



Unleashing the potential of Europe's universities

The Guild is a recently established network of eighteen research-intensive universities from thirteen countries across Europe. We believe that universities are core to the scientific, cultural, economic and social future of Europe. Universities are the place where scientific knowledge is gained and communicated; social problems are contested across generations; new knowledge is applied to secure Europe's competitiveness; and where the interconnectedness of Europe's cultures are reinforced. We make nine core propositions for how European funding through Horizon 2020 (H2020) and the next Framework Programme (FP9) can strengthen research and innovation:

1. To ensure that Europe's scientific, economic, cultural and social potential is optimized, the budget for Research and Innovation – in H2020 and for FP9 – must be significantly increased.
2. Improved success rates are needed to assure continued applications from Europe's best researchers, through more active management of the application process.
3. The Excellent Science Pillar is a critical foundation to outstanding frontier research. Funding for this Pillar needs to be at least maintained at its current level, and no cuts must be made.
4. Public spending must bring public benefit. The SME instrument must be opened up to allow collaboration with universities for disruptive innovation.
5. Europe's Societal Challenges can be better addressed through enhanced opportunities for bottom-up collaboration, better use of Social Sciences and Humanities (SSH), and less focus on Technology Readiness Levels (TRL).
6. All stakeholders need to make a concerted effort to overcome barriers to Research and Innovation, encourage meaningful collaboration across Europe and leverage further funding into lower performing regions. This will require change at national and regional, as well as at European levels.

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7. We need progress on the European Research Area (ERA) in order to maximize the opportunities afforded by H2020.
8. We welcome the three Os: Open Innovation, Open Science and Open to the World and urge a focus on the 'quick wins', removing barriers and enhancing initiatives to collaboration.
9. We need a more trust-based approach between researchers and the Commission to ensure the effective implementation of grants.

Further Details on Suggested Changes

- 1. To ensure that Europe's scientific, economic, cultural and social potential is optimized, the budget for Research and Innovation – in H2020 and for FP9 – must be significantly increased.**

It is of great concern that in 2015, over 75% of funding proposals considered by independent experts to be of 'high quality' could not be funded through H2020. This represents an unacceptable waste of talent and potential where scientific advances could have been made and applied, for the benefit of Europe's citizens. The funding of European Research and Innovation must be commensurate with the outstanding ideas generated by its scientists, entrepreneurs and businesses.

We protest against the recent H2020 budget cuts made to create the European Fund for Strategic Investments (EFSI). Noting that every 1€ spent on FP7 has generated an economic return of €11. We have not seen any evidence that EFSI-funds will generate a similar rate of return.¹ The majority of EFSI spending is not related to Research and Innovation (R&I), thus undermining Europe's relative global position in world R&I spend. The most effective way to shore up Europe's competitive position in R&I is to restore the full €2.2bn taken from Horizon 2020's budget to help finance EFSI.

¹ Louise O.Frenzo, 'Commitment and Coherence. Essential Ingredients for Success in Science and Innovation' (November 2015), p.60:

https://ec.europa.eu/research/evaluations/pdf/fp7_final_evaluation_expert_group_report.pdf

H2020 resource cannot be stretched through loans, which many universities and other research-performing organizations, as public institutions, would be forbidden from taking. The EU is in a particular position to provide funding for internationally excellent research and innovation, based on collaboration and exchange. For this reason, we need the EU's leadership in providing enhanced funding for research and innovation in Europe.

2. Success Rates need to improve to assure continued applications from Europe's best researchers, through more active management of the application process.

The Budget Cuts have compounded the low – and declining – success rates for applications. This has generated unacceptable waste in time and resource spent on applications, and will discourage outstanding scientists from applying in the future. Application rates must be managed better, for instance through increased use of the controlled two-step application process, with a limited number of applications going through to the second round where success rates would then be much higher (around 33%).

3. The Excellent Science Pillar is a critical foundation to outstanding frontier research, funding for this Pillar needs to be at least maintained at its current level, and no cuts must be made.

Individual and collaborative curiosity-driven research is the basis of the success of Horizon 2020, in the knowledge it creates and the impact it will generate. The Excellent Science pillar has funded critically important science, promoting outstanding scholarship from across the career spectrum. Marie Skłodowska Curie Action (MSCA) has been essential for attracting and training new generations of internationally leading researchers, who in turn contribute to the creation of outstanding science in academia and industry. The European Research Council (ERC) has supported world-leading researchers which has been recognized recently through the award of the 2016 Nobel Prize in Chemistry to Ben Feringa (Groningen), as well as the 2014 Fields Medals to Artur Avila (CNRS/Paris 7 Diderot) and Martin Hairer (Warwick).

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4. Public spending must bring public benefit. The SME instrument must be opened up to allow collaboration with universities for disruptive innovation.

As comprehensive universities, we are proud of the added value that our universities can offer in collaborations with companies, and we support the broad range of topics that have been funded under the objective of ‘Leadership in enabling and industrial technologies’. We are less optimistic about the place and added value of ‘Access to risk finance’: Risk finance and venture capital are ill-placed in a programme that has research and innovation at its core. More impact can be generated in Horizon 2020 (and FP9) by diverting the money for risk finance into Research & Innovation Actions that will supply companies with knowledge and ideas that they can use to their full benefit in other initiatives that exist for that purpose (e.g. COSME, EFSI).

In relation to the SME Instrument, we want to see more disruptive innovation coming through collaboration. Universities have a particular role in bringing together a range of different actors, including SMEs, in trusted relationships. Our universities, for example, have huge international networks that are used to increasing the visibility of the SMEs we work with, networks that also deliver an initial set of customers to these SMEs. We have not been able to utilize these in the SME Instrument. Finally, there is already a wide range of instruments in the EU supporting SMEs (e.g. COSME, Eurostars, EIT). Adding an extra instrument has only increased complexity for fledgling SMEs looking for the right mechanisms.

Many of the current topics are developed in close collaboration with industry, which in turn inspires relevant fields of research. At the same time, it is of paramount importance to add more topics with a broader range of TRL, including the differentiated use of TRL on sub-topics in a project, to achieve the optimal collaboration between all knowledge providers.

5. Europe’s Societal Challenges can be better addressed through enhanced opportunities for bottom-up collaboration, better use of SSH, and less focus on TRLs.

We strongly support the continued funding of collaborative research, as truly adding value compared to what is possible at the national or bi-lateral level. Through their research and their communities, universities have a very close understanding of our societal challenges in practice. Consequently, our researchers must be empowered to identify how best to best address the Societal Challenges. We propose that an opportunity is provided within each Societal Challenge for consortia to identify key challenges as they have arisen, and apply for funding, improving the connectivity of bottom-up and top-down approaches.

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Interdisciplinary research is essential for addressing Europe's Societal Challenges, and the concerns of European citizens. SSH knowledge around smart cities, ageing, migration and intercultural communication (for instance) is critical for addressing the key challenges of Europe, they matter hugely to the individual citizen, and they require the contribution of all disciplines. SSH expertise needs to be involved from the moment Work Programmes are created, right up to the evaluation of funded projects.

Currently Innovation Actions make it almost impossible for university-based researchers to apply for funding, whilst even the Research and Innovation Actions require TRL levels that are inappropriate for projects that should include contributors along the entire innovation chain. More generally, we need to redefine the impact of research, how we articulate it, and how we measure this throughout the entire innovation chain. In the immediate future, we need low to medium TRL calls to avoid the 'valley of death' and fill the gap between low and high TRL research. It is critical that we enhance the connection between curiosity-driven research and innovation.

6. All stakeholders need to make a concerted effort to overcome barriers to Research and Innovation, encourage meaningful collaboration across Europe and leverage further funding into lower performing regions. This will require change at national and regional, as well as at European levels

We are concerned at the low levels of funding into research and innovation that are won in low performing countries. The reasons for this are structural, historical, and economic, and they vary from country to country. Therefore, while the inability of many institutions to pay internationally competitive salaries is a major issue, it needs to be seen in conjunction with other barriers to excellence. The Guild will work closely with its members across Europe to propose solutions for overcoming these barriers. In addition, we call for the creation of a High-Level Expert Group including universities, research and technology organisations, and national policy-makers to develop concrete proposals about how to overcome barriers to excellence in research and innovation in low-performing regions. The Group's findings must be of consequence to national policy makers, urging them to undertake reforms that enhance the capacity of universities for research and innovation. And the Group must also show how funding mechanisms in FP9 can be optimized across Europe, in conjunction with changes that need to be made at the national levels. For H2020, we propose that:

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- Work Programmes be formulated so that they can better take advantage of the breadth of perspectives and expertise across Europe.²
- The requirement, under the TEAMING action, to create or upgrade autonomous Centres of Excellence has added new (and unnecessary) layers of complication for universities.
- We need closer synergies between H2020 and the European Structural and Investment Funds (ESIF), with the Commission seeking a minimum value of 20% of ESIF funds to be spent on R&I. Instruments beyond TEAMING could be linked to ESIF in a mandatory way.
- Additional remuneration rules should be made more flexible.
- We welcome the Commission's recent focus on the Spreading Excellence actions for the allocation of additional funds where they become available. We support in particular extra funding for ERA Chairs, and propose that ERA chairs are tasked with research projects (and not just research organization).
- We welcome the Commission's recent announcement to apply the 'Seal of Excellence' to the Excellent Science Pillar.

7. We need progress on ERA in order to maximize the opportunities afforded by H2020

We advocate a renewed focus on the objectives of the European Research Area. There are still substantial disconnects between European and national research systems, while transnational cooperation and competition should be optimized further. We are far from achieving an open labour market for researchers, as well as gender equality throughout. Many of the points made in other parts of this submission (about international collaboration, the compatibility between national and EU funding rules) also have a bearing on ERA.

8. We welcome the three Os, and urge a focus on the 'quick wins', removing barriers and enhancing initiatives to collaboration.

² For an example that might be applied to actions in the Societal Challenges, see <https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc1-hco-08-2017.html>

Open Innovation: Universities are central to disruptive innovation, which cannot emerge without ideas based on knowledge and an awareness of scientific principles. We support the creation of the EIC to coordinate the open, radical and disruptive innovation driven by universities, industry and entrepreneurs. Funding for the EIC must not be taken from H2020, but come from additional funds (e.g. EFSI, ESIF and national funds) creating more synergy between the various programmes.

Open Science: We support measures to improve Open Access, and the inclusion of the Open Access requirement (with the possibility of opt-outs) for H2020-funded research. We also support the work of the Open Science Policy Platform (OSSP) and the High-Level Expert Groups reporting into it. At the same time, we urge that:

- Open Science can relate to national initiatives effectively, and that it builds on, rather than duplicates, relevant aspects of the ERA (notably the development, under ESFRI, of e-infrastructures).
- The requirement to publish on Open Access does not transfer resource from research and innovation to the publishing industry. The Commission needs to have an active coordinating role in bringing publishers and universities together to agree optimal ways of ensuring Access.
- There is an active engagement with national university representations and research councils to consider questions around (i) career advancement and recognition for researchers engaged in Open Science; (ii) research parameters; and (iii) challenges to achieve research integrity, including the reproducibility of research results.

Open to the World: Insufficient progress has been made to enhance international cooperation, and for European Research and Innovation to be Open to the World. We urge the Commission to show real commitment by addressing the numerous obstacles to international cooperation, especially in relation to terms and conditions (like governing law, IP rules). We call upon the Commission to increase its efforts to create S&T agreements with third countries that are not automatically eligible for funding in Horizon 2020, and to continue setting up Co-funding mechanisms to make it easier for researchers from third countries to participate.³

9. We need a more trust-based approach between researchers and the Commission to ensure the effective implementation of grants.

³ A good example is the Co-funding Mechanism (CFM) launched by the Chinese Government and the EU in 2015

We appreciate the simplification achieved in H2020, especially in the pre-award process. Streamlining, flexibility and simplification on financial aspects of implementation must be a continuing process, and should be based on trust between the Commission and the research community. Furthermore, the proliferation of funding programmes and instruments bears the risk of confusion for researchers and creates a need for more bureaucratic support for research and innovation. This is not necessarily conducive to enhanced collaboration in R&I.

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