among scientists from traditionally humanistic fields and those from hard sciences created a unique setting to look at the same issues through different lenses”, concluded the Chair.

Through its open, inclusive and collaborative approach, iNEAL showed how COST serves as a stepping stone, helping researchers build trust, test new ideas, and prepare the ground for high-impact initiatives such as ERC grants.

Visit to Neanderthal sites

READ MORE

→ ‘Integrating Neanderthal Legacy: From Past to Present’ (iNEAL)

ODIN and BAANG: Designing Smarter Aircraft for Safer, Greener Skies

Every time an aircraft takes off, thousands of structural components must work perfectly under stress, vibration and changing temperatures. Ensuring that these structures remain safe for decades is one of the greatest challenges in aviation. The COST Action ‘Optimising Design for Inspection’ (ODIN) decided to rethink this challenge from the very beginning.

Instead of asking how aircraft should be inspected after they are built, ODIN focused on embedding inspection into the design itself. The idea is similar to the human nervous system. Just as your body feels pain and reacts early, ODIN worked on aircraft structures that can ‘feel’ damage and report it before it becomes serious.

As Action Chair, Dr Rhys Pullin, from Cardiff University, explains: *“Much like the human body’s nervous system, these ‘built-in senses’ will provide real-time updates on the health and safety of the aircraft. They’ll also help the plane automatically adjust its shape to improve fuel efficiency, make the ride smoother, and ensure everything is running at its best.”*

FROM INSPECTIONS TO SELF-SENSING STRUCTURES

Currently, aircraft maintenance largely relies on scheduled ground-based inspections. While effective, this approach can be costly and may miss early signs of damage. *“The aerospace industry is famously cautious”*, says Rhys Pullin. *“New technologies often take decades to move from the lab into real aircraft, partly because every new idea must go through strict certification processes by regulators like the European Union Aviation Safety Agency (EASA) and similar bodies worldwide. This caution ensures safety, but it can also slow down the adoption of fresh research and innovations.”*

COST NETWORKS LEAD TO LARGE EUROPEAN PROJECTS

ODIN, however, explored a different vision: aircraft structures equipped with embedded sensors that can continuously monitor their own condition while in service.

These ideas are based on technologies such as ultrasonic sensing, energy harvesting and wireless communication, which were brought together within a single design framework.

According to Petar Dimitrov, Science Communication Coordinator of the Action from the University St. Kliment Ohridski, *"ODIN transformed structural health monitoring from isolated laboratory research into a coordinated, validated and industry-relevant framework."*

By integrating sensing into the structure itself, ODIN has helped to transform inspection from a reactive task into a built-in capability.

Petar Dimitrov, presenting at the training school in Belgrade, 2024

FROM COLLABORATION TO TANGIBLE RESULTS

ODIN's impact goes beyond concepts. The Action delivered shared tools, datasets and benchmarks that are already shaping ongoing research and industrial approaches.

The ODIN open-access book, 'Structural Health Monitoring Damage Detection Systems for Aerospace', introducing key methods for monitoring the health of aircraft structures, has been consulted over 477,000 times, showing its value to both researchers and industry professionals.

According to Petar Dimitrov: *"ODIN established durable links between academia, SMEs, and aerospace companies. This network is expected to accelerate the transfer of Structural Health Monitoring technologies into real aircraft design and maintenance practices."*

Knowledge exchange was equally central. Through online research exchanges and short-term scientific missions, eight universities worked together to compare different methods of computer-modelling a complex aircraft wing component.

A major result was the development of a representative aircraft wing structure test, validated and approved by Airbus. As Petar notes: *"ODIN's wing structure test, produced datasets that are already being used in publications, conference workshops and training."*

As part of its dissemination strategy, ODIN collaborated with 'Science Made Simple' to develop engaging outreach resources. These were later used at Cardiff University's 'Museum at Night', where visitors experienced hands-on demonstrations of damage detection via an interactive exhibit. The event attracted around 1,700 members of the public, demonstrating ODIN's success in bringing complex aerospace research to a wider audience.

Finally, one of ODIN's proudest achievements was helping to secure EU funding for the follow-up project, BAANG, which will carry this work even further.

TWINNING PROJECT INSPIRED BY BIRDS

BAANG, a Horizon Europe Twinning project, grew directly out of the collaborations established within the COST Action. Thanks to ODIN, the project coordinator, Brno University of Technology, was able to apply existing approaches and deepen its collaboration with Imperial College London, an internationally recognised expert in computational structural health monitoring, fracture modelling, and damage. TU Delft and TU Wien joined the consortium, providing expertise in morphing design and material science. The successful BAANG consortium was formed, and a morphing wing design was developed. BAANG focuses on morphing aircraft wings, taking inspiration from birds that alter the shape of their wings during flight to enhance efficiency. Such adaptive structures depend on embedded sensing, which is a direct continuation of ODIN's research.

As Prof. Zdenek Hadas, ODIN Working Group Leader from Brno University of Technology, explains: *"ODIN's networking and collaboration activities were key to establishing the BAANG project consortium. A self-sensing morphing wing operation is a critical part of the BAANG project, and many concepts and techniques are commonly used for development in both ODIN and BAANG activities."*

Through ODIN meetings and workshops, partners were able to transfer knowledge directly into BAANG's design and monitoring concepts, ensuring continuity between the two initiatives.

"Together, they contribute to a vision of adaptive, intelligent, and safer aircraft structures that are both energy-efficient and capable of self-monitoring in service," concludes Zdenek Hadas.

SHARED VISION, SHARED IMPACT

Although ODIN's primary focus was on the aerospace industry, its influence extends further. *"The partnerships built through the network are still active today and are producing results across a range of industries,"* says the Action Chair. *"Knowledge shared through exchanges and training schools has begun to filter into areas such as renewable energy, agriculture, and advanced manufacturing."*

Examples include wind and tidal turbines with built-in sensors for real-time monitoring, and smart farming systems that use a combination of sensors and satellite data to track the health of livestock in remote areas. In manufacturing, they are also used to monitor machine wear, supporting more efficient and reliable production across different industries.

The Science Communication Coordinator recognises the broader impact as ODIN's long-term value: *"ODIN's legacy will be to have shifted structural health monitoring from a laboratory concept into a practical design philosophy. For society, the legacy is safer, more reliable, and more sustainable air travel, plus spillover innovations in other fields that benefit daily life."*

A LONG-TERM DREAM FOR AVIATION

Looking to the future, Dr Pullin describes his vision for aircraft that are lighter, smarter and environmentally responsible: *"The big dream for the future of aviation is an aircraft powered by clean, green hydrogen. Imagine a plane built with strong but lightweight wings and frames that can actually adapt and change shape mid-flight to make each journey more efficient. This vision would mean truly net-zero air travel, helping passengers fly sustainably, creating skilled jobs, and protecting our planet."*

And the Chair concludes: *"ODIN has already laid the foundation for this vision by testing these smart 'nervous system' and 'shape-shifting' technologies in the lab, proving they can work in realistic aircraft structures."*

"ODIN transformed structural health monitoring from isolated laboratory research into a coordinated, validated and industry-relevant framework."

READ MORE

→ 'Optimising Design for Inspection' (ODIN)

COST INNOVATORS GRANTS PROVIDE REAL SOLUTIONS

Some COST Actions are granted additional time to transform ideas into lasting structures and services for society. The three stories below prove how COST Innovators Grants help COST Actions deliver clear, tangible benefits beyond the life of the network, including global risk tools, new products and practical support systems.

How a COST Innovators Grant Helped Build the Global Tsunami Model

Tsunamis are triggered by sudden events that displace large volumes of water. They are long waves that most frequently originate from earthquakes, setting the entire water column in motion, allowing the tsunami to propagate far from the source, in some cases, travelling entire oceans before striking land with potentially devastating force.

The scale of this hazard was tragically revealed in 2004, when an Indian Ocean tsunami killed more than 225,000 people and affected millions across Indonesia, Sri Lanka, India and Thailand, making it the deadliest tsunami in recorded history. For scientists working on natural hazards, the disaster exposed a critical gap: although tsunami research existed, there was no shared global framework to understand, compare and communicate tsunami risk.

"The 2004 tsunami was a turning point," recalls Finn Løvholt, Vice-Chair of the COST Action 'Accelerating Global Science in Tsunami Hazard and Risk Analysis' (AGITHAR) and rapporteur of the Global Tsunami Model Board. *"It showed that we lacked a shared scientific framework to understand and assess the risk."* This realisation set in motion years of international collaboration and ultimately led to the creation of the Global Tsunami Model (GTM) Association.

WHERE COLLABORATION TOOK SHAPE

COST Action AGITHAR brought together a diverse international community to share probabilistic approaches to tsunami hazard and risk assessment and advance understanding of both seismic and non-seismic tsunami sources. The Action addressed key research gaps and produced highly visible, frequently cited outputs, including the first comprehensive reference 'Probabilistic Tsunami Hazard and Risk Analysis - A Cookbook'. Its results extended well beyond academia, informing early warning systems, mitigation planning and policy discussions, and were presented to international bodies such as UNESCO, United Nations Office for Disaster Risk Reduction (UNDRR), European Civil Protection and Humanitarian Aid Operations (DG ECHO) and the World Bank. AGITHAR also had a strong impact on networking, with partners involved in several funded interdisciplinary R&D projects contributing tsunami expertise. These projects received more than €40 million in research investment.

By contributing to turning fragmented research into a shared, operational framework for tsunami risk, AGITHAR created the scientific, technical and community foundations needed to transition from cooperation to long-term implementation.

COST INNOVATORS GRANTS PROVIDE REAL SOLUTIONS

FROM IDEAS TO INSTITUTIONS

As the Action came to an end, a key question remained: how could this collective expertise be sustained and reliably made available to society? The answer came through the COST Innovators Grant (CIG) 'Sustaining AGITHAR - building a Global Tsunami Model Association'. With support from the CIG, researchers moved beyond a temporary network to build a permanent structure. This led to the establishment of the Global Tsunami Model (GTM) Association in 2024, which was legally recognised as an independent entity on 1 August 2025.

Global Tsunami Model Association, 2025

"It was important to create the GTM to provide a more structured approach to tsunami hazard and risk analysis globally," explains Jörn Behrens, Chair of AGITHAR and GTM Board. *"Tsunami hazard is highly interdisciplinary, with few standardised procedures, and the community needs to have an institutional home to support permanent improvement of community tools and knowledge."*
The ambition of GTM is clear, though challenging: to assess tsunami risk in a consistent, transparent and globally comparable way. Over time, the Association will deliver shared guidelines for hazard and risk analysis, alongside a technical core producing reference datasets. In practice, this will mean common models, agreed workflows and openly accessible knowledge to support decisions from local coastal planning to global policy discussions. *"We're trying to provide a global template for tsunami hazard and risk assessment. When everyone views the data in the same way, it becomes easier to plan, prioritise, and save lives,"* says Clea Denamiel, AGITHAR participant and member of the GTM Board.

Although the Association is still at an early stage, concrete progress is already underway. GTM is actively developing global hazard and risk models and related services, with early prototypes in place and discussions ongoing about how these could evolve into operational tools. While no models have yet been commercialised, prototype models exist, and it is expected that practical applications will emerge as the organisation matures.

FROM SCIENCE TO GLOBAL PREPAREDNESS

The Global Tsunami Model Association is designed to serve society as a whole, not only the scientific community. Its audiences include national and local authorities, civil protection services, tsunami early warning providers, international organisations such as the United Nations and the World Bank, as well as private actors including insurance and reinsurance companies. By acting as a neutral scientific reference point, GTM enables all these users to work from the same trusted evidence base.

The long-term vision is firmly focused on public benefit. *"We can't predict when and where the next big wave will occur, but we can contribute to an improved understanding of the risk posed by tsunamis. That provides a much better basis for making wise decisions before something happens,"* says Stefano Lorito, AGITHAR participant and member of the GTM Board.

By creating a permanent home for collaboration, common standards and shared models, the CIG ensured that AGITHAR's impact did not end with the Action. Instead, it continues through the Global Tsunami Model Association - a lasting COST legacy that turns scientific cooperation into global preparedness and resilience. *"The goal is for the world to be better prepared for the next major tsunami,"* adds Alexander Rudloff, AGITHAR advisory board member and treasurer of the GTM Board. *"The more knowledge we share, the better societies can adapt and protect themselves."*

COST INNOVATORS GRANTS PROVIDE REAL SOLUTIONS

Global Tsunami Model Board

"It was important to create the Global Tsunami Model to provide a more structured approach to tsunami hazard and risk analysis globally."

READ MORE

→ 'Accelerating Global science In Tsunami HAzard and Risk analysis' (AGITHAR)

→ 'Global Tsunami Model' (GTM)

From Airy Ideas to Real-World Impact

Aerogels are often described as 'frozen smoke' because these extremely light materials are composed mostly of air. Their tiny pores give them a very low weight, strong insulating properties, and a huge surface area compared to their size. They are widely used in construction, but their real potential extends much further. Through the COST Action 'Advanced Engineering and Research of aeroGels for Environment and Life Sciences' (AEROGELS), researchers explored applications that were previously unknown, ranging from environmental uses to biomedical and food innovations.

The Action brought together scientists, engineers and industry experts who had never collaborated before. It created a strong European network that pushed aerogels into the spotlight with new discoveries, growing global recognition and ideas that reshaped the field.

The momentum created during the Action led to the COST Innovators Grant (CIG) 'Technical, commercial and societal innovations on aerogels towards circular economy' (ECO-AEROGELS). Its aim was clear: to use the Action's achievements as a springboard to make aerogels more sustainable, more practical and more accessible.

A COMMUNITY THAT TRANSFORMED AN ENTIRE FIELD

When AEROGELS started in 2019, most people saw aerogels as impressive but delicate niche materials. The COST Action changed this perception. With its community of 600 researchers from 47 countries, Europe became the driving force behind efforts to make aerogels more environmentally friendly and useful to society.

Research activity increased rapidly. Aerogels were selected by the International Union of Pure and Applied Chemistry (IUPAC) as one of the Top Ten Emerging Technologies in Chemistry. The field advanced so quickly that IUPAC is considering revisiting its own definition of aerogels. A collaboration supported by the Action even resulted in a Nature publication on 3D-printed silica aerogels, opening new possibilities in robotics, electronics, and medicine.

A key moment came when engineers and technology groups joined the network. Their industry experience helped researchers to understand how to scale up production and design market-ready products. In turn, companies learned how aerogels could solve everyday problems.

Reflecting on these exchanges, Professor Carlos García-González from the University of Santiago de Compostela, the Action Chair, explains: *"As a result of this close contact and collaboration between academia and industry, two business models were defined and are on the way to acceleration with funding acquisition actions for the ulterior establishment of two new start-ups."*

TURNING IDEAS INTO SOLUTIONS

The momentum created during the Action resulted in a new milestone: the 'ECO-AEROGELS' COST Innovators Grant (CIG). Building on the results of the Action, the CIG shifted the focus from discovery to real-world impact.

Carlos describes the approach: *"During the ECO-AEROGELS CIG, several approaches were developed. In terms of green production, alternative sources of aerogel precursors from waste, food leftovers and forest residues were evaluated and integrated into the aerogel production pipeline. Alternative green aerogel production methods were also tested to minimise raw material and energy consumption and reduce waste, including 3D printing of aerogels and continuous aerogel processing."*

Two breakthrough results stood out.

BREAKTHROUGH ONE: AEROGELS READY FOR MEDICINE

A significant achievement was the development of sterile aerogels made from natural polymers. Previously, aerogels could be used in medicine but sterilising them was difficult and often damaged the material.
The team overcame this challenge by creating both a method and a working prototype that produces naturally sterile aerogels. *"This solution unlocks previous biomedical restrictions of aerogels and allows unprecedented uses of these materials where sterility is a critical quality attribute,"* says Prof. García-González.

This research won the Technology Transfer Prize 2025 from the Galician Royal Academy of Sciences. A patent for the sterilisation process was filed during the CIG and has since been extended internationally. This marks a strong step towards real clinical applications.

Carlos García-González adds: *"In terms of circularity, this patent allows the production of sterile aerogels as well as the other new options for the reprocessing of aerogels and their safe disposal."*

BREAKTHROUGH TWO: AIRYBERRY - A SNACK WITH A STORY

The second breakthrough took aerogels into an unexpected area: food. Using surplus fruit and by-products from the food industry, the team developed edible aerogels and created AiryBerry, a light, nutritious snack with a long shelf life.

At a public tasting event in Athens, chefs, nutrition experts and food industry representatives sampled strawberry, coffee and oat versions. Many were surprised by the texture and taste.

Professor Patrina Paraskevopoulou, one of the Action leaders from the National and Kapodistrian University of Athens, who organised the event, sums it up well: *"AiryBerry is a smart, sustainable, and nutritious way to rethink modern food!"*

For developing the eco-innovative food product AiryBerry, a team of students from the Chemistry Department of the National and Kapodistrian University of Athens won 3rd prize at the ECOTROPHELIA 2023 competition.

COST INNOVATORS GRANTS PROVIDE REAL SOLUTIONS

AiryBerry is now protected by a patent and has attracted strong interest from the food innovation sector.

Prof. Paraskevopoulou explains why this matters: *"This patent supports the valorisation of surplus agricultural produce and by-products of the food industry into high-value aerogel-based functional food formulations, thereby promoting resource efficiency and sustainable food innovation."*

AiryBerry tasting

Prof. Patrina Paraskevopoulou, leader in AEROGELS Action

"This patent supports the valorisation of surplus of the food industry into high-value aerogel-based functional food formulations, thereby promoting resource efficiency and sustainable food innovation."

A LEGACY THAT WILL LAST

Both the Action AEROGELS and the CIG ECO-AEROGELS have left a lasting mark. The scientific community formed during the Action continues to collaborate, and new teaching materials are being used in universities. The International Aerogel Association, which was founded in 2024, is continuing to shape this growing field.

Meanwhile, the CIG has delivered patents, prototypes and new business opportunities that are bringing aerogels closer to everyday life. Several start-ups focusing on aerogel technologies have been established as a direct result of collaborations initiated during the Action.

Carlos offers a final reflection: *"The closed-loop recycling of aerogels and the reprocessing of aerogels have been identified as new and unexplored development pathways. This research is the tip of a huge iceberg that warrants further exploration beyond the CIG lifetime."*

READ MORE

→ 'Advanced Engineering and Research of aeroGels for Environment and Life Sciences' (AEROGELS)

→ 'Technical, commercial and societal innovations on aerogels towards circular economy' (ECO-AEROGELS)

COST INNOVATORS GRANTS PROVIDE REAL SOLUTIONS

From Hidden Wounds to Healing Systems

WHEN THOSE WHO HEAL ARE HURT

What happens when an unexpected medical error occurs in a hospital? As the old saying goes, 'Errare humanum est' (to err is human). Many of these events involve honest mistakes arising from system failures, heavy workloads, or communication breakdowns, rather than recklessness. It isn't only patients who suffer in such situations. After such events, healthcare professionals themselves often become the 'second victims,' suffering emotional distress that can lead to burnout, depression, or even leaving the profession. For decades, their silent struggles went largely unnoticed, hidden behind a culture that equated error with failure.

However, this is beginning to change thanks to the work of COST Action 'The European Researchers' Network Working on Second Victims' (The ERNST Group) and its follow-up project, 'European certification of interventions in support of second victims' (RESCUE), which is funded through the COST Innovators Grant (CIG). Europe is beginning to acknowledge that caring for those who care for us is not a luxury, but a foundation for safer, stronger healthcare.

"The most fulfilling part has been watching something that was once invisible become a visible and respected topic on the European agenda," says Professor José Joaquín Mira of The Foundation for the Promotion of Health and Biomedical Research of the Valencian Community (Fisabio), Chair of the Action and the CIG.

BUILDING A EUROPEAN SAFETY NET

The ERNST Group united experts from 31 European countries to study the emotional impact of adverse events on healthcare professionals, those moments when something goes wrong despite the best of intentions.

Traditionally, emotional support in healthcare started only *after* something went wrong. The ERNST Group changed that thinking by proposing the ERNST Five-Tier Model that begins much earlier:

1. Prevention: building awareness and resilience before harm occurs.
2. Self-care: giving professionals tools to manage stress and seek help early.
3. Peer support: trained colleagues offering confidential, empathetic conversations.
4. Structured professional support: psychologists and occupational health experts stepping in when needed.
5. Clinical care: targeted treatment for severe emotional consequences.

This model doesn't just protect individuals. *"It's a cultural shift in healthcare,"* says Professor Mira. *"From isolation and guilt to support and shared responsibility. It gives professionals a safety net and helps institutions retain talent and foster a just culture."*

The first important milestone was when the Action published its 'Policy Statement on the Second Victim Phenomenon', endorsed by experts from 29 countries and featured in Public Health Reviews in 2024. For the first time, Europe had clear, evidence-based recommendations and policy proposals to guide institutions in supporting healthcare professionals after adverse events.

"That document consolidated years of research and dialogue," recalls Professor Mira. *"It captured the attention of health authorities and even reached the President of the European Parliament, with whom our colleague Professor Sandra Buttigieg had the opportunity to discuss our approach to addressing this problem across Europe. That was the moment we realised we had moved from research to real influence. It became the foundation for developing a guidance and recognition system that shows institutions how to organise interventions that strengthen resilience and address the second victim phenomenon."*

COST INNOVATORS GRANTS PROVIDE REAL SOLUTIONS

The ERNST Group and RESCUE promoters

TURNING RESEARCH INTO ACTION

Another important step was the COST Innovators Grant RESCUE that turned years of dialogue into a concrete plan of action. *"It confirmed that our work had matured into something actionable, scalable, and capable of driving real change across Europe,"* remembers José Joaquín Mira.

RESCUE transformed The ERNST Group's findings into a RESCUE certification system for hospitals and professionals. It set European standards for what effective second victim support should look like, ensuring that healthcare staff receive timely, structured help when they need it most.

The certification is not just a badge of quality. It's a framework for building trust between professionals and their institutions, and between patients and the healthcare system.

"RESCUE provides a validated, evidence-based framework to ensure that second victim support systems are truly effective," explains Professor Mira. *"For hospitals, it's a way to strengthen credibility and create a just culture. For professionals, it means structured, timely support. And for patients, it means safer care delivered by emotionally resilient professionals."*

"The economic case for action is as strong as the moral one," continues the Chair. *"In a German study, the annual cost of not addressing the second victim phenomenon for a single nurse was about €14,000 - our interventions can cut that by half!"*

RECOGNITION AND REACH

In 2024, The ERNST Group received the Butterfly Patient Safety Award from the European Patient Safety Foundation (EUPSF), recognising its groundbreaking work in establishing a European certification framework and training peer supporters.

"Receiving the Butterfly Award was an incredible honour," says Professor Mira. *"But the recognition goes far beyond. Our work is now included in policy briefs and national strategies. The message of ERNST resonates with professionals, patients, families, and civil society."*

Prof. José Joaquín Mira,
Chair of The ERNST Group and RESCUE

"Real change only happens when there is vision, collaboration, and shared purpose. And that's exactly what RESCUE stands for."

COST INNOVATORS GRANTS PROVIDE REAL SOLUTIONS

A NEW CHAPTER FOR PATIENT SAFETY IN EUROPE

In addition to the award, The ERNST Group and RESCUE have been highlighted at WHO workshops, European conferences, and international policy forums. Their training manual, podcasts, and training courses in 7 languages are helping hospitals around the world establish their own support systems.

"Just recently, we signed an agreement with the EUPSF to ensure that our system continues over time," says Professor Mira. *"I believe this adds even more value to the efforts made in these past years."*

For him, the message is simple and consistent. *"RESCUE is not only about supporting second victims,"* he says. *"It's about improving patient safety. That has always been our goal."*
He sees the work as part of a deeper cultural shift. *"Real change only happens when there is vision, collaboration, and shared purpose,"* he concludes. *"And that's exactly what RESCUE stands for."*

READ MORE

→ 'The European Researchers' Network Working on Second Victims' (The ERNST Group)

→ 'European certification of interventions in support of second victims' (RESCUE)

COST ACTIONS END, BUT NETWORKS CONTINUE

Many COST Actions have a lasting impact when their networks remain active, and their findings are communicated clearly and creatively. The following two stories demonstrate how strong communities continue to collaborate long after an Action has ended. These networks help to guide better health policies and transform chemistry into something beautiful and understandable.

Building a Sustainable Future for Burden of Disease Research

SEEING THE INVISIBLE TO UNDERSTAND THE BURDEN OF DISEASE

Every breath we take contains tiny particles that are invisible to the naked eye and can harm our health. Air pollution alone contributes to heart disease, stroke, lung cancer, and other chronic illnesses. But how can we measure its real impact on people's lives? How does it compare with other threats, such as smoking, diabetes or infectious diseases?

To answer these questions, scientists use a measure called the Disability-Adjusted Life Year (DALY). This combines years of life lost due to premature death with years lived with illness, showing how much of a population's health is lost to specific diseases and risk factors. This helps governments to see the bigger picture and decide where to invest for the greatest health gains.

Before the launch of the COST Action 'European Burden of Disease Network' (Burden-EU), each country used different methods, making comparisons almost impossible. The COST Action brought together almost 500 researchers from over 60 countries to create a shared framework for carrying out these studies. The result is more reliable, comparable data to inform policies that can save lives.

A COMMON STANDARD TO SPEAK THE SAME LANGUAGE

One of the Action's most important achievements is the STROBOD statement, a new international standard for reporting burden of disease studies.

"We are particularly proud of the STROBOD statement," said Prof. Brecht Devleesschauwer from Sciensano, Chair of the Action. *"As part of our systematic reviews, we saw how variable and unclear some studies were. The STROBOD statement is the first standard protocol for reporting DALY calculations. Its widespread use will increase consistency and transparency, which makes results more comparable and easier to use."*

The STROBOD statement is already helping to train the next generation of researchers. *"It also serves as an educational tool,"* added Brecht, *"helping researchers and students to understand the different choices and assumptions that need to be made when calculating DALYs."*

COST ACTIONS END, BUT NETWORKS CONTINUE

Prof. Brecht Devleesschauwer, Chair of Burden-EU Action

"It's rewarding to see that what started as a COST network has now grown into a living community that continues to make a difference."

KNOWLEDGE WITHOUT BORDERS ACROSS EUROPE

The Action placed a strong emphasis on training and knowledge sharing. Through training schools, workshops and webinars, Burden-EU helped over 100 researchers, many from countries with less experience in this field, develop the necessary skills to conduct national burden of disease studies.

"Our training material continues to live on through our Summer Schools," said Brecht. *"We are currently running the second edition after a successful kick-off last year."*

The network also maintains close ties with the WHO Regional Office for Europe by participating in the Health Information Network and other WHO/EURO initiatives. *"This includes sharing expertise on burden of disease via a lecture during the Population Health Surveillance training of WHO/EURO,"* Brecht continued. *"Likewise, we maintain close ties with other international organisations such as the Organisation for Economic Co-operation and Development (OECD) and the Institute for Health Metrics and Evaluation (IHME), which coordinates the Global Burden of Disease study."*

Burden-EU final event, Trieste, 2024

CONTINUING THE MISSION

Even after the project officially ended in 2024, the network continued to collaborate. The Burden-EU project continues to run the Burden-EU webinar series on new scientific developments.

"As the COST Action was coming to an end, we reached out to the network to understand what should continue," said Brecht Devleesschauwer. *"We learned that there was still a strong need to continue activities that fostered collaboration and impact. The webinars are a cost-effective activity with a large reach and impact."*

Dr Vanessa Gorasso, the Belgian Action Management Committee Member, now leads the organisation of these webinars at Sciensano. *"It's been a great way to stay active in the community and to keep learning,"* she said.

FROM STUDENT TO LEADER

For Vanessa, joining the Action was transformative. *"When I started my PhD, I was completely new to the burden of disease methodology. Being part of the network was essential to learn the methods and apply them in my research,"* she said.

COST ACTIONS END, BUT NETWORKS CONTINUE

Her involvement led to lasting collaborations. *"The network facilitated multiple collaborations on scientific papers. I also got to be part of the BEST-COST project, a Horizon Europe initiative that brought together many Burden-EU partners. One of the nicest advantages for me was connecting with other young researchers. In particular, through the network, I met a colleague with whom I'm currently leading a European Public Health Association (EUPHA) section on public health economics. This collaboration would not have been possible without the Action's role in bringing us together."*

Her professional growth also accelerated. *"Early in my career, I had the opportunity to present at the European Public Health Conference alongside Burden-EU colleagues, which was a big milestone for me. Even more meaningful was getting the chance to teach for the first time at one of the network's training schools."*

In summary, Vanessa said: *"Thanks to the Action, I've gained visibility in the field and developed both scientific and soft skills. It's rewarding to see that what started as a COST network has now grown into a living community that continues to make a difference."*

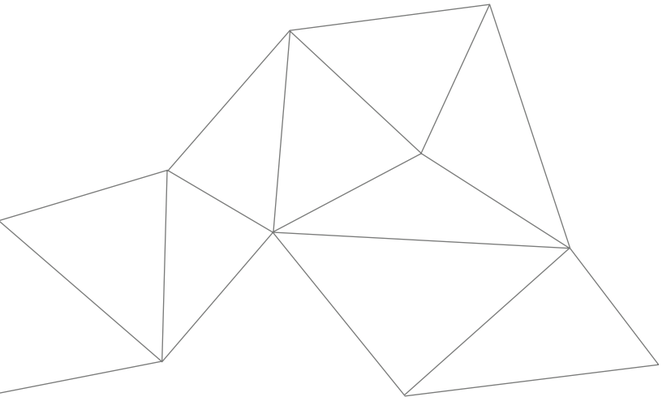
SUSTAINABLE IMPACT

From measuring the health effects of air pollution to assessing the burden of chronic diseases, Burden-EU has helped make population health data more comparable, transparent and useful. Its outputs, such as the STROBOD statement, training materials and continuing webinars, will keep supporting researchers and policymakers across Europe.

For Brecht, the greatest success is the sense of community that Burden-EU created. *"It's already difficult for me to imagine a world without the network,"* he said. *"We have been able to build strong ties that are essential for moving the field forward."*

READ MORE

→ 'European Burden of Disease Network' (Burden-EU)



COST ACTIONS END, BUT NETWORKS CONTINUE

Growing Knowledge from Chemical Gardens

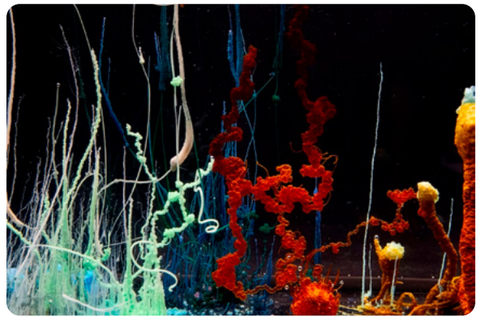
"If you have a garden and a library, you have everything you need."

This famous quote by Cicero reminds us that the beauty of life lies in the harmony between nature and knowledge. More than two thousand years later, this idea still resonates, particularly with a group of European researchers who have created a unique type of 'garden': one that grows from chemistry itself.

THE BEAUTY OF CHEMICAL GARDENS

When certain metal salts are placed in water, strange, delicate, plant-like tubes and filaments begin to grow, twisting and blooming into colourful shapes. These creations, known as chemical gardens, are the result of natural chemical reactions. What appears to be art is actually science in motion.

Behind these mesmerising shapes lies a complex world of physics, chemistry and biology. Understanding these reactions could help scientists to design new materials, improve biomedical devices, capture gases such as carbon dioxide and even gain insight into how life first emerged on Earth.



Chemical Gardens

A EUROPEAN NETWORK OF CURIOSITY

To unlock the secrets of these self-growing forms, the COST Action 'Chemobrionics' (CBrio) brought together chemists, physicists, mathematicians, engineers, and artists from across Europe. Many of them had never worked together before, but this diversity became the Action's greatest strength.

Led by Professor Julyan Cartwright of the Spanish National Research Council (CSIC), the network built lasting collaborations that continue today. *"The most important achievement,"* he explains, *"was the establishment of a community of researchers that persists to this day."*
Its influence can be seen in the growing number of publications and projects now using the term *chemobrionic* that barely existed before this Action began.

SHARED SCIENCE

The CBrio Action not only advanced science but also opened laboratory doors to the public.

Dr Carlos Pimentel of the Complutense University of Madrid created an online Chemobrionics Database which categorises chemical gardens from around the world according to their components and experimental conditions. Anyone can explore the database to learn how chemical gardens form, what materials are used and what discoveries have been made. *"The database started out as an internal tool,"* he explains, *"but it became so useful that I decided to make it public, and I continue to update it regularly. I am proud of this project."*

This living archive continues to grow and attract interest from researchers and science enthusiasts.

Recognised as a reference by Altmetric, the database is now a valuable tool for scientists worldwide, offering curious minds an accessible way to explore this emerging field.

COST ACTIONS END, BUT NETWORKS CONTINUE

SCIENCE ON THE BIG SCREEN

Dr Jitka Čejková, the Action's Science Communication Coordinator, found a new way to share science with the world. Working alongside filmmaker Mathis Leemann, who was a physics student at EPFL at the time, she produced the short documentary 'Chemobrionics'. The film premiered at the Ji.hlava International Documentary Film Festival in 2021 and later became a finalist at the Academia Film Olomouc Festival.

"The film allowed us to show science as something beautiful and alive," she says. *"It sparked curiosity and helped people see chemistry from a completely new perspective."*

Jitka also contributed to 'Robot 100: Sto rozumů',: a book celebrating the 100th anniversary of Karel Čapek's play 'R.U.R.', where she and other members of the Action explored links between artificial life, robotics, and chemobrionics, once again bridging science and creativity. *"The book contains the original play along with contributions from 100 personalities, including several members of our COST Action whose texts are connected to our research themes"*, Jitka explained.

CBrio film projection

WHEN SCIENCE MEETS ART

The Action also inspired new artistic collaborations. For example, researcher Tan Phat Huynh worked with artist Jan-Erik Andersson on 'The Table and the Tubes', a creative booklet that explores the intersection of art and science, using chemical reactions to convey visual stories.

Similar events, including public 'science and art nights' in Finland, invited people to discuss and experience chemistry in entirely new ways.

These artistic projects helped make complex science an understandable, visual, and emotionally engaging subject that both scientists and the public can appreciate.

A LASTING IMPACT

For Professor Ágota Tóth from the University of Szeged, who coordinated the Action's mobility grants, the true success of CBrio lies in the opportunities it created: *"We funded around 50 scientific visits, and from those, longer collaborations have evolved. Even now, I see joint publications from participants. The network gave early-career researchers a platform to present their work and build connections that will last a lifetime."*

"The Action has allowed me to enjoy COST events and activities. I have been a lecturer on one of the courses they have organised, received an STSM grant and participated in a COST conference", continues Carlos Pimentel.

"Participating in the Action provided me with valuable opportunities to connect with leading scientists, present our work to broader audiences, and gain visibility both within and outside my field," adds Jitka Čejková.

Beyond research papers, the Action's legacy lives on in artistic works, online resources, and educational materials. It has also inspired a Special Collection on Chemobrionics, showcasing the field's latest developments.

FROM GARDENS TO KNOWLEDGE

Through CBrio, Europe's scientists have demonstrated that nurturing curiosity can lead to the growth of knowledge in the most unexpected of places, even from a drop of salt in water.

"It is a joy to see how the people brought together by this project continue to collaborate and advance the frontiers of chemobrionics knowledge," shares the Action Chair Prof. Cartwright.

COST ACTIONS END, BUT NETWORKS CONTINUE

Today, as chemical gardens continue to grow in laboratories around the world, they stand as symbols of both nature's creativity and human imagination.

Just as Cicero once reflected on the importance of gardens and libraries, the CBrio Action reminds us that true progress flourishes when knowledge and beauty grow together.

Prof. Julyan Cartwright, Chair of CBrio Action

"The most important achievement was the establishment of a community of researchers that persists to this day."

READ MORE

→ 'Chemobrionics' (CBrio)

OTHER SUCCESS STORIES PUBLISHED IN 2025

Long read: Changing the face of a rare eye disease

Aniridia is a rare eye condition in which the iris, the coloured part of the eye, is missing or underdeveloped. Because the iris controls how much light enters the eye through the pupil, its absence can lead to serious vision problems such as cataracts and glaucoma, which worsen over time. While there's no cure, promising treatments such as stem cell and gene therapies are on the horizon.

The COST Action 'Aniridia: networking to address an unmet medical, scientific, and societal challenge' (ANIRIDIA-NET) aimed to turn these hopes into reality by raising awareness and promoting innovative research to improve the lives and vision of those affected.

→ Read more here.

How HyperChildNET is revolutionising children's health in Europe

High blood pressure isn't just an adult problem, it's a life-long condition that can start in childhood, yet it receives little attention in younger populations. That's where the Action 'Network for blood pressure research in children and adolescents' (HyperChildNET) comes in, creating Europe's first comprehensive network to tackle high blood pressure in young people. Its research shows that maintaining healthy blood pressure in childhood through primordial prevention, stopping risk factors before they develop, could lead to healthier adults and reduced healthcare costs.

→ Read more here.

OTHER SUCCESS STORIES PUBLISHED IN 2025

DEVOTION transforms birth experiences

What if the happiest moment of your life turned into your worst nightmare? For thousands of women across Europe, the miracle of childbirth is overshadowed by a trauma that lingers long after they leave the hospital. Evidence suggests almost one in three women in Europe experience some aspect of their birth as traumatic. Unrecognised and untreated, the trauma doesn't just affect the mother, it affects her baby, her family and ultimately society.

Led by Professor Joan Lalor of Trinity College Dublin, the Action DEVOTION has brought together researchers, clinicians, NGOs and SMEs to address this critical but often overlooked issue.

→ Read more here.

Improving stroke care across Europe

Stroke can come out of the blue, even in people who have been healthy all their lives. What's remarkable about stroke treatment is its extreme time sensitivity. If a blockage is removed quickly, the brain can often resume normal function with minimal damage. But if the blockage lasts only a few hours, the brain damage can be permanent.

Although effective treatments exist, they are not available in many countries. The quality of stroke care varies dramatically across different regions of Europe, leading to significant differences in patient outcomes. This critical gap in healthcare was the catalyst for the COST Action 'Implementation Research Network in Stroke Care Quality' (IRENE).

→ Read more here.

OTHER SUCCESS STORIES PUBLISHED IN 2025

SHIINE: Transforming higher education through the 5 Seas Labs

The COST Action 'Multi-disciplinary Innovation for Social Change' (SHIINE) has become a powerful force for educational change across Europe. Born from a collaboration between Tallinn University and Northumbria University, the initiative was led by Associate Professor Katri-Liis Lepik, who recognised the growing gap between traditional teaching methods and the increasingly complex challenges of our modern world. The Action identified a critical need to prepare students for the challenges of the 21st century. It focused on supporting creativity, employability, and multidisciplinary learning.

→ Read more here.

ReMO: Building a healthier research culture across Europe

Many researchers across Europe face significant mental health challenges, with toxic work environments, job insecurity, hyper competition, and limited funding all part of the daily pressures. For too long, these issues have been marginalised or treated as personal struggles and/or incidents rather than systemic problems. The COST Action 'Researcher Mental Health' (ReMO) aimed to change this.

By bringing these issues into the open, ReMO has been a driving force in changing the way mental health is perceived and discussed within academic institutions. The Action created open spaces where researchers could share personal stories and develop practical solutions with mental health experts and institutional leaders.

→ Read more here.

OTHER SUCCESS STORIES PUBLISHED IN 2025

ROXY-COST improves ripening, reduces waste and grows careers

Fresh fruits and vegetables are essential to a healthy diet, but they are also highly perishable. Keeping fruit fresh for longer isn't just about packaging; it's about understanding the biology behind ripening. Understanding how oxygen interacts with ethylene (a key ripening hormone) could lead to new technologies that extend shelf life, reduce food waste, and maintain the nutritional and sensory qualities of fruits.

The COST Action 'Oxygen sensing a novel mean for biology and technology of fruit quality' (Roxy-COST) has addressed this challenge in a new and innovative way. Bringing together scientists from across Europe, the project explored how oxygen and other stress signals affect the quality of fruit, using tomatoes as a starting point.

→ Read more here.

Supporting minority rights without borders

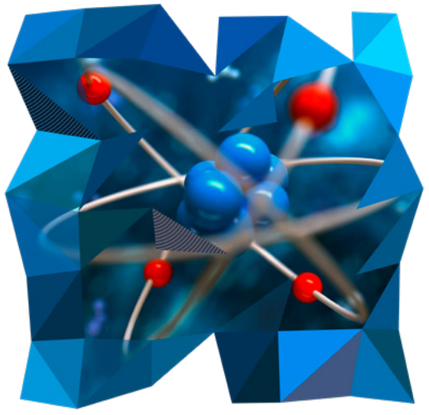
In many political systems, the will of the majority often silences minority voices. Federalism can help, but only if minorities live in specific territories. So, what can be done when communities are scattered across a country or region?

Non-territorial autonomy (NTA) offers a promising solution. This allows cultural, linguistic or ethnic minorities to manage their own affairs without requiring a defined geographic area. Despite its potential, NTA has not been widely studied or well understood. The COST Action 'European Non-Territorial Autonomy Network' (ENTAN) aimed to change that.

→ Read more here.

OTHER SUCCESS STORIES PUBLISHED IN 2025

The COST Action TIPICQA is trapping the future

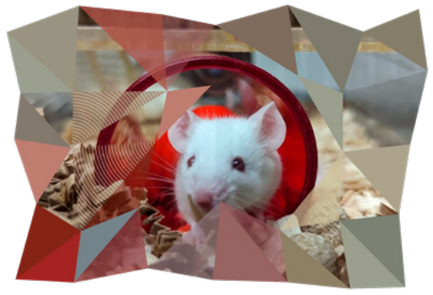


The COST Action 'Trapped Ions: Progress in classical and quantum applications' (TIPICQA) brought together research groups working with trapped ion technologies from across Europe and beyond. By connecting experts with both theoretical and experimental backgrounds, the Action created an environment in which scientific ideas could evolve into tangible applications.

Several start-up companies were founded as a result, with the aim of bringing trapped-ion quantum computers, as well as the necessary software and algorithms, to market.

→ Read more here.

Long read: shaping the future of lab animal monitoring



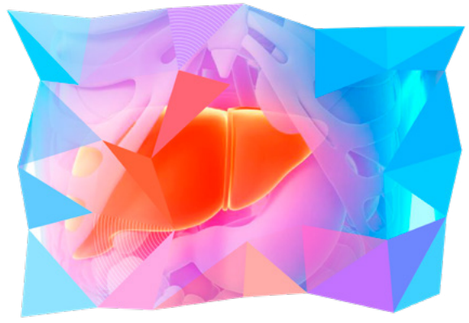
Laboratory animals are used in biomedical research to study physiological and pathological conditions in living organisms with the ultimate aim of understanding and treating human and animal disorders. Home-cage monitoring uses video and sensors to track animals in their cages and has huge potential in this field.

'Improving biomedical research by automated behaviour monitoring in the animal home-cage' (TEATIME) Action brought together developers and users of automated home-cage monitoring technologies to assess these technologies, develop guidelines and build capacity for wider adoption of home-cage monitoring.

→ Read more here.

OTHER SUCCESS STORIES PUBLISHED IN 2025

COST Action DILI drives innovation and empowers young talents

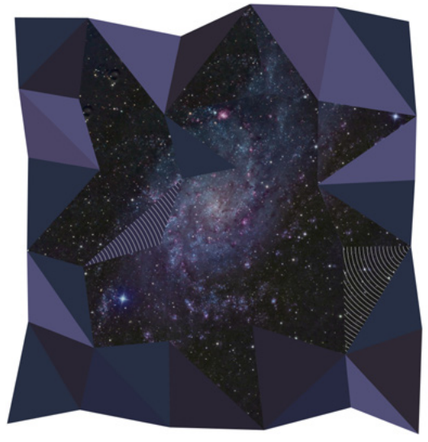


Drug-induced liver injury (DILI) is a disorder caused by drugs, traditional medicines, and herbal or dietary supplements. There are two types of DILI. The first type is dose-related and occurs shortly after exposure. The second form, idiosyncratic DILI, is unpredictable and driven by host factors. It occurs several weeks after exposure and poses a significant challenge in drug development and clinical practice.

The COST Action 'Prospective European Drug-Induced Liver Injury Network' (PRO-EURO-DILI-NET) addressed the complex challenge of idiosyncratic DILI. The ultimate goal was to prevent and pre-empt DILI, develop innovative therapeutic approaches to improve clinical outcomes, and raise public awareness.

→ Read more here.

G2net: when gravitational waves met machine learning



The discovery of gravitational waves in 2015 marked a turning point in our understanding of the universe. But detecting these faint signals was only the beginning. The real challenge lies in separating meaningful data from the overwhelming background noise.

To tackle this, the COST Action 'A network for Gravitational Waves, Geophysics and Machine Learning' (G2net) brought together physicists, data scientists and engineers from across Europe. With the clear aim of applying machine learning to gravitational wave science, the Action has developed practical tools, trained young researchers, supported scientific careers, and built a strong, cross-disciplinary community.

→ Read more here.

OTHER SUCCESS STORIES PUBLISHED IN 2025

Guardians of urban trees

Trees are an essential part of our cities. However, climate change, urbanisation and global trade have created ideal conditions for invasive pathogens and insects to spread. European trees often have no natural defences against these alien species, and the consequences can be devastating.

To respond to this growing threat, researchers and stakeholders from across Europe joined forces under the COST Action 'Urban Tree Guard - Safeguarding European urban trees and forests through improved biosecurity' (UB3Guard). The Action created a collaborative network of scientists, city planners, arborists, and local activists across 31 countries, all working towards the same goal of strengthening the biosecurity of Europe's urban forests.

→ Read more here.

Long read: traces that connect us

Across Europe and beyond, traces of the past, such as artefacts, memories and landscape scars, tell stories about who we are and how we live. Until recently, however, there was no single field that brought together the scientists, artists, curators and activists who study these traces.

The COST Action 'Traces as a Research Agenda for Climate Change, Technology and Social Justice' (TRACTS) has taken on the challenge.

→ Read more here.

7

EVENTS

January

21/01	Workshop on the COST Innovators Grant, Brussels
21/01	COST Academy Grant Awarding Coordinator workshop, online
23/01	COST Academy Grant Holder Manager workshop, Brussels
30/01	COST New Year reception for stakeholders, Brussels

February

05 → 06/02	COST at Advancing collaborative research and innovation in South Mediterranean event: the opportunities and challenges, Cairo
13/02	COST-EIT pre-Jumpstarter webinar for COST Actions
17/02	COST Academy event: Sustainability of COST Actions, Brussels
19 → 20/02	COST Communication seminar for science communication coordinators, Brussels
25/02	General COST Info Day, online

COST info days are organised to promote COST and its opportunities among the research community in the various COST Member countries. They are organised in close cooperation with the COST National Coordinators, the national contact points in the country.

EVENTS

March

05 → 06/03	COST Communication seminar for science communication coordinators, Brussels
21 → 22/03	COST at Marie-Curie Alumni Association annual conference, Krakow
25/03	COST Academy training: How to present your research with impact, Brussels

April

01 → 03/04	COST Academy training: Media skills, Brussels
03/04	COST at Circular Bio-based Europe Joint Undertaking annual networking event, Brussels
09/04	Workshop for COST National Coordinators, Brussels
10 → 11/04	COST Academy training: Storytelling, Brussels
23/04	COST Academy Action Chairs' Forum, Brussels

COST Connect is a series of thematic workshops providing an open space for COST Actions, policymakers, and the broader research and innovation community to network on science and policy-related topics. Topics are defined along the lines of the current EU policy agenda and societal challenges.

EVENTS

May

12/05	COST Academy training: How to coordinate the international research networks, Brussels
13/05	COST Connect: Gender Equality Plans in COST Actions, Brussels
16/05	COST Academy Leadership workshop, Brussels
26 → 27/05	COST at Scientific Advice Mechanism conference: Building bridges – Shaping Europe's science-for-policy landscape, Vienna
27 → 28/05	COST at Future Labs Live, Basel
28/05	COST Academy training: Understanding EU decision-making processes – How to advocate your interest, Brussels

June

09 → 12/06	COST at European Biomass Conference and Exhibition, Valencia
10/06	COST Connect: Agriculture and its products, follow-up meeting, Brussels
17 → 18/06	COST Connect: Advancing a clean and healthy environment through research collaboration, Brussels
19 → 20/06	Science for policy and science diplomacy workshops for new COST Actions, Brussels
26/06	COST Connect: Mental health, follow-up meeting, Brussels

July

02 → 04/07	Cross-Cutting Activity on career advancement for young researchers, Brussels
04/07	COST Academy webinar: How to write a policy brief
10 → 11/07	COST at Rencontres Recherche et Création, Avignon

COST Academy supports COST Actions in managing their networks by offering training, workshops, and webinars on topics highly relevant for the performance of the networks.

EVENTS

August

28/08	COST Academy webinar: Final Financial Report for grant holder managers

September

02 → 03/09	COST Academy training for young researchers, Brussels
09 → 10/09	COST Academy Leadership workshop, Brussels
15 → 19/09	COST at NanoInnovation conference, Rome
29/09	COST Academy training: Social media for science communication coordinators, Brussels

October

02/10	COST Academy training: Social media for Action chairs, Brussels
07 → 08/10	Joint COST Connect – JRC workshop on cancer research, health technologies, biotechnology, disease prevention and mental health, Ispra
08/10	COST-EIT webinar: Opportunities for COST Actions
20/10	COST Academy training for young researchers, Brussels
20 → 21/10	COST at Western Balkans R&I ministerial meeting, Podgorica
21/10	COST Academy webinar: Peer review – Tips for an open research approach

November

03 → 04/11	COST at AI in Science Summit, Copenhagen
26/11	COST Connect: Science in Action – Solutions for the Sustainable Development Goals, online

COST Global Networking – reinforces collaboration with COST Near Neighbour Countries and promotes COST globally.

December

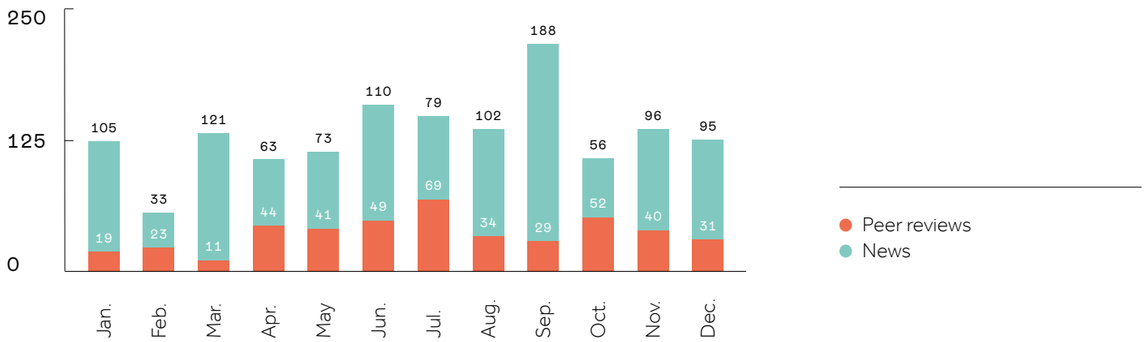
02 → 04/12	Cross-Cutting Activity on career advancement for young researchers, mid-term meeting, Brussels
17/12	From research to relation: international scientific networks, the quiet diplomats, side event at the 2nd European Science Diplomacy conference, Copenhagen

Cross-Cutting Activity is a governance tool with the objective to utilise the COST networking instruments for targeting specific policy priorities in order to strengthen the role of COST in a given policy domain related to COST policies, ERA priorities or other EU R&I policies. They focus on horizontal topics, they are decided top-down, and the primary beneficiaries of the outcomes are COST Actions participants and the community of R&I policy in Europe as a whole.

8

MEDIA & COMMUNICATION DATA

COST ACTIONS IN THE NEWS AND SPECIALISED PUBLICATIONS



ABOUT US

COST (the European Cooperation in Science and Technology) is an EU-funded programme which enables researchers and innovators to set up interdisciplinary research networks in Europe and beyond.

WHAT IS THE COST MISSION?

COST provides networking opportunities for researchers and innovators to strengthen Europe's capacity to address scientific, technological and societal challenges. COST implements its mission by funding bottom-up, excellence-driven, open and inclusive networks for peaceful purposes in all areas of science and technology.

WHAT DO WE FUND?

COST does not fund research, but provides support for networking activities carried out within COST Actions. In this way, it complements nationally-funded research. These funds are used to organise meetings, events, short-term scientific missions, training schools, dissemination activities, grants to attend international conferences and virtual networking tools.

WHAT ARE COST ACTIONS?

A COST Action is an interdisciplinary research network that brings together researchers and innovators to investigate a topic of their choice over a four-year period. COST Actions are highly interdisciplinary and open to researchers and innovators.

WHO CAN PARTICIPATE?

COST Actions attract researchers and innovators from all types of institutions: academia, public institutions, SMEs and industry, NGOs, and European and international organisations. Participants may apply at any stage of their career. COST Actions are based on the principle of inclusiveness and actively encourage the participation of researchers and innovators from less research-intensive COST Member countries known as COST Inclusiveness Target countries. Researchers from Near Neighbour countries and Third States can also take part in a COST Action.

HOW TO APPLY?

There are two ways to take part in a COST Action:

- Participate in an existing Action. Browse the COST Actions on the COST website to find the network that best matches your scientific expertise.
- Create your own network. Submit a COST Action proposal at any time of the year. Proposals are collected once a year. The submission, evaluation, selection and approval procedure ensures a simple, transparent and competitive evaluation and selection process, in line with COST's bottom-up, open and inclusive principles.

Proposers benefit from a one-stage submission via the online e-COST tool.

Find out more on the → COST website:

→ COST Member countries

→ Action networking tools

→ Corporate brochure

→ Video 'Tips for submitting a COST Action proposal'

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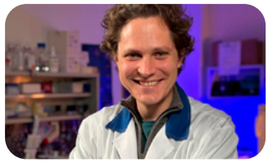
TESTIMONIALS



Dr Jan Kraśko
National Cancer Institute, Lithuania, WG Leader of *Mye-InfoBank* Action

"During our COST Action, I connected with people specialising in scientific approaches different from my own. This experience deepened my appreciation for the diversity in science and reaffirmed my belief that young scientists, such as those actively involved in Mye-InfoBank, can drive meaningful and impactful projects."

Dr Ivan Halasz
Ruder Boskovic Institut, Croatia, WG Leader of MechSustInd Action

"I am proud of how we built a collaborative community that enabled experts from diverse fields to share perspectives and shape new approaches in process engineering. Through the COST Action, we encouraged innovative solutions that strengthened our field while supporting the transition toward a greener economy."

Katrien De Moor
Department of Information Security and Communication Technology at NTNU, The Netherlands, MC Member of BEiNG-WISE Action

"Taking part in the COST Action has enabled me to meet new people and reconnect with familiar faces, leading to novel short- and long-term collaboration initiatives. The multi-disciplinary nature of the network has also broadened my perspective on the interplay of human, societal, legal and technical aspects of cybersecurity in the wireless landscape."

Dr Jovana Blagojevic
Institute for Plant Protection and Environment, Serbia, WG member in UB3Guard Action

"The COST Action gave me the opportunity to meet amazing people from different backgrounds. It also gave me a sense of responsibility. I now see how much we can achieve when we work across disciplines and across borders. The Action UB3Guard changed the way I think about research and its role in society."

TESTIMONIALS

Ms Almudena Muñoz Puche
Centro Tecnológico del Mueble y la Madera de la Región de Murcia, Spain, Chair of LIAISE Action

"Industrial symbiosis is more than just a strategy; it's a pathway to a sustainable future. Through LIAISE, we brought experts, industries and policy-makers together to break down barriers, share knowledge and transform waste into opportunities, thereby building a circular economy that benefits both the planet and society."

Prof. Anne W. Ekdahl
Department of Clinical Sciences, Faculty of Medicine, Lund University, Sweden, WG Leader of PROGRAMMING Action

"Being part of the COST Action provides me with an opportunity to contribute with my experience as a clinical physician and leader in geriatric medicine accumulated over many years to health care providers in countries where Geriatric Medicine is still emerging."

Prof. Nurinisa Esenbuga
Ataturk University, Erzurum, Türkiye, MC Member of SHiFT Action

"COST Action is a network that brings together people from different disciplines and countries. It is a network that gives me the opportunity to meet and exchange ideas with many people, both within and outside my field. I would strongly encourage my colleagues to participate in the COST Action or submit a proposal."

Prof. Caroline Wilkinson
Liverpool John Moores University, Chair of MDVI Action

"COST Action is a great opportunity to bring people from lots of different disciplines together, from lots of different countries across the world, to address a global issue and to build capacity across Europe whilst affecting international policy."

Dr Fernando Gomollón-Bel
Agata Communications, Spain, member of MechSustInd Action

"Clearly, the connections created during the COST Action had a very important impact, from the positive results of the IMPACTIVE project to having become part of the mechanochemistry family in Europe and internationally. I think COST is a great catapult for the creation of strong networks of collaboration."

Dr Branko Bošković
Univerzitet Donja Gorica Podgorica, Montenegro, Science Communication Coordinator of ENTAN Action

"Building connections and contacts has increased my visibility as a researcher and improved my knowledge in the field. It has strengthened my human and social capital, and I have become more involved with COST Actions and similar projects. ENTAN opened many doors during and after the project."

TESTIMONIALS

Prof. Brunella Morandi
Alma Mater Studiorum – University of Bologna, Italy, Chair of FruitCREWS Action

"The COST Action FruitCREWS represents a joint international effort to provide growers with strategies and tools to face the more and more frequent risk of drought stress. We believe that joining forces at international level is the only way to effectively face this challenge."

Dr Ana Rotter
Marine Biology Station, National Institute of Biology, Piran, Slovenia, Chair of Ocean4Biotech Action

"The COST journey has been a profound personal and professional growth experience, allowing me to connect with remarkable experts and kind professionals across Europe. Together, we have built not just a network, but genuine friendships - a precious achievement in the professional world."

Nico Trummer
Technical University of Munich, Germany, member of Mye-InfoBank Action

"The Action gave me the confidence and skills to tackle complex computational problems early on, shaping my approach to bioinformatics and systems biology."

Dr Benno Augustinus
Swiss Federal Institute for Forest, Snow and Landscape Research WSL, member of UB3 Action

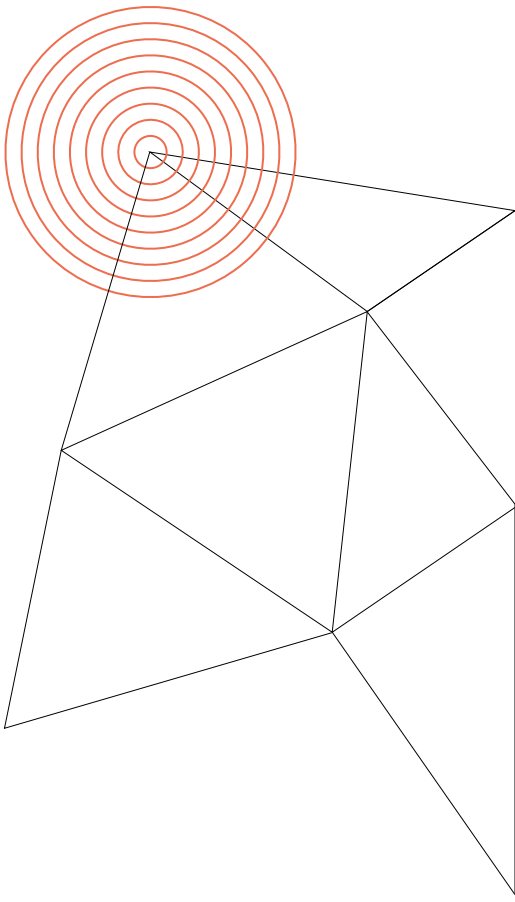
"To present our work on urban trees, I was invited to give a keynote at the Forest Invasive Species Network for Europe and Central Asia conference. Being an active member, therefore, grew my network and opened doors outside of the COST Action."

Dr Ramona Monica Buzdugan
Schaeffler AG, Romania, MC Member of HISTRATE Action

"As a representative of the industry, my participation in the COST Action enabled to further collaborate with Academia and with other industrial sectors in the topics relevant for my company. Moreover, it is an excellent way to share knowledge and train young researchers."

Prof. Rosario Domingues
University of Aveiro, Portugal, Chair of EpiLipidNET Action, MC Member in 3 COST Actions

"Thanks to the COST Action, I was able to expand my network, meet new researchers and establish contacts with companies. It also increased the international visibility of my institution and created new opportunities for young researchers in my team. To colleagues considering joining or proposing a COST Action, I would advise doing so as soon as possible!"



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EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

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