

# Selected COST Action - proposals for CSO approval

Open Call - collection date 27 April 2018  
(OC-2018-1)



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## SOURDOugh biotechnology network towards novel, healthier and sustainable food and bloproCesseS

(oc-2018-1-22513 - rank: 24 - mark: 60)

### SUMMARY

Traditional sourdough bread resorts to spontaneous fermentations leading to natural selections of microorganisms, mainly yeasts and lactic acid bacteria. Such microorganisms are essentially beneficial to humans and, concomitantly, inhibits propagation of undesirable microbiota. Sourdough fermentation was probably one of the first microbial processes employed by Man for food production and preservation. Sourdough bread stills widely manufactured at farm level across Europe and worldwide and is highly appreciated by consumers for its distinct flavour, texture and healthy attributes. Through a bottom-up approach, this COST Action network brings together a multidisciplinary group of scientists and SMEs/LEs dedicated for many decades to study cereals and sourdough technologies. SOURDOMICS will exploit sourdough technology through entire value chain: from sustainable cereals' production, through fermentation processes' exploitation, to by-products' valorisation in circular economy. In (1)-upstream, it aims at (1.1)-exploitation autochthonous (pseudo)cereals with good baking, nutritional and healthy attributes, while (1.2)-promoting a sustainable agriculture and preserving genetic diversity. Simultaneously, aims at contributing to develop new business opportunities to local farmers through their engagement into food processing with shared small-scale breadmaking facilities, and the integration into industrial and trade chains. Such features are in agreement with European Agenda for Food and Environment. In (2)-downstream, the biotechnological sourdough fermentation exploitation comprises several objectives: (2.1)-Design starter cultures with a wide range of biotechnological applications; (2.2)-Production of healthy and tasty varieties of bread, thus catalysing changes in consumers' diets and market orientations; (2.3)-Production of high-added value metabolites resorting to sourdough microbiota; and (2.4)-Valorisation of by-products from cereal production and sourdough technologies.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Other engineering and technologies: Food science and technology</li> <li>● Industrial biotechnology: Food microbiology</li> <li>● Industrial biotechnology: Bioprocessing technologies (industrial processes relying on biological agents to drive the process)</li> <li>● Industrial biotechnology: Fermentation</li> <li>● Other engineering and technologies: Sustainability in food science and technology</li> <li>● Other engineering and technologies: Food science and technology</li> <li>● Industrial biotechnology: Food microbiology</li> <li>● Industrial biotechnology: Bioprocessing technologies (industrial processes relying on biological agents to drive the process)</li> <li>● Industrial biotechnology: Fermentation</li> <li>● Other engineering and technologies: Sustainability in food science and technology</li> </ul>	<ul style="list-style-type: none"> <li>● Food biotechnology, quality and preservation</li> <li>● Secure food chain and wealth traditional products</li> <li>● Microbiota, food fermentation and breadmaking technology</li> <li>● Genomics, proteomics, transcriptomics and metabolomics</li> <li>● New business models, sustainability and circular economy</li> <li>● Food biotechnology, quality and preservation</li> <li>● Secure food chain and wealth traditional products</li> <li>● Microbiota, food fermentation and breadmaking technology</li> <li>● Genomics, proteomics, transcriptomics and metabolomics</li> <li>● New business models, sustainability and circular economy</li> </ul>

### COST Countries

Main Proposer: PT

Network of Proposers: BE, BG, CH, CY, CZ, DE, EE, EL, ES, FI, FR, HR, HU, IL, IT, LT, LV, MT, NL, NO,

PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 39% ECI / 54% Women / 55% ITC

## International Cooperation

**Near Neighbour Country:** Egypt, Morocco

**International Partner Country (IPC):** Argentina, Brazil, Canada, Costa Rica, Malaysia, Mexico, New Zealand, Nigeria, South Africa, United States

## Industrial Dimension

**SMEs:** Croatia, Czech Republic, France, Germany, Lithuania, Morocco, Poland, Romania, Spain, United States

**Large companies:** Belgium, Portugal

## The European Aquatic Animal Tracking Network

(oc-2018-1-22547 - rank: 30 - mark: 57)

### SUMMARY

Telemetry is a commonly applied method to investigate the ecology and movement behaviour of aquatic species in relation to their environment. It provides a scientific basis for management and conservation and has significantly improved our understanding of ecosystem functioning and dynamics. More specifically telemetry provides valuable data that can be used in many policies and directives. As a result, large scale nationally and regionally managed initiatives were implemented around the globe in recent years. Although there is a large and growing number of researchers in Europe using biotelemetry to study aquatic animals and answer management-related questions, there is a stringent lack of in-field telemetry collaborations in Europe. This situation represents a substantial loss of opportunities for: scientific excellence, funding opportunities, competitiveness of European SME on the international biotelemetry market. With this COST Action, we want to close this gap and the overarching objective is to ensure a transition from a loosely-coordinated set of existing regional telemetry initiatives to a sustainable, efficient, and integrated pan-European biotelemetry network embedded in the international context of already existing initiatives. This will be achieved through working group meetings, workshops, training courses and scientific missions focused on: 1) Implementing a centralised European database, requirements and policy mapped to the data standards of existing international biotelemetry data systems 2) improve the usefulness and inter-applicability of currently available technology and foster technological advancements, 3) promoting the establishment of key telemetry infrastructure and research on key species, and 4) provide continuous training opportunities and disseminate knowledge to the stakeholders community.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Biological sciences: Ecology</li> <li>● Earth and related Environmental sciences: Databases, data mining, data curation, computational modelling</li> <li>● Environmental engineering: Remote sensing</li> <li>● Biological sciences: Zoology, including animal behaviour</li> <li>● Biological sciences: Environmental and marine biology</li> </ul>	<ul style="list-style-type: none"> <li>● Telemetry</li> <li>● Network</li> <li>● Database</li> <li>● Biologging</li> <li>● Data sharing</li> <li>● Telemetry</li> <li>● Network</li> <li>● Database</li> <li>● Biologging</li> </ul>

<ul style="list-style-type: none"> <li>● Biological sciences: Ecology</li> <li>● Earth and related Environmental sciences: Databases, data mining, data curation, computational modelling</li> <li>● Environmental engineering: Remote sensing</li> <li>● Biological sciences: Zoology, including animal behaviour</li> <li>● Biological sciences: Environmental and marine biology</li> </ul>	<ul style="list-style-type: none"> <li>● Data sharing</li> </ul>
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## COST Countries

Main Proposer: BE

Network of Proposers: BE, BG, CZ, DE, DK, EE, EL, ES, FI, FR, IS, IT, LT, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 57% ECI / 34% Women / 46% ITC

## International Cooperation

**Near Neighbour Country:** Morocco

**International Partner Country (IPC):** Australia, Canada, South Africa, United States

## Industrial Dimension

**SMEs:** Germany, Iceland

## Innovation with Glycans: new frontiers from synthesis to new biological targets

(oc-2018-1-22567 - rank: 24 - mark: 60)

### SUMMARY

The aim of INNOGLY COST action is to build up a multidisciplinary group of researchers to address the same pioneering goal: Gaining new insight into the biological function of glycans in different biological contexts. INNOGLY will address two main topics:

1) Glycan profiling in health and disease, where studies will be more specifically focused on glycan-based correlations in developmental and cancer biology, and glycan dependent modulation of autophagy in cancer, lysosomal disorders and neurodegenerative diseases.

2) Glycan-based diagnostics and therapeutics, where INNOGLY investigators will focus on glycan dependent fine tuning of immunity, and the exploration of the multifaceted roles of glycosaminoglycans.

Within these topics, INNOGLY will foster the development of new glycan-based tools for diagnosis and treatment of diseases.

To this end, INNOGLY will bring together scientists working in the vast area of glycoscience and researchers of other scientific disciplines willing to mutual exchange of knowledge, skill and expertise. In this way, scientists who have never been involved in glycoscience can provide improvements and new tips by bringing their different points of view. The goal is to forge and foster collaborations among researchers, each of them spurred to pursue his own research interests, and to intermesh these interests with other colleagues in order to move forward new concepts, ideas and approaches to address glycan-related scientific challenges from new and wider perspectives. In addition, INNOGLY COST Action would provide the chance for young and smart researchers to get trained in the innovations of glycoscience and to find new career opportunities.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Chemical sciences: Organic chemistry</li> <li>● Biological sciences: Glycomics</li> <li>● Basic medicine: Glycomics</li> <li>● Basic medicine: Immunosignalling</li> <li>● Chemical sciences: Organic chemistry</li> <li>● Biological sciences: Glycomics</li> <li>● Basic medicine: Glycomics</li> <li>● Basic medicine: Immunosignalling</li> </ul>	<ul style="list-style-type: none"> <li>● glycan profile</li> <li>● glycan-based tools and biosensors</li> <li>● immune modulation</li> <li>● glycochemistry</li> <li>● glycan-based polymers</li> <li>● glycan profile</li> <li>● glycan-based tools and biosensors</li> <li>● immune modulation</li> <li>● glycochemistry</li> <li>● glycan-based polymers</li> </ul>

## COST Countries

Main Proposer: IT

Network of Proposers: DE, EL, ES, FI, FR, HR, IL, IT, LU, NL, PT, SE, SI, SK, UK

Main and secondary proposers: 14% ECI / 23% Women / 33% ITC

## International Cooperation

**International Partner Country (IPC):** United States

## Industrial Dimension

**SMEs:** Croatia

## Revealing the Milky Way with Gaia

(oc-2018-1-22591 - rank: 13 - mark: 62)

### SUMMARY

MW-GAIA will provide European leadership in understanding the Galaxy, its stars and planets, enhance the potential of the community in its scientific exploitation of the observations of more than a billion stars with the European Space Agency's Gaia satellite, and enhance the development of the next steps in astrometry and space astrometry missions.

The Action brings together key stakeholders from across Europe, to leverage expertise, and develop new techniques to fully maximise the scientific returns from Gaia's rich and complex data.

Five key challenges are addressed: The Milky Way as a Galaxy, The Life and Death of Stars; Planetary Systems Near and Far; Gaia Fundamentals: Space and Time; and Astrometry Innovation Challenge – towards sub- $\mu$ as astrometry. COST enables the vital Action activities, supporting exchanges, training and meetings. Key objectives are to increase science impact and European leadership in the scientific exploitation of Gaia, developing new techniques in the analysis and interpretation of the Gaia data. The Action technological impact is through the delivery of a key science- technical roadmap to identify the requirements and challenges in developing a future space astrometry mission building on Gaia, but moving to the sub-microarcsec realm (thus opening up discovery space to the Local Group of Galaxies).

The Action, will have a significant legacy, creating a dynamic and vibrant network of researchers, with expertise in the study of the Milky Way, its constituents and the art of Astrometry. Participation will be inclusive, with researchers accessing the Network from across Europe, irrespective of their gender or location.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Physical Sciences: Astrophysics, astronomy, space sciences</li> <li>● Physical Sciences: The Galaxy</li> <li>● Physical Sciences: Stars and stellar systems</li> <li>● Physical Sciences: Astrophysics, astronomy, space sciences</li> <li>● Physical Sciences: The Galaxy</li> <li>● Physical Sciences: Stars and stellar systems</li> </ul>	<ul style="list-style-type: none"> <li>● Astronomy</li> <li>● Astrometry</li> <li>● Big Data</li> <li>● Stars</li> <li>● Innovation</li> <li>● Astronomy</li> <li>● Astrometry</li> <li>● Big Data</li> <li>● Stars</li> <li>● Innovation</li> </ul>

## COST Countries

Main Proposer: UK

Network of Proposers: AT, BE, BG, CH, CZ, DE, DK, EE, EL, ES, FI, FR, HU, IE, IL, IT, LT, MT, NL, PL, PT, RS, SE, SI, UK

Main and secondary proposers: 16% ECI / 35% Women / 40% ITC

## International Cooperation

**Near Neighbour Country:** Armenia, Lebanon, Russian Federation, Ukraine

**International Partner Country (IPC):** Canada, China, South Africa, United States

## Industrial Dimension

**SMEs:** Ireland

## Risk-based meat inspection and integrated meat safety assurance

(oc-2018-1-22638 - rank: 13 - mark: 62)

### SUMMARY

The European Food Safety Authority has recently proposed a generic framework for a modern, flexible and dynamic risk-based meat safety assurance system. Implementation of such a system is expected to be a slow and careful process that would involve its thorough development, fine-tuning and testing its practical feasibility and general impacts. There are many research groups in Europe that currently perform studies, mostly at national level, to fill the knowledge gaps related to such a new system. The main aim of the proposed network is to combine and strengthen European-wide research efforts on modern meat safety control systems. The network would allow exchange of ideas, experience and results of country-level research studies. Furthermore, the aim is to create a platform for training of relevant participants in the new meat safety system and thus help its operability, as well as to inform relevant stakeholders about the requirements, benefits and consequences of the new system. The RIBMINS network will consist of five Working Groups: 1. on scope and targets of meat safety assurance, 2. on farm-level controls and risk categorisation of farms, 3. on abattoir-level controls and risk categorisation of abattoirs, 4. on meat safety assurance system impact with changes, addition and alternatives to meat inspection, and 5. on meat safety assurance system training, communication and monitoring. Overall, the establishment of the proposed network shall help the full development and implementation of the general principles of meat safety



assurance system across Europe for the benefit of consumers, industry and protection of animal health and welfare.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Veterinary science: Veterinary medicine (miscellaneous)</li> <li>● Animal and dairy science: Microbiology</li> <li>● Other engineering and technologies: Food science and technology</li> <li>● Veterinary science: Veterinary medicine (miscellaneous)</li> <li>● Animal and dairy science: Microbiology</li> <li>● Other engineering and technologies: Food science and technology</li> </ul>	<ul style="list-style-type: none"> <li>● meat</li> <li>● safety</li> <li>● inspection</li> <li>● risk analysis</li> <li>● meat</li> <li>● safety</li> <li>● inspection</li> <li>● risk analysis</li> </ul>

## COST Countries

Main Proposer: RS

Network of Proposers: AT, CH, DE, DK, EE, ES, FI, HR, LV, NO, PT, RS, SE, UK

Main and secondary proposers: 37% ECI / 53% Women / 36% ITC

## International Cooperation

**International Partner Country (IPC):** United States

## Industrial Dimension

**SMEs:** Switzerland

**Large companies:** Denmark

## The neural architecture of consciousness

(oc-2018-1-22662 - rank: 5 - mark: 63)

## SUMMARY

Conscious experience is central to our existence, and although important advances have been made in our scientific understanding of the phenomenon, radically different theories are still debated within the field, and clinically, prognoses for disorders of consciousness can still be improved substantially. The main aim of this Action is examine the role of cortical neural architecture in consciousness from a basic science as well as a clinical perspective. This will be achieved in a joint effort aimed at building detailed neuroarchitectural models from different kinds of brain data and relating these to meticulously gathered behavioural from healthy normal participants performing tasks associated with conscious perception/behaviour as well as to clinical data from patients with disorders of consciousness. The relation between neural architecture and consciousness will be made using advanced statistical modelling, including machine learning. If the Action is successful, the resulting models can be compared to identify neuroarchitectural characteristics related to each consciousness phenomenon individually and in all phenomena. This can be used to form a tentative data driven neuroarchitectural model of consciousness. Furthermore, successfully reaching the clinical sub-aims can result in a substantial increase in the predictive accuracy of prognoses for disorders of consciousness. Accurate prognoses could have a substantial positive impact on the lives of patients and



relatives, and they could facilitate clinical decisions regarding whether escalate or stop treatment.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Psychology: Cognitive and experimental psychology: perception, action, and higher cognitive processes</li> <li>● Basic medicine: Behavioral neuroscience (e.g. sleep, consciousness, handedness)</li> <li>● Psychology: Cognitive and experimental psychology: perception, action, and higher cognitive processes</li> <li>● Basic medicine: Behavioral neuroscience (e.g. sleep, consciousness, handedness)</li> </ul>	<ul style="list-style-type: none"> <li>● consciousness</li> <li>● perception</li> <li>● magnetic resonance imaging</li> <li>● consciousness</li> <li>● perception</li> <li>● magnetic resonance imaging</li> </ul>

## COST Countries

Main Proposer: DK

Network of Proposers: BE, CH, CZ, DE, DK, EE, FR, HU, LT, NO, PL, RO, SK, UK

Main and secondary proposers: 48% ECI / 17% Women / 50% ITC

## International Cooperation

**International Partner Country (IPC):** Japan

## Industrial Dimension

**SMEs:** Denmark, Japan

## Climate change and bats: from science to conservation

(oc-2018-1-22668 - rank: 30 - mark: 57)

## SUMMARY

Climate change poses major threats to biological communities and the ecosystem services they provide. Bats are sensitive to human-driven habitat alteration, and changes in temperature and water availability induced by climate change may affect their eco-physiology, distribution and ultimately survival. Climate change is therefore likely to influence European bat populations and affect insect consumption by bats in farmland, forests and urban areas, implying serious consequences for the conservation of European biodiversity as well as economy. However, little scientific work has addressed this issue, so we lack the knowledge to devise mitigation strategies. The Action fills this gap by pursuing the following objectives.

1) *Define, predict and quantify the effects of climate change on bats across Europe*, establishing how bats react to different climatic conditions, assessing the current magnitude of this impact, forecasting its future effects and establishing the roles played by life history traits and environmental factors.

2) *Establish strategies to develop a network to monitor and predict changes in bat distribution and inform future management and policy*. This will be achieved by selecting the best monitoring approaches, identifying a set of responsive bat species acting as indicators, and facilitating cooperation between scientists and relevant stakeholders.

3) *Evaluate the effects of climate change on insectivory provided by bats in farmland* by: a) estimating the

importance of this ecosystem service across Europe for agricultural economy and society and monetise its current value; and b) modelling scenarios of distributional mismatch between bats and their pest prey under future climate change, also evaluating the economic consequences.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Biological sciences: Conservation biology, ecology, genetics</li> <li>● Biological sciences: Biodiversity, comparative biology</li> <li>● Biological sciences: Zoology, including animal behaviour</li> <li>● Biological sciences: Conservation biology, ecology, genetics</li> <li>● Biological sciences: Biodiversity, comparative biology</li> <li>● Biological sciences: Zoology, including animal behaviour</li> </ul>	<ul style="list-style-type: none"> <li>● Biodiversity loss</li> <li>● Chiroptera</li> <li>● Ecosystem service</li> <li>● Modelling</li> <li>● Monitoring</li> <li>● Biodiversity loss</li> <li>● Chiroptera</li> <li>● Ecosystem service</li> <li>● Modelling</li> <li>● Monitoring</li> </ul>

## COST Countries

Main Proposer: IT

Network of Proposers: BG, DE, EL, ES, IE, IL, IT, MT, NL, PL, PT, RO, SI, UK

Main and secondary proposers: 50% ECI / 50% Women / 43% ITC

## International Cooperation

**International Partner Country (IPC):** South Africa

## Quantum gravity phenomenology in the multi-messenger approach

(oc-2018-1-22670 - rank: 5 - mark: 63)

## SUMMARY

The exploration of the Universe has recently entered a new era thanks to the multi-messenger paradigm. The detection of cosmic particles (photons, neutrinos, cosmic rays), now joined by the birth of gravitational wave astronomy, gives us information about the different sources in the Universe and the properties of the intergalactic medium. In particular, the most energetic events allow us to test our physical theories at energy regimes which are not directly accessible in accelerators. This is in fact the target of quantum gravity phenomenology, a quite recent field of physics that tries to set phenomenological models that may incorporate some of the effects of the Planck scale, thus providing a bottom-up approach to the largely studied quantum gravity problem. The main objective of the proposed COST Action is to gather theoretical and experimental working groups from the relevant communities (with proper geographical, age and gender balance) to work in the prediction and possibility of detection of physical phenomena characteristic from quantum gravity theories. This cooperation is necessary to address this challenge properly, which may result in extraordinary advancements in fundamental physics. A second objective will be the formation of a generation of scientists that will be competent in the interdisciplinary expertise that is needed in the effective search of quantum gravity footprints in the production, propagation and detection of these cosmic messengers. Whatever the outcomes of this search may be, it will certainly have an important impact on science through a better understanding of the Universe and its fundamental laws.

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Physical Sciences: High energy and particles astronomy, X-rays, cosmic rays, gamma rays, neutrinos</li> <li>● Physical Sciences: Particle physics (theory)</li> <li>● Physical Sciences: Fundamental interactions and fields (theory)</li> <li>● Physical Sciences: High energy and particles astronomy, X-rays, cosmic rays, gamma rays, neutrinos</li> <li>● Physical Sciences: Particle physics (theory)</li> <li>● Physical Sciences: Fundamental interactions and fields (theory)</li> </ul>	<ul style="list-style-type: none"> <li>● gamma-ray bursts</li> <li>● cosmic neutrinos</li> <li>● Lorentz invariance violation</li> <li>● ultra-high-energy cosmic rays</li> <li>● high-energy photons</li> <li>● gamma-ray bursts</li> <li>● cosmic neutrinos</li> <li>● Lorentz invariance violation</li> <li>● ultra-high-energy cosmic rays</li> <li>● high-energy photons</li> </ul>

## COST Countries

Main Proposer: ES

Network of Proposers: BE, CZ, DE, EE, ES, FI, FR, HR, IT, NL, PL, RO, RS, UK

Main and secondary proposers: 39% ECI / 22% Women / 43% ITC

## International Cooperation

**International Partner Country (IPC):** Canada, Chile, China, Japan, United States

## Accelerating Global science In Tsunami HAZard and Risk analysis

(oc-2018-1-22678 - rank: 24 - mark: 60)

### SUMMARY

Large tsunamis are low-frequency but potentially very high impact events that can cause extreme numbers of casualties as well as very large economic loss, recently demonstrated by the Sumatra-Andaman Tsunami in December 2004 and the Japan Tsunami of March 2011. In both cases the scale of the actual disaster surpassed by far the anticipated magnitudes. One of the reasons for the underestimated risk potential can be identified by a lack of rigorous, robust and standardized hazard and risk analysis methods and associated uncertainties. While a large number of probabilistic as well as deterministic methods has been proposed and used in the past [], a consolidation process is dearly overdue and will require to bring experts from diverse areas of science involved in tsunami hazard and risk analysis together.

This COST action will use the specific tools of COST – namely, workshops, networking, exchange of experts – in order to assess current approaches in tsunami hazard and risk analysis, and evaluate them quantitatively by means of common metrics and benchmarks;

Determine gaps in scientific knowledge, methodological approaches and tools in order to achieve robust tsunami hazard and risk analysis across a variety of tsunami sources, including earthquakes, landslides, volcanoes, and meteorological events;

Derive and agree on best practices and standards for probabilistic tsunami hazard and risk analysis, through discussion by a large group of practitioners;

Identify issues and challenges to orient future research;

Disseminate the acquired knowledge among hazard and risk practitioners and end-users.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Earth and related Environmental sciences: Physics of earth's interior, seismology</li> <li>● Earth and related Environmental sciences: Applied mathematics, statistics, non computational modelling</li> <li>● Earth and related Environmental sciences: Databases, data mining, data curation, computational modelling</li> <li>● Earth and related Environmental sciences: Oceanography (other)</li> <li>● Earth and related Environmental sciences: Physics of earth's interior, seismology</li> <li>● Earth and related Environmental sciences: Applied mathematics, statistics, non computational modelling</li> <li>● Earth and related Environmental sciences: Databases, data mining, data curation, computational modelling</li> <li>● Earth and related Environmental sciences: Oceanography (other)</li> </ul>	<ul style="list-style-type: none"> <li>● Probabilistic hazard and risk assessment</li> <li>● Tsunami science</li> <li>● Tsunami modeling</li> <li>● Earthquake, landslide, volcanic and meteorological sources</li> <li>● Risk and uncertainty communication</li> <li>● Probabilistic hazard and risk assessment</li> <li>● Tsunami science</li> <li>● Tsunami modeling</li> <li>● Earthquake, landslide, volcanic and meteorological sources</li> <li>● Risk and uncertainty communication</li> </ul>

## COST Countries

Main Proposer: DE

Network of Proposers: DE, EE, EL, ES, FR, IE, IL, IT, MT, NO, PT, RO, TR, UK

Main and secondary proposers: 26% ECI / 21% Women / 36% ITC

## International Cooperation

**International Partner Country (IPC):** Chile, Pakistan, United States

## Industrial Dimension

**SMEs:** United Kingdom

**Large companies:** United States

## Underground Built Heritage as catalyser for Community Valorisation

(oc-2018-1-22687 - rank: 5 - mark: 63)

## SUMMARY

The proposal will establish and implement an expert network, aiming at promoting balanced and sustainable approaches for the conservation of the underground heritage and, at the same time, realising the potential of underground space in urban and rural areas for regeneration policies. The experts will be organised in three working groups: 1. Underground space conservation and monitoring; 2. underground Heritage-Led urban and rural regeneration; 3. Planning and governance tools. Each expert will share best-practices, by reporting on governance mechanisms, planning framework, stakeholders' involvement management, financing mechanisms, technical needs, and their direct impacts on the underground built environment preservation,

environment, society and economy, as well as potential negative externalities (i.e. ‘gentrification’, hard-branding, mass tourism, recreational villages, underground degradation...). Collected information will be the basis for developing new research and training, open and accessible to all parties interested in the underground regeneration, and it will provide knowledge on main technical and organisational barriers to the underground regeneration and correlated solutions. The proposal aims at guaranteeing continuity of use and significance to the underground historic fabric, revitalisation of the public realm and skills development for townspeople. It will disseminate knowledge on underground culture and assist local communities’ decision-making with adequate cultural, scientific and technical knowledge of the underground built environment from many different aspects (i.e. archaeology, geotechnics, history, urban planning, cultural anthropology, economics, architecture, cultural tourism). Finally, it will contribute to other EU programmes implementation.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Social and economic geography: Spatial development, land use, regional planning</li> <li>● History and Archeology: Preservation of cultural heritage</li> <li>● Social and economic geography: Databases, data mining, data curation, computational modelling</li> <li>● Civil engineering: Preservation of cultural heritage</li> <li>● Environmental engineering: Remote sensing</li> <li>● Social and economic geography: Spatial development, land use, regional planning</li> <li>● History and Archeology: Preservation of cultural heritage</li> <li>● Social and economic geography: Databases, data mining, data curation, computational modelling</li> <li>● Civil engineering: Preservation of cultural heritage</li> <li>● Environmental engineering: Remote sensing</li> </ul>	<ul style="list-style-type: none"> <li>● Underground Built Environment</li> <li>● Heritage-Led Regeneration</li> <li>● Heritage Conservation Methods</li> <li>● Sustainability Transition</li> <li>● Technological and Social Innovation</li> <li>● Underground Built Environment</li> <li>● Heritage-Led Regeneration</li> <li>● Heritage Conservation Methods</li> <li>● Sustainability Transition</li> <li>● Technological and Social Innovation</li> </ul>

## COST Countries

Main Proposer: IT

Network of Proposers: BE, BG, CY, EL, ES, FR, IL, IT, MK, MT, PL, PT, RO, RS, SI, TR

Main and secondary proposers: 35% ECI / 39% Women / 63% ITC

## International Cooperation

**Near Neighbour Country:** Republic of Moldova, Russian Federation

## Industrial Dimension

**SMEs:** Romania

**Large companies:** Italy

## Genome editing in plants - a technology with transformative potential

(oc-2018-1-22695 - rank: 21 - mark: 61)

### SUMMARY

A great challenge of this century is to provide adequate nutrition for an increasing global population while developing a more socially, economically and environmentally sustainable agriculture that counters climate change, biodiversity loss and degradation of arable land. Plant research and breeding are very important in meeting this challenge. Building on scientific progress, a number of genome editing techniques have been developed over the past two decades allowing an unprecedented level of precision in our control over genetic material and its corresponding traits. This COST Action will bring together expertise from a range of disciplines to evaluate plant genome editing techniques and their resulting products from various perspectives. The findings will serve to design a roadmap for directing and facilitating applications of genome editing in plant research and breeding, which in turn will help setting R&D priorities and stimulating further cross-national and cross-disciplinary collaborations.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Agricultural biotechnology: Genetic engineering, transgenic organisms, recombinant proteins, biosensors for agricultural biotechnology, animal biotechnology</li> <li>● Biological sciences: DNA synthesis, modification, repair, recombination and degradation</li> <li>● Agriculture, Forestry, and Fisheries: Sustainable Agriculture</li> <li>● Biological sciences: Ethics of biological sciences</li> <li>● Industrial biotechnology: Genetic engineering, transgenic organisms, recombinant proteins, biosensors for industrial biotechnology</li> <li>● Agricultural biotechnology: Genetic engineering, transgenic organisms, recombinant proteins, biosensors for agricultural biotechnology, animal biotechnology</li> <li>● Biological sciences: DNA synthesis, modification, repair, recombination and degradation</li> <li>● Agriculture, Forestry, and Fisheries: Sustainable Agriculture</li> <li>● Biological sciences: Ethics of biological sciences</li> <li>● Industrial biotechnology: Genetic engineering, transgenic organisms, recombinant proteins, biosensors for industrial biotechnology</li> </ul>	<ul style="list-style-type: none"> <li>● Genome editing</li> <li>● Plants</li> <li>● Research and breeding</li> <li>● Innovation</li> <li>● Future roadmap</li> <li>● Genome editing</li> <li>● Plants</li> <li>● Research and breeding</li> <li>● Innovation</li> <li>● Future roadmap</li> </ul>

### COST Countries

Main Proposer: SE

Network of Proposers: AT, BE, CH, CZ, DE, ES, FI, FR, HU, IL, IT, NL, NO, PL, PT, RS, SE, SI, TR, UK

Main and secondary proposers: 11% ECI / 37% Women / 35% ITC

### International Cooperation

**International Partner Country (IPC):** Australia, Canada, New Zealand, United States

**International Organisations (IO):** Italy, New Zealand

## Industrial Dimension

**SMEs:** Belgium, Germany, Netherlands, New Zealand, Norway, Switzerland, United Kingdom

**Large companies:** Finland

## Mechanochemistry for Sustainable Industry

(oc-2018-1-22697 - rank: 24 - mark: 60)

### SUMMARY

The Mechanochemistry for Sustainable Industry (Mech@SusInd) network is formed to face several challenges which are in the EU agenda. EU is presently calling for strong actions to arrest, or mitigate, climate changes via a suitable programme of measures. In chemical processes, the attention is focused on the reduction of solvent waste, the possibility to use less toxic solvents or reagents, to diminish the number of steps of the synthesis or in the purification processes. Another fundamental point is the quest of new raw materials which can be an alternative for critical raw materials or in anticipation of the possible reduced global availability of certain materials. Finally, technological leadership, innovation, and integration represent the historical sources of competitive advantage for the EU chemical industry. In this regard, a significant opportunity is taking shape for EU to take the lead in a scientific and technological area that shows significant promise to beneficially impact the chemical sector in terms of product and process innovation, competitiveness and sustainability. This area is mechanochemistry. Mechanochemistry is the branch of chemistry focusing on the activation of chemical transformations by mechanical stresses in the solid state in the absence of solvents. Mechanochemistry can potentially accomplish solvent-free the same reactions as currently are being performed in solution in laboratories and industry worldwide, with a drastic reduction of the solvent waste. Solid reactions allow to explore new synthetic pathways which can lead to new control over stereoselectivity or stoichiometric efficiency/atom economy. Moreover, the different processes of the reactions lead to the investigation and access to poorly soluble, but cheaper reactants or new raw material. EU is fully entitled to take lead of innovation in this area with crucial returns for other strategic sectors of chemical industry and manufacturing activities. Indeed, history of mechanochemistry roots in Europe and the largest community of researchers involved in mechanochemistry still resides in EU countries. Physicists, chemists and engineers form a multi-faceted community with long tradition in mechanochemical studies and unique expertise to spend in enabling technologies. Beside them, a community of technologists, entrepreneurs, industrialists and investors are ready to address the exploitation of mechanical activation methodologies in the production of chemicals. For EU, taking the lead in mechanochemistry is a unique opportunity of scientific and technological growth that intrinsically bears the promise of sustainable innovation in chemical industry and definite stimulation of economy.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Chemical sciences: Green chemistry research</li> <li>● Chemical sciences: Green chemistry research</li> </ul>	<ul style="list-style-type: none"> <li>● Green Chemistry</li> <li>● Mechanochemistry</li> <li>● Green Energy</li> <li>● Green Chemistry</li> <li>● Mechanochemistry</li> <li>● Green Energy</li> </ul>



## COST Countries

Main Proposer: FR

Network of Proposers: AT, BA, CH, CZ, DE, EE, ES, FR, HR, HU, IT, MT, PL, PT, RO, RS, SI, SK, TR, UK

Main and secondary proposers: 30% ECI / 44% Women / 65% ITC

## International Cooperation

**Near Neighbour Country:** Russian Federation

**International Partner Country (IPC):** Canada, China, Mexico, Singapore, United States

## Industrial Dimension

**SMEs:** Canada, Croatia, France, Italy, Romania

**Large companies:** Italy, Switzerland

## Understanding and exploiting the impacts of low pH on micro-organisms

(oc-2018-1-22712 - rank: 24 - mark: 60)

### SUMMARY

This proposed COST action is broad in its technical and scientific cope, as its central aim is to bring together people working in quite diverse fields but with a common scientific interest: namely, the understanding and exploitation of the responses of micro-organisms to low pH. These organisms in this context include bacteria, yeasts, and other fungi. This topic is already being studied in considerable depth and has many important practical applications in a number of diverse sectors; however, these sectors traditionally do not communicate well with each other. A new forum for communication will be highly beneficial both for scientific progress and, importantly, for the applied fields in which this topic is important. These include the microbiology of food and drink, many aspects of industrial biotechnology and bioprocessing, and clinical and veterinary treatment of infections in a time of increasing antimicrobial resistance. Through a combination of working groups, workshops, short term scientific missions, and dissemination activities, plus two open conferences, this proposed action will (a) aid our increased understanding of the details of how micro-organisms detect and respond to low pH (b) ensure that technical developments being made in one field are rapidly translated into other fields (c) leverage the many different areas of expertise that exist across consortium members and (d) ensure, through participation and dissemination, that these developments reach as wide an audience as possible, including pure and applied scientists in the inclusiveness target countries.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Biological sciences: Microbiology</li> <li>● Industrial biotechnology: Food microbiology</li> <li>● Industrial biotechnology: Bioprocessing technologies (industrial processes relying on biological agents to drive the process)</li> <li>● Clinical medicine: Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)</li> <li>● Other engineering and technologies: Food science and technology</li> </ul>	<ul style="list-style-type: none"> <li>● Microbial physiology</li> <li>● Low pH and acidity</li> <li>● Stress responses</li> <li>● Bioprocessing</li> <li>● Microbiological safety</li> <li>● Microbial physiology</li> <li>● Low pH and acidity</li> <li>● Stress responses</li> <li>● Bioprocessing</li> <li>● Microbiological safety</li> </ul>

<ul style="list-style-type: none"> <li>● Biological sciences: Microbiology</li> <li>● Industrial biotechnology: Food microbiology</li> <li>● Industrial biotechnology: Bioprocessing technologies (industrial processes relying on biological agents to drive the process)</li> <li>● Clinical medicine: Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)</li> <li>● Other engineering and technologies: Food science and technology</li> </ul>	
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## COST Countries

Main Proposer: UK

Network of Proposers: AT, CH, CZ, DE, EL, FR, HR, IE, IT, MT, NL, PL, PT, SE, SI, TR, UK

Main and secondary proposers: 13% ECI / 44% Women / 41% ITC

## International Cooperation

**Near Neighbour Country:** Armenia

**International Partner Country (IPC):** Brazil, Japan, Singapore

## Industrial Dimension

**SMEs:** Italy, Netherlands

**Large companies:** Netherlands, Switzerland, Turkey

## European Non-Territorial Autonomy Network

(oc-2018-1-22715 - rank: 30 - mark: 58)

### SUMMARY

ENTAN – European Non-Territorial Autonomy Network is a COST Action aiming to examine comparatively and comprehensively the concept of non-territorial autonomy (NTA), in particular NTA arrangements for reducing inter-ethnic tensions within a state and for accommodation of the needs of different communities while preventing the calls to separate statehood. The Action will tackle recent developments in theories and practices of cultural diversity; minority rights (including linguistic and educational rights); state functions and sovereignty; conflict resolution through policy arrangements; policy making and inclusiveness; self-governance and autonomy. The main objective is to investigate the existing NTA mechanisms and policies and to develop new modalities for accommodation of differences in the context of growing challenges stemming from globalisation, regionalisation and European supranational integration. Along with issues related to culture and education of diverse groups within a nation state, and legal arrangements for recognition and practicing of separate identity, the Action will also focus on political strategies and policies that have potential to increase the autonomy of stateless nations and to empower cultural, ethnic and religious communities. The network is created upon agreed research activities, which include interdisciplinary and multidisciplinary group work, training and empowerment of young researchers, scientific conferences and publications, and dissemination of results to policy makers, CSOs and communities. The Action is proposed by scholars coming from ITCs and other EU countries. It is based on past experiences, the current state of affairs and extensive theoretical and practical knowledge, which ensures that the results and recommendations will be relevant across Europe.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Political Science: International studies, strategic studies, human rights, global and transnational governance</li> <li>● Sociology: Identity studies</li> <li>● Political Science: Violence, conflict and conflict resolution</li> <li>● Law: Legal theory, legal systems, constitutions, comparative law</li> <li>● Political Science: International studies, strategic studies, human rights, global and transnational governance</li> <li>● Sociology: Identity studies</li> <li>● Political Science: Violence, conflict and conflict resolution</li> <li>● Law: Legal theory, legal systems, constitutions, comparative law</li> </ul>	<ul style="list-style-type: none"> <li>● non-territorial autonomy</li> <li>● minority rights</li> <li>● identity</li> <li>● policy making</li> <li>● conflict resolution</li> <li>● non-territorial autonomy</li> <li>● minority rights</li> <li>● identity</li> <li>● policy making</li> <li>● conflict resolution</li> </ul>

## COST Countries

Main Proposer: MK

Network of Proposers: DE, ES, HU, IT, ME, MK, RS, UK

Main and secondary proposers: 56% EC1 / 44% Women / 50% ITC

## International Cooperation

**Near Neighbour Country:** Albania

## Transnational Collaboration on Bullying, Migration and Integration at School Level

(oc-2018-1-22727 - rank: 13 - mark: 62)

## SUMMARY

With immigration a growing, permanent and fractious part of the EU's reality, integration is of foremost concern for policy-makers in Europe, and schools are recognised as an essential part of social stability and a key aspect of integration policy both at national and EU level. Schools provide crucial education for integration and citizenship, long term directly affecting social status, professional achievement, economic earning power and students understanding of cultural morality and societal principals, allowing both the individual to prosper, and the state and EU to benefit and build on their potential as a valuable new resource. School safety, building inclusion and preventing bullying for all students is central to integration and their well-being. Yet in the face of a far more diverse society schools face challenges that they are largely not currently supported for. The scientific measures of school safety used today are outdated and do not reflect a modern, multi-cultural, multi-faith, Europe, while school communities are working in a fragmented, individualised manner in the areas of inclusion and bullying prevention. This proposed COST Action aims to: enhance collaboration between stakeholders to update, enhance and pilot new 'real world' scientific measures and approaches, collate evaluated interventions and approaches around inclusion and bullying prevention to disseminate a comprehensive program/handbook for schools and a guideline policy document for authorities, building capacity, and working holistically towards ensuring the integration, safety

and well-being of all students in EU secondary schools, to aid in the social stability of both the individual and society.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Educational sciences: Education: training, pedagogy, didactics</li> <li>● Sociology: Migration, interethnic relations</li> <li>● Psychology: Social psychology</li> <li>● Educational sciences: Education: training, pedagogy, didactics</li> <li>● Sociology: Migration, interethnic relations</li> <li>● Psychology: Social psychology</li> </ul>	<ul style="list-style-type: none"> <li>● Migration</li> <li>● Integration</li> <li>● Bullying</li> <li>● School</li> <li>● Transnational</li> <li>● Migration</li> <li>● Integration</li> <li>● Bullying</li> <li>● School</li> <li>● Transnational</li> </ul>

## COST Countries

Main Proposer: IE

Network of Proposers: AT, CY, DE, ES, FI, FR, HU, IE, IT, NO, RS, TR

Main and secondary proposers: 31% ECI / 31% Women / 33% ITC

## International Cooperation

**Near Neighbour Country:** Georgia

## Aniridia: networking to address an unmet medical, scientific, and societal challenge

(oc-2018-1-22761 - rank: 5 - mark: 63)

## SUMMARY

Aniridia is a devastating ocular disease requiring intensive eye care, social and community support from birth and throughout an individual's lifetime. A congenital genetic mutation causes an underdeveloped retina, cataract, glaucoma, and a progressive ocular surface disease of stem cell deficiency and loss of corneal transparency. Classified as a rare disease (ORPHA:77), aniridia is extremely challenging for the ophthalmologist, with very few effective treatments available. This stems from a lack of adequate-sized patient populations to conduct coordinated clinical and research activities, and a lack of information exchange in assessing and treating aniridia, with expertise typically limited to geographically-dispersed centers. The goals of ANIRIDIA-NET are therefore to:

Build a large, inclusive EU network of ophthalmologists, scientists, trainees, aniridia patient organizations, industry, and special interest groups to create linkages and a rich training ground for a new generation of trainees;

Improve aniridia management through evidence-based research, harmonized clinical protocols, pooling/sharing of samples and models, and consensus activities; and

Stimulate development of novel diagnostics and treatments for aniridia based on innovative research in regenerative medicine/stem cells, investigational drugs, gene therapy, tissue engineering, transplantation, etc.

Although a rare disease, aniridia is associated with ocular surface pathology such as dry eye, inflammation, stem cell insufficiency, nerve degeneration, and vascularization - problems common to many ocular surface

pathologies collectively affecting large populations. Greater collaboration and sharing of information and resources in the area of aniridia is therefore additionally expected to have significant benefits for the treatment of larger patient populations with ocular surface disease.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Clinical medicine: Ophthalmology</li> <li>● Medical biotechnology: Gene therapy, stem cell therapy, regenerative medicine for medical biotechnology</li> <li>● Basic medicine: Stem cell biology</li> <li>● Basic medicine: Sensory systems (e.g. visual system, auditory system)</li> <li>● Clinical medicine: Ophthalmology</li> <li>● Medical biotechnology: Gene therapy, stem cell therapy, regenerative medicine for medical biotechnology</li> <li>● Basic medicine: Stem cell biology</li> <li>● Basic medicine: Sensory systems (e.g. visual system, auditory system)</li> </ul>	<ul style="list-style-type: none"> <li>● aniridia</li> <li>● ocular surface</li> <li>● PAX6</li> <li>● stem cell</li> <li>● rare disease</li> <li>● aniridia</li> <li>● ocular surface</li> <li>● PAX6</li> <li>● stem cell</li> <li>● rare disease</li> </ul>

## COST Countries

Main Proposer: SE

Network of Proposers: AT, BE, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LV, MT, NL, NO, PL, PT, RS, SE, TR, UK

Main and secondary proposers: 33% ECI / 48% Women / 46% ITC

## Industrial Dimension

**SMEs:** Czech Republic, Estonia, Netherlands, Spain, Sweden

## European network for Gynaecological Rare Cancer research: From Concept to Cure

(oc-2018-1-22788 - rank: 21 - mark: 61)

## SUMMARY

Approximately 18.5 million women annually are affected by gynaecological cancer, from which approximately 50% are classified as rare cancers. Delayed diagnosis of patients suffering from rare gynaecological cancers leads to poor outcomes and contributes to a huge socio-economic burden. This field is lagging due to distinct scientific and technological challenges that gynaecological cancer research faces. Currently, the overall efforts for addressing these challenges are fragmented across different European countries (and beyond).

GYNO CARE aims to address these challenges by creating a unique network between key stakeholders covering five distinct domains (from concept to cure): basic research on rare gynaecological cancer, biobanking, industrial dimension, legal and regulatory requirements for international trials and other research collaborative efforts, and high-quality, international, and innovative clinical trials. To achieve our ambitious goals, we have devised research coordination and capacity building objectives in accordance with mission and vision of the COST Action.

GYNO CARE will focus on (1) capacity-building on rare gynaecological cancer by connecting high-quality

scientific communities in various disciplines, existing networks, policy-makers, industrial partners, and patient organisations across Europe and beyond; (2) coordinating, and contributing to the development of a research roadmap dedicated to connect (innovative) basic research to (harmonised) biobanking to ‘smarter’ clinical trials; (3) the development of a platform for sharing best practices, including funding roadmap and legal/ethical requirements, in gynaecological cancers – aiming to advice policy-makers and other key stakeholders; and (4) providing (equal) networking opportunities for early-stage researchers, and other talented young professionals.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Clinical medicine: Oncology</li> <li>● Basic medicine: Pharmacology, pharmacogenomics, drug discovery and design, drug therapy</li> <li>● Clinical medicine: Clinical trials</li> <li>● Clinical medicine: Oncology</li> <li>● Basic medicine: Pharmacology, pharmacogenomics, drug discovery and design, drug therapy</li> <li>● Clinical medicine: Clinical trials</li> </ul>	<ul style="list-style-type: none"> <li>● Rare Gynaecological Cancer</li> <li>● Biobanking</li> <li>● Clinical Trials</li> <li>● Biomarkers</li> <li>● Precision medicine</li> <li>● Rare Gynaecological Cancer</li> <li>● Biobanking</li> <li>● Clinical Trials</li> <li>● Biomarkers</li> <li>● Precision medicine</li> </ul>

## COST Countries

Main Proposer: IT

Network of Proposers: AT, BE, CH, CZ, DE, DK, ES, FR, IT, NO, PL, RO, SI, TR, UK

Main and secondary proposers: 38% ECI / 55% Women / 33% ITC

## International Cooperation

**Near Neighbour Country:** Armenia, Belarus

**International Partner Country (IPC):** United States

## Industrial Dimension

**SMEs:** Spain

**Large companies:** Spain, Switzerland, United Kingdom, United States

## Implementation Research Network in Stroke Care Quality – IRENE

(oc-2018-1-22832 - rank: 30 - mark: 57)

## SUMMARY

Stroke is 2nd leading cause of death and the leading cause of life-long disability worldwide. Effective methods for stroke treatment exist; however the implementation of these treatment methods is very low and therefore constitutes the most challenging problem in current stroke management. In many countries, and many hospitals, patients do not receive effective treatment because implementation framework is missing.

Our interdisciplinary consortium established in 1/2015, aims to understand contextual factors, develop implementation framework and test its effectiveness. Effective implementation framework will have break-through impact on public health. Research results of this project can save tens of thousands of lives, eliminate hundreds of thousands of disabilities after stroke, and save millions of euros in healthcare costs.

Networking is essential part of such large-scale implementation project.

The core activity of this COST Action called IRENE is to improve public health through; a) Networking which will facilitate understanding of contextual factors, in between-country differences in innovation-values fit and implementation climate, b) a quality registry that will provide a cohesive picture of the implementation of stroke treatments; followed by c) the dissemination of results to the main stakeholders (e.g. hospitals and Ministries of Health) to implement new mechanisms to improve the outcome of stroke.

This COST Action will be conducted mainly in Eastern European countries as the burden of stroke is higher, quality of stroke care is lower, and resources for healthcare are less developed compared to Western European countries. Our action will alleviate disparities in stroke care and improve outcomes after stroke.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Health Sciences: Health services, health care research</li> <li>● Clinical medicine: Clinical neurology</li> <li>● Health Sciences: Databases, data mining, data curation, computational modelling</li> <li>● Health Sciences: Health services, health care research</li> <li>● Clinical medicine: Clinical neurology</li> <li>● Health Sciences: Databases, data mining, data curation, computational modelling</li> </ul>	<ul style="list-style-type: none"> <li>● Stroke Care Quality</li> <li>● Implementation research</li> <li>● Health Care Registry</li> <li>● Implementation strategy</li> <li>● Eastern Europe and Central Asia</li> <li>● Stroke Care Quality</li> <li>● Implementation research</li> <li>● Health Care Registry</li> <li>● Implementation strategy</li> <li>● Eastern Europe and Central Asia</li> </ul>

## COST Countries

Main Proposer: CZ

Network of Proposers: AT, BG, CH, CZ, EE, HR, HU, IT, LT, MK, PL, RO, RS, SI, SK

Main and secondary proposers: 62% ECI / 51% Women / 80% ITC

## International Cooperation

**Near Neighbour Country:** Albania, Armenia, Azerbaijan, Georgia, Republic of Moldova, Russian Federation, Ukraine

**International Partner Country (IPC):** United States

## Industrial Dimension

**Large companies:** Bulgaria, Czech Republic, Hungary, Poland, Romania, Russian Federation, Ukraine, United States

## Who Cares in Europe?

(oc-2018-1-22849 - rank: 13 - mark: 62)

## SUMMARY

This Action will define and develop an emerging research field that explores the relationships among voluntary associations, families and states in the creation of social welfare in Europe. It focuses on the question of how state welfare emerged from the social welfare provided by non-profit, non-state institutions and individuals; how it has developed and changed over time; and how, in recent years, it has entered into



crisis in many countries. The Action, which is at once local and transnational, will bring together researchers and policy makers throughout Europe in a collaborative exchange. The Action emphasizes the welfare state's deep historical roots, and will use local case studies to recover the "voices" and contributions of individuals, families and voluntary associations. This will give us a much deeper and richer story about social protection in Europe than is currently available. By analyzing the long-term development of welfare within a triadic optic that examines the interactions among families, voluntary welfare associations and states in the creation of social welfare, the Action has the potential to radically shift dominant paradigms in the field of welfare studies. The Action will contribute to welfare policy development and debate by offering a historical perspective on current problems and debates and the principles and premises that underpin them.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● History and Archeology: Modern and contemporary history</li> <li>● History and Archeology: History of collective identities and memories, history of gender</li> <li>● History and Archeology: Social and economic history</li> <li>● History and Archeology: Modern and contemporary history</li> <li>● History and Archeology: History of collective identities and memories, history of gender</li> <li>● History and Archeology: Social and economic history</li> </ul>	<ul style="list-style-type: none"> <li>● Social protection</li> <li>● Welfare history</li> <li>● Voluntary associations</li> <li>● Families</li> <li>● Current welfare crisis</li> <li>● Social protection</li> <li>● Welfare history</li> <li>● Voluntary associations</li> <li>● Families</li> <li>● Current welfare crisis</li> </ul>

## COST Countries

Main Proposer: FR

Network of Proposers: BE, CH, CZ, DE, EL, ES, FI, FR, HU, IE, IT, LT, NL, NO, PL, PT, RO, SE, SI, UK

Main and secondary proposers: 28% ECI / 81% Women / 35% ITC

## Reliable roadmap for certification of bonded primary structures

(oc-2018-1-22885 - rank: 5 - mark: 63)

### SUMMARY

With the increasing pressure to meet unprecedented levels of eco-efficiency, aircraft industry aims for superlight structures and towards this aim, composites are replacing the conventional Aluminium. The same trend is being followed by civil, automotive, wind energy, naval and offshore industry, in which the combination (or replacement) of steel with composites can increase the strength-to-weight ratio. However, the joining design isn't following this transition. Currently, composites are being assembled using fasteners. This represents a huge weight penalty for composites, since holes cut through the load carrying fibres and destroy the load path. Adhesive bonding is the most promising joining technology in terms of weight and performance. However, its lack of acceptance is limiting its application to secondary structures, whose failure is not detrimental for the structural safety. In primary (critical-load-bearing) structures, fasteners are always included along bondlines, as "back-up" in case the bond fails. The main reasons for this lack of acceptance are the limited knowledge of their key manufacturing parameters, non-destructive inspection techniques, damage tolerance methodology and reliable diagnosis and prognosis of their structural integrity. The action aims to deliver a reliable roadmap for enabling certification of primary bonded composite structures. Despite the motivation being aircraft structures, which is believed to have the most demanding certification, it will

directly involve other application fields in which similar needs are required. This action will tackle the scientific challenges in the different stages of the life-cycle of a bonded structure through the synergy of multi-disciplinary fields and knowledge transfer.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Mechanical engineering: Mechanical and manufacturing engineering (shaping, mounting, joining, separation)</li> <li>● Mechanical engineering: Aerospace engineering</li> <li>● Civil engineering: Civil engineering</li> <li>● Mechanical engineering: Mechanical and manufacturing engineering (shaping, mounting, joining, separation)</li> <li>● Mechanical engineering: Aerospace engineering</li> <li>● Civil engineering: Civil engineering</li> </ul>	<ul style="list-style-type: none"> <li>● adhesive bonding</li> <li>● critical load bearing structures</li> <li>● certification</li> <li>● adhesive bonding</li> <li>● critical load bearing structures</li> <li>● certification</li> </ul>

## COST Countries

Main Proposer: NL

Network of Proposers: BE, CH, CY, CZ, DE, DK, EL, ES, FR, IT, LT, NL, PL, PT, RO, SE, SI

Main and secondary proposers: 55% ECI / 28% Women / 41% ITC

## International Cooperation

**International Organisations (IO):** United Kingdom

## Industrial Dimension

**SMEs:** Belgium, France

**Large companies:** France, Germany, Netherlands, Spain

## Cultures Of Victimology: understanding processes of victimization across Europe

(oc-2018-1-22897 - rank: 5 - mark: 63)

## SUMMARY

Victimology as an academic endeavour has shown a remarkable growth in the past decades, and although victims are no longer the 'forgotten party' of the criminal justice system, the increased attention has been both topically and geographically lopsided. Victims of certain forms of criminal behaviour (domestic and sexual violence for instance) have commanded the lion's share of academic and policy interest, and the research on victim's experience is mainly conducted in North America, Oceania and North-West Europe. This results in more rapid advances in certain areas of victimology, while elsewhere basic victimological questions have yet to receive an answer.

This COST-Action intends to develop an innovative, functional and overarching theoretical framework for cultural victimology. Understanding the mediating and moderating influence of cultural constructs on victimology will improve understanding of the extent to which the current victimological knowledge base can be generalized from the types of victimization and geographical locations that have been relatively

extensively studied to elsewhere. A greater grasp of this complexity in return will offer greater insight into the underlying causal factors of this current research base, as well as offer new perspectives and lines of inquiry. It is, therefore, not only to the benefit of understanding the current grey and dark areas of victimological research, but will also shed further light on those fields of knowledge that have already been more heavily illuminated.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Law: Criminal law</li> <li>● Sociology: Deviance studies</li> <li>● Political Science: Violence, conflict and conflict resolution</li> <li>● Political Science: International studies, strategic studies, human rights, global and transnational governance</li> <li>● Sociology: Anthropology, ethnology, cultural studies</li> <li>● Law: Criminal law</li> <li>● Sociology: Deviance studies</li> <li>● Political Science: Violence, conflict and conflict resolution</li> <li>● Political Science: International studies, strategic studies, human rights, global and transnational governance</li> <li>● Sociology: Anthropology, ethnology, cultural studies</li> </ul>	<ul style="list-style-type: none"> <li>● Victimology</li> <li>● Criminology</li> <li>● Cultural Studies</li> <li>● Victim policy</li> <li>● Interdisciplinarity</li> <li>● Victimology</li> <li>● Criminology</li> <li>● Cultural Studies</li> <li>● Victim policy</li> <li>● Interdisciplinarity</li> </ul>

## COST Countries

Main Proposer: NL

Network of Proposers: BE, DE, ES, HR, IE, IT, ME, NL, PL, PT, RS, SE, SI, UK

Main and secondary proposers: 55% ECI / 66% Women / 43% ITC

## International Cooperation

**International Partner Country (IPC):** Canada, United States

## European Cholangiocarcinoma Network

(oc-2018-1-22912 - rank: 3 - mark: 64)

## SUMMARY

Cholangiocarcinomas (CCAs) are an heterogeneous group of cancers of the biliary tree. CCA is considered one of the deadliest cancers and its incidence is increasing constantly and dramatically in Europe. Notably, CCA is the most frequent cause of cancer metastases of unknown origin, suggesting underestimation of the CCA problem. CCA heterogeneity has limited the discovery of biomarkers and novel therapeutic options, hampering the development of tools for early diagnosis and effective treatment. CCA constitutes a major challenge for researchers, clinicians, national health systems and society. Still, coordinated multidisciplinary Pan-European studies are lacking. As such, the EURO-CHOLANGIO-NET (European Cholangiocarcinoma Network) aims to set up a pan-European-wide interdisciplinary co-operative network of stakeholders, including scientists, clinicians, regulatory authorities, small/medium enterprises (SMEs) and industry partners, to address the CCA problem. Through the creation of shared data registries inherent main relevant

basic or clinic-epidemiologic aspects, conference calls, meetings, workshops, scientific exchanges as well as training schools, this Action will coordinate efforts aiming at advancing our understanding of CCA to translate basic research and preclinical findings into clinical practice. For this purpose, this Action will be organized in 9 Working Groups (WGs) dealing with interrelated aspects of CCA: *PRECLINICAL, IN-DEPTH HISTOMORPHOLOGICAL PHENOTYPING, MOLECULAR PROFILING, EPIDEMIOLOGY, CLINICAL CHARACTERIZATION AND TRIALS, EARLY DIAGNOSTIC BIOMARKERS, DEVELOPMENT OF NOVEL THERAPEUTIC TOOLS, TRAINING AND EDUCATION, LEGISLATION AND ETHICS, INTERNAL COORDINATION AND EXTERNAL RELATIONSHIPS*. These WGs will work as coordinated networks to construct efficient connections, exchanges and promote capacity-building objectives (i.e. data registries, young researchers mobility, meetings, seminars, consensus guidelines and more).

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Clinical medicine: Gastroenterology and hepatology</li> <li>● Basic medicine: Epigenetics and gene regulation</li> <li>● Clinical medicine: Oncology</li> <li>● Basic medicine: Proteomics</li> <li>● Basic medicine: Pharmacology, pharmacogenomics, drug discovery and design, drug therapy</li> <li>● Clinical medicine: Gastroenterology and hepatology</li> <li>● Basic medicine: Epigenetics and gene regulation</li> <li>● Clinical medicine: Oncology</li> <li>● Basic medicine: Proteomics</li> <li>● Basic medicine: Pharmacology, pharmacogenomics, drug discovery and design, drug therapy</li> </ul>	<ul style="list-style-type: none"> <li>● Translational research platforms</li> <li>● Updated characterization and classification</li> <li>● Molecular profiling</li> <li>● Early diagnosis biomarkers</li> <li>● Development of novel therapeutic tools</li> <li>● Translational research platforms</li> <li>● Updated characterization and classification</li> <li>● Molecular profiling</li> <li>● Early diagnosis biomarkers</li> <li>● Development of novel therapeutic tools</li> </ul>

## COST Countries

Main Proposer: IT

Network of Proposers: AT, CH, CZ, DE, DK, ES, FR, HU, IT, LV, MT, NL, NO, PL, PT, RO, RS, SE, SI, TR, UK

Main and secondary proposers: 33% ECI / 37% Women / 48% ITC

## International Cooperation

**International Partner Country (IPC):** United States

## Industrial Dimension

**SMEs:** Spain

## The Pan-European Family Support Research Network. A bottom-up, evidence-based and multidisciplinary approach

Main and secondary proposers: 33% ECI / 37% Women / 48% ITC

### SUMMARY

The best interest of children is placed at the forefront of social policies, giving the governments the responsibility to provide parent and family support. The recent crisis has placed parenting at a more difficult situation, accompanied by the existence of complex family realities that need new responses which require innovative approaches. Although recognised as central to a number of political priorities, at a European level the institutions have not yet addressed family support wholistically.

The Action proposes the creation of a Pan-European family support network, under which family support and parenting policies are included, combining both common goals across countries and the recognition of the specificities of cultural and families' contexts.

This Action will build collaborative pathways between researchers, practitioners, policy-makers, children and families, public and private agencies, and general society to create the necessary framework that allows to inform family policies and practices with the underlying goal of ensuring children's rights and families' well-being. EuroFam-Net will: (1) Use a pluralistic and dialogic structure to co-create responses with all involved stakeholders in the field in close collaboration with the national policies; (2) Create an evidence-based framework that improves family support services, science and technology-driven policy and practice; (3) Use a multidisciplinary approach by gathering all the relevant scientific disciplines working in this field; (4) Disseminate research and make use of advice mechanisms to the professional and political arena to innovate in family support services; (5) Avoid the duplication of services and promote inter-sectorial coordination, increasing the efficiency of available resources.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Sociology: Family studies</li> <li>● Psychology: Developmental psychology</li> <li>● Political Science: Social policies, welfare state</li> <li>● Health Sciences: Health services, health care research</li> <li>● Political Science: Public administration, public policy</li> <li>● Sociology: Family studies</li> <li>● Psychology: Developmental psychology</li> <li>● Political Science: Social policies, welfare state</li> <li>● Health Sciences: Health services, health care research</li> <li>● Political Science: Public administration, public policy</li> </ul>	<ul style="list-style-type: none"> <li>● Family support</li> <li>● Positive parenting</li> <li>● Childs rights-based approach</li> <li>● European social policy</li> <li>● Evidence-based programmes</li> <li>● Family support</li> <li>● Positive parenting</li> <li>● Childs rights-based approach</li> <li>● European social policy</li> <li>● Evidence-based programmes</li> </ul>

### COST Countries

Main Proposer: ES

Network of Proposers: AT, BA, BE, BG, CH, CZ, DE, EE, ES, FI, FR, HR, HU, IE, LT, LV, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, TR, UK

Main and secondary proposers: 45% ECI / 68% Women / 57% ITC

### International Cooperation

**Near Neighbour Country:** Albania, Kosovo (under UNSCR 1244/99)

## Industrial Dimension

**SMEs:** Hungary

## European Sexual Medicine Network

(oc-2018-1-22927 - rank: 21 - mark: 61)

### SUMMARY

Sexual medicine is an immense field that deals with disorders of sexual health of individuals throughout the course of life. Due to its broad scope, a comprehensive approach to the subject is largely non-existent; research is in short supply and few medical educators are qualified to teach the subject. Different clinical, biological and psychosocial disciplines deal with the treatment of sexual disorders, but they often do this only partially due to the particular discipline. Clinical, technological and socioeconomic progress, along with societal changes, have caused general interest in sexual health to increase and change. Sexual medicine also has to pay more attention to modern-day developments. Incidents of mass sexual violence amplify the need for novel research on sexually deviant behaviour. Mass media, including social media, have an immense impact on contemporary viewpoints on sexuality by younger generations. Research on prevalence, pathophysiology, and optimal treatment of sexual dysfunction associated with chronic illness, including cancer, becomes more important. Importantly, too, the aging population compels medical and psychosocial sciences to deal increasingly with sexual health of older people.

The Action aims to exchange research results produced by different disciplines in order to find commonalities in concepts and approaches to sexual medicine. This will serve as the foundation for identifying shared concepts and definitions, and the start of joint interdisciplinary research, with a particular focus on including young researchers. It will also form the conceptual groundwork for developing interdisciplinary outlines and curricula for further university education at a European standard of qualification and recognition.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Health Sciences: Social biomedical sciences (including family planning, sexual health, psycho-oncology, political and social effects of biomedical research)</li> <li>● Health Sciences: Public and environmental health</li> <li>● Clinical medicine: Andrology</li> <li>● Clinical medicine: Obstetrics and gynaecology</li> <li>● Clinical medicine: Oncology</li> <li>● Health Sciences: Social biomedical sciences (including family planning, sexual health, psycho-oncology, political and social effects of biomedical research)</li> <li>● Health Sciences: Public and environmental health</li> <li>● Clinical medicine: Andrology</li> <li>● Clinical medicine: Obstetrics and gynaecology</li> <li>● Clinical medicine: Oncology</li> </ul>	<ul style="list-style-type: none"> <li>● Model of education in sexual medicine</li> <li>● Science of sexual medicine</li> <li>● Integrated sexual medicine</li> <li>● Sexuality in clinical and public health</li> <li>● Sexual wellbeing of the population</li> <li>● Model of education in sexual medicine</li> <li>● Science of sexual medicine</li> <li>● Integrated sexual medicine</li> <li>● Sexuality in clinical and public health</li> <li>● Sexual wellbeing of the population</li> </ul>

### COST Countries

Main Proposer: AT

Network of Proposers: AT, BE, BG, DE, DK, EL, FR, HR, HU, IT, LT, NL, NO, PT, RO, SI, TR, UK  
Main and secondary proposers: 39% ECI / 44% Women / 44% ITC

## International Cooperation

**Near Neighbour Country:** Republic of Moldova  
**International Partner Country (IPC):** Canada

## Industrial Dimension

**SMEs:** Romania

# Advanced Engineering and Research of (aero)Gels for Environment and Life Sciences

(oc-2018-1-22935 - rank: 30 - mark: 58)

## SUMMARY

AERoGELS COST Action intends to bring together the knowledge on research and technology of aerogels at the European level from academia, industry and regulatory experts. Aerogels are a special class of mesoporous materials with very high porosity and tunable physicochemical properties. Although some types of aerogels have already reached the market in construction materials and aerospace engineering, the full potential of aerogels are still to be assessed for other sectors. In this Action, the use of aerogels specifically for environmental and life sciences applications will be explored in a multidisciplinary approach to tackle two of the current main European challenges: circular economy and active ageing. The scope of the Action is to advance the state-of-the art on the topic by joining the knowledge and efforts of the most renowned experts on cutting-edge aerogel technology, on advanced characterization of materials as well as on biomedical and environmental research. Aerogels will be assessed from a materials performance point of view but also regarding health and environmental implications. AERoGELS Action will set a forum to disseminate knowledge to society, to boost the industry-academia interactions and to train European young researchers on research, innovation and entrepreneurial skills via technical schools, publications and STSM exchanges. Finally, the interdisciplinary collaborations are expected to yield innovative and integrated solutions for environment and for life sciences. The long-term scope of this Action is to develop an aerogel technology able to improve the welfare of European people and to move towards cleaner and smarter production in Europe.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Materials engineering: New materials: oxides, alloys, composite, organic-inorganic hybrid</li> <li>● Medical engineering: Medical engineering and technology</li> <li>● Chemical engineering: Chemical engineering: processes and products (others)</li> <li>● Nano-technology: Nano-materials and nano-structures</li> <li>● Environmental engineering: Environmental and geological engineering</li> <li>● Materials engineering: New materials: oxides, alloys, composite, organic-inorganic hybrid</li> </ul>	<ul style="list-style-type: none"> <li>● aerogel</li> <li>● advanced materials</li> <li>● biomedical applications</li> <li>● environmental applications</li> <li>● materials engineering</li> <li>● aerogel</li> <li>● advanced materials</li> <li>● biomedical applications</li> <li>● environmental applications</li> <li>● materials engineering</li> </ul>



<ul style="list-style-type: none"> <li>● Medical engineering: Medical engineering and technology</li> <li>● Chemical engineering: Chemical engineering: processes and products (others)</li> <li>● Nano-technology: Nano-materials and nano-structures</li> <li>● Environmental engineering: Environmental and geological engineering</li> </ul>	
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## COST Countries

Main Proposer: ES

Network of Proposers: AT, CH, CZ, DE, EL, ES, FI, FR, HU, IT, NL, PL, PT, RO, RS, SE, SI, TR

Main and secondary proposers: 39% ECI / 53% Women / 44% ITC

## International Cooperation

**Near Neighbour Country:** Jordan, Russian Federation

**International Partner Country (IPC):** Costa Rica

## Industrial Dimension

**SMEs:** France, Germany, Portugal, Spain

**Large companies:** Germany

## Writing Urban Places. New Narratives of the European City

(oc-2018-1-22944 - rank: 30 - mark: 58)

### SUMMARY

Europe is a continent predominantly populated on a relatively even spread of medium-sized cities. Together, these cities epitomize a rich variety of distinct urban cultures, which are in turn embedded in urban narratives: stories rich in information regarding citizens socio-spatial practices, preceptions and expectations. By recognizing the value of these narratives, the Action aims to articulate a set of concrete literary devices within a host of spatial disciplines; bringing together scientific research in the fields of literary studies, urban planning and architecture; and positioning this knowledge vis-à-vis progressive redevelopment policies carried out in medium-sized cities in Europe.

The Action aims to collect current initiatives of scholars addressing urban change from the crossing point of literary studies, urban studies and architecture, with the objective to offer a conceptual framework and operative tools to analyze urban narratives and to share knowledge with city makers.

The Action defines three thematic targets it wants to explore theoretically as well as in case studies. 1) meaningfulness: offering local communities and professionals the ability to improve their understanding of their built environment; 2). appropriation: empowering communities by improving their ability to project their feelings on their built environment. 3). integration: offering concrete tools and methods for the construction of common grounds among communities, based on relations of meaningfulness and appropriation of their built environment.

Writing Urban Places proposes an innovative investigation and implementation of a process for developing human understanding of communities; their society; and their place, by narrative methods.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Other humanities: Cultural heritage, cultural memory</li> <li>● Other social sciences: Qualitative methods for the social sciences</li> <li>● Languages and literature: Literary theory and comparative literature, literary styles</li> <li>● Arts: History of art and history of architecture</li> <li>● Other humanities: Cultural heritage, cultural memory</li> <li>● Other social sciences: Qualitative methods for the social sciences</li> <li>● Languages and literature: Literary theory and comparative literature, literary styles</li> <li>● Arts: History of art and history of architecture</li> </ul>	<ul style="list-style-type: none"> <li>● narrative</li> <li>● urban studies</li> <li>● architecture</li> <li>● literature</li> <li>● place-making</li> <li>● narrative</li> <li>● urban studies</li> <li>● architecture</li> <li>● literature</li> <li>● place-making</li> </ul>

## COST Countries

Main Proposer: NL

Network of Proposers: BE, CH, DK, EE, MK, NL, PT, RO, SI, UK

Main and secondary proposers: 67% EC1 / 58% Women / 50% ITC

## International Nucleome Consortium

(oc-2018-1-22949 - rank: 1 - mark: 65)

### SUMMARY

The genomic revolution has been a unidimensional one. Chromosome maps, sequences, polymorphism databases, the wealth of information that has been and continues to be gained from genomic studies exists independently of the cellular context. Yet our genome lives as a three-dimensional object intricately folded and packaged in the cell nucleus, structured around nuclear bodies and landmarks, acted upon by countless force-generating nano-machines. Ultimately then, understanding how the genome works requires elucidating the structure-activity relationships of the cell nucleus as a complex, dynamics biological system. No doubt this is an ambitious task. But it is also one of the most exciting challenges now facing biomedical research. With the recent advances that have been made in microscopy, biochemistry and modeling, tackling this challenge requires concertation on a global scale. The field is now attracting more and more people with very diverse expertise (biologists, physicists, mathematician, statisticians, data scientists). It is also ripe for technology transfer and production through creation of start-ups. Consequently the huge amount of data produced in modern laboratories requires extensive numerical analysis and modelling to be correctly analysed and knowledge of physical principles to be interpreted and applied. The International Nucleome Consortium will establish a worldwide community of cooperation among multi-disciplinary nucleome scientists to accelerate scientific breakthroughs leading to new concepts, innovative interdisciplinary approaches and realistic applications for health, agriculture and industry. The consortium aims at maintaining Europe's leading position in this quickly developing and exciting field.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Biological sciences: Genomics, comparative genomics, functional genomics</li> <li>● Biological sciences: Biological systems analysis, modelling and simulation</li> <li>● Biological sciences: Epigenetics and gene regulation</li> <li>● Mathematics: Statistics</li> <li>● Biological sciences: Genomics, comparative genomics, functional genomics</li> <li>● Biological sciences: Biological systems analysis, modelling and simulation</li> <li>● Biological sciences: Epigenetics and gene regulation</li> <li>● Mathematics: Statistics</li> </ul>	<ul style="list-style-type: none"> <li>● Genome function</li> <li>● Chromosome</li> <li>● Nuclear organization</li> <li>● Modeling and simulation</li> <li>● Health and agriculture</li> <li>● Genome function</li> <li>● Chromosome</li> <li>● Nuclear organization</li> <li>● Modeling and simulation</li> <li>● Health and agriculture</li> </ul>

## COST Countries

Main Proposer: FR

Network of Proposers: BG, CY, CZ, DE, ES, FR, HR, HU, IL, IT, NL, NO, PL, PT, SI

Main and secondary proposers: 33% ECI / 43% Women / 53% ITC

## International Cooperation

**Near Neighbour Country:** Egypt

**International Partner Country (IPC):** Japan, United States

## Industrial Dimension

**SMEs:** France, Italy, Poland

**Large companies:** Czech Republic

## Saving European Archaeology from the Digital Dark Age

(oc-2018-1-22951 - rank: 30 - mark: 58)

## SUMMARY

Making archaeological data open and freely accessible is a priority across Europe, but the domain lacks appropriate, persistent repositories. Due to the fragility of digital data and non-repeatable nature of most archaeological research, the domain is poised to lose a generation of research to the Digital Dark Age. The key to mitigating this crisis is to bring archaeologists and data management specialists together to share expertise, and create resources that allow them to address problems in the most appropriate way within their own countries. While important international standards exist and should be used, there is no single way to build a repository. To be successful, archaeologists must be at the decision-making heart of how their data is archived to ensure re-use is possible. SEADDA will be vital for establishing a priority research area in the archiving, dissemination and open access re-use of archaeological data, and includes proposers from 26 COST countries. It will bring together an interdisciplinary network of archaeologists and computer scientists; experts in archaeological data management and open data dissemination and re-use. It will create publications and materials that will set out the state of the art for archaeological archiving across Europe,

recommendations to mitigate the crisis and at least one major funding application. It will organise meetings and training that will allow archaeologists from countries with archiving expertise to work with archaeologists with few or no available options, so they may share knowledge and create dialogue within their countries, and move forward to address the crisis.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● History and Archeology: Databases, data mining, data curation, computational modelling</li> <li>● History and Archeology: Databases, data mining, data curation, computational modelling</li> </ul>	<ul style="list-style-type: none"> <li>● Digital Preservation</li> <li>● Archaeology</li> <li>● Information Science</li> <li>● Digital Archiving</li> <li>● Digital Repositories</li> <li>● Digital Preservation</li> <li>● Archaeology</li> <li>● Information Science</li> <li>● Digital Archiving</li> <li>● Digital Repositories</li> </ul>

## COST Countries

Main Proposer: UK

Network of Proposers: AT, BE, BG, CY, CZ, DE, DK, EL, ES, FI, FR, HR, HU, IE, IT, LT, MT, NL, NO, PL, PT, RO, SE, SI, TR, UK

Main and secondary proposers: 47% EC1 / 40% Women / 46% ITC

## International Cooperation

**International Partner Country (IPC):** Argentina, Canada, Japan, United States

## Industrial Dimension

**SMEs:** UNITED KINGDOM

## Islamic Legacy: Narratives East, West, South, North of the Mediterranean (1350-1750)

(oc-2018-1-22961 - rank: 1 - mark: 65)

## SUMMARY

The purpose of the Action is to provide a transnational and interdisciplinary approach capable of overcoming the segmentation that currently characterizes the study of relations between Christianity and Islam in late medieval and early modern Europe and the Mediterranean. Over the last thirty years, some separate geographic and academic areas have been defined in this research field: the Iberian Peninsula, Italy, Central Europe and the Balkans, and Greece and the different islands of the Mediterranean. These different geographical areas have been analysed in isolation and have been further disjointed in a scientific context defined by the separation of disciplines and chronologies. The intention of the Action is to mitigate this academic distortion by creating a common space for scientific exchange and reflection. This space will involve institutions from 26 different European and Mediterranean countries as well as 59 senior and junior researchers coming from different disciplines (history, history of art, philology, anthropology, social sciences,

history of the science, politics, etc.). The creation of this network will help to provide a comprehensive understanding of past relations between Christianity and Islam in the European context through the addressing of three main research problems: otherness, migration and borders. Beyond the strictly academic realm, the Action also aims to revive diversity and Euro-Mediterranean relations in education, at a moment when Europe is at a cultural and political crossroads.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● History and Archeology: Early modern history</li> <li>● Arts: History of art and history of architecture</li> <li>● Philosophy, Ethics and Religion: Theology and religious studies</li> <li>● History and Archeology: Early modern history</li> <li>● Arts: History of art and history of architecture</li> <li>● Philosophy, Ethics and Religion: Theology and religious studies</li> </ul>	<ul style="list-style-type: none"> <li>● Islam</li> <li>● Europe</li> <li>● Mediterranean</li> <li>● Early Modern History</li> <li>● Early Modern Cultural Relations</li> <li>● Islam</li> <li>● Europe</li> <li>● Mediterranean</li> <li>● Early Modern History</li> <li>● Early Modern Cultural Relations</li> </ul>

## COST Countries

Main Proposer: ES

Network of Proposers: BA, BG, CH, DE, EL, ES, FR, HR, HU, IE, IT, ME, MT, NL, PL, PT, RO, RS, SE, SI, TR, UK

Main and secondary proposers: 49% ECI / 49% Women / 55% ITC

## International Cooperation

**Near Neighbour Country:** Algeria, Egypt, Morocco, Tunisia

## European Network FOR Chemical Elemental analysis by Total reflection X-Ray Fluorescence

(oc-2018-1-22966 - rank: 13 - mark: 62)

## SUMMARY

The "European Network FOR Chemical Elemental analysis by Total reflection X-Ray Fluorescence" Action aims to develop a research network focused on exploring and assessing total reflection X-ray fluorescence spectroscopy (TXRF) for the elemental analysis of challenging biological, environmental, and food samples.

The Action will create an infrastructure for scientific communication, exchange, collaboration, to enhance technical standards, advance measurement science, fostering new research activities, combining the partners' expertise in chemistry, physics, life science and engineering. This network will provide the information and tools to maximize European competitiveness in forming and attracting talented scientists, supporting new sources and capabilities that improve research productivity, quality, dissemination, and efficiency.

The outcome is a novel technology portfolio for TXRF applications that will benefit science, economy and the society. The activities will enable breakthrough scientific developments leading to new concepts and products, increasing Europe's research and innovation capacities, and supporting European Commission regulations' organisms in crucial fields as environmental protection, food safety, life science, and

nanotechnologies. ENFORCE TXRF will develop well-organized and sustainable partnerships, preparatory to joint projects by dissemination of scientific knowledge and actively engaging new stakeholders. The interest of the next generation of scientists will be increased, ensuring that Europe will remain at the front-line of research for the development of new tools for the chemical analysis.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Chemical sciences: Characterization methods of materials (theoretical aspects)</li> <li>● Chemical sciences: Analytical chemistry</li> <li>● Physical Sciences: Atomic, molecular and chemical physics</li> <li>● Materials engineering: Characterization methods of materials for material engineering applications</li> <li>● Chemical sciences: Characterization methods of materials (theoretical aspects)</li> <li>● Chemical sciences: Analytical chemistry</li> <li>● Physical Sciences: Atomic, molecular and chemical physics</li> <li>● Materials engineering: Characterization methods of materials for material engineering applications</li> </ul>	<ul style="list-style-type: none"> <li>● TXRF</li> <li>● elemental analysis</li> <li>● biological</li> <li>● environmental</li> <li>● food</li> <li>● TXRF</li> <li>● elemental analysis</li> <li>● biological</li> <li>● environmental</li> <li>● food</li> </ul>

## COST Countries

Main Proposer: IT

Network of Proposers: AT, DE, EL, ES, FR, HR, HU, IT, PL, PT, RS, SE, SI, TR, UK

Main and secondary proposers: 31% ECI / 47% Women / 47% ITC

## International Cooperation

**Near Neighbour Country:** Albania, Russian Federation

**International Partner Country (IPC):** Chile, China, Japan, Kenya, United States, Venezuela

## Industrial Dimension

**SMEs:** Croatia, Germany, Italy

## Statistical and machine learning techniques in human microbiome studies

(oc-2018-1-22977 - rank: 3 - mark: 64)

## SUMMARY

In recent years, the human microbiome has been characterised in great detail in several large-scale studies as a key player in intestinal and non-intestinal diseases, e.g. inflammatory bowel disease, diabetes and liver cirrhosis, along with brain development and behaviour. As more associations between microbiome and phenotypes are elucidated, research focus is now shifting towards causality and clinical use for diagnostics, prognostics and therapeutics, where some promising applications have recently been showcased. Microbiome data are inherently convoluted, noisy and highly variable, and non-standard analytical methodologies are therefore required to unlock its clinical and scientific potential. While a range of statistical modelling and Machine Learning (ML) methods are now available, sub-optimal implementation often leads to

errors, over-fitting and misleading results, due to a lack of good analytical practices and ML expertise in the microbiome community. Thus, we propose a COST Action network to create productive symbiosis between discovery-oriented microbiome researchers and data-driven ML experts, through regular meetings, workshops and training courses. Together, we will first optimise and then standardise the use of said techniques, following the creation of publically available benchmark datasets. Correct usage of these approaches will allow for better identification of predictive and discriminatory 'omics' features, increase study repeatability, and provide mechanistic insights into possible causal or contributing roles of the microbiome. We will also investigate automation opportunities and define priority areas for novel development of ML/Statistics methods targeting microbiome data. Thus, this COST Action will open novel and exciting avenues within the fields of both ML/Statistics and microbiome research.

## SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Biological sciences: Bioinformatics</li> <li>● Computer and Information Sciences: Machine learning algorithms</li> <li>● Biological sciences: Microbiology</li> <li>● Biological sciences: Genomics, comparative genomics, functional genomics</li> <li>● Biological sciences: Biodiversity, comparative biology</li> <li>● Biological sciences: Bioinformatics</li> <li>● Computer and Information Sciences: Machine learning algorithms</li> <li>● Biological sciences: Microbiology</li> <li>● Biological sciences: Genomics, comparative genomics, functional genomics</li> <li>● Biological sciences: Biodiversity, comparative biology</li> </ul>	<ul style="list-style-type: none"> <li>● Microbiome</li> <li>● Machine Learning</li> <li>● Statistics</li> <li>● Omics</li> <li>● Modelling</li> <li>● Microbiome</li> <li>● Machine Learning</li> <li>● Statistics</li> <li>● Omics</li> <li>● Modelling</li> </ul>

## COST Countries

Main Proposer: IE

Network of Proposers: CY, CZ, EE, EL, ES, FR, HR, HU, IE, LU, MK, NL, PL, SE, SK, UK

Main and secondary proposers: 27% ECI / 36% Women / 56% ITC

## International Cooperation

**International Organisations (IO):** Germany

## Industrial Dimension

**SMEs:** Greece, Slovakia



## Functional Glyconanomaterials for the Development of Diagnostics and Targeted Therapeutic Probes

(oc-2018-1-22985 - rank: 13 - mark: 62)

### SUMMARY

Carbohydrates, proteins, lipids and nucleic acids are the biomacromolecules that constitute the fundamental building blocks of life. Among those, carbohydrates are key players involved in a myriad of molecular recognition events from protein folding, cell-cell communication, bacterial and viral infections to fertilization. Cell-surface carbohydrates can differ considerably between cell lines and also between healthy and disease states. These differences can be exploited for the development of early diagnostic tools, prevention and/or treatment of diseases via for example molecules

probes that target the interactions between key glycans and their receptors.

However, despite their biological significance and therapeutic potential, these important biomolecules have been investigated to a much lesser extent compared to nucleic acids and proteins. The vast complexity of carbohydrate systems combined with the scarcity of glycan-based tools for study have been a major challenge in glycobiology. Thus, the production of tailored and structurally-defined glycan-based probes for biomedical applications represents a significant advancement in the field.

Nanotechnology provides a new array of techniques and platforms to study glycosystems. Recent developments in the field have provided access to an advanced toolkit of synthetic nanomaterials and the techniques to study such molecules at high resolution. In order to successfully develop new glycan-conjugated and carbohydrate-derived materials, interdisciplinary collaboration between material scientists, chemists, immunologists, microbiologists, molecular biologists and medics is crucial.

The aim of this action is to bring together experts in these different areas from all around Europe to develop the next generation of functional glyconanomaterials for the development of diagnostic tools and targeted therapeutics.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Chemical sciences: Supramolecular chemistry</li> <li>● Nano-technology: Nano-materials and nano-structures</li> <li>● Materials engineering: Structural properties of materials</li> <li>● Chemical sciences: Supramolecular chemistry</li> <li>● Nano-technology: Nano-materials and nano-structures</li> <li>● Materials engineering: Structural properties of materials</li> </ul>	<ul style="list-style-type: none"> <li>● Glycan-probes</li> <li>● Functional Nanomaterials</li> <li>● Diagnostics</li> <li>● Glycobiology</li> <li>● Therapeutics</li> <li>● Glycan-probes</li> <li>● Functional Nanomaterials</li> <li>● Diagnostics</li> <li>● Glycobiology</li> <li>● Therapeutics</li> </ul>

### COST Countries

Main Proposer: UK

Network of Proposers: CH, CZ, DE, EE, EL, ES, FI, FR, HU, IE, IS, IT, LV, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 13% ECI / 40% Women / 46% ITC

### International Cooperation

**International Partner Country (IPC):** United States

## Industrial Dimension

**SMEs:** Italy, United Kingdom

## European Research Network on Signal Transduction

(oc-2018-1-23022 - rank: 5 - mark: 63)

### SUMMARY

All cells face the vital challenge of sensing their environments and responding in appropriate ways. This process is accomplished by transmembrane signal transduction, which is present in every species and governs every aspect of how an organism functions. In regard to human health, there is a huge drive to understand how transmembrane signal transduction networks function on the molecular, cellular and physiological level so that drugs can be designed to modulate different aspects of the signal transduction cascade in highly specific ways. Despite significant progress in understanding the individual components, signal transduction as a whole is not fully understood. Fundamental questions remain regarding how different signalling pathways are activated and modulated in precise and reproducible ways. Filling this gap in knowledge is absolutely necessary to advance the next generation of drugs that will achieve therapeutic efficacy while minimizing side effects. A prime example of this research challenge is the large family of G protein-coupled receptors (GPCRs), which are the target of more than a third of all marketed drugs. The COST Action ERNEST (European Research Network on Signal Transduction) will tackle this challenge by uniting scientists from different disciplines spanning the molecular, cellular, physiological, and clinical perspectives. This network of diverse investigators will be uniquely able to synergistically develop an unprecedented comprehensive understanding of signal transduction that will advance drug design efforts in Europe, for the benefit of societies and human health worldwide.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Biological sciences: Signal transduction</li> <li>● Biological sciences: Biochemistry of signal transduction</li> <li>● Biological sciences: Cell signalling and cellular interactions</li> <li>● Biological sciences: Computational biology</li> <li>● Biological sciences: Biological systems analysis, modelling and simulation</li> <li>● Biological sciences: Signal transduction</li> <li>● Biological sciences: Biochemistry of signal transduction</li> <li>● Biological sciences: Cell signalling and cellular interactions</li> <li>● Biological sciences: Computational biology</li> <li>● Biological sciences: Biological systems analysis, modelling and simulation</li> </ul>	<ul style="list-style-type: none"> <li>● Signal transduction</li> <li>● GPCR</li> <li>● molecular mechanisms</li> <li>● drug design</li> <li>● database resources</li> <li>● Signal transduction</li> <li>● GPCR</li> <li>● molecular mechanisms</li> <li>● drug design</li> <li>● database resources</li> </ul>

### COST Countries

Main Proposer: DE

Network of Proposers: CH, DE, DK, EE, ES, HU, IL, NL, PL, SI, TR, UK

Main and secondary proposers: 0% ECI / 50% Women / 42% ITC

## Genomic Biodiversity Knowledge for Resilient Ecosystems

(oc-2018-1-23038 - rank: 30 - mark: 59)

### SUMMARY

In a rapidly changing environment, the resilience of ecosystems depends ultimately on species adaptability. G-BIKE will enable standard and routine tools for assessing, monitoring and managing the genetic resilience and related adaptive potential of wild and captive populations. Although genetic data can be obtained for most organisms, the standardization of protocols for detecting and monitoring species' genetic diversity, and their potential for adaptation, is still lacking. G-BIKE will assist scientists and practitioners across the EU and particularly in ITCs to integrate genetic and evolutionary knowledge into conservation planning policies, and to promote cross-border management and long term monitoring programs of evolutionary potential in order to ensure persistence of populations and species, and ultimately the continued supply of nature-based ecosystem services. Considering the drastic impacts of climate change during the coming decades, G-BIKE is especially urgent. The following aims will be accomplished by involvement and balanced representation of scientists and practitioners from a diversity of countries: 1) clearly articulating for managers how genetic diversity can support ecosystems; 2) developing and testing best practice protocols for monitoring genetic diversity in time and space; 3) providing an online forum on emerging tools; 4) connecting all stakeholders through networking and training opportunities; 4) building a network of conservation genetics labs; 5) building a foundation for long term impact. Results will be disseminated in easy-to-read summaries for practitioners and outreach to the public at Natura 2000 sites, botanic gardens and zoos as well as in scientific publications.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Biological sciences: Biodiversity, comparative biology</li> <li>● Biological sciences: Conservation biology, ecology, genetics</li> <li>● Biological sciences: Population biology, population dynamics, population genetics, plant-animal interactions</li> <li>● Environmental biotechnology: Diagnostic biotechnologies (DNA chips and biosensing devices) in environmental management</li> <li>● Biological sciences: Biodiversity, comparative biology</li> <li>● Biological sciences: Conservation biology, ecology, genetics</li> <li>● Biological sciences: Population biology, population dynamics, population genetics, plant-animal interactions</li> <li>● Environmental biotechnology: Diagnostic biotechnologies (DNA chips and biosensing devices) in environmental management</li> </ul>	<ul style="list-style-type: none"> <li>● biodiversity resources</li> <li>● genetic monitoring</li> <li>● genetic diversity</li> <li>● conservation planning</li> <li>● Scientists/Practicioners EU-wide network</li> <li>● biodiversity resources</li> <li>● genetic monitoring</li> <li>● genetic diversity</li> <li>● conservation planning</li> <li>● Scientists/Practicioners EU-wide network</li> </ul>

## COST Countries

Main Proposer: IT

Network of Proposers: AT, BA, BE, CH, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IT, MK, NL, PT, RO, RS, SE, SI, SK, UK

Main and secondary proposers: 38% ECI / 49% Women / 46% ITC

## Fire in the Earth System: Science & Society

(oc-2018-1-23046 - rank: 24 - mark: 60)

### SUMMARY

*FIRElinks* will develop the EU-spanning network of scientists and practitioners involved in forest fire research and land management with backgrounds such as fire dynamics, fire risk management, fire effects on vegetation, fauna, soil and water, and socio-economic, historical, geographical, political perception and land management approaches. It will connect communities from different scientific and geographic backgrounds, allowing the discussion of different experiences and the emergence of new approaches to fire research. The main aim of *FIRElinks* is to power synergistic collaborations between European research groups and stakeholders with the objective to synthesise the existing knowledge and expertise, and to define a concerted research agenda which promotes an integrated approach to create fire-resilient landscapes, taking into account biological, biochemical and-physical, but also socio-economic, historical, geographical, sociological, perception and policy constraints. This is an urgent societal need due to expected further intensification and geographical spreading of wildfire regimes under Global Change.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Earth and related Environmental sciences: Physical geography</li> <li>● Earth and related Environmental sciences: Terrestrial ecology, land cover change</li> <li>● Earth and related Environmental sciences: Hydrology, water resources</li> <li>● Earth and related Environmental sciences: Biogeochemistry, biogeochemical cycles</li> <li>● Earth and related Environmental sciences: Sedimentology, soil science, palaeontology, earth evolution</li> <li>● Earth and related Environmental sciences: Physical geography</li> <li>● Earth and related Environmental sciences: Terrestrial ecology, land cover change</li> <li>● Earth and related Environmental sciences: Hydrology, water resources</li> <li>● Earth and related Environmental sciences: Biogeochemistry, biogeochemical cycles</li> <li>● Earth and related Environmental sciences: Sedimentology, soil science, palaeontology, earth evolution</li> </ul>	<ul style="list-style-type: none"> <li>● fire dynamics and societal issues</li> <li>● fire effects on Earth System and Society</li> <li>● fire role on water, soil, sediments and nutrient cycles</li> <li>● fire, management and socioeconomic perspective</li> <li>● effective management for fire risk reduction</li> <li>● fire dynamics and societal issues</li> <li>● fire effects on Earth System and Society</li> <li>● fire role on water, soil, sediments and nutrient cycles</li> <li>● fire, management and socioeconomic perspective</li> <li>● effective management for fire risk reduction</li> </ul>

## COST Countries

Main Proposer: ES

Network of Proposers: BA, BG, CH, CY, CZ, DE, EL, ES, FI, FR, HR, HU, IE, IL, IS, IT, ME, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 39% ECI / 39% Women / 50% ITC

## International Cooperation

**Near Neighbour Country:** Algeria, Egypt

**International Partner Country (IPC):** Australia, Brunei, Canada, India, Iran, United States

**International Organisations (IO):** Denmark, United States

## Industrial Dimension

**SMEs:** Czech Republic, Spain

## European Forum for Advanced Practices

(oc-2018-1-23049 - rank: 5 - mark: 63)

### SUMMARY

The European Forum for Advanced Practices is a group of 50 researchers who work in universities, art academies, museums, private research centers, or as freelancers. *EFAP's* broad goal is to establish a dialog between institutional and non-institutional, public and private partners, a dialog based in emergent new forms of research driven by doing.

The network currently covers more than 15 different countries across Europe. The participants in *EFAP* have actively shaped contemporary forms of research in the fields of visual art, art history, philosophy, music, theatre, dance and performance studies, architecture, design and engineering.

*EFAP* posits a notion of Advanced Practices that comes into being through the amalgamation of methods and practices across numerous disciplines. Such a notion of *Advanced Practices* is being developed to respond to two sets of urgencies:

Ever more complex societal challenges across Europe are demanding constant new forms of knowledge exchange and transfer, as new research forms are gaining ground and become increasingly prominent modes of research output.

This requires new, multidisciplinary and comprehensive methods for capturing and assessing both, their quality and their impact, while operating *in advance* rather than retrospectively.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Arts: Visual arts</li> <li>● Arts: Performing arts</li> <li>● Media and communications: Museums and exhibitions</li> <li>● Philosophy, Ethics and Religion: Epistemology, logic, philosophy of science and technology</li> <li>● Arts: Visual arts</li> <li>● Arts: Performing arts</li> <li>● Media and communications: Museums and</li> </ul>	<ul style="list-style-type: none"> <li>● Artistic and practice based research</li> <li>● Cross-disciplinary collaborations</li> <li>● Art and Technology</li> <li>● Evaluating quality and impact</li> <li>● Societal challenges</li> <li>● Artistic and practice based research</li> <li>● Cross-disciplinary collaborations</li> <li>● Art and Technology</li> <li>● Evaluating quality and impact</li> </ul>

exhibitions • Philosophy, Ethics and Religion: Epistemology, logic, philosophy of science and technology	• Societal challenges
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## COST Countries

Main Proposer: NO

Network of Proposers: BE, CH, DE, ES, HR, HU, IE, LT, NL, NO, PT, UK

Main and secondary proposers: 56% ECI / 44% Women / 33% ITC

## International Cooperation

**International Partner Country (IPC):** United States

## European Middle Class Mass Housing

(oc-2018-1-23050 - rank: 30 - mark: 57)

### SUMMARY

The main challenge of the Cost Action proposal is to create a transnational network that gathers European researchers carrying studies on Middle-Class Mass Housing (MCMH) built in Europe since the 1950s. This network will allow the development new scientific approaches by discussing, testing and assessing case studies and their different methodologies and perspectives. MCMH has been generally underestimated in urban and architectural studies and there is still a lack of comparative analysis and global perspectives. The number of transnational publications and scientific meetings has also been scarce. By crossing different approaches focus on Architecture, Urbanism, Planning, Public Policies, History, Sociology new concepts and methodologies will arise. Therefore, the Action aims to produce a wider understanding of MCMH sprawl, deepening on-going researches and focussing on the existing case studies. The current methodologies, surveys, catalogue and contextualization allow an initial mapping of relevant case studies, their diverse degrees of resilience and how they have been adapted to current (urban and social) conditions. It is intended to develop the knowledge of the interaction between spatial forms, behaviours and satisfaction and to combine methodologies of architectural and social analyses. The Action will be developed by three Working Groups, coordinated by a Core Group: Documenting the MCMH; Development of a specific set of (new) concepts for MCMH analyses; Leverage contemporary architecture interventions and Public Policies. Eight countries will be involved with 17 researchers related to Mass Housing, MCMH Architecture and Urbanism, Planning and Public Policies, Sociological studies, Architecture History and Modern Heritage.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>• Arts: History of art and history of architecture</li> <li>• Arts: History of art and history of architecture</li> </ul>	<ul style="list-style-type: none"> <li>• Middle Class</li> <li>• Mass Housing</li> <li>• Twentieth Century Architecture</li> <li>• European City</li> <li>• Middle Class</li> <li>• Mass Housing</li> <li>• Twentieth Century Architecture</li> <li>• European City</li> </ul>

## COST Countries

Main Proposer: PT

Network of Proposers: BE, ES, IT, PL, PT, RS, TR, UK

Main and secondary proposers: 47% ECI / 88% Women / 50% ITC

## Research Innovation and Sustainable Pan-European Network in Peripartum Depression Disorder

(oc-2018-1-23058 - rank: 30 - mark: 58)

### SUMMARY

The Riseup-PPD Cost Action main goal is to establish a Pan-European multidisciplinary network of researchers dedicated to the understanding of Peripartum Depression Disorder (PPD), from its prevention and assessment to its treatment and global impact.

Currently available European estimates, although out-dated, show that PPD prevalence ranges from 4% to 38%, carrying several consequences for women, newborn-infants, and family system, and representing a socioeconomic burden to society.

Riseup-PPD aims at filling current gaps in PPD research, practice and social awareness by developing updated reviews to foster research efforts on the standardization of diagnostic criteria, the development of adequate screening tools and cost-effectiveness of prevention and treatment programs. Additionally, the network seeks to bridge multidisciplinary knowledge on the determinants of depressive symptoms in the peripartum period, and the mechanisms of action and change. This will be achieved by supporting innovative, translational research projects on the neuropsychological mechanisms and biomarkers involved in the onset, maintenance and short and long-term impact of PPD on women, newborn-infants and families, followed by cost-effectiveness analysis and evidence-based implementation research projects. Finally, Riseup-PPD aims at building a shared database providing research teams with large quality controlled datasets.

Ultimately, the network will boost new implications for clinical practice, increasing the quality of cost-effective and innovative health care services in PPD, and reaching a real impact on end-users.

Riseup-PPD will strengthen Europe's leading position in PPD by means of a network that supports Early Career Investigators, particularly from Inclusiveness Target Countries and female researchers, assuring a geographical and gender balanced Pan-European network.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Health Sciences: Health services, health care research</li> <li>● Psychology: Clinical Psychology</li> <li>● Health Sciences: Databases, data mining, data curation, computational modelling</li> <li>● Psychology: Developmental psychology</li> <li>● Clinical medicine: Psychiatric disorders</li> <li>● Health Sciences: Health services, health care research</li> <li>● Psychology: Clinical Psychology</li> <li>● Health Sciences: Databases, data mining, data curation, computational modelling</li> <li>● Psychology: Developmental psychology</li> <li>● Clinical medicine: Psychiatric disorders</li> </ul>	<ul style="list-style-type: none"> <li>● Peripartum Depression Disorder</li> <li>● Women's Mental Health</li> <li>● Newborn Development</li> <li>● Individualized Interventions</li> <li>● International Database</li> <li>● Peripartum Depression Disorder</li> <li>● Women's Mental Health</li> <li>● Newborn Development</li> <li>● Individualized Interventions</li> <li>● International Database</li> </ul>



## COST Countries

Main Proposer: PT

Network of Proposers: BE, DE, ES, FR, HR, PL, PT, TR

Main and secondary proposers: 50% ECI / 63% Women / 50% ITC

## International Cooperation

**International Partner Country (IPC):** Canada, Monaco, United States

## GEnomics of MusculoSkeletal traits TranslatiOnal Network

(oc-2018-1-23069 - rank: 13 - mark: 62)

### SUMMARY

The musculoskeletal system is a key element for healthy aging, being mobility a fundamental component of quality of life, health, and independence of aging individuals. The unprecedented amount of discoveries arising from genome-wide association studies (GWAS) have set a new era full of translational potential in the field of musculoskeletal biology. Coupled to the growing understanding of monogenetic disorders, the GWAS discoveries have set a roadmap characterizing the biological pathways underlying the musculoskeletal metabolism. The musculoskeletal field is now confronted with new biology arising in the form of novel factors clustering in known molecular pathways but also with novel factors whose role and function remains to be elucidated. Several opportunities to increase the amount of discoveries like the imminence of whole-genome sequencing efforts, the advent of a new generation of "very-low cost" GWAS arrays and the availability of very large mega GWAS studies like the UKBIOBANK are now in place. The challenge is now about bringing the knowledge arising from high-throughput analysis of increasingly available BIG DATA to a larger set of researchers, who can both contribute to 1) generating additional genetic discoveries and 2) setting the ground for their functional characterization in order to translate these genetic discoveries into meaningful clinical applications. To do this, GEMSTONE will be the mechanism to reach out to a wider range of researchers active in musculoskeletal biology, in order to fuel the production of discoveries and their biological relevance, which will allow their translation to treatments and new molecular definitions.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Clinical medicine: Endocrinology and metabolism (including diabetes, hormones)</li> <li>● Health Sciences: Epidemiology</li> <li>● Basic medicine: Genetic epidemiology</li> <li>● Basic medicine: Genomics, comparative genomics, functional genomics</li> <li>● Clinical medicine: Endocrinology and metabolism (including diabetes, hormones)</li> <li>● Health Sciences: Epidemiology</li> <li>● Basic medicine: Genetic epidemiology</li> <li>● Basic medicine: Genomics, comparative genomics, functional genomics</li> </ul>	<ul style="list-style-type: none"> <li>● Genomics</li> <li>● Musculoskeletal system</li> <li>● Translational Science</li> <li>● Osteoporosis</li> <li>● Molecular Medicine</li> <li>● Genomics</li> <li>● Musculoskeletal system</li> <li>● Translational Science</li> <li>● Osteoporosis</li> <li>● Molecular Medicine</li> </ul>

## COST Countries

Main Proposer: NL

Network of Proposers: BE, CH, CY, DK, EE, EL, ES, IL, IS, IT, MT, NL, NO, PT, RS, SI, UK

Main and secondary proposers: 36% ECI / 53% Women / 35% ITC

## International Cooperation

**Near Neighbour Country:** Russian Federation

**International Partner Country (IPC):** Australia, Canada, United States

**International Organisations (IO):** Italy

## Industrial Dimension

**Large companies:** Iceland, United Kingdom

## People in Motion: Entangled Histories of Displacement across the Mediterranean (1492-1923)

(oc-2018-1-23096 - rank: 13 - mark: 62)

### SUMMARY

PIMo is a four-year global research project undertaken by scholars from the humanities and social sciences, including historians, scholars of literary, visual, and material culture, philosophers, mathematicians, and maritime, biological, and bio-behavioral sciences. It addresses the entangled histories of displacement of human subjects within and from the Mediterranean from the fifteenth to twentieth centuries. The project provides a critical historical context and understanding for the current migration crisis in Europe in terms of the intensity of emotional responses of displaced peoples and the communities they orbit and join. It investigates multiple historical case studies of the movement of people through religious persecution, slavery and indentured labour, trade, exploration, and imperialism, curiosity, and environmental and social catastrophe. Within the deeply entangled or intertwined history and cultures of the Mediterranean, the project introduces the term 'displacement' as a way to reconceptualise the movement of people with awareness, historical acuity, and compassion. Attending to the phenomenon of displacement as a connective tissue of human experience does not presume (or judge) the conditions of movement (voluntary or involuntary), but seeks to recover and understand individuals and communities in light of their particular experiences of re/location. By tracing the entangled movement of people—and the objects, writing, and ideas that accompany them—this project understands displacement and dislocation as shared human experience, while remaining attentive to its geographical, political, and historical specificities.

### SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> <li>● Other humanities: Cultural heritage, cultural memory</li> <li>● History and Archeology: Colonial and post-colonial history, global and transnational history</li> <li>● History and Archeology: History of ideas, intellectual history, history of science and technology</li> </ul>	<ul style="list-style-type: none"> <li>● Displacement and dispossession across the Mediterranean</li> <li>● Entangled Histories of Emotions</li> <li>● Pre-and post-migration trauma</li> <li>● Shipwreck anthropology and archaeology</li> <li>● Humanities and social sciences cooperative research</li> <li>● Displacement and dispossession across the</li> </ul>

<ul style="list-style-type: none"> <li>● History and Archeology: History of collective identities and memories, history of gender</li> <li>● History and Archeology: Databases, data mining, data curation, computational modelling</li> <li>● Other humanities: Cultural heritage, cultural memory</li> <li>● History and Archeology: Colonial and post-colonial history, global and transnational history</li> <li>● History and Archeology: History of ideas, intellectual history, history of science and technology</li> <li>● History and Archeology: History of collective identities and memories, history of gender</li> <li>● History and Archeology: Databases, data mining, data curation, computational modelling</li> </ul>	<p>Mediterranean</p> <ul style="list-style-type: none"> <li>● Entangled Histories of Emotions</li> <li>● Pre-and post-migration trauma</li> <li>● Shipwreck anthropology and archaeology</li> <li>● Humanities and social sciences cooperative research</li> </ul>
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## COST Countries

Main Proposer: IT

Network of Proposers: DE, FR, HR, HU, IT, MT, RS, UK

Main and secondary proposers: 52% ECI / 52% Women / 50% ITC

## International Cooperation

**Near Neighbour Country:** Morocco

**International Partner Country (IPC):** Australia, United States