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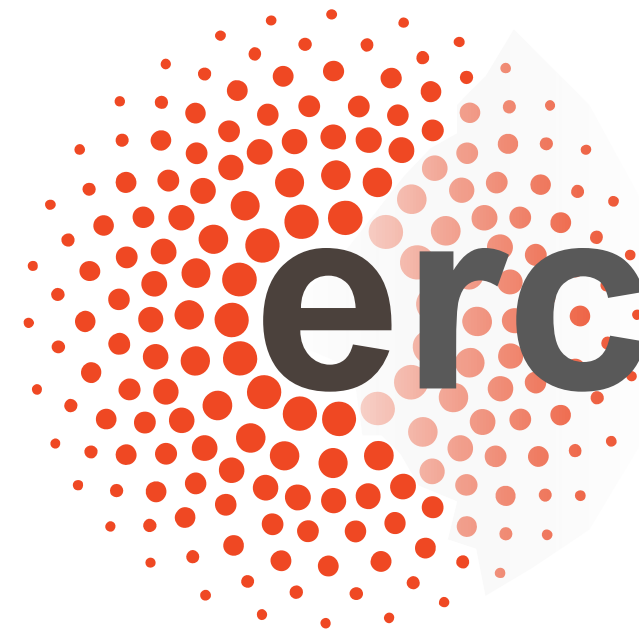
## ERC Synergy grants 2023

*Giuliano SCALZI*

*Synergy grants call co-coordinator*

*B.2 - Call and Project Follow-up Coordination Unit,*

*Webinar ERC Synergy Grant 2023*



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# ERC Grant Schemes



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## Starting Grants

2-7 years after PhD  
up to € 1.5 + 1 Mio  
for 5 years



50%



50%

## Consolidator Grants

7-12 years after PhD  
up to € 2 + 1 Mio  
for 5 years



40%



50%

## Advanced Grants

track-record of significant  
research achievements  
in the last 10 years  
up to € 2.5 + 1 Mio  
for 5 years



30%



50%

## Synergy Grants

2 – 4 Principal Investigators  
any career stage  
up to € 10.0 + 4 Mio for 6 years



30%



50%, except  
non-EU/AC PI

1 PI can be based outside EU/Associated Country

## Proof-of-Concept

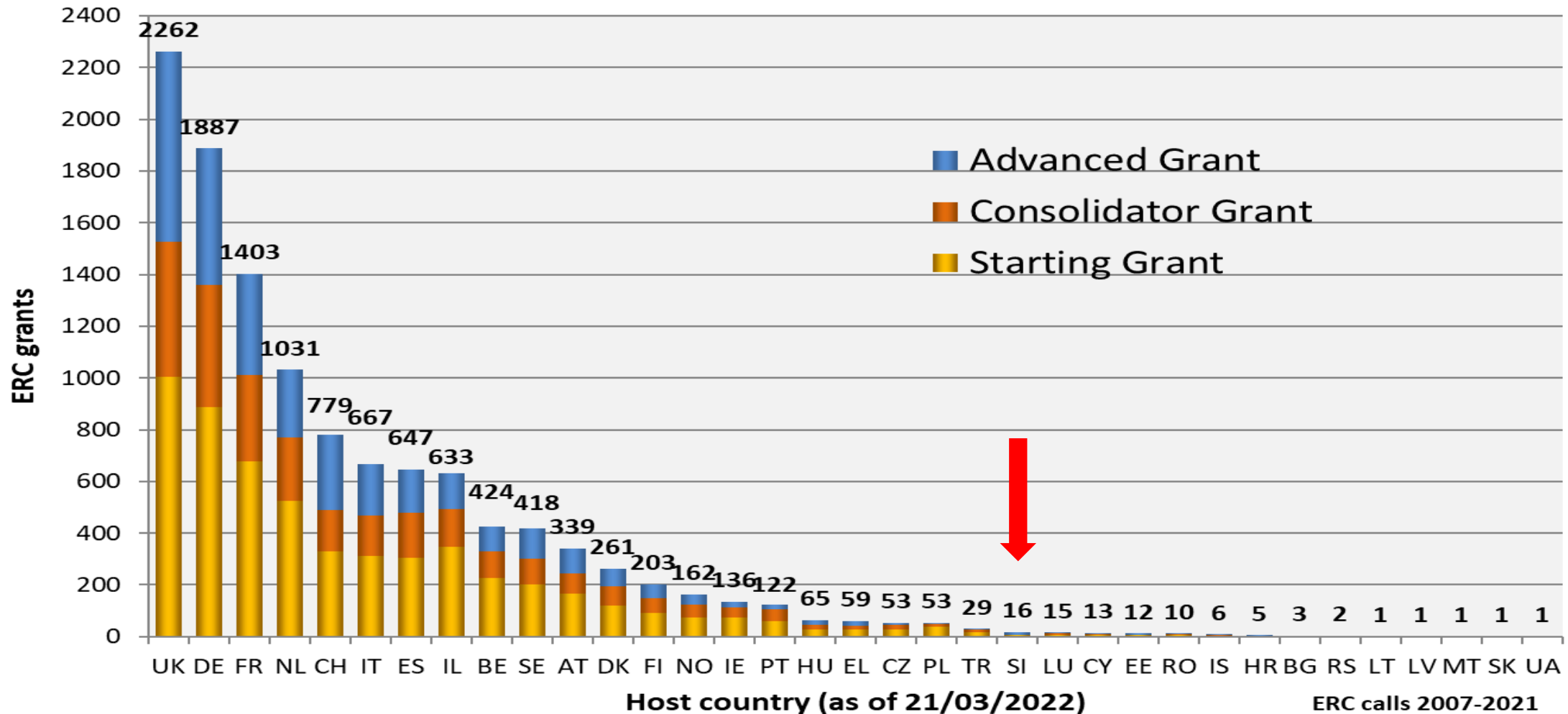
bridging gap between research - earliest stage of marketable or social innovation  
lump sum €150,000 for ERC grant holders



# ERC Funded Projects by Country of Host Institutions



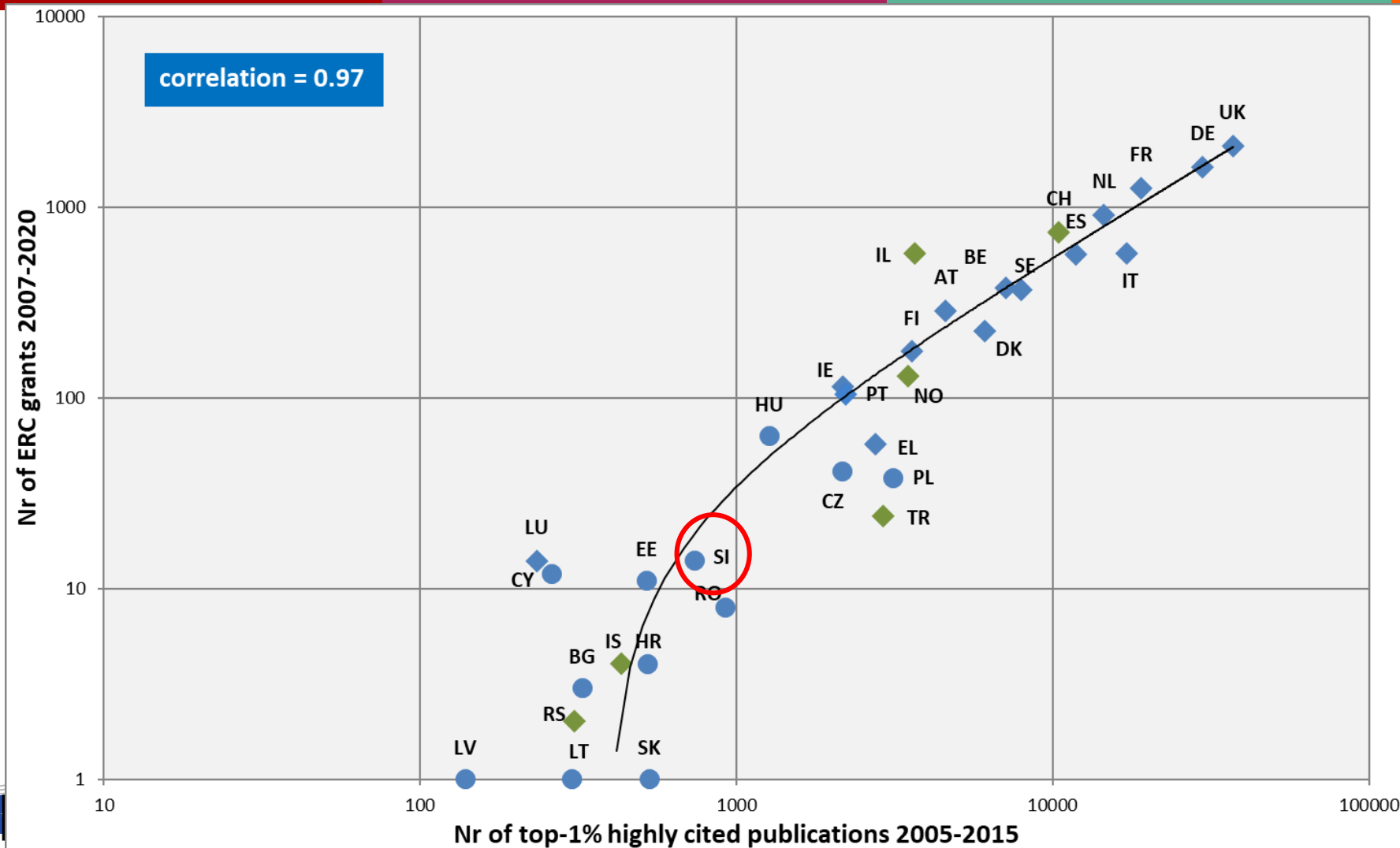
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# ERC Grants versus Top Publications



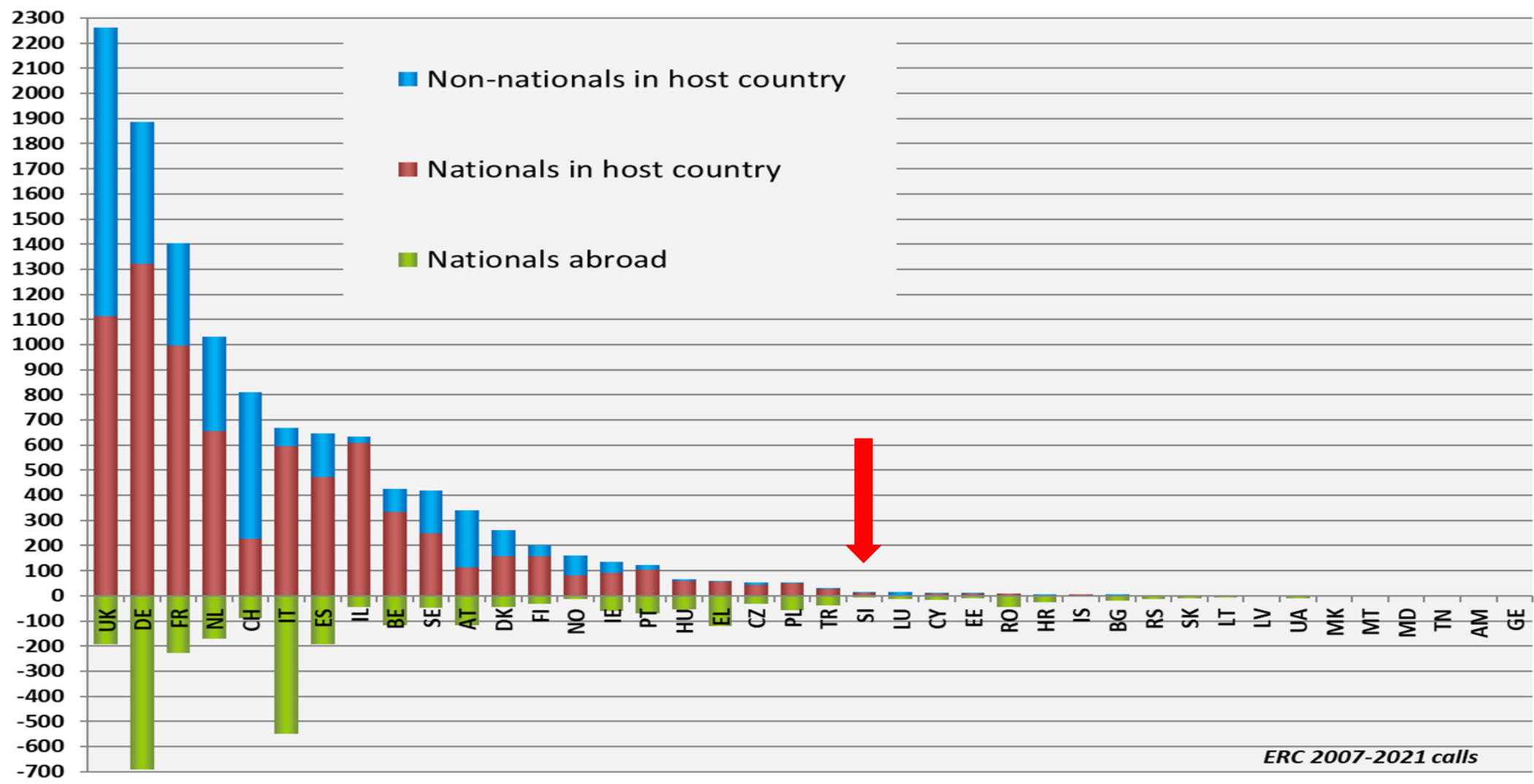
Correlation of **0.97** between nr of ERC grants and nr of top-1% highly cited publications per country.

Correlation of **0.85** between nr of ERC grants and GERD per country.

———— Linear fit

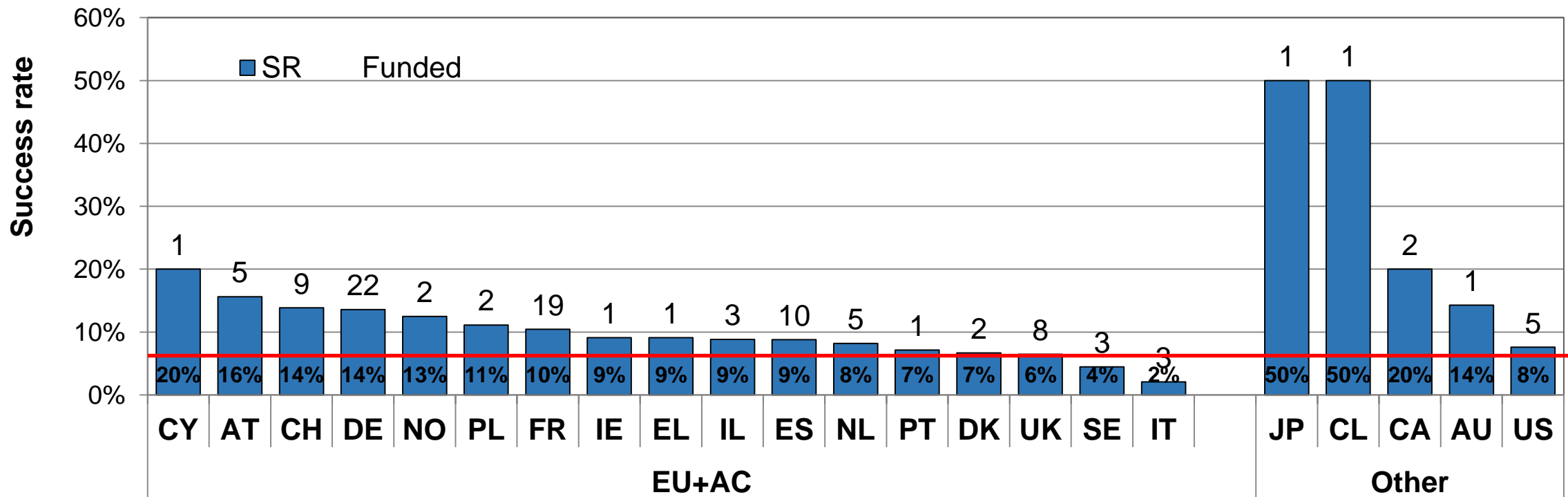
Host countries as of  
26/08/2020

# Researchers from Slovenia at the ERC



# Is your country successful in the Synergy grants calls?

**SyG 2020 Success rate by country of Host institutions**  
(counting all occurrences of HIs in a given country)

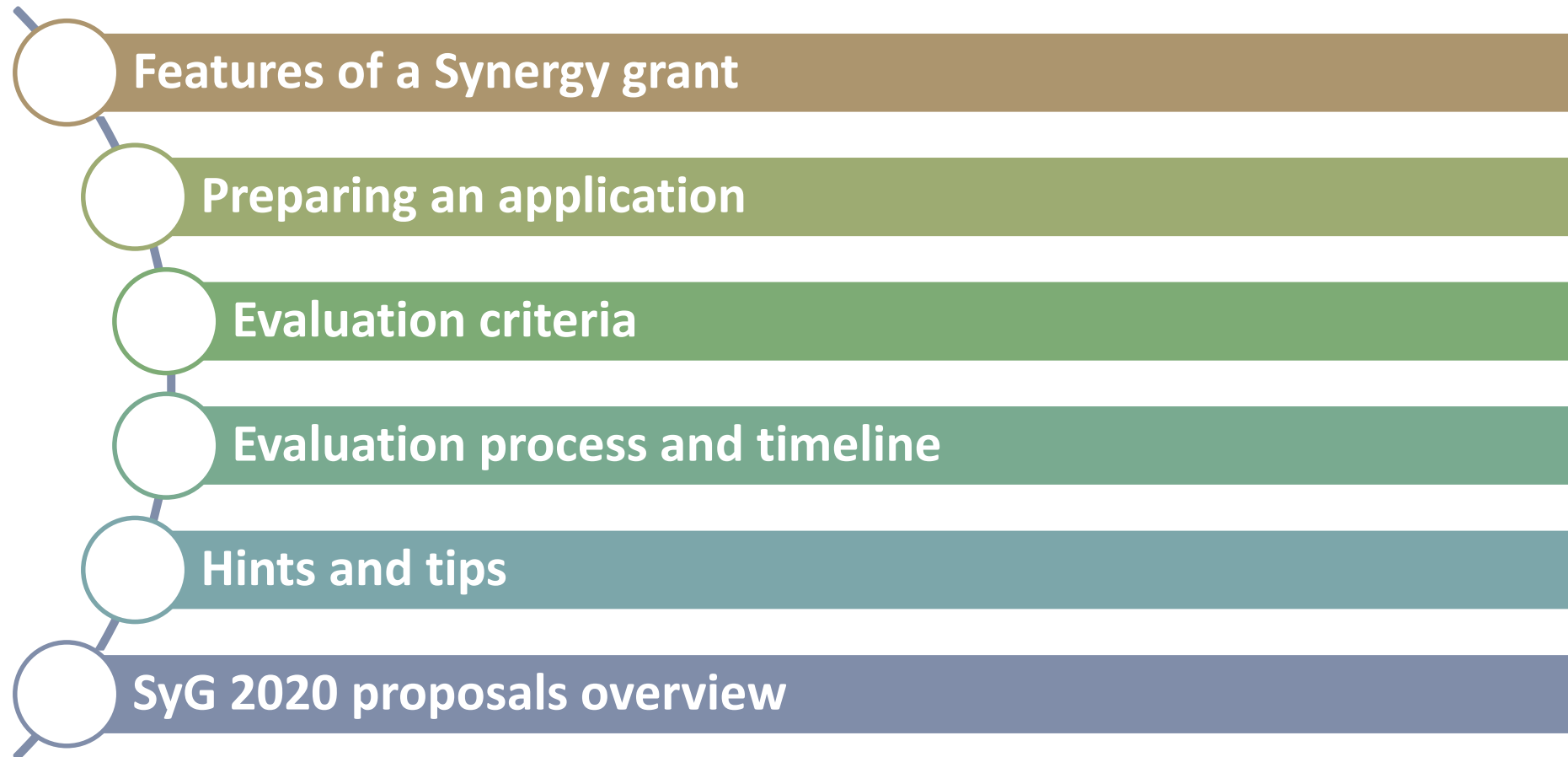


Additional 37 countries have no successful proposals

# Overview



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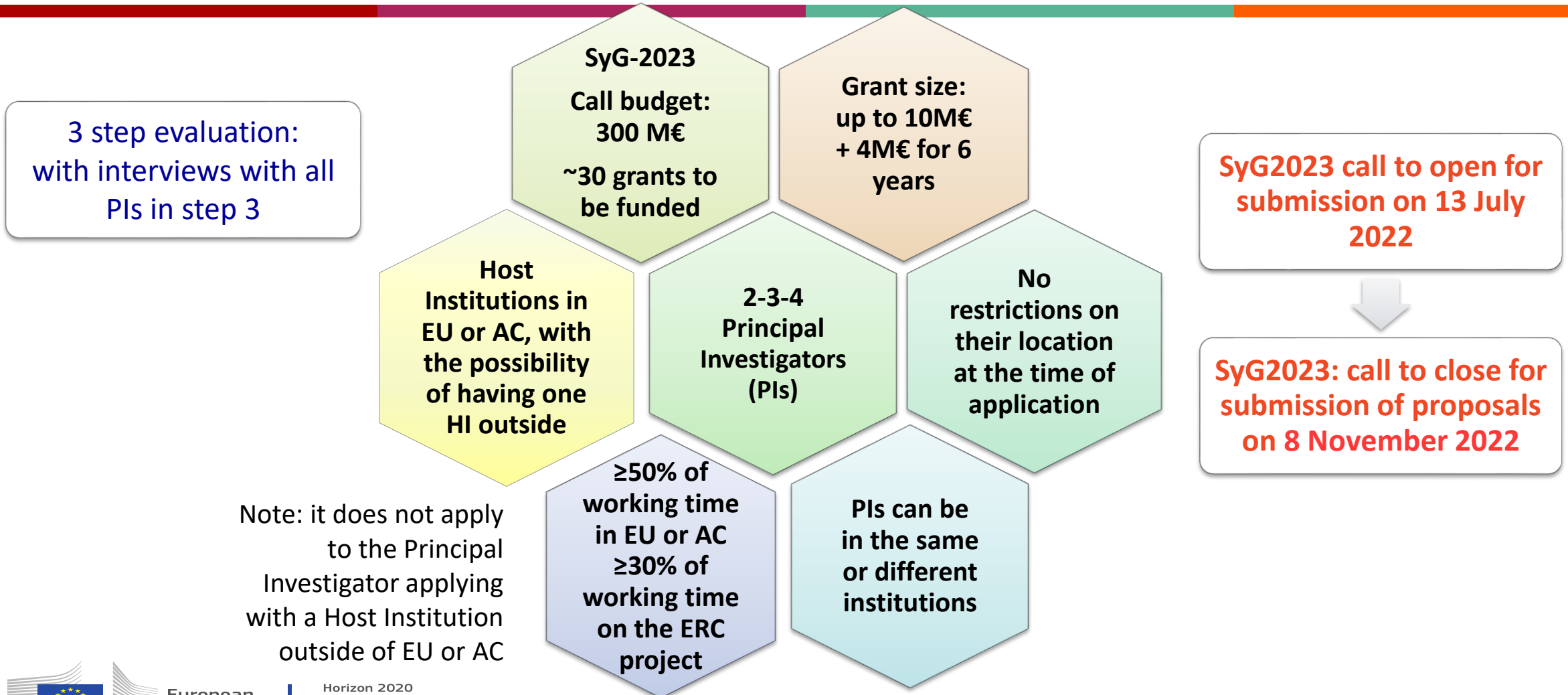
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# Design of the Synergy call 2023

The grant scheme description is pending on the approval of the ERC Work Programme 2023 in mid-July. Please check the final version on the ERC website.



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Note: it does not apply to the Principal Investigator applying with a Host Institution outside of EU or AC



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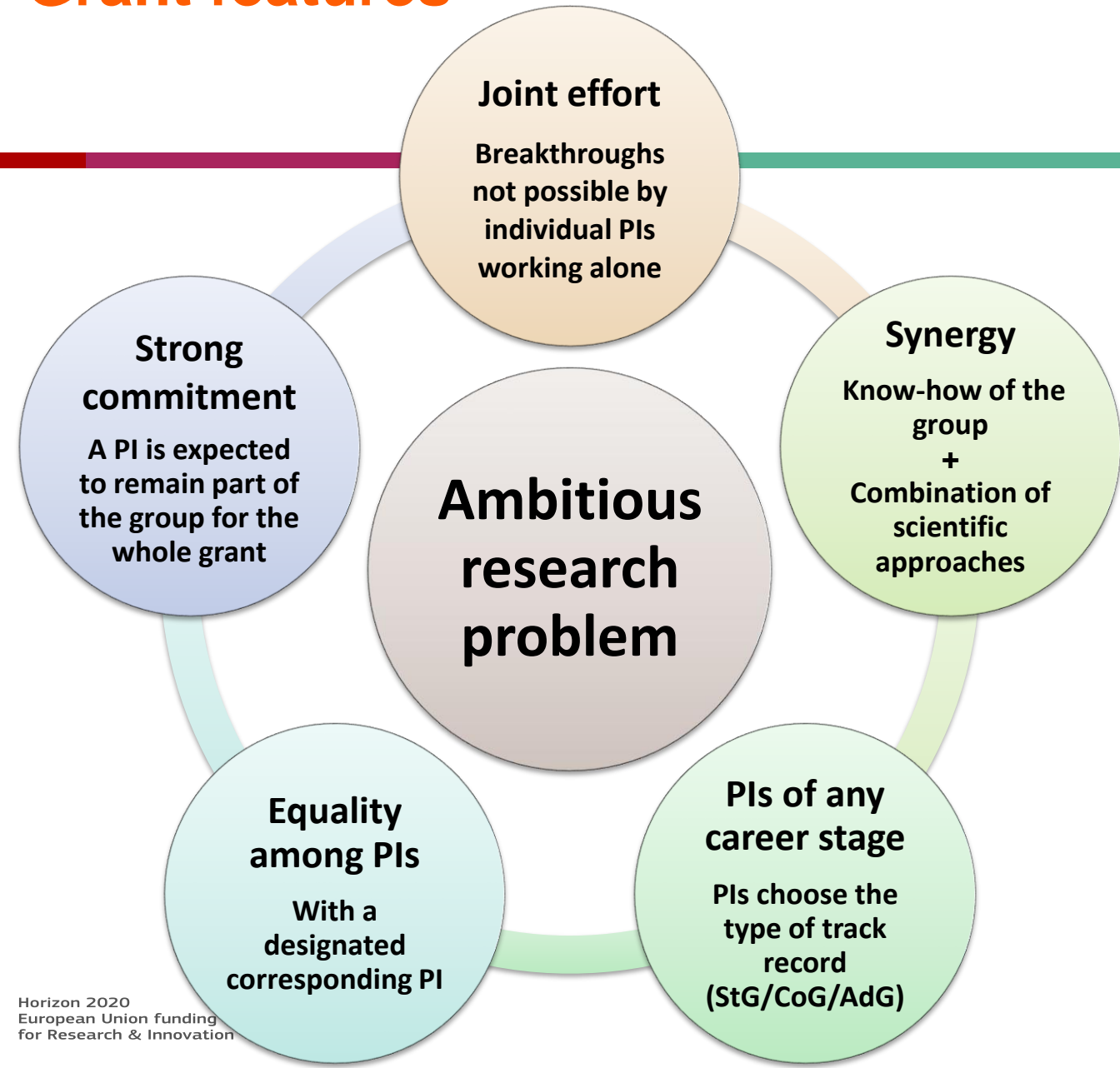
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# ERC Synergy Grant features



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# ERC Synergy Grant features

## Synergy aspects



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### SYNERGY

A major scientific question with a transformative scientific potential that could not be addressed by an individual PI and their team working alone

Involves teams with exceptional combinations of knowledge and skills with the PIs holding a central role

PIs must demonstrate that their group can successfully bring together the scientific elements necessary to address the scope and complexity of the proposed research question.

# ERC Synergy Grant features

## Synergy aspects



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NOT  
SYNERGY

Loose cooperation or  
networking between PIs

Simple passing of data or  
information from one team  
to another

**Note:** The proposed work does not need to cover more than one discipline or field to be considered for the Synergy grants

# ERC Synergy - Proposal Structure

In step 1 only part B1 is reviewed.

Administrative data and eligibility are checked by ERC staff.

Note! Each Host Institution has to submit their support letter for the PI(s) hosted by them.



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## Administrative forms (Part A)

- 1 – General information
- 2 – Administrative data of organisations
- 3 – Budget
- 4 – Ethics
- 5 – Call specific questions

*4-6 ERC keywords are selected, panels are not defined at submission*

## Part B1 (submitted as pdf) *Evaluated in Step 1 & Step 2 & Step 3*

- Text box - Cross-domain nature explanation
- a – Extended synopsis      5 pages
  - b – Curriculum vitae      2 pages *per PI!*
- Appendix – Funding ID
- c - Track-record      2 pages *per PI!*

## Part B2 (submitted as pdf) *NOT evaluated in Step 1 (only in Step 2 & 3)*

- Scientific proposal      15 pages
- a – State-of-the-art and objectives
- b – Methodology
- c – Resources (*budget breakdown per PI + a joint one*)

## Annexes

Commitment of all the Host Institutions, ethics docs, etc.

# Proposal submission

## updated guidance on the track record



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Review of funding strategy in light of DORA principles discussed by the Standing Committee on Panels. Regarding the WP the following advice was integrated in the text:

- **Journal Impact Factor not accepted anymore among the field relevant bibliometric indicators** that may be included as part of the publications track record required for applications to the main frontier research grants,
- The track record should specify that the list of achievements under each Principal Investigator profile is not exclusive, other types of achievements can be included if relevant to the research field and project proposal,
- Within the existing proposal template and page limits, Principal Investigators can provide a **short narrative description of the scientific importance of the research outputs** submitted as part of the proposal, and of the role that the Principal Investigator played in their production.



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# Evaluation

## hardship measures related to Covid-19



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In the context of the Covid-19 outbreak, applicants may mention in their research proposal (Curriculum Vitae) any specific situation caused by the pandemic that had a negative effect on their curriculum vitae or track record.

### Features:

- Similar to the approach used for career breaks and unconventional research career paths,
- Case-by-case evaluation by each Panel based on the applicant's statements,
- Part B1 template of the proposal includes a dedicated section to describe the Covid-19 impact to scientific productivity.



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# New eligibility condition

## Gender Equality Plan



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- Host Institutions must have a Gender Equality Plan (GEP) in place for the duration of the project.
- The absence of a GEP does not affect the evaluation of a proposal. **For SyG2023 a GEP is obligatory at granting stage.**
- The attention of applicants is called at the time of application about the consequence of the absence of a GEP at the time of the signature of the grant.
- The Gender Equality Plan requirement is detailed in the new Annex 5 of the Work Programme. Minimum process-related requirements:
  - Formal document published on the institution's website and signed by the top management,
  - Commitment of resources and gender expertise to implement it,
  - Production of sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators,
  - Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.



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# Indicative submission restrictions for the SyG2023 call

Please check the actual rules in the ERC Work Programme 2023 to be adopted mid-July 2022.

When checking for a rule look for the call year, not calendar year.



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Evaluation		Can a PI apply to		
Result of SyG2022	Step	StG/CoG call in 2023?	AdG call in 2023?	SyG call in 2023?
C	1	yes	no	no
B	1	yes	yes	yes
B	2	yes	yes	yes
A or B	3	yes	yes	yes

Applicants to previous StG/CoG/AdG ERC calls can apply to the SyG2023 call regardless of the score received previously.

To be eligible for SyG2023: a running ERC grant has to end before 8 November 2025

A PI can be part of only one application published under the same Work Programme regardless of the call. The first application will be considered, the subsequent ones will be declared ineligible.





# What are the evaluation criteria?

Excellence is the sole evaluation criterion: addressed at two levels



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## 1. EXCELLENCE OF THE RESEARCH PROJECT

- Ground breaking nature
- Potential impact
- Scientific approach
- Synergetic aspects
- In **step 1** the **feasibility** is assessed only => methodology in step 2 and 3
- Resources are not assessed in step 1

## 2. EXCELLENCE OF THE PRINCIPAL INVESTIGATORS

- Each PI assessed according to their career benchmarks
- Intellectual capacity
- Creativity
- Commitment => evaluated in step 2 and 3 only

# ERC SyG 2023 Evaluation questions

The following are used in STEP 1, 2 and 3. The answers to the below questions should be found in part B1, as only the short synopsis is evaluated at step 1.



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## 1. Research Project

### ***Ground-breaking nature and potential impact of the research project***

- *To what extent does the proposed research address important challenges?*
- *To what extent are the objectives ambitious and beyond the state of the art (e.g. novel concepts and approaches or development between or across disciplines)?*
- *To what extent is the proposed research high risk-high gain (i.e. if successful the payoffs will be very significant, but there is a high risk that the research project does not entirely fulfil its aims)?*

### ***Scientific Approach***

- *To what extent is the outlined scientific approach feasible bearing in mind the extent that the proposed research is high risk/high gain?*
- *To what extent does the proposal go beyond what the individual Principal Investigators could achieve alone?*
- *Reformulated in SyG2022: To what extent do the Principal Investigators succeed in proposing a combination of scientific approaches that are crucial to address the scope and complexity of the research questions to be tackled?*

# ERC SyG 2023 Evaluation questions

In addition to the questions on the previous slide, the following are used only if your proposal passed to step 2 – therefore the answers have to be found in part B2 of your proposal



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## 1. Research Project

### *Scientific Approach*

- *To what extent are the proposed research methodology and working arrangements appropriate to achieve the goals of the project?*
- *To what extent does the proposal involve the development of novel methodology*
- *To what extent are the proposed timescales, resources and PI commitment adequate and properly justified?*



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# ERC SyG 2023 Evaluation questions - continued

All the questions relating to the Principal Investigator group are used in all steps – be sure you are addressing them in part B1 already



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## 2. Principal Investigators

### Intellectual capacity and creativity

- *To what extent have the PIs demonstrated the ability to conduct ground-breaking research?*
- *To what extent do the PIs have the required scientific expertise and capacity to successfully execute the project?*

### Synergy

- *Reformulated in SyG2022 and used already at step 1: To what extent does the Synergy Grant Group successfully demonstrate in the proposal that it brings together the know-how – such as skills, experience, expertise, disciplines, teams – necessary to address the proposed research question?*

# ERC SyG 2023 Evaluation Process



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## Step 1: 1 panel

### REMOTE REVIEWS:

- Only part B1
- Mainly generalists
  - panel members
  - panel evaluators\*

27.02 - 03.03.2023

Meeting: panel chairs & vice chairs → scoring:

- A (max 7 x budget)  
~ 230 proposals
- B - rejected
- C\*\* - rejected

## Step 2: 5 panels

### REMOTE REVIEWS:

- Parts B1 & B2
- Mainly generalists: panel members
- Specialists: remote referees

26 - 30.06.2023

Meeting: panel members → scoring

- A (max 4 x budget)  
~ 100 proposals
- B - rejected

## Step 3: 5 panels

### NO REMOTE REVIEWS

- Parts B1 & B2
- Panel members: interview preparation: formulation of questions based on step 2 reviews/panel discussion

11 - 15.09.2023 Meeting: panel members; **interviews with all PIs** → ranking

- Top A - main list ~ 30 funded
- A below funding limit - reserve + rejected
- B - rejected

\*panel evaluators (PEVs) are panel members of other ERC calls assisting in the remote review phase by providing individual reviews

\*\* might be restricted from applying to the next ERC SyG call.

# Who is evaluating Synergy proposals?

## SyG 2020 - Evaluators' profiles

### Step 1: Remote Evaluation – all experts in one panel

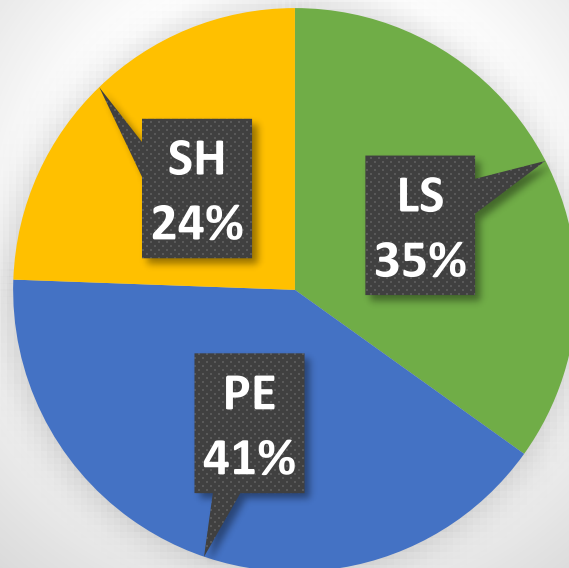


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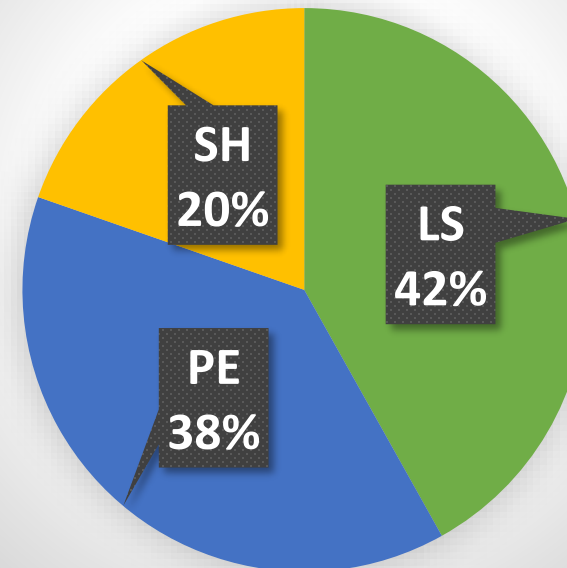
203 Reviewers; 36 Nationalities; 143 Men and 60 Women (30%)

### Scientific background

86 Panel Members (PMs)  
Including 5 chairs and 6 vice chairs



117 Panel Evaluators  
(PEVs) (PMs from other ERC calls)



# Who is evaluating Synergy proposals? (2)

## SyG 2020 - Evaluators' profiles

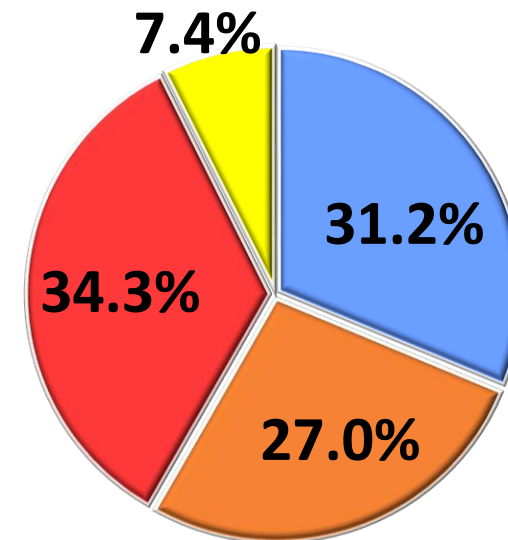
### Step 2: Panel members in 5 panels + external reviewers



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- 86 Panel members - distributed in 5 panels in step 2 and 3
- Remote referees: 3528 invited – 1192 reviews submitted
- Each proposal has between 7 and 15 reviews:
  - Panel members between 3 to 7 reviews per proposal
  - Remote referees and panel evaluators: between 3 to 11 reviews

- **Review delivered**
- **Not replied**
- **Declined**
- **Accepted but not delivered**



2078 Reviews  
submitted for 200  
proposals



# Hints and tips

## Preparing an application

### Differences in Part B1 and Part B2



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In **Step 1: Panel members** (act as generalists) they see only **Part B1** of your proposal: Prepare it accordingly!

- Pay particular attention to the **ground-breaking nature** of the research project – no incremental research. State-of-the-art is not enough. Think big!
- For SyG: Synergetic aspects important – **know-how of the group** is assessed together with the **combination** of the scientific elements
- Know your competitors – what is the **state of play** and why is your idea and scientific approach outstanding?
- **Only the extended Synopsis is read at Step 1: concise and clear presentation** is crucial (**Outline** only of the **methodological approach** – feasibility is assessed at step 1)
- Show, if applicable for StG and CoG profiles, the **scientific independence** in the CVs, the scientific leadership in the AdG profile
- **Funding ID** to be filled in carefully for each PI



# Hints and tips

## Preparing an application

### Differences in Part B1 and Part B2



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In **Step 2** : Both **Part B1 and B2** are sent to specialists around the world (**specialised external referees**)

- Do not just repeat the synopsis in part B2
- Provide **sufficient detail** on methodology, work plan, selection of case studies etc. (15 pages) (references do not count towards page limit)
- Check coherency of figures, **justify requested resources** (outside of 15 pages) – pay attention to the calculations and provide budget for each of the PIs
- Explain **involvement of additional team members** (it is possible to have further beneficiaries/partners in the project)
- Provide alternative strategies to **mitigate risk**

**In Step 3: no new reviews are written, but part B1 and B2 are re-assessed**

# Hints and tips

## Questions to ask yourself as an applicant



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### Principal Investigators – Why me, why this group?

- Is each of the PIs internationally competitive as a researcher at each of their career stage and in each of their discipline?
- Is each of the PIs able to work independently, and to manage a 6-year project with a substantial budget?
- How strong is the group of PIs as a whole?
- Does the proposal demonstrate that the PIs bring together the necessary elements, the know-how to address the research question?



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# Hints and tips

## Questions to ask yourself as an applicant



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### Research Project – Why now? Why is it important?

- Why is the proposed project important?
- Does it promise to go substantially beyond the state of the art?
- Has it the chance to cross-fertilize disciplines?
- What is the scientific transformative potential?
- Does it have a grand challenge that can boost European research?
- Why are we the best/only persons to carry it out?
- Why is this particular combination of the PIs the best for the project?
- Is the other person(s) really needed as a PI or only as a team member?
- Is it timely? (Why wasn't it done in the past? Is it feasible now?)
- What's the risk? Is it justified by a substantial potential gain? Do we have a plan for managing the risk?



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# 💡 Explain the budget properly!



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- Budget analysis carried out in Step 3 evaluation.
- Panels have the responsibility to ensure that resources requested are reasonable and well justified.
- Budget cuts need to be justified on a proposal-by-proposal basis (no across-the-board cuts).  
**Not explained costs are often cut!**
- Panels recommend a final maximum budget based on the resources allocated/removed.
- Panels do not 'micro-manage' project finances.
- Awards made on a 'take-it-or-leave-it' basis: no negotiations.
- Ask for funding for Open Access in case needed– this is obligatory in Horizon Europe!

**Rumour** : *Ask for more money, the reviewers will anyhow cut it down.*

**✗ NOT true**: however, unexplained or non-motivated requests can be cut, so if you artificially inflate your budget, it will be reduced.

## When writing the CVs

- Remember that the CVs/Track Records are as important as the project!
- Explain what has been each PI's own contribution to their key publications.
- Explain publishing habits in the field and country if needed.
- If the PI knows that he/she has gaps or other issues in the CV (e.g. co-authored publications), explain them.
- Describe activities which can indicate scientific maturity.
- Use the CV template provided by the ERC in the submission system
- No need to provide PhD supporting documents

**Rumour** : *One needs publications in Nature/Science/High Impact Factor journals to succeed.*

**✘ NOT true.** In addition note: for StG profiles: publishing with senior scientists (former supervisors) raises doubts about maturity/scientific independence.

# Typical reasons for rejection

## Principal investigators

- Insufficient track-record
- Insufficient (potential for) independence (StG and CoG profiles)
- Insufficient experience in leading projects (AdG profile)
- Complementarity of PIs not evident enough
- Not evident that the necessary elements can be successfully brought together (skills, knowledge, experience, expertise, disciplines, methods, approaches, teams)

## Proposed project

- Scope: Too narrow  $\leftrightarrow$  too broad/unfocussed
- Not synergetic enough to achieve the aims
- Incremental research
- Work plan not detailed enough/unclear
- Insufficient risk management

■ **Poor interview:** prepare well! (all PIs in step 3 are invited to an interview)

# Hints and tips

## Summing-up



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- Have an **original and exciting idea** that requires the **joint effort** of 2 or 3 or 4 PIs
- **Design a research project** to implement the idea
  - It is not about a consortium, but about a tight-knit small group of PIs and their teams. The PIs are equal and indispensable for the project!
- Get a letter of support from your **Host Institution**- **each HI has to provide a support letter for the PI(s) hosted by them**
- **Write** the research proposal (carefully plan the resources)
  - Choose carefully the 4-6 keywords: applications are not submitted to a StG/CoG/AdG types of the panels
- Read carefully the **evaluation criteria** and try to ensure that the reviewers can find the answers to them in your proposal (part B2 is not a mere repetition of part B1)
- **Get feedback** from your peers
- Don't underestimate the **obstacle of different scientific languages** when you are merging fields
- **Submit** your research proposal **before the deadline** -> fully electronic/web based submission system – try to avoid submitting on the last day

# ERC SYG2020 – Scientific Content- no privileged fields of science or scholarship

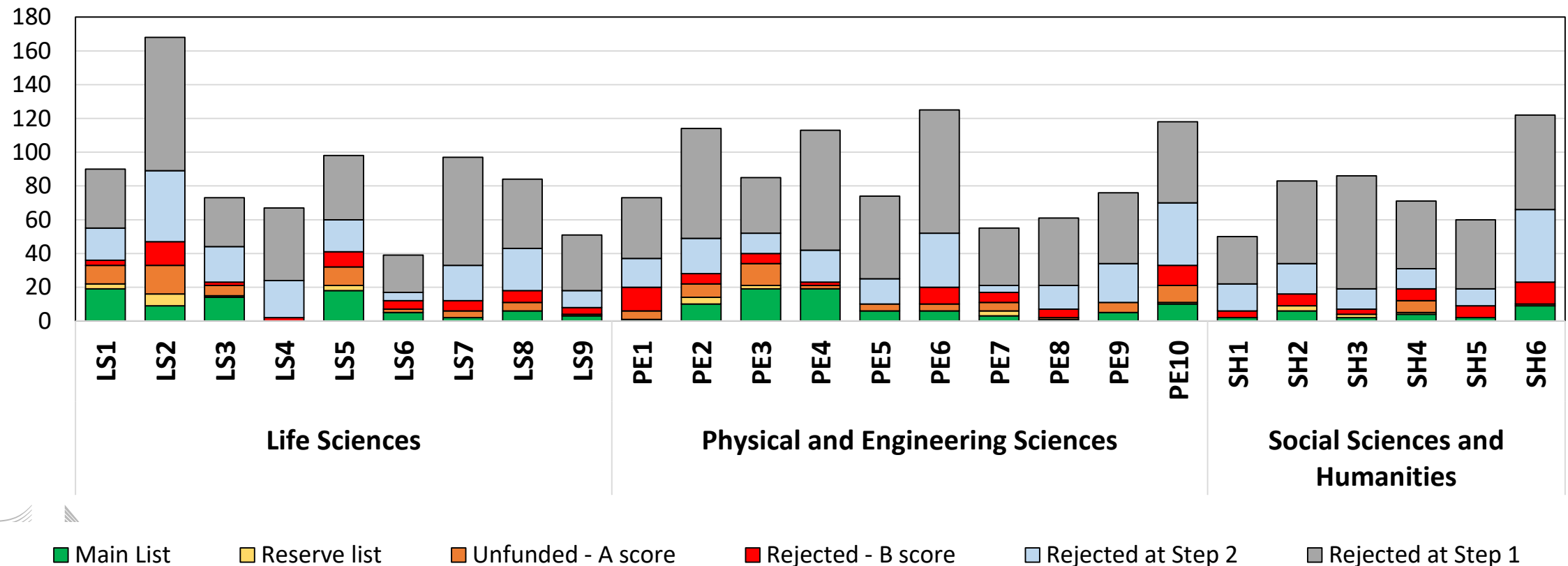


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ERC keywords in SyG 2020 proposals -> relating them to the STG/CoG/AdG panel structure

The results show a great variety in topic coverage – almost all ‘regular’ panels are covered by the 34 funded proposals

Occurrences of keywords from ERC Panels in SyG 2020 Proposals at each step





# ERC SYG2020 – Host Institution



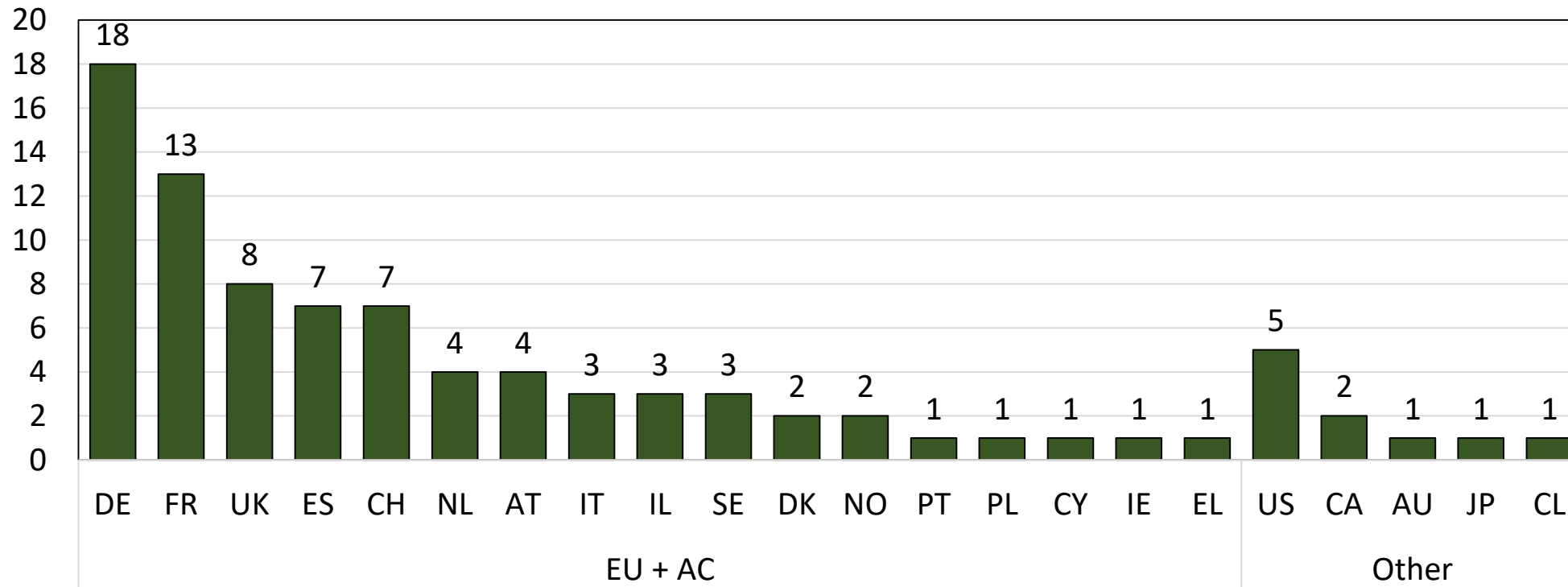
No. of proposals in a given Host Institution Country (in the 34 funded proposals)

example 1: France has 13 proposals in which at least one HI is French, in total involving 19 different French Host Institutions

example 2: Germany has 18 proposals involving 26 PIs who are based in 22 German Host Institutions

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SyG 2020 Number of funded proposals in a Host country  
(counting HI countries only once in a proposal)



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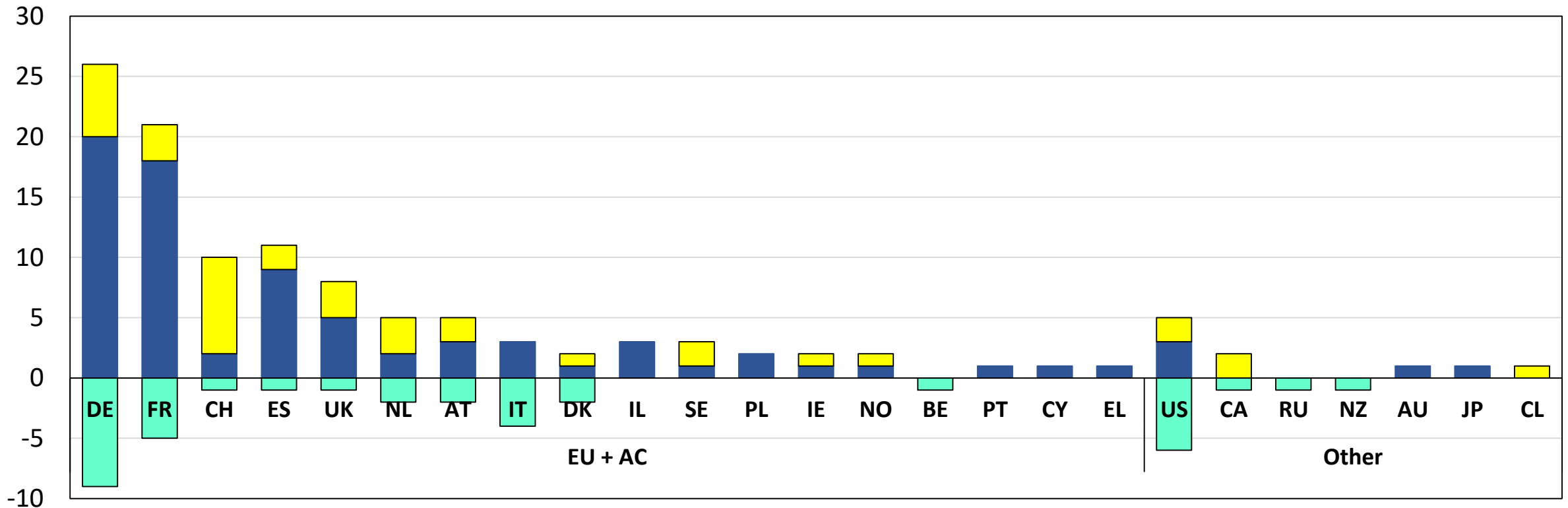
# ERC SYG2020 – Principal Investigators

Nationality of PIs of the proposals selected for funding



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SyG 2020 country of funded proposals in relation to the nationality of the PIs



■ Nationals abroad

■ Nationals in home country

■ Non nationals in home country



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# Take home messages – ERC Synergy grants



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The end result should be more than the mere sum of the parts.

- Competitive call (7,5% success rate in SyG 2020, expected success rate of 8,4% in Syg2022)
  - only exceptional proposals are likely to be funded that will demonstrate that the **truly ambitious** research questions could lead to breakthroughs **only through the joint effort** of the group of PIs.
- ‘Synergy’ does not mean a loose consortium and is not the end goal
  - The interaction would yield something more than just the sum of the individual parts.
  - To yield possibly either unforeseen, completely new science, to cross fertilize disciplines or to solve important research problems that until now could not be dreamt of solving.
- Early career applicants are encouraged to apply



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# Hints and tips

## Where to find more information



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1. The ERC Work Programme – our legal basis
2. Information for applicants
3. Videos on Synergy grants on the ERC website:  
<https://erc.europa.eu/funding/synergy-grants>

#### 4. Videos on ERC Classes

<https://www.youtube.com/watch?v=xbFbkVWgCU&list=PLtv6FnsXqnXAYRk6HCErwmXwML0ZKoMcy>

- What to consider before applying
- How to fill in the application
- The interview
- How the evaluation works



1. National Contact Points (NCP) <https://erc.europa.eu/funding/national-contact-points>



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# Thank you!

Don't hesitate to contact us:

[ERC-SYG-APPLICANTS@ec.europa.eu](mailto:ERC-SYG-APPLICANTS@ec.europa.eu)

[Giuliano.scalzi@ec.europa.eu](mailto:Giuliano.scalzi@ec.europa.eu)

## **Examples of proposals selected for funding and additional statistics on the SyG2020 call**

# SyG2020: Proposals selected for funding (LS)



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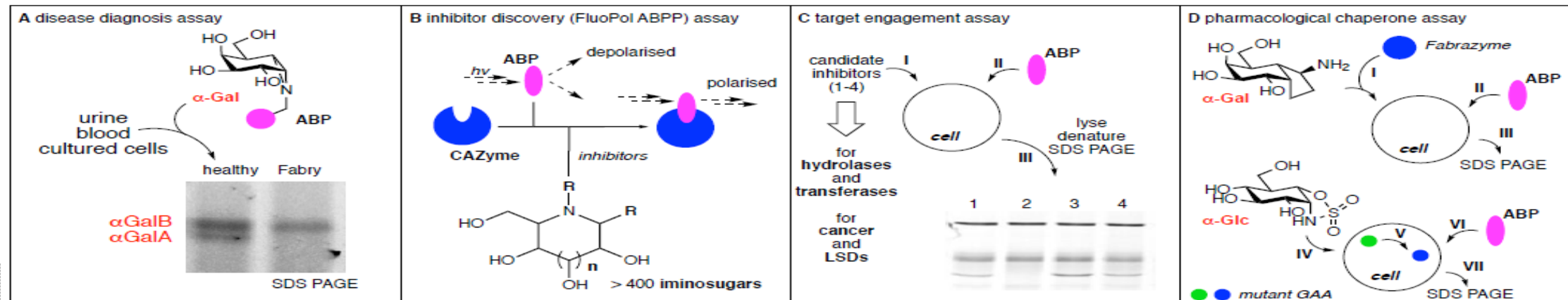
## CARBOCENTRE: Activity-Based Profiling of Glycoprocessing Enzymes for Human Health and a Sustainable Society

Budget: 9,057,250€

Hermen OVERKLEEF (NL)	UNIVERSITEIT LEIDEN	NL
Carme ROVIRA (ES)	UNIVERSITAT DE BARCELONA	ES
Gideon DAVIES (UK)	UNIVERSITY OF YORK	UK

**Aim: to develop carbohydrate-active enzymes (CAZymes) for human health and sustainable industries.**

- To provide visualization, diagnosis, and inhibitor assays and clinical lead compounds for enzymes in **cancers and genetic diseases** (lysosomal storage disorders).
- To explore the natural diversity of CAZymes and to discover, quantify and optimize new enzymes for **food and household applications** and for **biomass conversion to biofuels**.



# SyG2020: Proposals selected for funding (LS)



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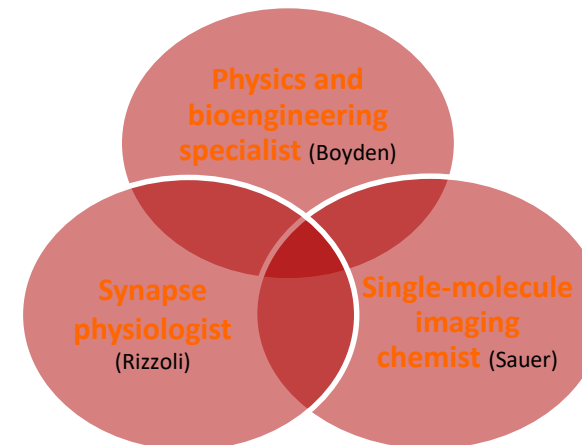
**ULTRARESOLUTION:** *Beyond super-resolution: ultra-resolution imaging provides solutions for synapse physiology and brain pathology*

**Budget: 11 100 221 €**

Silvio RIZZOLI (DE)	UNIVERSITAETSMEDIZIN GOETTINGEN - GEORGAUGUST-UNIVERSITAET GOETTINGEN – STIFTUNG OEFFENTLICHEN RECHTS	DE
Edward BOYDEN (US)	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	US
Markus SAUER (DE)	JULIUS-MAXIMILIANSUNIVERSITAT WURZBURG	DE

**Aim: to develop ultra-resolution imaging with true molecular resolution of 1-5nm, by combining optics based super-resolution with physical expansion of the samples.**

- To reveal the functional organization of key components of the synapse, in health and disease
- To develop protocols for brain pathology samples, for future use in medical diagnostics



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## ERC SYG 2020: Proposals selected for funding (LS)

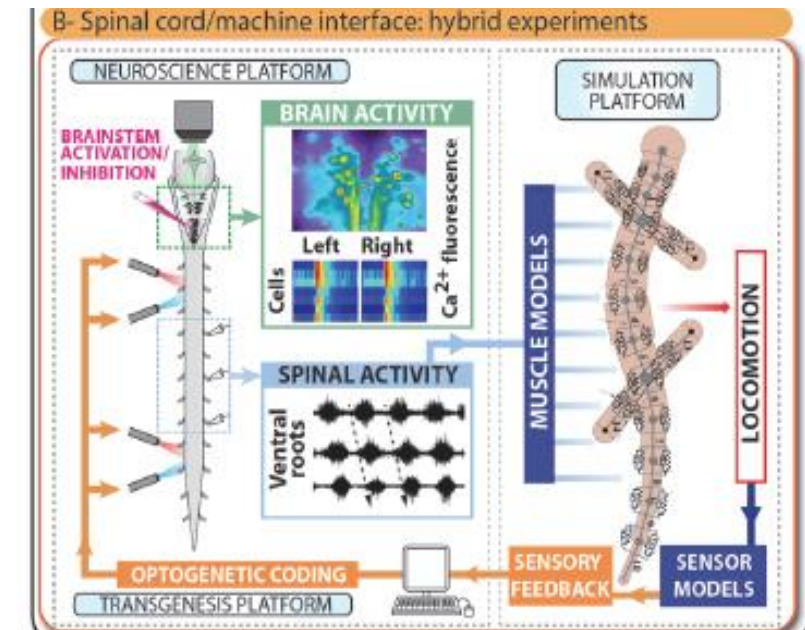
# SALAMANDRA: Decoding the organization and regeneration of locomotor neuronal networks in tetrapods

Budget: 9.559.650 €

Auke JAN IJSPEERT	École Polytechnique Fédérale de Lausanne	CH
András SIMON	Karolinska Institute	SE
DIMITRI RYCZKO	UNIVERSITÉ DE SHERBROOKE	CA

- Decode how **functional regeneration of motor circuits** can take place in a tetrapod **after spinal cord lesion**
- Decipher the **interplay of central and peripheral mechanisms in locomotion control** (neural network models, biorobotics)

LS5\_2 Systems neuroscience and computational neuroscience, PE7\_10 Robotics, LS5\_3 Neuronal development, plasticity and regeneration, LS2\_1 Molecular genetics, reverse genetics, forward genetics, genome editing

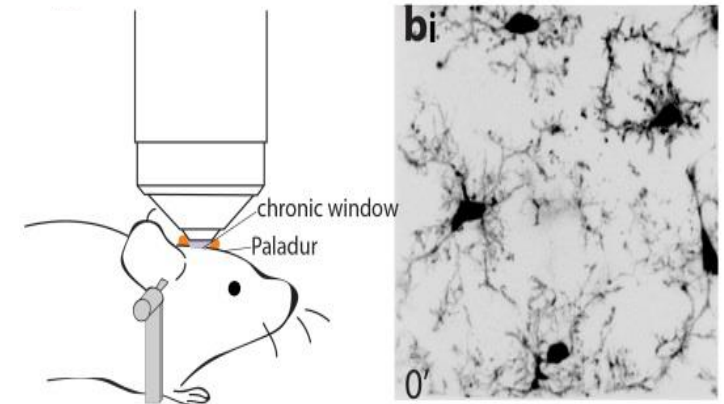


# ERC SYG 2020: Proposals selected for funding (LS)

## MICRO-COPS: Microglia Control of Physiological Brain States

Budget: 10.000.000 €

Nils BROSE	Max Planck Institute of Experimental Medicine	DE
Thomas OERTNER	University Medical Center Hamburg-Eppendorf	DE
Anne SCHAEFER	Icahn School of Medicine at Mount Sinai	USA/DE
Antoine TRILLER	Inserm-Ecole Normale Supérieure	FR



- How microglia **survey and respond to neuronal activity?**
- How microglia **signal to neurons?**
- How microglia **shape neuronal and circuit function and behaviour?**

LS5\_1 Neural cell function, communication and signalling, neurotransmission in neuronal and/or glial cells, LS5\_3 Neuronal development, plasticity and regeneration, LS5\_7 Neurological disorders, LS2\_8 Transcriptomics, LS3\_1 Morphology and functional imaging of cells and tissues, LS3\_5 Cell signalling and signal transduction

# ERC SYG 2020: Proposals selected for funding (LS)



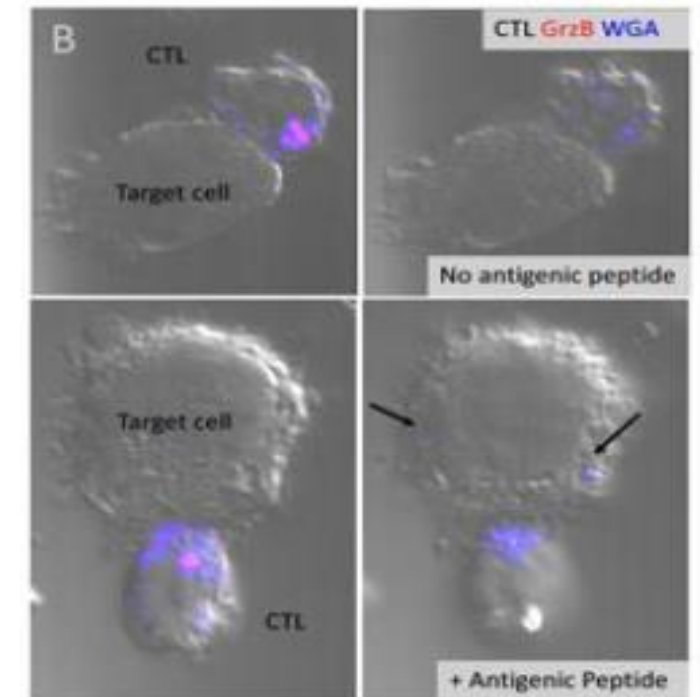
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## ATTACK: Analysis of the T cell's Tactical Arsenal for Cancer Killing

Budget: 9.999.018 €

Jens RETTIG	Saarland University	DE
Cosima BALDARI	University of Siena	IT
Michael DUSTIN	University of Oxford	UK
Salvatore VALITUTTI	INSERM	FR

- Analyse the contribution of newly described **Multicore Granules (MCGs)** and **Supramolecular Attack Particles (SMAPs)** to Cytotoxic T lymphocytes (CTL) mediated killing

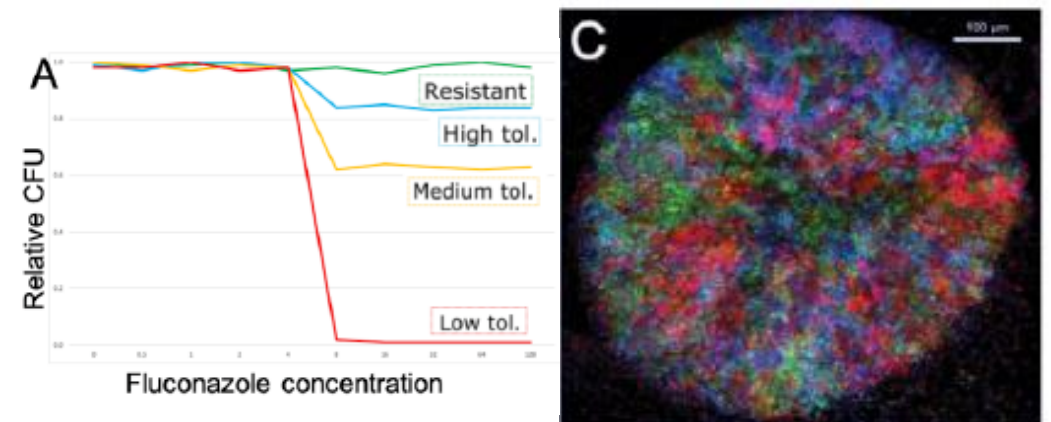


LS6\_3 Regulation and effector functions of the immune response, LS6\_2 Adaptive immunity, LS3\_4 Cell junctions, cell adhesion, cell communication and the extracellular matrix, LS3\_3 Organelle biology and trafficking, LS1\_10 Molecular mechanisms of signalling pathways, LS1\_1 Macromolecular complexes

## ERC SYG 2020: Proposals selected for funding (LS)

# FungalTolerance: unraveling the complexity of fungal drug tolerance at multiple scales of biology

Judith BERMAN	Tel Aviv University	IL
Markus RALSER	Charité Universitätsmedizin Berlin	DE



- Characterize the **diversity of tolerance at the species scale**
- Probe molecular and metabolic **mechanisms of tolerance at the population scale**
- Examine the networks that affect **phenotypic heterogeneity at the cellular scale**

LS2\_15 Systems biology, LS2\_9 Proteomics, LS2\_10 Metabolomics, LS2\_7 Metagenomics, LS8\_10 Microbial ecology and evolution, LS6\_5 Biology of pathogens

Budget: 9.690.918 €

## ERC SYG 2020: Proposals selected for funding (PE)

### ArtMotor: Artificial Motor Proteins: toward a designed, autonomous protein motor built from non-motor parts

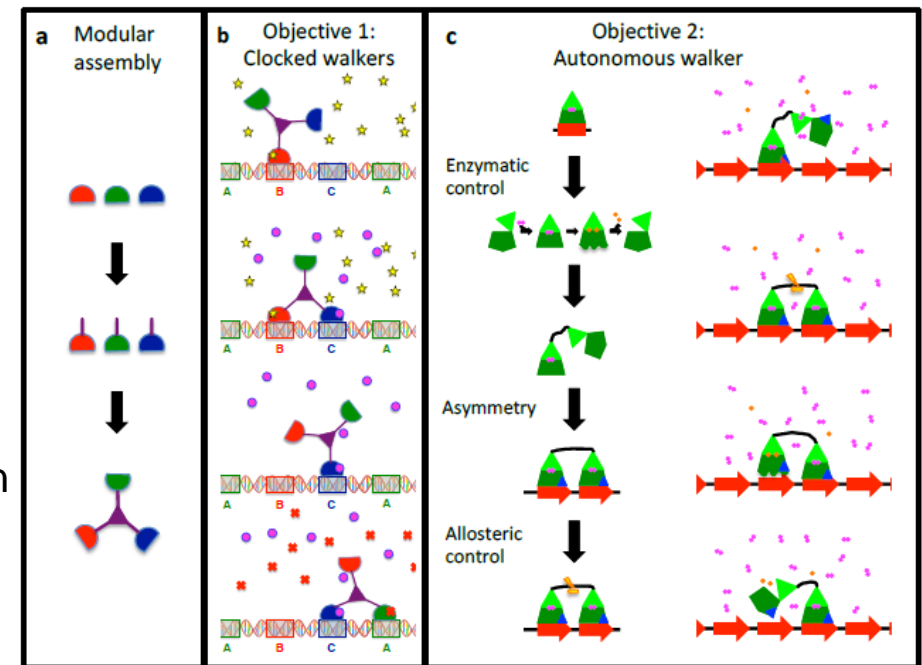
Budget: 9,999,892 €

Heiner LINKE, DE	Lunds Uni. (SE)
Birte HOECKER, DE	Uni. Bayreuth (DE)
Paul CURMI, AU	Uni. New South Wales (AUS)

ArtMotor aims:

- to design and build functional, synthetic protein motors capable of moving and transducing energy
- by constructing synthetic motors based on existing, non-motor protein modules of known molecular function

autonomous walking machine



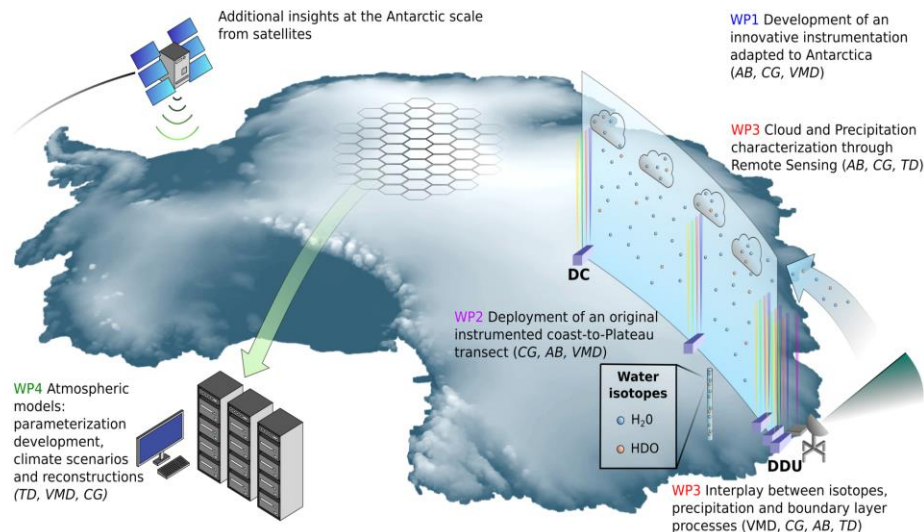


## ERC SYG 2020: Proposals selected for funding (PE)

# AWACA: Atmospheric Water Cycle over Antarctica: Past, Present and Future

Budget: 13 967 283 €

Christophe GENTHON, FR	CNRS (FR)
Alexis BERNE, FR	EPFL (CH)
Valérie MASSON-DELMOTTE, FR	CEA (FR)
Thomas DUBOS, FR	ECOLE POLYTECHNIQUE (FR)



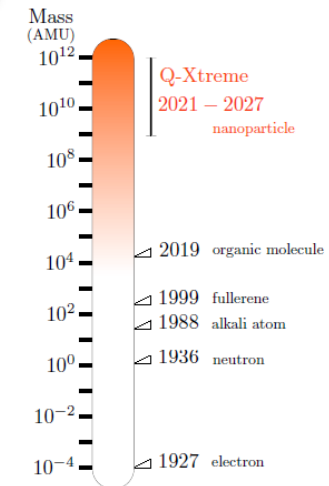
- The project aims to provide a groundbreaking understanding of the past, present and future atmospheric branch of the Antarctic water cycle.
- Gained insights will be a strong basis to develop new physics parameterizations for regional and climate models.

# ERC SYG 2020: Proposals selected for funding (PE)

## Q-Xtreme: Macroscopic Quantum Superpositions

Budget: 13.121.677 €

Oriol ROMERO-ISART (ES)	University Innsbruck	AT
Markus ASPELMEYER (AT)	University Vienna	
Lukas NOVOTNY (CH)	ETH Zurich	CH
Romain QUIDANT (FR)		

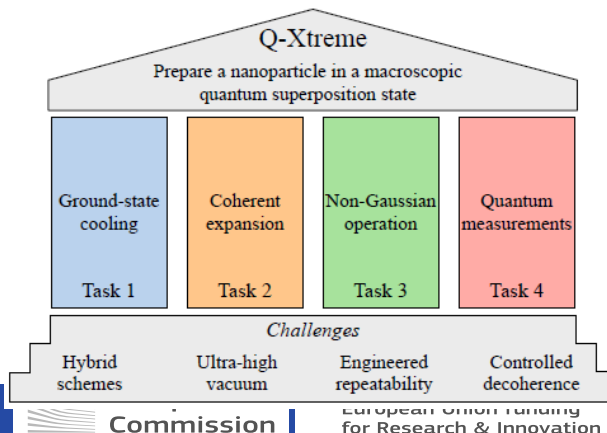


Goals:

- Prepare & control centre of mass of levitated nanoparticle

- Prepare quantum superposition state of levitated nanoparticle
- Demonstrate macroscopic quantum superposition state of levitated nanoparticle

Test laws of quantum physics at unprecedented macroscopic scales for massive objects only



## ERC SYG 2020: Proposals selected for funding (PE)

### UniverScale: sub-percent calibration of the extragalactic distance scale in the era of big surveys

Grzegorz PIETRZYNSKI (PL)	Polish Academy of Sciences	PL
Pierre KERVELLA (FR)	Observatoire de Paris	FR
Wolfgang GIEREN (DE)	Universidad de Concepción	CL
Bozena CZERNY (PL)	Polish Academy of Sciences	PL

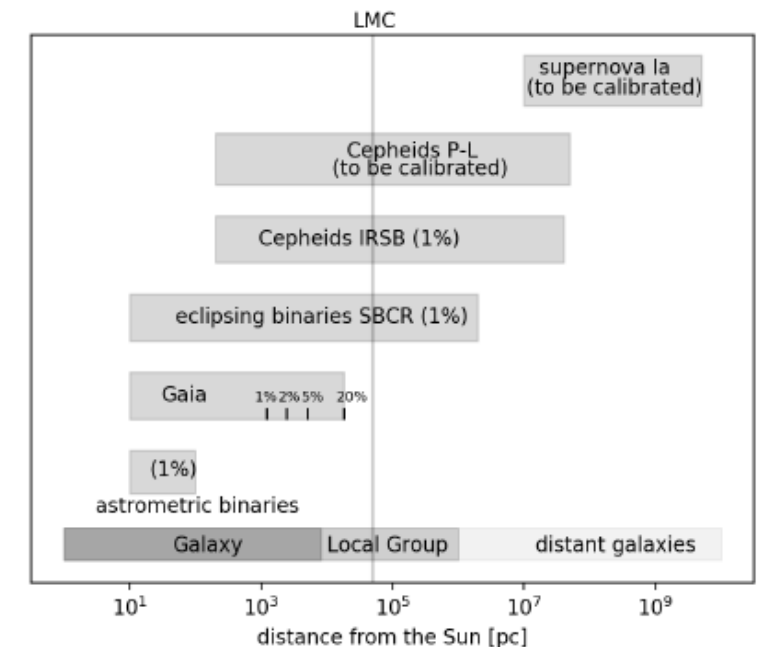
#### Goals:

- Improve extragalactic distance measurements using Cepheids & eclipsing binary stars
- Improve extragalactic distance measurements to Supernovae Type Ia
- Test modelling & monitoring (reverberation method) of Active Galactic Nuclei



Determine Hubble constant & physical nature of Dark Energy

Budget: € 13.997.076





# ERC SYG 2020: Proposals selected for funding (SH)



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## Nanobubbles: how, when and why does science fail to correct itself?

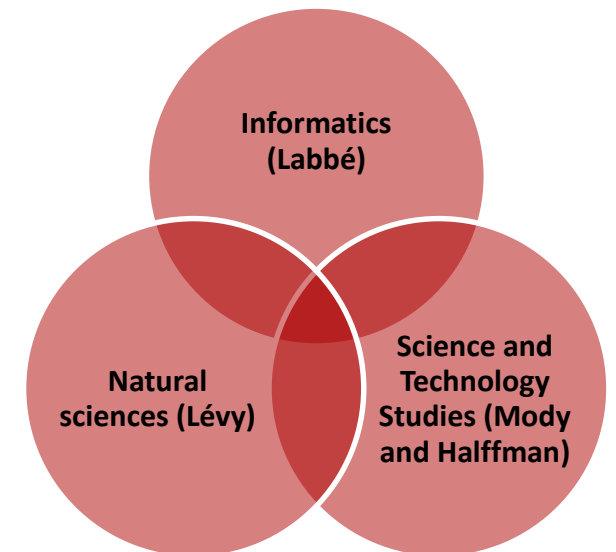
Budget: 8,325,461 €

RAPHAËL LÉVY (CPI)	UNIVERSITÉ PARIS DIDEROT	FR
CYRUS MODY	MAASTRICHT UNIVERSITY	NL
CYRIL LABBÉ	UNIVERSITÉ GRENOBLE ALPES	FR
WILLEM HALFFMAN	RADBOUD UNIVERSITEIT	NL

The project will explore how, when and why science fails to correct itself, and explore ways to improve the reliability and efficiency of the scientific process.

The project combines approaches from the natural, engineering, and social sciences and the humanities (Science and Technology Studies).

Focus is on nanobiology, a highly interdisciplinary field founded around the year 2000 that has already seen multiple episodes of overpromising and promotion of erroneous claims.



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# ERC SYG 2020: Proposals selected for funding (SH)



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## 4-OCEANS: Human History of Marine Life: Extraction, Knowledge, Drivers & Consumption of Marine Resources c.100 BCE to c.1860 CE

Budget: 10 471 753 €

Poul Holm (cPI) - DK	TRINITY COLLEGE, THE UNIVERSITY OF DUBLIN	IE
James H. Barrett - UK	THE UNIVERSITY OF CAMBRIDGE	UK
Cristina Brito - PT	NOVA UNIVERSITY LISBON	PT
Francis Ludlow - IE	TRINITY COLLEGE, THE UNIVERSITY OF DUBLIN	IE

Aim: to assess the importance of marine life for human societies during the last two millennia.

The project will transcend the binary distinctions of East and West, global-north and global-south, indigenous and colonial, resource exploitation and wildlife conservation, nature and culture, while opening a new window on human-nature dynamics.

Team: interdisciplinary team combining expertise in marine environmental history, climate history, natural history, geography, historical ecology and zooarchaeology.



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# Evaluation reports (ER) sent to the applicants

After the proposals are discussed in the panel meeting, a final score is awarded and the decision summarised in a panel comment



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## STEP 1 REJECTED PROPOSALS

- Predefined standard panel comment based on the score, summarizing the decision taken by the panel
- Individual assessments, without names and grades
- Possible scores given by the panel: 'A', 'B', 'C'
- For 'A' score (passed to step 2) ERs are not provided

## STEP 2 REJECTED PROPOSALS

- Carefully drafted panel comments for each rejected proposal
- Individual assessments, without names and grades
- Possible scores: 'A', 'B'
- For 'A' score (passed to step 3) ERs are not provided

## STEP 3 ALL PROPOSALS

- Carefully drafted panel comments for each proposal
- Individual assessments, without names and grades
- Possible scores: 'A', 'B'
- Outcome based on ranking: 'A' –( funded; reserve; not funded, but excellent quality) 'B'- not fundable

# ERC SYG2020 - Overview

441 proposals submitted - 34 funded → 116 PIs funded



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Online meeting



	Step 1	Step 2	Step 3	Funded
Proposals evaluated	438	200	98	34
Success rate (%)	46	49	35	7.7
Budget multiplier	5.5	2.8	1.01	1.01
Average duration (max. 72 months)	70	71	71	72
Average # PIs	3.3	3.4	3.5	3.4
% Women throughout the evaluation	23%	21%	20%	16%
Average budget requested (million €)	9.0	9.6	10	10.4
Average # HIs	2.9	3.0	3.1	3.1
% proposals including partner organisations	17%	20%	16%	18%

Call budget: 350 Million €

Total awarded grant for the 34 selected proposals: 352 133 637 €



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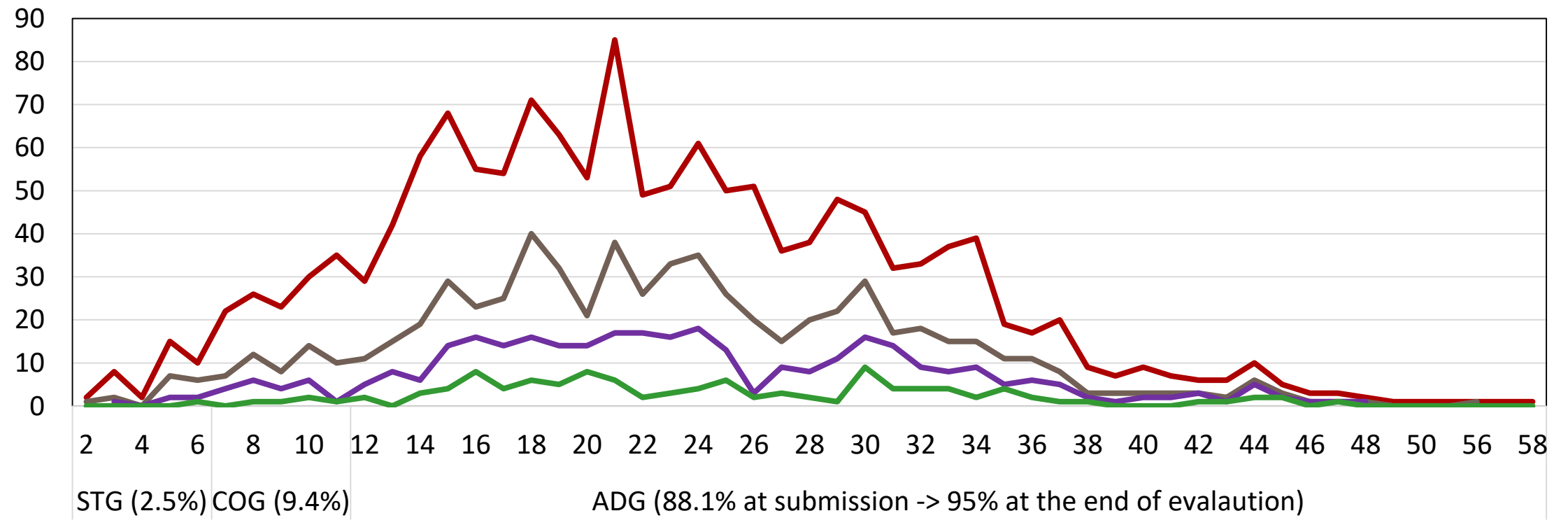
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# SyG 2020 - Profile of Principal Investigators throughout the call

The ERC Scientific Council is encouraging applications from PIs of all career stages -> no discrimination in evaluation

## Academic profile of SyG 2020 PIs by years since PhD on 1/1/2020

(% represents profile at submission)



STG (2.5%) COG (9.4%)

ADG (88.1% at submission -> 95% at the end of evaluation)

— Submissions — Step 2 — Step 3 — Funded

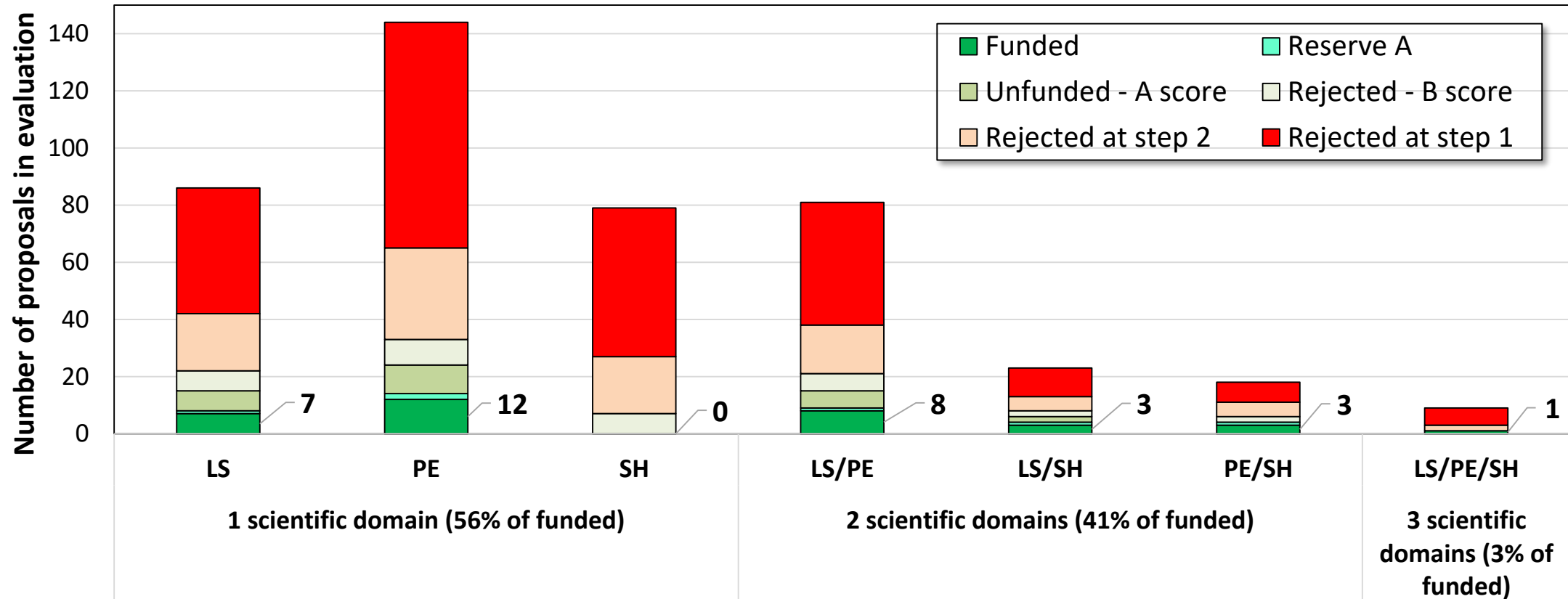
# ERC SyG2020 – Scientific Content (1)

Affinity of proposals to ERC scientific domains



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SyG 2020 domain identification from abstracts of proposals in all evaluation steps



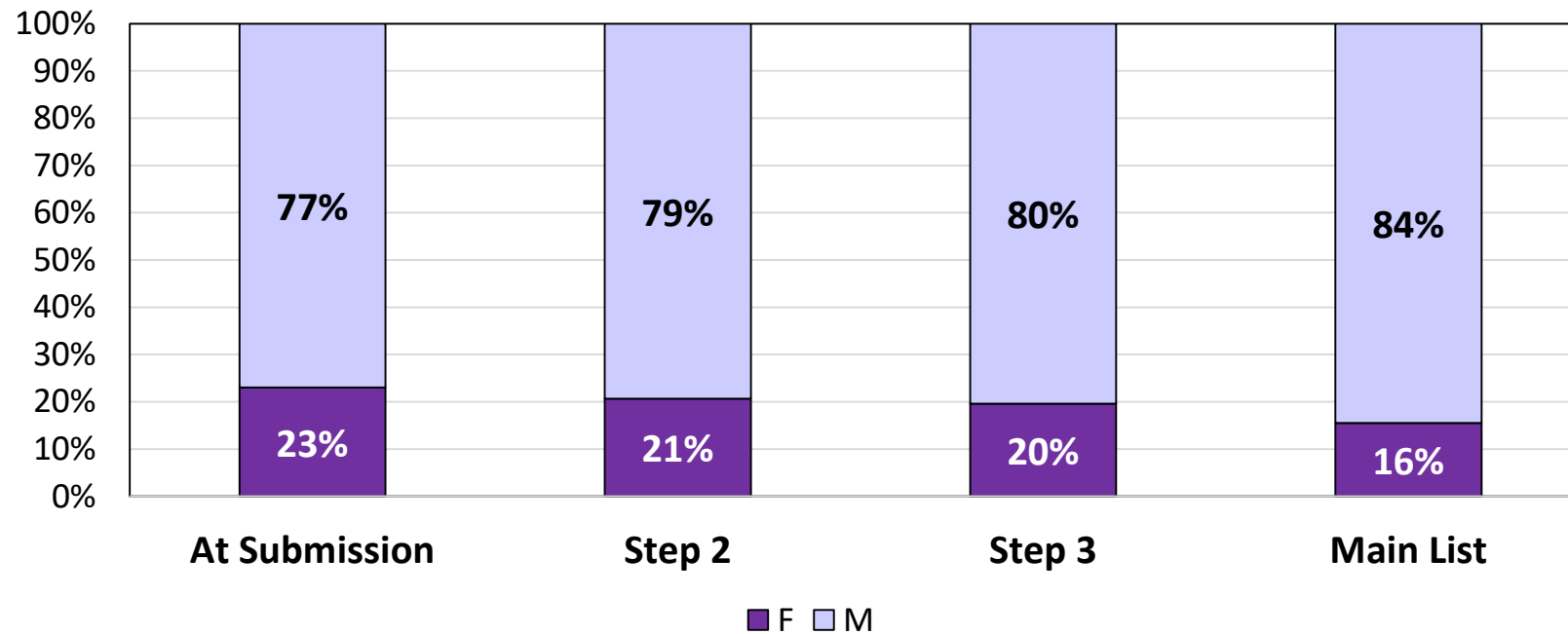
# ERC SYG2020 – Principal Investigators

## Gender dimension throughout the evaluation steps



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SyG 2020 Proposals by gender



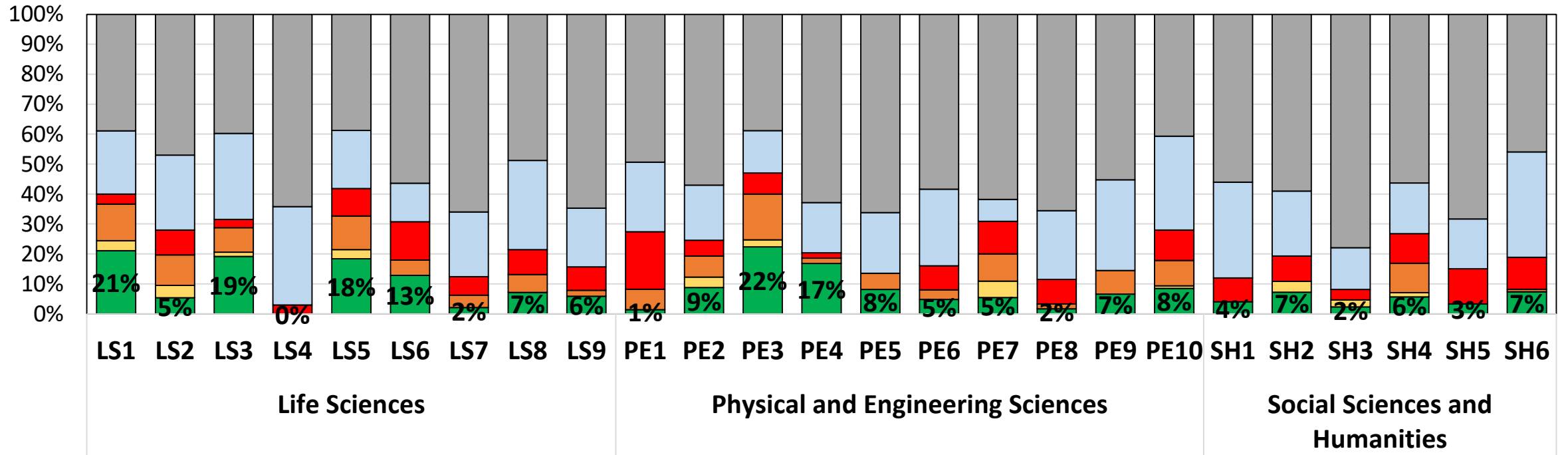
# ERC SYG2020 – Scientific Content (2)

## ERC keywords in SyG 2020 proposals



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Occurrences of keywords from ERC Panels in SyG 2020 Proposals at each step



■ Main List   
 ■ Reserve list   
 ■ Unfunded - A score   
 ■ Rejected - B score   
 ■ Rejected at Step 2   
 ■ Rejected at Step 1



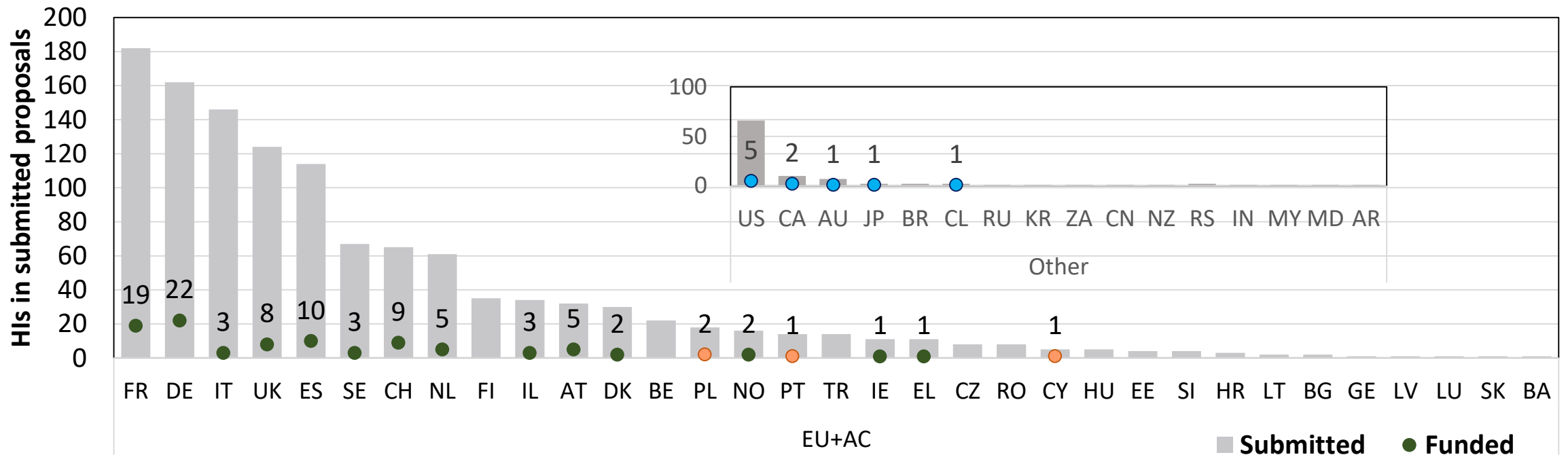
# ERC SYG2020 – Host Institutions

10 Proposals have Host Institutions outside of EU and AC



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SyG 2020 proposals by Host Institution country at submission and in funded proposals (counting all HI occurrences in a proposal)



In 34 funded proposals, there are 4 HIs based in Widening countries (PT: 1, CY:1, PL:2 - in the same proposal)  
10 based outside EU or AC (US: 5, CA: 2, AU: 1, JP: 1, CL: 1) – only one allowed per proposal

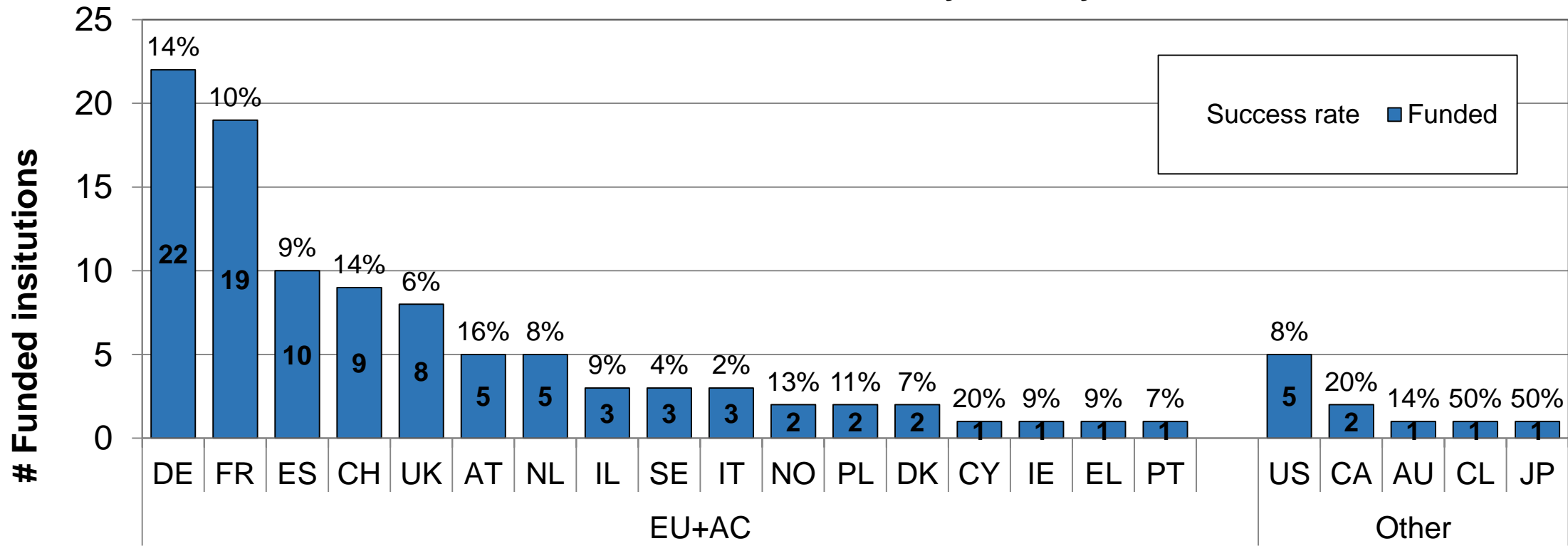
# SYG 2020 Funded Host Institutions by country

(Additional 37 countries participated with no successful proposals;  
counting all occurrences of institutions per proposal in a given country)



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## SYG 2020 # funded Host Institutions by country



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