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LIST OF 45 ACTIONS

Proposal N.	Proposal Title	Page
CA19101	Determinants of Physical Activities in Settings	3
CA19102	Language in the Human-Machine Era	4
CA19103	LGBTI+ Social and Economical (in)equalities	5
CA19104	advancing Social inclusion through Technology and Empowerment	6
CA19105	LipidNET- Pan-European Network in Lipidomics and Epilipidomics	7
CA19106	Multi-Sectoral Responses to Child Abuse and Neglect in Europe: Incidence and Trends	8
CA19107	Unifying Approaches to Marine Connectivity for improved Resource Management for the Seas	9
CA19108	High-Temperature Superconductivity for Accelerating the Energy Transition	10
CA19109	European network for Mediterranean cyclones in weather and climate	11
CA19110	Plasma applications for smart and sustainable agriculture	12
CA19111	European Network on Future Generation Optical Wireless Communication Technologies	13
CA19112	Women on the Move	14
CA19113	The European Researchers' Network Working on Second Victims	15
CA19114	Network for Optimized Astatine labelled Radiopharmaceuticals	16
CA19115	Network for blood pressure research in children and adolescents	17
CA19116	Trace metal metabolism in plants	18
CA19117	Researcher Mental Health	19
CA19118	High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications	20
CA19119	Investigation on comics and graphic novels in the Iberian cultural area	21
CA19120	WATER isotopes in the critical zone: from groundwater recharge to plant transpiration	22
CA19121	Network on Privacy-Aware Audio- and Video-Based Applications for Active and Assisted Living	23
CA19122	European Network For Gender Balance in Informatics	24
CA19123	Protection, Resilience, Rehabilitation of damaged environment	25
CA19124	Rethinking packaging for circular and sustainable food supply chains of the future	26
CA19125	EPigenetic mechanisms of Crop Adaptation To Climate change	27
CA19126	Positive Energy Districts European Network	28
CA19127	Cognitive decline in Nephro-Neurology: European Cooperative Target	29
CA19128	Pan-European Network for Climate Adaptive Forest Restoration and Reforestation	30
CA19129	Decolonising Development	31
CA19130	Fintech and Artificial Intelligence in Finance - Towards a transparent financial industry	32
CA19131	Europe Through Textiles: Network for an integrated and interdisciplinary Humanities	33
CA19132	European Network to Advance Best practices & technology on medication adherence	34
CA19133	Fostering and Strengthening Approaches to Reducing Coercion in European Mental Health Services	35
CA19134	Distributed Knowledge Graphs	36
CA19135	Connecting Education and Research Communities for an Innovative Resource Aware Society	37
CA19136	International Interdisciplinary Network on Health and Wellbeing in an Age-friendly Digital World	38
CA19137	Sudden cardiac arrest prediction and resuscitation network: Improving the quality of care	39
CA19138	Lobular Breast Cancer: Discovery Science, Translational Goals, Clinical Impact	40
CA19139	Process-based models for climate impact attribution across sectors	41
CA19140	Focused Ion Technology for Nanomaterials	42
CA19141	Integrating Neanderthal Legacy: From Past to Present	43
CA19142	Leading Platform for European Citizens, Industries, Academia and Policymakers in Media Accessibility	44
CA19143	Global Digital Human Rights Network	45
CA19144	European Venom Network	46
CA19145	European Network for assuring food integrity using non-destructive spectral sensors	47

CA19101 - Determinants of Physical Activities in Settings

SUMMARY

The COST Action “Determinants of Physical Activities in Settings” (DE-PASS) is unique in focus, extent, constitution and as an effective Knowledge Transfer Platform (KTP). DE-PASS will focus exclusively on identifying, understanding and measuring the determinants which promote, maintain or inhibit Physical Activity Behaviours (PABs) across the lifespan and in different settings and translating this knowledge to assist policy makers to achieve greater health impact. European and global society is now largely physically inactive. The health, economic and social benefits of a more active society are enormous. DE-PASS will illuminate why individuals and/or societies adopt a physically active or inactive lifestyle. To date enormous energy has been invested by researchers in answering this question, however, the knowledge gained and the impact achieved through this investment is fragmented, not readily translatable and rarely transcends the state of the art. DE-PASS will achieve the following: 1) Use a settings approach (home, school, work etc.) to bridge the knowledge and translation gap; 2) enact a multi-disciplinary, Pan-European, international network (35 nations, 100+ proposers) of established, young and Early Career Investigators (ECIs) and policy makers; 3) exploit, consolidate and further integrate existing relevant expertise, evidence, resources and influence; 4) develop capacities and careers for ECIs; 5) provide a new European PABs conceptual framework, a best evidence statement and implementation guidelines for policy makers; 6) define and standardise European measurement protocols; 7) establish a new, high functioning, open access European database of determinants of PABs with a cohort extension and 8) define an evidenced based and aspirational Pan-European research harmonisation and implementation strategy.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Health Sciences: Epidemiology ● Health Sciences: Public and environmental health ● Health Sciences: Sport and fitness sciences 	<ul style="list-style-type: none"> ● Determinants, Correlates ● Physical Activity Behaviours ● Research and Measurement Harmonisation ● Health Risk Behaviours ● Life-span, settings

COST Countries

Main Proposer: IE

Network of Proposers: BA, BE, BG, CH, CY, DE, DK, EL, FI, FR, HR, HU, IE, IT, LT, LU, LV, ME, MT, NL, NO, PL, PT, RO, RS, SE, SI, UK

Main and secondary proposers: 33% ECI / 57% Women / 54% ITC

International Cooperation

International Partner Country: Australia, Brazil, Canada, Singapore, Taiwan, United States

Industrial Dimension

SMEs: Ireland

CA19102 - Language in the Human-Machine Era

SUMMARY

"Within the next 10 years, many millions of people will be ... wearing relatively unobtrusive ... devices that offer an immersive and high-resolution view of a visually augmented world" (Perlin 2016: 85). This is the 'human-machine era', a time when our senses are not just supplemented by handheld mobile devices, but thoroughly augmented. The language we see, hear and produce will be mediated in real time by technology. This has major implications for language use, and ultimately language itself. Are linguists ready for this? Can our theory, methods, and epistemology handle it?

LITHME has two aims: to prepare linguistics and its subdisciplines for what is coming; and to facilitate longer term dialogue between linguists and technology developers. How will pervasive augmentation technology affect language in areas such as international law, translation, and other forms of language work? What will this mean for how people identify with specific languages? Could increasing reliance on real-time language technologies actually change the structure of language? Longer term, could developments in brain-machine interfaces serve to complement or even supersede language altogether? Linguistics would be far stronger for robust technological foresight, while developers would benefit from better understanding potential linguistic and societal consequences of their creations.

Meanwhile LITHME would shine a light on the ethical implications of emerging language technologies. Inequality of access to technologies, questions of privacy and security, new vectors for deception and crime; these and other critical issues would be kept to the fore.

LITHME would equip linguists and stakeholders for the human-machine era.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Languages and literature: Translation and interpretation ● Languages and literature: Linguistics: formal, cognitive, functional and computational linguistics ● Languages and literature: Use of language: form, pragmatics, sociolinguistics, discourse analysis, lexicography, terminology ● Languages and literature: Second language teaching and learning ● Languages and literature: Databases, data mining, data curation, computational modelling 	<ul style="list-style-type: none"> ● Language ● Artificial Intelligence ● Human-machine interfaces ● Virtual Reality ● Augmented Reality

COST Countries

Main Proposer: FI

Network of Proposers: AL, AT, BA, BE, BG, CH, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IS, IT, LT, LU, LV, MD, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 29% ECI / 51% Women / 58% ITC

International Cooperation

International Partner Country: Australia, Brazil, Canada, Singapore, United States

Industrial Dimension

SMEs: Canada, Greece, Latvia, Sweden

Large companies: Greece

CA19103 - LGBTI+ Social and Economical (in)equalities

SUMMARY

The Challenge aims to address LGBTI+ (lesbian, gay, bisexual, trans, intersex and queer) social and economic (in)equalities at times of increased vulnerability for gender and sexual minorities in Europe. The Action will take concrete steps to break scholarly disciplinary silos, work across diverse cultural contexts and engage with Civil Society Organisations (CSOs) and the public at large. We will also work with government, non-governmental policy organisations, trade unions and businesses. With 30 joining members representing 14 European countries and 10 disciplines, three Working Groups (WGs) will be established in areas where social and economic inequalities shape the everyday lives of LGBTI+ people: Families and Communities; Employment and Economic Well-being; and Social and Legal Inclusion.

Despite existing legal protections against discrimination, LGBTI+ individuals continue to face challenges in Europe, particularly in certain EU countries and neighbouring nations. These difficulties extend to research networking since academics often remain hidden. Data remains scarce since gender and sexual identity is not commonly surveyed. The network will bring in potentially less visible researchers from across the EU. New academics and PhD students will be mentored and advised on how to build successful careers in LGBTI+ studies. We will also work to encourage governments to include information on gender and sexual identities in data collection and to consider the specific challenges facing these groups when formulating policy initiatives. Broader networking will include the delivery of online courses, Training schools, Short-term Scientific and Policy Missions, and community engagement.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Economics and business: Organization studies ● Sociology: Gender and sexuality studies ● Political Science: Democratization, social movements ● Educational sciences: Education: training, pedagogy, didactics 	<ul style="list-style-type: none"> ● Gender and sexual minorities ● Social and economic inequalities ● Families and communities ● Employment and economic well-being ● Social and legal inclusion

COST Countries

Main Proposer: UK

Network of Proposers: AT, DE, ES, HU, IE, IS, MT, NL, PL, PT, RO, RS, TR, UK

Main and secondary proposers: 27% ECI / 59% Women / 50% ITC

International Cooperation

International Partner Country: Australia, Mexico, United States

Industrial Dimension

SMEs: Netherlands

CA19104 - Advancing Social inclusion through Technology and Empowerment

SUMMARY

Social inclusion is an important element of well-being for people with Autism Spectrum Disorder (ASD) and/or Intellectual Disability (ID). Research has highlighted that social inclusion is facilitated through access to education and employment. Despite this, people with ASD and/or ID have low rates of participation in these domains. Research has demonstrated that Assistive Technology (AT) shows great promise in increasing participation in education and employment. Notwithstanding recent technological advances, there are low rates of adoption of AT throughout Europe by service providers, educators, employers and policymakers. There are several areas of unmet need including: high abandonment rates of AT, lack of inclusion of people with ASD and/or ID in the research process, lack of interdisciplinary and intersectoral collaboration and poor match between technology and the individual with ASD and/or ID.

The aim of the COST action is:

Build an interdisciplinary, intersectoral pan EU and beyond, network which will enhance social inclusion and empowerment of individuals with ASD and/or ID.

This will be achieved by:

Evaluating the development of novel AT by providing an interdisciplinary and intersectoral collaboration between all stakeholders using a translational approach to establish standardised practice guidelines for design, development and deployment of AT.

Creating knowledge, by providing a database of current AT technologies and their match to employment and educational contexts for users with ASD and/or ID.

Promoting the adoption of evidence-based guidelines in relation to use of AT across settings and populations and propagating the use of inclusive design and rigorous research approaches.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Health Sciences: Health services, health care research ● Psychology: Developmental psychology ● Educational sciences: Education to gifted persons and to those with learning disabilities 	<ul style="list-style-type: none"> ● Social Inclusion ● Assistive Technology ● Intellectual Disability ● Autism ● Empowerment

COST Countries

Main Proposer: IE

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

Main and secondary proposers: 29% ECI / 53% Women / 52% ITC

International Cooperation

International Partner Country: Colombia, United States

Industrial Dimension

SMEs: Belgium, Israel, Serbia, Spain, United Kingdom

Large companies: United States

CA19105 - LipidNET- Pan-European Network in Lipidomics and Epilipidomics

SUMMARY

Lipids represent a wide variety of molecules that play different biological roles such as energy resources, structural components or signaling molecules that regulate metabolic homeostasis. Most notably, lipids and oxidatively modified lipids have been found to be involved in regulating important mechanisms mediating tissue injury, inflammation, and related noncommunicable diseases, which are responsible for near 70% of all deaths in developed countries.

Lipidomics and Epilipidomics are the most promising strategies for the progress in the knowledge of lipids, aiming at biomarker discovery for the prevention, early diagnosis, monitoring, evaluation of diseases therapeutics. These approaches involve the use of complex protocols, different instrumentation and processing huge amounts of data. Effectiveness, while reducing the high costs associated with these technologies, requires a harmonized multidisciplinary approach involving coordinated actions from pan-European centres of lipidomics investigation. This will avoid unnecessary redundancy, improving reproducibility and ensuring efficient and productive research.

LipidNET aims to build and maintain a multidisciplinary Pan European network of researchers, clinicians and enterprises working in the field of lipidomics and epilipidomics to boost a hub of research excellence, advanced knowledge and technology transfer, to promote high level of training for young researches and facilitate clinical translation. LipidNet will include five interactive working groups covering analytical methods and computational approaches in (epi)Lipidomics, clinical significance and applications, lipid signaling and mechanisms of action, dissemination and outreach. LipidNET will foster inclusive networking, promoting new opportunities for collaborative research projects, knowledge and technology transfer, dissemination, caring for young scientists and scientists from target countries, keeping gender balance.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Chemical sciences: Analytical chemistry ● Biological sciences: Metabolomics ● Biological sciences: Biochemistry ● Basic medicine: Metabolomics ● Clinical medicine: Non-communicable diseases 	<ul style="list-style-type: none"> ● Lipids ● Mass spectrometry ● Omics ● Lipids in health and disease ● Clinical translation

COST Countries

Main Proposer: PT

Network of Proposers: AT, BE, BG, CZ, DE, EE, ES, FI, FR, HR, HU, IT, MK, NL, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 16% ECI / 45% Women / 57% ITC

International Cooperation

International Partner Country: Japan, Singapore, United States

Industrial Dimension

SMEs: Finland, Germany, Italy, Sweden, United Kingdom, United States

Large companies: Germany, Netherlands, United States

CA19106 - Multi-Sectoral Responses to Child Abuse and Neglect in Europe: Incidence and Trends

SUMMARY

In Europe, millions of children experience abuse or neglect at the hands of those who should care for them. Yet, how many of these children get help, which services they receive by which agency remains largely unknown. Moreover, countries are hardly aware which maltreatment turns fatal. This constitutes a major knowledge gap that is likely due to inconsistent ways of surveying and reporting on child maltreatment services across Europe. Without this information, we cannot know how the systems work, what additional preventive efforts are required, if the interventions fit the victims' needs or if the most vulnerable groups are properly identified. The proposed project addresses this gap by creating a network of experts in child maltreatment and relevant stakeholders and links them in working groups, in order to promote the development of a rigorous, consistent, and comparable methodology for the collection of surveillance data on child maltreatment and maltreatment-related fatalities. Researchers, policymakers, administrators and practitioners will identify best-practice methods of surveillance and recommend efficient ways of implementing them across Europe. Importantly, this network will invite youth and adult survivors of child maltreatment to collaborate in all working group decision-making processes. The four working groups within this network will focus on: 1) definition and operationalization of child maltreatment; 2) promoting secondary analyses; 3) participatory approaches to child maltreatment surveillance; and 4) implementation and dissemination. Final products of these projects will include guidelines for implementation of best practices in child maltreatment surveillance across Europe.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Health Sciences: Public and environmental health ● Political Science: Social policies, welfare state ● Health Sciences: Health services, health care research ● Psychology: Clinical Psychology 	<ul style="list-style-type: none"> ● Child abuse and neglect ● Child maltreatment ● Child protection ● Epidemiology ● Surveillance

COST Countries

Main Proposer: DE

Network of Proposers: AT, BA, BG, CH, CY, DE, EE, EL, FR, HR, HU, IT, NO, PL, PT, RO, SE, SI, TR, UK

Main and secondary proposers: 14% ECI / 60% Women / 55% ITC

International Cooperation

International Partner Country: United States

CA19107 - Unifying Approaches to Marine Connectivity for improved Resource Management for the Seas

SUMMARY

In a human-altered marine environment, fragmented and subjected to unprecedented climate change, planning sustainable strategies for development requires to understand the distribution of marine biodiversity and how its variations impact ecosystem functioning and the evolution of species. Functional Connectivity characterizes the migratory flows of organisms in the landscape. As such, it determines the ecological and evolutionary interdependency of populations, and ultimately the fate of species and ecosystems. Gathering effective knowledge on Marine Functional Connectivity (MFC) can therefore improve predictions of environmental change impacts and help refine management and conservation strategies for the Seas. This is challenging though, because marine ecosystems are particularly difficult to access and survey. Currently, >50 institutions investigate MFC in Europe, by using complementary methods from multiple research fields to describe the ecology and genetics of marine species. SEA-UNICORN aims at coordinating their research to unify the varied approaches to MFC and integrate them under a common conceptual and analytical framework for improved management of marine resources and ecosystems. For this, it will bring together a diverse group of scientists in order to collate existing MFC data, identify knowledge gaps, reduce overlap among disciplines, and devise common approaches to MFC. It will promote their interaction with connectivity theoreticians and ecosystem modelers, to facilitate the incorporation of MFC data into the projection models used to identify priorities for marine conservation. Lastly, it will forge strong working links between scientists, policy-makers and stakeholders to promote the integration of MFC knowledge into decision support tools for marine management and environmental policies.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Biological sciences: Population biology, population dynamics, population genetics, plant-animal interactions ● Biological sciences: Conservation biology, ecology, genetics ● Earth and related Environmental sciences: Biological oceanography ● Earth and related Environmental sciences: Biogeochemistry, biogeochemical cycles 	<ul style="list-style-type: none"> ● Marine connectivity ● Marine resources ● Metapopulations ● Metahabitats ● Migrations

COST Countries

Main Proposer: FR

Network of Proposers: AL, BE, BG, CH, CY, DE, EL, ES, FI, FR, HR, IT, LV, MT, NO, PL, PT, RO, SE, SI, TR, UK

Main and secondary proposers: 21% ECI / 47% Women / 50% ITC

International Cooperation

International Partner Country: Australia, United States

CA19108 - High-Temperature Superconductivity for Accelerating the Energy Transition

SUMMARY

Superconductivity is a fascinating state of matter characterised by the absence of electrical resistivity that certain materials exhibit when cooled below a certain cryogenic temperature. Together with other unique properties, like the ability to carry huge currents and trap extremely large magnetic fields, superconductors pave the way for accelerating the Energy Transition. High-temperature superconducting (HTS) materials make possible more compact, efficient, and even disruptive technologies that can be integrated into all the links of the electrical energy chain, boosting its decarbonisation. Despite the potential benefits and successful demonstrators of HTS technologies, they still lack mass penetration in the electrical system. Several reasons pointed out by the industry include concerns on the cost of these systems; the uncertainty about cryogenics' reliability; and the idea that only top-skilled professionals will be able to operate the latter. Other causes relate a lack of systematic knowledge about the design of HTS systems for the grid, and on how to simulate their performance by standard software packages. There is also a general unawareness about these materials, particularly on the reliability of the associated technologies on systems where often the security of supply must always be assured. This COST Action tackles all the above challenges, by a systemic approach that will create the path from materials to devices; foster improved modelling and advanced computation paradigms; provide methodologies and demonstrators for addressing industrial challenges and applications; and develop tools for the economic and sustainability assessment of HTS technologies.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Electrical engineering, electronic engineering, Information engineering: Computational modelling and simulation ● Electrical engineering, electronic engineering, Information engineering: Energy aspects of electrical and electronic engineering ● Environmental engineering: Engineering of energy production and energy systems, energy distribution and application ● Materials engineering: Superconductivity for materials engineering applications 	<ul style="list-style-type: none"> ● High-Temperature Superconductivity ● Materials ● Advanced Modelling ● Power Applications ● Life-Cycle Analysis

COST Countries

Main Proposer: PT

Network of Proposers: BE, BG, CZ, DE, ES, FI, FR, HU, IL, IT, LU, MK, MT, PL, PT, RO, SK, TR, UK

Main and secondary proposers: 30% ECI / 34% Women / 58% ITC

International Cooperation

International Partner Country: Brazil

Industrial Dimension

SMEs: Czech Republic, Germany, Hungary, Italy

Large companies: United Kingdom

CA19109 - European network for Mediterranean cyclones in weather and climate

SUMMARY

Cyclones are the main weather modulators in the Mediterranean region and constitute a major environmental risk, often producing windstorms and heavy rainfall. Moreover, cyclones play a key role in the regional climate variability by controlling the oceanic circulation and regional water cycle, and by mobilizing and transporting large amounts of dust from North Africa.

Despite the recent achievements of the scientific community to provide deeper insight into the atmospheric processes and impacts associated with Mediterranean cyclones, there are still unaddressed scientific challenges that require a coordinated approach. In addition, the lack of direct interaction between academic researchers and weather/climate prediction scientists working in operational centres inhibits the efficient exploitation of fundamental research results to improve atmospheric models in a tangible way. Therefore, it is undeniable that there are potentially large societal benefits from improving cyclone predictions for weather and climate timescales.

Efficient networking between stakeholders, operational weather forecasters and researchers is timely and essential to address both challenges of research coordination and operational implementation of scientific results into weather and climate services. This Action will coordinate the activities of researchers in meteorology and climatology and scientists from weather/climate services with the main aims to provide a deeper understanding of Mediterranean cyclones and to improve significantly the European capacity to predict their environmental and climate impacts. In this context, the network will identify, and involve in the network, relevant stakeholders with different backgrounds (e.g. civil protection, re-insurance companies) and co-develop cyclone prediction products tailored to their needs.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Earth and related Environmental sciences: Meteorology, atmospheric physics and dynamics ● Earth and related Environmental sciences: Climatology and climate change 	<ul style="list-style-type: none"> ● Mediterranean cyclones ● Numerical weather prediction ● High impact weather ● Climate prediction

COST Countries

Main Proposer: CH

Network of Proposers: AL, AT, BG, CH, CY, CZ, DE, EL, ES, FI, FR, HR, HU, IL, IS, IT, LT, LV, MK, MT, NL, NO, PL, PT, RO, RS, SI, TR, UK

Main and secondary proposers: 24% ECI / 43% Women / 55% ITC

Industrial Dimension

SMEs: Germany

Large companies: France, Switzerland

CA19110 - Plasma applications for smart and sustainable agriculture

SUMMARY

A continuous increase in demand for food caused by population growth represents a serious challenge for the humankind. Even in regions where food is plentiful, safety of the food cycle is increasingly important. Improving sustainability of agriculture and at the same time reducing adverse effects of agriculture on the environment requires efficient technologies that enhance productivity while maintaining food quality and safety. The main aim of this COST Action is to investigate the potential of low temperature plasmas (cold plasmas), as a green alternative to conventional chemicals in agriculture to improve yields, increase size and robustness of plants and to reduce (or eliminate) the need for antifungal agents. It will aim to break the classical field boundaries for new dimension in sustainable agriculture with lower chemical impact. The Action will address the use of plasmas for treating food and packaging. Action aims at combining efforts of numerous European scientific communities dealing with plasma, biology, agriculture and food processing with a goal of identifying and developing applications in the chain of food production. Transfer of plasma technology to industry will be based on understanding of plasma's most important processes with further considerations including (Novel food) legislations, energy consumption, food safety and quality. The Action will help define a new field in science by a coordinated, joint effort across the Europe and broader, through exchange and a better use of resources and by intensive study of the basic mechanisms within the context of the well thought out present or future applications.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Physical Sciences: Atomic, molecular and chemical physics ● Agriculture, Forestry, and Fisheries: Agriculture related to crop production, soil biology and cultivation, applied plant biology, crop protection ● Other engineering and technologies: Food science and technology ● Agriculture, Forestry, and Fisheries: Sustainable Agriculture ● Chemical engineering: Green chemistry 	<ul style="list-style-type: none"> ● Low temperature plasma (diagnostics, modelling) ● Low temperature plasma treatments-seeds, plants and food ● Smart and sustainable agriculture ● Agricultural wastewater decontamination ● Guidelines for implementation (agriculture/food)

COST Countries

Main Proposer: RS

Network of Proposers: BA, BE, BG, CZ, DE, EL, ES, HR, HU, IE, IT, LT, LU, MT, NL, PL, PT, RO, RS, SI, SK, UK

Main and secondary proposers: 16% ECI / 35% Women / 64% ITC

International Cooperation

International Partner Country: Canada, Japan, United States

Industrial Dimension

SMEs: Czech Republic

CA19111 - European Network on Future Generation Optical Wireless Communication Technologies

SUMMARY

The design of future wireless communication networks that cope with the ever-growing mobile data traffic as well as support varied and sophisticated services and applications in vertical sectors with a low environmental impact is recognized as a major technical challenge that European engineers face today. The COST Action NEWFOCUS will propose truly radical solutions with the potential to impact the design of future wireless networks. Particularly, NEWFOCUS aims to establish optical wireless communications (OWC) as an efficient technology that can satisfy the demanding requirements of backhaul and access network levels in beyond 5G networks. This also includes the use of hybrid links that associate OWC with radiofrequency or wired/fiber-based technologies. Towards this vision, NEWFOCUS will carry out a comprehensive research programme under two major pillars. The first pillar is on the development of OWC-based solutions capable of delivering ubiquitous, ultra-high-speed, low-power consumption, highly secure, and low-cost wireless access in diverse application scenarios. The developed solutions will in particular support Internet-of-Things (IoT) for smart environments with applications in vertical sectors. The second pillar concerns the development of flexible and efficient backhaul/fronthaul OWC links with low latency and compatible with access traffic growth. In addition to scientific and technological advances, NEWFOCUS will serve as a global networking platform through capacity building of all relevant stakeholders including universities, research institutions, major industry players, small medium enterprises, governmental bodies and non-governmental organisations. Within this rich consortium, NEWFOCUS will train experts to accompany related European industries for the standardisation and commercialization of the OWC technology.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Electrical engineering, electronic engineering, Information engineering: Communications engineering and systems (select for additional explanation) 	<ul style="list-style-type: none"> ● Optical Wireless Technology ● Future Telecommunication Networks ● Green and Reliable Communications for Internet of Things ● Next Generation (5G and B5G) Wireless Networks ● Co-existing Optical and Radio-Frequency Links

COST Countries

Main Proposer: FR

Network of Proposers: AT, BA, BE, BG, CH, CY, CZ, DE, DK, EL, ES, FR, HR, HU, IL, IT, LT, LU, LV, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 15% ECI / 18% Women / 58% ITC

International Cooperation

International Partner Country: Canada, Japan, United States

Industrial Dimension

SMEs: Czech Republic, France, Greece, Hungary, Latvia, Poland, Portugal, Spain, Switzerland, Turkey, United Kingdom

Large companies: France, Germany, Turkey, United States

CA19112 - Women on the Move

SUMMARY

Women on the Move is a transdisciplinary network of European researchers who focus on historic and contemporary female labour mobility spanning six centuries to the present. The objective is to show the presence and economic contribution of female migrants in European history by revealing women as active migrants and builders of Europe - with economic means, belongings, assets and social networks - capable to overcome gendered obstacles. This will contradict macro-narratives that present women as vulnerable migrants and economic burdens. Focusing on women's labour mobility will raise the current debates on migration by unveiling women's skills and agency, as well as their constraints and limits as economic actors. The Action suggests a multidimensional and multi-factorial interpretation of migration dynamics and tackles in-migration, out-migration and internal migration in a long perspective to highlight consistencies and exceptions in European historic migration patterns. This will bring out local idiosyncrasies and challenge global narratives on female migration. Women on the Move will create a repository of sources on female migration and will dialogue with policy makers. The Action will organize exhibitions (in- and out-door) to reach out to the public on women's presence in European migration history and their contribution to the European economy. In keeping with the European Union's Gender Equality Strategy 2018-2023, the Action will thus challenge gender-blind perceptions of European migration and deconstruct sexist stereotypes. Women on the Move will bring about informed dialogues on European migration, with knowledge on historic and contemporary women's economic potential, labour power, cultural and social belongings, and networking.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● History and Archeology: History of collective identities and memories, history of gender ● History and Archeology: Social and economic history ● Other humanities: Cultural heritage, cultural memory ● History and Archeology: Modern and contemporary history 	<ul style="list-style-type: none"> ● Female migration ● Labour migration ● Gender inequalities ● History and memory ● Economic history

COST Countries

Main Proposer: FR

Network of Proposers: AT, BA, BE, BG, CH, CY, CZ, DE, EL, ES, FI, FR, HR, HU, IT, LU, LV, MT, NL, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 40% ECI / 50% Women / 57% ITC

International Cooperation

International Partner Country: Australia, China, Costa Rica, Hong Kong SAR, India, Kazakhstan, Nigeria

CA19113 - The European Researchers' Network Working on Second Victims

SUMMARY

Patient Safety is a Priority in Europe. However, unfortunately every year between 8 and 12% of the people admitted to hospitals and around 6% of those in primary care suffer from an adverse event (AE) while receiving healthcare. When an AE does occur, there is a domino effect with healthcare professionals (second victims of these events) also suffering from the knowledge of having harmed their patients (first victims). This second victim phenomenon increases the likelihood of further errors and suboptimal care as consequences of emotional disturbances in the hours after the patient safety event.

The overall aim of this Action is to facilitate discussion and share scientific knowledge, perspectives, legislation and rules, and best practices concerning AEs in healthcare institutions to implement joint efforts to support second victims, and to introduce an open dialogue and discussion among stakeholders about the consequences of the second victim phenomenon based on a cross-national collaboration that integrates different disciplines and approaches, including legal, educational, professional, and socio-economic perspectives.

This Action will yield innovative solutions through enhancing our understanding of decision-making after patient safety events, ideas for caring for the care provider as a prerequisite for safety and quality of care, promoting debate among stakeholders involved in the understanding of clinical errors and creating new approaches to break the taboo around mistakes, enriching our knowledge of the factors that might contribute to transparency after mistakes, capturing the multi-dimensionality of the second victim phenomenon, and proposing recommendations and interventions useful for the European countries and overseas.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Health Sciences: Health services, health care research 	<ul style="list-style-type: none"> ● Patient Safety ● Second Victims ● Adverse Events ● Quality of Care ● Well-being at work

COST Countries

Main Proposer: ES

Network of Proposers: BA, BE, CZ, ES, IE, IT, LT, NL, PL, PT, RO, SK, TR

Main and secondary proposers: 19% ECI / 52% Women / 62% ITC

International Cooperation

International Partner Country: Japan, United States

CA19114 - Network for Optimized Astatine labelled Radiopharmaceuticals

SUMMARY

Cancer is a major health concerns for European citizens. Thus, the main research aim of this Network for Optimized Astatine labeled Radiopharmaceuticals (NOAR) COST Action is to successfully demonstrate that one of the most promising radionuclides for Targeted Alpha Therapy (TAT), namely astatine-211, can become the European standard for treatment of certain cancerous pathologies. To this end, an efficient networking is essential among all European stakeholders interested in promoting astatine-211 for medical applications.

NOAR COST Action brings together European and international excellence labs, astatine-211 production centers, hospitals, industry and patient associations from more than 20 countries, thus covering the whole value chain of innovation: production, chemistry, radiochemistry, biology, preclinical and clinical research and delivery of radiopharmaceuticals to patients.

A European web portal will be created containing information for patients, practitioners, researchers, Industry and as a contact point for National and European patient associations. The idea is to gather forces at the European level in order to implement actions to leverage hurdles to the development of this powerful radionuclide and to identify pathologies in which it will be particularly relevant.

A special emphasis will be given to train a new generation of young researchers and PhD students, promoting interdisciplinary competences through international and inter-sectoral mobility.

The long-term goal of this project is to make Astatine-211 technology available to all European citizens.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Clinical medicine: Radiology, nuclear medicine and medical imaging ● Chemical sciences: Nuclear chemistry ● Physical Sciences: Databases, data mining, data curation, computational modelling ● Clinical medicine: Oncology ● Health Sciences: Health services, health care research 	<ul style="list-style-type: none"> ● Astatine-211 ● Alphatherapy Network ● Oncology ● Nuclear Medicine

COST Countries

Main Proposer: FR

Network of Proposers: BE, CZ, DE, DK, FR, MK, NL, NO, PL, PT, RO, RS, SE, SI

Main and secondary proposers: 10% ECI / 44% Women / 50% ITC

International Cooperation

International Partner Country: Australia, Japan, South Africa, United States

Industrial Dimension

SMEs: Australia, Belgium, France

Large companies: Belgium

CA19115 - Network for blood pressure research in children and adolescents

SUMMARY

Hypertension (HTN) is now responsible for 7.1 million deaths per year worldwide, and largely contributes to cardiovascular and renal diseases such as ischemic heart disease, stroke and chronic kidney disease. Cardiovascular and renal diseases linked to high blood pressure (BP) are the first cause of mortality in Europe with an economic impact cost of approximately 1 billion euros per year. In fact, although most of the adverse outcomes occur in adulthood it has become clear that high BP is a life course problem that can become evident in early life.

While few would dispute the importance of taking effective steps to identify and manage this condition in middle-aged and older people, relatively little attention has been paid to the problem of high BP in children and adolescents.

As a consequence, despite the latest advances and the wide literature on BP in children and adolescents, the solutions to relevant questions are still pending. Thus, scientific and clinical community, as well as decision-makers, stakeholders and the overall society, must face some critical problems related to the high BP in children and adolescents as a cardiovascular risk factor.

The COST Action HyperChildNET is aimed at establishing a European sustainable and multidisciplinary network of internationally renowned researchers, clinicians, early career investigators, health economists, decision-makers, patients, regulatory bodies, nutrition & pharma companies and medical devices manufacturers focusing on acquiring a holistic understanding of the factors affecting high BP in children in order to propose and implement corrective and preventive actions both globally and locally.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Clinical medicine: Paediatrics 	<ul style="list-style-type: none"> ● blood pressure ● children and adolescents ● origin, impact and prevention of high blood pressure ● clinical guidelines, policies and action plans for high BP

COST Countries

Main Proposer: ES

Network of Proposers: BA, CH, CY, CZ, DE, DK, EE, EL, ES, HR, HU, IT, LT, NL, NO, PL, PT, SI, TR, UK

Main and secondary proposers: 11% ECI / 42% Women / 55% ITC

International Cooperation

International Partner Country: United States

Industrial Dimension

Large companies: Germany, Italy, Netherlands, Spain, United States

CA19116 - Trace metal metabolism in plants

SUMMARY

Many trace metals (TMs) (e.g. Cu, Fe, Mn, Mo, Ni, Zn) are essential for organisms as active centres of enzymes, as about one third of all proteins are metalloproteins. Therefore, TM homeostasis in plants is at the core of many challenges currently facing agriculture and human societies. Low TM bioavailability in many soil types of large world areas causes a reduction in crop production and diminishes nutritional value of food. Some essential TMs (e.g. Cu) have narrow beneficial concentration ranges, while others (e.g. Cd, Hg) are usually only toxic, and in many areas of the world metal toxicity is a severe agricultural and environmental problem. For environmental risk assessment and remediation, as well as improved agriculture (targeted fertilisation and breeding), the mechanisms of TM uptake, distribution, speciation, physiological use, deficiency, toxicity and detoxification need to be better understood. PLANTMETALS aims at elucidating them by the combined expertise of researchers (physiologists, (bio)physicists, (bio)(geo)chemists, molecular geneticists, ecologists, agronomists and soil scientists). It furthermore aims at making this knowledge applicable to the needs of farmers and consumers, with input from companies for translating laboratory results into applied products. This shall be done by integrated scientific, communication and dissemination activities, pooling together our research efforts. Regular meetings within and between the workgroups of this COST network, training workshops for young scientists, as well as by technology transfer meetings will be organised in cooperation with the partner companies within PLANTMETALS, as well as producers and merchants of micronutrient fertilisers.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Biological sciences: Plant biology, Botany ● Biological sciences: Biochemistry ● Biological sciences: Biophysics ● Chemical sciences: Spectroscopic and spectrometric techniques ● Agriculture, Forestry, and Fisheries: Sustainable production 	<ul style="list-style-type: none"> ● trace metal uptake and distribution ● transition metal speciation ● trace metal deficiency and trace metal uptake efficiency ● trace metal toxicity and detoxification ● metalloenzymes and metal metabolism

COST Countries

Main Proposer: CZ

Network of Proposers: AT, BA, BE, CH, CZ, DE, DK, ES, FR, HU, IT, LT, NL, PL, PT, RS, SI, SK, TR, UK

Main and secondary proposers: 10% ECI / 43% Women / 50% ITC

Industrial Dimension

SMEs: Czech Republic, Hungary

Large companies: Netherlands, Poland

CA19117 - Researcher Mental Health

SUMMARY

ReMO will focus on wellbeing and mental health within academia, a theme of strategic importance for the European Research Area. Previous research shows that low levels of wellbeing and mental health problems have a negative impact on individual, team and organizational performance, triggering significant costs. In addition, institutional context, organizational structure and culture, as well as managerial practices have significant impact on wellbeing and health of employees. Therefore, general insights on the causes of workplace wellbeing and mental health need to be refined with contextual specifics (i.e. in academia) in order to develop tailored, effective and efficient prevention and action programs.

ReMO wants to address these limitations using a threefold approach: (1) We aim at developing a conceptual framework and tools that are tailored to the academic context taking into account the specifics and challenges of academia and academic work (e.g. performance management of academics, an increasingly competitive landscape for recruiting and retaining talented employees, increasing challenges of dealing with diversity and internationalization, job insecurity, etc.); (2) We take a multilevel perspective on problems and problem generating mechanisms, but also on positive organizational behavior in support of meaningful work and wellbeing; (3) We use a diversity of methods with short feedback loops between theory and practice.

The proposers of ReMO are academics, practitioners, policy makers and consultants for higher education institutions. They represent an international mix of scientific knowledge and practice on researcher mental health and a much needed interdisciplinary (e.g. psychology, sociology, business administration), multilevel (individual, organizational, system) and intercultural perspective.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Sociology: Sociology of science ● Psychology: Social psychology 	<ul style="list-style-type: none"> ● Researcher Mental Health ● Academia ● Research policy ● Wellbeing

COST Countries

Main Proposer: DE

Network of Proposers: BE, BG, CZ, DE, DK, EE, EL, ES, HR, HU, IE, IL, IT, LT, MK, NL, PL, PT, RO, RS, SI, SK, TR, UK

Main and secondary proposers: 16% ECI / 62% Women / 58% ITC

Industrial Dimension

SMEs: Hungary, Israel, Portugal, Spain

CA19118 - High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications

SUMMARY

The goal of EsSENce is to develop an innovation scientific hub at European and International level, focusing on advanced composite materials reinforced with Carbon based (nano)materials (CNMs). The sharing of ideas and results will boost the development of high-performance composites with sensing properties. Special focus will be given in the utilisation of these materials for the introduction of smart properties to the final composites and their application in the field of sensors development. The aim of EsSENce hub, defined as a collaborative community, is to gather together scientific partners, research groups, technology providers and industrial key players aiming to enhance creativity and collaboration among them, by positioning the entrepreneurial individuals at the centre. Indeed, by building a community with diversity both in the broad sense (gender, ethnicity) and with regards to heterogeneous knowledge, the emergence of novel ideas and practices is fostered thus leading to unique and viable innovations. EsSENce activities will focus on the promotion of the successful results from the involved partners and the utilization of the synergistic effect to improve exploitation and dissemination of knowledge. Dissemination and management actions will be organised to attract the interest of research and industry for higher awareness. The intention is to enable as many groups as possible to participate in a highly integrated innovation environment, which will develop Workgroups, will organize Workshops and Conferences, as well as Training Schools and Seminars. EsSENce will promote mobility among researchers, junior scientists and students working on these fields, while promoting contacts with related industries.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Materials engineering: Nanophysics for materials engineering applications ● Nano-technology: Nano-materials and nano-structures ● Materials engineering: Characterization methods of materials for material engineering applications ● Nano-technology: Particle physics for nano-technology applications 	<ul style="list-style-type: none"> ● Carbon-based nanomaterials ● Advanced Composites ● Smart Properties ● Sensing ● Multi-functionality

COST Countries

Main Proposer: EL

Network of Proposers: AL, AT, BA, BE, BG, CH, CY, CZ, DE, EL, ES, FR, HU, IE, IT, LT, LU, LV, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 21% ECI / 47% Women / 58% ITC

International Cooperation

International Partner Country: United States

Industrial Dimension

SMEs: Belgium, Bulgaria, Cyprus, Greece, Hungary, Netherlands, Portugal, Spain, Switzerland, United Kingdom

Large companies: Czech Republic, France, Italy, Turkey, Ukraine

CA19119 - Investigation on comics and graphic novels in the Iberian cultural area

SUMMARY

The iCon-MICS Action aims at carrying out Investigation on Comics and Graphic Novels from the Iberian Cultural Area (Spain, Portugal, and Latin America). Today, Iberian comics are struggling to position themselves on the global scene particularly because of past political and economic crises and a strong lack of recognition. Moreover, research works are very scattered leading to redundant initiatives and sources are not easily accessible.

iCon-MICS will address it by structuring an international federating network of researchers, professionals, and end-users on Iberian comics to gather research works and improve access to it and to the sources; strengthening its dissemination and preservation; and improving practices for using comics as an educational tool to highlight and improve the image of this medium. To achieve those objectives, the network integrates 11 European countries, including 7 ITCs and 3 countries of Latin America (IPCs).

iCon-MICS will produce various tools devoted to a broad range of stakeholders including: a database gathering Iberian comics, authors, and research works, a professional website dedicated to Iberian comics promotion, and a guide to use comics as an educational tool.

This Action will significantly strengthen Iberian comics identity on the international scene. Moreover, comics as a testimony to countries culture and history will provide a new vision of this Iberian area. Finally, iCon-MICS will offer broader advances in research on new trends and use of comics as an educational tool. Sustainable synergies created between authors, publishers, readers and researchers in this field will represent solid assets for developing research and industry.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Arts: Visual arts ● Languages and literature: Literary theory and comparative literature, literary styles ● Media and communications: History and philosophy of media and communication ● Educational sciences: Education: training, pedagogy, didactics ● History and Archeology: Cultural history 	<ul style="list-style-type: none"> ● comics and graphic novels ● iberian cultural heritage ● comics mutations from 1980's to the contemporary digital era ● cultural, language, didactic, social and editorial aspects ● inter-&trans-cultural relationships, comparison&dialogue

COST Countries

Main Proposer: FR

Network of Proposers: CY, CZ, ES, FR, IT, LU, PL, PT, RO, SI, UK

Main and secondary proposers: 20% ECI / 51% Women / 64% ITC

International Cooperation

International Partner Country: Brazil, Chile, Peru

Industrial Dimension

SMEs: Italy, Poland, Spain

CA19120 - Water isotopes in the critical zone: from groundwater recharge to plant transpiration

SUMMARY

Understanding water exchange within the critical zone, i.e. the dynamic skin of the Earth that extends from vegetation canopy to groundwater, is vital for addressing key environmental problems linked to the sustainable management of water resources. The main aim of WATSON is to collect, integrate, and synthesize current interdisciplinary scientific knowledge on the partitioning and mixing of water in the critical zone taking advantage of the unique tracing capability of water isotopes. These efforts will allow going beyond the current fragmented knowledge providing a novel conceptual framework on the interactions between groundwater recharge, soil water storage, and vegetation transpiration useful for water resources management across a variety of climatic settings. The Action activities are based on a network of early career and senior scientists from different complementary disciplines who are experts in the use of water isotopes, and stakeholders from governmental agencies and private companies from 19 COST countries and one Near Neighbour Country. Meetings and training events will involve scientists and water managers, facilitating communication between academia and stakeholders, promoting the transfer of the latest scientific findings, and helping to identify research gaps and management priorities. The ultimate goal of the network is to build capacity in the use of robust isotope approaches for water resource management. The deliverables include practical tools, such as maps of groundwater recharge and water sources used by vegetation in different European regions that will enable the translation of scientific cutting-edge knowledge into tangible recommendations to support European agencies responsible for water management in agro-forest systems.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Earth and related Environmental sciences: Hydrology, water resources ● Environmental engineering: Water management and technology ● Earth and related Environmental sciences: Terrestrial ecology, land cover change 	<ul style="list-style-type: none"> ● Water isotopes ● Groundwater recharge ● Water residence and travel time ● Vegetation water use ● Water resources management

COST Countries

Main Proposer: IT

Network of Proposers: AT, CH, CZ, DE, ES, FR, HR, HU, IL, IT, LT, LU, NL, PL, PT, RO, SI, SK, UK

Main and secondary proposers: 38% ECI / 49% Women / 53% ITC

Industrial Dimension

SMEs: Italy, Romania

Large companies: France, Lithuania, Portugal

CA19121 - Network on Privacy-Aware Audio- and Video-Based Applications for Active and Assisted Living

SUMMARY

Europe faces crucial challenges regarding health and social care due to the demographic change and current economic context. Active and Assisted Living (AAL) are a possible solution to face them. AAL aims at improving health, quality of life, and wellbeing of older, impaired and frail people. AAL systems use different sensors to monitor the environment and its dwellers. Cameras and microphones are being more frequently used for AAL. They allow to monitor an environment and gather information, being the most straightforward and natural ways of describing events, persons, objects, actions, and interactions. Recent advances have given these devices the ability to 'see' and 'hear'. However, their use can be seen as intrusive by some end users (assisted persons, and professional and informal caregivers.)

The General Data Protection Regulation (GDPR) establishes the obligation for technologies to meet the principles of data protection by design and data protection by default. Therefore, AAL solutions must consider privacy-by-design methodologies in order to protect the fundamental rights of those being monitored.

The aim of GoodBrother is to increase the awareness on the ethical, legal, and privacy issues associated to audio- and video-based monitoring and to propose privacy-aware working solutions for assisted living, by creating an interdisciplinary community of researchers and industrial partners from different fields (computing, engineering, healthcare, law, sociology) and other stakeholders (users, policy makers, public services), stimulating new research and innovation. GoodBrother will offset the "Big Brother" sense of continuous monitoring by increasing user acceptance, exploiting these new solutions, and improving market reach.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Electrical engineering, electronic engineering, Information engineering: Computer vision ● Computer and Information Sciences: Ethics of computer and information sciences ● Computer and Information Sciences: Cryptology, security, privacy ● Clinical medicine: Geriatrics and gerontology 	<ul style="list-style-type: none"> ● Active and healthy aging ● Privacy ● User acceptance ● Computer vision ● Audio signal processing

COST Countries

Main Proposer: ES

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

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

International Cooperation

International Partner Country: Brazil, Canada, Japan, United States

Industrial Dimension

SMEs: Austria, France, Germany, Ireland, Italy, Latvia, Lithuania, Netherlands, Spain, Turkey

Large companies: Greece

CA19122 - European Network for Gender Balance in Informatics

SUMMARY

Women are underrepresented in Informatics (Computer Science, Computer Engineering, Computing, ICT) at all levels, from undergraduate and graduate studies to participation and leadership in academia and industry. Increasing female representation in the field is a grand challenge for academics, policymakers, and society as a whole. Although the problem is evident, progress has been invariably slow, in spite of all the momentum and impulse for change happening across Europe. The main aim of this COST Action is to improve gender balance in Informatics through the creation and strengthening of a truly multi-cultural European network of academics working on the forefront of the efforts in their countries, institutions and research communities. We will be building on their knowledge, experiences, struggles, successes, and failures, learning and sharing what has worked and how it could be transferred to other institutions and countries. Among other outcomes, the Action will provide the academic community, policymakers, industry and other stakeholders with recommendations and guidelines to address the following key challenges: (i) How to have more girls choosing Informatics as their higher education studies and profession; (ii) How to retain female students and assure they finish their studies and start successful careers in the field; (iii) How to encourage more female Ph.D. and postdoctoral researchers to remain in the academic career and apply for professorships in Informatics departments; (iv) How to support and inspire young women in their careers and help them to overcome the main hurdles that prevent women to reach senior positions.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Electrical engineering, electronic engineering, Information engineering: Human computer interaction and interface, visualization and natural language processing ● Computer and Information Sciences: Ethics of computer and information sciences ● Computer and Information Sciences: History and philosophy of computer and information sciences ● Electrical engineering, electronic engineering, Information engineering: Software engineering, operating systems, computer languages ● Sociology: Gender and sexuality studies 	<ul style="list-style-type: none"> ● Gender Balance ● Informatics ● Computer Science ● IT/ICT ● Academic Career

COST Countries

Main Proposer: CH

Network of Proposers: AT, BG, CH, CY, CZ, DE, EE, EL, ES, FR, HR, HU, IE, IT, LT, LV, NL, NO, PL, PT, RO, SE, TR, UK

Main and secondary proposers: 14% ECI / 86% Women / 50% ITC

Industrial Dimension

Large companies: Latvia

CA19123 - Protection, Resilience, Rehabilitation of damaged environment

SUMMARY

Humanity faces unprecedented challenges: global warming, overuse of fossil fuel energy and increasing urbanisation. While solutions are becoming increasingly limited, microorganisms represent a realistic hope. For millennia microbes have tirelessly been shaping the Earth's ecosystems and with the right approach, they can be help re-introduce environmental equilibrium. PHOENIX aims to demonstrate the effectiveness of Bio-electrochemical systems (BESs); BESs exploit the biological activity of live organisms for pollutants reduction, recycling of useful elements, synthesis of new products and production of electricity, in the case of microbial fuel cell (MFC). Recent advancements in the field of low power electronics enables the exploitation of these environmental technologies. Activities will be related to the characterization of BESs technologies and their implementation as bio-remediator, bio-sensing, bio-reactor in link with sustainable urban planning and sociology-economic aspect. The integration of bio-technologies in the urban context is a key priority for correct urban planning and minimum environmental impact.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Environmental biotechnology: Bioreactors and applied microbiology for environmental engineering ● Electrical engineering, electronic engineering, Information engineering: Energy aspects of electrical and electronic engineering ● Environmental biotechnology: Environmental biotechnology, e.g. bioremediation, biodegradation ● Social and economic geography: Socio-economic aspects of environmental sciences ● Electrical engineering, electronic engineering, Information engineering: Sensors and sensor systems 	<ul style="list-style-type: none"> ● bio-electrochemical system ● depollution ● low power electronics ● wireless sensor network ● sustainable city planning

COST Countries

Main Proposer: FR

Network of Proposers: AT, CY, FR, IT, PL, PT, RO, TR, UK

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

International Cooperation

International Partner Country: China, Colombia, New Zealand

CA19124 - Rethinking packaging for circular and sustainable food supply chains of the future

SUMMARY

Food packaging is designed to protect the food through its supply chain, communicate to customers, and to ensure food quality, safety and optimal shelf life. Progress is now needed to secure its circularity, minimize food waste and improve sustainability. CIRCUL-A-BILITY will go beyond the state of the art by jointly addressing the major technical and non technical hurdles for implementation of sustainable food packaging solutions within future circular food supply chains. A food specific, focused action is critical amongst the ongoing debate in sustainable packaging. It is important to share data on the consequences of specific food product - package interactions and to keep the behavior of consumers as a critical focus. CIRCUL-A-BILITY will organize a pan-European network of actors involved in all aspects of food packaging, including material scientists, food scientists, industry end-users, consumer scientists and policy makers. The network will actively work to harmonise and integrate food packaging related research, share information, support industry in the implementation of sustainable packaging systems, create authoritative working groups able to give science based recommendation to consumers, user groups, policy makers and industry. It is expected that such COST action activities will 1) valorize the current technical advances, 2) speed the preparation of prototypes beyond the interest of single stakeholders and to the benefit of the European landscape; 3) avoid duplication of efforts in research in adjacent fields; 4) accelerate technology transfer and entrepreneurship; 5) elevate the scientific capacity and research ranking of the COST working members.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Other engineering and technologies: Food science and technology ● Industrial biotechnology: Sustainability 	<ul style="list-style-type: none"> ● food ● sustainable packaging ● waste ● circularity ● consumer

COST Countries

Main Proposer: DK

Network of Proposers: AL, AT, BE, BG, DE, DK, EL, ES, FI, HU, IL, IS, IT, LT, LV, MK, NL, NO, PL, PT, RO, RS, SI, SK, TR, UK

Main and secondary proposers: 28% ECI / 60% Women / 50% ITC

International Cooperation

International Partner Country: Argentina, Brazil, Canada, United States

European RTD Organisation: Germany

Industrial Dimension

SMEs: Belgium, Denmark, Finland, Italy, Netherlands, Spain

Large companies: Denmark, Italy, Norway

CA19125 - EPIgenetic mechanisms of Crop Adaptation to Climate change

SUMMARY

The ultimate objective of this proposed COST action is to define, develop, generate and share new breaking knowledge and methodology for the investigation of epigenetic mechanisms modulating plant adaptation to environmental stresses driven by climate change. No international network has been still created with the aim of standardizing methodology in plant epigenetics/epigenomics and better integrate these data with other “omic” approaches. EPI-CATCH will create a pan-European framework for networking in this under-investigated research field. This COST Action will use a unique cross-disciplinary approach that brings together industrial developers, molecular geneticists, molecular biologists, crop breeders, agronomists, plant pathologists, bioinformaticians. EPI-CATCH will expand new frontiers on both innovative and translational research targeting the new challenges in plant epigenetics. Four main specific objectives will be addressed by four provided working groups (WG): 1) update of the most-recent findings in crop epigenomics related to climate change, 2) development of new concepts and approaches in crop epigenetics and epigenomics that can be transferable in other living organisms, 3) establishment of common standardized pipelines, methods and workflows for generation, analysis and interpretation of epigenetic/epigenomic data, 4) an intense output dissemination and training for early-career scientists. The methodologies, concepts and ideas developed by EPI-CATCH will assist stakeholders to develop future innovative technologies to enhance environmental sustainability of agriculture in a rapid climate change scenario.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Biological sciences: Epigenetics and gene regulation ● Agriculture, Forestry, and Fisheries: Conservation biology, ecology, genetics ● Agricultural biotechnology: Sustainable production 	<ul style="list-style-type: none"> ● Epigenetic ● Adaptation ● Crop ● Climate ● Change

COST Countries

Main Proposer: IT

Network of Proposers: BA, BG, CH, CY, CZ, DE, EE, EL, ES, FR, HU, IE, IT, LT, LU, PL, PT, RS, SE, UK

Main and secondary proposers: 16% ECI / 42% Women / 55% ITC

International Cooperation

International Partner Country: United States

Industrial Dimension

SMEs: United States

Large companies: Germany

CA19126 - Positive Energy Districts European Network

SUMMARY

Europe is set to be a global role model in energy transition. It has made significant progress in building level innovations and is now stepping up efforts towards city-wide transformation with the pioneering concept of Positive Energy Districts (PEDs). The EU's Strategic Energy Technology Plan (SET-Plan) has set out a vision to create 100 PEDs in Europe by 2025. The concept of PEDs is emerging and the knowledge and skills needed for the planning and designing, implementation and monitoring, as well as replication and mainstreaming of PEDs are yet to be advanced. The challenge is cross sectors and domains, thus the solutions can only be found through collective innovation. This COST Action will drive the deployment of PEDs by harmonizing, sharing and disseminating knowledge and breakthroughs on PEDs across different stakeholders, domains and sectors at the national and European level. It will establish a PED innovation eco-system to facilitate open sharing of knowledge, exchange of ideas, pooling of resources, experimentation of new methods and co-creation of novel solutions across Europe. Additionally, this COST Action will support the capacity building of new generation PED professionals, Early Career Investigators as well as experienced practitioners. It will mobilize the relevant actors from and across Europe to collectively contribute to the long-term climate neutral goal.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Environmental engineering: Engineering of energy production and energy systems, energy distribution and application ● Environmental engineering: Sustainable engineering ● Civil engineering: Architecture engineering ● Social and economic geography: Spatial development, land use, regional planning ● Economics and business: Sustainability 	<ul style="list-style-type: none"> ● Positive energy districts ● Carbon neutral cities ● Energy transformation ● Smart cities and communities

COST Countries

Main Proposer: DE

Network of Proposers: AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, IT, LT, MT, NO, PL, PT, RO, UK

Main and secondary proposers: 19% ECI / 47% Women / 50% ITC

Industrial Dimension

SMEs: Czech Republic, Italy

Large companies: Portugal

CA19127 - Cognitive decline in Nephro-Neurology: European Cooperative Target

SUMMARY

Fragmentation between neurological and nephrological expertise has frustrated research into the mechanism of cognitive decline secondary to kidney disease. By for the first time bringing these fields together in CONNECT we establish a novel multidisciplinary field to improve patient diagnosis and care. The developed world is experiencing a growing number of patients with chronic kidney disease (CKD), a complex systemic and potentially fatal disease. With improved long-term life expectancy as the result of kidney replacement therapies, more attention has been given to comorbidities, including cognitive impairment. In CKD patients, both the central and peripheral nervous system are frequently affected. Eventually, this decreases quality of life and eventually dementia with loss of independence in everyday activities. CONNECT aims to coordinate research on cognitive impairment in CKD. This requires exchanging clinical information between nephrologists and neurologists, and between neuroscientists and kidney physiologists, guided by big data analysts. This collaborative network will define new experimental paradigms, their translational value and, in turn, focus on new interventions in the field of cognitive impairment.

At the core of this COST Action lie activities that bridge the gaps between these fields and prepare early-stage researchers and clinicians to start new research lines. The interdisciplinary consortium from 22 countries will focus on 1) Pre-clinical research, 2) Clinical trials, 3) clinical practice, 4) Data management and analytics, and 5) Inclusiveness and dissemination of the Action. This COST Action will alleviate disparities in CKD patient care and enable breakthrough research enabling patient diagnosis and early treatments.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Clinical medicine: Nephrology ● Clinical medicine: Clinical neurology ● Basic medicine: Metabolism, biological basis of metabolism related disorders ● Basic medicine: Neuropsychology ● Health Sciences: Epidemiology 	<ul style="list-style-type: none"> ● Renal disease ● Cognitive impairment ● Big Data analysis

COST Countries

Main Proposer: IT

Network of Proposers: AL, BA, BG, CH, CZ, DE, DK, EL, ES, FR, HU, IT, LT, MK, NL, PL, PT, RO, SE, TR, UK

Main and secondary proposers: 11% ECI / 33% Women / 52% ITC

International Cooperation

International Partner Country: United States

Industrial Dimension

SMEs: Italy

Large companies: Sweden

CA19128 - Pan-European Network for Climate Adaptive Forest Restoration and Reforestation

SUMMARY

The capacity of forests to mitigate climate change is underutilized. More than two billion hectares of degraded areas worldwide need restoration; in many countries timely reforestation following harvests, disturbances, and land abandonment is lagging; and forest management could be sustainably intensified to sequester more carbon. Increasingly, global change and human-induced disturbances raise the need for accelerating restoration and reforestation programs, although consensus is lacking on which techniques to use and what objectives to pursue. Indeed, a confusing terminology and multiple, often conflicting interests fuel the debate on what constitutes success and appropriate forest management objectives. Additionally, knowledge gained locally is not widely shared and vice versa. Thus there is an urgent need to broaden the experience on climate adaptive forest restoration and reforestation (CAFoRR). Underlying these urgent need, the developing bioeconomy will sharply increase the demand for forest products. The PEN-CAFoRR network of experts from Europe and beyond will respond to these challenges by addressing the entire cycle of forest restoration and reforestation in different ecosystems, by broadening the dissemination of knowledge, and by facilitating an increased scale of planning and implementation of CAFoRR programs. Specifically, PEN-CAFoRR will provide new guidelines for 1) setting restoration and reforestation goals, 2) decision making on need and ways of restoration, 3) selection, 4) production and quality control of targeted forest reproductive material, 5) establishment techniques, and 6) post-planting protection and silviculture. One result will be an open-access database comprising state-of-the-art information on techniques and guidelines of European CAFoRR.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Agriculture, Forestry, and Fisheries: Silviculture, tropical forestry ● Agriculture, Forestry, and Fisheries: Sustainable forest management 	<ul style="list-style-type: none"> ● Forest Ecosystem ● Forest Establishment ● Forest Reproductive Material ● Silviculture ● Forest Socioeconomy

COST Countries

Main Proposer: RS

Network of Proposers: AT, BA, BG, DE, DK, EE, EL, ES, FI, FR, HR, IT, LV, MK, NO, PL, RO, RS, SE, SI, SK, TR

Main and secondary proposers: 16% ECI / 41% Women / 55% ITC

International Cooperation

International Partner Country: Canada, United States

European RTD Organisation: Finland

Industrial Dimension

SMEs: Denmark

CA19129 - Decolonising Development

SUMMARY

The Action DecolDEV takes on the challenge to reconstruct the concept and practice of development after its deconstruction. It aims for a resetting and diversification of the actors, structures, institutions and spaces in which knowledge about and for development is produced, shared, contested and put into practice. The Action will progress beyond the state-of-the-art through exploring and formulating alternatives in three areas: Research, Teaching and Practice.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Political Science: International studies, strategic studies, human rights, global and transnational governance ● Sociology: Social movements ● Sociology: Anthropology, ethnology, cultural studies ● Sociology: Sociology of science ● Political Science: Political sociology 	<ul style="list-style-type: none"> ● knowledge ● critical development ● decolonisation ● Agenda 2030 ● development cooperation

COST Countries

Main Proposer: DE

Network of Proposers: CZ, DE, ES, FI, HU, MT, NL, PT, SE, SI, SK, UK

Main and secondary proposers: 31% ECI / 66% Women / 50% ITC

CA19130 - Fintech and Artificial Intelligence in Finance - Towards a transparent financial industry

SUMMARY

The financial sector is the largest user of digital technologies and a major driver in the digital transformation of the economy. Financial technology (FinTech) aims to compete with traditional financial industry methods in the delivery of financial services. Globally, more than \$100 billion of venture capital and growth equity has been deployed to Fintech companies and Artificial Intelligence (AI) since 2010, still growing substantially. In early 2018, the European Commission unveiled their action plan for a more competitive and innovative financial market, and initiative on AI with the aim to harness the opportunities presented by technology-enabled innovation in financial services. Europe should become a global hub for FinTech, with EU businesses and investors able to take most of the advantages offered by the Single Market in this fastmoving sector. We want to facilitate interactions and collaborations between different groups of academics and industry working on Fintech and AI in Finance, to provide theoretic expertise to industrial partners, and to establish a large and vibrant interconnected community of excellent scientists across diverse fields. The key objectives are:

- to improve transparency of AI supported processes by developing a data-driven rating methodology for ICOs
- to address the disparity between the proliferation in AI models within the financial industry for risk assessment and decision-making, and the limited insight the public has in its consequences by developing policy papers and methods to increase transparency
- to develop methods to scrutinize the quality of rule-based “smart beta” products across the asset management, banking and insurance industry.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Economics and business: Finance ● Computer and Information Sciences: Machine learning algorithms 	<ul style="list-style-type: none"> ● Artificial Intelligence ● Fintech ● Finance ● Transparency ● Financial Markets

COST Countries

Main Proposer: IE

Network of Proposers: AT, BG, CH, CZ, DE, DK, EL, IE, IL, IT, LT, LU, LV, MK, NL, PL, PT, RO, SK, UK

Main and secondary proposers: 34% ECI / 46% Women / 50% ITC

International Cooperation

International Partner Country: Australia, Singapore

Industrial Dimension

SMEs: Austria, Bulgaria, Czech Republic, Latvia, North Macedonia, Poland, United Kingdom

Large companies: Greece, Latvia, Lithuania

CA19131 - Europe Through Textiles: Network for an integrated and interdisciplinary Humanities

SUMMARY

EuroWeb fosters a pan-European network of scholars and stakeholders from academia, museums, conservation, cultural and creative industries. Scholars from 13+ disciplines of the Humanities (philology, art history, archaeology, history), Social Sciences (social anthropology, ethnology, economics, law) and Natural Sciences (geochemistry, conservation, chemistry, biology) join forces to bridge current cultural, political and geographical gaps and facilitate interdisciplinary research leading to inspirational material for experts in the allied and applied disciplines of fashion, art and design.

The scholarly vision is to re-write European history based on its massive production, trade, consumption and reuse of textiles and dress. The goal is to identify expertise across time in sustainable textile practices. For this purpose, ITCs are crucial for their experience in ancient techniques and cultural heritage in textile craft. EuroWeb consists of 100+ proposers from 24 COST member countries, incl. 15 ITCs. It offers multiple theoretical and practical training schools, mentors, targeted career development masterclasses for the ECIs, with the aim to increase EU funding for ITC scholars and ECIs. Each year, EuroWeb aims to host large international textile and dress conferences in the ITCs, to highlight their collections, capacities and scholarship. EuroWeb enables collaborations between researchers, engineers, scholars and other stakeholders and business by providing a platform for them to collaborate, co-create projects and training schools, and foster trust and shared ideas. Deliverables include collaborative publications, research workshops, theoretical reflection and advancement, digital infrastructure, EuroWeb digital Atlas, films and podcasts, and intense mentoring, training and career development for ECIs.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● History and Archeology: Preservation of cultural heritage ● History and Archeology: Cultural history ● History and Archeology: Early modern history ● History and Archeology: Ancient history ● History and Archeology: Social and economic history 	<ul style="list-style-type: none"> ● textile ● dress ● history ● archaeology ● conservation sciences

COST Countries

Main Proposer: DK

Network of Proposers: AT, BG, CH, CZ, DE, DK, EE, EL, FR, HR, HU, IT, LT, LV, MK, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 23% ECI / 88% Women / 63% ITC

International Cooperation

International Partner Country: United States

Industrial Dimension

SMEs: Germany, Poland, Portugal, Serbia

CA19132 - European Network to Advance Best practices & technology on medication adherence

SUMMARY

Due to an ageing society, there is a steady increase in chronic diseases and multi-morbidity in the EU. This rise of chronic diseases and multi-morbidity requires a multidisciplinary response, which often involves lifestyle changes combined with lifetime medication use.

Medication non-adherence affects however up to half of the chronic medication users, poses considerable challenges in managing chronic diseases, and is associated with almost 200,000 deaths and €80-125 billion of potentially preventable direct and indirect costs in the EU. Technological advances (e.g. smart pillboxes, digital inhalers, tracking devices, e-injection pens, e-Health, big data), have significant potential to support healthcare professionals and empower patients in detecting and managing non-adherence.

Awareness of healthcare professionals on the availability and implementation of adherence enhancing technology is limited and there is a lack of collaboration between stakeholders. Successful EU-wide implementation of adherence enhancing technology is further hampered by a lack of insight in different European healthcare systems, reimbursement pathways and policy regulations that significantly differ between countries. This affects not only patients and healthcare professionals, but also manufacturers of technology (mostly SMEs) in their innovation capacity and competitiveness.

To address these challenges, the European Network to Advance Best practices & technoLogY on medication adherencE (ENABLE) aims to (1) raise awareness of adherence enhancing technological solutions, (2) foster and extend multidisciplinary knowledge on medication adherence at patient, treatment and system levels, (3) accelerate translation of this knowledge to useful clinical application and (4) work collaboratively towards economically viable implementation of adherence enhancing technology across European healthcare systems.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Health Sciences: Health services, health care research ● Clinical medicine: General and internal medicine 	<ul style="list-style-type: none"> ● Medication adherence ● eHealth ● Implementation

COST Countries

Main Proposer: NL

Network of Proposers: BE, BG, CZ, DE, DK, EE, EL, ES, FR, HR, HU, IE, IT, LT, LV, NL, PL, PT, RS, SE, SK, UK

Main and secondary proposers: 24% ECI / 41% Women / 50% ITC

Industrial Dimension

SMEs: France, Hungary, Italy, Serbia

CA19133 - Fostering and Strengthening Approaches to Reducing Coercion in European Mental Health Services

SUMMARY

FOSTREN is an Action designed to establish a sustainable, multidisciplinary network of researchers and practitioners focused on reducing the degree to which mental health services use coercion in hospital and community mental health services. Many people receiving mental health care are subjected to coercive practices such as outpatient commitment in the community and physical restraint in hospital. Such practices can violate human rights and there is a growing international policy momentum to reduce reliance on them. Given the biopsychosocial complexity of mental health service delivery, successful initiatives in this area require sustained multilevel interventions which can be implemented effectively in the long term. Clinical practice in this area is extremely variable across Europe and relevant research activity is highly fragmented. The FOSTREN network will address these issues by enabling research and practice expertise to be exchanged in order to create an integrated framework for mental health service transformation.

The network objectives are: to advance understanding of successful interventions to reduce coercion within an implementation science paradigm by building a stable interdisciplinary network of European researchers and practitioners; and to apply this understanding by articulating and communicating best practice to key stakeholders responsible for mental health service delivery. This will be achieved through networking activities organized along four themes: risk factors; alternative interventions; outcomes & recovery; and implementation science. Key deliverables such as a framework for shared datasets and a coercion reduction implementation model will contribute to a pan-European effort to enhance human rights for vulnerable people with mental health problems.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Health Sciences: Health services, health care research ● Sociology: Work and professions ● Psychology: Social psychology 	<ul style="list-style-type: none"> ● Coercion ● Mental Health ● Violence ● Organizational change

COST Countries

Main Proposer: NO

Network of Proposers: CH, DK, HR, IE, IT, ME, NL, NO, PL, PT, RO, RS, SE, SK, TR, UK

Main and secondary proposers: 32% ECI / 45% Women / 50% ITC

Industrial Dimension

SMEs: Netherlands

Large companies: Denmark

CA19134 - Distributed Knowledge Graphs

SUMMARY

Knowledge Graphs are a flexible way to represent interlinked information about virtually anything. People from a variety of application domains including biomedical research, public and open data, linguistics, journalism, and manufacturing publish, use, and investigate knowledge graphs. As the publication is done in a decentralised fashion across the web, the knowledge graphs form a distributed system.

Due to the ever-increasing uptake of Knowledge Graph technologies in recent years, there are new challenges for research and development including dealing with the scale and the degree of distribution of knowledge graphs, while monitoring and maintaining data quality and privacy. Tackling these research challenges will need a stronger collaboration within the research community, and a joint effort to establish a more functional, decentralized Web of Data.

The main aim of the Action is therefore to create a research community for deployable Distributed Knowledge Graph technologies that are standards-based, and open, embrace the FAIR principles, allow for access control and privacy protection, and enable the decentralised publishing of high quality data. To this end, the Action connects European researchers and practitioners from: (1) diverse application domains and (2) the whole life cycle of Distributed Knowledge Graphs, from provisioning to finding, accessing, integrating, programming, deploying, enriching, and analytics. The Action will develop practices for scalable, privacy-respecting, high quality and decentralised Knowledge Graph publication and consumption, reach out to the European industry, and formulate a research agenda.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Electrical engineering, electronic engineering, Information engineering: Databases, data mining, data curation, computational modelling ● Computer and Information Sciences: Artificial intelligence, intelligent systems, multi agent systems 	<ul style="list-style-type: none"> ● Knowledge Graphs ● Data Management ● FAIR Data ● Data Science

COST Countries

Main Proposer: DE

Network of Proposers: AT, BE, DE, FR, HU, IE, LU, LV, MT, NL, PL, RS, TR

Main and secondary proposers: 40% ECI / 25% Women / 54% ITC

Industrial Dimension

SMEs: Poland

CA19135 - Connecting Education and Research Communities for an Innovative Resource Aware Society

SUMMARY

Parallel computing platforms have revolutionised the hardware landscape by providing high-performance, low-energy, and specialized (viz. heterogeneous) processing capabilities to a variety of application domains, including mobile, embedded, data-centre and high-performance computing. However, to leverage their potential, system designers must strike a difficult balance in the apportionment of resources to the application components, striving to avoid under- or over-provisions against worst-case utilisation profiles. The entanglement of hardware components in the emerging platforms and the complex behaviour of parallel applications raise conflicting resource requirements, more so in smart, (self-)adaptive and autonomous systems. This scenario presents the hard challenge of understanding and controlling, statically and dynamically, the trade-offs in the usage of system resources, (time, space, energy, and data), also from the perspective of the development and maintenance efforts. Making resource-usage trade-offs at specification, design, implementation, and run time requires profound awareness of the local and global impact caused by parallel threads of applications on individual resources. Such awareness is crucial for academic researchers and industrial practitioners across all European and COST member countries, and, therefore, a strategic priority. Reaching this goal requires acting at two levels: (1) networking otherwise fragmented research efforts towards more holistic views of the problem and the solution; (2) leveraging appropriate educational and technology assets to improve the understanding and management of resources by the academia and industry of underperforming economies, in order to promote cooperation inside Europe and achieve economical and societal benefits.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Electrical engineering, electronic engineering, Information engineering: Embedded systems, cyber-physical systems ● Electrical engineering, electronic engineering, Information engineering: Computer systems, parallel/distributed systems ● Computer and Information Sciences: Theoretical aspects of pervasive and ubiquitous computing 	<ul style="list-style-type: none"> ● Predictable, safe and reliable computing ● Resource-aware computing ● Information and program analysis ● Knowledge transfer ● Technology transfer

COST Countries

Main Proposer: RS

Network of Proposers: AL, BE, CH, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IT, LU, LV, NL, PL, PT, RS, SE, SI, SK, UK

Main and secondary proposers: 29% ECI / 27% Women / 50% ITC

International Cooperation

International Partner Country: Singapore

Industrial Dimension

SMEs: Greece, Italy, Serbia, United Kingdom

Large companies: France, United Kingdom

CA19136 - International Interdisciplinary Network on Health and Wellbeing in an Age-friendly Digital World

SUMMARY

To promote social inclusion, independent living and active and healthy ageing in society, the main aim of NET4AGE-FRIENDLY is to establish an international and interdisciplinary network of researchers from all sectors to foster awareness, and to support the creation and implementation of smart, healthy indoor and outdoor environments for present and future generations. NET4AGE-FRIENDLY further aims to overcome fragmentation and critical gaps at both conceptual and pragmatic innovation level on responsive, age-friendly and sustainable environments in order to address the research-policy future requirements of Europe.

The main approach of NET4AGE-FRIENDLY is the establishment of new local or regional ecosystems or by expanding existing ones in each European COST country involved, to work on health and wellbeing in an age-friendly digital world. The ecosystems will consist of citizens, public authorities, businesses/NGOs and research and will be supported by five thematic Working Groups (User-centred inclusive design in age-friendly environments and communities, Integrated health and wellbeing pathways, Digital solutions and large-scale sustainable implementation, Policy development and funding forecast, and Cost-benefit evaluation and market opportunities). The outcomes of the five thematic Working Groups will be obtained in the work of one dedicated Working Group to create a synergised output as Reference Framework. NET4AGE-FRIENDLY will be used as a connector for involving and hosting regular themed sessions with local and regional stakeholders and users' representatives from various countries and backgrounds and for fostering the knowledge among researchers and to promote the involvement of Early Career Investigators, Inclusiveness Target Countries and entrepreneurs.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Health Sciences: Public and environmental health ● Computer and Information Sciences: Artificial intelligence, intelligent systems, multi agent systems ● Environmental engineering: Environmental and geological engineering 	<ul style="list-style-type: none"> ● smart ● health ● age-friendly ● environments ● wellbeing

COST Countries

Main Proposer: PT

Network of Proposers: AL, AT, BA, BE, BG, CH, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IL, IS, IT, LT, LU, LV, MD, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR, UK

Main and secondary proposers: 23% ECI / 48% Women / 56% ITC

International Cooperation

International Partner Country: Australia, Brazil, Canada, Japan, Mexico, United States

European RTD Organisation: Poland

Industrial Dimension

SMEs: Austria, Belgium, Cyprus, France, Germany, Italy, Japan, Luxembourg, Malta, Netherlands, North Macedonia, Romania, Serbia, Slovenia, Turkey, United Kingdom

Large companies: Croatia, Greece, Israel

CA19137 - Sudden cardiac arrest prediction and resuscitation network: Improving the quality of care

SUMMARY

Sudden cardiac arrest (SCA) causes 2 million deaths each year in Europe alone. Since SCA strikes unexpectedly and is lethal within minutes if untreated, solving this problem requires (1) recognizing individuals at risk and designing preventive strategies, (2) providing timely and effective treatment. Because SCA mostly occurs out-of-hospital, SCA victims rely on first-response treatment provided by citizens, firefighters and emergency medical services. There are large regional differences in SCA survival rates across Europe (1-30%). This suggests that regional differences in individual risk prediction, prevention and treatment have a major impact on the chance to survive. To improve survival rates across Europe it is imperative to study: 1) inherited, acquired, and environmental risk factors of SCA across European regions; 2) regional differences in preventive measures and first-response treatment strategies and their effectiveness. The PARQ Action will facilitate this research by forming a pan-European network of excellence in SCA and resuscitation science. This network includes investigators from different disciplines including cardiology, molecular biology, resuscitation science, emergency medicine, general practice and health economics. The main objectives of the project are to promote development of standards for collection of clinical data and biological samples and to harmonize data analysis. This will aid in development of risk prediction models based on inherited, acquired and environmental risks. The PARQ action will focus on European differences in first-response treatment and develop guidelines. In summary, the PARQ Action investigators will enable breakthrough developments to decrease the incidence of SCA and improve survival, while reducing the vast regional European differences in survival rates.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Clinical medicine: Cardiovascular diseases ● Clinical medicine: Critical care medicine and Emergency medicine ● Health Sciences: Health services, health care research ● Basic medicine: Databases, data mining, data curation, computational modelling 	<ul style="list-style-type: none"> ● sudden cardiac arrest ● risk prediction ● resuscitation ● first response treatment ● biomarkers

COST Countries

Main Proposer: NL

Network of Proposers: BE, CZ, DK, EE, FR, IT, LU, NL, RO, RS, SE, TR

Main and secondary proposers: 39% ECI / 41% Women / 50% ITC

Industrial Dimension

SMEs: Netherlands

CA19138 - Lobular Breast Cancer: Discovery Science, Translational Goals, Clinical Impact

SUMMARY

Invasive Lobular Breast cancer (ILC) represents a major cancer type that affects 25,000 patients annually in Europe, representing a severe societal impact. Differential diagnosis is still unreliable due to variable histological criteria, long-term survival is poor in the metastatic setting and the response to chemotherapy is virtually absent. Despite its etiological, pathological, molecular and clinical peculiarities, there is still no specific treatment strategy for ILC patients, which is mostly due to the lack of concerted multidisciplinary efforts.

LOBSTERPOT aims to better understand, diagnose and treat ILC. This Action will combine the essential areas of expertise and provide a comprehensive platform to bring together and foster collaborations between epidemiologists, geneticists, biologists, clinicians, data scientists, academic and industry trialists, ethical and legal experts, as well as ILC patient advocacy movements. This Action will bridge the gaps in translational cancer research for ILC, and will provide an unprecedented clinical impact due to the streamlining of the “from bench-to-bedside” principal to enable uniform diagnosis and tailored treatment for ILC patients.

To achieve its aims and in agreement with the mission and vision of the COST Actions, *LOBSTERPOT* will:

- (1) coordinate EU-wide multidisciplinary ILC research,
- (2) promote capacity-building by developing a unique biobank, state-of-the-art models, exclusive platforms of multi-OMICs and clinical ILC data accessible to the scientific community,
- (3) advice policy-makers and other key stakeholders,
- (4) provide an attractive structure for the development of ILC-focused clinical trials, and,
- (5) create a unique training and networking opportunity for young and senior researchers devoted to fight ILC.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Clinical medicine: Oncology ● Biological sciences: Molecular biology and interactions ● Basic medicine: Transcriptomics ● Clinical medicine: Clinical trials ● Basic medicine: Cell signalling and cellular interactions 	<ul style="list-style-type: none"> ● Lobular Breast Cancer ● genomics, oncology, cell biology, cancer models, treatment ● Discovery Science ● Translational Goals ● Clinical Impact

COST Countries

Main Proposer: NL

Network of Proposers: BE, FR, HU, IE, LU, NL, PL, PT

Main and secondary proposers: 8% ECI / 54% Women / 50% ITC

International Cooperation

International Partner Country: United States

CA19139 - Process-based models for climate impact attribution across sectors

SUMMARY

Many complex process-based models are available in Europe to project future climate impacts. Yet, the current climate impact research community is fragmented, modeling mostly individual systems. The integration of climate impacts across different natural and societal sectors is only slowly emerging. Likewise, attribution of impacts to climate and other factors is still a strongly under-researched field given that climate change is already strongly manifesting itself, an increasing number of court cases dealing with climate impacts is being negotiated and policy debates on loss and damage are intensifying. This lack of coordination amongst impact modelers and insufficient awareness about impact attribution methods hampers important scientific and political progress and more coordination and networking is urgently needed. Therefore, PROCLIAS aims to develop common protocols, harmonized datasets and a joint understanding of how to conduct cross-sectoral, multi-model climate impact studies at regional and global scales allowing for attribution of impacts of recent climatic changes and robust projections of future climate impacts. The Action will do so by focusing on key interactions of climate impacts across sectors, their accumulated effect, especially of extreme events, the attribution of impacts to climate change and the quantification of uncertainties. PROCLIAS will make use of all COST networking tools to train young researchers to conduct and analyse multi-model simulations in a cross-sectoral way, to support a common platform for collecting impact model simulations and methods for analyzing them and to disseminate the data, code and results to scientists as well as, in a more synthesized form, to stakeholders.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Earth and related Environmental sciences: Climatology and climate change ● Earth and related Environmental sciences: Terrestrial ecology, land cover change ● Biological sciences: Computational biology ● Earth and related Environmental sciences: Databases, data mining, data curation, computational modelling ● Economics and business: Sustainability 	<ul style="list-style-type: none"> ● Climate impacts ● Process-based Modeling ● Impact Attribution ● Future Scenarios ● Cross-sectoral

COST Countries

Main Proposer: DE

Network of Proposers: CZ, DE, EE, EL, ES, HU, NL, PL, PT, RO, RS, SE, UK

Main and secondary proposers: 44% ECI / 39% Women / 54% ITC

International Cooperation

International Partner Country: Canada, China, United States

CA19140 - Focused Ion Technology for Nanomaterials

SUMMARY

The aim of the Action is to create a coordinated effort in the field of ion beam based nanoengineering that will put European researchers and commercial businesses at the forefront of the quickly moving field of functional nanostructured materials. The Action will unite developers and practitioners of focused ion beam technology to enable them to build the most efficient tool sets and application techniques for the identification, fabrication and characterization of next generation functional nanomaterials. The Action will develop ion sources and instrumentation for the sub 10 nm fabrication and materials analysis. These objectives will be reached through Europe wide networking between researchers from theoretical and experimental groups traditionally not interacting closely. The challenge to overcome is the increasing fragmentation of the FIB landscape between operators of established technologies, developers providing new techniques and methods and designers of functional nanomaterials not aware of the possibilities provided by these emerging focused ion beam technology and methods.

A tight feedback loop between academic and commercial technology developers with researchers of fundamental ion solid interactions and scientists developing new functional nanomaterials will be formed through a series of conferences, training schools and short term scientific missions. This will enable European researchers to develop bleeding edge functional nanomaterials allowing them to offer solutions to many of the important socioeconomic questions defined by the various research programs in Europe. New and emerging focused ion beam technology developed by the Action will play an important role for Quantum Technologies, Semiconductor Industry, Functional Nanomaterials and Medical applications.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Materials engineering: Solid state materials ● Nano-technology: Nano-materials and nano-structures ● Nano-technology: Particle physics for nano-technology applications 	<ul style="list-style-type: none"> ● Focused ion beam ● nanotechnology ● nanofabrication ● materials science

COST Countries

Main Proposer: DE

Network of Proposers: AT, CH, CZ, DE, ES, FR, HU, IE, LU, NL, PL, RS, SI, SK, TR, UK

Main and secondary proposers: 15% ECI / 33% Women / 50% ITC

International Cooperation

Industrial Dimension

SMEs: Czech Republic, Germany, Luxembourg

Large companies: Austria, Czech Republic, France

CA19141 - Integrating Neandertal Legacy: From Past to Present

SUMMARY

Neandertals are the first human population that can be truly recognized as pan-European phenomenon. Traces of their cultural and/or skeletal remains can be found in most European countries and cover a period of more than 250 000 years. A lot of scientific work has been done on various aspects of their heritage and there is a vast collection of archaeological and anthropological data available. However, there is still a discrepancy in available and updated datasets from various countries. In addition, communication between scientists from various fields and from various countries is still based on personal connections between individual scientists, mostly related to specific projects. This Action is a long overdue attempt to bridge the geographic, language, disciplinary-and-data specific gap, as well as a gap created by traditions of different disciplines in different European countries. Through a combined, scientifically-based and geographically inclusive approach, creation of a growing inclusive database, and promoting dialogue among scientists and creating guidelines for research, a solid base for better understanding of Neandertals can be reached. Further, this will allow a base for inclusion of Neandertal legacy into the present, through scientifically based guidelines for public presentation and further actions for promoting their heritage via inclusion of non-scientific stakeholders, such as administrators, museum and cultural workers, touristic sector, small and medium enterprises and other interested parties.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● History and Archeology: Prehistory and protohistory ● Other humanities: Cultural heritage, cultural memory 	<ul style="list-style-type: none"> ● Prehistory ● Palaeolithic ● Neandertals ● Europe ● Public Archaeology

COST Countries

Main Proposer: HR

Network of Proposers: AT, CZ, DE, ES, FR, HR, HU, IT, PL, RO, RS, SI

Main and secondary proposers: 14% ECI / 32% Women / 58% ITC

CA19142 - Leading Platform for European Citizens, Industries, Academia and Policymakers in Media Accessibility

SUMMARY

The proposed LEAD-ME COST Action aims to help all stakeholders in the field of Media Accessibility and cross-cutting topics (e.g. AI and Interactive Technologies) in Europe to meet the legal milestones requested by the recently passed European legislation. Researchers, engineers, scholars as well as businesses and policy makers will be empowered by LEAD-ME with a common and unique platform which, during the next 48 months, will collect, create, share, and disseminate innovative technologies and solutions, best practices and guidelines, and promote them. Furthermore, it will contribute towards existing and new standards on Media Accessibility among at least 28 European or associated countries. To do so, the LEAD-ME network will make use of the specific tools of the COST Action: meetings and working group meetings; educational institutes, short-term scientific mission; dissemination activities. LEAD-ME will boost a cultural change and the creation of a new mindset when designing tools for professional and private activities for all European citizens of all abilities and disabilities. This COST Action is strongly needed to avoid further fragmentation in the European accessibility scene, challenging the European Single Digital Market idea. The uneven take-up in Europe is the direct result of the complex nature of Media, the background technology involved, the fast-changing technology and business models, and the wealth of EU languages. This counts for both the market and research.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Computer and Information Sciences: Artificial intelligence, intelligent systems, multi agent systems ● Languages and literature: Translation and interpretation ● Media and communications: Media and communications, social aspects of information science and surveillance, socio-cultural communication ● Electrical engineering, electronic engineering, Information engineering: Human computer interaction and interface, visualization and natural language processing 	<ul style="list-style-type: none"> ● Accessibility ● Media ● Audiovisual ● Multimedia

COST Countries

Main Proposer: CH

Network of Proposers: AT, BA, BE, CH, DE, ES, FR, HR, IE, IT, LT, MT, PL, PT, RO, RS, SE, SI, TR, UK

Main and secondary proposers: 15% ECI / 35% Women / 50% ITC

Industrial Dimension

SMEs: France, Germany, Portugal, Romania, Turkey, United Kingdom

Large companies: Switzerland

CA19143 - Global Digital Human Rights Network

SUMMARY

The Network will systematically explore the theoretical and practical challenges posed by the online context to the protection of human rights. The Network will address the matter whether international human rights law is sufficiently detailed to enable governments and private online companies to understand their respective obligations vis-à-vis human rights protection online. It will evaluate how national governments have responded to the task of providing a regulatory framework for online companies and how these companies have transposed the obligation to protect human rights and combat hate speech online into their community standards. The matters of transparency and accountability will be explored, through the lens of corporate social responsibility.

The Network will propose a comprehensive system of human rights protection online, in the form of recommendations of the content assessment obligation by online companies, directed to the companies themselves, European and international policy organs, governments and the general public. The Action will develop a model which minimises the risk of arbitrary assessment of online content and instead solidifies standards which are used during content assessment; and maximises the transparency of the outcome.

The Action will achieve scientific breakthroughs (a) by means of a quantitative and qualitative assessment of whether private Internet companies' provide comparable protection of human rights online in comparison with judicial institutions, and (b) in the form of a novel holistic theoretical approach to the potential role of artificial intelligence in protecting human rights online, and (c) by providing policy suggestions for private balancing of fundamental rights online.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Law: International law ● Political Science: International studies, strategic studies, human rights, global and transnational governance ● Law: Legal theory, legal systems, constitutions, comparative law ● Political Science: Political systems and institutions, governance 	<ul style="list-style-type: none"> ● digital human rights ● Internet ● censorship ● corporate social responsibility ● private protection of human rights

COST Countries

Main Proposer: EE

Network of Proposers: AL, DE, DK, EE, EL, FI, FR, HR, HU, IS, IT, LT, LV, RS, TR

Main and secondary proposers: 28% ECI / 44% Women / 53% ITC

International Cooperation

International Partner Country: Argentina, Australia, Colombia, South Africa, United States

Industrial Dimension

SMEs: Colombia, United States

CA19144 - European Venom Network

SUMMARY

Venomous organisms produce complex mixtures of bioactive compounds that have evolved through million years of natural selection in evolutionary arms races. As such, they are extremely efficient, being usually effective at a very low concentration via highly specific interactions with key molecular targets (ion channels, enzymes and membrane components), identifying them as ideal candidates for therapeutic and biotechnological development.

Venom research is an emerging and highly multidisciplinary field that involves studies of the biodiversity, ecology and evolution of venomous organisms, the structure and function of venom deployment systems, the biochemistry and pharmacology of venoms, the pathophysiological effects that venom induces in prey and predators, and the translational development of venom components for biomedical and biotechnological applications. These different research facets tend to be pursued by different research groups that usually are poorly coordinated in Europe, hampering a full development of venom investigation and applications. The overarching aim of the EVEN COST Action is to foster venom investigation at the European level. The Action will identify priority targets and promising innovative approaches, develop best practice pipelines ensuring consistency across Europe and providing international standards in venom research. Further, it provides a novel platform to promote synergistic interactions between academia, industry and society, and to nurture a new generation of venom researchers with a multidisciplinary expertise. Building a gender, age and geographically balanced network involving all the relevant stakeholders will be the fundamental prerequisite to leverage the extraordinary biochemical warfare enclosed in animal venoms, with an enduring scientific, technological and socioeconomic impact.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Biological sciences: Zoology, including animal behaviour ● Biological sciences: Transcriptomics ● Biological sciences: Proteomics ● Basic medicine: Pharmacology, pharmacogenomics, drug discovery and design, drug therapy 	<ul style="list-style-type: none"> ● venomics ● evolution ● ecology ● biodiscovery

COST Countries

Main Proposer: IT

Network of Proposers: CZ, DE, EE, FR, IT, PT, SI

Main and secondary proposers: 0% ECI / 22% Women / 57% ITC

CA19145 - European Network for assuring food integrity using non-destructive spectral sensors

SUMMARY

There is an increasing need for the food industry to provide information on their products in order to satisfy quality standards and to protect their products from food fraud. Recent developments in technology, and advances in big data analytics, provide the opportunity for step-changes that can transform the role of food integrity assurance from one of just strictly conformance to one that addresses a wide range of business critical concerns, including quality, safety and authenticity solutions. Non-destructive Spectroscopic Sensors (NDSS), such as NIR Spectroscopy, Fluorescence, Raman or Hyperspectral imaging, enable rapid, non-destructive and environmentally-safe assessment of multiple parameters in a variety of food products. Most applications of these technologies in the food industry are made at-line. Industry requires them to be deployed *in situ* and preferably on-line for full process control over the entire food chain. These requirements introduce constraints on sensor design and calibration development which do not normally apply to laboratory-based instruments. Long-term stability of instruments, robustness of the calibrations, sensor integration in production environments, transferability of data and the building of real-time decision-making systems are critical issues to be considered. SensorFINT will create a vibrant network, combining experience in research, manufacture, training and technology transfer in relation to NDSS. The Action will operate by developing generic solutions to existing and emerging problems in non-invasive food process control building an "smart food control system" as well as developing a cadre of well-trained young researchers who will convert scientific results into a reality that matches industrial needs.

SCIENTIFIC SCOPE

Areas of Expertise	Keywords
<ul style="list-style-type: none"> ● Other engineering and technologies: Databases, data mining, data curation, computational modelling for food science and technology ● Chemical sciences: Spectroscopic and spectrometric techniques 	<ul style="list-style-type: none"> ● Spectral sensors, big data and ICTs ● Smart food control system, Non destructive in situ analys ● Food Integrity/ Food Fraud ● Multivariate processing and modelling ● Decision Support Systems and real-time decision making

COST Countries

Main Proposer: ES

Network of Proposers: BE, BG, CY, ES, FR, HU, IE, IT, PL, PT, RO, SI, TR, UK

Main and secondary proposers: 4% ECI / 39% Women / 57% ITC

International Cooperation

International Partner Country: Australia, South Korea, United States

Industrial Dimension

Large companies: Hungary