



# HORIZON EUROPE

#HorizonEU

June 2021



*"Horizon Europe will continue to strongly support frontier research through the European Research Council (ERC). It will entice more young people to a career in research through Marie Skłodowska-Curie Actions (MSCA) and invest in world-class research infrastructures. Both the ERC and MSCA will help Europe attract talented researchers from across the globe."*

**Mariya Gabriel** Commissioner for Innovation, Research, Culture, Education and Youth



## Pillar I EXCELLENT SCIENCE

### DRIVING SCIENTIFIC EXCELLENCE AND SUPPORTING THE EU'S POSITION AS A WORLD LEADER IN SCIENCE

Research, science and innovation are pushing our societies and economies forward. New knowledge improves all aspects of our life. The first pillar of Horizon Europe - Excellent Science - supports frontier research and breakthrough scientific ideas, teams up the best researchers from Europe and beyond and equips them with skills and world-class research infrastructures.

### €25 billion\*

for supporting frontier research, fellowships, doctoral networks, trainings and exchanges of researchers and developing research infrastructures in all Member States.

**European Research Council**



16 billion

**Marie Skłodowska-Curie Actions**



6.6 billion

**Research infrastructures**



2.4 billion

\*Listed budget numbers are in current prices.





European Research Council

## THE EUROPEAN RESEARCH COUNCIL (ERC)

supports top researchers from anywhere in the world, working in Europe to push the frontiers of knowledge. Researchers themselves identify topics and directions of their projects. This ensures that funds are channelled into the newest and most promising scientific endeavours, with the sole criterion: scientific excellence.

### Benefits for Europe:

- Advances at the frontiers of knowledge
- Leadership in new and emerging technological fields
- Makes the EU more attractive for the best researchers
- Inspires national reforms raising the quality and visibility of European research overall
- Deeper understanding of global challenges

### Benefits for researchers:

- Grants for ambitious, self-defined projects
- Allows ground-breaking, high-gain/high-risk research
- Creating his/her own research team
- Long-term financial stability of the project
- Visibility in the global R&I community



**10 000 top researchers** funded so far. Over **200,000 articles** were published in international scientific journals. ERC grantees won prestigious prizes, including **7 Nobel Prizes, 4 Fields Medals, 9 Wolf Prizes.**



Some **80% of projects** funded by the ERC **led to scientific breakthroughs or major advances.**



Each ERC grantee employs on average **six team members.** Currently over 75,000 postdocs, PhD students and other staff are working in their research teams.



## THE MARIE SKŁODOWSKA-CURIE ACTIONS (MSCA)

support researchers from all over the world at all stages of their careers, with a focus on their training, skills and career development. The MSCA also support institutions through excellent doctoral and postdoctoral programmes and collaborative projects. They also foster cooperation beyond academia, notably with industry and SMEs.

### Benefits for Europe:

- Scientific excellence promoted in all countries
- Attract and retain talents in Europe
- High quality R&I for Europe's sustainable growth
- Increased strategic cooperation and brain circulation between countries, disciplines and sectors
- New links between research, industry and society
- Stronger European Research Area (ERA)

### Benefits for researchers and organisations:

- New knowledge and skills in and outside academia
- Increased career prospects and employability
- Innovation-oriented mindset, to convert ideas into products and services
- Networking and increased visibility in the European R&I community
- International, interdisciplinary and inter-sectoral experience and exposure
- Access to leading organisations, top experts and their teams



#### Former MSCA fellow wins a Nobel Prize!

In 2020, former MSCA fellow **Emmanuelle Charpentier** together with Jennifer A. Doudna received the **Nobel Prize in Chemistry** 'for the development of a method for genome editing'. Other MSCA fellows and supervisors have also won prestigious awards, including **9 Nobel Prizes** and **1 Oscar**.



Under Horizon 2020, the MSCA have supported over **65 000 researchers** from the EU and beyond, including **25 000 PhD candidates**. They have also **financed more than 1 000 doctoral programmes**.

The programme has also boosted ties between academia and industry, **involving 4 700 companies** and nearly **2 200 SMEs**.



With over **37% of researchers coming from non-EU countries**, the MSCA have been key in building international strategic partnerships and promoting global research mobility and science cooperation. Organisations from non-EU and non-associated countries took part in Horizon 2020 mostly through the MSCA, with **3 450 participations** and **1 275 organisations** involved in **1 800 projects**.



## RESEARCH INFRASTRUCTURES (RIS)

are facilities that provide resources and services to conduct research and foster innovation. They can be single-sited, distributed or virtual. The EU action for RIs supports the development, upgrading and consolidation of excellent pan-European RIs, while optimizing their use to address major scientific and societal challenges. It enables access to digital resources and massive data processing too, by supporting the implementation of the **European Open Science Cloud** of which Research Infrastructures are central elements.

### Benefits for Europe:

- Increased R&I capacity and coordinated investment
- Innovation boost and advanced projects developed in the EU
- Cooperation research-industry in developing off-the-shelf instrumentations
- Regional development and attractiveness of less innovative regions
- Reinforced EU scientific global leadership through international research cooperation
- Data exchange and operability

### Benefits for researchers:

- Trans-national and open access to top scientific tools and infrastructures
- Cooperation with leading partners from industry
- Availability of customized services
- Trainings on management and exploitation of advanced infrastructures



Over almost 20 years, the European Commission has worked with Member States and the scientific community within the **European Strategy Forum on Research Infrastructures (ESFRI)** to develop new pan-European infrastructures and the effective



networking of existing ones. This has led to the establishment of **over 50 European Research Infrastructures**. This policy coordination and incentive measures under the Framework Programmes have mobilised close to **€20 billion** worth of investment.

### More information:

[European Research Council](#)  
[Marie Skłodowska-Curie Actions](#)  
[European Research Infrastructures](#)

[#MSCA](#)

[#ResearchImpactEU](#)

[#ResearchInfrastructure](#)

Luxembourg: Publications Office of the European Union, 2021

© European Union, 2021

Reuse is authorised provided the source is acknowledged and the original meaning or message of the document are not distorted. The European Commission shall not be liable for any consequence stemming from the reuse. The reuse policy of the European Commission documents is implemented by Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39).

All images © European Union, unless otherwise stated. Image sources: © ivector # 235536634 # 249868181 # 251163013 # 266009682 # 273480523 # 362422833 # 241215668 # 244690530 # 245719946 # 251163053 # 252508849, © shooarts # 121467308, 2020. Source: Stock.Adobe.com. Icons © Flaticon – all rights reserved.



Publications Office  
of the European Union

|       |                        |                    |                   |
|-------|------------------------|--------------------|-------------------|
| Print | ISBN 978-92-76-36506-8 | doi:10.2777/413597 | KI-01-20-664-EN-C |
| PDF   | ISBN 978-92-76-24767-8 | doi:10.2777/456952 | KI-01-20-664-EN-N |