## Connecting researchers, advancing science in Horizon Europe

COST Annual Report 2022







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## About us



COST provides networking opportunities for researchers and innovators in order to strengthen Europe's capacity to address scientific, technological, and societal challenges. At COST, there are three strategic priorities: promoting and spreading excellence, fostering interdisciplinary research for breakthrough science, and empowering and retaining young researchers and innovators. 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 ARE COST ACTIONS?

A COST Action is an interdisciplinary research network that brings researchers and innovators together to investigate a topic of their choice for four years.

#### WHO CAN PARTICIPATE?

Researchers and innovators coming from all types of institutions: academia, public institutions, SMEs/ industry, NGOs, European/international organisations. Participants can apply at any stage of their career.

COST Actions are based on the principle of inclusivity and actively promote the participation of researchers and innovators based in less-research-intensive COST Member countries, known as COST Inclusiveness Target Countries (ITC).

Researchers from Near Neighbour Countries and Third States can also take part in a COST Action.

#### **HOW TO APPLY?**

Participants are invited to submit a COST Action proposal contributing to the scientific, technological, economic, cultural or societal knowledge advancement and development of Europe. Proposals from all fields of science and technology are encouraged (including interdisciplinary and new and emerging fields). Proposals for new COST Actions can be submitted to our annual Open Call via e-COST, our dedicated grant management tool.

#### WHAT DO WE FUND?

COST does not fund research, but provides support for networking activities carried out within COST Actions. In this way, it compliments nationally funded research.

#### **NETWORKING** TOOLS

#### 1. Meetings, workshops, and conferences



Meetings are organised by the Management Committee (MC) of a COST Action in any COST Member country participating in the network. They take many different forms, such as MC meetings, working group meetings, workshops or conferences. They may be open to the wider community and provide opportunities to enhance the COST Action's visibility. COST will contribute to the travel and subsistence expenses of the invited participants as well as to the expenses of organising the meeting.

#### 2. Short-term Scientific Missions (STSMs)



These scientific missions allow researchers involved in a COST Action to visit an institution or laboratory in another COST Member/Cooperating Member or Near Neighbour Country participating in the Action. Their aim is to foster collaboration and share new techniques and research infrastructures that may not be available in a participant's home institution or laboratory. STSMs provide a great opportunity for both young and experienced researchers looking for mentoring and lifelong learning.

#### 3. Training Schools



Training Schools offer intensive training on an Action topic at the premises of one of the Action participants. Trainees are typically, but not exclusively, young researchers from across Europe. These schools can also offer researchers from any career stage, continuous education opportunities.

#### 4. Conference Grants

These grants are aimed at young researchers from COST Inclusiveness Target Countries (ITC) and help individuals attend beneficial international conferences that are not organised by COST Actions.



#### 5. Virtual Networking Grants



COST has developed two new types of grant to fill the rising need of digital tools to ensure continuity of COST Action activities:

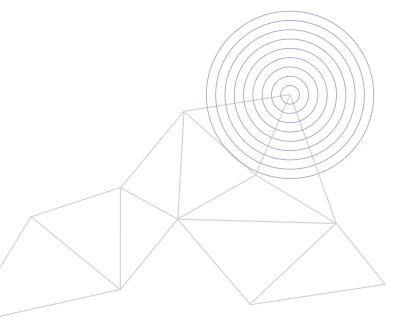
- Virtual Networking Support (VNS) Grants. These grants aim at promoting virtual collaboration to complement traditional ways of collaboration within the research and innovation communities.
- Virtual Mobility (VM) Grants. These grants aim at strengthening the existing networks by allowing researchers to foster collaboration in a virtual setting, to exchange knowledge, learn new techniques, disseminate, and share Action results.

6. Communication, dissemination, and valorisation strategy



COST Actions are encouraged to inform all relevant stakeholders about the scientific achievements of the Action. This should be in line the principles of Open Science and Open Access. Their aim is to valorise their results, facilitating their uptake by the European research and innovation community and society at large. The dissemination of scientific results achieved by the Actions is essential to COST. We support Action participants to share the outcome of their research to other COST networks, the wider scientific community, policymakers, industry, the media, and the general public. Numerous dissemination and communication tools and channels are available to the Actions such as dissemination grants, network websites, academic publications, social media, press releases, meetings and events, and success stories.

More information about the networking activities and their eligible costs can be found in the Annotated Rules for COST Actions.



# **Message from the President**

### Synergy in Action -Advancing Research Together

It is with great pleasure that I present to you the 2022 COST Annual report. As we look back on the past year, I am proud of what the Association and our 270 COST Actions accomplished.

The COST family grew, welcoming Georgia, Ukraine, and Armenia as COST Full Members. This marked a significant milestone for European research cooperation and is testament to COST's dedication to inclusivity and diversity. Furthermore, COST has continued to support researchers based in Switzerland and the United Kingdom, thereby fostering collaboration across borders and breaking down barriers in the pursuit of scientific discovery. This free mobility of researchers makes all of us stronger and contributes to a resilient society based on knowledge, whilst leaving no one behind.

Research and innovation are not isolated activities, as they involve the collective efforts of scientists working together towards a common goal. But scientific progress is not only a result of scientific networking, but also of the interactions and collaborations of researchers with the social, economic, and political forces. Therefore, COST has a long history of collaboration with other stakeholders, and I'm pleased to inform you that over the past year COST reinforced synergies with various initiatives such as the European Institute of Innovation & Technology (EIT), Joint Research Centre (JRC), European Research Council (ERC), Marie Skłodowska-Curie Actions (MSCA), the European Parliament Research Service (EPRS), and the European Food Safety Authority (EFSA) to create a constructive exchange of ideas, expertise, and opportunities.

At the same time, COST has continued to advocate change for the scientific community, for example by signing the Agreement on Reforming Research Assessment and joined the Coalition for Advancing Research Assessment (CoARA), one of the latest key initiatives in the European Research arena.

Cross-border collaboration and mobility is key in today's research and innovation practice. COST Actions offer the right tools for this cross-border collaboration. COST

Actions are flexible enough networks, to easily turn and adjust their professional work towards new, timely questions and involve new partners based on their needs for knowledge or expertise. The networks work as a 'scout', which can explore new pathways not easily accessible to the mainstream Horizon Europe tools. In this regard, I am thrilled to report that COST Actions have led to a significant increase in the number of proposals submitted for collaborative research by their members in the European Framework Programmes for Research and Innovation. With an impressive average success rate of 39%, these submitted proposals demonstrate the impact and effectiveness of COST Actions as a successful pre-portal to follow-up funding for research and innovation.

It is imperative that the scientific and technological results stemming from COST Actions are shared freely and widely with the research and innovation community. This is why I am glad to announce a fantastic new opportunity for COST Actions. They now have the ability to publish their research through Open Research Europe (ORE), the European Commission's premier Open Access publishing platform.

Lastly, I am particularly proud to highlight that COST creates a community where young researchers collaborate side-by-side with esteemed researchers in the field, including recent ERC grantees and Nobel Prize winners, of which exciting examples are highlighted in this report. This demonstrates the high-quality and impact of the COST networks.

As the President of COST, I am confident that we will continue to be a vital resource for researchers and a stepping stone towards other EU funding schemes. Our mission of fostering collaboration and driving research excellence remains at the forefront of our efforts. I am deeply grateful to our Action members, staff, and all those who have supported COST throughout the year. Together, we will continue to push the boundaries of scientific breakthroughs.



**Prof. Alain Beretz** President of the COST Association

Photo © François Nussbaumer



# Introduction from the Director

### Inclusive Excellence: Growing and Reinforcing Networks

2022 was a remarkable year for COST. After two difficult years of decreased networking activities due to the travel restrictions imposed by the global COVID-19 pandemic, we saw an exceptional uptake of the COST Action's activities. The pandemic posed significant difficulties and prompted a rapid shift towards innovative methods of networking, accelerating the progression of prevailing trends. The Virtual Networking Tools we launched in 2021 became an established networking tool at the disposal of our researchers. With these flexible, complementary, and voluntary tools COST allowed researchers to stay connected, even in times when no physical meetings and events were possible.

As of spring last year, most of our networks were once again able to meet in person, maximising opportunities for the scientific community through a wide variety of networking instruments. This included 1 462 Short-term Scientific Missions, 229 Training Schools, 306 conference grants, and 807 Action meetings. During summer and autumn we saw the activity of COST Actions exceeding pre-pandemic levels, showcasing the ever-existing need for research and innovators to connect in person. In 2022, the COST Open Call for Action proposals attracted 374 interdisciplinary applications from a diverse range of countries and with a record of 45.2% female main proposers.

At the COST Association, we see ourselves as an active facilitator, continuously engaging with our COST Action participants. This focus on stewardship involves fostering a sense of ownership and accountability among those researchers involved, and creating a supportive environment for them to thrive in. In this sense, I am thrilled to report that the COST Academy has been instrumental in elevating the presence of young researchers and individuals from Inclusiveness Target Countries in key leadership roles. Over 40% of the participants of the 2022 COST Academy Leadership Training for young researchers are now enrolled in leadership positions in the COST Actions, meaning that COST remains an instrumental tool to launch the next generation of leaders in research and innovation. In total, around 49 COST Academy trainings were organised for more than 1 500 Action participants.

I am happy to say that in 2022 we launched a record of 70 new COST Actions and approved six new COST Innovators Grants, bringing the total number of running COST Actions to more than 270. While managing these networks, we value the principle of Inclusive Excellence, which is a key characteristic of our networks as it strives to ensure equal opportunities and representation for all members of the scientific community, regardless of their background, ethnicity, gender, or other personal characteristics. By promoting inclusive excellence, European research networks aim to create a more diverse, equitable, and inclusive scientific community. where all members can fully contribute their skills and expertise to drive impactful research and innovation. More than 506,700 connections were created between researchers & innovators. This approach not only benefits individual researchers but also contributes to the overall success and competitiveness of the European research landscape, of which COST is still a cornerstone.

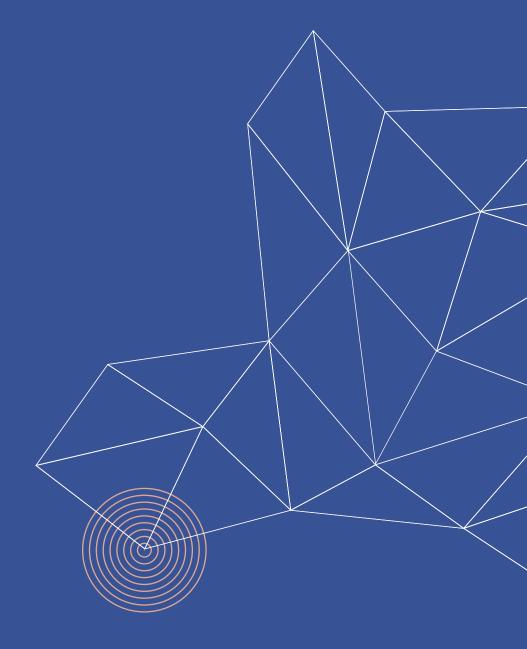
Science does not stop at Europe's borders, and therefore we remain actively engaged with promoting COST to a wide variety of research communities across the globe. Last year we organised information sessions for researchers, in countries such as Azerbaijan, Faroe Islands, Jordan, Palestine, Tunisia, South-Africa.

At the same time, we keep working hard to simplify our processes and systems, and to ensure that our Actions are well-managed and supported. For this, we are in continuous dialogue with our COST Action Grant Holders, as their role is vital in creating impactful networks. We believe that this simplification mindset will help us achieve our goals more effectively and efficiently, making a greater impact for the researchers and innovators involved.

In conclusion, I would like to express my gratitude to all those who have contributed to this report and to the continued success of COST. I am confident that the future holds even greater promise, and that COST will continue to be the most empowering research programme in Europe.



**Dr Ronald de Bruin** Director of the COST Association



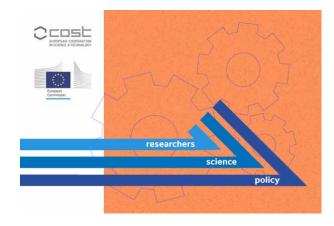


#### 13 JANUARY 2022

# COST-Joint Research Centre (JRC) cooperation continues

One of the key areas the COST President, Alain Beretz, discussed with the JRC Director-General, Stephen Quest, was the cooperation between COST and the JRC in the area of science-informed policy advice. With a view to continuing successful cooperation in 2022, the meeting resulted in the agreement to develop and implement the following concrete activities:

- Actively promote formal participation of JRC researchers in COST Actions by organising a virtual COST Info Day specifically targeting JRC researchers.
- Continue and extend our 'Science for Policy' collaborations e.g., more joint sessions in (international) conferences such as INGSA, COST participation in the JRC workshop 'Strengthening and connecting eco-systems of science for policy across Europe', and involvement of the JRC in a COST training session on how to achieve policy impact, targeted at a selected group of COST Actions.



• Explore opportunities for cooperation in future COST Connect events, for example in the area of food safety.

Find out more

#### 24 FEBRUARY 2022

### Connecting the innovation chain by reinforcing synergies: COST and the European Institute of Innovation and Technology (EIT) signed a Memorandum of Understanding

Following the signature, both institutions agreed to share their initiatives to support researchers and innovators, and to identify areas of collaboration based on common interests. In the spirit of building a new European Research Area, this partnership between the EIT and COST will enable research institutions, businesses, and citizens to further develop their innovations and explore new market opportunities.

#### Find out more



#### 30-31 MARCH 2022

### Georgia and Ukraine become COST Full Members

Following a unanimous decision of the Committe of Senior Officials (CSO), both Georgia and Ukraine joined the COST family.

"The admission of Georgia and Ukraine as COST Full Members underpins the key role of COST in facilitating integration to the European research and innovation landscape. COST aims to foster open and inclusive networks of excellence in all scientific fields, and through their membership Georgian and Ukrainian researchers will be able to take a proactive role in proposals for future COST Actions."

Prof. Alain Beretz, President of the COST Association

Membership of COST allows researchers and innovators to fully benefit from COST's networking opportunities, including being the main proposer for COST Actions. Furthermore, at governance level, both countries will now contribute to setting the strategy for shaping the future of COST.

Find out more



# 27 MAY 202270 new COST Actions approved

COST governing board, the Committee of Senior Officials, confirmed the funding of 70 new COST Actions, which officially started in Autumn 2022.

The 70 new COST Actions in figures:

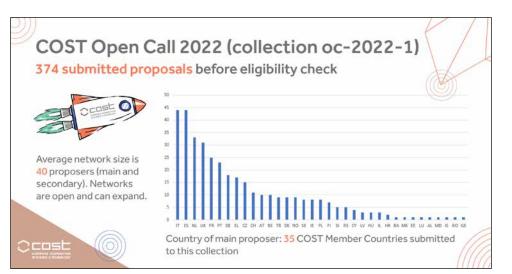
- 16% of main proposers are young researchers
- 44% of main proposers are women
- 71% of the proposals feature participants from industry/SMEs
- 19% of main proposers come from an Inclusiveness Target Country (ITC)
- 77% of the future networks have attracted participants from all over the world

As an indicator of interdisciplinarity of the 70 new COST Actions, 47% of all new Actions cover at least two fields of science and technology of the Organisation for Economic Co-operation and Development (OECD), while 11% cover at least three fields.

Natural sciences led the way as the most represented field of science (represented in 50% of the new approved Actions), followed by Medical and Health Sciences (34%), Social Sciences (27%), Engineering and Technology (24%), Agricultural Science (13%), and Humanities (11%).

The success rate for applications in this Open Call was 17.4%.

Find out more



### 29 JUNE 2022 Six new COST Innovators Grants (CIG) approved



The COST Innovators Grant, as defined in the COST Strategic Plan, aims to enhance the pace and success of breakthrough innovations, build bridges between the scientific research performed in COST Actions and marketable applications and/or societal solutions, and explore innovation potential.

Launched in 2019 as a pilot scheme, CIGs are now a fully established feature for COST under Horizon Europe. Eligible COST Actions that are reaching the end of their initial 4-year funding period are invited to apply for CIG funding by the COST Association. CIGs have a duration of 12 months and grantees benefit from the same networking activities available to COST Actions. The CIG scheme provides an equitable process for the range and depth of COST Actions to progress their innovation potential. This results in an increased relevance of the scheme to COST and added-value to the investment in COST Actions. Critically, it enhances and accelerates research to real-world situations through the power of networks. This unique funding stream is well positioned to make full use of the richness of COST networks and the progressive and world-leading thinking on innovation.

Find out more

#### SEPTEMBER 2022

### COST Actions can now submit to Open Research Europe (ORE)

ORE is the European Commission's Open Access publishing platform for research. The platform offers a free, reliable, peer-reviewed publishing service of high scientific quality, with swift publication times and rigorous scientific standards. Importantly, ORE gives everyone, researchers and citizens alike, free-of-charge access to the latest scientific discoveries.

Find out more

"We are thrilled to offer COST Actions the opportunity to publish in Open Research Europe. It is imperative that the scientific and technological results stemming from COST Actions are shared freely and widely with the Research and Innovation community. This new publishing opportunity helps further COST's commitment to promote Open Access and ensures rapid and transparent dissemination."

Prof. Alain Beretz, President of the COST Association



#### **10 NOVEMBER 2022**

### Armenia becomes the 41<sup>st</sup> Full Member of COST

Armenia fulfilled all the conditions to become a COST Full Member, including association with two previous EU Framework Programmes for Research and Innovation, FP7 and Horizon 2020. By November 2022, Armenian researchers were involved in 29 (10%) of running Actions. 44 scientists represented Armenia in Actions' Working Groups. "The figures are encouraging, and we sincerely hope that full membership will contribute to enlarging Armenia's participation in COST Actions."

Mr Sargis Hayotsyan, Chairman of the Science Committee of the Republic of Armenia

Find out more



#### NOVEMBER 2022

COST signs The Agreement on Reforming Research Assessment to become a member of the Coalition for Advancing Research Assessment (CoARA)

Joining CoARA will allow COST to maintain a dialogue with Research Funding and Performing Organisations as well as other R&I stakeholders in assessing and improving systems of evaluation, in turn reviewing, developing, and evaluating COST's own evaluation criteria, tools, and processes.



#### Find out more

#### 2022

### COST Virtual Networking Tools: from a pilot to long-term benefits

Their initial objective was clear: the Virtual Networking Support (VNS) and Virtual Mobility (VM) grants did not aim at replacing physical mobility but rather at offering an effective alternative to support networking and collaboration during a period of travel restrictions. The two have been shaped to act complementarily and to support COST Actions to continue building capacity and meet their initial objectives.

Taking this crucial aspect into consideration, COST decided to maintain both grants as part of its networking tools for COST Actions within the new Horizon Europe Framework Programme.



Find out more



# **Success** Stories

### Women moving on and up



Women in action

Considering gender balance as a key aspect of COST's commitment to being open and accessible to all, with COST Actions focusing on ensuring equal opportunities and gender-friendly career advancement.

COST Action WEMov (Women on the Move) is a transdisciplinary network of European researchers looking at historical and contemporary women's labour mobility spanning six centuries to the present day. The Action was launched two years ago and includes a very wide range of disciplines bringing together historians, social scientists, the arts, psychologists and economists amongst others.



#### **A VISIBLE ROLE**

"Our aim is to make women's role in migration visible," says Action Chair Dr Marie Ruiz of the University of Picardie. "Women have largely been written out of the archives on migration. So, we are creating a timeline and repository of sources on women's migration; this includes mapping and collating primary sources across Europe."

Migration, even today, is often seen as a phenomenon dominated by men. However, this is not correct. For instance, in 2020 women migrants outnumbered male migrants in Europe, accounting for 51.6% of the total. "Women were not always counted – nor included in census data," explains Marie. "Through the Action we are revealing women as active migrants and builders of Europe with economic resources, assets and social networks which contradicts established narratives presenting women as vulnerable migrants or economic burdens."

"Our map of landmarks already catalogues some 1,000 places across Europe that commemorate or acknowledge women's role in migration," states Marie.

#### SPREADING THE WORD

As well as building a repository of female migration sources, the Action is engaging with policy makers and reaching out to the public to highlight women's presence in European migration history.

"We are creating walking tours that trace the path of women migrants to highlight their cultural and institutional contributions," explains Marie. The first two walking tours are located in Prague and Bucharest, and the next two will take place in Lisbon and Luxembourg.

WEMov was also the first COST Action to launch a collection on Open Research Europe – the EU's open access publication portal. "We have launched two book series and we are developing an article series to help this field emerge as a specific area of research," says Marie. "One of the book projects led by WEMov members highlights unknown stories of women migrants and how they contributed to their home or host communities."

All WEMov's creations are on the Action's website: virtual exhibitions are also being created and a poster exhibition is touring around Europe. The exhibition is hosted by Action members and has already been to Cyprus and Sofia, it will next be exhibited in Lisbon, and Luxembourg before reaching Dublin. Educational materials are also being developed including a Massive Open Online Course (MOOC) that should be available from Spring 2023.

The Action strives to be inclusive and open to all. "The field, unsurprisingly, mostly attracts women researchers, but it is an area of importance for men too," says Marie. "We wrote gender balance – 50/50 male/ female – into the network proposal and we have two dedicated women early career researchers who ensure a gender balance across all our activities in their role as gender balance advisors."

### "Our aim is to make women's role in migration visible."

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The Action also prioritised Inclusiveness Target Countries (ITC) in terms of membership and activities: in particular organising meetings in ITC members states and opening their annual meetings with local NGOs gathered around a stakeholders' meeting to learn from their experiences.

The Action has received high-level support. Helena Dalli, the EU's first Commissioner for Equality, produced a video message for the Action and a member of her cabinet, David Kerr, has participated in the Action's annual meeting. WEMov has also engaged with the Council of Europe.

"WEMov is helping to address, inform and make an impact with policy makers on gender issues," concludes Marie.

Read more about COST Action 'Women on the Move (WeMove)' - CA19112

### Public outreach: an evolving story

Why is communicating science so important? As Anne Roe, the American psychologist, said: "Nothing in science has any value to society if it is not communicated."

Good public outreach increases the visibility of research, can enhance the reputation of the researchers and institutions involved and boost support for future funding, collaboration or exploitation of results. And, of course, communicating science, its challenges and opportunities, is vital to inspire the next generation of researchers.

#### SCIENTIFIC LITERACY

Today, we are bombarded by a deluge of information from the internet, social and mass media. To reliably decipher what is fact from fiction relies on citizens having a level of scientific literacy: the ability to critically evaluate, apply and understand scientific knowledge and how it is produced. Without this skill, citizens will have difficulty in making fully informed decisions on issues that could profoundly affect their lives.

The COST Action EuroScitizen (Building on scientific literacy in evolution towards scientifically responsible Europeans) focused on promoting scientific literacy using evolution as a model to improve public understanding of science.

Dr Tania Jenkins from the University of Geneva describes herself as an evolutionary ecologist turned science communicator and was Chair of the Action that is now in its final month. "We chose evolution as a model because it is so relevant to daily lives – there are applications of evolution all around us," explains Tania. "Many people make the mistake of thinking that evolution is something that has happened, but organisms are constantly evolving and adapting. For example, over the past few years we have all heard about the rapid evolution of new variants of the COVID virus."

Another topical and relevant issue is adaptation to climate change. "For example, European vineyards have been shaped by centuries of evolution, but will need to adapt to the changing climate – this could represent a very real threat to aspects of European cultural identity," says Tania.

The Action attracted over 200 members from 36 countries and from a wide range of disciplines. "As well as evolutionary biologists we welcomed education scientists, science communicators, teachers and journalists from all around Europe," explains Tania.

The Action assessed the level of acceptance and understanding of evolution across Europe through a survey of first year biology students. "We also looked at how evolution was approached in different EU countries, areas and ages," explains Tania. "We looked at the role of media and non-formal education settings, such as in museums and science centres, the role of scientists themselves in the communication of their science, and also how citizen science can contribute."

This last aspect was a joint endeavour with two other COST projects (Alien CSI and CS-EU) and a meeting on 'Citizen science as a tool for education and promotion

of scientific literacy in evolution' that took place in January 2020 just before the COVID pandemic hit. The outcomes were published in the prestigious Royal Society Proceedings B in 2022.

During the pandemic, the Action produced lots of dissemination material that are available on the project website. "We produced several e-books that have been translated into many languages – in particular publications for the public and teachers on the COVID virus and influenza, as well as videos and online courses," says Tania.

The videos produced included a programme on Evolutionary Science aimed at primary schools and a series of portraits of scientists. "The portraits series was a result of the COVID pandemic," says Tania. "Physical meetings were obviously limited but we wanted to give a human face to science, so we asked contributors to record short clips describing their work, their lives and ambitions."

The online courses developed included a course on responsible research and innovation and a series - Sci Comm4All – that gives researchers tips on how to better communicate science. The Action has also been a springboard to other things activities including an upcoming Creative Europe proposal that is addressing the issue of fake news.

#### NATURE-BASED SOLUTIONS

Creating a Massive Online Open Course (MOOC) has been a significant outcome for the COST Action Circular City (Implementing nature-based solutions for creating a resourceful circular city). Resource depletion, climate change and degradation of ecosystems are challenges faced by cities worldwide to which they must adapt. Cities need to become more sustainable. One route to reach this transition is to implement nature-based solutions. These can provide a range of ecosystem services that benefit the urban environment such as flood prevention, water treatment, local food production and more.

> "We wanted to give a human face to science"





COST Action EuroScitizen - workshop Berlin

"However, most nature-based solutions are currently implemented to serve a single purpose without a more holistic approach of circular urban economies which combines multiple services that return and (re)use resources within the city," says Action Chair Dr Guenter Langergraber of the University of Natural Resources and Life Sciences, Vienna (BOKU). "A circular city approach should increase the benefits obtained. Our COST Action is building a network to show that a circular system using nature-based solutions to manage resources can lead to a more resilient, sustainable and healthy urban environment."

The network of researchers, companies and stakeholders assembled under the Action is spread across Europe and neighbouring countries and brings together a diverse portfolio of disciplines.

"Our aim was to use nature-based solutions in a different way with a focus on interdisciplinary planning," explains Guenter. "To achieve a greener city but to ensure that the various solutions and processes are integrated into one holistic system that maximises sustainability and the use of natural resources within a city. The main outcome of the work is a framework of how to use different nature-based solutions to address circularity aspects in cities."

Having developed the framework, the next step was to consider how to disseminate the findings for maximum impact. "We wanted to develop a web-based guidance tool that show the results in an understandable way, so anyone in a city administration could easily find a solution," says Guenter. "People should be able to access information via a solution- or technology-based entry point and be guided to different solutions and case studies."

The Action has produced a number of videos available in multiple languages and the MOOC 'Nature-Based

Solutions for Creating Circular Cities'. "So far more than 500 people have taken this course in its first iteration, which ended in January," Guenter says. "We are now updating the course based on the feedback from participants and will fully integrate the guidance tool as well. The course will be available again to everyone after the Action is closed."

Further training material is also being developed that will enable people to run their own courses to raise awareness and overcome barriers in cities. "The new material will focus on examples from real life projects," concludes Guenter. "You could describe it as an offline version of the MOOC."

Read more about COST Action 'Building on scientific literacy in evolution towards scientifically responsible Europeans (EuroScitizen)' - CA17127

Read more about COST Action 'Implementing nature based solutions for creating a resourceful circular city (Circular City)' - CA17133

### **Resistance revisited**

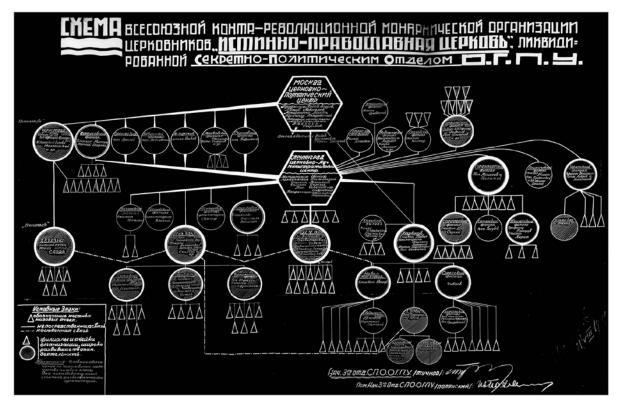
Inclusive excellence is a clear aim of the COST initiative. COST Actions and activities look to nurture talent and creativity wherever it is to be found in Europe and beyond, at all career stages – but especially with younger researchers and in less research-intensive countries: the COST Inclusiveness Target Countries (ITCs).

One COST Action that has been particularly active in promoting inclusivity and excellence is COST Action NEP4DISSENT (New Exploratory Phase in Research on East European Cultures of Dissent), which completed its work in 2022. The Action focused on resistance and dissent in the former socialist states of eastern Europe from 1945 to 1989. Given current events in Ukraine, this Action could not have been more timely.

#### RESISTANCE

Resistance and dissent in former Soviet Europe represents a remarkable chapter in Europe's recent past that has informed and helped shape its current geopolitical context. This era can provide insights on contemporary developments in Europe and social movements worldwide.

"Basically, the Action looked to streamline new research approaches to dissent in Central and Eastern Europe in the post-war era," explains Action Chair Dr Maciej Maryl of the Institute of Literary Research of the Polish Academy of Sciences. "We engaged scholars from



True Orthodox Church secret police network scheme Ukraine

37 countries across Europe including from Georgia and Ukraine as well as Kosovo and Russia."

The aim of the Action was to reinvigorate the research area by moving beyond inherited Cold War-era conceptions and included hitherto unrepresented actors and phenomena, such as religious minorities, feminists and women's rights activists, popular music, transnational artists networks, and the dissent among socialist thinkers and artists. Two principle new approaches were followed, firstly to broaden research beyond national and disciplinary silos by looking at the wider European context through the lens of diverse disciplines. And secondly, to bring new digital technologies into play to enable better handling of archival sources and develop new tools for public engagement.

"Bringing different and diverse researchers together and exposing them to new digital methods helped open up new research avenues," Maciej states. "We were looking to rebalance the whole field and put it on a new track."

#### DISSENT

The work covered many different types of dissent from religious dissent to women's rights. "The general idea was to incubate a new exploratory phase for the field," says Dr Piotr Wciślik, who co-coordinated the Action alongside Maciej. "We focused on what was uncharted and created a critical analysis of existing approaches."

The Action has produced numerous high-profile publications – with more to come - as well as video articles, training materials and virtual exhibitions. This last output



NEP4DISSENT COST Action - Core Group meeting

neatly captures the Action's strategy to enable new approaches to research and scholarly communication by bringing together scholars and IT professionals. Some 20 new projects have sprung from the initiative and many fellowships have been awarded to participants – including an ERC Starting Grant.

As well as involving researchers from many ITCs, the Action put young investigators centre stage in many of its successful activities and has facilitates a whole new generation of scholarly and public engagements with questions of dissent.

#### UKRAINE

The Action was also a natural source of support to Ukrainian scholars when the Russian invasion happened. "The group Science4Ukraine was initiated by Sanita Reinsone, our Science Communication officer," explains Maciej. "The fact that we had people fluent in digital technologies enabled us to set up support methods quickly and the project is, of course, continuing."

Science4Ukraine is a grass-root initiative run by an international community of volunteers with a mission to support the Ukrainian academic community in surviving the war, help ensure the continuity of Ukraine's science, and strengthen its presence in the international science arena.

Read more about COST Action 'New Exploratory Phase in Research on East European Cultures of Dissent (NEP4DISSENT)' - CA16213



Dr Maciej Maryl, NEP4DISSENT Action Chair

### Wearable robotics boost interdisciplinary collaboration

Inspiring cooperation across disciplines and different areas of science and technology is often an enabler of significant breakthroughs in research and innovation. Cross-fertilization of ideas and knowledge can enrich academic debate and foster new directions for research. COST Actions play a key catalytic role in bringing researchers together across the spectrum of research from fundamental science to social sciences, arts and humanities to make those vital connections.

COST Action WearableRobots (Wearable Robots for Augmentation, Assistance or Substitution of Human Motor Functions) focused on the integration of the different disciplines involved in this evolving field as well as engaging with a wide range of stakeholders to help improve the technology and its potential impact on society.

Wearable Robotics is an emerging set of technologies that is looking to develop personal devices, such as exoskeletons, that support or augment human functions. This inevitably involves increased direct interaction between the robotic device and the human operator that opens numerous issues such as safety.

#### **CONNECTING DISCIPLINES**

"When the Action started there was a lot of research on robotic exoskeletons for medical application and also for supporting workers in industry," says Dr Jan Veneman, Chair of the Action from Swiss company Hocoma Medical GmbH. "These involved separate research groups, funded from a variety of diverse sources and operating in different domains such as healthcare or industrial environments. Our aim was to bring everyone together."

As wearable robots continuously interact with humans in multiple and varied situations, Human Robot Interaction, Ergonomics, and Ethical, Legal and Societal (ELS) issues are also considerations, along with early involvement of regulatory and other stakeholders, that are essential to ensure the optimum positive impact of these technologies for society.

"As well as the technical disciplines such as mechatronics, electronics, materials etc. we wanted to involve ELS topics from the start," continues Jan. "This meant finding and engaging with people from the social sciences that were interested in robotics and their impact."



Photo by: Gijs van Ouwerkerk

As well as connecting disciplines the Action was able to connect different ongoing research programmes to ensure exchange of knowledge and reduce overlap. These included major projects such as Eurobench, that was establishing a European benchmarking system for the performance of bipedal robots, and the COVR project focusing on the safety of collaborative robots.

#### **STANDARDS**

The Action has also played a major role in shaping the future of the wearable robotics field thanks to the publication of a series of scientific review papers covering the different aspects of wearable robots and the involvement of members within the standardization community. "Several participants in the Action were experts on international standards development," explains Jan. "And in our COST meetings they could discuss potential standards with the wider community and get the feedback they needed."

This resulted in the Action, together with Eurobench, being able to create an EU level workshop agreement with CEN/CENELEC (the pan European Standards organisation). This produced protocols to benchmark robots walking over ground and obstacles and enable wider comparison of performance. The Action also funded Short-Term Scientific Missions to enable

> "Our aim was to bring everyone together"

researchers to test their prototypes at the same facility in Madrid using the protocols.

Jan is particularly proud of the training schools organised through the Action. "These were a key achievement for integration of different disciplines," he states. "Participants were exposed to information and experience they would not otherwise be able to normally access and made valuable connections between researchers that will continue beyond the Action."

Read more about COST Action 'Wearable Robots for Augmentation, Assistance or Substitution of Motor Functions (Wearable Robots)' - CA16116

### **Building global research communities**

COST is an EU initiative but its remit covers the whole of Europe and beyond. Borders should not be barriers to cooperation in science and technology. COST helps to build global research and innovation communities and its Actions are open to participants from all around the world.

A global exchange of research skills, sharing resources and facilitating scientific mobility is at the core of COST Actions and often builds the foundations of enduring and valuable long-term research relationships.

#### BREAD BUGS

Sourdough bread is widely consumed worldwide and is appreciated for its distinct flavour, texture and healthy attributes. It is a result of spontaneous fermentation by naturally occurring yeasts and lactic acid bacteria and was probably one of the first microbial processes employed by humanity for food production.

COST Action SOURDOMICS (SOURDOugh biotechnology network towards novel, healthier and sustainable food and bloproCesseS) brought together scientists and small enterprises to study sourdough technologies along the entire value chain from sustainable cereals' production, through fermentation processes, to use of by-products in a circular economy.

"Sustainable bioprocesses have much to contribute from a circular economy standpoint, " says Professor Elena Bartkiene from the Lithuanian University of Health Sciences and Vice-Chair of the Action. "There are different sourdoughs in different countries, each with their specific characteristics due to the microorganisms that are involved in the fermentation."

The aim of the Action was to bring together knowhow from decades of international research and to examine opportunities to further exploit Sourdough Biotechnology in new industrial, agricultural and commercial applications. Today the Action has 278 members from 56 countries spread over five continents – a truly global affair. "Since the start we have seen a huge increase in participation including from industry," says Elena. "Not just in terms of breadmaking but industrial biotechnology applications for making chemicals, nutraceuticals and many types of bioproducts."

The global benefits have been summarised by Professor. Tamer Gamel of Alexandria University, Egypt and a member of the Action. "One of the main benefits is the networking. To have more collaborations is very beneficial for African partners. Also, once you start being involved in one project, you may have the chance of getting involved in additional ones, and join new collaborations," he commented.

Elena sees the Action producing long-term success through the partnerships that have been established and will continue beyond the Action. "All participants have great respect for each other, and the processes are transparent," she explains. "This produces effective engagement and trust: we are all working from a common understanding of the issues."



COST Action SOURDOugh - meeting in Thessaloniki 2022

Six books and a large number of papers have resulted from the Action so far and many Short-Term Scientific Missions (STSMs) and Training Schools (TSs) have been organised.

#### FAST CHEMISTRY

The development of ultrashort intense light sources operating in the XUV and X-ray spectral regions could revolutionize chemistry, as they will give access to dynamic molecular processes occurring in the attosecond time scale. An attosecond is an incredibly short period of time: equal to 1×10–18 or one quintillionth of a second. As a comparison, an attosecond is to a second what a second is to 31.7 billion years or over twice the age of the Universe!

Large-scale facilities are currently being developed across Europe for this purpose and this infrastructure is accompanied by an increasing demand for accurate theoretical support. The COST Action AttoChem (Attosecond Chemistry) is looking to coordinate experimental and theoretical efforts in this field.

"AttoChem's scientific goal is to extend the present capability to access the attosecond time scale and to do chemistry in a different way," says Professor Fernando Martin of Universidad Autónoma de Madrid and Chair of the Action. "The European effort is supported by COST but there are groups all around the world trying to do similar research including in Asia and North America. From the very beginning of AttoChem we invited people from the US, Canada and elsewhere to participate."

As this area of science is a recent, emerging field, research had been scattered and fragmented. "AttoChemhas enabled better communication between groups around the world and initiated joint efforts," says Fernando.

It also inspired a broader international networking initiative in the US called the Extreme Light in Intensity, Time, and Space (X-lites) network funded by the US National Science Foundation last year. AttoChem is now in its third year. "AttoChem and X-lites will work very closely together," says Fernando. "I am one of the AttoChem representatives on X-lites and the X-lites Chair is one of the US representatives on AttoChem. We are seeking to align different research initiatives and the funding they can raise, so emerging collaborations can effectively materialise."

Already a joint Training School on 'The Frontiers of Attosecond and Ultrafast X-ray Science' has been

organised for March this year in Sicily. "AttoChem will cover the expenses of European participants and X-lites will fund US students' participation," explains Fernando. "The joint organisation will give the school a much higher visibility in the US." The fourth annual AttoChem meeting will take place at the ELI-ALPS facility in Hungary in September and will also involve participation from X-lites. "This will allow us to better identify the research lines where a closer collaboration at the international level is needed," says Fernando. "Attochem is making significant efforts to train the next generation of scientists who will lead these initiatives".

"The close working relationship with X-lites helps to coordinate and organise research in this field on a global scale," concludes Fernando. "This helps to improve the quality and efficiency of our work in this rapidly evolving scientific domain."

#### ACID TEST



COST Action EuroMicropH – Training School at the large scale facilities in Pakmaya, Turkey

COST Action EuroMicropH (Understanding and exploiting the impacts of low pH on micro-organisms) is gathering together a global community of scientists working in different areas, from medicine to food and drink, on responses to low pH in microorganisms. "Fermentation processes or some human activities lead to acidification of the environment where microorganisms live and this can have positive or negative impacts on the activity of the organism and the process in general," explains Action Chair Professor Daniela De Biase of Sapienza University in Rome. "Taking advantage of these effects is of great interest to a wide research community."

"Of all our activities, overall, the most fruitful are the training schools and the STSMs," continues Daniela.



Dr Andreas Gombert

"It allows real sharing of knowledge and best practise. Most are in Europe, but we have also supported, for example, students to go to New Zealand to learn a new technology."

A great example of cooperation with a participant from an International Partner Country is Dr Andreas Gombert from the University of Campinas in Brazil. "Andreas was participating from the beginning and although distant physically he has always given feedback and made suggestions. He was always there with his brain," Daniela comments. Andreas was part of the initial Network of Proposers for the Action.

"COST is one of the few European mechanisms that I could access," explains Andreas. "And I was fortunate to be able to participate in an Action event in February 2020 in Lisbon – just before the pandemic. In fact, I was invited to give the opening talk, which gave my work huge visibility."

This exposure has resulted in Andreas vastly increasing his network and engaging with new opportunities. "COST enables people to get to know each other, to learn from each other, and build trust for further collaboration"



"COST networking has so many non-tangible positive consequences," he states. "Suddenly people know about your work and are asking you to evaluate papers, join editorial boards, and participate in collaborations."

Andreas is also participating in another COST Action, YEAST4BIO, that arose directly from his involvement with EuroMicropH. "The most valuable benefit, personally, from COST has been to see the change in mindset in colleagues," concludes Andreas. "COST enables people to get to know each other, to learn from each other, and build trust for further collaboration."

Read more about COST Action 'SOURDOugh biotechnology network towards novel, healthier and sustainable food and BloproCesseS (SOURDOmICS)' - CA18101

Read more about COST Action 'Attosecond Chemistry (AttoChem)' - CA18222

Read more about COST Action 'Understanding and exploiting the impacts of low pH on micro-organisms (EuroMicropH)' - CA18113

### Monitoring biodiversity with eDNA

Policymakers, at all levels of government, need to be informed by sound science policy advice. COST, with its 'network of expert networks', is in an ideal position to contribute over a very wide range of topics. COST funds dissemination activities that engage actively with policymakers and decision takers. And all COST Actions receive specific training opportunities on how to engage with policymakers and increase their policy impact.

COST is also reinforcing its relationship with the European Commission's Joint Research Centre (JRC)

by extending cooperation on 'science for policy' activities and working to encourage more JRC researchers to get involved with COST Actions.

A good example of a COST activity that has contributed significantly to science policy advice is COST Action DNAqua-Net (Developing new genetic tools for bioassessment of aquatic ecosystems in Europe) and its work around new techniques to assess biodiversity and water quality.



#### QUALITY WATER

UNDER the EU's Water Framework Directive, the protection of aquatic ecosystems is legally binding for all Member States. But how do you assess the ecological status of a given body of water? Traditionally aquatic biodiversity data based on morpho-taxonomy are obtained and compared to a reference water body. This relies on expert analysis of the number and type of organisms in a water sample, which is time consuming and prone to human error. New genomic tools offer an alternative technique that could complement and, in some cases, replace traditional bioassessment, but a standard methodology is needed. This was the start point for DNAqua-Net.

"The concept behind genomic analysis is to take a water sample, extract DNA, amplify a characteristic marker gene and compare the sequences identified from the environmental DNA – eDNA - with a database," explains Professor Florian Leese of the University of Duisburg-Essen and Chair of the Action. "This gives a good overview of the biodiversity within the sample and can be done quickly and efficiently. However, many different protocols and methodologies are currently being developed – over 100 different workflows already – so there was a need to harmonise and also assess any gaps in the reference databases."

The Action brought together over 500 participants from 49 countries around the globe including taxonomists, biomonitoring experts, DNA technology developers, policymakers and managers to redefine and improve environmental surveillance.

#### **COMPARING TECHNIQUE**

"We organised some 50 exchanges of people between countries to transfer knowledge, compare and share

techniques," says Florian. "This enabled molecular biology experts to visit traditional taxonomy labs - and vice versa - to learn about each other, better understand the limits of the technologies, develop the best methods, and define the boundaries for the technique."

"A book on best practise was published," he continues. "Not to define one standard but to document evolving techniques and help ensure that results improve and are comparable."

The Action resulted in notable achievements including the creation of an International Open Access Peer Review Journal, the establishment of EU CEN Working Group on standardisation of eDNA methodologies, and input to ECO–STAT - the European Commission working group on the Water Framework Directive. The Action also organised a one-day session on standardisation methods at the United Nations Science Summit in 2022.

"In total over 100 papers resulted from the Action and two Horizon EU projects are taking up the thoughts and ideas from the Action," concludes Florian. "There are numerous pioneer projects at national level - especially at regulatory policy level – with pilot proposals in several countries. In addition, various spin-off companies were initiated or got a massive boost from Action."

Read more about COST Action: "Developing new genetic tools for bioassessment of aquatic ecosystems in Europe (DNAqua-Net)"



### Synergy: the key to future funding

Under Horizon Europe, COST has reinforced its commitment to synergies with other EU programmes and initiatives including the Marie Sklodowska Curie Actions (MSCA) and widening initiatives amongst other.

Participation in COST Actions consistently leads to both significant results, further collaboration and follow-on projects. Under the Horizon 2020 programme proposals submitted from COST Actions achieved a funding success rate of 39% compared to the average rate of 12.2%. In total, an estimated EUR 2.6 billion of funding was approved for COST 'spin-off' projects in the programme.

The networking funds provided through the COST Programme act like 'catalytic money' creating new synergies and funding opportunities and demonstrating a key role for COST as a pre-portal for further European funding.

#### THE COST PORTAL

Oral administration is the most common drug delivery route. But the efficiency of this route is determined by highly complex and dynamic interactions between the patient's gastrointestinal tract, the dosage form and the active ingredients. The COST Action UNGAP (European Network on Understanding Gastrointestinal Absorption-related Processes) focused on a range of issues related to drug development and effective clinical treatment and resulted in the creation of an international network on intestinal drug absorption involving almost 600 members.

Professor Patrick Augustijns of the Katholieke Universiteit Leuven in Belgium was Chair of the Action. "The Action brought together colleagues from many different sectors: academia, medical practice, industry, and regulatory agencies," he explains. "We started in a very informal way with several meetings in Leuven that set the seed for active discussions on future collaborations."

Patrick considers thinking about future collaborations needs to start early in an Action. "You need to undertake gap analyses to understand what needs to be done and you need to create trust between new colleagues," he continues. It is also important to find people who are willing and able to take the lead on project proposals. "This is more difficult," says Patrick. "Many people may want to collaborate, but fewer want to take the lead. This means you must select active contributors – people who can work together and realise the collaboration."

UNGAP has been very successful in that respect with three MSCA networks approved as well as a Horizon 2020 project proposal: GeneGut. "In total some 30 new PhDs have started under the two new Marie Curie Actions born out of UNGAP," states Patrick.

#### TWINNING

Under Horizon Europe, COST is fully integrated into the Widening Participation and Strengthening initiative. One Widening instrument is Twinning, which aims to enhance networking activities between research institutions in widening countries and top-class EU counterparts.

The COST Action MINDDS (Maximising Impact of research in NeuroDevelopmental DisorderS), which ended in 2022, has inspired a spin-off project, STREAMLINE, under a call for Western Balkans Twinning projects. The leader of one of the work packages under STREAMLINE is Dr Danijela Drakulic from the Institute of Molecular genetics and Genetic Engineering at the University of Belgrade who was the Serbian Management Committee member in MINDDS and the Action Chair, Professor Adrian Harwood of Cardiff University, is also involved in the project.



Dr Danijela Draculic

"MINDDS was a pan European network on neuro brain development which is associated with a variety of mental health issues," explains Danijela. "Research in this area was dispersed and MINDDS looked to address this by forming a large network of institutions working in the same field. Our focus was on research, standardising protocols and methodologies, and providing a platform to share data and build patient cohorts."

"MINDDS aimed to get everybody to do research with the same information," agrees Adrian, "And it was very successful. It grouped good people who were prepared to work with each other and support each other."

Both are clear that the Twinning project would not have happened without the collaboration and networking under the COST Action. "MINDDS was a big opportunity for us," continues Danijela. "It gave us the key to the Twinning project and helped to bring our science to a higher level. We are working to build up my institution in Belgrade as a regional high-capacity hub for research of neurodevelopmental disorders, so it is not just for Serbia but also for the whole West Balkans region."

Adrian sees open collaboration as essential. "To be truly successful in collaborative research you must be open and sharing: 'self-less-ness' is very important," he emphasises. "The more you help people, the more they will help you. You also need a long-term vision of where your research community wants to be."

#### SYNERGIES WITH OTHER EU INITIATIVES



European Natural Science Collections host approximately 1.5 billion biological and geological objects representing about 80% of the known current and past biological and geological diversity on earth. The scope of the COST Action MOBILISE (Mobilising Data, Policies and Experts in Scientific Collections) is to strengthen and extend a cooperative network in Europe to support excellent research and facilitate knowledge and "There are numerous pioneer projects at national level – especially at regulatory policy level"



technology transfer around natural science collections. It was also a crucial element in preparing the ground for the pan-European Distributed System of Scientific Collections (DiSSCo) project funded under the European Strategy Forum on Research Infrastructures (ESFRI) instrument.

Dr Dimitris Koureas of the Naturalis Biodiversity in Leiden was the Action Chair. "The Holy Grail for our scientific community is to unlock scientific information and provide everyone with the skills to be able to interact with our vast distributed knowledge base," states Dimitris.

A COST Action was hugely appropriate to provide the networking activities required to complement activities around content and structure. "MOBILISE enabled more institutions to participate," says Dimitris. "And this capacity building was as important for some smaller institutions in Western Europe as it was for widening country partners from eastern and southern Europe."

MOBILISE created the connections that help realise the DiSSCo under ESFRI. "I cannot underestimate the value of the Action," he continues. "We would not have delivered without MOBILISE. COST Actions allow huge flexibility, so plans can be adjusted to address emerging issues. The Action delivered way beyond what its funding might imply: The few hundred thousand euros of COST funding has contributed to leveraging some 30 to 35 million euros for the DiSSCo."

The COST Action ERBFacility (European Raptor Biomonitoring Facility) is another good example of COST Action synergy with other European funding programmes. ERBFacility addressed the challenge of environmental pollution in Europe by delivering robust data on contaminants in raptors at a pan-European scale. The Action also collaborated with DiSSCo in scoping a database of frozen raptor samples suitable for contaminant monitoring purposes, linked to the broader digitalisation of European collections under DiSSCo. "As apex predators, raptors can be key sentinels for improved management of chemicals," explains Chair of the Action Guy Duke of Oxford University. "By establishing a robust biomonitoring network, we can provide early warning of emerging contaminants, inform regulators on the substances to prioritise for further risk assessment, and assess the effectiveness of current risk management measures."

Over four years, the Action built a virtual 'Facility' involving hundreds of institutions and brought three key groups of expertise together: the people in the field working with raptors, the natural science collections (museums and specimen banks), and the analytical laboratories. "The facility offers an unparalleled network for European-scale contaminant monitoring," says Guy.

"Several Action participants became partners in the two million euro LIFE APEX project, which has demonstrated

"The Action delivered way beyond what its funding might imply" the systematic use of chemical monitoring data from apex predators in regulatory applications," continues Guy. "Many Action participants also collaborated in novel pan-European studies on contaminants in owls and buzzards, the latter with LIFE APEX."

Further synergy may come from a new, 400 million euro Horizon Europe initiative, the European Partnership for the Assessment of Risks from Chemicals (PARC). "PARC is looking to develop European early warning systems, and we see strong regulator interest in the approaches developed by our Action and LIFE APEX," concludes Guy.

Read more about COST Action 'European Network on Understanding Gastrointestinal Absorptionrelated Processes (UNGAP)' - CA16205

Read more about COST Action 'Maximising Impact of research in NeuroDevelopmental DisorderS (MINDS)' - CA16210

Read more about COST Action 'Mobilising Data, Policies and Experts in Scientific Collections (MOBILISE)' - CA17106

Read more about COST Action 'European Raptor Biomonitoring Facility (ERBFacility)' - CA16224





### **Financial overview**

COST is financed as a Coordination and Support Action (CSA) in the form of Multi-Annual Specific Grant Agreements (SGAs) within a seven-year Framework Partnership Agreement (FPA) under Horizon Europe.

The budget dedicated to COST stems from the Work Programme 11 Widening participation and strengthening the European Research Area. The total contribution in the first Multi-Annual Specific Grant Agreement totals EUR 153 million. The first year of the Multi-Annual SGA covers the period from 1 November 2021 to 31 October 2022 with a total budget of EUR 48 565 670.

COST is a global framework whose core activity is the networking of researchers and stakeholders from public and private institutions, NGOs, industry, and SMEs. It carries out its activities on a multi-annual basis, which means the networks funded by the COST Association – the COST Actions – run for four years and are implemented under decentralised management, namely the COST Grant System.



**374** Number of proposals submitted in the Open Call 2022

> 14 339 Number of proposers in the Open Call 2022

> > **35** COST Member countries main proposers participated in the Open Call 2022

> > > 40 Average number of researchers in network of proposers

45.2% of the main proposers are women

48% of the proposals have two or more main fields of science



971 Number of Action members affiliated to SMEs

€9.5 M

Average value of spin-off projects per Action

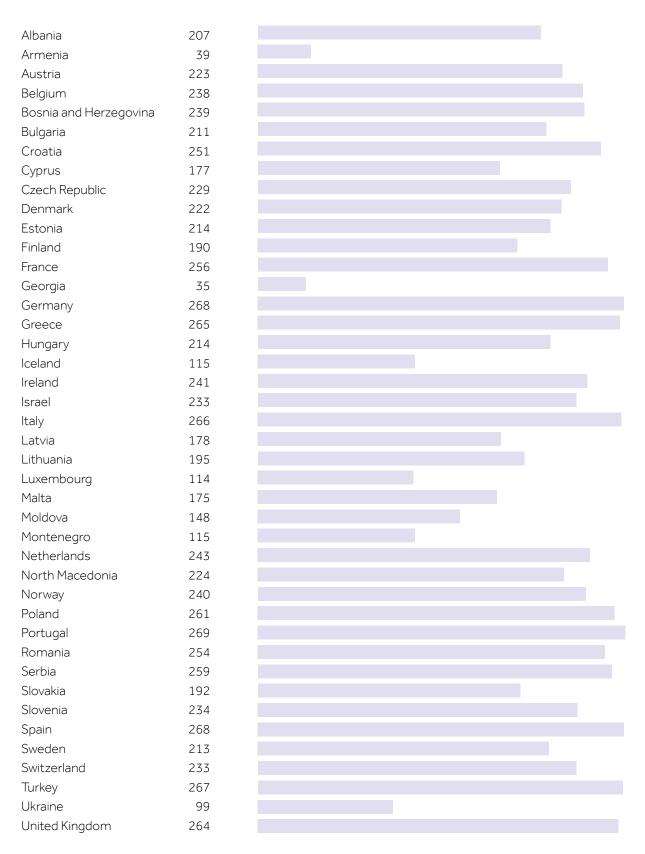
**5** Average number of non-COST members per Action

> 33 Average number of COST members per Action

### **Country participation**

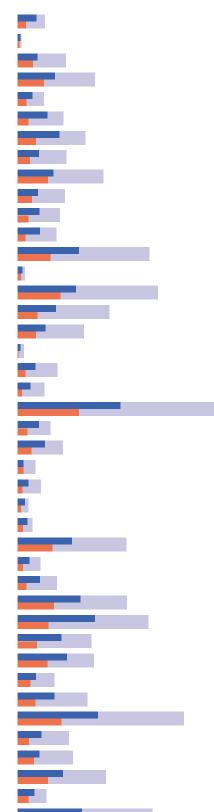
#### NAME

NUMBER OF ACTIONS IN 2022 IN WHICH COUNTRY WAS ACTIVE



### Proposers profile per country

NAME	MAIN AND SECONDARY PROPOSERS	WOMEN PROPOSERS	YOUNGER RESEARCHERS	
Albania	147	102	46	
Armenia	21	14	9	
Austria	261	107	83	
Belgium	418	202	142	
Bosnia and Herzegovina	142	80	47	
Bulgaria	249	160	57	
Croatia	368	225	100	
Cyprus	264	116	66	
Czech Republic	464	193	165	
Denmark	255	110	76	
Estonia	230	119	59	
Finland	209	120	41	
France	713 40	331	178	
Georgia	40 760	26 315	18 231	
Germany Greece	497	206	106	
Hungary	359	200 151	99	
Iceland	33	151	4	
Ireland	216	96	41	
Israel	144	69	22	
Italy	1115	558	333	
Latvia	178	116	54	
Lithuania	244	147	75	
Luxembourg	97	31	31	
Malta	125	57	27	
Moldova	57	40	17	
Montenegro	81	54	29	
Netherlands	589	295	189	
North Macedonia	123	65	28	
Norway	214	120	48	
Poland	591	340	197	
Portugal	708	420	167	
Romania	399	237	104	
Serbia	412	267	162	
Slovakia	199	99	69	
Slovenia	379	200	97	
Spain	901	435	238	
Sweden	279	130	61	
Switzerland	299	117	89	
Turkey	479	245	165	
Ukraine	155	90	59	
United Kingdom	731	349	211	





# **Events**

### COST Connect - A thematic approach in an interactive format



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. Some of the COST Connect events, which took place in 2022, are presented below.

### 9-10 JUNE 2022 COST Connect on the New European Bauhaus initiative

The New European Bauhaus initiative was designed to bridge the world of science and technology with art and culture.

This event brought together several stakeholders working on the topic of architecture and sustainability (European Commission, UN Climate Change, World Meteorological Organisation, Climate Knowledge and



Innovation Communities of the European Institute of Innovation and Technology, European Creative Business Network, and more than 15 COST Actions). They engaged in interactive discussions, and the COST Action researchers gained valuable knowledge on the New European Bauhaus initiative.

Find out more



### 20-21 OCTOBER 2022 COST Connect on Food and Agriculture

This COST Connect event brought together experts from various fields to discuss the societal importance of food and agriculture. The topic is crucial as it encompasses a range of critical issues, including sustainability, health, food security, safety, and climate change.

The event aimed to foster collaboration and knowledge-sharing among participants from relevant COST





Actions, as well as stakeholders and policymakers in the food and agriculture sector. Represented organisations included the European Commission, the Joint Research Centre, the Knowledge and Innovation Communities of the European Institute of Innovation and Technology, among others.

The gathering provided a platform for participants to exchange views, make new connections, and establish professional relationships in the broad field of food and agriculture. It emphasised the importance of collaboration in finding solutions that have pan-European impact, as well as the need for continuous dialogue and cooperation between relevant stakeholders.

Find out more

### **COST Cross-Cutting Activity**

#### 23-24 JUNE 2022

# The final conference: Exploring the Impact of Science Communication and Public Engagement



The final conference of COST's Cross-Cutting Activity (CCA) on Science Communication, was held at Aalborg University in Copenhagen. The event marked a new and final milestone for the CCA. The entire programme revealed how strong and committed the science communication community, built over the last years, has become, and how broad the spectrum covered by this topic currently is.

#### Find out more

### **Thematic Policy events**

### 16 JUNE 2022 Science for Policy workshop

For the first time, the COST Association organised a Science for Policy (S4P) workshop, aimed at showing COST Actions how to make their research more impactful on policy. The Joint Research Centre led two interactive S4P training sessions and delivered a presentation that offered tips and guidance on effectively engaging with policymakers. This workshop was a continuation of prior initiatives and focused on COST Actions that want to increase the impact of their research and improve their communication skills with policymakers.



Find out more

#### **12 OCTOBER 2022**

### Minding the Gap: increasing women participation in policy and technology in Europe



October 12, 2022 | @Microsoft Center Brussels

Conversations Unscripted is a multi-stakeholder initiative to bring together European leaders to explore avenues to reduce the gender gap in the fields of politics and technology. Initiated by Microsoft, COST joined seven other stakeholder organisations across the research and innovation field in this one-year project.

'Minding the Gap: increasing women participation in policy and technology in Europe' was a flagship event of this project.

Find out more

### COST Academy – a training initiative to support the Actions' performance

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.

In 2022, the COST Academy has organised a total of 49 trainings for more than 1 500 participants from

different COST Actions. The face-to-face events included, among others, sessions for the Action chairs, science communication coordinators, and grant holder managers.

#### **SEPTEMBER 2022**

### Leadership programme

Three workshops were specially organised for and innovators, focusing on scientists from COST Inclusiveness Target Countries (participating in new COST Actions. The purpose of these events was to empower young researchers to take on leadership roles within their respective Actions. The leadership workshops were part of a comprehensive leadership programme aimed at preparing participants for the management of European-level networks and supporting their early career development. Over 44% of participants of leadership workshops took over leadership positions in COST Actions.



Find out more

### COST Global Networking – Reinforcing and promoting collaboration with COST NNC and promotes COST globally

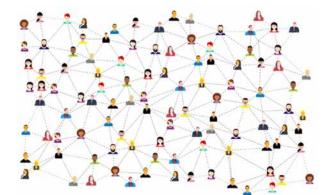
The COST programme connects researchers and innovators from the countries neighbouring Full Members. These countries are known as COST Near Neighbour Countries (NNCs).

COST Actions are also open to global cooperation and welcome researchers from the Third States to participate based on mutual benefits. Third States are non-COST Members countries or NNCs.

#### MARCH-APRIL 2022

# Series of online events COST Meets Researchers with Near Neighbour Countries

In 2022, COST organised 'COST Meets Researchers' events in four NNCs: Palestine, Azerbaijan, Jordan, and Tunisia. At these events, attendees learned about how to get involved in COST Actions and heard from fellow researchers from their respective countries about their experiences of participating in COST Actions. The purpose was to increase awareness of the opportunities offered by COST to researchers from NNCs. COST's ultimate goal is to double the number of participants from NNCs in its Actions by the end of the Horizon Europe programme.



#### Find out more

#### JANUARY - DECEMBER 2022

### **COST Info Days**

In order to promote COST and its opportunities among the research community, COST Info Days are organised in close cooperation with the COST National Coordinators, the national contact points in the various countries that are a Member of COST. Targeted COST Info Days dedicated to Inclusiveness Target Countries are also organised on a regular basis to increase awareness about COST in less connected research communities.



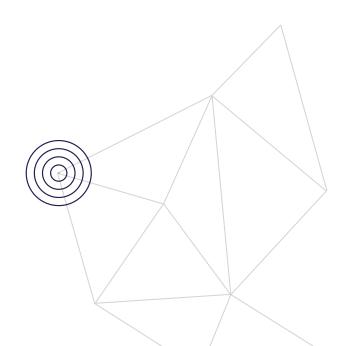
In 2022, COST Info Days were held in the countries shown in blue on the map.

### **COST Communication Seminar**

#### MAY-JUNE-SEPTEMBER 2022

COST organised three seminars to help science communication coordinators improve how they share scientific information with journalists, policymakers, and the public. These seminars provided guidance and tips for newcomers and allowed participants to learn from each other's experiences. The seminars also gave participants the chance to practice their communication skills.

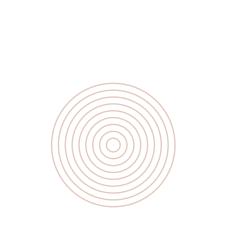




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