



European Research Council
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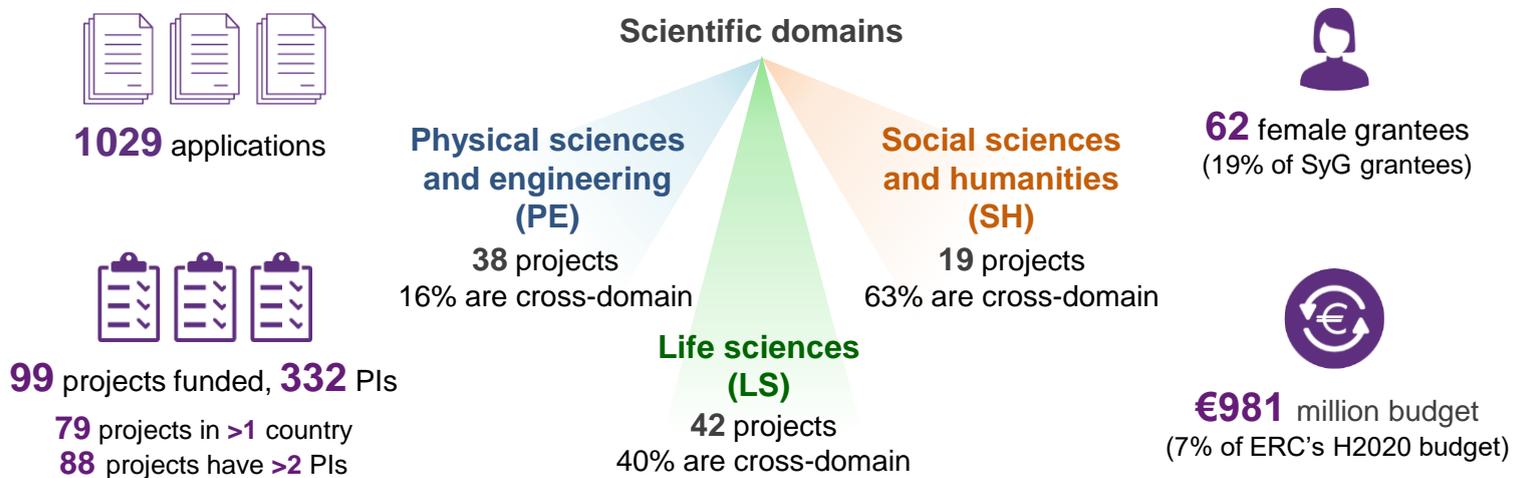
ERC Frontier Research in the Synergy Grant calls

This fact sheet provides an overview of the projects funded in the three Synergy Grant calls launched in the H2020 Framework Programme (2014-2020). Unlike single-investigator grants (Starting Grant, Consolidator Grant and Advanced Grant), the Synergy Grant funds a group of two to four principal investigators, working together and combining different skills and resources to tackle ambitious research problems. Synergy projects are often interdisciplinary and cover several of the ERC's scientific domains. The ERC's ambition for the Synergy Grants scheme is to become a world benchmark in funding transformative research.

Data as of December 2021

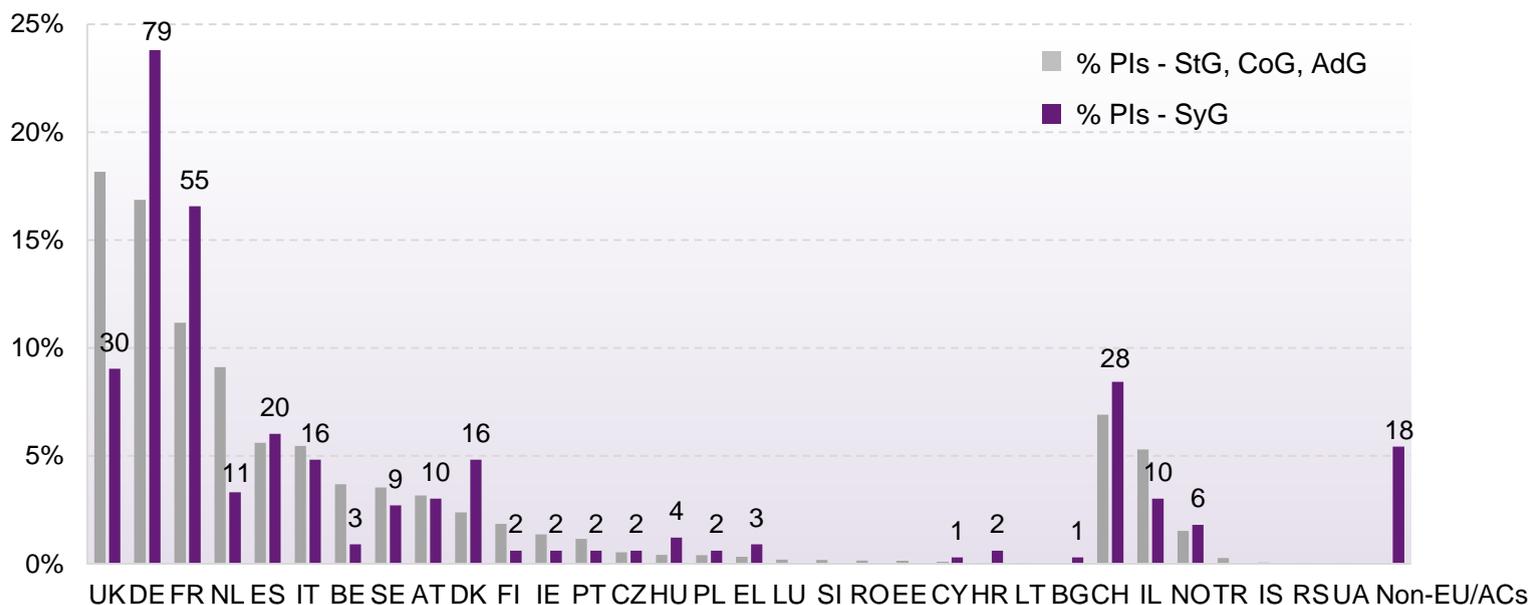
Synergy Grant calls

This fact sheet provides an overview of the projects funded in the three Synergy (SyG) calls launched in the H2020 Framework Programme (2014–2020)*



Distribution of SyG PIs in Horizon 2020

The 332 PIs of the 99 funded projects are in 20 EU Member States, 3 Associated Countries (ACs) and 5 non-EU/ACs



Host institutions with ≥5 SyG PIs



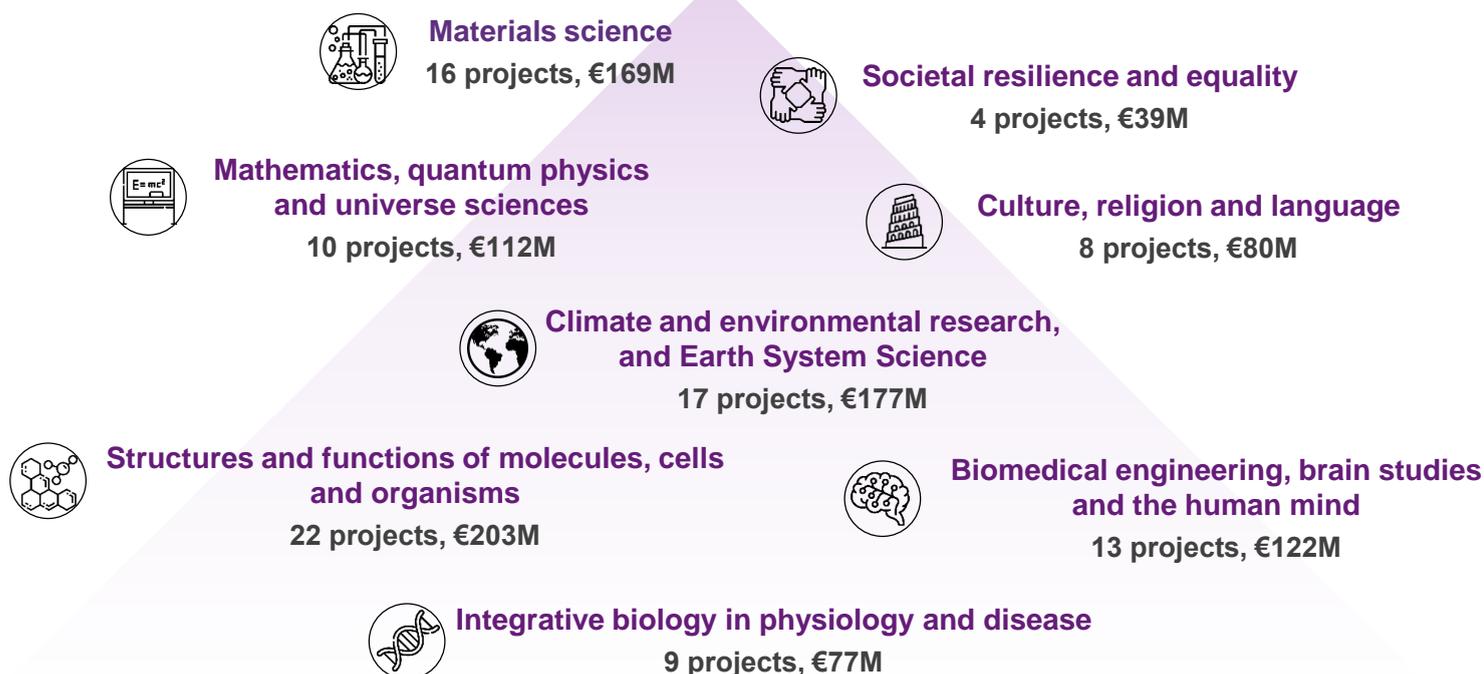
Country of origin of grantees other than EU or ACs (≤4 grouped together)



*Data as of December 2021

Disciplinary and topical clustering of Synergy projects

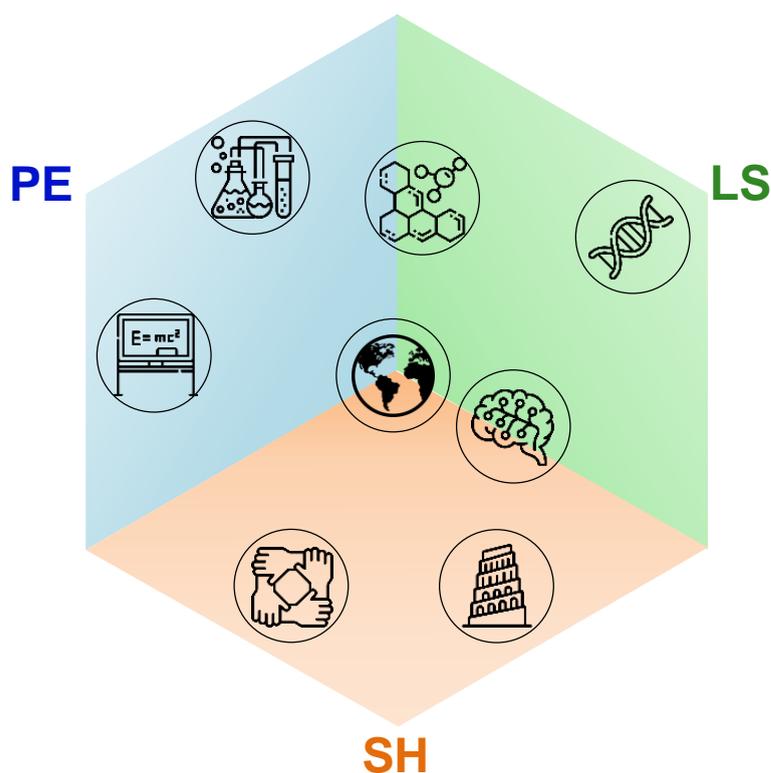
Clusters of SyG projects



The 99 SyG projects were grouped into thematic clusters to better capture their scientific landscape. The clustering was achieved by exploring common disciplines and topics between individual projects, where a total of 336 terms were used as classifiers, including 117 disciplines and 219 topics. The scope of each cluster spans across a range of scientific areas that are reflected in the cluster's name.

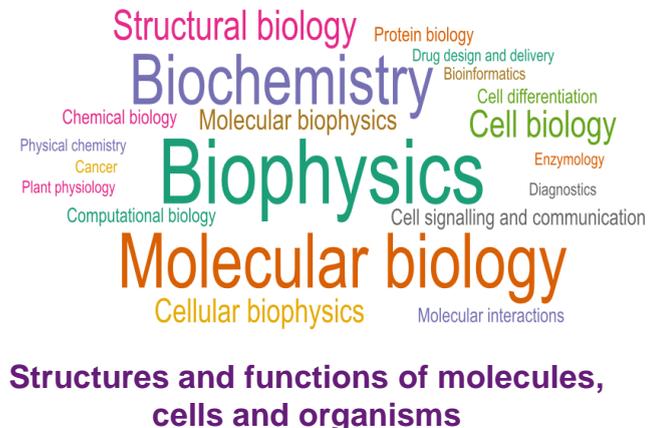
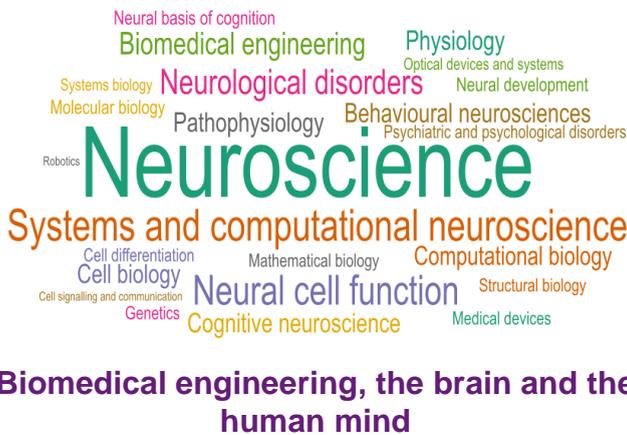
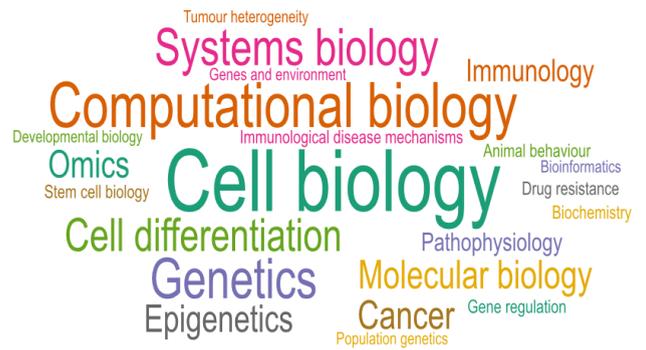
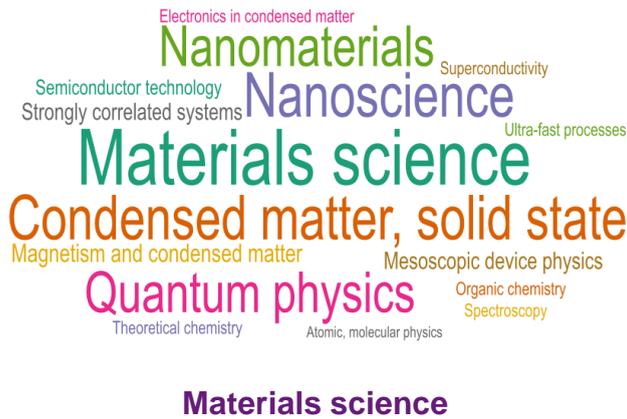
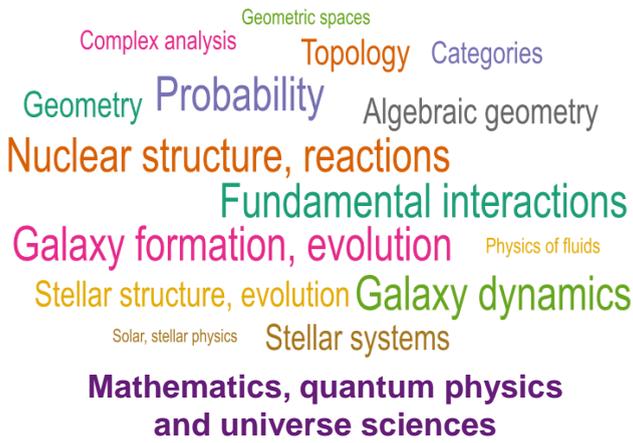
SyG clusters in the 3 scientific domains

SyG clusters are spread across the 3-domain space. Five clusters are more focused on a single domain and three clusters have a strong inter-domain component



- **Mathematics, quantum physics and universe science** and **Materials science** are predominantly PE. **Integrative biology in physiology and disease** is mainly LS. **Culture, religion and language** and **Societal resilience and equality** are substantially SH.
- **Climate and environmental research, and Earth System Science** lies at the intersection of the three domains, which contribute equally to the cluster. In the **Structures and functions of molecules, cells and organisms** cluster, the majority of the projects have an LS orientation with several having a strong PE component. **Biomedical engineering, the brain and the human mind** is at the intersection between LS and SH domains with a predominant LS orientation.

Scientific landscape of ERC-funded projects in Synergy: exploring the clusters

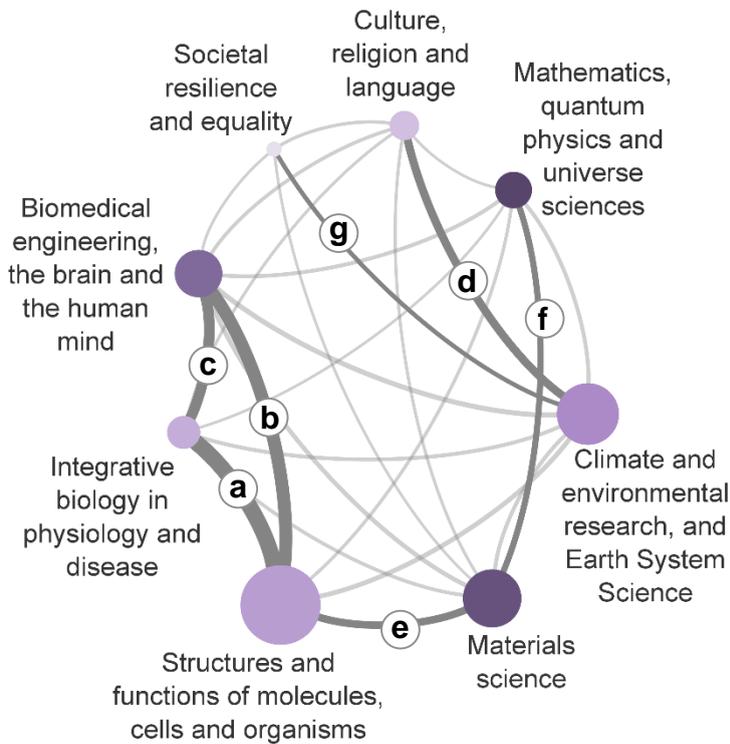


The word clouds represent the most prevalent scientific fields in the pool of SyG ERC projects under each scientific cluster.

Scientific synergies and methodological developments in Synergy

Main connections between the clusters of SyG projects

The nodes, whose size is proportional to the number of projects, represent scientific clusters of the Synergy projects. These clusters are interconnected and the strength of this connection is represented by the thickness of the arc that is proportional to the number of shared scientific fields. The most representative scientific fields of the main connections, tagged with letters, are listed.



- a** Cell biology; Computational biology; Cell differentiation; Cancer; Molecular biology
- b** Computational biology; Mathematical biology; Neurological disorders; Molecular biology; Physiology; Structural biology; Cell differentiation; Cell signaling and communication; Cell biology; Optical devices and systems
- c** Systems biology; Computational biology; Genetics; Molecular biology; Pathophysiology; Cell biology; Cell differentiation
- d** Climatology and paleoclimatology; Paleoanthropology; Climate change impact
- e** Biochemistry; Physical chemistry; Spectroscopy
- f** Atomic molecular physics; Optics and laser physics; Gas and plasma physics; Quantum information, physics, optics; Electronics photonics; Materials engineering; Nanoscience; Topology; Optoelectronic photonic systems; Spectroscopy; Thermodynamics
- g** Governance; Anthropology; Economics; Political Science; Social psychology; Policy

Landscape of methodological developments in SyG projects

The main methodological development across all domains is in the field of *Computational modelling, simulations* with a substantial contribution to models and algorithm development for Earth system studies. The largest share of projects contributing towards methodological developments is found in the PE domain followed by the LS domain and to a lesser extent in the SH domain.

