ERC – funding for frontier research

ERC information session

East & North Finland

March 5, 2021

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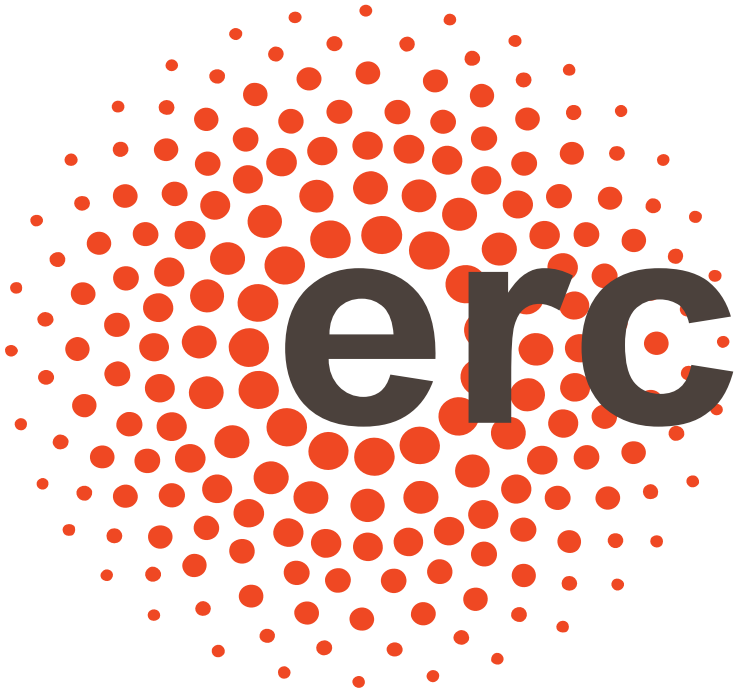

Horizon Europe

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Pillar 1
EXCELLENT SCIENCE

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

Pillar 2
GLOBAL CHALLENGES & 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

ERC Scientific Council on Horizon Europe

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- Continuity
- Agility
- Scale-up

➢ **Continuity:**
- ✓ Of structure from the current legal framework
- ✓ Of governance arrangements: independence of Scientific Council and operational autonomy

➢ **Agility:**
- ✓ To innovate and adapt its scientific strategy
- ✓ To manage its resources flexibly
- ✓ To use tailor made tools and procedures when necessary

➢ **Scale-up:**
- ✓ To turn ERC into one of Europe's main funders
- ✓ To ensure appropriate success rates
- ✓ To support more Europe's top-performing researchers

Current planning for 2021-2022

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- StG, CoG and AdG continue as usual in 2021 and 2022, but with a delayed time schedule
- Normal schedule expected by mid-2022.
- No SyG in 2021, expected to be back in 2022.
- Initially no PoC in 2021, but potentially later in 2021 or in 2022.
- Panel structure:
  - NEW: SH7 Human Mobility, Environment and Space
  - NEW: PE11 Materials Engineering
  - Smaller redefinitions of LS panels
  - https://erc.europa.eu/news/new-erc-panel-structure-2021-and-2022
- Interviews for AdG panels

The way we fund research makes a big difference

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the NATIONAL BUREAU of ECONOMIC RESEARCH

"Despite its presumed role as an engine of economic growth, we know surprisingly little about the drivers of scientific creativity. In this paper, we exploit key differences across funding streams within the academic life sciences to estimate the impact of incentives on the rate and direction of scientific exploration. Specifically, we study the careers of investigators of the Howard Hughes Medical Institute (HHMI), which tolerates early failure, rewards long-term success, and gives its appointees great freedom to experiment; and grantees from the National Institute of Health, which are subject to short review cycles, pre-defined deliverables, and renewal policies unforgiving of failure. Using a combination of propensity-score weighting and difference-in-differences estimation strategies, we find that HHMI investigators produce high- impact papers at a much higher rate than a control group of similarly-accomplished NIH-funded scientists. Moreover, the direction of their research changes in ways that suggest the program induces them to explore novel lines of inquiry."

Incentives and Creativity: Evidence from the Academic Life Sciences
Pierre Azoulay, Joshua S. Graff Zivin, Gustavo Manso
NBER Working Paper No. 15466
Issued in October 2009

Current ERC Grant Schemes

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Starting Grants (StG)

- PI 2-7 years after PhD
  - as on January 1st
  - extended for career breaks
- Up to 1.5 (+1.0*) M€
- Up to 5 years

Consolidator Grants (CoG)

- 7-12 years after PhD
  - as on January 1st
  - extended for career breaks
- Up to 2.0 (+1.0*) M€
- Up to 5 years

Advanced Grants (AdG)

- 10-year track-record of significant achievements (+career breaks)
- Up to 2.5 (+1.0*) M€
- Up to 5 years

Synergy Grants (SyG)

Jointly for 2-4 principal investigators
Up to 10 (+4.0*) M€, 6 years

Proof-of-Concept (PoC)

Earliest stage of marketable innovation
€150,000 for ERC grant holders

European Commission
Horizon 2020
European Union funding
for Research & Innovation

* Additional budget available for (a) Start-up costs for PIs coming from outside EU/AC, (b) purchase of major equipment, (c) access to large facilities, and/or (d) other major experimental and field work costs, excluding personnel costs.

Age distribution of different grant types

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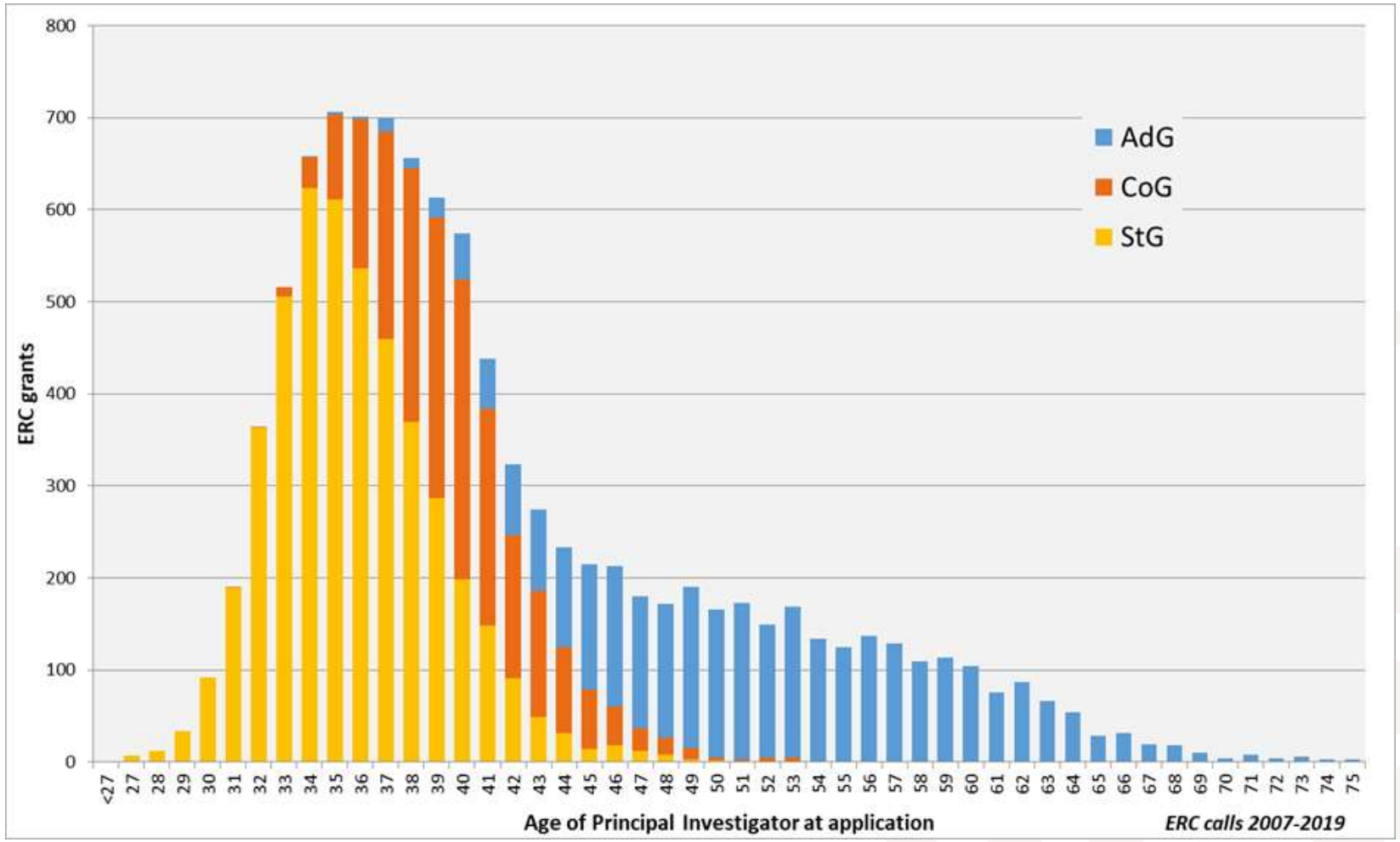

Starting / Consolidator / Advanced Grants

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- Funding for a single research group led by the principal investigator (PI)
- The PI can manage the project and its budget independently
- Eligible costs: salaries (PI, postdocs, students, technical staff), equipment, consumables, travel, publication costs etc. +25% overheads
- The project can have two or more participating institutions if necessary
- The PI can move the grant to another host institution during the project
- The PI can be of any nationality; the host institution must be in a EU member state or an associated country
- The host institution is NOT an evaluation criteria

Additional funding

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Additional funding can be requested to cover the costs below:

- Up to € 1.0m for Starting / Consolidator / Advanced grants
- Up to € 4.0m for Synergy grants

(a) "start-up" costs for Principal Investigators moving to the EU or an Associated Country from elsewhere as a consequence of receiving the ERC grant and/or

(b) the purchase of major equipment and/or

(c) access to large facilities and/or

(d) other major experimental and field work costs, excluding personnel costs.

Synergy call in a nutshell (2022 ->)

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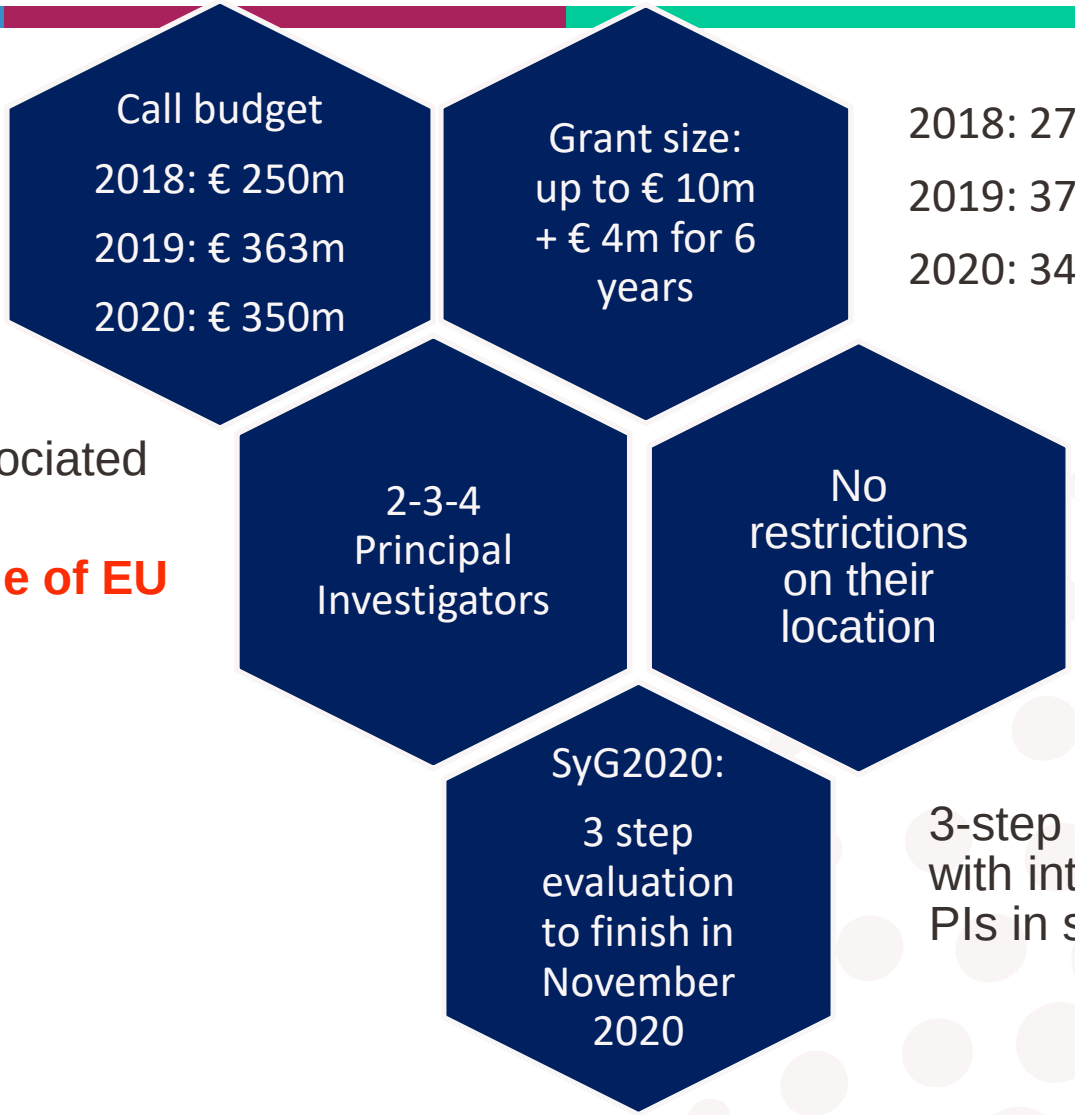

2018: 27 projects
2019: 37 projects
2020: 34 projects

HI to be in EU or Associated Country

One PI can be outside of EU or AC

≥50% of working time in EU or AC
≥30% of working time on the ERC project
-> does not apply to the PI with a third country Host Institution

3-step evaluation with interviews for all PIs in step 3

Proof of Concept grants (2022 ->)

Proof of Concept Grants

Synergy Grants

Advanced Grants

Consolidator Grants

Starting Grants

- **Who can apply:** Holders of an ERC grant with an idea substantially drawn from an ERC-funded project
- **What for:** establish the innovation potential of the idea: technical validation, market research, clarifying IPR strategy, investigating business opportunities
- **Amount:** €150,000 per grant (18 months) Total budget in 2020: € 25million (~167 projects)
- **Evaluation:** Experts in technology transfer check the innovation potential and that the plan is reasonable

Evaluation Panels (StG – CoG – AdG)

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ERC programme is fully bottom-up

- No thematic priorities or budget quotas
- Panel structure is purely operational
  - Right level of expertise
  - Roughly similar in size
  - Budget is allocated proportionally to demand
- Panel chairs can reassign a proposal to another panel if necessary expertise is only available in a different panel.

Interdisciplinary proposals

- The panels overlap by design in order to avoid gaps between panels.
- The panel chairs can request additional reviews from other panels in step 1 in order to complement the expertise of the panel members.
- The applicants can indicate a secondary review panel, which can help to identify the additional expertise needed for the proposal (explain in part B1).
- The panel appoints remote reviewers for step 2 individually for each proposal in order to cover all aspects of them (within or without the field of the panel).

ERC Panel Structure for 2021-2022

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Life Sciences

- LS1 Molecules of Life: Biological Mechanisms, Structures and Functions
- LS2 Integrative Biology: from Genes and Genomes to Systems
- LS3 Cellular, Developmental and Regenerative Biology
- LS4 Physiology in Health, Disease and Ageing
- LS5 Neuroscience and Disorders of the Nervous System
- LS6 Immunity, Infection and Immunotherapy
- LS7 Prevention, Diagnosis and Treatment of Human Diseases
- LS8 Environmental Biology, Ecology and Evolution
- LS9 Biotechnology and Biosystems Engineering

Physical Sciences & Engineering

- PE1 Mathematics
- PE2 Fundamental Constituents of Matter
- PE3 Condensed Matter Physics
- PE4 Physical and Analytical Chemical Sciences
- PE5 Synthetic Chemistry and Materials
- PE6 Computer Science and Informatics
- PE7 Systems and Communication Engineering
- PE8 Products and Process Engineering
- PE9 Universe Sciences
- PE10 Earth System Science
- PE11 Materials Engineering

Social Sciences and Humanities

- SH1 Individuals, Markets and Organisations
- SH2 Institutions, Governance and Legal Systems
- SH3 The Social World and Its Divers
- SH4 The Human Mind and Its Complexity
- SH5 Cultures and Cultural Production
- SH6 The Study of the Human Past
- SH7 Human Mobility, Environment, and Space

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Eligibility of the principal investigator

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Starting Grant	Consolidator Grant	Advanced Grant
> 2 and ≤ 7 years prior to 1 January 2021 Cut-off dates: PhD awarded from 1 January 2014 to 31 December 2018 (inclusive)	> 7 and ≤ 12 years prior to 1 January 2021 Cut-off dates: PhD awarded from 1 January 2009 to 31 December 2013 (inclusive)	No specific criteria

Eligibility of the principal investigator

European Research Council
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Starting Grant	Consolidator Grant	Advanced Grant
> 2 and ≤ 7 years prior to 1 January 2021 Cut-off dates: PhD awarded from 1 January 2014 to 31 December 2018 (inclusive)	> 7 and ≤ 12 years prior to 1 January 2021 Cut-off dates: PhD awarded from 1 January 2009 to 31 December 2013 (inclusive)	

Eligibility window can be extended in case of career breaks (maternity, parental leave, long-term illness, national service etc. See the work programme for details)

Special case for medical doctors without PhD

Documents must be included in the submission

Submission of Proposals
Differences in Part B1 and Part B2

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Step 1: Panel members and cross-panel reviewers (if needed)

- Only Part B1 is evaluated!

Project

- **Focus on the ground-breaking nature** – no incremental research. Think big!
- Know your competitors – what is the state of play and why is your idea and scientific approach outstanding?
- Outline of the methodological approach.
- Do you have preliminary results? Is it feasible?
- Is it timely? Why wasn't it done already?
- Concise and clear presentation is crucial (some evaluators are generalists).

Submission of Proposals
Differences in Part B1 and Part B2

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Step 1: Panel members and cross-panel reviewers (if needed)

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Principal investigator

- Are you internationally competitive?
- Why are you the right person to carry out the project?
- Show your scientific leadership in your CV.
- Show your own contribution on your key publications (incl. papers published without your PhD supervisor).
- Select papers that highlight achievement, relevant expertise, collaborations and that support the narrative of your CV.
- Give a realistic picture of your collaborations – show that you can drive the collaborations.

Submission of Proposals
Differences in Part B1 and Part B2

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- Only Part B1 is evaluated!

Principal investigator

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- Why are you the right person to carry out the project?
- Show your scientific leadership in your CV.
- Show your own contribution on your key publications (incl. papers published without your PhD supervisor).
- Select papers that highlight achievement, relevant expertise, collaborations and that support the narrative of your CV.
- Give a realistic picture of your collaborations – short-term and long-term collaborations.

Track record for AdG:

Only the last 10 years are taken into account!

Can be extended on the applicant's request in case of career breaks (see the work programme for details)

Submission of Proposals
Differences in Part B1 and Part B2

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Step 2: Panel members + external remote reviewers

- **Parts B1 and B2 and the budget** are evaluated.
- Do not just repeat the synopsis, go in more depth especially on methodology.
- Provide details on methodology, work plan, selection of case studies etc. Show that you know the alternative methodologies and argue why your choice is the best.
- Make sure that the quantitative and qualitative differences to the state of the art are clear and referenced.
- Check coherence of budget figures, justify requested resources.
- Explain involvement / profiles of team members.
- Show that you understand the risks and provide alternative strategies to mitigate them.

Some typical reasons for rejection

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Principal investigator

- Insufficient earlier achievements
- Insufficient leadership profile / lack of independence

Proposed project

- Lack of knowledge of the state of the art
- Scope: Too narrow ←→ too broad / unfocussed
- The proposal does not acknowledge / mitigate risks
- Incremental research / continuation of previous work
- The proposal does not show that the PI is ready to manage the project if funded

Indicative schedule for the 2021 ERC calls

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	Starting Grant	*Consolidator Grant*	*Advanced Grant*
Call identifier	ERC-2021-StG	ERC-2021-CoG	ERC-2021-AdG
Call Opens	25/02/2021	11/03/2021	20/05/2021
Call closes	~~24/03/2021~~ **08/04/2021**	20/04/2021	31/08/2021

Resubmission restrictions

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Call to which the Principal Investigator applied under previous ERC Work Programmes and proposal evaluation outcome		2021 ERC calls to which a Principal Investigator is *not* eligible
2019 and 2020 Starting, Consolidator, Advanced Grant or Synergy Grant	Rejected on the grounds of a breach of research integrity	Starting, Consolidator and Advanced Grant
2019 Starting, Consolidator or Advanced Grant	C at Step 1	Starting, Consolidator and Advanced Grant
2020 Starting, Consolidator or Advanced Grant	A, or B at Step 2	No restriction
	B, or C at Step 1	Starting, Consolidator and Advanced Grant
2020 Synergy Grant	A, or B at Step 3	No restriction
	B at Step 1 or Step 2	No restriction
	C at Step 1	Advanced Grant

Distribution of evaluation results (H2020 excl. AdG-2020)

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No of proposals per 1M people (H2020 excl. AdG-2020)

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Number of grants
H2020 StG-CoG-AdG (except AdG-2020)

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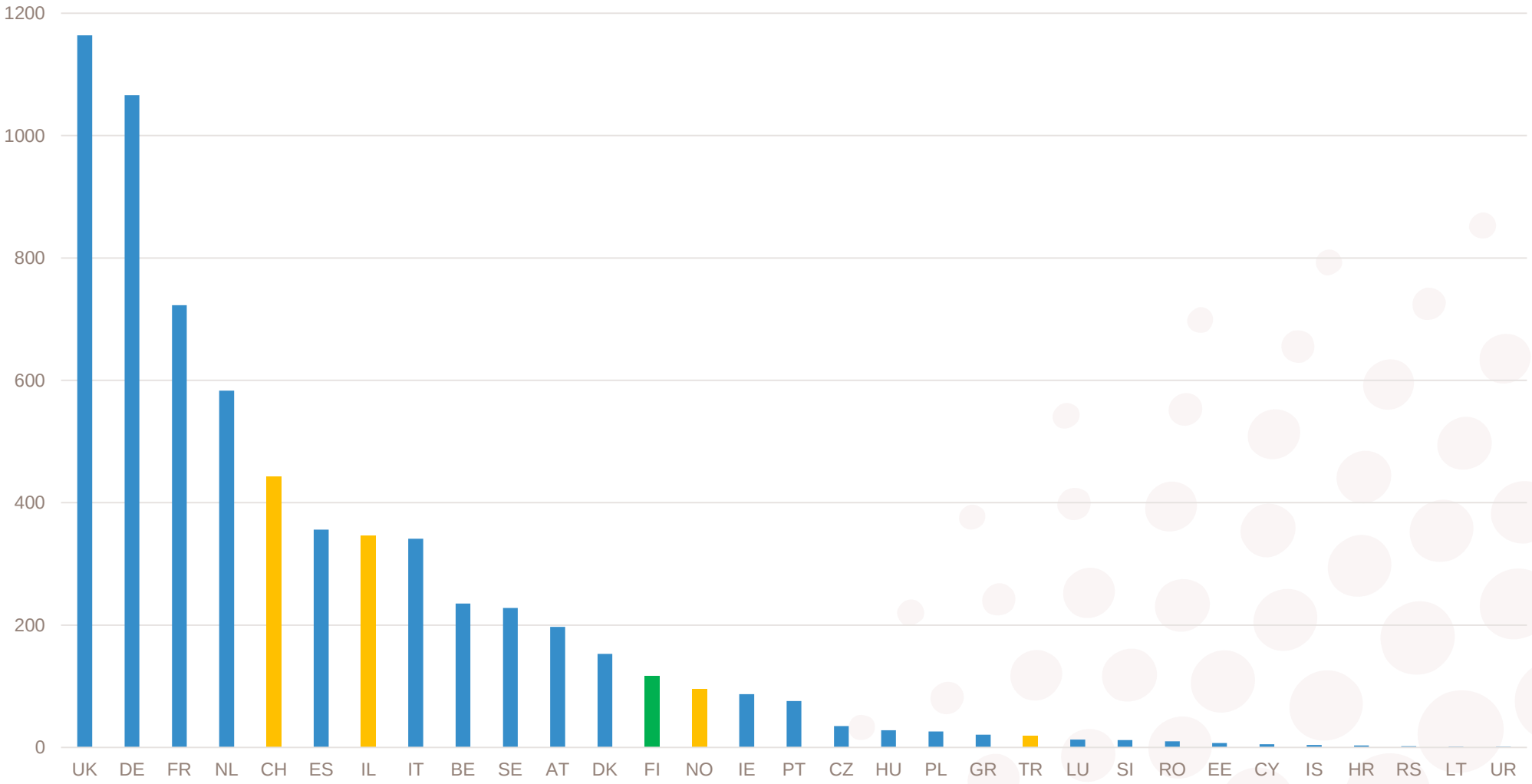

Number of grants per 1M people
H2020 StG-CoG-AdG (except AdG-2020)

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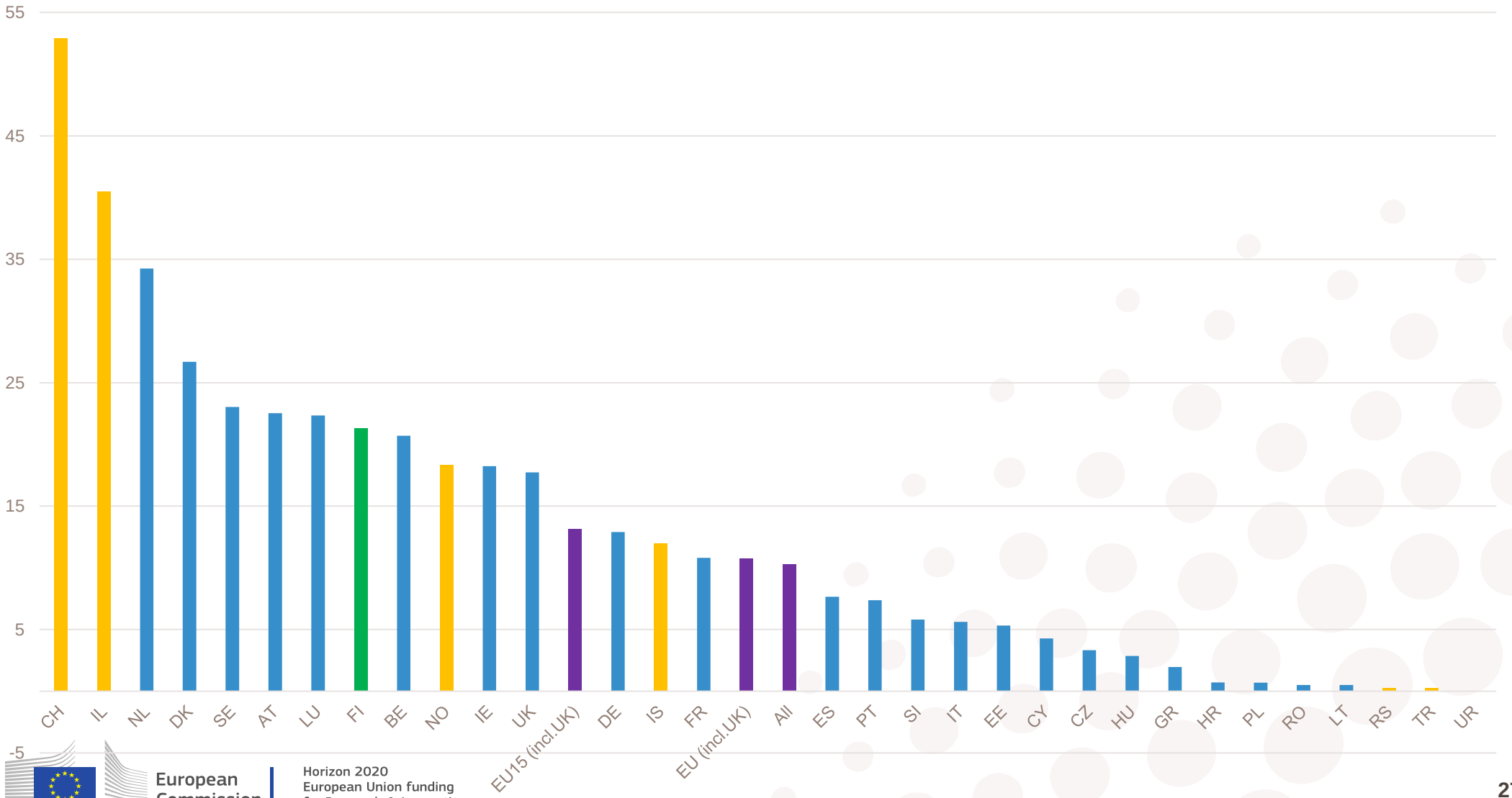

Funded projects per 1M people (Finland vs all countries)

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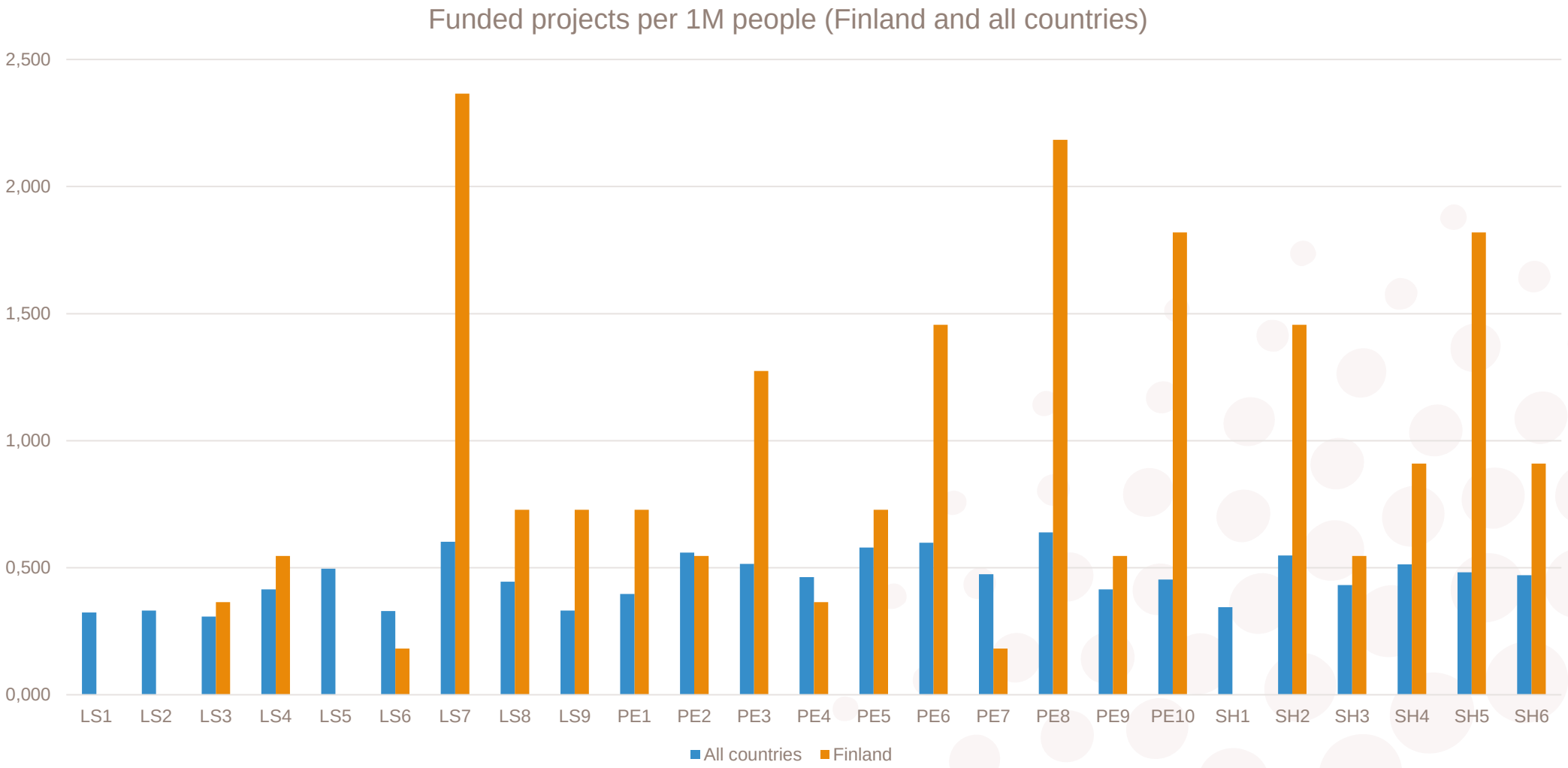

No of grants in Finland vs % of all grant in that panel

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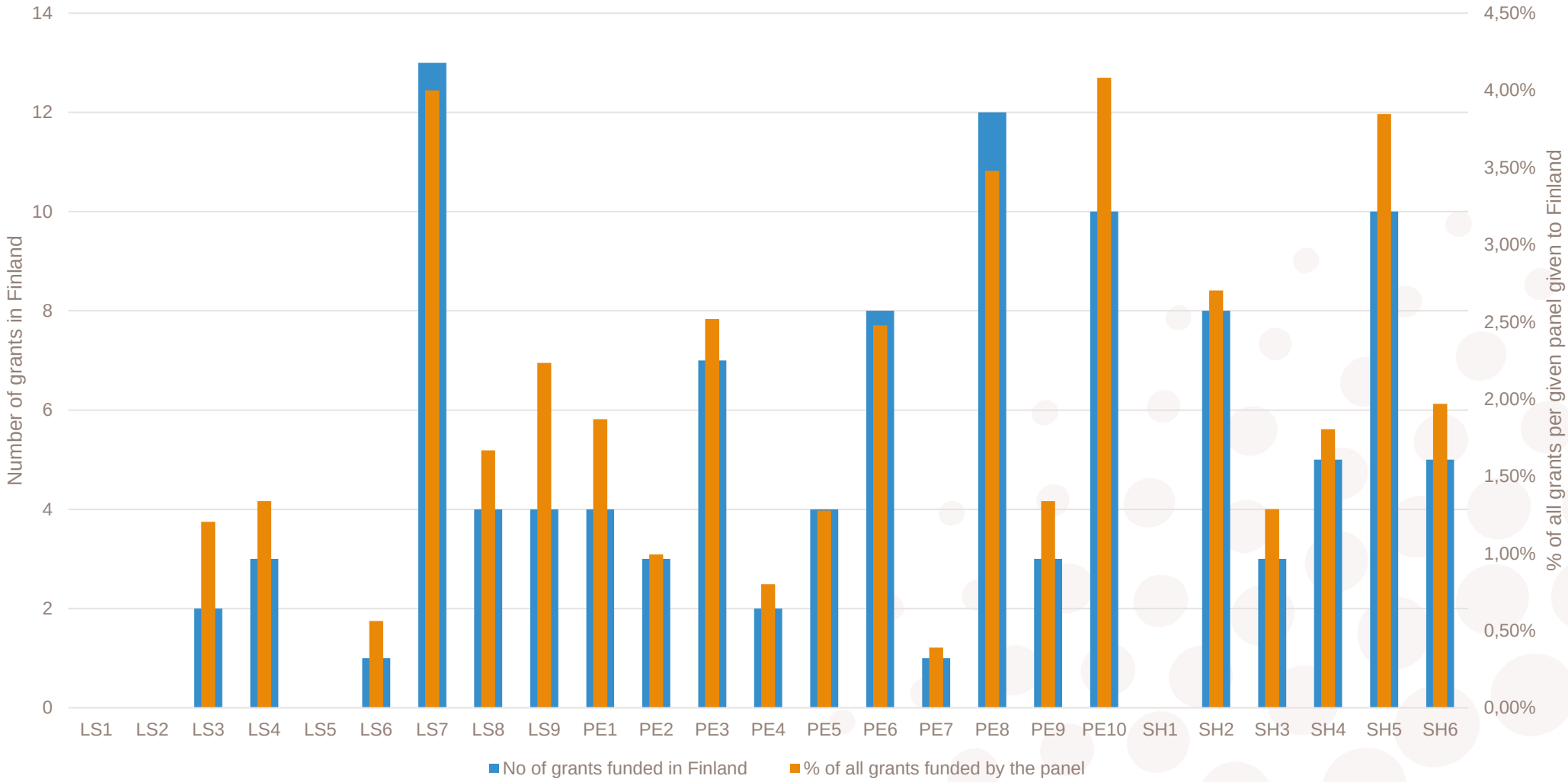

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Success rate for Finland

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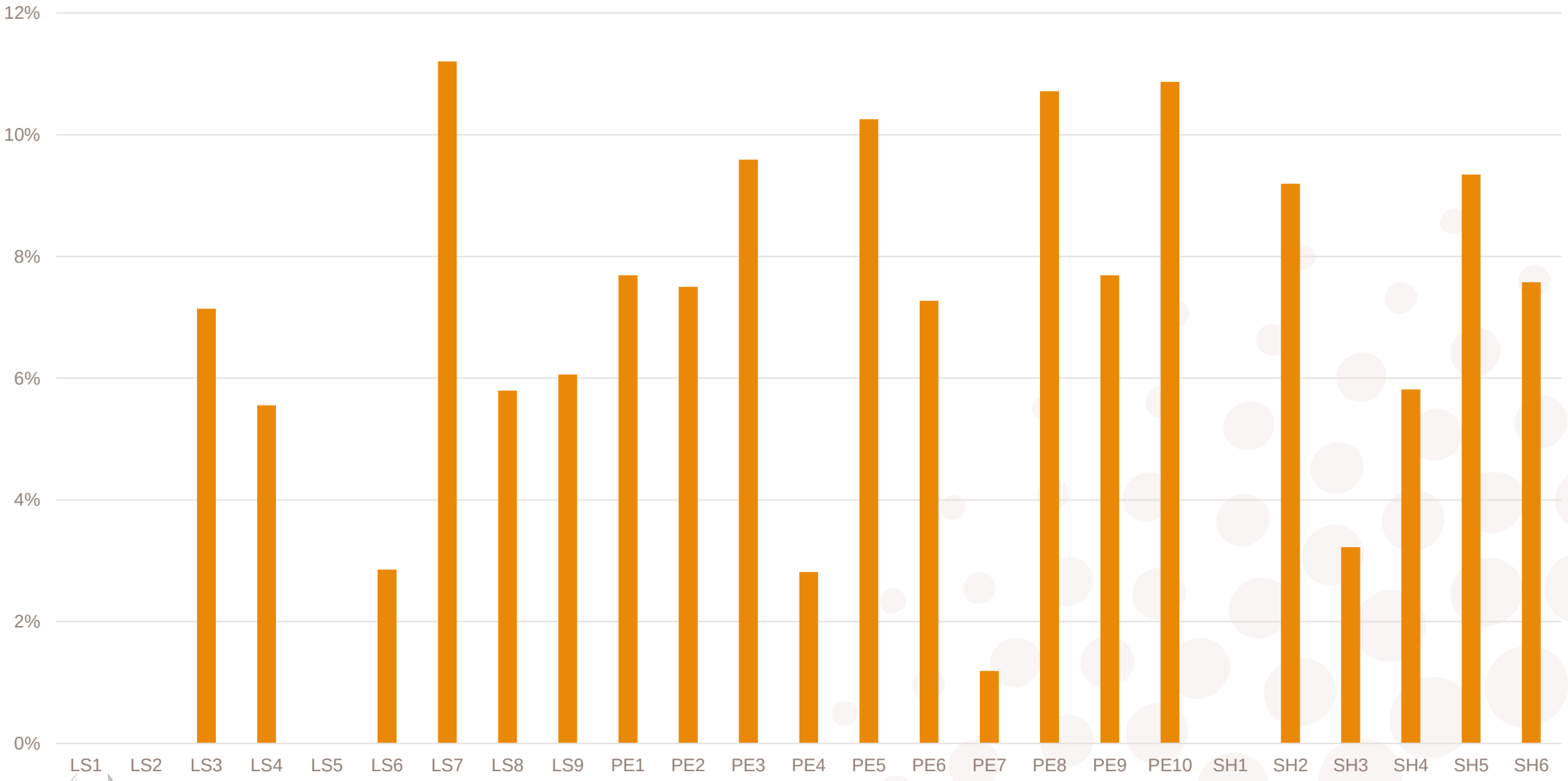

Thank you!

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ERC website
https://erc.europa.eu

ERC Work programme
https://erc.europa.eu/document-category/work-programmes

Participant's portal (submission + documents for all calls)
https://ec.europa.eu/info/funding-tenders/opportunities/portal

EU Research funding:
https://ec.europa.eu/info/horizon-europe

YouTube tutorials:
https://youtu.be/xbFbzkVWgCU

More information:

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