How to apply for research funding: funding opportunities for Early Stage Researchers and grant writing tips

1st Winter School on Trends on Additive Manufacturing for Engineering Applications
24-28 January 2021

Dr Silvia Tavernini

TODAY'S LECTURE

The lecture will deal with:

- the main research European and international funding opportunities for PhD and Post-Doc.
- some basic best practices on grant writing process with a special focus on the **European Marie Skłodowska-Curie actions**.

TOMORROW

16:30-18:00

silvia.tavernini@unipr.it

AGENDA

MSCA actions

Funding opportunities and where to find them

Before you start writing

- Read all the relevant documents
- Know your enemy
- Get advice and feedback

Grant writing

- Title, acronym, abstract
- Introduction/state of the art
- Objectives
- Methodology
- Impact: communication, dissemination, exploitation
- Implementation: work plan, resources, risks management

Keep trying!

HORIZON 2020 (2014-2020)

Excellence Science

- **European Research Council**
  Frontier research by the best individual teams (ERA)
- **Future and Emerging Technologies**
  Collaborative research to open new fields of innovation
- **Marie Sklodowska Curie Actions**
  Opportunities for training and carrer development
- **Research Infrastructures (Including e-infrastructure)**
  Ensuring access to world-class facilities

Industrial Leadership

Leadership in enabling and industrial technologies

- **ICT**
- **Nanotechnologies materials, biotechnologies, manifacturing**
- **Space**

- **Access to risk finance**
  Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
  Fostering all forms of innovationin all types of SMEs

Societal Challange

- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research, and the bio-economy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Europe in a changing world – inclusive, innovative, reflective societies**
- **Secure Societies**

HORIZON EUROPE (2021-2027)

Pillar 1
Excellent Science

- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

Pillar 2
Global Challenges and European Industrial Competitiveness

Clusters
- Health
- Culture, Creativity and Inclusive Society
- Civil Security for Society
- Digital, Industry and Space
- Climate, Energy and Mobility
- Food, Bioeconomy, Natural Resources, Agriculture and Environment

Joint Research Centre

Pillar 3
Innovative Europe

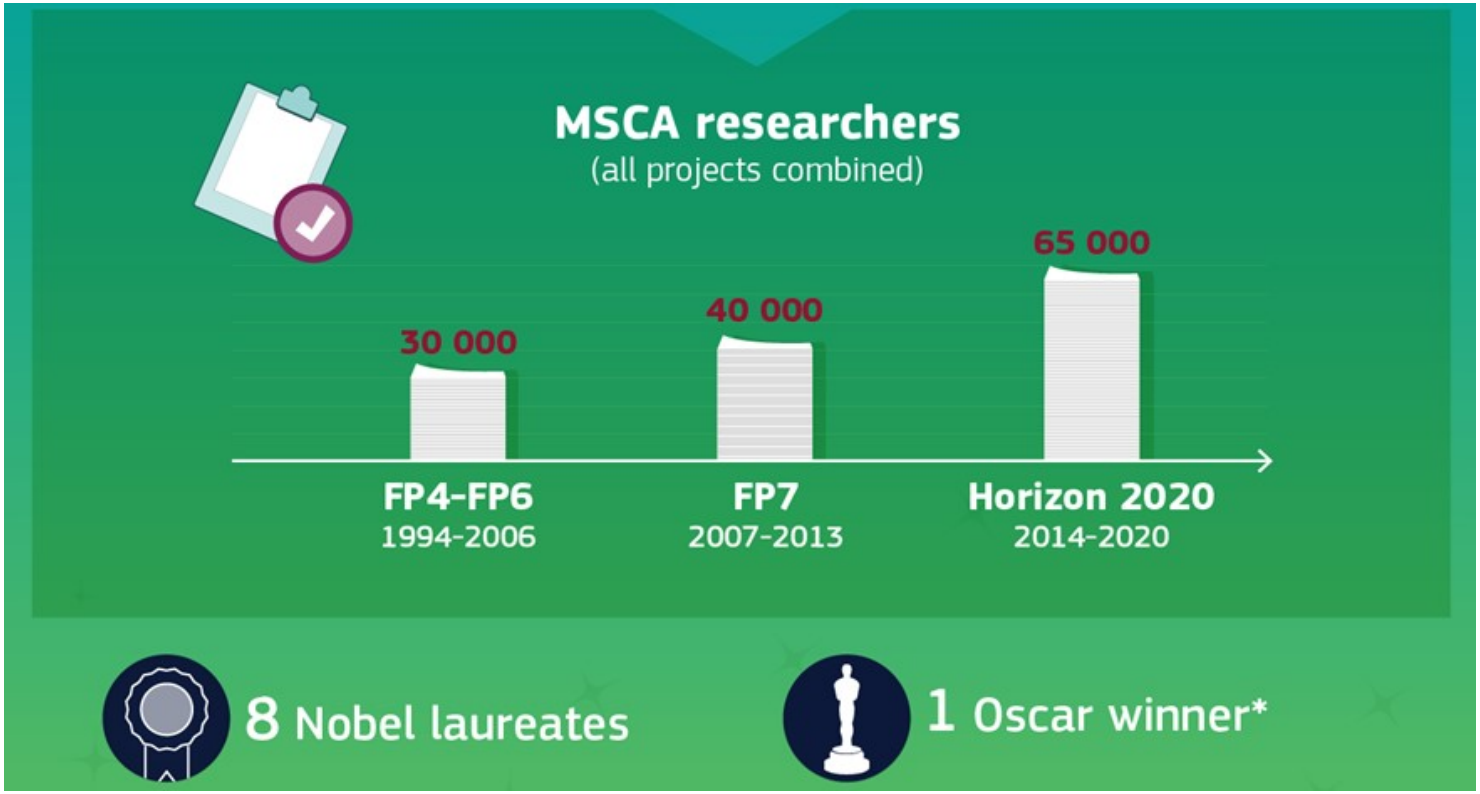
- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

Widening Participation and Strengthening the European Research Area

- Widening participation and spreading excellence
- Reforming and Enhancing the European R&I system

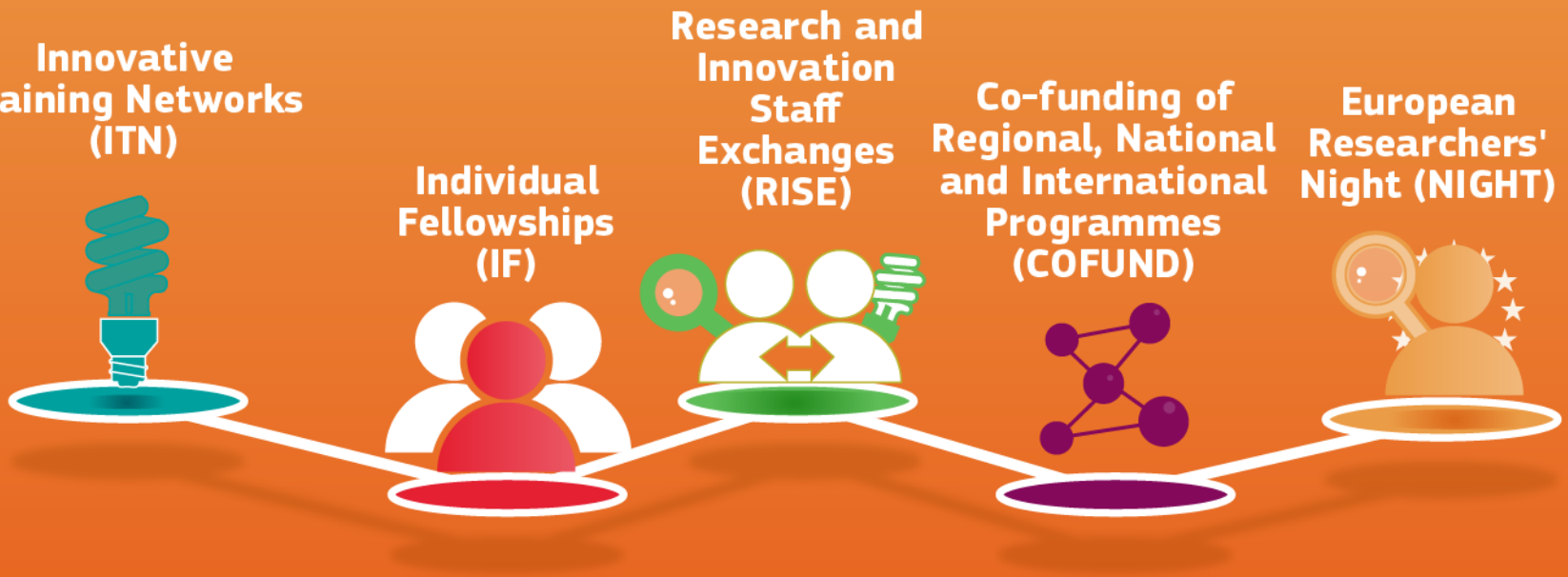
MARIE SKŁODOWSKA-CURIE ACTIONS

The MSCA support researchers in all scientific domains, promote collaboration between the academic, scientific and business communities, boost the careers of scientists at all stages and develop excellent training in Europe and beyond through international and intersectoral mobility.



* A team of software developers involved with MSCA won an Academy Award in 2006 for their work on visual effects software http://europa.eu/!qK83Yg

MARIE SKŁODOWSKA-CURIE ACTIONS



European Commission | Research Executive Agency

MSCA 2021-2027

1. MSCA Doctoral Networks → *networks training doctoral candidates*
2. MSCA Postdoctoral Fellowships → *postdoctoral researchers*
3. MSCA Staff Exchanges → *any type of research(-related) staff*
4. MSCA COFUND → *co-funding training programmes*
5. MSCA and Citizens → *public outreach events*

Please note that the information on Horizon Europe in this presentation is still subject to change!

MARIE SKŁODOWSKA-CURIE ACTIONS

Post-doctoral fellowships

ITN
Innovative Training Networks

What does it offer?
High-quality research training delivered through interdisciplinary networks, industrial doctorates or joint doctorates.

Who applies?
International networks of research organisations from the academic and non-academic sectors

Who is funded?
Researchers at doctoral level (less than 4 years of full-time research experience and no doctoral degree)

IF
Individual Fellowships

What does it offer?
Opportunities to work on personal research projects by moving between countries and possible sectors to acquire new skills.

Who applies?
Individual researchers together with the host organisations

Who is funded?
Postdoctoral researchers

RISE
Research & Innovation Staff Exchange

What does it offer?
The exchanges of staff members involved in research and innovation to develop sustainable collaborative projects and the transfer of knowledge.

Who applies?
International networks of research organisations from the academic and non-academic sectors

Who is funded?
Researchers, technical administrative and managerial staff of any nationality and at all career levels

COFUND
Co-Funding of Regional, National & International Programmes

What does it offer?
Regional national or international programmes to foster excellence in training mobility and career development of researchers

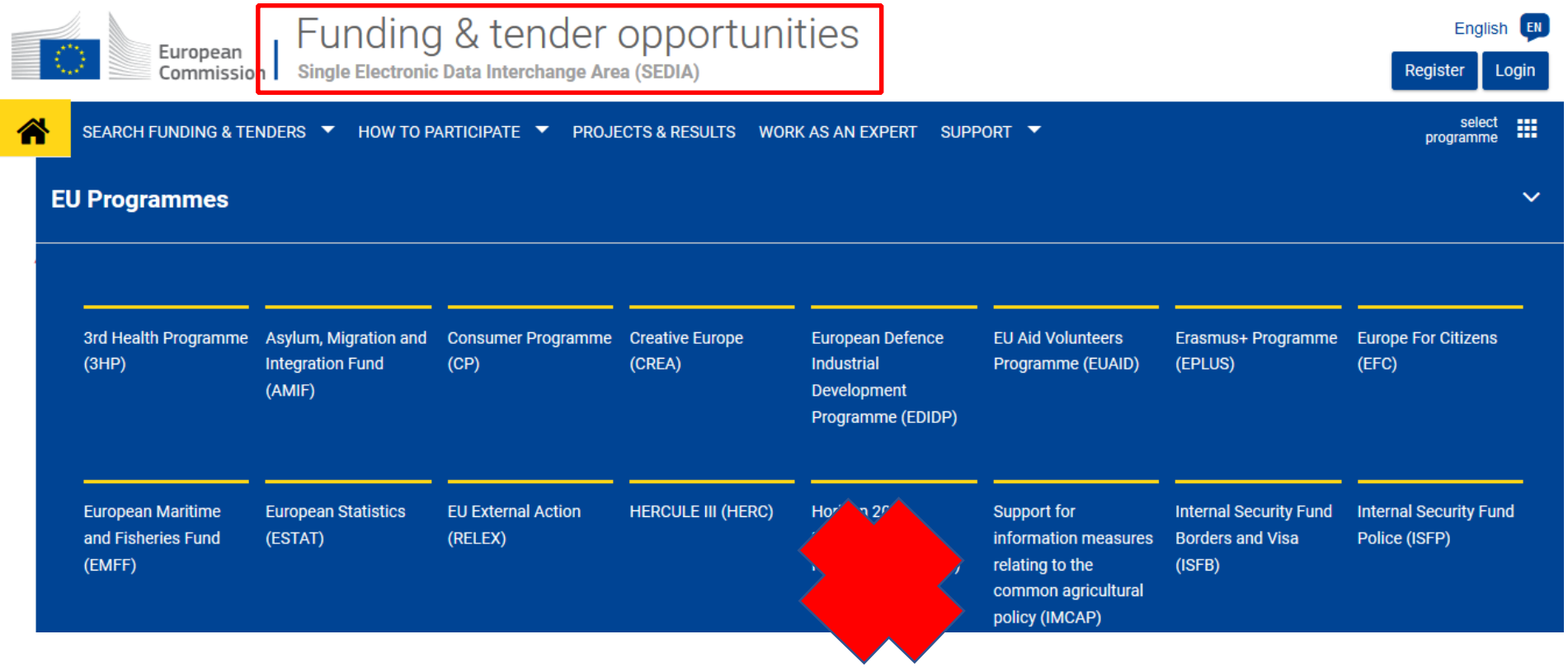
Who applies?
Organisations funding or managing doctoral or fellowships programmes

Who is funded?
Researchers at doctoral and postdoctoral level

FUNDING OPPORTUNITIES

- It’s never too early to think about funding.
- What do you most need the money for? Is it your own time, the costs of travel to do fieldwork, or money to hold a workshop?
- You have to investigate **different possible funding bodies** who give grants or fellowships of the type that support what you need the money for.

Let’s look at some websites you should know...

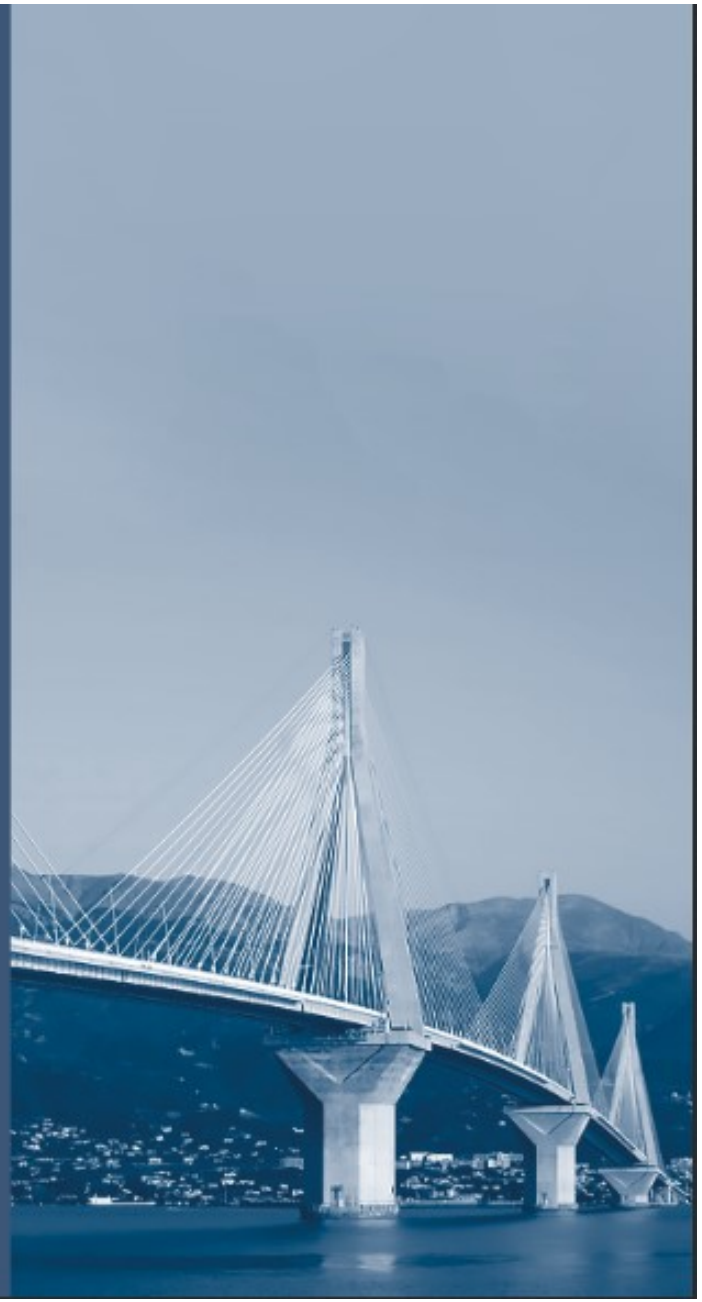


https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home

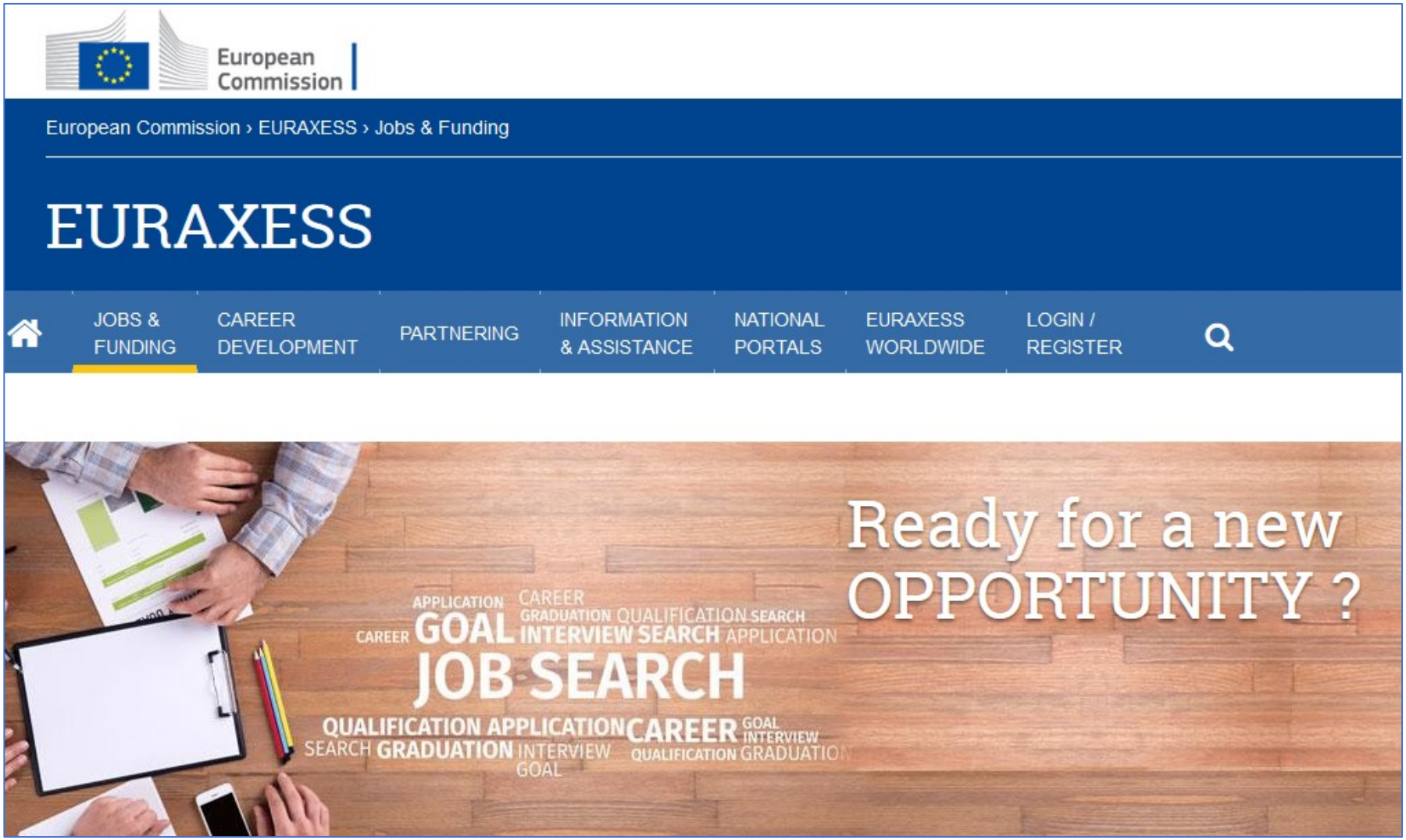
GUIDE TO EU FUNDING 2014-2020

This funding guide constitutes a basic introduction to funding opportunities for **regional and local authorities, NGOs, businesses, professionals and citizens**. Its objective is to list the most important EU funds in a simple way, and to provide appropriate information to potential beneficiaries on the opportunities they offer.

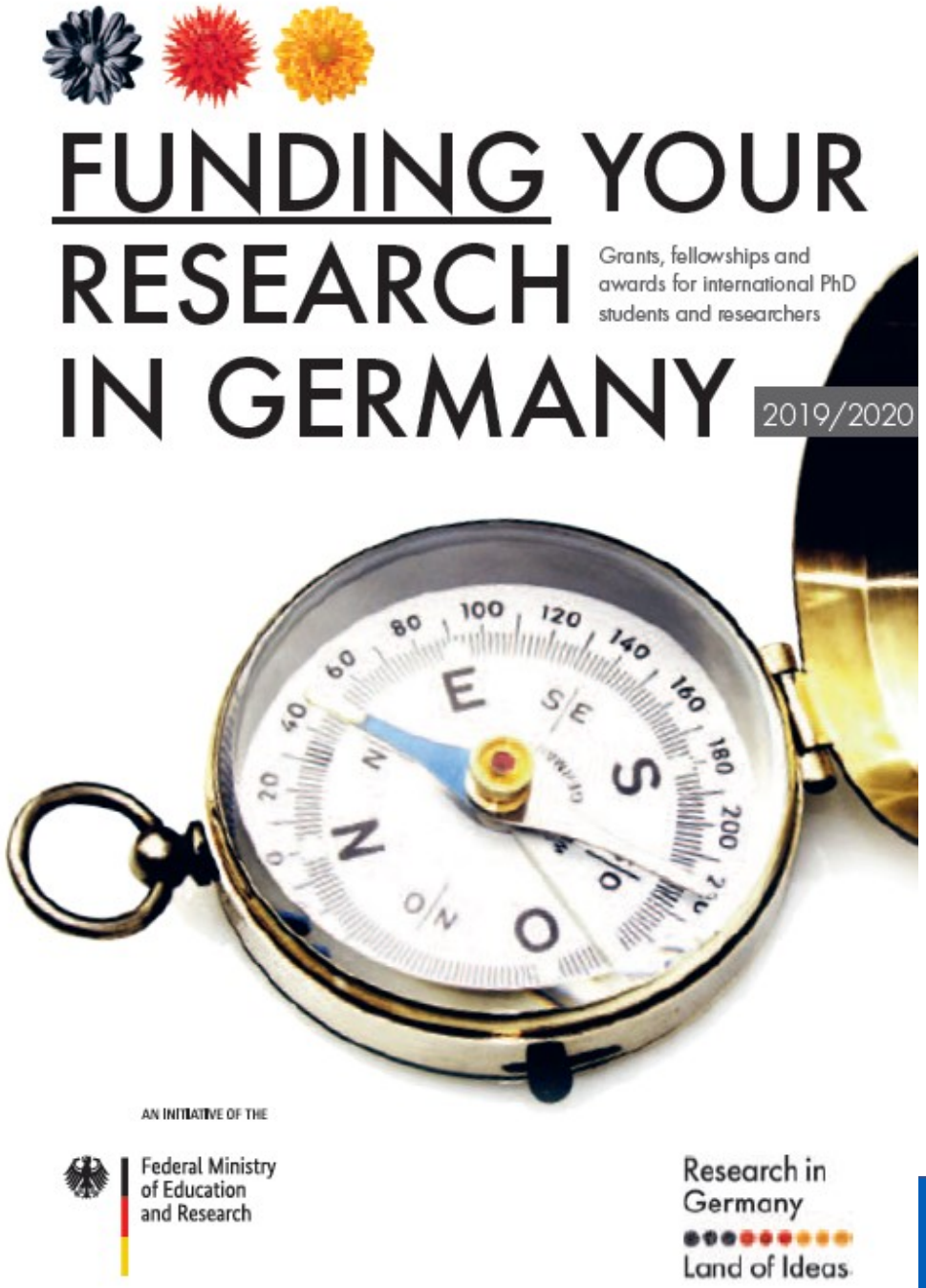
Available versions



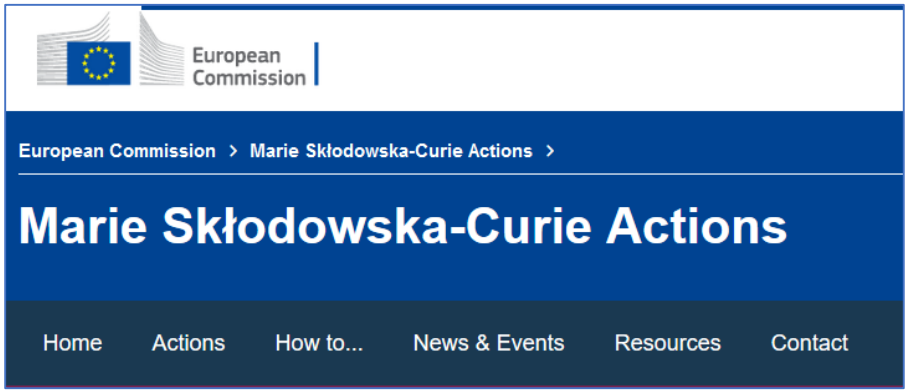
https://www.europarl.europa.eu/EPRS/Funding_Guide.pdf



https://euraxess.ec.europa.eu/jobs



https://www.research-in-germany.org/en/research-funding/funding-programmes.html



https://ec.europa.eu/research/mariecurieactions/how-to/find-job_en

https://recruitment.jrc.ec.europa.eu/

PROGRAMMI EXTRA-EUROPEI DI FINANZIAMENTO

RICERCA INTERNAZIONALE

- Finanziamenti europei
- Finanziamenti extra europei
- Progetti finanziati
- Link utili
- News

Di seguito trovate elencati alcuni tra i maggiori programmi extra-europei di finanziamento di potenziale interesse per l'Ateneo di Parma. Tra parentesi sono definite le tematiche dei programmi: Ambiente (AMB), Chimica (CHI), Informatica (ICT), Ingegneria e Architettura (IA), Matematica e fisica (MF), Scienze socio-economiche (SSH), Scienze della vita (LIF).

Potete trovare le schede dettagliate dei programmi di finanziamento nella pagina Elly Proform della Ricerca Internazionale.

- American Federation for Ageing Research (CHI; LIF) Apri
- American Association of University Women (AMB; CHI; ICT; IA; LIF; MF) Apri
- Allen Foundation, Inc. (AMB; LIF; SSH) Apri
- Alzheimer's Drug Discovery Foundation (CHI; LIF) Apri

I nostri corsi di studio
OFFERTA FORMATIVA 2019-2020

Iscrizioni a.a. 2019-2020
ISCRIVITI A UN CORSO DI STUDIO

Graduatorie
PER I CORSI CON ORDINE CRONOLOGICO

https://www.unipr.it/ricerca/opportunita-di-finanziamento/ricerca-internazionale/altri-programmi

Sponsorship

https://www.humboldt-foundation.de/web/programmes-by-target-group.html

Programmes for researchers ...

coming to Germany | going abroad

Programmes for postdoctoral researchers

→ Humboldt Research Fellowship for Postdoctoral Researchers
from abroad to sponsor a 6 to 24 month research stay at a research institution in Germany.

→ Georg Forster Research Fellowship for Postdoctoral Researchers
for academics from developing countries to do research relevant to development policy which, being carried out in Germany, facilitates the transfer of knowledge and technologies to developing countries. Duration: 6 to 24 months plus a subsequent Return Fellowship lasting 12 months.

→ Capes-Humboldt Research Fellowship for Postdoctoral Researchers
from Brazil to sponsor a 6 to 24 month research stay at a research institution in Germany.

Programmes for junior research group leaders

→ Sofja Kovalevskaja Award
for successful top-flight junior researchers who may use the award to spend five years carrying out research of their own choice at research institutions in Germany and building up their own working groups.
Value of the award: €1.65 million.

Programmes for experienced researchers

→ Humboldt Research Fellowship for Experienced Researchers
from abroad to sponsor a 6 to 18 month research stay at a research institution in Germany. The fellowship is flexible and can be divided up into as many as three stays within three years.

→ Georg Forster Research Fellowship for Experienced Researchers
for academics from developing countries to do research relevant to development policy which, being carried out in Germany, facilitates the transfer of knowledge and technologies to developing countries. Duration: 6 to 18 months. The fellowship is flexible and can be divided up into as many as three stays within three years.

→ Capes-Humboldt Research Fellowship for Experienced Researchers
from Brazil to sponsor a 6 to 18 month research stay at a research institution in Germany. The fellowship is flexible and can be divided up into as many as three stays within three years.

→ Friedrich Wilhelm Bessel Research Award

Other target groups

→ German Chancellor Fellowship
for prospective leaders from Brazil, China, India, Russia and the USA, who have completed at least a first degree (Bachelor or comparable degree) and have demonstrated outstanding potential for future leadership in their careers to date. The fellowship allows them the carry out a project of their own choice in Germany over a period of twelve months.

→ International Climate Protection Fellowship
for prospective leaders from non-European transition and developing countries who are engaged in the field of climate protection and climate-related resource conservation and who have completed at least a first university degree and have extensive professional experience in a leadership role. During a one-year stay in Germany fellows will be enabled to conduct a research-related project of their own choice.

→ Hezekiah Wardwell Fellowship
for young Spanish musicians and musicologists making the transition to professional life to sponsor further training or advanced study at a college of music or university in Germany over a period of two semesters.

Transnational & Virtual Access

http://www.rich2020.eu/tas_calls

The list hereunder includes all the on-going projects funded under FP7 and H2020 RI to open their research infrastructures to transnational/virtual researchers/users. These are the projects funded under the Integrating Activities part of the RI Work programme, some of the ESFRI projects (if access is granted to all researchers no matter if their country is member of the ESFRI RI) and some e-infrastructures (provided services are addressed to researchers and not to RIs or other e-infra).

For each project, a short description of the transnational/virtual activities is given as well as the deadline to submit a proposal to open call and a link to the project website and the TA&VA access webpage. The projects can be filtered by scientific domain and type of access (transnational or virtual).

More information about Transnational Access

RICH: TA & VA Users' Testimonies

Project Acronym

Domain

e-Infrastructures
Engineering and Energy
Environment and Earth Sciences
Life sciences

BRISK 2 | Biofuels Research Infrastructure for Sharing Knowledge II | Engineering and Energy

Transnational Access Info:
BRISK2 will give access to researchers from EU and qualifying countries to carry out training research at any of the 15 project partners' facilities across Europe.

Researchers will be able to apply to visit any BRISK2 research partner located outside of their home country to utilise biomass conversion research facilities. BRISK2 will pay for transnational access (TA) along with a grant for travel and subsistence.

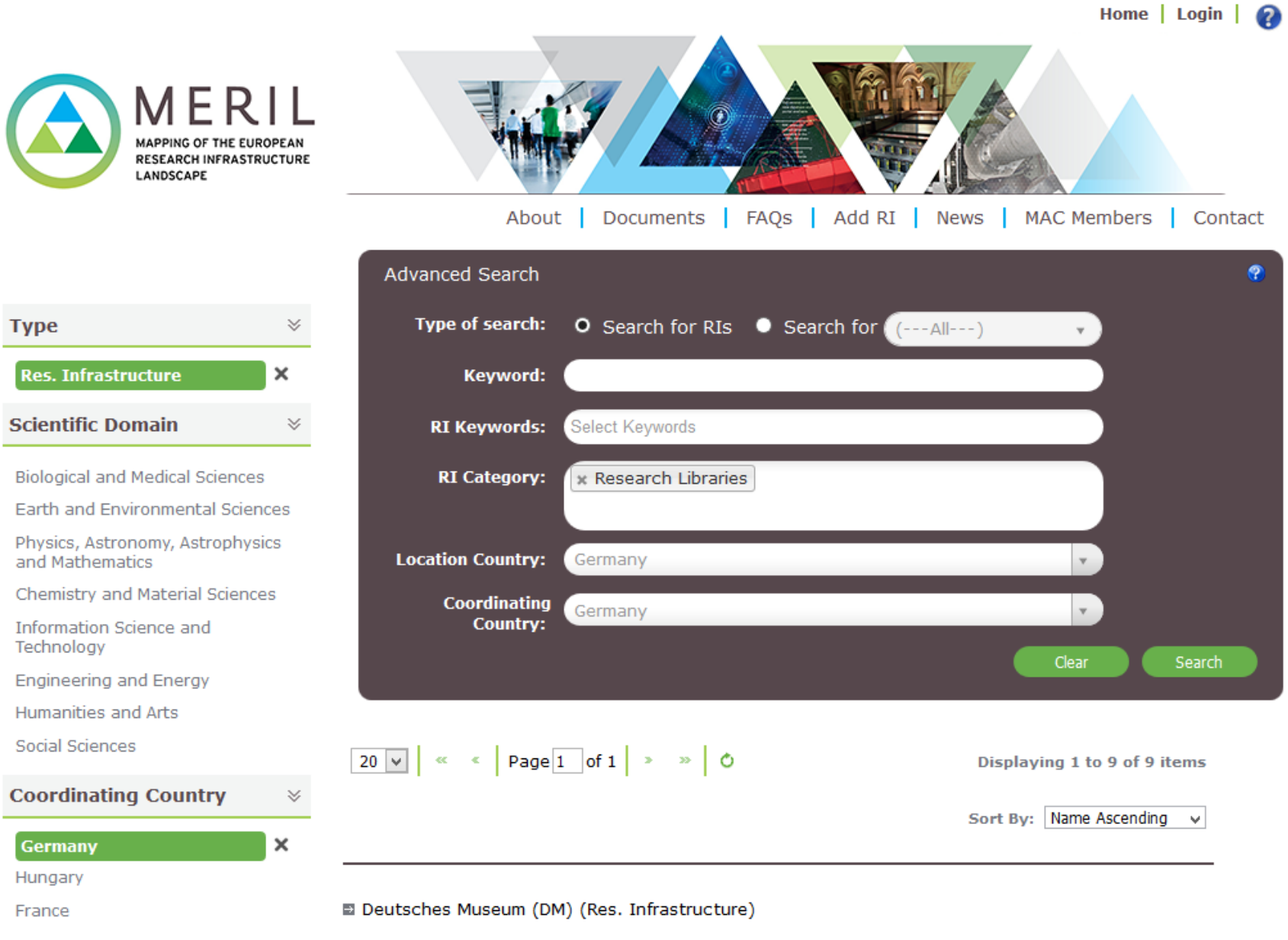
BRISK2 will begin accepting formal applications for Transnational Access from August 2017

Applications are accepted year round and are pooled for assessment twice per year until 2022 according to the following dates: deadline October 1st and April 1st

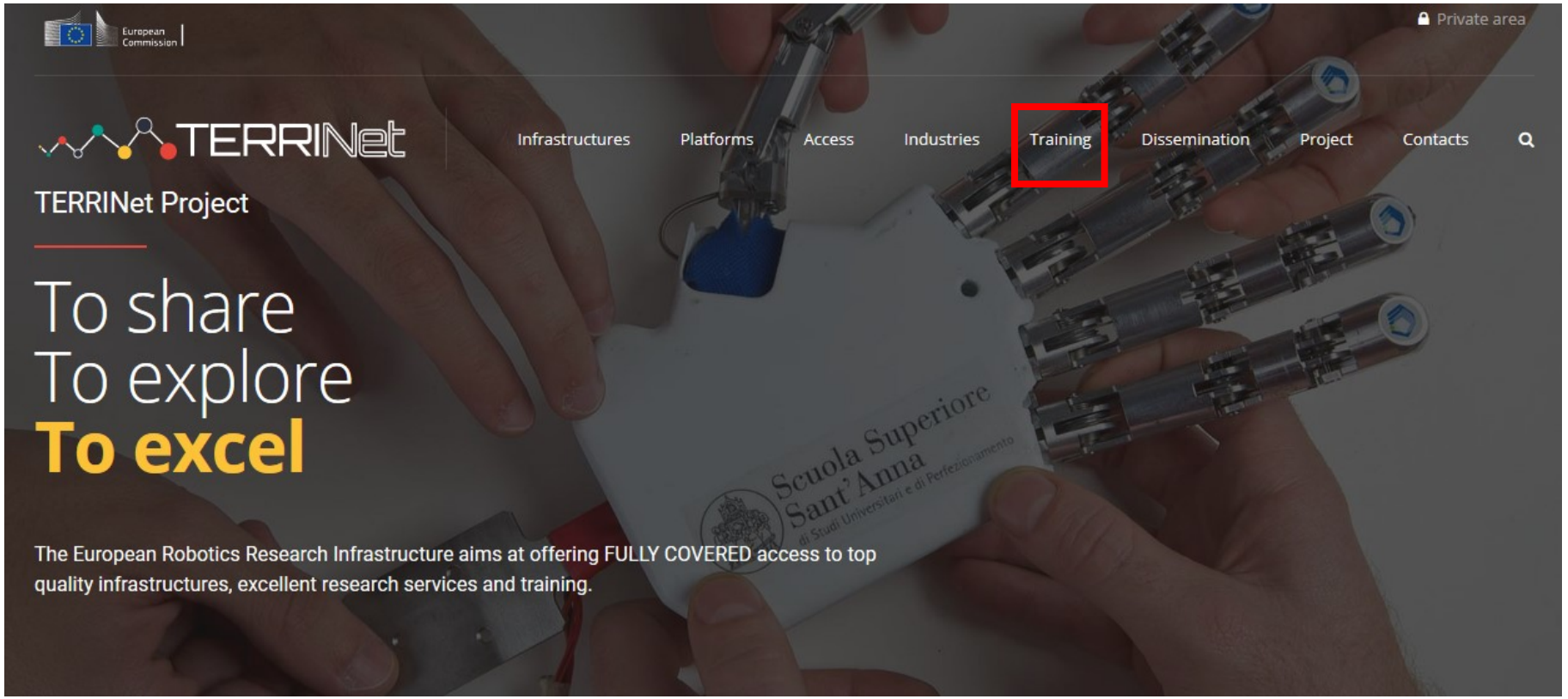
Status: OPEN

More info on the project: http://www.brisk2.eu/

More info on the access: https://www.brisk2.eu/how-to-apply/



http://portal.meril.eu/meril/



https://www.terrinet.eu/

cost
EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

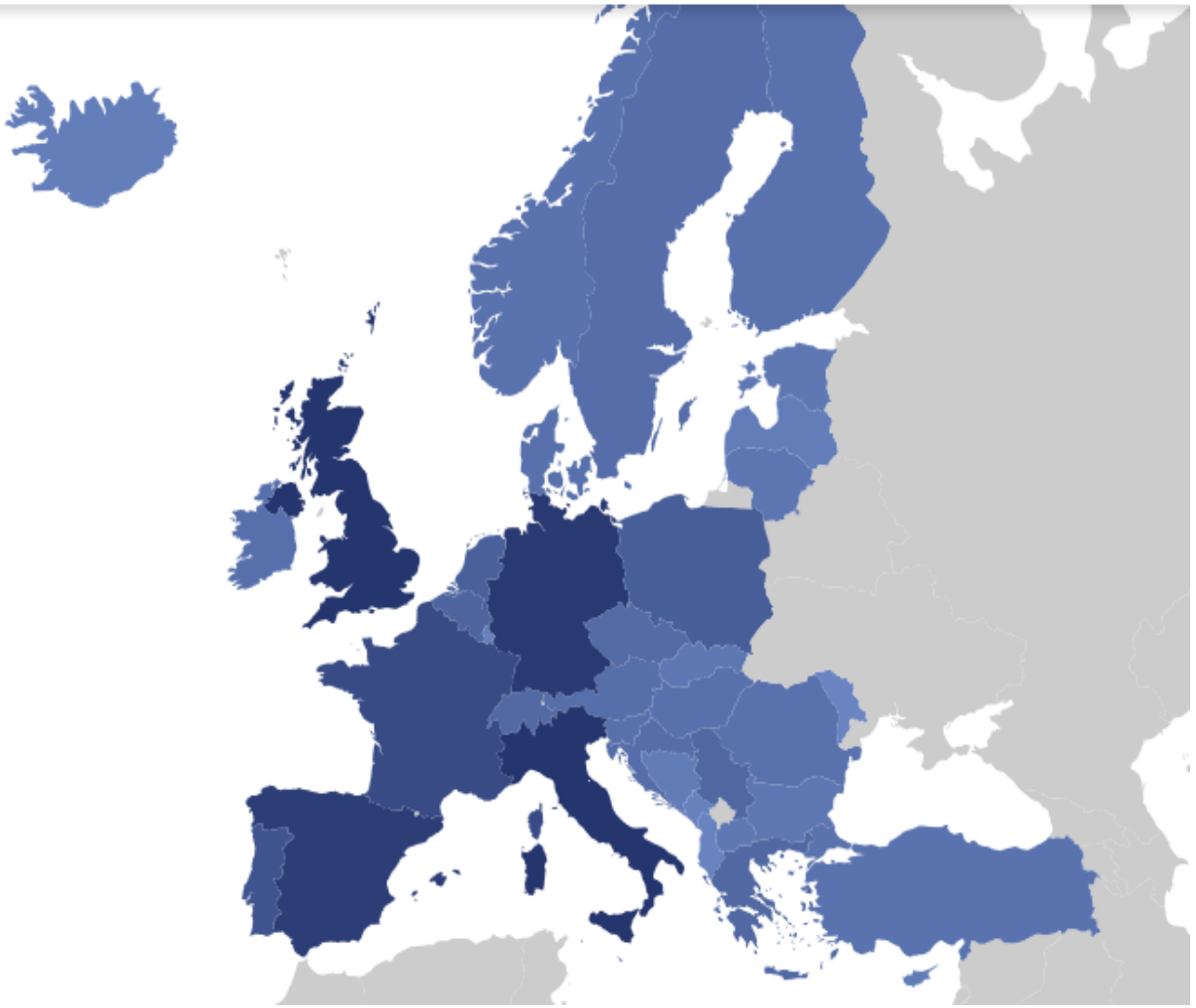
Who we are | Funding | COST Actions | Academy

291
Running Actions

45,000
Researchers involved

2,457
Short-term scientific missions

213
Training schools



https://www.cost.eu/cost-actions/how-to-participate/

Grant writing is time-consuming, could be tedious and the success rates are (sometimes) depressing.

While there's no easy way to write a successful application, there are some steps you can take to make the process less stressful…

BEFORE YOU START WRITING

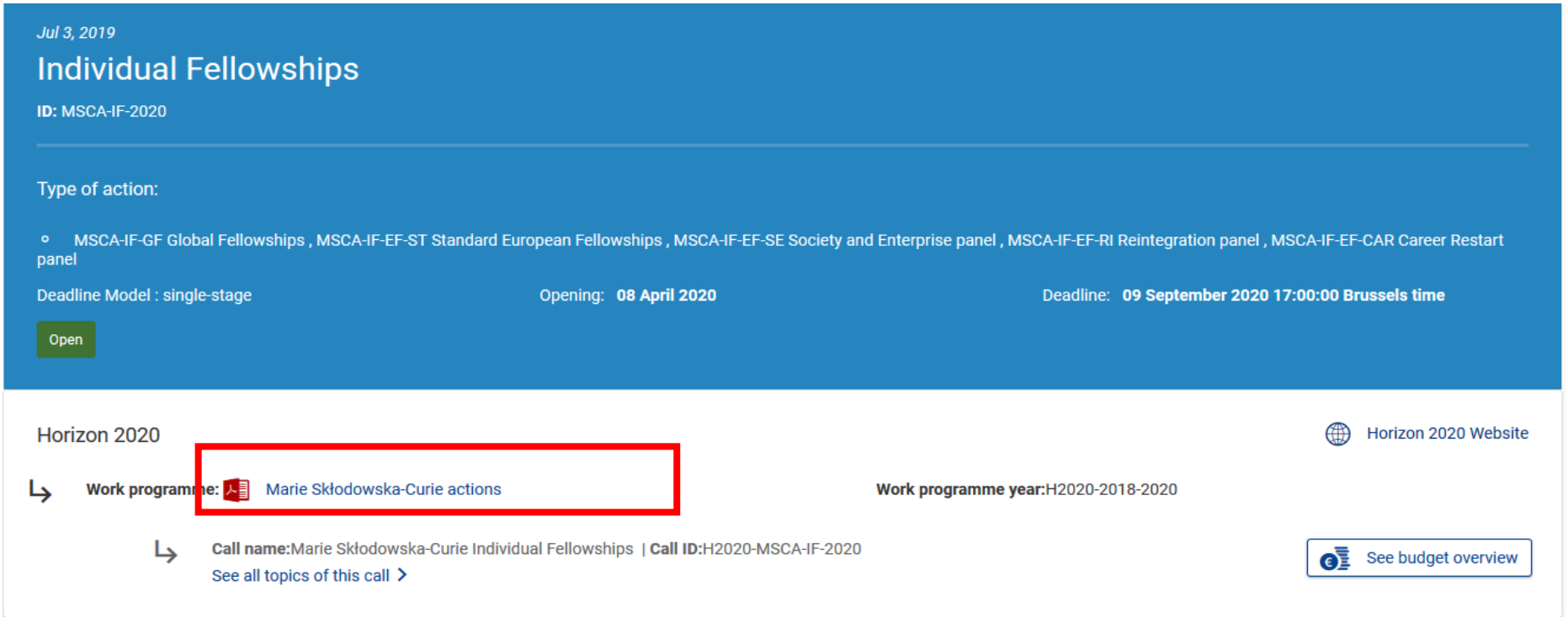
When are you going to apply?

You need a <u>significant</u> amount of time:

- to do the necessary preliminary work.
- to write, check and revise your proposal.
- to improve your project idea.
- to prepare the supporting documents (e.g. HI letter, degrees, …).

READ ALL THE RELEVANT DOCUMENTS

- Read the relevant guidance notes carefully to avoid wasting your time and that of the funding body.
- Make sure you understand the components of a typical grant proposal.



EN

Horizon 2020

Work Programme 2018-2020

3. Marie Skłodowska-Curie actions

Important notice on the Horizon 2020 Work Programme

This Work Programme covers 2018, 2019 and 2020. The parts that relate to 2019 and 2020 are provided at this stage on an indicative basis. Such Work Programme parts will be decided during 2018 and/or 2019.

(European Commission Decision C(2017)7124 of 27 October 2017)

Table of contents

Proposals are invited against the following topic(s):

MSCA-IF-2018: Individual Fellowships

Objective: *The goal of the Individual Fellowships is to e potential of experienced researchers, wishing to divers terms of skill acquisition through advanced training, inter*

Individual Fellowships provide opportunities to researche transfer new knowledge and to work on research and i States and Horizon 2020 Associated Countries) and supports the return and (re)integration of European res those who have previously worked here, as well as resea the EU and Horizon 2020 Associated Countries. It al individual researchers who show great potential.

Scope: Support is foreseen for individual, trans-national most promising researchers of any nationality, for emp Horizon 2020 Associated Countries. It is based on a researcher and the beneficiary in the academic or non-acad

Only one proposal per individual researcher per call will b

Fellowships take the form of European Fellowships Fellowships are held in EU Member States or Horizon open to researchers either coming to Europe from any cou Europe. The researcher must comply with the rules of European Fellowship is held.

Direct return to and long-term reintegration of researc country of origin, is supported via a separate multi-disc European Fellowships. For the reintegration panel, the country of the beneficiary in Europe from a third country short stays such as holidays are not taken into account).

Support to individuals to resume research in Europe afte leave or due to recent migration, is ensured via a separ panel of the European Fellowships. To qualify for the ca not have been active in research for a continuous period of at least 12 months within the 18 months immediately prior to the deadline for submission.

Expected Impact:

At researcher level:

- Increased set of skills, both research-related and transferable ones, leading to improved employability and career prospects both in and outside academia
- Increase in higher impact R&I output, more knowledge and ideas converted into products and services
- Greater contribution to the knowledge-based economy and society

At organisation level:

- Enhanced cooperation and stronger networks
- Better transfer of knowledge between sectors and disciplines
- Boosting of R&I capacity among participating organisations

At system level:

- Increase in international, interdisciplinary and intersectoral mobility of researchers in Europe
- Strengthening of Europe's human capital base in R&I with more entrepreneurial and better trained researchers
- Better communication of R&I results to society
- Increase in Europe's attractiveness as a leading destination for R&I

Topic description
Conditions and documents
Partner Search
Submission service
Topic related FAQ
Get support
Call Updates

Go back to search results

Topic conditions and documents

1. Eligible countries: described in Annex A of the Work Programme.
A number of non-EU/non-Associated Countries that are not automatically eligible for funding have made specific provisions for making funding available for their participants in Horizon 2020 projects. See the information in the Online Manual.

2. Eligibility and admissibility conditions: described in the MSCA part of the Work Programme.

Proposal page limits and layout: please refer to Part B of the proposal template in the submission system below. The maximum length of a proposal is:

Part B1 (Excellence, Impact, Implementation): 10 pages - *do* **not** *include any cover page or table of contents*

Part B2: no overall page limit (CV of the researcher: maximum 5 pages)

3. Evaluation:

- **Evaluation criteria, scoring and threshold**s are described in Annex H of the Work Programme. The award criteria and evaluation procedure specific to Marie Skłodowska-Curie Actions (MSCA) are also described in the MSCA part of the Work Programme.
- **Submission and evaluation processes** are described in the Online Manual.

The maximum length of a proposal is 10 pages, excluding the CV of the researcher and the annexes.

5. Proposal templates, evaluation forms and model grant agreements (MGA):

Specific rules and funding rates are described in the MSCA part of the Work Programme.

Supporting information will be found in the **Guide for applicants**.

Other useful documents:

Standard proposal template
MSCA standard evaluation form
MGA MSCA IF – Mono-Beneficiary
Annotated Grant Agreement

KNOW YOUR ENEMY

- Find out everything about reviewers, the evaluation criteria and the success rate

3. Evaluation:

- **Evaluation criteria, scoring and threshold**s are described in Annex H of the Work Programme. The award criteria and evaluation procedure specific to Marie Skłodowska-Curie Actions (MSCA) are also described in the MSCA part of the Work Programme.
- **Submission and evaluation processes** are described in the Online Manual.

The maximum length of a proposal is 10 pages, excluding the CV of the researcher and the annexes.

KNOW YOUR ENEMY

- Find out everything about reviewers, the evaluation criteria and the success rate
- The peer reviewers could be from anywhere in the world: write your proposal in a clear and unambiguous manner. Proposals should be written in a rigorous way, but simple enough to allow non-specialist reviewers to fully understand them.
- Remember that the reviewers gets hundreds of applications and needs to make a valuable selection of candidates within a very short time frame.

GET ADVICE & FEEDBACKS

Become familiar with grant writing early on.

It's always worth getting a bit of early experience in grant writing even if it might not be on your mind at the time.

As a PhD student or early postdoc you can ask to see drafts of work that is being done in your team, as an observer. This way you can keep getting a sense of the process before you have to do a grant proposal on your own.

Talk to colleagues who have applied to the same organisation.

GET ADVICE & FEEDBACKS

- Consult your university experts for proposal writing and applications.
- Contact your National Contact Point for the specific programme.
- Also, look around the web for tips.
- Discuss your ideas and your proposal with as many people as possible.
- Present some sketches of your project during talks, congresses, workshop and get feedback from the audience.

DON’T BE AFRAID TO ASK QUESTIONS!

BEFORE YOU START WRITING

- Carefully read the proposal template!
- Check if there's a strict page limit
- So get to the point quickly: evaluators have to read many (and sometimes boring) proposals, thus it is essential that they can see the important information in your proposal at once.
- Provide relevant details whenever possible. Provide the evaluators with evidence for your claims, but avoid external resources (links to websites etc.) if possible.

COMMON MISTAKES: not reading and answering the questions being asked and being over-ambitious in expectation of what can be achieved in the timescale of an award.

THE WRITING PROCESS.
TITLE, ACRONYM, ABSTRACT

Evaluators first read title and abstract and then decide if they are interested in reading more, so:

- A short, attention-catching and clear title is the most effective. However, it is also important to ensure that the title describes the subject you are writing about.
- Choose an easily-pronounced acronym for your proposal—this is how the panel members will discuss your project, so make it easy for them.
- Write a crystal clear abstract: it should briefly describe the work to be discussed in your proposal and also give a concise summary of the expected findings.

ABSTRACT

1) **Explain the problem** you are addressing
2) **Identify your purpose and motivation:** explain the importance of the research and its impact on related research fields or the wider scientific domain

"X is a clinical problem. My research aims at investigating the role of W in X development"

Why is X important? Who cares? Why is this study important to your field or to the lay reader? You have to articulate the study significance

"X is an severe clinical problem at European level, influencing the life styles of more than 10.000.000 people"

Why do we need to investigate W? Situate your research in the literature to introduce your point of view

"Previous research showed Y and Z about X. However, knowing Y and Z is not enough. X is a more complicated phenomenon. It involves also W, which we know less about"

ABSTRACT

3) Discuss your approach: you need to discuss how you plan to solve or make progress on the challenge you're tackling—how you will conduct your research.

" I aim to investigate W. To reach this aim I shall address the following research questions… Relying on an innovative approach including …"

4) Summarize your expected results and state your conclusion.

"If successful, I shall achieve the following outcomes…. This will impact on our understanding of X in the multiple ways: …".

COMMON MISTAKES: Never copy and paste direct quotes from the proposal! Using new vocabulary and phrases will keep your abstract more interesting.

Proposal ID	Acronym

Abstract

Short summary (max. 2,000 characters, with spaces) to clearly explain:

- *the objectives of the proposal*
- *how they will be achieved*
- *their relevance to the work programme.*

Will be used as the short description of the proposal in the evaluation process and in communications with the programme management committees and other interested parties .

- *Do not include any confidential information.*
- *Use plain typed text, avoiding formulae and other special characters.*

If the proposal is written in a language other than English, please include an English version of this abstract in the "Technical Annex" section.

Remaining characters 2000

Has this proposal (or a very similar one) been submitted to a Horizon 2020 Marie Skłodowska-Curie Individual Fellowship call, with the same supervisor and future host institution (and partner organization for Global Fellowships)? ○ Yes ○ No

The Horizon 2020 grant proposal application was divided into three major sections: Excellence, Impact and Implementation.

Part B-1:

The **maximum** total length for this document is **10 pages.** It should be composed as follows (detailed description below):

- Section 1: Excellence
- Section 2: Impact
- Section 3: Implementation

MSCA-IF H2020 template

Of the **maximum 10 pages** applied to sections 1, 2 and 3, applicants are free to decide on the allocation of pages between the sections. However, the overall page limit will be strictly applied: after the call deadline, **excess pages will automatically be made invisible, and will not be taken into consideration by the experts**.
It is the responsibility of the applicant to verify that the submitted PDF documents are readable and are within the page limit. PDF documents can contain colours.

STATE OF THE ART

1. Excellence[4]

1.1 Quality and credibility of the research/innovation action (level of novelty, appropriate consideration of inter/multidisciplinary and gender aspects)

You should develop your proposal according to the following lines:

- Introduction, state-of-the-art, specific objectives and overview of the action.
- Research methodology and approach: highlight the type of research / innovation activities proposed.

- Knowledge of all relevant perspectives on the research subject. **Up-to-date knowledge** of the research subject

  "Recent research (e.g. Mr Bean, 1976) shows that..".

- Describe the advance your proposal would provide beyond the state-of-the-art.

OBJECTIVES

1. Excellence[4]

1.1 Quality and credibility of the research/innovation action (level of novelty, appropriate consideration of inter/multidisciplinary and gender aspects)

You should develop your proposal according to the following lines:

- Introduction, state-of-the-art, specific objectives and overview of the action.
- Research methodology and approach: highlight the type of research / innovation activities proposed.

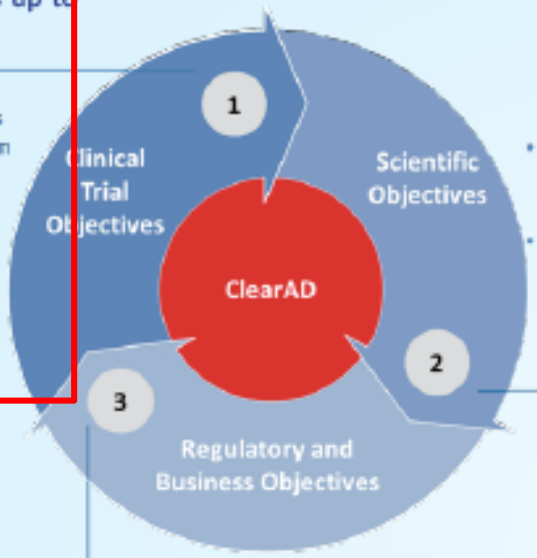
- Define objectives clearly. Have in mind what you want to achieve, when, how.
- Specific objectives should be SMART: specific, measurable, assignable, realistic and time related
- Goals are NOT the activities you will perform. Answer the question: "What am I going to achieve?" NOT "What am I going to do/perform?“
- The project objectives must coherently respond to the size of the project.

EXAMPLE: "ClearAD"

Alzheimer`s Disease (AD) is by far the most common dementia of later life and the leading cause of disability and death in the aged population. According to the World Health Organization it affects 36 million people worldwide[1]. Due to demographic changes an estimated number of 115 million people worldwide will be suffering from AD by 2050. Accordingly, current and especially future health care systems are facing tremendous costs. In 2010, the global economic impact of AD and other dementias was US$604 billion[2]. There is a tentative estimate of an 85% increase in costs to 2030. Despite its public health importance and recent advances in understanding its molecular pathology, no disease-modifying drug exists up to date that can halt or at least slow down the progression of AD. Present treatment strategies only provide minimal short-term benefit due to limited symptomatic treatment without targeting the underlying mechanism of AD.

Building on promising preclinical data, the 'ClearAD' proposal seeks to **advance XMolecule** as a treatment for AD by conducting a European Randomized Clinical Trial (RCT) for use in Early Alzheimer's Dementia (EAD). This RCT will be flanked with supplementary support activities in order **to ensure** its smooth performance, underpin the efficacy of the pharmacological treatment, and **plan** ahead and ensure Marketing authorization and reimbursement at an early stage of the product life cycle. The overarching purpose of these combined activities is **to bring to the market a safe, effective causal treatment for elderly individuals suffering from AD.**

In order to realise the above presented **vision**, the ClearAD project has a three-fold focus, as it appears in the following graph:



- To validate the putative disease modifying effects of Xmolecule on cognition
- To underpin the theory that Xmolecule triggers the efflux of neurotoxic compounds
- To investigate the effect of Xmolecule treatment on amyloid burden and plasma biomarkers
- Market Access environment analysis
- Early communication with Regulatory and Market Access authorities for valorization of results

[1] *Prince M, Jackson J. International World Alzheimer Report 2009. Alzheimer's disease international (Adi); 2009 Sep.*

[2] *Wilmo A, Prince M. International World Alzheimer Report 2010: The Global Economic Impact of Dementia. Alzheimer's disease international (Adi); 2010 Sep.*

METHODOLOGY

1. Excellence[4]

1.1 Quality and credibility of the research/innovation action (level of novelty, appropriate consideration of inter/multidisciplinary and gender aspects)

You should develop your proposal according to the following lines:

- Introduction, state-of-the-art, specific objectives and overview of the action.
- Research methodology and approach: highlight the type of research / innovation activities proposed.

- Describe HOW your research will be done. Be ambitious in relation to the "what", but realistic on the "how".
- Describe the methodological approach you will adopt. Explain why the methodological approach is appropriate in relation to the goals.
- Be specific about what you plan to do.

"we will teach art class for children"

"we will run weekly contemporary art sessions for 8-12 year old kids over a 3 month period. Each session will be 2 hours long and will be attended by 10 children."

- You should link the methodology with the objectives you plan to achieve. Give indication of the time

Research methodology and approach:

1. The methodology applied for reaching SO1 will be mainly historical, combining paleographical techniques and archival research to identify a[illegible], I will use digital images [illegible], along with private transcriptions (many of which are already in my possession). I will supplement this with visits to libraries to double-check transcriptions against the originals.
2. Reaching SO2 will require identifying, cataloguing and analysing [illegible]

- Literature based indication of the inquiry strategy. Indication of data sources and data analysis techniques

"To address my research question I will conduct some interviews"

"To address my research question I shall adopt inductive case study research as inquiry strategy (Pozzi e Ginori, 2020)

- Show advantages and innovation of your approach

IMPACT

- Every call for proposal originates from **specific societal challenges** that your project should tackle. For this reason, it successful it will have a profound impact at the scientific, economic, environmental, societal level.
- Which is the value of my project for different audiences?

1. Scientific impact: publications, conferences, or any other opportunities that can arise as a result of this project to promote the research field.
2. Environmental: new more environmental friendly products, tools, policy papers or guidance documents produced as a result of the research project,
3. Socio-economic: new possibilities for job creation, important policy outputs, new information for the general public

2. Impact

2.1 Expected impacts

In the following paragraphs, we illustrate quantitatively and qualitatively how SIRAMM will achieve the expected impacts set out in the work programme under topic WIDESPREAD-03-2018 Twinning. When present, barriers that may determine wheter the expected impact will be achieved are also reported.

A. INCREASED RESEARCH EXCELLENCE OF THE COORDINATING INSTITUTION AND THE OTHER WIDENING PARTNERS

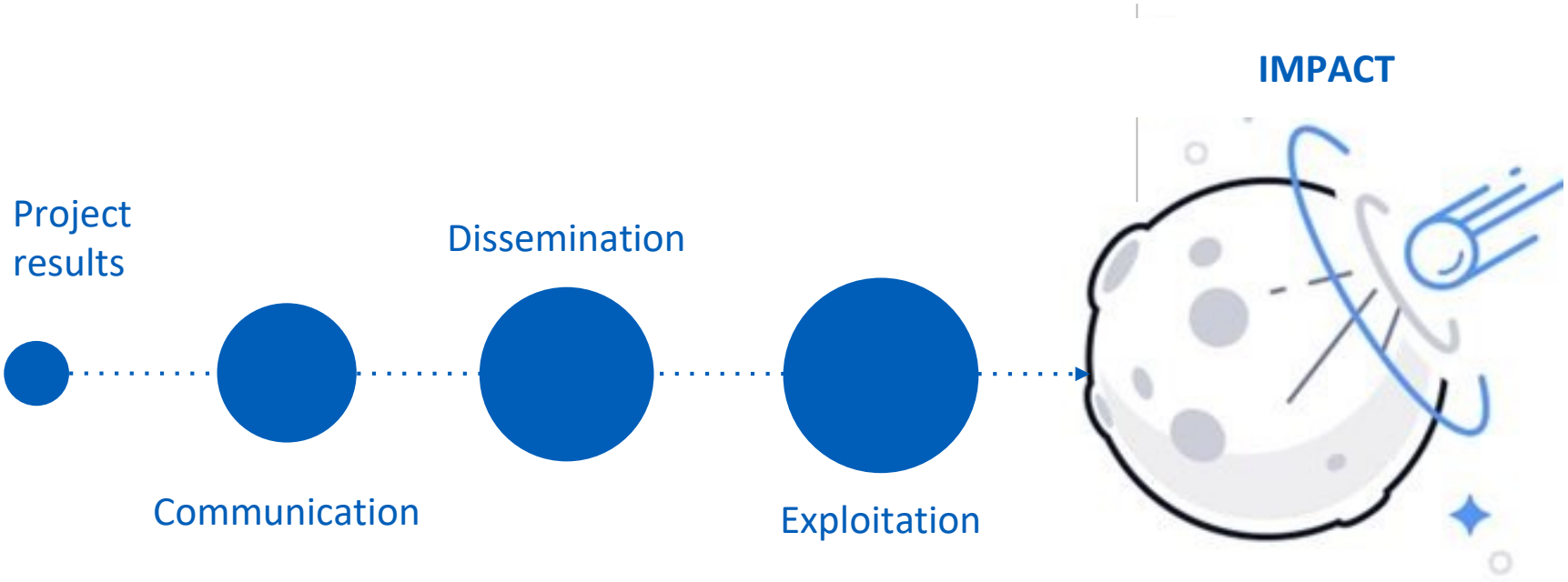
The lack of appropriate and multi-disciplinary curricula was identified by EASME [3] as one of barrier to be removed for efficient AM deployment in Europe, and SIRAMM could address this challenge. This project will **train the staff** of the coordination institution and the other two widening partners in different fields such as structural integrity and reliability, fatigue and fracture of engineering materials, microstructural-based modelling of materials [34]. The **exchange of staff** will be pivotal to improve methodological skills and mixed research methods and will act as a source for increased mobility (inwards and outwards) of qualified scientists. Furthermore, junior researchers can challenge their own research with both theoretical and practical advancements in the above-mentioned fields during **summer schools, exchange periods and dedicated workshops**.

In the long run, the project will generate new knowledge in the new areas of design and quality production control of

F. GROWTH OF THE INDUSTRIAL SECTOR

The industrial sector of Romania, Serbia and Czech Republic will benefit of the higher availability of high-profile personnel with strong scientific competences to be employed in different sectors. The new scientific/technical knowledge generated by this project can be applied in future technologies, potentially creating cheaper and more environmentally friendly market products, in countries with both high and low research and innovation (R&I) indicators. The proposed novel fatigue and quality assessment methodology will increase the quality of AM components used in **automotive, aerospace, and biomedical sectors**, due to the higher safety level obtainable (best strenght and fatigue resistance), and reduced production costs. In particular in the automotive industry, these advances in AM knowledge will create new opportunities in terms of innovative design, resulting in lighter and safer products, with estimated production costs 10-30% lower (in energy and material savings) than the traditional methods [35].

HOW CAN YOU MAXIMIZE THE IMPACT OF YOUR PROJECT?



Communication

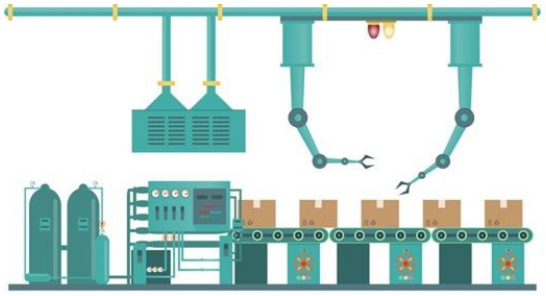
It is a process that starts at the outset of the action and continues throughout its entire lifetime, aimed at **promoting the action and its results.** It requires strategic and targeted measures for communicating to a multitude of audiences.

Dissemination

Means to make the **results** of a project public (— by any appropriate means other than protecting or exploiting them, e.g. scientific publications).

Exploitation

Means to **make use of the results** produced in an EU project in further activities (other than those covered by the project, e.g. in other research activities; in developing, creating and marketing a product, process or service; in standardisation activities).



http://ec.europa.eu/research/participants/portal/desktop/en/support/reference_terms.html

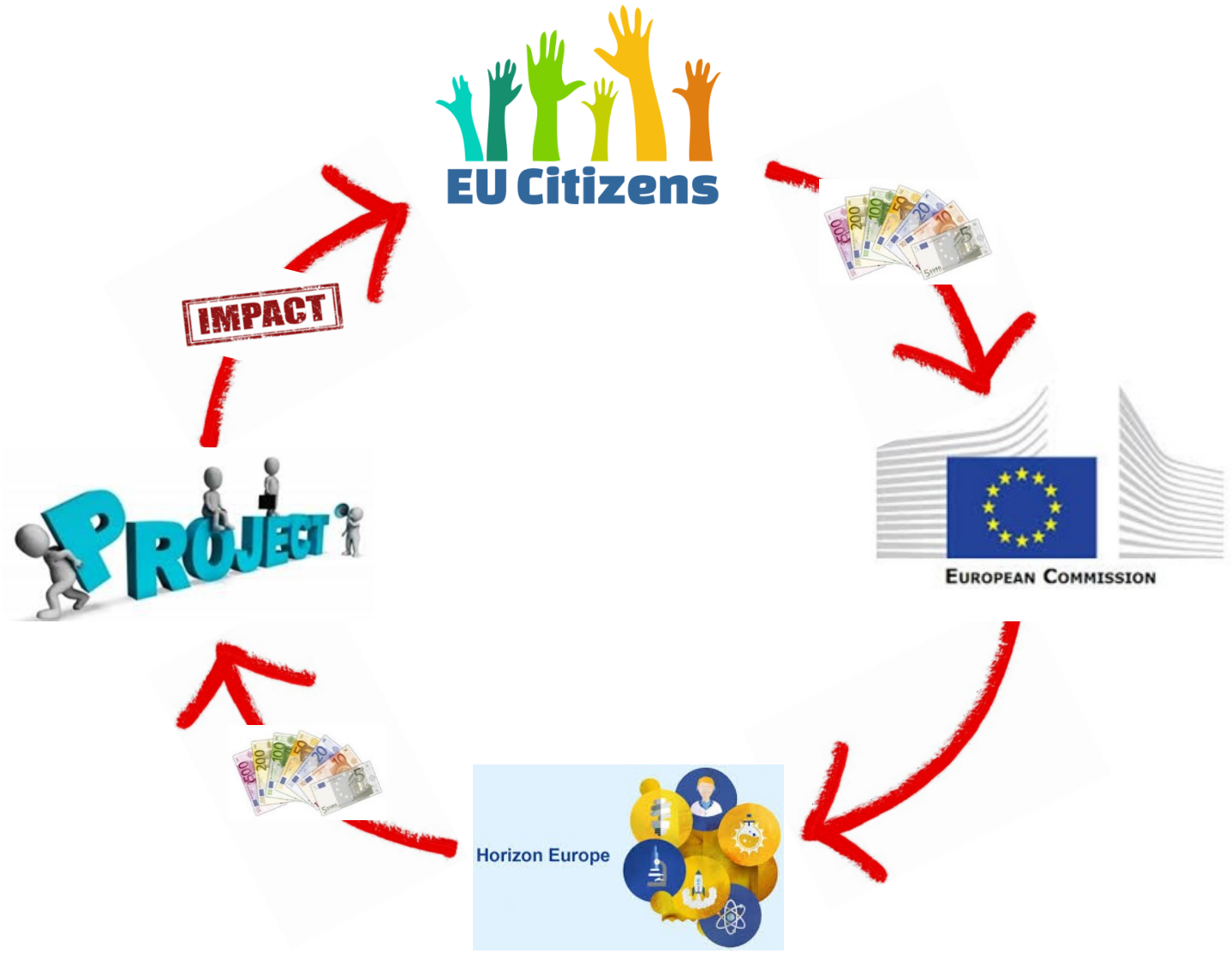
DIFFERENCE BETWEEN COMMUNICATION AND OUTREACH

Outreach and communication activities are related, but are not the same and a good MSCA project should include a mix of both.

Outreach activities are meant to engage a large audience and to bring knowledge on a particular topic to the general public. Outreach activities can take several forms, such as school presentations, workshops, public talks and lab visits, etc. The objective of outreach is o explain the benefits of research to a larger public (the taxpayers who fund your research). Outreach **implies an interaction between the sender and the receiver of the message**, there is an engagement and a **two-way communication** between the researcher and the public.

Communication, on the other hand, **only goes in one direction from the sender to the receiver**. Communication refers to articles in *mainstream* newspapers or magazines, or on TV and radio channels. Successful communication requires a clear language and attractive scientific subject with outstanding results that can catch the media's attention.

COMMUNICATION, DISSEMINATION, EXPLOITATION WHY ARE THEY IMPORTANT?



MEASURES TO MAXIMIZE THE IMPACT: COMMUNICATION AND DISSEMINATION

1. WHY? The purpose of your activities.

Raise awareness: let other know what you are doing. Engage: receive input/feedback from the community. Inform.

2. WHAT will be communicated/disseminated?

The language should be a appropriate for the target audience.

3. WHO is the target audience of each activity?

Give specific examples! Ex. industries, expert users, regulators, researchers in the field, etc.

4. HOW?

Describe the dissemination/communication tools and channels: *conferences, industry events, journal publications, workshops, newsletter, etc..*

5. WHEN?

Time	Activity	Target audience	Result/Impact
1	Announcement via social media already available at UniPR.	Researchers and students; UniPR social media followers	Announce that the host institution was granted by a MSCA; Introduction of the topic of the research and the team member
2, 22	Articles on local newspaper in accessible language to non-specialist public	General public typically aged 30-60	Introduce the topic of the research and raise the public awareness about the European funded research activities and results. Updates on the research.
6,12, 18, 24	Newsletter follow-up	Researchers	Frequent update on the evolution of the research project in order to promote the research about [illegible] even to close-boundaries discipline scientists.
4,16	Open Days	Young students from high school	Open doors of ER's lab to young students and general public in order to spread the outcomes of their research and raise scientific awareness in their specific fields of study
18	Publication of a video on the UniPR Youtube channel	General public typically aged 14-30	To communicate in a simple, fast and free way the results of the MSCA.
5, 17	One-day workshops in high school and universities	Young students	Inspiring their curiosity in scientific disciplines by providing a tangible proof that scientific excellence may have a direct impact to everyday lives
11	Seminar at "Festival della Scienza" (Genoa, Italy)	General public typically aged between 14-70	To engage people and promote the research profession to the public.
6	Open event at Museum [illegible] with experimental demonstration	General public typically aged 6-50	To engage people and promote the research profession to the public.
10, 22	Experimental activity at European Research Night in Parma	General public typically aged 5-50	To engage people and promote the research profession to the public.

	Tools and activities	Target groups	Expected impacts
1	Brand identity (Logo, Templates Brochure, Leaflet, video)	- Academics - General public/Science lovers - Health care community - Industries/SMEs	- Presentation and promotion of the project - Creation of a specific identity for the project
2	Web communication	- Academics - General public/Science lovers - Patient associations - Health care community - Industries/SMEs - Partners - Policy makers	- Visual presentation of the project - Dissemination of project results - Sharing information among partners
3	Press, papers and publications	- Academics - General public/Science lovers - Health care community - Industries/SMEs - Students	- Presentation and promotion of the project - Dissemination of project results to different audience
4	National and international scientific conferences and fairs	- Academics - Industries/SMEs - Policy makers	- Presentation and promotion of the main results of the project - Dissemination of project results and achievements to a wider audience
5	Workshops	- Academics - Industries/SMEs - Policy makers	- Presentation and promotion of the main results of the project - Increasing the general knowledge of new technologies/medical devices and public acceptance - Meeting potential clients
6	Public engagement (competition, visits to partners facilities, open days)	- Academics - General public/Science lovers - Industries/SMEs - Policy makers - Students	- Fostering new research vocations among students - Increasing the general knowledge of new technologies/medical devices and public acceptance


MSC Ambassadors
EC Events Conferences Open Days
Poster Leaflet
Summer School
Social media, E-newsletter
Public talks, TV/Radio Newspapers
Workshop

MEASURES TO MAXIMIZE THE IMPACT: EXPLOITATION

Further internal research	• These research activities must be beyond the project. • Relevant for research organisations and research intensive companies.
Collaborative Research	• The results used as background of future collaborative research projects. • Relevant for research organisations and research intensive companies.
Internal product development	• Results used in developing, creating and marketing a product/process. • Relevant for companies.
Internal service creation	• Results used in creating and providing a service. • Relevant for companies.
Licensing	• Results exploited by other organisations through out-licensing. • Relevant for all participants, but care should be taken to comply with Horizon 2020 rules.
Assignment	• Results exploited by other organisations by the transfer of ownership. • Relevant for all participants, but care should be taken to comply with Horizon 2020 rules.
Joint Venture	• Results used as background of a joint venture. • Relevant for all participants, but care should be taken to comply with Horizon 2020 rules.
Spin-off	• A separate company established in order to bring to the market results from the project. • Relevant for all participants, but care should be taken to comply with Horizon 2020 rules.
Standardisation activities	• Results used either to develop new standardisation activities, or to contribute to on-going standardisation work. • Relevant for all participants, but care should be taken to comply with Horizon 2020 rules.

https://www.iprhelpdesk.eu/FS_IP_management_in_MSCA-H2020.

IMPLEMENTATION

3. Quality and Efficiency of the Implementation

3.1 Coherence and effectiveness of tl n, including appropriateness of the allocation of tasks and resources

Describe how the work planning (i s) and tl mobilised will ensure that the research and training objectives will be reached. Explain why the number of person-months planned and requested for the researcher (and corresponding to the project duration) is appropriate in relation to the proposed activities.

3.2 Appropriateness of the management structure and procedures, including risk management

3.3 Appropriateness of the institutional environment (infrastructure)

DESCRIBE YOUR WORK PLAN

- A work package (WP) is a part of a project structure plan.
- It contains the task-based services that are necessary to reach the defined result by a given date.
- Each WP must contain the **allowed time and the deliverables**.
- Deliverables are the outputs of the projects (e.g. database, special report, a technical diagram brochure, list, other building block of the project).
- Deliverables must be produced at a given moment during the action.

WP Number	**Start Month-End Month** Do not give the exact date but the estimated month number (M1, M2, M3 etc.).
WP Title	Keep concise as the objective described what it will entail.
Tasks: These are the steps/events/tasks you will carry to complete WPs (T1.1, T1.2)	
Deliverables: Distinct output of the WP (report, data analysis, article, document, prototype, software etc.). There could be different versions of deliverables	
Milestones: These are control points to help with progress and allow progression to the next stage of the project (completion of data analysis, development of career development plan).	

Revised from N4M MSCA IF Handbook 2020

WP2: Material testing (Months 13-24). The object of WP2 is the detection of strained zones and the formation of micro fissures under mechanical stress via fluorescent emission. The secondment in the group of Dr. [redacted] will be performed in the frame of this WP. **Duration: 12 months.**

Task 2.1 Fabrication of specimen for mechanical testing. Testing the photo physical and stress-related fluorescence properties of the resulting thermosets. Testing of the material fluorescence emission under stress using microscope and hand-held camera under different stress condition (extension, compression, three-point bending, etc.). **Duration: 8 months.**

Task 2.2 Measurement of the displacement and the strain field of the surface of the specimen *via* DIC. Correlation between fluorescence emission and displacement. Evaluation of the mechanical sensitivity and spatial resolution of the fluorescence emission. **Duration: 4 months.**

M2.1: Self-diagnostic composites. Complete material testing of self-diagnostic composites.

D2.1: Thermoset and composites fluorescence measurements. [redacted] (Month 20)

D2.2 Self-diagnostic composites performances. [redacted] (Month 24)

WP3: Modeling and simulation (M1–M23)

Objectives: Establish a robust model to predict Q_{max} and operating temperature of PHPs at operating limit of PHP and optimization of PHP parameters by using the established prediction model for industrial applications.

Tasks: T3.1 Development of a robust, efficient algorithm for solving the IHCP; T3.2 Establishment of predictive model for operating limit of PHP; T3.3 Validation of the model with the experimental results; T3.4 Optimization of the PHP design to maximize heat transfer capability within given design conditions using the predictive models.

Deliverables and milestones: D3.1 Validated predictive model for PHP operating limit. D3.2 Design tool for PHP optimization that maximize the heat transfer capability.

WP No.: 2	
WP Title	Training, with a focus on interdisciplinary aspects and on transversal skills
Objectives	Deepening and enhancing the ER's research competencies on Hegel, dealing with relevant interdisciplinary aspects (implementation of the dialogue between Philosophy, Evolutionary Psychology and Neuroscience). Training in complementary skills will enhance the ER's career perspectives.
Description	T2.1 Scientific training (M1-36; Fellow, with the support of the HI and POs): during the outgoing phase (M1-24): self-consciousness, natural prerequisites, language acquisition and social interaction; during the return phase (M25-36): Self-consciousness, neuroscience and brain imagining. T2.2 Training in transversal skills (M1-36; Fellow, with the support of the HI and POs): during the outgoing phase (M1-24): English language, project management, communication and presentation skills. During the return phase (M25-36): Principles of project design, Entrepreneurship.
Deliverables	D2.1 Personal Career Development Plan (M2)
Milestones	M2.1 Certificates related to the training received are awarded (M16, M24, M35)

Milestones are **control points** in the project that help to chart progress. They may correspond to the completion of a key deliverable, allowing the next phase of the work to begin. They may also be needed at intermediary points so that, if problems have arisen, corrective measures can be taken.

GANTT

Year	Year 1												Year 2											
Title / Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
WP1 - Experimental studies with single loop																								
Visualization experiment of single loop				M1.1																				
Data processing and analysis by IHCP approach						D1.1																		
WP2 - Experimental studies with PHP																								
Design and manufacture of PHPs								M2.1		M2.2														
Visualization experiment of PHPs at operating limit														M2.3										
Data processing and analysis by IHCP approach																D2.1								
WP3 - Modeling and simulation																								
Development of robust, efficient algorithm for solving IHCP																								
Establishment of predictive modeling for operating limit of PHP																								
Validation of predictive model with experimental results																			D3.1					
Optimization of PHP design to maximize heat transfer capability																							D3.2	
WP4 - Training																								
Research training	D4.1																							M4.1
Transferable skills training	D4.1																							M4.1
Secondment at EHP																								
WP5 - Project management																								
Project management												D5.1												M5.1 D5.2
WP6 - Communication, dissemination, and exploitation																								
Implementation of communication tools and channels for various audiences	D6.1																							M6.1
Implementation of dissemination activities										D6.2					D6.3	D6.4				D6.5				M6.1 D6.6
Exploitation of the research																								M6.1

Legend Milestone M
Deliverable D

RESOURCES

3.1 Coherence and effectiveness of the work plan, including appropriateness of the allocation of tasks and resources

Describe how the work planning and the resources mobilised will ensure that the research and training objectives will be reached. Explain why the number of person-months planned and requested for the project is appropriate in relation to the proposed activities.

- **Resources** = staff, money, equipments, competences
- For each WP, justify why the amount of person effort proposed is the appropriate one for completing each task.
- Make your budget as specific as possible. Provide a detailed financial plan: What do I need for which task? How much of what do I need?
- Get quotes for everything you will need to pay for, so that it is accurate.
- Do not include any non-specific items in your budget, such as “contingency costs” or “miscellaneous”.

RISKS

- Research and/or administrative risks that might endanger reaching the action objectives and the contingency plans to be put in place should risk occur

- Identify the risks (both **scientific and administrative**) in your proposal; e.g. data availability, equipment failure, delay of permits, etc. Other possible risks: **climate, economy, political issues…**
- Rate them; e.g. high-medium-low.
- Suggest contingency measures.

Table 4 | Risk assessment and contingency plan

Description of the risk	Risk Rating	Contingency Plan	WP
No co-crystals are obtained with a give EO and a selected coformer	Low	Alternatives synthetic paths way will be considered A different coformer will be selected from the GRAS list An *ad hoc* coformer will be synthesized in order to maximize the intermolecular network	1
Crystalline structure characterization and correlation with final co-crystal properties: No single crystal suitable for SCXR analysis are obtained	Medium	Structure solution will be attempted from XRPD Combined XRPD and theoretical approach will be used	2
The chemico-physical properties of the co-crystals obtained with the same EO but different coformers are similar and there is not a significant differentiation.	Low	A new ad hoc conformed will be synthesized to further differentiate the intermolecular network. Even if properties from systematic synthesis of cocrystal does not provide with different properties, the ER will proceed testing the co-crystals in WP3	2
Co-crystal properties do not significantly modify the chemico-physical EO properties as pure liquid	Low	The formation of co-crystal will be considered as added value: although the chemical efficiency of the EO is similar, the co-crystal represents, as a solid, a safer way to handle/store EO.	3
Difficulties for papers to be accepted in high profile journals/ conferences	Medium	A publication strategy will be defined well in advance before submission deadlines. The ER will have constant feedbacks from his supervisors and Department staff to ensure good quality submissions.	all

ALMOST DONE

- Remember that a **nice layout is important**.
- Use sub headers, bullet points, numbered sub-titles, breaks etc. in order to make your **text easily readable and appealing.**
- Use figures, tables and diagrams, when (and if) necessary.
- Always respect the formatting constraints reported in the proposal template.
- Remember that the text should be legible in black and white, if printed by the evaluators.
- **Proof-read your proposal** and evaluate point per point your proposal following the evaluation criteria. Give yourself marks!
- If English isn't your native language, ask at least one native speaker to proof-read your project.
- Don't wait until final version is ready. Every new submission overwrites the previous one (in H2020).

IF YOU GET REJECTED, KEEP TRYING

- It is the exception to get funded, not the rule
- Being rejected doesn't necessarily mean your idea is un-fundable.
- You might need to make changes, or it might be that this time there just was not funding available
- Try again: lots of people don't re-submit applications. But responding to feedbacks from reviewers can add value to a proposal and, once adapted, (some) **good** applications are funded.

Eastern European twinning on Structural Integrity and Reliability of Advanced Materials obtained through additive Manufacturing — 'SIRAMM'

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857124.

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