BULLETIN
FUNDS FOR SCIENTIFIC RESEARCH
N.9 December 2021

a cura della dott.ssa Lucrezia Auditore
(Resp. U.Op. Ricerca BIOMORF)

HORIZON Europe Program

European Research Council (ERC)

Starting Grant 2021
ERC-2022-STG

Deadlines: January 13, 2022, 17:00 Brussels time

Budget: 1 500 000 EUR, max 5 years

The ERC Starting Grants are designed to support excellent Principal Investigators at the career stage at which they are starting their own independent research team or programme. Principal Investigators must demonstrate the ground-breaking nature, ambition and feasibility of their scientific proposal.
Starting Grants may be awarded up to a maximum of **EUR 1 500 000** for a period of **5 years.** The maximum size of the grants is reduced *pro rata temporis* for projects of a shorter duration. (This does not apply to ongoing projects). Additional funding up to **EUR 1 000 000**.can be requested in the proposal to cover the following eligible costs when these are necessary to carry out the proposed work: (a) "start-up" costs for Principal Investigators moving to the EU or an Associated Country from elsewhere as a consequence of receiving the ERC grant and/or (b) the purchase of major equipment and/or (c) access to large facilities and/or (d) other major experimental and field work costs, excluding personnel costs.
Additional funding is not subject to *pro rata temporis* reduction for projects of shorter duration.
All funding requested is assessed during evaluation.
The Principal Investigators shall have been awarded their first PhD **at least 2 and up to 7 years prior to 1 January 2022**. Cut-off dates: PhD awarded from 1 January 2015 to 31 December 2019 (inclusive).
The eligibility period can be extended beyond 7 years in certain properly documented circumstances.
A competitive Starting Grant Principal Investigator must have already shown the potential for research independence and evidence of maturity, for example by having produced **at least one important publication as main author or without the participation of their PhD supervisor.** Applicant Principal Investigators should also be able to demonstrate a promising track record of early achievements appropriate to their research field and career stage, including significant publications (as main author) in major international peer-reviewed multidisciplinary scientific journals, or in the leading international peer-reviewed journals of their respective field. They may also demonstrate a record of invited presentations in well-established international conferences, granted patents, awards, prizes, etc.
Link

Consolidator Grant 2021
ERC-2022-COG

Deadlines: March 17, 2022, 17:00 Brussels time

Budget: 2 000 000 EUR, max 5 years

The ERC Consolidator Grants are designed to support excellent Principal Investigators at the career stage at which they may still be consolidating their own independent research team or programme. Principal Investigators must demonstrate the ground-breaking nature, ambition and feasibility of their scientific proposal.
Consolidator Grants may be awarded up to a maximum of **EUR 2 000 000** for a period of **5 years.** The maximum size of the grants is reduced *pro rata temporis* for projects of a shorter duration. (This does not apply to ongoing projects).
Additional funding up to **EUR 1 000 000**.can be requested in the proposal to cover the following eligible costs when these are necessary to carry out the proposed work: (a) "start-up" costs for Principal Investigators moving to the EU or an Associated Country from elsewhere as a consequence of receiving the ERC grant and/or (b) the purchase of major equipment and/or (c) access to large facilities and/or (d) other major experimental and field work costs, excluding personnel costs. Additional funding is not subject to *pro rata temporis* reduction for projects of shorter duration. All funding requested is assessed during evaluation.
The Principal Investigators shall have been awarded their first PhD **at least 7 and up to 12 years prior to 1 January 2022**. Cut-off dates: PhD awarded from 1 January 2010 to 31 December 2014 (inclusive).
The eligibility period can be extended beyond 12 years in certain properly documented circumstances.

A competitive Consolidator Grant Principal Investigator must have already shown research independence and evidence of maturity, for example by having produced **several important publications as main author or without the participation of their PhD supervisor**. Applicant Principal Investigators should also be able to demonstrate a promising track record of early achievements appropriate to their research field and career stage, including significant publications (as main author) in major international peer-reviewed multidisciplinary scientific journals, or in the leading international peer-reviewed journals of their respective field. They may also demonstrate a record of invited presentations in well-established international conferences, granted patents, awards, prizes, etc.
Link

Proof of Concept Grant2
ERC-2022-POC2

Deadlines: February 15, 2022, 17:00 Brussels time

Budget: 1 500 000 EUR, max 5 years

The ERC Proof of Concept Grants aim to maximise the value of the excellent research that the ERC funds, by funding further work (i.e. activities which were not scheduled to be funded by the original ERC frontier research grant) to verify the innovation potential of ideas arising from ERC funded projects. Proof of Concept Grants are therefore on offer only to Principal Investigators whose proposals draw substantially on their ERC funded research.
Size of ERC Proof of Concept Grants. The financial contribution will be awarded as a **lump sum of EUR 150 000** for a period of **18**

months. The ERC expects that normally proof of concept projects should be completed within 12 months. However, to allow for those projects that require more preparation time, projects will be signed for 18 months. Given this initial flexibility, extensions of the duration of proof of concept projects may be granted only exceptionally. The lump sum will cover the beneficiaries' direct and indirect eligible costs for the project: if the project is implemented properly the amounts will be paid regardless of the costs actually incurred. The lump sum has been designed to cover the beneficiaries' personnel costs, subcontracting, purchase costs, other cost categories and indirect costs. All **Principal Investigators in an ERC frontier research project**, that is **either ongoing or has ended less than 12 months before 1 January 2021**, are eligible to participate and apply for an ERC Proof of Concept Grant.
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HORIZON_MSCA-2021-COFUND-01
Marie Skłodowska-Curie Actions

MSCA COFUND 2021
HORIZON-MSCA-2021-COFUND-01

Deadlines: February 10, 2022, 17:00 Brussels time

Projects results are expected to contribute to the following outcomes:
For supported doctoral candidates or postdoctoral researchers

- Deeper and more diverse set of research-related and transferable skills and competences;
- Improved employability and career prospects both within academia and beyond;
- New mind-sets and approaches to R&I work forged through interdisciplinary and inter-sectoral experience;
- Enhanced networking and communication capacities with scientific peers, as well as with the general public that will increase and broaden the research and innovation impact.

For participating organisations

- Enhanced quality and sustainability of research training;
- Increased global attractiveness, visibility and reputation of the participating organisation(s);
- Stronger R&I capacity and output among participating organisations;
- Increased contribution of the participating organisations to the local, regional and/or national socio-economic ecosystems;
- Regular feedback of research results into teaching and education at participating organisations.

Applicants submit proposals for new or existing doctoral or postdoctoral programmes with an impact on the enhancement of human resources in R&I at regional, national or international level. These programmes will be co-funded by MSCA COFUND.
Proposed programmes can cover any research disciplines ("bottom-up"), but exceptionally can also focus on specific disciplines, notably when they are based on national or regional Research and Innovation Strategies for Smart Specialisation (RIS3 strategies). In this case, the range of covered disciplines should allow reasonable flexibility for the researchers to define their topic. Funding synergies with Cohesion policy funds and the Recovery and Resilience Facility (RRF) are strongly encouraged.
A Career Development Plan must be jointly established by the supervisor and each recruited researcher upon recruitment. In addition to research objectives, this Plan

comprises the researcher's training and career needs, including training on transferable skills, teaching, planning for publications and participation in conferences and events aimed at opening science and research to citizens. The Plan must be established at the beginning of the recruitment and should be revised (and updated where needed) within 18 months.
COFUND takes the form of:
A) ***Doctoral programmes*** Doctoral programmes offer research training activities to allow doctoral candidates to develop and broaden their skills and competences. They will lead to the award of a doctoral degree in at least one EU Member State or Horizon Europe Associated Country. The training activities should be based on the EU Principles on Innovative Doctoral Training.
Substantial training modules, including digital ones, addressing key transferable skills and competences common to all fields and fostering the culture of Open Science, innovation and entrepreneurship will be supported. They will include, *inter alia*, training on the use of collaborative tools, opening access to publications and to research data, FAIR data management, public engagement and citizen science.
On top of compulsory international mobility, applicants are encouraged to include elements of cross-sectoral mobility and interdisciplinarity into their programmes. Collaboration with a wider set of associated partners, including from the non-academic sector, will be positively taken into account during the evaluation. These organisations may provide hosting or secondment opportunities or training modules in research or transferable skills.
Particular attention is paid to the quality of supervision and mentoring arrangements as well as career guidance. The selection procedure for doctoral candidates must be open, transparent and merit-based, in line with the Code of Conduct for the Recruitment of Researchers. The vacancy notice (to be widely advertised internationally, including on the EURAXESS website) must include the minimum gross salary (not including employer's social contributions) offered to the researcher.
B) ***Postdoctoral Programmes*** Postdoctoral Programmes fund individual advanced research training and career development fellowships for postdoctoral researchers. The programmes should offer training to develop key transferable skills and competences common to all fields, foster innovation and entrepreneurship and promote and (where appropriate) reward Open Science practices (open access to publications and to research data, FAIR data management, public engagement and citizen science, etc.).
Postdoctoral Programmes should have regular selection rounds following fixed deadlines or regular cut-off dates, allowing fair competition between researchers. The selections should be open, widely advertised internationally (including on the EURAXESS website), competitive, merit-based and with a transparent international peer review, in line with the Code of Conduct for the Recruitment of Researchers. The vacancy notice must include the minimum gross salary (not including employer's social contributions) offered to the postdoctoral researcher.
On top of compulsory international mobility, applicants are encouraged to include elements of cross-sectoral mobility and interdisciplinarity into their programmes. Researchers will be able to freely choose a research topic and the appropriate organisation to host them, fitting their individual needs.
Link

MSCA Researchers at risk 2021
HORIZON-MSCA-2021-RR-01

Deadlines: January 6, 2022, 17:00 Brussels time

Project results are expected to contribute to the following outcomes:

- A more consistent and sustained level of coordination and preparedness for supporting researchers at risk at European, national and institutional level;
- Improved support to researchers at risk through the provision of policy recommendations, as well as advice and assistance on their implementation;
- A more sustainable and professionalised support network/structure/system for researchers at risk across Europe, facilitating access to funding and networking opportunities, creating level playing field for applicants to European and national R&I programmes, and raising the quality of submitted proposals;
- More synergies between initiatives supporting researchers at risk funded by EU programmes (such as Horizon Europe and Erasmus+) and national or institutional actors;
- Increased exposure of researchers at risk to the industry and to the non-academic sector;
- Greater awareness in Europe and beyond on why researchers are at risk and ways to support them.

Scope: To build on the results of the Researchers at Risk initiative "InSPIREurope" launched under the MSCA in 2019, further support is envisaged towards national and international organisations working with researchers at risk and aiming to enhance and professionalise their activities. The support action should take into consideration existing work and new challenges for researchers at risk, such as the consequences of the COVID-19 pandemic. It should further facilitate and strengthen cooperation and linkages between European, national and institutional initiatives and programmes, increasing awareness on why researchers are at risk, as well as identifying and delivering the best possible solutions.
The support action should be aligned with the general objectives of the MSCA, in particular scientific excellence, skills and career development, inter-sectoral mobility, equal opportunities and inclusiveness, attractive working conditions, work/life balance, while fostering open science, innovation and entrepreneurship. It should not duplicate other actions foreseen under Horizon Europe or other EU-funded programmes such as Erasmus+, but rather build synergies between these programmes. The activities carried out under this support action should complement actions in Member States and third countries associated to Horizon Europe.
The expected duration of the action is 36 months.
Link

MSCA Staff Exchanges 2021
HORIZON-MSCA-2021-SE-01

Deadlines: March 9, 2022, 17:00 Brussels time

Project results are expected to contribute to the following outcomes:
For staff members

- Increased set of research and transferable skills and competences, leading to improved employability and career prospects within and outside academia;
- More knowledge and innovative ideas converted into products, processes and services;

- More entrepreneurial mind-sets, testing new and innovative ideas;
- Increased international exposure leading to extended networks and opportunities;
- Enhanced networking and communication capacities with scientific peers, as well as with the general public that will increase and broaden the research and innovation impact.

For participating organisations

- Innovative ways of cooperation and transfer of knowledge between sectors and disciplines;
- Strengthened and broader international, interdisciplinary and inter-sectoral collaborative networks;
- Boosted R&I capacity.

Scope: MSCA Staff Exchanges involve organisations from the academic and non-academic sectors (including SMEs) from across the globe.
Support is provided for international, inter-sectoral and interdisciplinary mobility of R&I staff leading to knowledge transfer between participating organisations.
Mobility through secondments The organisations constituting the partnership contribute directly to the implementation of a joint R&I project by seconding and/or hosting eligible staff members. Such a project must explore activities that can be based on previous work but should go beyond and generate or strengthen long-term collaborations. Secondments must always take place between legal entities independent from each other. MSCA Staff Exchanges can address three dimensions of mobility: inter-sectoral, international and interdisciplinary. While exchanges between organisations within EU Member States and Horizon Europe Associated Countries should mainly be inter-sectoral, same-sector exchanges are also possible under the condition that they are interdisciplinary. Interdisciplinarity is not required for same-sector exchanges with non-associated Third Countries.
Secondments between institutions established in non-associated Third Countries or within the same EU Member State or Horizon Europe Associated Country are not eligible.
The collaborative approach of MSCA Staff Exchanges should exploit complementary competences of the participating organisations and create synergies between them. The secondments should be essential to achieve the joint project's R&I activities. The project should *inter alia* enable networking activities and the organisation of workshops and conferences, to facilitate sharing of knowledge and testing of innovative approaches for specific R&I topics.
Skills' development For participating staff members, the project should offer new skills acquisition and career development perspectives. Participating organisations must ensure that the seconded staff are adequately mentored.
Link

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Horizon Europe Framework Programme (HORIZON)

Cluster 1

Staying healthy (two stage – 2022)

Boosting mental health in Europe in times of change (RIA)
HORIZON-HLTH-2022-STAYHLTH-01-two-stage

Deadlines:
February 01, 2022 17:00:00 Brussels time
September 06, 2022 17:00:00 Brussels time

This topic aims at supporting activities that are enabling or contributing to one or several impacts of destination 1 "*Staying healthy in a*

rapidly changing society". To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to all of the following expected outcomes:

- Health care professionals, national/regional public authorities and other relevant actors in key settings (e.g. schools, workplaces, etc.):
  - Have access to and apply evidence-based, innovative, cost-effective/cost-neutral, large-scale, comprehensive strategies and interventions for the promotion of mental health and the prevention of mental ill health, targeting the most vulnerable populations;
  - Adopt clinical guidelines, best practices, implementation strategies and policy recommendations (as applicable to them) to mitigate the mental health burden and help cope with the (combined) effects of a transforming Europe (e.g. the socio-economic consequences of the COVID-19 pandemic, climate change, environmental degradation, energy transition, demographic and migration factors, digitalisation, and exponential technological advancements);
- The scientific community together with the public authorities anticipate new and emerging risks to mental health associated with a transforming Europe, contributing to better and inclusive public mental health preparedness.
- Citizens have access to and make use of new tools and services to take informed decisions about their wellbeing and mental health care needs (including for self-management and self-care).
- Citizens feel less stigmatised and marginalised due to their mental ill health.

Scope: Against the backdrop of a transforming Europe and in the midst of a global pandemic, the EU is committed to lead the transition to a healthier planet and a new digital world. The health and wellbeing of its citizens is a prerequisite to achieve this aspiration.

On the one hand, extreme weather and environmental disasters have risen dramatically over the last decade. Links between these events and serious mental health problems, including anxiety, depression, post-traumatic disorder and suicide, have been reported. Moreover, several new words such as "eco-anxiety", "ecoparalysis" and "ecological grief" have been coined to express the acute and/or chronic effects on mental health caused by climate and environmental changes.

On the other hand, digital technologies and the achievement of the Digital Single Market – one of the EU's key priorities – are transforming our economy, our industries as well as our culture and lifestyle. Digitalisation, including digitally-enabled technologies such as robotics and artificial intelligence, are penetrating much faster into societies than in the past and affect us all. Accordingly, the "Fourth Industrial Revolution"' is changing the way we work (e.g. workplaces, working practices and patterns, the workforce and its skills, and how we perceive work) as well as the way we live. The exponential incorporation of digital technologies in our daily lives has already caused profound changes in the way we communicate and is likely to have significant impact (both positive and negative) on mental health and intellectual/cognitive ability, in particular of the youth. Digital platforms can provide mental health support as well as increase social inclusiveness. However, digital technologies also introduce new risks, such as continuous connectivity, cyberbullying and exposure to inappropriate or fake content.

Accordingly, the proposed research should aim to deliver in all three dimensions listed below, focusing on one or several of the (combined) effects of a transforming Europe highlighted in the "Expected Outcomes".

- Provide a comprehensive knowledge base of how a transforming Europe can influence mental health in a fast-evolving society, especially in the most vulnerable populations, by consolidating data from relevant sources and/or acquiring new data, and by reviewing existing methodologies.
- Develop and implement (pilot and/or scale-up) interventions, which promote wellbeing and prevent mental illness to help cope with and mitigate the stress of a changing society, including digitalisation, climate change and/or other factors highlighted in the "Expected Outcomes".8 The interventions should target relevant settings (e.g. workplaces, schools) and the most vulnerable populations (e.g. children and adolescents, the elderly, people with pre-existing health conditions and co-morbidities and other high-risk groups such as socio-economic disadvantaged groups, migrants, etc.). Integration of care and coordination among different settings from communities to health care is desirable. The effectiveness of the interventions should be evaluated, inter alia, in terms of health outcomes, (comparative) cost-effectiveness, implementation facilitators and barriers. Depending on the aspects covered by the proposed research, desired outputs may include, but are not limited to:
  - Evidence-based guidelines for health care professionals on the promotion of mental wellbeing and prevention of mental illness related to ICT and climate and environment change (including screening methods).
  - Evidenced-based pedagogical practices for education professionals to foster mental health promotion in schools (including higher education) and/or via eLearning.
  - Consultation during school time to educate students (e.g. on coping with change) and to detect early students at risk.
  - Educational material and campaigns targeting the most vulnerable groups, (e.g. children and the elderly), disseminated via the most appropriate and effective media and communication channels, to improve health literacy, skills, attitudes and self-awareness leading to a better (self-)management of wellbeing and/or mental ill health.
  - Studies on occupational mental health in the workplace, in particular in small and medium-sized enterprises, e.g.: i) understanding the impact of a 24-hour digital economy on workers' well-being, also in terms of managerial control mechanisms, work-life balance and privacy and developing/piloting new methods to protect and support workers' well-being in this respect; ii) designing information and training campaigns for workers to integrate the already visible impacts of digitalisation-induced changes into the professional risk assessment processes; iii) developing return-to-work programmes, also exploring innovative collaboration between mental health services, (life-long) education, and employment sectors. This will ensure appropriate support to better integrate individuals affected by mental ill health in the workforce and the society.
- Inform policy-makers and regulators on: i) the prevalence and burden of mental ill

health related to a transforming European society (e.g. digital technologies, climate change, etc); and/or ii) the effects of a transforming European society (e.g. digitalisation, climate change and transition to "green jobs") on occupational mental health; and/or iii) the (comparative) cost-effectiveness of public mental health interventions/policy choices.

Research should be multidisciplinary, including medical sciences, social sciences, the humanities, and the arts, if relevant. It is important to consider aspects such as (associated) behavioural patterns, stigma and novel social dynamics as well as different socioeconomic, cultural and geographical contexts. In all instances, sex and gender-related issues must be taken into account. All data should be disaggregated by sex, age and other relevant variables, such as by measures of socioeconomic status (i.e. take into account the socioeconomic gradient in mental health). International collaboration is encouraged.

Link

Trustworthy artificial intelligence (AI) tools to predict the risk of chronic non-communicable diseases and/or their progression (RIA)

HORIZON-HLTH-2022-STAYHLTH-01-04

Deadlines:
February 01, 2022 17:00:00 Brussels time
September 06, 2022 17:00:00 Brussels time

This topic aims at supporting activities that are enabling or contributing to one or several expected impacts of destination 1 *"Staying healthy in a rapidly changing society"*. To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to all of the following expected outcomes.

- Clinicians, medical professionals and citizens have access to and use validated AI tools for disease risk assessment. Hence, citizens are better informed for managing their own health.
- Health care professionals utilise robust, trustworthy and privacy-preserving AI tools that help them to assess and predict the risk for and/or progression of chronic non-communicable diseases. Hence, citizens benefit from improved health outcomes.
- Health care professionals develop evidence-based recommendations and guidelines for the implementation of AI-based personalised prevention strategies. Hence, citizens benefit from optimized health care measures superior to the standard-of-care.
- Health care professionals employ quantitative indicators in order to identify and follow-up on individuals with high risk for the development and/or risk for the progression of chronic non-communicable diseases.

Scope: It is widely recognised that health systems must put more emphasis on prevention and adopt a person-centred approach. Artificial intelligence (AI) along with the increased availability of health data hold great potential to pave the way for personalised prevention and enable progress towards risk prediction and early detection of chronic non-communicable diseases.

This topic will support multidisciplinary research, build on broad stakeholder engagement and support proposals developing novel robust and trustworthy AI tools to enable timely personalised prevention approaches for chronic non-communicable diseases/disorders. The topic does not exclude any diseases/disorders.

Proposals are expected to develop and test AI tools for assessing and predicting the risk of

developing a disease and/or the risk of disease progression once it is diagnosed, taking into account the individuals' (or groups) genotypes, phenotypes, life-style, occupational/environmental stressors and/or socio-economic and behavioural characteristics, as necessary. Sex and gender aspects should be considered, wherever relevant.

The AI tools may include a broad range of technological solutions on their own and/or in combination with other relevant state-of-the-art technologies (i.e. AI algorithms, mobile apps and sensors, robotics, e-health tools, telemedicine etc.)

Proposals should implement proof-of-concept studies to test and validate the performance of their AI tools in the real-world setting and compare their performance to the established practice.

The applicants should ensure that the AI tools developed are driven by relevant end-users/citizens/health care professionals needs. Therefore, the proposals are expected to introduce concrete measures for the involvement of the end-users throughout the AI development process and not only in the last phases of development. SME(s) participation is encouraged with the aim to strengthen the scientific and technological basis of SME(s) and valorise their innovations for the people's benefit.

Proposals should address all of the following:

- Leverage existing high-quality health-relevant data from multiple sources (i.e. cohorts, electronic health records and registries, taking into account the individual's genotypic/phenotypic, medical, life-style, socio-economic, behavioural data etc.) and/or generation of new high-quality health data necessary for the rigorous development of the AI disease-risk tools.
- Develop the adequate performance metrics to assess the technical robustness of the developed AI tools for risk assessment of disease and/or disease progression and in particular their accuracy, reliability, reproducibility and generalisability. Proposals should assess the possible inherent bias introduced to the AI tools originating from the data quality used for their development.
- Develop the criteria to assess the effectiveness of the AI tools for disease risk assessment in terms of improving health outcomes and enabling personalised prevention strategies.
- Implement proof of concept and/or feasibility studies to validate the AI tools for risk assessment of disease and/or disease progression in a relevant end-users environment and/or real-world setting and assess their performance in comparison to the standard-of-care.

Proposals should adhere to the FAIR data principles and apply good practices for GDPR-compliant personal data protection. Proposals are encouraged to implement international standards and best practices used in the development of AI solutions.

Integration of ethics and health humanities perspectives to ensure an ethical approach to the development of AI solutions. In relation to the use and interpretation of data, special attention should be paid to systematically assess for gender and ethnic bias and/or discrimination when developing and using data-driven AI tools.

To ensure citizens' trust, wide uptake by user communities and scalability of the solutions across clinical contexts, actions should promote the highest standards of transparency and openness of the AI tool, going well beyond documentation and extending to aspects such as assumptions, architecture, code and underlying data.

Link

Prevention of obesity throughout the life course (RIA)
HORIZON-HLTH-2022-STAYHLTH-01-05

Deadlines:
February 01, 2022 17:00:00 Brussels time
September 06, 2022 17:00:00 Brussels time

This topic aims at supporting activities that are enabling or contributing to one or several impacts of destination 1 "*Staying healthy in a rapidly changing society*". To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to some of the following expected outcomes:

- Researchers, developers of medical interventions, and health care professionals have a much better understanding of basic biological pathways (genetic and epigenetic blueprints) conferring susceptibility to and protecting against overweight/obesity, i.e. how genetic, epigenetic, environmental, socio-economic and lifestyle factors interact to drive or prevent the transition from normal weight to overweight/obesity throughout the life course.
- Health care professionals, national/regional/local public authorities and other relevant actors (e.g. schools, canteens, hospitals, work places, shopping malls, sport centres):
  - Have access to, adopt and implement evidence-based clinical guidelines, best practices, coordinated, pan-European, multidisciplinary preventive strategies, policy recommendations and/or new policies to fight overweight/obesity and their co-morbidities throughout the life course.
  - Have access to and make use of a robust outcomes framework and tool-kit for standardised collection of economic and cost data related to the prevention and treatment of overweight/obesity and its co-morbidities at population level across European regions and countries.
  - Adopt and implement tailor-made prevention campaigns to tackle overweight/obesity, including campaigns for improving integration of health education into academic learning and raising awareness of health care providers and citizens.
- Citizens have access to and make use of new tools and services to make informed decisions about lifestyle choices that will prevent them from becoming overweight/obese.

Scope: Obesity is one of the most serious public health challenges of the 21st century. Although health has improved in the EU over the last decades, the prevalence of obesity has tripled in many countries of the EU. It is known that once individuals become overweight or obese, they are at risk of developing related diseases (diabetes, cardiovascular diseases, cancer). Overweight and obesity are largely preventable. In the current pandemic, the issue of overweight/obesity has become even more prominent, highlighting the need for prevention of overweight/obesity.

Increased efforts in research and innovation are critical for developing and testing the impact of tools, initiatives, interventions, strategies, programmes, policies and their implementation to prevent overweight/obesity. The use of best practices, harmonisation guidelines and/or standard operating procedures, developed at various levels (from local to national) in the EU and beyond, will be the foundation for new research.

Cultural diversity, urban/rural dichotomy, socio-economic status, age groups, sex and gender differences should be investigated,

where relevant. Strong collaborations across sectors and with other European projects dealing with issues such as agriculture, aquaculture, food, environment, etc. are welcome. Proposals should engage citizens, civil society organisations (e.g. employers/employee organisations, charities), authorities (e.g. municipalities and health authorities) and institutions (schools, canteens, hospitals, work places, shopping malls, sport centres), local producers, etc. in the development of their actions to ensure acceptability and deployment. Proposals should aim to develop scientifically robust and transparent methodologies, building on achievements from previous research activities.

Proposals should address several of the following research bottlenecks:

- A comprehensive understanding of biological pathways (genetic, epigenetic, molecular, microbiome, and/or neuroimmune) conferring susceptibility to and protecting against uncontrolled "weight gain".
- Identification of socio-economic and lifestyle factors influencing consumer behaviour and their association to overweight/obesity prevention.
- Identification of pre-obesity biomarkers (genetic, laboratory, imaging, etc.) and their association to lifestyle and environmental interventions aiming at obesity prevention and tailored to specific target populations.
- Mapping existing implementation research activities to prevent overweight/obesity, outcome analyses and identification of best practices.
- Conducting a thorough meta-review of information from available scientific literature and identification of the relationship between the risk for overweight/obesity and the biology of obesity, lifestyle habits, exposures, susceptibility to co-morbidities and/or all of their combinations.
- Developing recommendations and guidelines for what constitutes an appropriate healthy diet for different age and health groups.
- Understanding the causal links between overweight/obesity and sedentary behaviour, quality and quantity and types of food/drinks, physical activity, and personality traits.
- Designing a creative and engaging programme to reach the optimal balance between diets and physical activity for the prevention of overweight/obesity.
- Analysing obesity stigma, stress and work-life balance, circadian rhythm disruption, mental health (including psychological problems), screen-time dependency, drugs and side effect of drugs, for the prevention of overweight/obesity.
- Addressing inequality aspects of overweight/obesity at multiple levels, taking into account vulnerable groups, gender and socio-economic factors.
- Setting up pilots to assess the effectiveness of obesity management strategies, including cost-effectiveness, and analyse the impact of inactions, taking into account co-morbidities and value-based care system.
- Developing a system for monitoring population indicators relevant to overweight/obesity by extending European Core Health Indicators.

Proposals should adopt a patient-centred approach that empowers patients, promotes a culture of dialogue and openness between health professionals, patients and their families.

Link

Personalised blueprint of chronic inflammation in health-to-disease transition (RIA)

HORIZON-HLTH-2022-STAYHLTH-02-01

Deadlines: April 21, 2022 17:00:00 Brussels time

This topic aims at supporting activities that are enabling or contributing to one or several expected impacts of destination 1 "*Staying healthy in a rapidly changing society*". To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to several of the following expected outcomes:

- Researchers and medical professionals understand the chronic inflammation factors triggering the health-to-disease transition and subsequently provide optimal counselling to citizens for improving their health.
- Health care professionals have access to and employ objective health indicators of chronic inflammation for monitoring the health status, establishing personalised prevention measures and improving the health outcomes for citizens.
- Health care professionals have the scientific evidence and understanding of health-to-disease transition to develop and use improved guidelines for personalised prevention strategies to tackle chronic diseases.
- Citizens are better informed to actively manage their own health, have the tools to maintain their healthy status, improve their health and reduce their risk for developing chronic diseases.

Scope: Personalised approaches for disease prevention seek to determine the predisposition to disease and deliver timely and targeted prevention measures. Understanding the risk factors that trigger the health-to-disease transition is essential for delivering personalized prevention measures or reducing the burden of chronic diseases.

A large body of clinical evidence has accumulated over the past decade demonstrating that chronic inflammation is a process implicated in chronic diseases/disorders. Inflammatory response is a physiological process helping the body to heal against harmful entities, but when dysregulated it could lead to unresolved chronic local or systemic inflammation. The later in combination with the person's genotype, phenotype, medical history, nutritional and well-being status, life-style and/or occupational/environmental/life stressors is likely to be involved in driving the health-to-disease transition, leading to the onset of chronic diseases. Proposals should be of multidisciplinary nature involving all relevant stakeholders and may cover several different stages in the continuum of the innovation path (from translational research to validation of the findings in human studies etc.), as relevant. Proposals are expected to develop and implement data-driven, personalised approaches to identify the drivers of chronic inflammation that may determine the transition from health to pre-symptomatic and early stages of chronic diseases/disorders. The topic does not exclude any diseases/disorders. The human studies and human data utilised/generated should be compatible to an age range as representative as possible to the pre-disease phase and onset of the disease to be studied, in order to boost the fast translation of the research results into proof-of-concept studies.

Proposals should develop personalised diagnosis and/or prevention strategies linked to chronic systemic/local inflammation and assess the effects of different types of interventions and/or their combinations i.e. pharmacological, non-pharmacological, nutritional supplements, diet and life-style

modifications, as relevant. Sex and gender differences should be investigated, wherever relevant.
The proposals should address several of the following areas:

- Integrate state-of-the-art knowledge and data from suitable human studies (i.e. medical/clinical, well-being, life-style etc.) to identify actionable factors linking chronic systemic and/or local inflammation to the health-to-disease transition. Take stock of omics (i.e. genomics, metabolomics, nutrigenomics, microbiomics etc.), of dynamic measurements of the health and well-being status, and of data-driven analytical tools in order to identify biomarkers and other health indicators linked to the health-to-disease transition.
- Understand at the systems-level the human biology and physiology underlying chronic inflammation in connection to the tissues/organ dysregulation, organ cross-talk and homeostasis breakdown triggering the health-to-disease transition, taking into account the person's genotype, phenotype, medical history, nutritional and well-being status, life-style and/or occupational/environmental/life stressors.
- Develop and deploy robust sensors, devices and/or mobile apps and other innovative technologies to monitor dynamically the individual's health status and to identify objective indicators of chronic inflammation correlative to the health-to-disease transition.
- Implement proof-of-concept human studies to assess the beneficial effect of diverse prevention and/or interventions strategies with the aim to demonstrate improved health outcomes.
- Test suitable interventions with the aim to demonstrate the reduction and/or reversion of the pre-disease state linked to chronic systemic and/or local inflammation.

Proposals should adopt a patient-centred approach to inform and empower patients, promote a culture of dialogue and openness between health professionals, patients and their families, and unleash the potential for social innovation.
Link

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Horizon Europe Framework Programme (HORIZON)

Cluster 1

Tackling diseases and reducing disease burden

Deadlines: April 21, 2022 17:00:00 Brussels time

Pre-clinical development of the next generation of immunotherapies for diseases or disorders with unmet medical needs (RIA)

HORIZON-HLTH-2022-DISEASE-06-02

This topic aims at supporting activities that are enabling or contributing to one or several expected impacts of destination 3 "*Tackling diseases and reducing disease burden*". To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to some of the following expected outcomes:

- The scientific and clinical communities make effective use of the pre-clinical validation of new immunotherapies for high burden diseases or disorders with unmet medical needs.
- The scientific and clinical communities have access to new knowledge allowing for a better understanding of the mode of action of the next generation of

immunotherapies and/or combinatorial treatments, which enables further development and optimisation of treatments.

- The scientific and clinical communities have access to and use new personalized models (*in vitro* and *in vivo*) for high burden diseases or disorders as well as protocols for the next generation of immunotherapies.
- Health care professionals have access to and use new evidence-based safety and efficacy guidelines for immunotherapies. Proof-of-clinical concept, when applicable, as single or combinatorial treatment, should be compared to existing approaches.

Scope: Immunotherapy is defined as a treatment able to stimulate or restore the ability of the immune (defence) system to fight infection, disease or disorder. It has proved to be a valuable medical treatment notably when preventive interventions are not available. Passive and active immunotherapies (such as antibody-based, RNA-based and cell-based therapies, respectively) are covered by this topic, which is aiming at the pre-clinical to first-in human development of next generation immunotherapies for unmet needs.

Proposals should build on existing knowledge in the field, when available, in order to save time and to avoid spilling resources, and could build on the knowledge of the interaction between the immune system (innate and adaptive arms) and the microbiota, or take advantage of key enabling technologies such as biotechnology and nanotechnology, advanced manufacturing, imaging, 5G, internet of things, artificial intelligence and existing databases.

The next generation of immunotherapies are needed in order to improve and diversify the capabilities of health care for several communicable and non-communicable diseases that cannot be effectively tackled with the currently available treatments.

Proposals are expected to address some of the following research gaps for the development of the next generation of effective and safe immunotherapies:

- Preclinical development and study of new immunotherapeutic agents *in vitro* and in relevant animal model(s) of the disease(s). This includes understanding of the therapy's agent(s) mode of action, its toxicity, the development of related potency assay(s), and its/their validation *in vitro* and *in vivo*. A robust regulatory and Health Technology Assessment (HTA) strategy should be in place at the start of the proposal.
- Off-the-shelf therapies, including the cell-based therapies, will be considered as assets during the evaluation.
- Proposals could include proof-of-concept (PoC)/first-in-human studies for testing the new therapies, with a clear regulatory and clinical pathway and should address as appropriate the therapy-related potential for adverse side effects. PoC and clinical studies in humans should take sex, gender, age and socio-economic factors into account, where relevant. Phase II studies or later phase trials will not be supported.
- Development of a standardised framework for assays and data usage to enable a robust assessment of the safety and efficacy.
- In case treatments are already available for the proposed targeted disease(s), a justification of the need for development of a new immunotherapy treatment is requested.
- The proposed action should include a pathway of the necessary steps to ensure sustainable therapeutic agent production (considering intellectual property

management if relevant) and uptake by health systems and rapid access to patients.
Link

Vaccines 2.0 - developing the next generation of vaccines (RIA)
HORIZON-HLTH-2022-DISEASE-06-03

This topic aims at supporting activities that are enabling or contributing to one or several expected impacts of destination 3 "*Tackling diseases and reducing disease burden*". To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to all of the following expected outcomes:

- The scientific and clinical communities use the increased knowledge on pathogens and better understanding of the immune system's role in infectious diseases to develop vaccines with improved efficacy.
- Vaccine manufacturers use more innovative and sustainable manufacturing technologies and improved GMP manufacturing know-how for producing the next generation of vaccines.
- A diversified portfolio of vaccine candidates ready for testing in clinical trials help policy makers and funders to make informed decisions about support to vaccine development.
- New innovative and improved design of preclinical/clinical studies that match the features of the next generation of vaccines is available for clinical community and regulators, and will shorten vaccine development time.

Scope: Infectious diseases, including antimicrobial resistant (AMR) infections, remain a major threat to health and health security in the EU and globally. The availability of more effective, accessible and affordable vaccines would provide the most cost-effective preventive measure against the health threat of epidemics and AMR pathogens. Vaccines against diseases, such as AIDS, tuberculosis (TB), malaria, neglected tropical diseases, hepatitis C and water-borne diseases are essential to achieve the WHO targets to control the spread of infectious diseases. The first generation of vaccines against some of the pathogens have proven to be suboptimal and not effective enough to protect the population. Many viruses of pandemic potential are variable in their surface antigen composition, and novel technologies are required to develop efficient vaccines against each new variant efficiently and in a short timeframe. To ensure that more effective, accessible and affordable vaccines against all major infectious diseases become a reality, it is essential to sustain a diverse and modernised vaccine development pipeline.
Proposals should aim to diversify and accelerate the global vaccine research and development pipeline, and to strengthen the current leading role of the EU in vaccine research and development. Proposals should cover those pathogens, which still lack vaccines of sufficient efficacy, but where earlier efforts have already produced promising vaccine candidates.
The proposals should address several of the following areas:

- Innovation and integration of expertise and capabilities, including alignment of preclinical and clinical models, biomarker studies and new vaccine approaches from discovery to late stage development, from bench-based research to clinical development of promising preventive candidates.
- Application of iterative processes (including cross-learning, back-translation steps, integrative analysis of data) to allow exploitation and integration of novel

findings between clinical, preclinical and discovery research and development.
- Deciphering mechanisms of protection of candidates, new approaches to antigen discovery and immunogen engineering, reverse vaccinology, evaluation of vaccines in novel platforms and technologies, novel adjuvants, innovative vaccine manufacturing approaches, relevant animal models, evaluation of alternative vaccine delivery routes.
- Effective, evidence-based decision-making for progression of vaccine candidates in the pipeline based on transparent and objective portfolio management. Regulatory requirements be considered. Sex, gender, age and socio-economic factors should be taken into account.

Link

Development of new effective therapies for rare diseases (RIA) (second stage)
HORIZON-HLTH-2022-DISEASE-06-04

This topic aims at supporting activities that are enabling or contributing to one or several expected impacts of destination 3 "*Tackling diseases and reducing disease burden*". To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to some of the following expected outcomes:
- Researchers and developers make the best use of the state-of-the-art knowledge and resources for a fast and effective development of new therapies for rare diseases.
- Researchers and developers increase the development success rate of therapies for rare diseases by employing robust preclinical models, methods, technologies, validated biomarkers, reliable patient reported outcomes and/or innovative clinical trials designs.
- Developers and regulators move faster towards market approval of new therapies for rare diseases (with currently no approved treatment option) due to an increased number of interventions successfully tested in late stages of clinical development.
- Healthcare professionals and people living with a rare disease get access to new therapeutic interventions and/or orphan medicinal products.

Scope: Despite the considerable amount of knowledge that has been accumulated and the new orphan medicines developed in recent years, the number of available therapies for rare diseases remains low, as fewer than 6% of rare diseases have an approved treatment option.
The joint evaluation of the regulations on orphan medicinal products and paediatric medicines concluded that those regulations have boosted the development for new therapies for rare diseases but have not yet adequately managed to direct research and innovation in areas of greatest unmet medical need. Actually, there is an urgent unmet medical need for the development of therapies for rare diseases, where there is still no approved therapeutic option available.
Therefore, proposals should aim to develop therapies for rare diseases with no approved therapeutic option. Proposals should focus on group(s) of rare diseases with commonalities, such as shared biological features, possibly within the same and/or across different medical areas within the rare diseases landscape. Thus, proposals should not address a single disease only (for example with an Orphacode representing a single disease).
The therapies to be developed may include a broad family of therapeutic interventions such as small molecule(s), advanced therapy

medicinal products, repurposing of existing medicinal products, including non-pharmacological interventions and/or their combinations, as relevant. Sex and gender aspects should be considered, where relevant. To ensure that the needs of people living with a rare disease are adequately addressed, the involvement of patient representatives in all phases of the research and development process is strongly encouraged. Rare infectious diseases and rare cancers are excluded from this topic and will not be considered.

The topic will support proposals covering several different stages in the continuum of the innovation pathway (i.e. translational, preclinical, clinical research, validation in the clinical and/or real-world setting etc.), as relevant. SME(s) participation is encouraged with the aim to strengthen the scientific and technological basis of SME(s) and valorise their innovations for the benefit of people living with a rare disease.

The proposals should address most of the following research activities:

- Establish multidisciplinary collaborations between all relevant stakeholders by integrating disciplines, technological developments and existing knowledge. Integrate harmonised data from multiple sources (i.e. natural history studies/clinical trials, multi-omics, medical imaging, registries etc.) by utilising data analytics and/or other suitable methods, with the aim to understand the pathophysiology/heterogeneity of the rare diseases concerned and to identify therapeutically actionable mechanisms.
- Develop and utilise relevant preclinical models and/or innovative tools/technologies to: verify molecular/cellular pathways/genes that can be therapeutically targeted, increase the confidence in the targets selection and/or perform toxicity studies. When using disease models the applicants should describe how well the model replicates the pathology or the human condition.
- Develop and/or execute innovative clinical trials designs for small populations and novel approaches to assess and monitor the safety and efficacy of the proposed interventions. Such approaches may include but are not limited to: biomarkers defining robust surrogate and clinical endpoints; artificial intelligence tools/medical devices/biosensors/ companion/ complementary diagnostics for defining reliable patient reported outcomes; modelling and simulation and in-silico trials methodologies.
- Carry out preclinical proof-of-concept (PoC) studies and/or multinational interventional clinical studies to demonstrate the safety and efficacy of the therapeutic interventions under study. Preclinical PoC studies should include late-stage preclinical studies (i.e. toxicological properties, adverse effects etc.). Clinical studies may cover all necessary development stages. Applicants should propose a clear exploitation pathway through the different necessary steps (research, manufacturing, regulatory approvals and licensing, IP management etc.) in order to accelerate marketing authorisation and uptake by the health systems.

Proposals should involve group(s) of rare diseases (i.e. a rare disease being individually defined in the European Union as affecting not more than five in 10.000 persons). Proposals that plan to run clinical trials should demonstrate that they have already taken into account scientific advice or protocol assistance from EMA. In particular, proposals planning the clinical development of orphan

medicinal products should demonstrate that they have been granted approval for an orphan designation at the latest on the date of the call deadline.
Link

Pandemic preparedness (RIA)
HORIZON-HLTH-2022-DISEASE-07-02

This topic aims at supporting activities that are enabling or contributing to one or several expected impacts of destination 3 "*Tackling diseases and reducing disease burden*". To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to some of the following expected outcomes:

- The scientific community has better understanding of the biology of the pathogens (virus, bacteria etc.), its transmission, its interaction with humans, animals and plants, in particular in view of emerging threats to human health, such as infectious diseases and anti-microbial resistance.
- Health care providers and practitioners have access to and use appropriate medical countermeasures, e.g. vaccines, diagnostics, therapeutics and digital solutions.
- Health authorities have the evidence-base and tools for better public health measures.

Scope: The COVID-19 pandemic has revealed weaknesses in the ability of the Union and its Member States to respond quickly and effectively to such an unprecedented health emergency. Therefore, the Commission is stepping up its efforts in supporting the Union's ability to respond to serious cross-border threats. Member States agreed to step up their coordination in the area of pandemic preparedness research and aim to establish a European partnership on pandemic preparedness. A dedicated coordination support action will help develop a common long-term Strategic Research and Innovation Agenda for such a partnership. A key component for the European Health Union will be the establishment of the Health Emergency Preparedness and Response Authority (HERA) for which the Commission will put forward a legislative proposal by the end of 2021. It should build on experiences dealing with COVID-19, SARS and influenza, and consider emerging biological threats to human health, e.g. in the context of climate change, deforestation and biodiversity loss. This topic aims to contribute and complement both of these initiatives, notably by addressing priority research and innovation gaps also identified by Member States and that would contribute and support the establishment and work of a potential future Health Emergency Preparedness and Response Authority (HERA).
Research focussing on 'pathogen X' from threat assessment, horizon scanning for the identification of potential medical countermeasures and innovative technologies, including the development of standardised research protocols would be in the scope of this topic.
Link

Non-communicable diseases risk reduction in adolescence and youth (Global Alliance for Chronic Diseases - GACD) (RIA)
HORIZON-HLTH-2022-DISEASE-07-03

This topic aims at supporting activities that are enabling or contributing to one or several expected impacts of destination 3 "*Tackling diseases and reducing disease burden*". To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to some of the following expected outcomes:

- Health care practitioners and providers in low- and middle-income countries (LMICs) and those in high-income countries (HICs) serving vulnerable populations have access to and use specific guidelines to implement prevention interventions able to support adolescents and young people to decrease future risks of developing NCDs.
- Public health managers and authorities have access to improved insights and evidences on the NCDs related to behaviours and conditions in youth and adolescence. They establish improved health policies to diminish these risks, including to facilitate the deployment of effective public health interventions.
- Researchers, clinicians and authorities have an improved understanding of the factors that influence the implementation of preventive actions that address risk behaviours in youth and adolescence.
- Communities and local stakeholders and authorities are fully engaged in implementing and taking up health interventions and thus contribute to deliver better health.

Scope: The European Commission is a member of the Global Alliance for Chronic Diseases (GACD), an alliance of international funding agencies representing over 80% of the world's public health research funding and the first collaboration of its kind to specifically address non-communicable diseases (NCDs). The GACD supports implementation science to improve health outcomes. This topic is launched in concertation with the other GACD members funding agencies and aligned with the GACD call 2021.

The topic is focused on implementation research about common risk prevention interventions targeting adolescents and youth to reduce the impact of non-communicable diseases (NCDs) in low- and middle-income countries (LMICs) and vulnerable populations in high-income countries (HICs). Proposals should focus on implementation science around evidence-based interventions that promote healthy behaviours, and that have the potential to profoundly reduce the risk of chronic diseases and multimorbidity.

The GACD Alliance is particularly interested in funding projects that focus on interventions that reduce health risk and/or enhance a healthy lifestyle in young people, which the WHO defines as the period from ages 10-24 and includes adolescence (ages 10-19) and youth (15-24). Adolescence and youth mark a period of emerging independence and an important time for laying the foundations of good health. Adolescence and youth is a period in life where patterns of behaviour are established around diet, physical activity, substance use and sexual activity, which can affect their health in the present; in their future adult lives; and even in the next generation. In the transition from childhood to adulthood, young people become increasingly exposed to harmful products such as tobacco, alcohol and drugs, and can experience devastating mental health issues such as depression, anxiety, self-harm, substance abuse and addictions, as well as eating disorders and suicide. Over 150 million young people smoke; 81% adolescents do not meet physical activity guidelines; 11.7% of adolescents partake in heavy episodic drinking; and suicide has emerged as a leading cause of death in young people globally.

All proposals must make the case for why their selected life stage is a critical period for the reduction of NCD risk in the communities where the research will be undertaken. There are a range of evidence-based interventions, including the WHO Best Buys, which aim to reduce the health risks associated with common NCD risk factors. Implementation

research is necessary to understand the uptake, accessibility, acceptability, adaption, sustainability and costs of known interventions for use in young adults and adolescents. Applicants are invited to consider interventions at the individual, family, community (e.g., work or school) or population level. Multi-sectoral approaches and a combination of different types of interventions, including biomedical, digital (such as artificial intelligence and big data), socio-behavioural, and/or structural are encouraged. Projects will be expected to build on evidence-based interventions that focus on prevention interventions and strategies that reduce common risk factors for chronic non-communicable diseases, or that promote healthy behaviours. Such interventions/strategies might include, but are not limited to, those in the following three areas: nutrition, physical activity, and/or sleep; tobacco, substance abuse and/or alcohol use; social wellbeing and loneliness. Proposals should be gender-responsive and consider socioeconomic, racial or other factors that relate to equitable impacts of the intervention or barriers to equitable implementation.
Proposals should include implementation research outcomes (e.g. feasibility, fidelity and/or adaptation, spread and/or penetration, acceptability, sustainability, uptake, and cost effectiveness) and where relevant, include service outcomes (e.g. efficiency, safety, effectiveness, patient-centeredness, timeliness). The aim is to harmonise the research common goals and the outcomes assessment of GACD-funded projects in order to maximise the potential for learning across the network and the impact of the initiative as a whole. To this end, all funded teams are expected to use explicit indicators and measures of project context, reach, outcomes evaluation and scale-up potential in their plans and protocols. In this topic, the use of the following measures is encouraged: evidence of uptake of promoted healthy behaviours; evidence of reduction in harmful behaviours; and proxy mental and/or physical health outcomes, if appropriate (pre- and post-intervention PHQ-9 scores, blood pressure, HbA1C, etc.).
Proposals should include a strategy to include policy makers and local authorities, as well as other relevant stakeholders such as community groups. Such engagement should inform the conception and development of the project and should continue throughout the duration of project and afterwards during the knowledge translation phase. Participants that are local stakeholders can be powerful assets to the projects indeed. Their contributions should be nurtured through meaningful engagement throughout all phases of the project, not only as participants in the research undertaken.
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Horizon Europe Framework Programme (HORIZON)
Cluster 6 - Food, Bioeconomy Natural Resources, Agriculture & Environment

Understanding the oceanic carbon cycle
HORIZON-CL6-2022-CLIMATE-01-02

Deadline: February 15, 2022, 17:00:00 Brussels time

In support to the European Green Deal and its biodiversity and climate initiatives, successful proposals will contribute to strengthening the ocean - climate nexus by reinforcing the scientific capacity to further our understanding of the natural ocean carbon sinks and their potential role in mitigating and adapting to climate change, help identify

lasting solutions to climate change by paying greater attention to nature-based solutions for healthy and resilient seas and ocean. The ocean is a large storage system for the global reservoirs of climate-regulating factors. Successful proposals will also close knowledge gaps in support of decision-making aimed at preserving the integrity of ocean and aquatic ecosystems through a better understanding of the drivers of change in the ocean and emerging threats.

Project results are expected to contribute to all of the following expected outcomes:

- Furthered ocean exploration and increased understanding, predictability and reduced uncertainty associated with the oceanic carbon cycle and the role, capacity, spatial and temporal changes and trends over time in the ocean and its ecosystems in absorbing and storing CO_2 from the atmosphere.
- Improved understanding of the potential of the ocean and its ecosystems for contributing to the next generation of carbon cycling models, such as those used by the Intergovernmental Panel on Climate Change, to set global climate policy.
- Significant contribution to closing the knowledge gaps in the ocean carbon cycle and substantial contributions made to key international assessments, such as the Intergovernmental Panel on Climate Change (IPCC), Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), World Ocean Assessment (WOA) and other major regional and global initiatives.

Scope: The ocean has a key role in regulating atmospheric CO_2 concentrations and currently take up about 25% of annual anthropogenic carbon emissions. The oceanic carbon cycle is composed of processes that exchange carbon between various pools within the ocean, as well as between the atmosphere, Earth interior, and the seafloor. The oceanic carbon cycle is a result of many interacting forces across multiple time and space scales. The oceanic carbon cycle is a central element of the global carbon cycle and contains three main processes (or pumps): the solubility pump, the carbonate pump, and the biological pump. In order to better understand, quantify and predict the ocean's potential for carbon uptake, actions should further research the oceanic carbon cycle. The deep sea and its water column may be the largest carbon sink on Earth but its large-scale carbon uptake potential and future is still unknown. Ocean carbon sequestration options include the management of natural ocean processes, i.e. actions to maintain the integrity of natural carbon stores and actions that enhance the long-term (century-scale) removal and sequestration of greenhouse gases from the atmosphere by marine systems, primarily by biological means. Actions should aim at developing innovative approaches to understand the complex processes underlying the oceanic carbon cycle, its efficiency, climate sensitivity, and emerging feedbacks. Actions should further the understanding of the resilience to climate change and temporal and regional variability of the natural carbon inventory in the ocean. Actions should further the understanding of how the biological pump and the deep ocean carbon sink will respond to the rapid and ongoing anthropogenic changes to our planet—including warming, acidification, and deoxygenation of ocean waters. Actions should advance the scientific understanding of marine pelagic and benthic invertebrate and vertebrate carbon, the carbon services they provide (i.e. trophic cascade carbon, biomixing carbon, carbon mineralisation, bony fish carbonate, whale pump, twilight zone carbon, biomass carbon, deadfall carbon and marine vertebrate mediated carbon), and the intricate biological

pathways involved in carbon cycling and the associated implications for climate regulation. Actions should assess and model the marine vertebrate carbon services and should link them to population dynamics, with a view to gathering enough evidence to enable their inclusion in the models of carbon cycling. Actions should assess and model the as yet poorly quantified carbonate-forming invertebrate species in the deep sea, such as reef-building scleractinians, as well as their resilience to cumulative impacts of global changes. Actions should contribute to ocean observations and the Digital twin of the oceans by providing an ocean carbon-modelling environment. Actions should improve the sampling of regions and metrics for marine organisms and should gather evidence and data to estimate and quantify the global CO_2 sequestration potential of protecting and restoring populations of invertebrates and vertebrates to previous levels. Actions should explore the efficiency and global magnitude of the biological pump and how this will be affected by climate change. Actions should deliver quantification and predictability of the ocean carbon sink and in so doing, should contribute to resolving the uncertainty in the magnitude and sign of projections of future global ocean primary production. The regional variability in the amplification or reduction of the efficiency of the ocean carbon sink is an important element that actions should take into consideration, as the climate effects on the carbon sink (both on the physical and biological drivers) will have a strong regional correlation. The importance of polar regions in the carbon cycle needs to be kept in mind. Actions should further the regional predictive skill beyond five years.

Actions should further investigate tipping points and irreversibility in the ocean carbon cycle (both for the upper ocean and the intermediary & deep ocean), the biogeochemical feedbacks, the changes that will occur in the 21st century, both globally and regionally, and how the multiple stressors will affect the primary production (monitoring strategies to have access to all the compartments - upper, intermediary and deep ocean). Among the stressors, the effects of trawling, drilling, overfishing, deep-sea mining and dredging on carbon cycling and sediment dynamics should be included and investigated using marine monitoring techniques. Actions should look into the policy implications of the findings of this research.

For this action, the multifaceted nature of the ocean carbon cycle necessitates collaboration across disciplines, taking an ecosystem approach. At a minimum, actions should link science on the changing ocean physics and chemistry, and more generally on climate, with the study of the marine biota and their evolution. International cooperation is strongly encouraged. Actions under this topic should plan on a close collaboration among each other and should build upon and link with Horizon 2020 projects and other European and international ocean observing initiatives, including the Integrated Ocean Carbon Research, IOC-R. All in-situ data collected through actions funded from this call should follow INSPIRE principles and be available through open access repositories supported by the European Commission (Copernicus, GEOSS, and EMODnet). Where relevant, creating links to and using the information and data of the European Earth observation programme Copernicus, the Group on Earth Observations (GEO) and the Global Earth Observation System of Systems (GEOSS) is expected.

Link

Marine microbiome for a healthy ocean and a sustainable blue bioeconomy (RIA)
HORIZON-CL6-2022-CIRCBIO-01-07

Deadline: February 15, 2022, 17:00:00 Brussels time

In line with the European Green Deal, the EU bioeconomy strategy and the blue growth strategy, the successful proposals will support the development of microbiome-based greener aquatic industrial products/processes and/or environmental services sustaining the health of aquatic ecosystems for a healthy planet and people.
The project results are expected to contribute to all of the following expected outcomes:

- Provision of a scientific base to enable the efficient production of high-quality marine microbiome data, increased data interoperability and facilitate its use by a wide range of stakeholders. Improvement of capacity building in bioinformatics in Europe and overcome fragmentation.
- Increased engagement of all actors in the marine microbiome biodiscovery pipeline, including industry, the scientific community, and civil society in full consideration of the sustainability objectives while accelerating the profitability and economic prospects of marine microbiome-enabled products and processes.
- Proven biodiscovery strategies based on whole microbiome communities enlarging the spectrum of biotechnology-enabled products and processes of value to society based on marine bioresources.
- Better protection and sustainable use of marine (genetic) bioresources by advancing new intellectual property rights (IPR) approaches to securing clear access while ensuring fair and equitable sharing of benefits arising from their utilisation.
- Increased awareness on the potential of marine microbiome to boost the sustainable blue bioeconomy.

Scope: The ocean is the Earth's largest microbiome. Microorganisms represent nearly 90% of the ocean biomass and largely determine the functioning and health of marine ecosystems. They also contain a great variety of metabolic pathways that can yield beneficial products and processes such as medicines, high value industrial compounds and environmental services. The marine microbiome is one of the fastest growing segments of the blue bioeconomy and its study is vital to advance the discovery, understanding, protection and harnessing of the ocean.
The purpose of the action is to develop novel tools and approaches to produce, analyse and use marine microbiome data for the discovery and production of high value sustainable industrial products/processes and/or environmental services that sustain the health of aquatic ecosystems.
Applicants should address:

- Scientific and technological challenges cutting across marine microbiome fields such as: (i) developing new methods to analyse and model microbiome communities and take full advantage of post-genomic technologies and bioinformatic analysis pipelines; (ii) developing standards and common methodologies that are coherent across marine microbiome exploration, monitoring and engineering, and can adapt to the capacity of the different sectors (science, industry, people and society); and (iii) optimising the use of (pre-existing) databases and research infrastructures by ensuring interoperability and enhanced networking.
- Bioprospecting to discover biological compounds or functions that are obtained

only through complex interactions involving whole microbiome communities; targeted cultivation strategies beyond lab grown monocultures; manipulate and bioengineer microbiome products that ensure the sustainable use of marine bioresources; ensure open access and benefit sharing in balance with agreements and negotiations to protect intellectual property.

Collaboration between private industry and academia, and the link with end users and society are both essential. In addition, the professional skills and competences on marine microbiomes of those working and being trained to work within the blue bioeconomy should be improved.

Proposals should assess the risks and ethics related to microbiome science & technology and guarantee the preservation of biodiversity and the compliance with EU regulations on access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation (ABS) in the EU. Fostering long-term preservation in biobanks, proper documentation of rights for redistribution and full traceability of their use and benefits.

Dissemination, public engagement and establishing links between researchers and the various end users should be central to the proposals. Projects should seek synergies and capitalise on the results of past or ongoing research. Cooperation with other selected proposals under this topic and complementary topics included in this work programme is encouraged.

International co-operation is strongly encouraged as a win-win scenario, while contributing to the European competitiveness and resilience.

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Bandi a regime di presentazione permanente

Alzheimer's Research UK: Scientific Conference

Alzheimer's Research UK has a large number of different grant schemes through which you can apply for funding. All applications must fall within Alzheimer's Research UK's remit which covers biomedical research in Alzheimer's disease and other dementias. Alzheimer's Research UK funds research into cause, diagnosis/detection, prevention and treatment (disease modifying and symptomatic). Of particular importance is research which has translational potential for patient benefit. This includes basic preclinical as well as clinical research, but not care or service delivery research.

Link

Union for International Cancer Control (UICC): Technical Fellowship (UICC-TF)

Transfer of cancer control knowledge, skills and techniques through one month international visits

Objectives:

- Facilitate the international exchange and development of technical knowledge and skills in all areas of cancer control
- Build capacity of the individual and the home organisation through the effective application and dissemination of the newly acquired skills in the home organisation upon return
- Support the development of networks of cancer control professionals for the continued sharing of best practices and knowledge, and the informal provision of ongoing support, guidance or training

The 2021 calls for applications to the Technical Fellowships and the sub-programme focused on Francophone Africa, *Bourses pour l'Afrique francophone* opened on 1 February 2021
Link

Borse e premi della Fondazione Alexander von Humboldt

L'Alexander von Humboldt Foundation è una fondazione no-profit tedesca volta alla promozione della cooperazione internazionale nel campo della ricerca. La Fondazione offre a ricercatori altamente qualificati, di qualsiasi nazionalità, la possibilità di trascorrere periodi di ricerca in Germania.
Nota: Le candidature devono essere generalmente presentate da Enti/istituti di ricerca tedeschi, specificati nel bando. Si invita pertanto gli interessati a prendere contatti con tali enti con congruo anticipo, nonché di verificare eventuali ulteriori requisiti specifici.
Si riportano di seguito le varie tipologie di finanziamento offerte.

" Humboldt Research Fellowships for Post-Doctoral Researchers"
Borse di ricerca rivolte a scienziati e studiosi altamente qualificati di qualsiasi nazionalità in possesso del titolo di dottorato da non più di 4 anni e all'inizio della loro carriera accademica, per trascorrere un periodo di ricerca in Germania.
Durata: 6 - 24 mesi. Le borse ammontano a 2.650 Euro mensili. Sono inoltre previste altre indennità tra cui: un contributo mensile da Euro 500 o 800 per l'Istituto ospitante e una borsa per lo studio intensivo della lingua tedesca.
Link

" Humboldt Research Fellowships for Experienced Researchers"
Borse di ricerca rivolte a scienziati e studiosi altamente qualificati di qualsiasi nazionalità che abbiano conseguito il titolo di dottorato di ricerca (o titolo equivalente) da non più di 12 anni, per trascorrere un periodo di ricerca in Germania. In particolare, i candidati devono già avere la qualifica di "Assistant Professor" (ricercatore) o di "Junior Research Group Leader" o comunque essere in grado di documentare l'attività di ricerca indipendente svolta nel corso di diversi anni. Settori disciplinari: Tutti - Durata: 6 - 18 mesi, frazionabili.
L'ammontare della borsa è pari a 3.150 Euro mensili. Sono inoltre previste altre indennità tra cui: un contributo mensile da Euro 500 o 800 per l'Istituto ospitante e una borsa per lo studio intensivo della lingua tedesca.
Link

" Humboldt Research Award"
Premi rivolti a ricercatori accademici stranieri di fama internazionale a riconoscimento dei loro risultati accademici. I vincitori dovranno sviluppare un progetto di ricerca in Germania in collaborazione con partner tedeschi. Settori disciplinari: Tutti - Durata: 6 - 12 mesi, frazionabili.
L'importo totale del finanziamento è di 60.000 Euro. Ogni anno sono finanziati circa 100 progetti.
Link

"Friederich Wilhelm Bessel Research Award"
20 premi rivolti a ricercatori stranieri di fama internazionale per effettuare un progetto di ricerca con un partner tedesco. I candidati devono aver conseguito il titolo di dottorato negli ultimi 18 anni. Settori disciplinari: Tutti - Durata: 6 - 12 mesi, frazionabili.
L'importo totale del finanziamento è di 45.000 Euro.

Link

Boehringer Ingelheim Fonds: Travel grants

The Boehringer Ingelheim Fonds (BIF) awards travel grants of up to three months duration to MD and PhD students, as well as postdoctoral researchers from all over the world. The BIF supports them if they conduct experimental projects in basic biomedical research and want to pursue short-term research stays or attend practical courses relevant to their projects in Europe or overseas.
The programme also enables graduate students and their potential supervisors to evaluate the scientific and personal fit before starting a PhD project abroad.
The Boehringer Ingelheim Fonds (BIF) travel grants are awarded for research stays of up to three months. They support junior scientists who want to learn clearly-defined methods useful for their ongoing research and their current laboratory by

- Visiting another laboratory
- Attending research-orientated courses with the practical part making up at least 50 % of the course.

They can also be used by PhD candidates and their potential supervisors to evaluate the scientific and personal fit before the start of a PhD project in another country by funding a research stay of one to three months in the supervisor's laboratory.
Link

"EMBO Short Term Fellowships"

EMBO promotes excellence in the life sciences through a variety of programmes and activities. EMBO is entrusted with the execution of the EMBC General Programme. Through its General Programme, the EMBC provides a framework for European co-operation the life sciences. Its focus is the provision of training, teaching and research scholarships, and the establishment of programmes for courses and workshops in the life sciences. Financial contributions from each Member State carry the General Programme.
EMBO Programmes and activities are about research on the mechanisms of life at all levels, from single molecules to organisms and ecosystems. To be able to group and retrieve information from a particular area, we apply a system of 20 broad and non-exclusive categories to our projects, communities, and events.
Link