Trends and developments in funding by the Swiss National Science Foundation

Bernd Gotsmann

FNSNF
Swiss National Science Foundation

Bernd Gotsmann - a brief introduction

Commitments at the SNSF

- Member of the Swiss National Research Council
- President division 2 of the SNSF
  (Mathematics, natural and engineering sciences)
- Panel chair and proposal evaluation in project funding div.2, Requip, Flare
- Sounding board member SPARK
- Member of the presiding board

Researcher commitment

- Principal Research Staff Member at IBM Research Europe – Zurich
- Research in nanotechnologies, physicist by training

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Questions, concerns and allegations reaching me from the Physics community

- Excellent proposals are no longer funded. Why have the success rates gone down?
- The SNSF is devaluing Physics and fundamental research, putting more money into other domains and towards commercially relevant research
- The evaluation process is unfair (gender, domain, discipline, topical area, institution, collaborative research) and the panels do not have the correct expertise
- The evaluation criteria are not clear. The feedback is not useful.
- The one-grant-per-applicant rule is problematic
- The SNF is risk-averse and conservative

Other concerns? – please contact me (bgo@zurich.ibm.com)

Agenda

- Very short overview over the SNSF
- Success rate statistics
- DORA and the new CV format
- Budget cuts and risky research

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The SNSF

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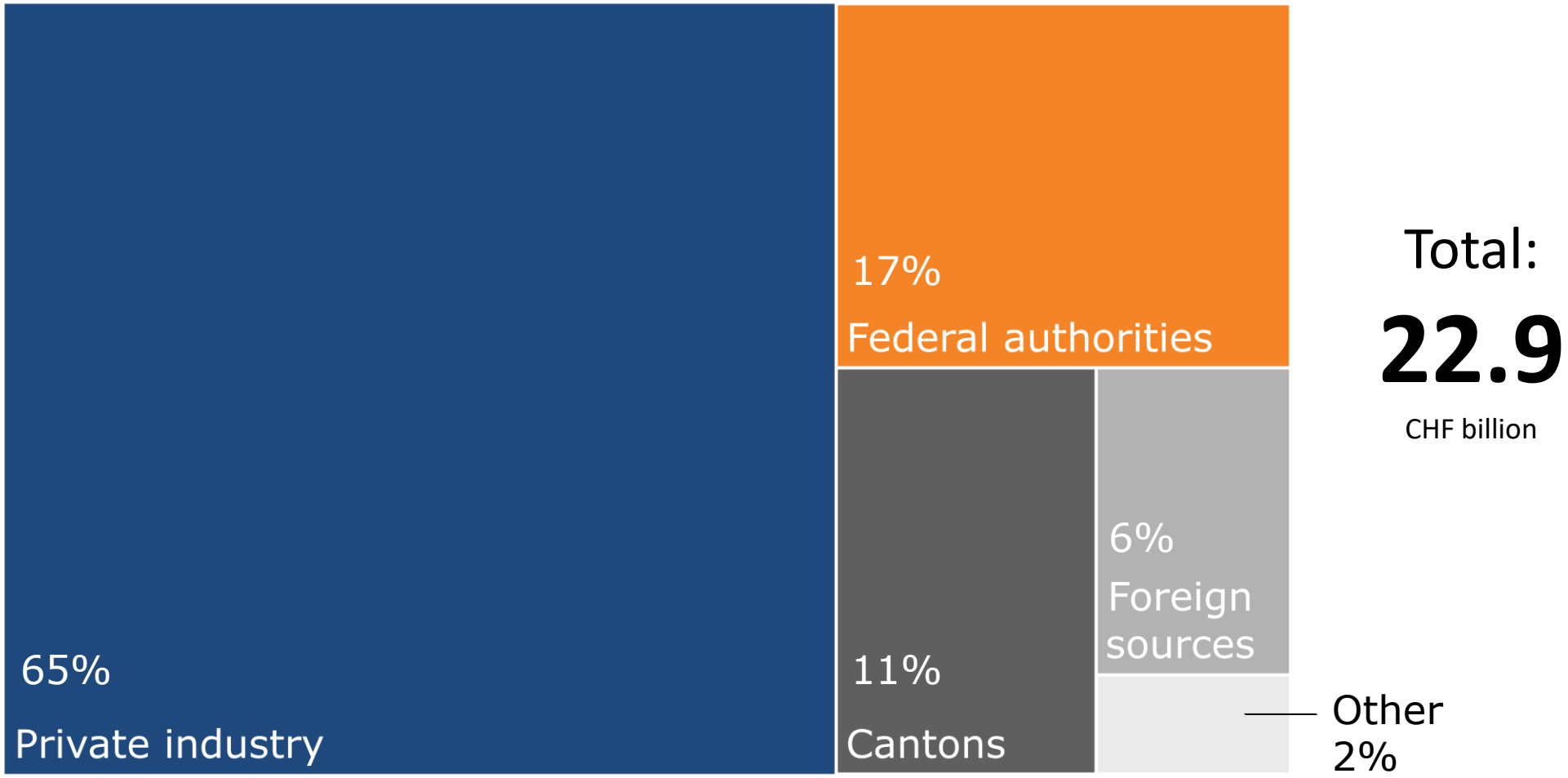
R&D: sources of finance in Switzerland



Source: Swiss Federal Statistical Office, Data 2019

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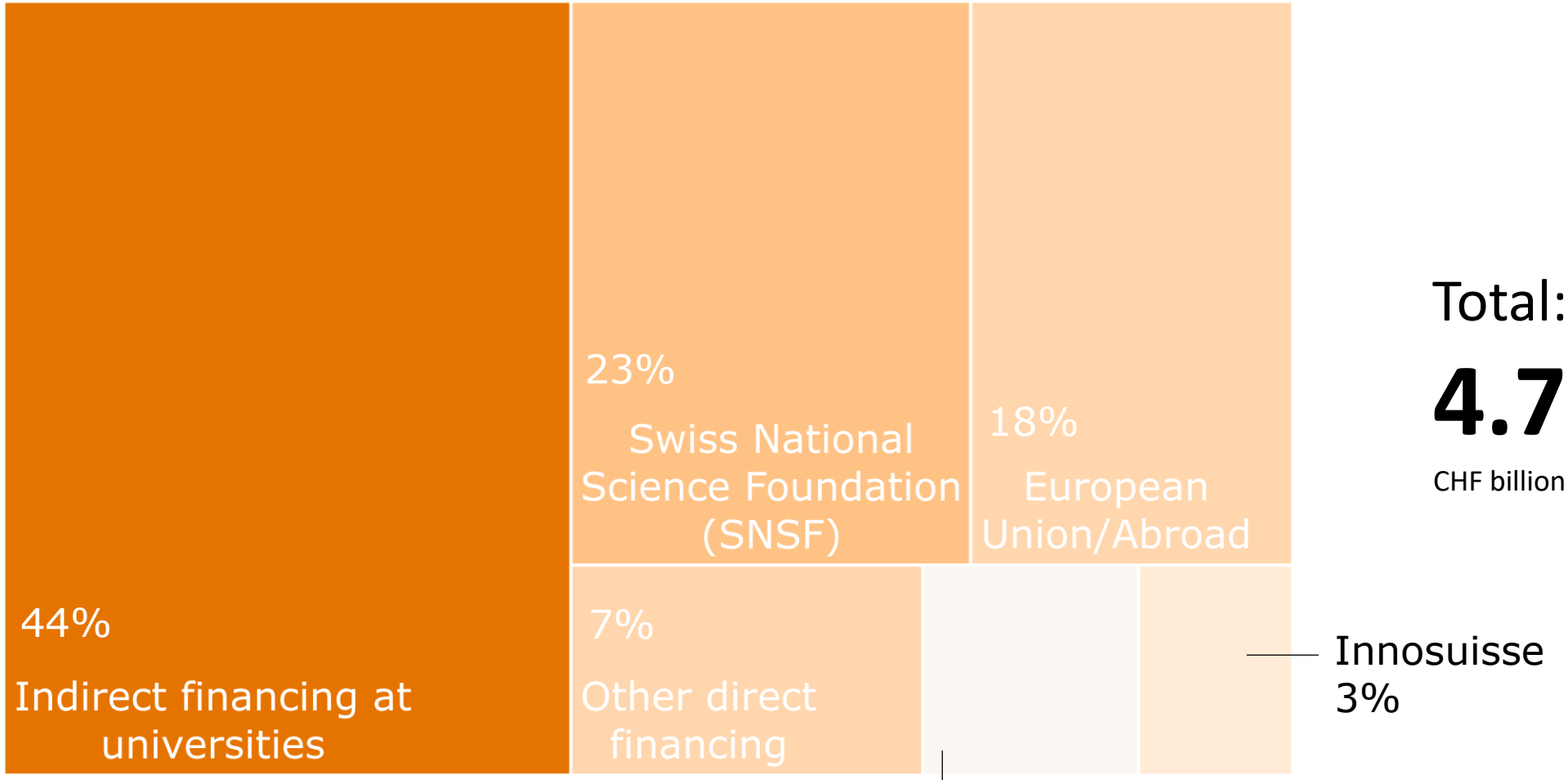
R&D: federal funding



Source: Swiss Federal Statistical Office, Data 2019

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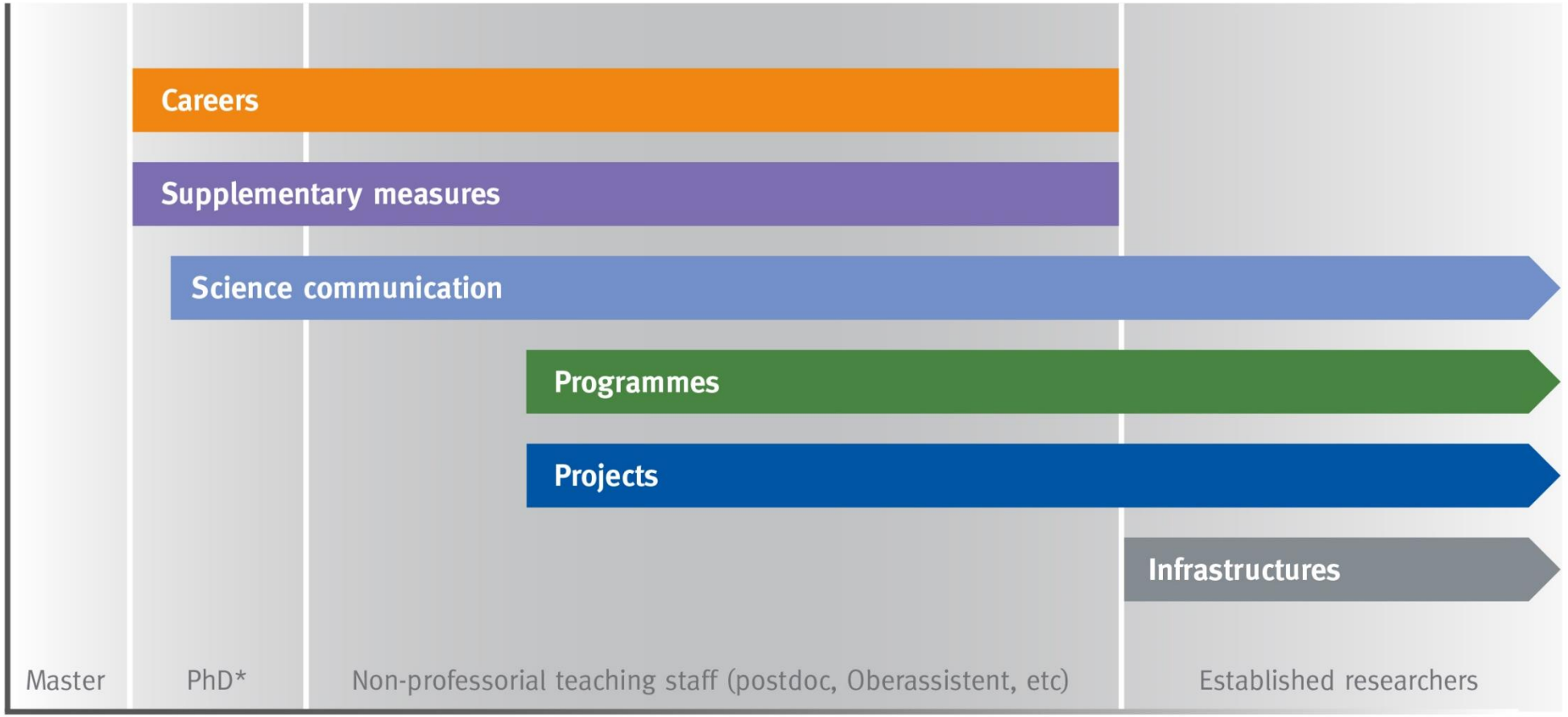
Overview



*PhD or 3 years of research experience

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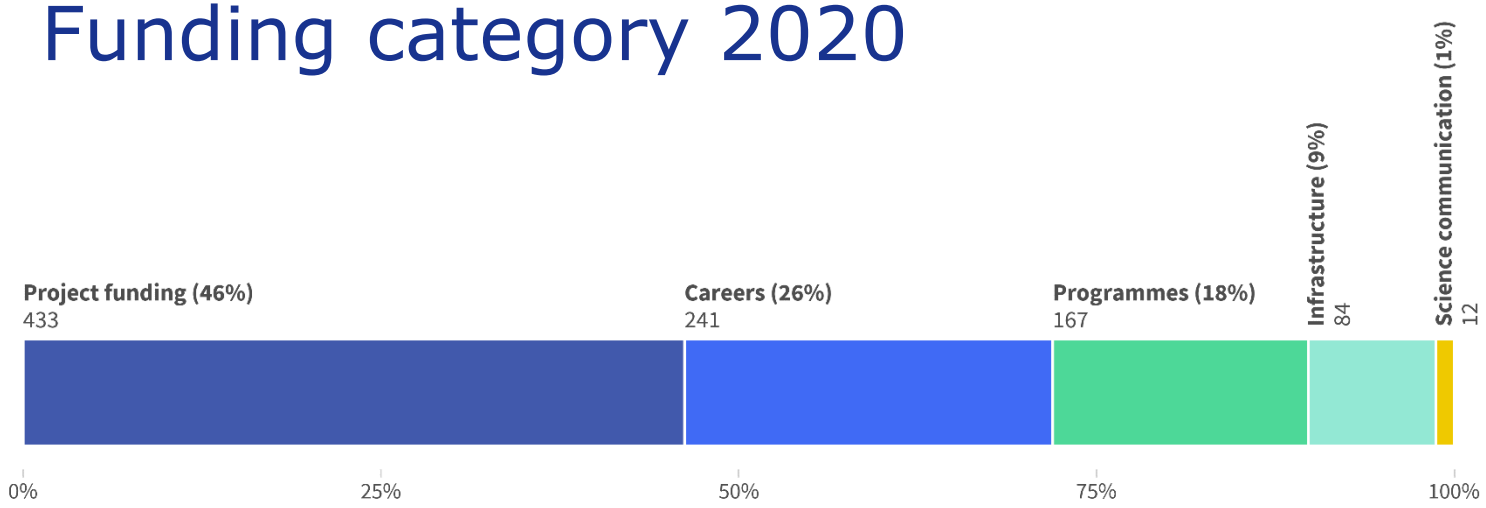
Funding category 2020



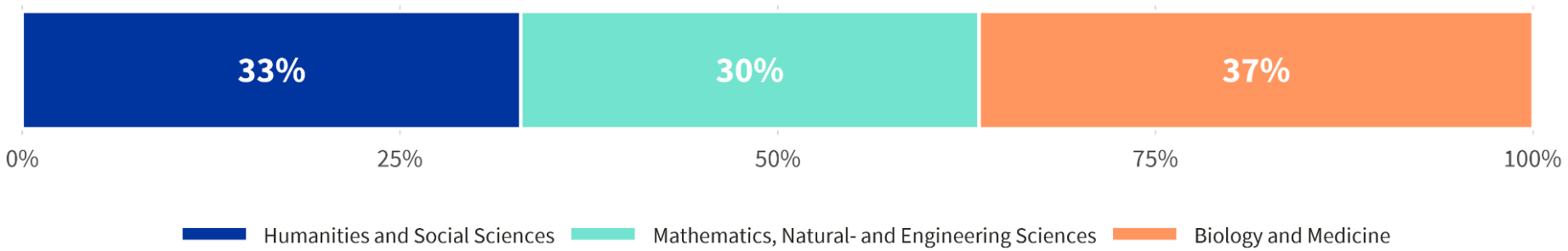
937

CHF million

3,300

Approved applications

Funding by research area 2020



Data 2020

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Funding rates and success rates

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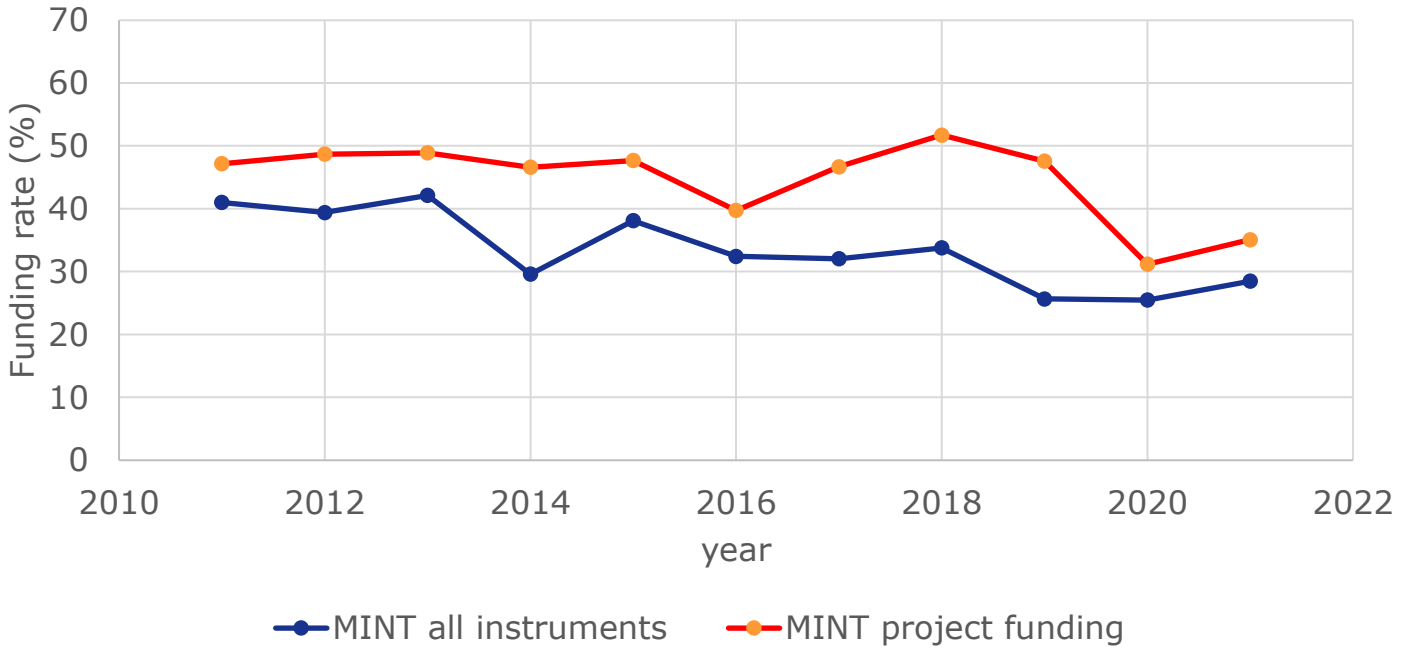
SNSF funding rates in MINT area



Funding rate = approved budget / requested budget

Success rate = number of approved proposals / submitted proposals

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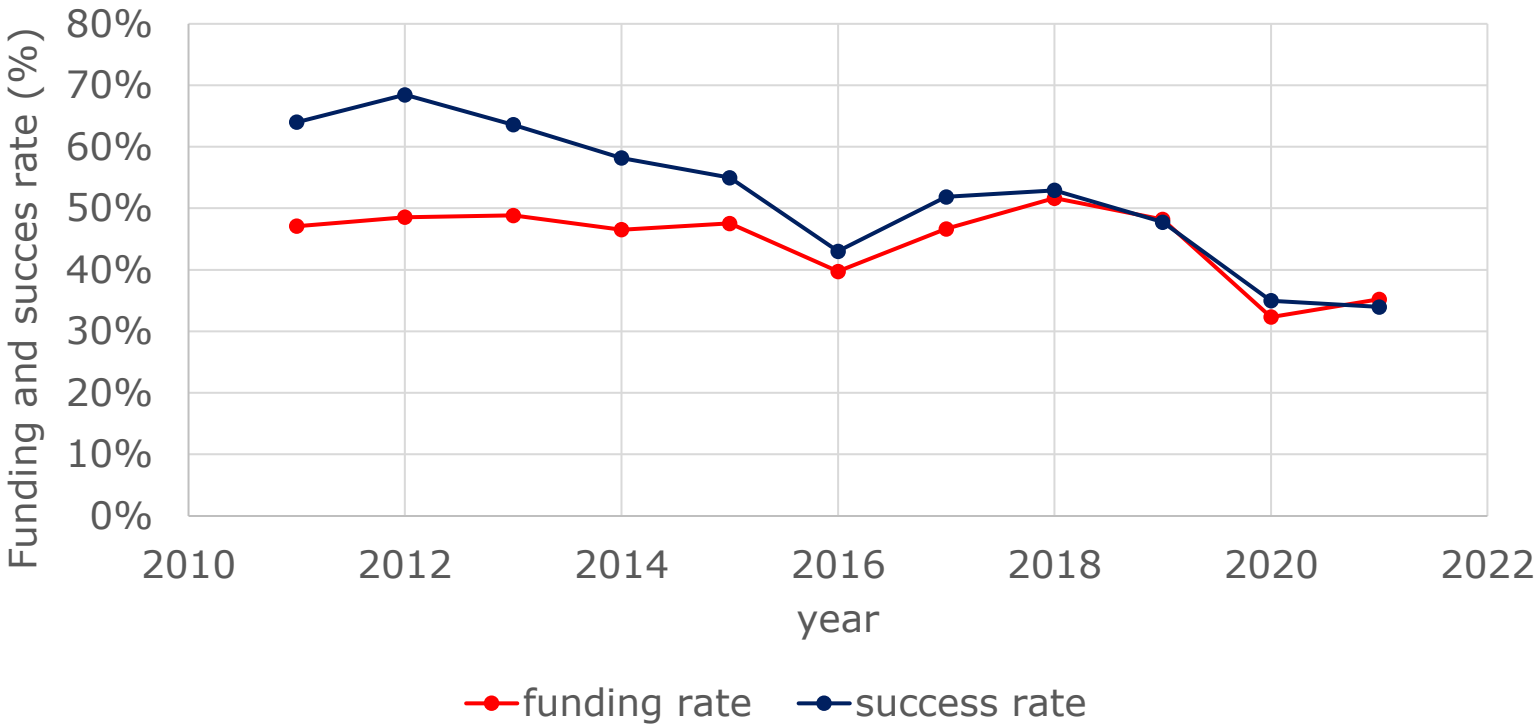
SNSF funding vs success rates in MINT project funding



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Success rate = number of approved proposals / submitted proposals

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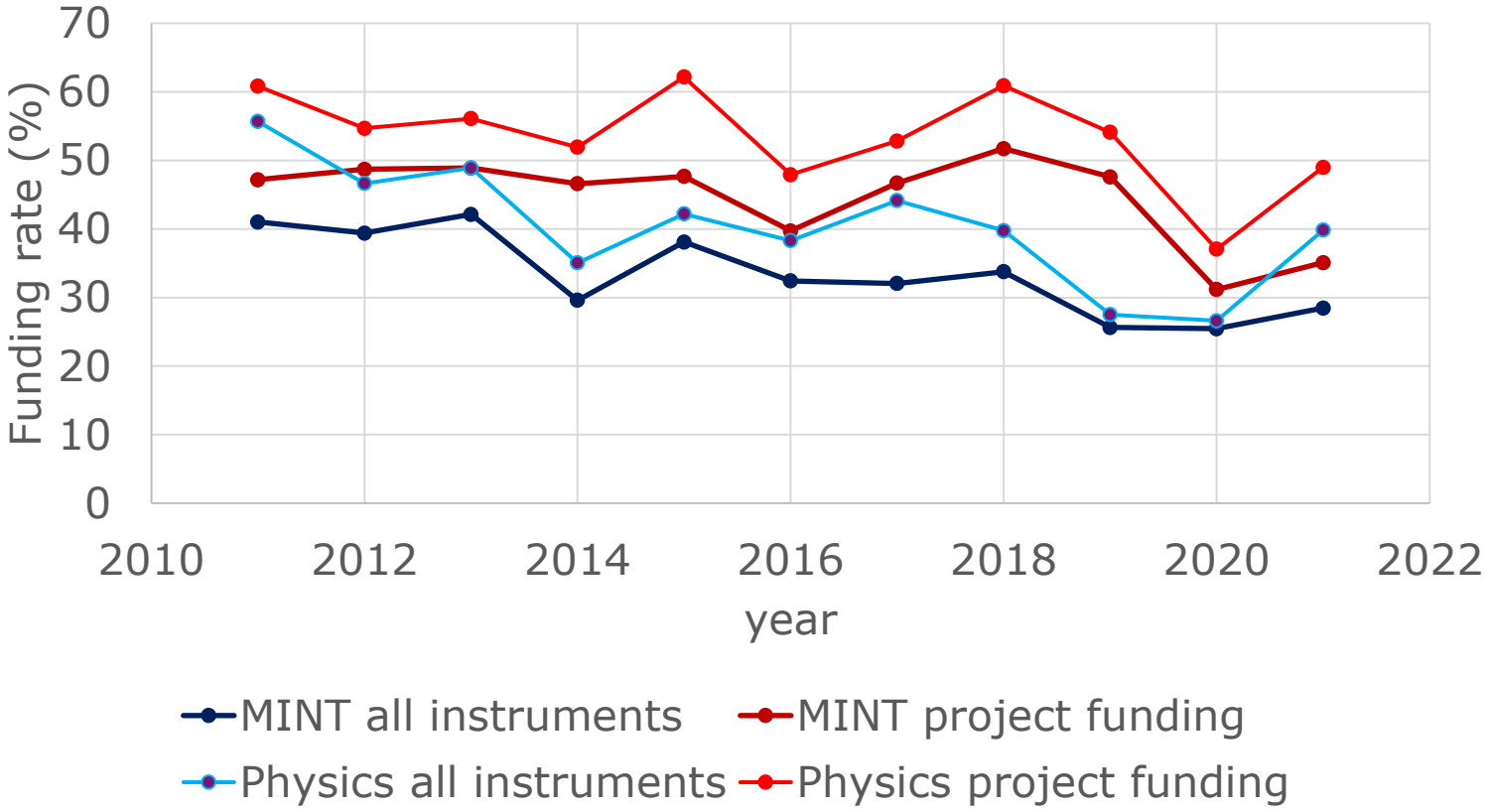
SNSF funding rates: Physics vs MINT



Funding rate = approved budget / requested budget

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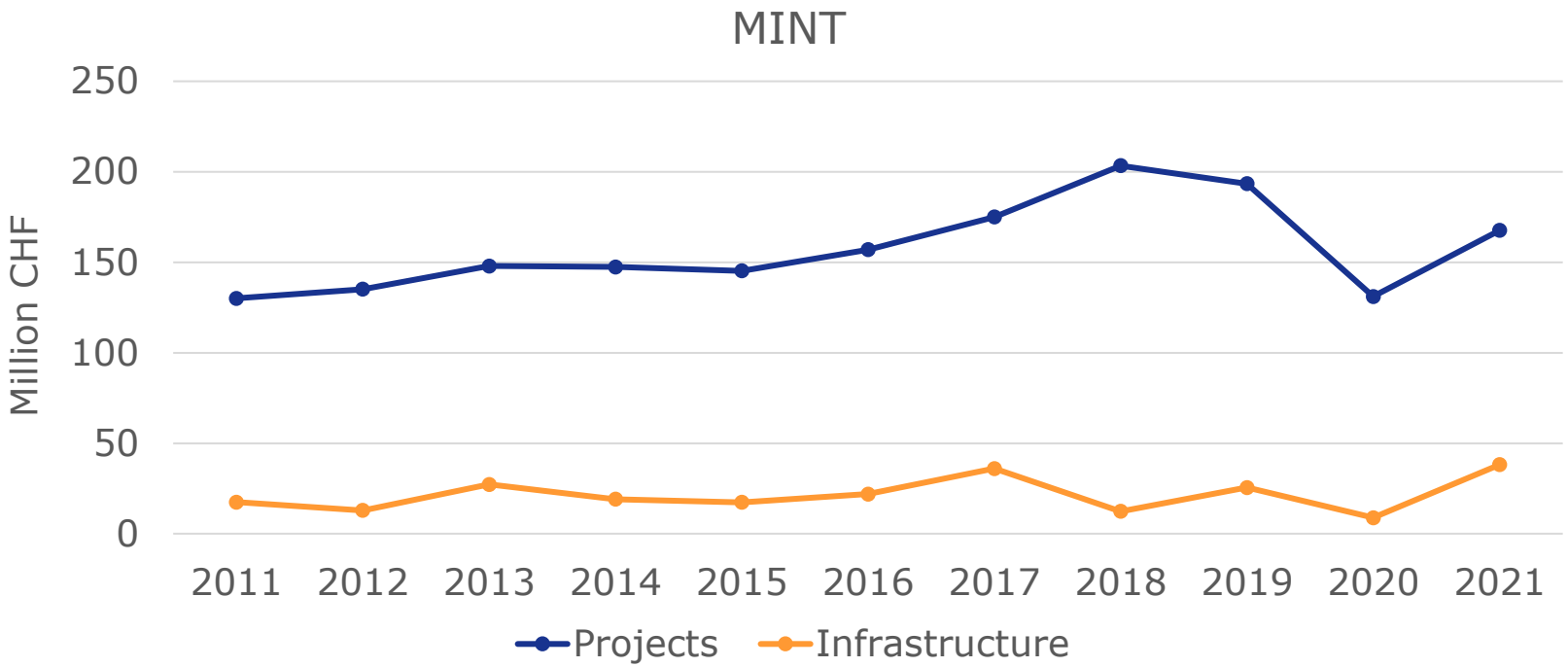
Total funding in MINT area



The overall steady increase follows approximately the gradual increase of the SNSF budget provided by SERI. There is no intention to decrease funds in project funding. Further, there is a clear commitment to continue with open calls.

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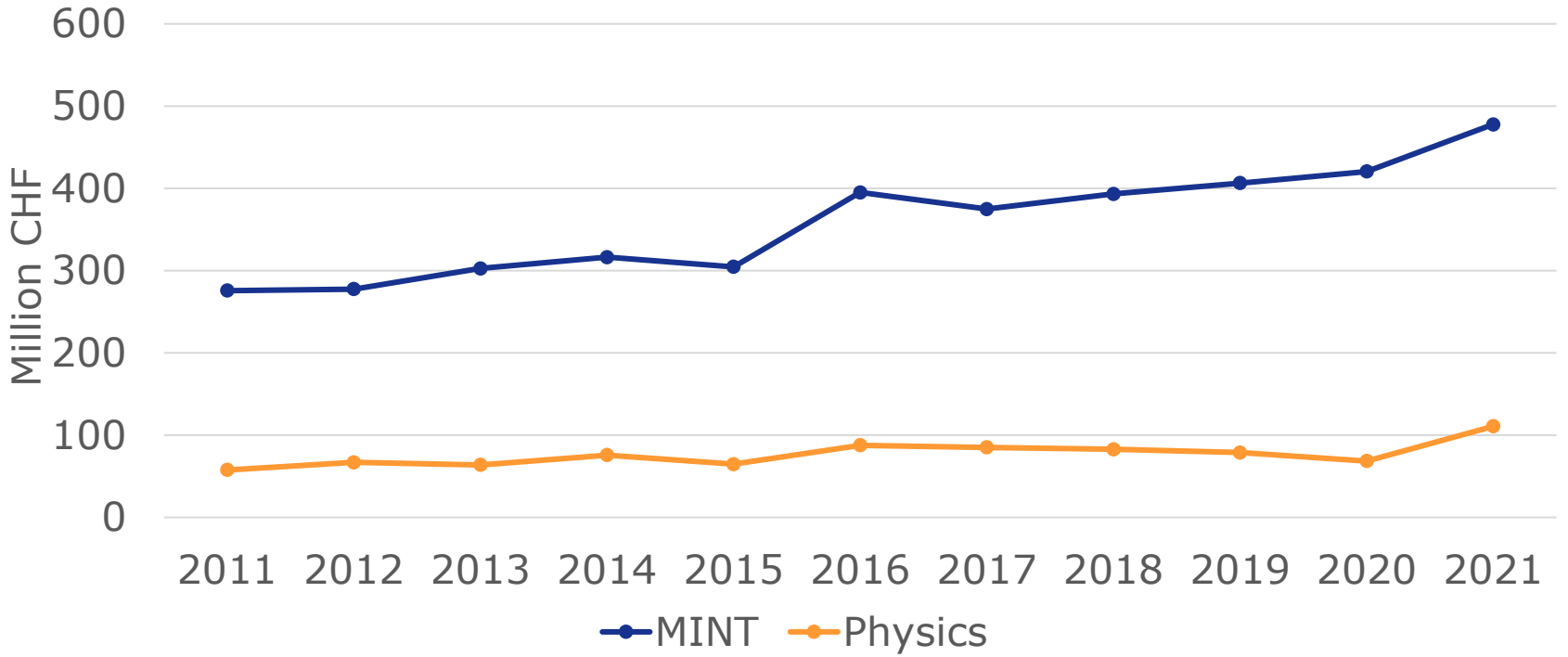
Development of requests



The share of requests in physics is approximately constant.

The increase is mainly increased budget request, and not number of proposals.

Applicants ask for more positions, increasingly favor postdocs over PhD students, ask for more travel money, more consumables.

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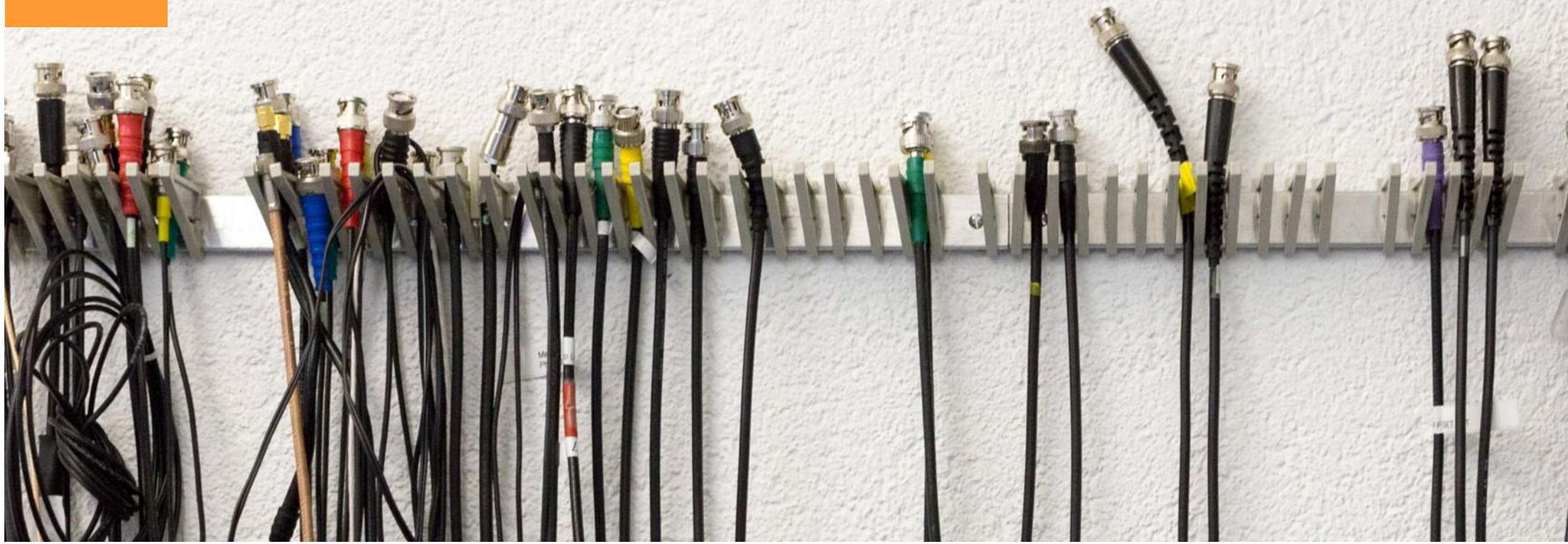

Some further developments and things which have not changed

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Strategy of the SNF (see snf.ch)

Research as well as its context and funding are constantly evolving. The SNSF aims to anticipate and help shape these changes. To achieve this, we have defined four strategic priorities for the 2021-2028 period.

- We promote Diversity in Research
- We shape the Future of Research
- We convey the Value of Research
- We strengthen the Competence of the SNSF

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21,831 individuals and organizations in 158 countries have signed DORA to date.

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Scientific awards
Image competition
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A new CV

28.02.2022

The SNSF will introduce a new standardised CV format in autumn 2022. The aim is to facilitate comparisons between applicants and to make the evaluation of their scientific career more transparent.

Contact

Martin von Arx
E-Mail: martin.vonarx@snf.ch

Evaluation criteria in project funding

Article 24 Criteria

[1] The relevant criteria for the award of research grants are:

a. the scientific quality of the proposed research project;

b. the scientific qualifications of the researchers.

[2] The scientific evaluation is based on the following main criteria:

a. scientific quality of the proposed research project: scientific relevance, topicality and originality, suitability of methods, feasibility;

b. scientific qualifications of the researchers: scientific track record and ability to carry out the research project.

[3] In the case of proposals for use-inspired research, the project's broader impact outside science is considered in the evaluation.

[4] In the Implementation Regulations, the Research Council may stipulate and prioritise further criteria for specific funding schemes.

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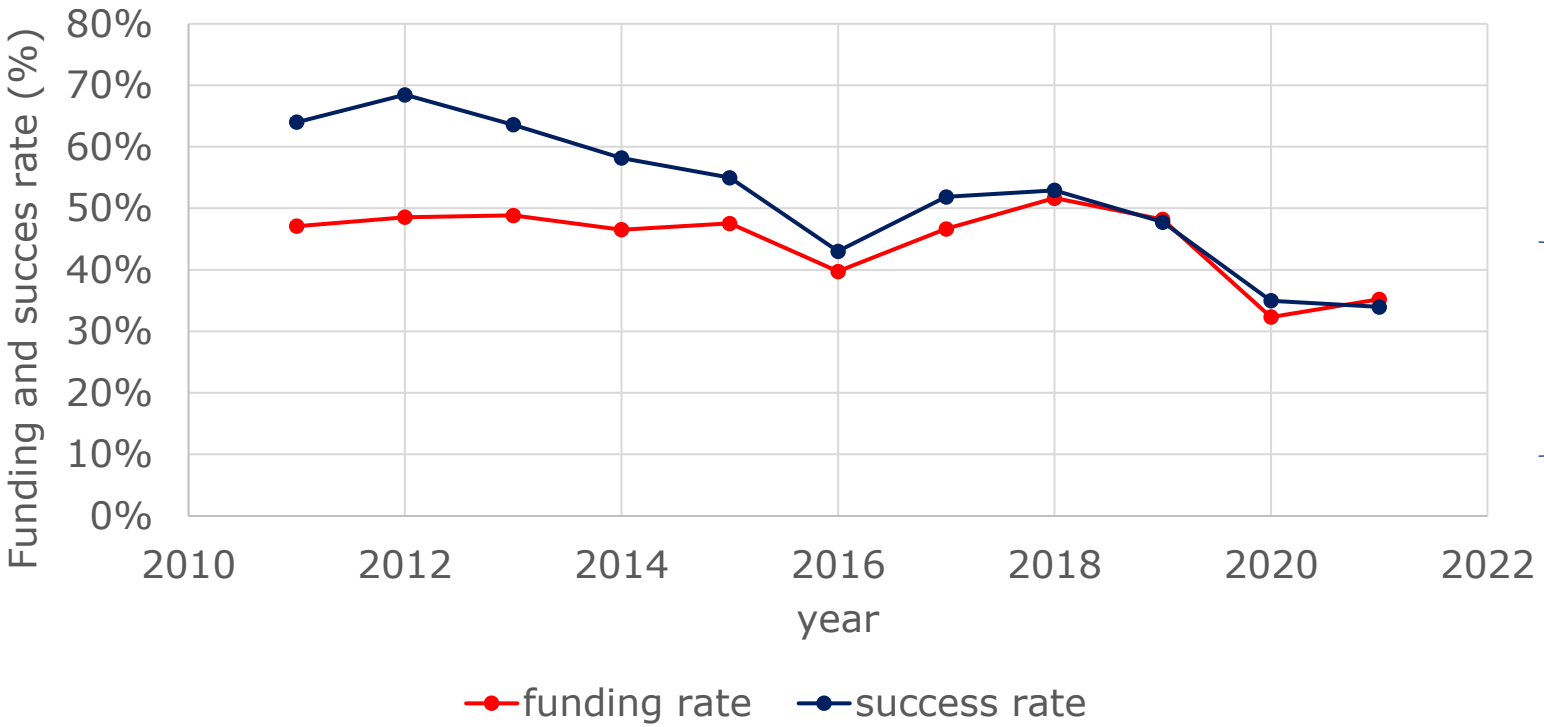
SNSF funding vs success rates in MINT project funding



Selection tends to become risk averse

Funding rate = approved budget / requested budget

Success rate = number of approved proposals / submitted proposals

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Various other developments

- SPARK, an instrument for unconventional and risky research, is being evaluated after 2 calls.
- SNSF joins CoalitionS
- PRIMA and Eccellenza will become SNSF Professorial Fellowships
- Support for Ukranian researchers

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How can you help?

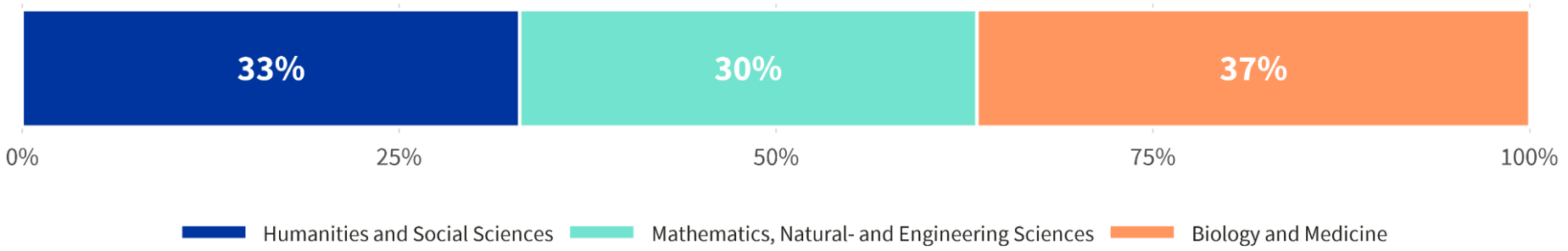
Portrait
Swiss National Science Foundation

FNSNF
Swiss National Science Foundation

Contents

- The SNSF
- Funding schemes
  - Projects
  - Supplementary measures
  - Careers
  - Programmes
  - Infrastructures
  - Science communication
- Funding approved in 2020
- Swiss research landscape
- Final slides on the benefits of basic science

Funding by research area 2020



Total :

937

CHF million

Physics:

ca 54

CHF million

Data 2020

The SNSF

Mission and tasks

We invest in researchers and their ideas

On behalf of the Swiss government, the SNSF supports basic and use-inspired research in all scientific fields. We select and fund the best research projects in a competition-based selection process. The new knowledge gained through SNSF-funded research provides a sound scientific basis for societal and economic progress.

Founding

- A foundation under private law
- Founded in 1952 by the Academies of Arts and Sciences with support from the government
- Professor Alexander von Muralt
- Petition submitted to the Federal Council:
- "The funds available in Switzerland today are insufficient and too fragmented to support, alongside individual achievements, the development of independent young scientists and a bedrock of successful science personalities."

Under a government mandate

- Federal Act on the Promotion of Science and Innovation (RIPA)
- Service level agreement 2017-2020 between the SNSF and the State Secretariat for Education, Research and Innovation (SERI)
- Federal contributions 2017: CHF 942 million

Ongoing SNSF projects

6,000

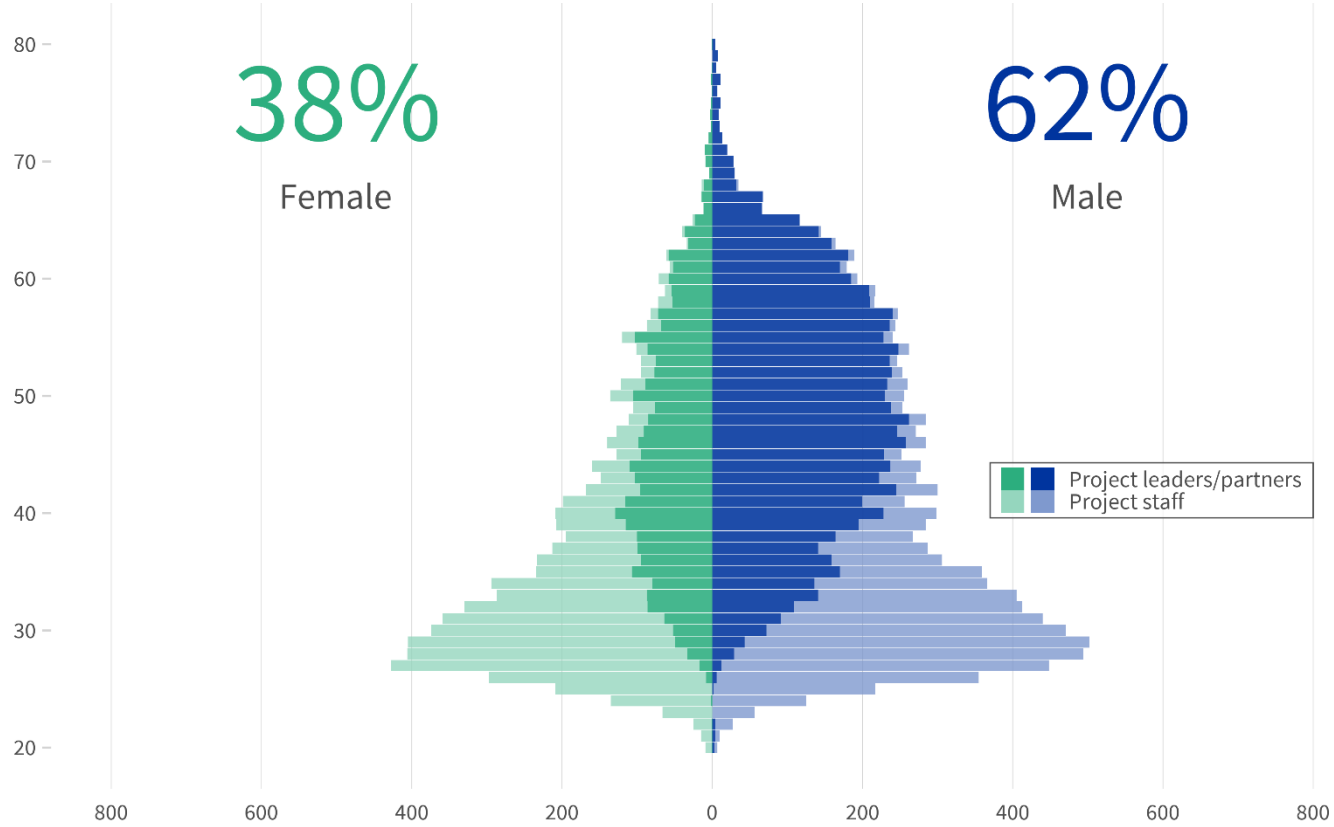
Ongoing SNSF projects

20,000

Researchers in projects

Data 2020

Researchers in projects according to age and gender



Data 2020

Tasks of the SNSF as a research funder

1. Finance scientific research

2. Promote scientific careers

3. Coordination with international research environment

4. Look ahead in strategic research questions

5. Strengthen the impact of research and communicate its value

Task 1: Finance scientific research

- Scientific research in all disciplines
- Researchers have free choice of topic
- In some programmes, there is a requirement to address major issues of national importance
- 80% basic research, 20% use-inspired research

The benefits

- Flexible and creative cutting-edge research
- New knowledge in wide range of fields for use-inspired research and innovation
- Societal and economic progress
- Competitive advantage, prosperity and quality of life

2. Promote scientific careers

- Funding schemes for project leaders at every career stage, from doctoral student through to assistant professor
- Measures for men and women
- Financing of young researchers also in other funding categories (project team)

The benefits

- Young researchers are able to work independently at an earlier stage
- New incentives for researchers
- Better chances of a career for talented researchers
- Highly qualified specialists for academia, business, public administration and teaching

3. Coordination with the international research environment

- Participation of the SNSF in international programmes
- Funding of research projects with partners abroad
- Awarding of fellowships abroad
- Close collaboration between the SNSF and international research organisations

The benefits

- International cooperation and networking of researchers
- Latest insights and high quality
- Leading position of Swiss research in the global arena

4. Outlook on strategic research questions

- Anticipating the changing needs of researchers and adapting funding schemes accordingly in advance
- Enabling research in promising new fields
- Contributing to research policy discourse

The benefits

- Research funding with a long-term impact
- Optimal conditions for researchers
- Development of scientific research and research policies
- Securing the innovation potential of Switzerland

Task 5: Strengthen the impact of research and communicate its value

- Free access to all publications and research data
- Supporting the communication work of researchers
- The SNSF provides information on selected research results and presents arguments that underscore the value of research

The benefits

- Visible and comprehensible research
- Widespread application of results in science and beyond
- Appreciation of science and willingness of politicians and public to fund research

The SNSF

Selection of research projects

Advantages of the SNSF selection process

1. Nationwide competition

2. Quality-based and transparent criteria

3. Internationale expertise

4. Decision-making by scientists

5. Comprehensive quality assurance

1. Nationwide competition

- Evaluation procedures based on nationwide competition in all funding categories
- Equal chances of an SNSF grant for all researchers - regardless of gender, discipline, institution and type of research

The benefits

- Higher quality projects thanks to competing ideas
- Higher probability of scientific discoveries
- Diffusion of SNSF quality standards through all research in Switzerland
- Success of Swiss projects in selection processes for all European programmes

2. Transparent, quality-based criteria

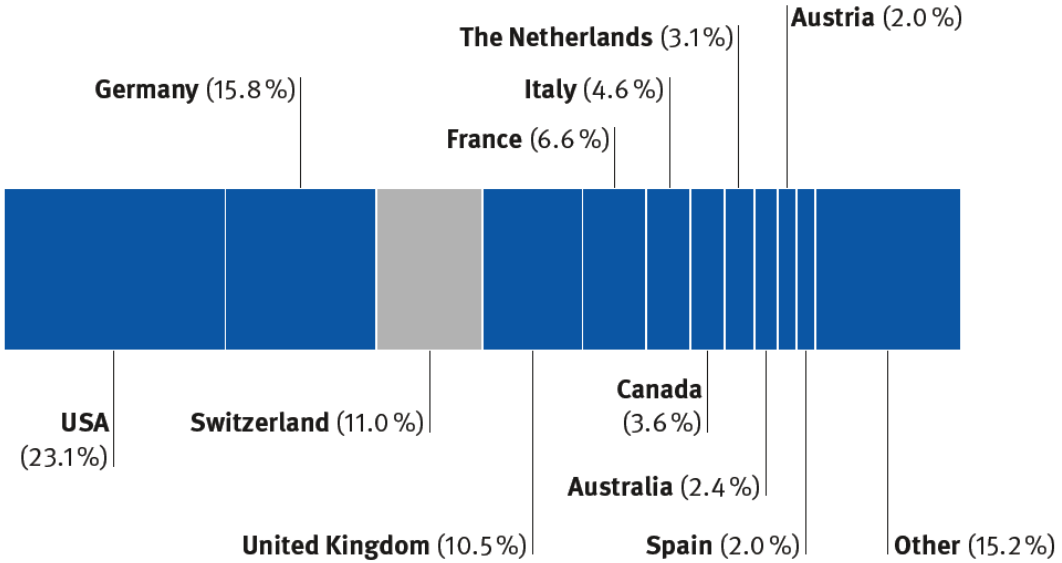
- Assessment of grant applications according to quality-based criteria (international standard)
- Disclosure of criteria

The benefits

- Selection of best projects and researchers
- Clarity for researchers about criteria

3. Reviews by international experts

- Approx. 90% of applications are reviewed by experts abroad
- Foreign members in SNSF bodies



The benefits

- Pool of international experts
- Reduces risk of conflicts of interest
- Additional guarantee of maintaining international quality standards
- Input/feedback from experts abroad boosts Swiss research

4. Decisions taken by researchers

- Funding decisions by the National Research Council of the SNSF (100 high-ranking scientists)
- Preparatory work by evaluation commissions composed of researchers ahead of decision

The benefits

- High scientific competence of SNSF bodies
- Credible and objective decisions
- Politics and business do not influence funding decisions in any way
- Inclusion of Swiss science community in SNSF research funding

5. Comprehensive quality assurance

- Assessment of evaluation processes and the impact of funding schemes
- Evaluation of research projects based on state-of-the-art in the field
- Comparision with other funding agencies
- SNSF commissions for compliance (adherence to rules) and scientific integrity

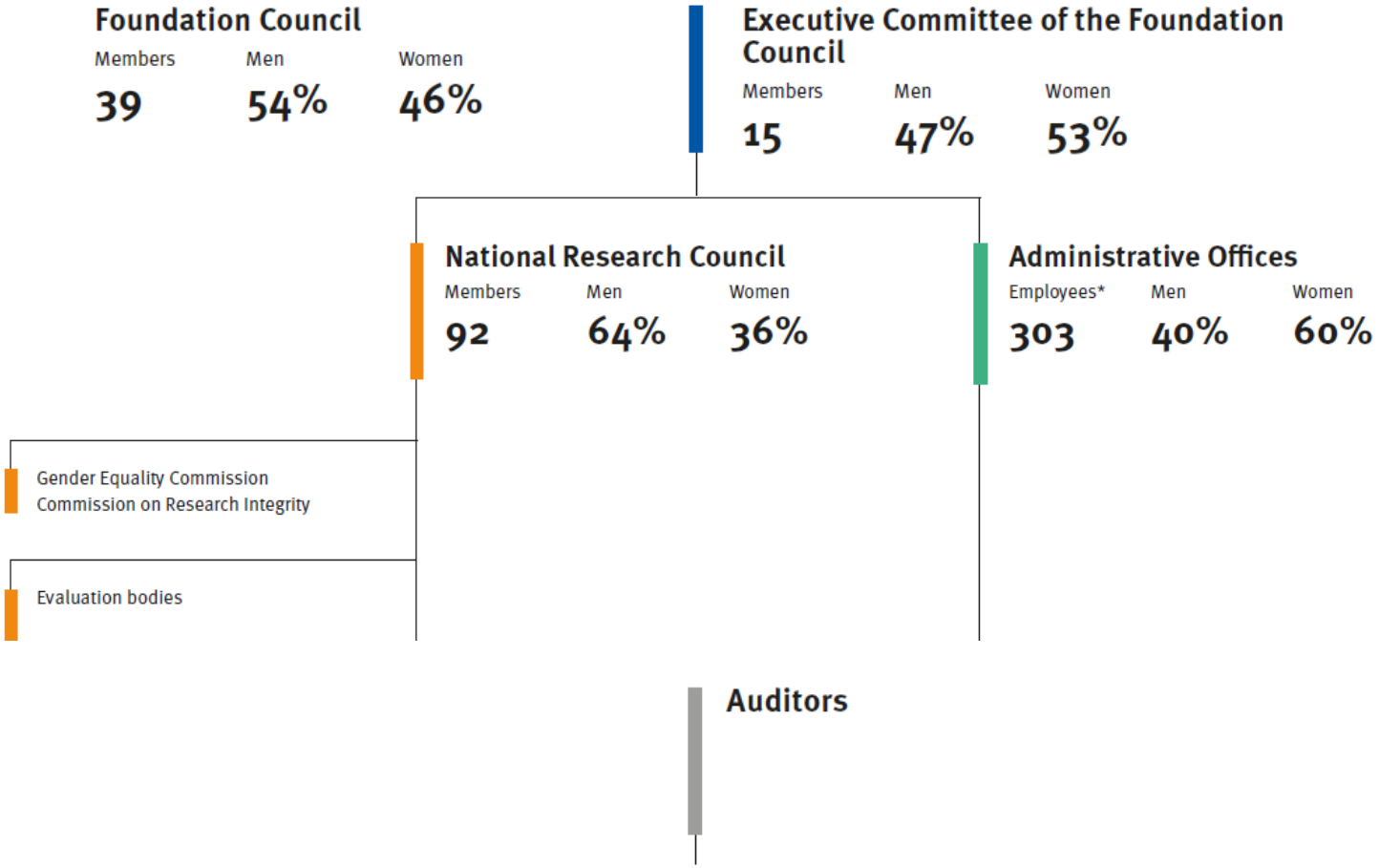
The benefits

- Research funding at high international level
- Fair evaluation procedures
- Efficient use of public funds according to federal mandate

The SNSF

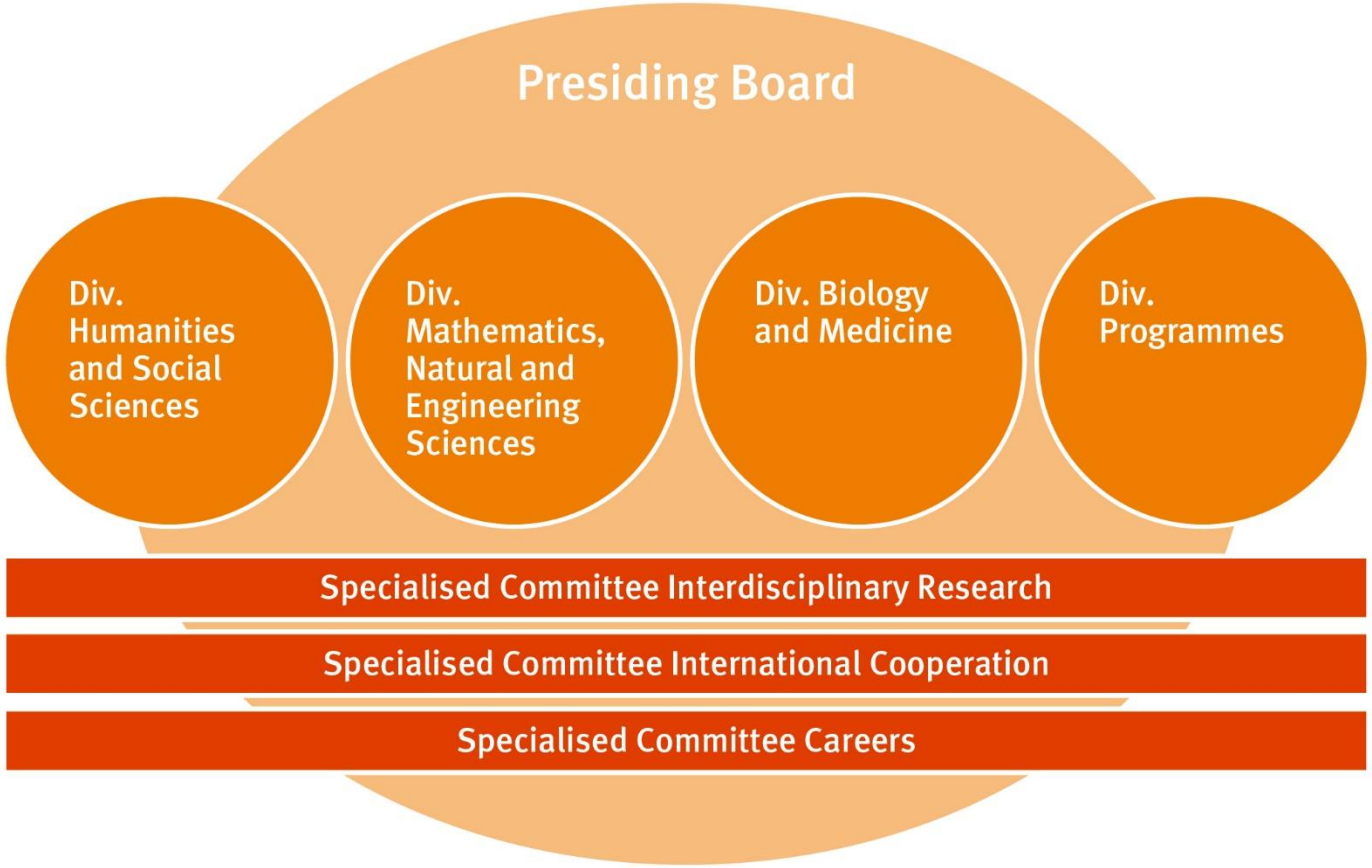
Organisation

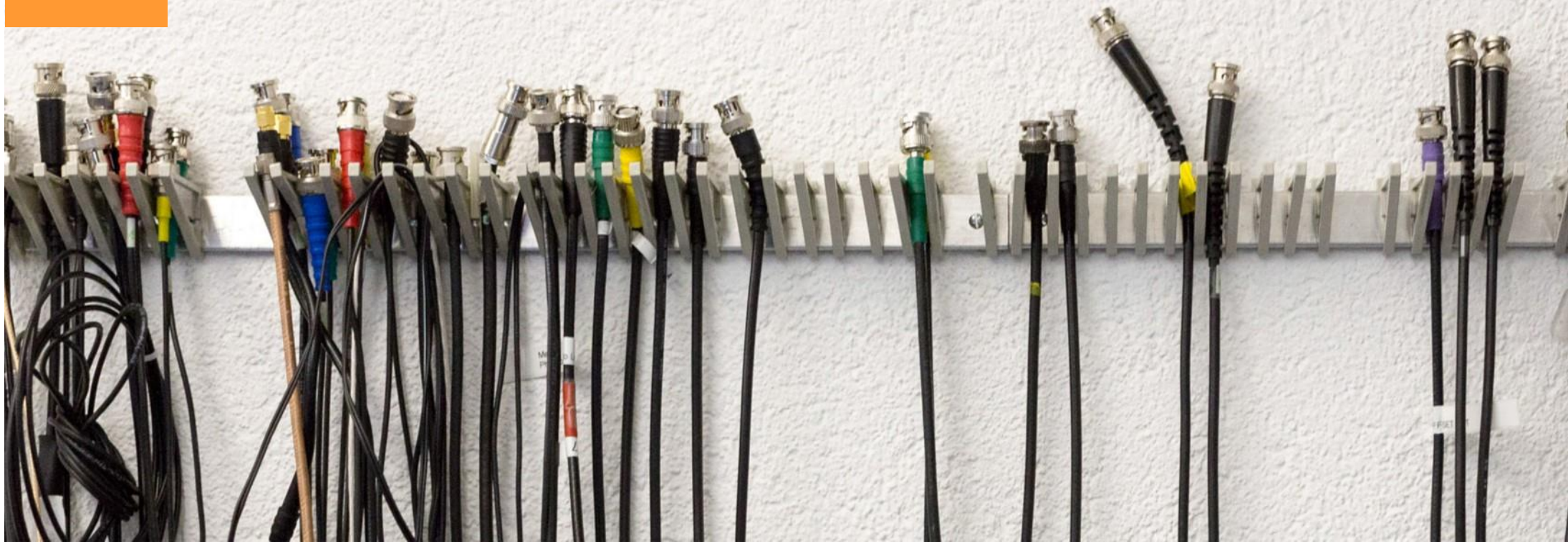
Bodies of the SNSF



Data 2020

Organisation of SNSF bodies



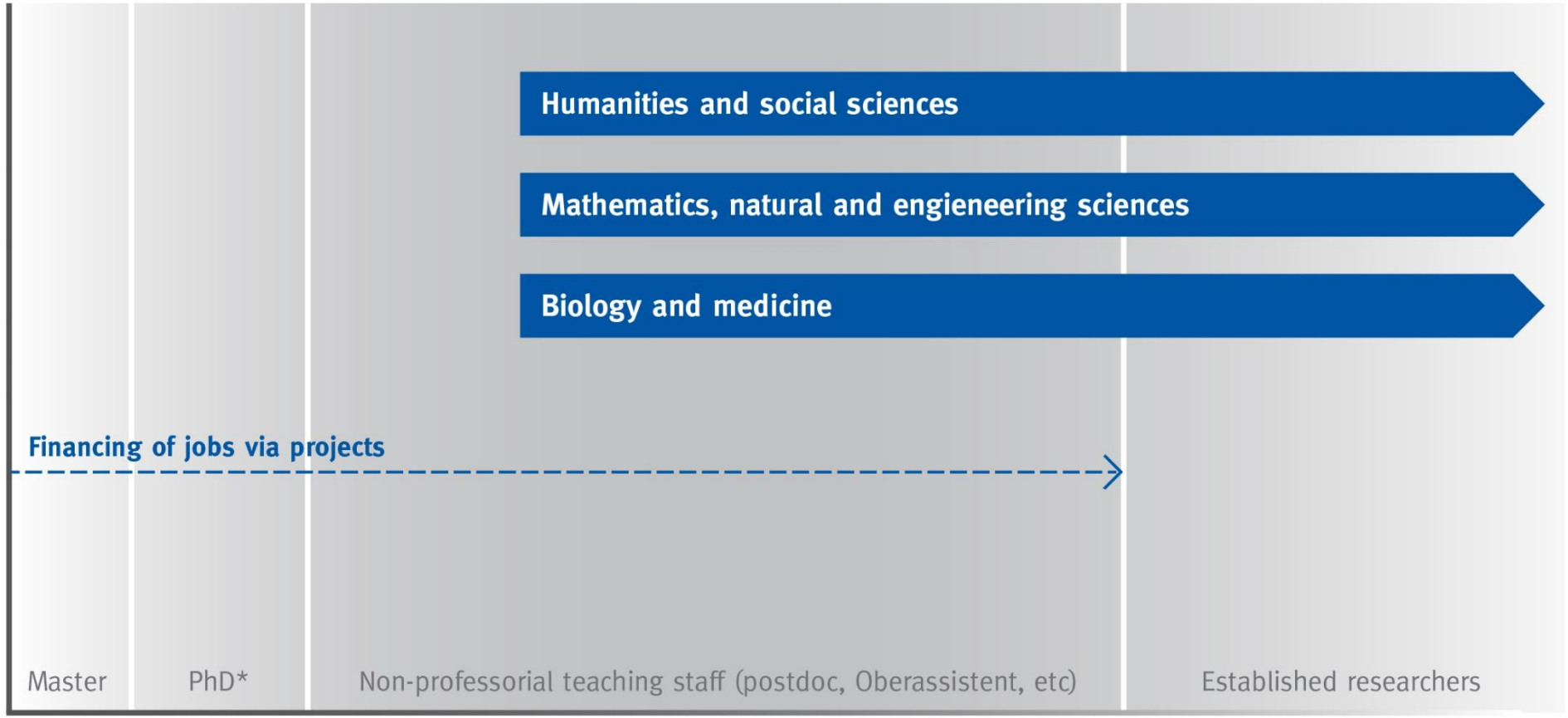


Funding schemes

Funding schemes

Project funding

Project funding



*PhD or 3 years of research experience

Project funding

- Free choice of research themes
- All scientific disciplines
- Project evaluation (peer review)
- Competitive selection process
- Decision about six months after submission
- Calls: 1 April / 1 October
  (excl. spec. programmes)

Stages in the evaluation procedure

Evaluation criteria

Proposed project

- Scientific relevance, topicality and originality
- Suitability of methods and feasibility

Applicants

- Scientific track record and performance in publication terms
- Professional expertise with regard to the project

Funding schemes

Supplementary measures

Flexibility Grant

To find the right balance between academic career and family commitments

- For doctoral and postdoctoral researchers with child care duties who need more flexibility
- Enables temporary part-time employment and hiring of a support person, and/or grantees can use grant to cover child care costs

⇨ **Can be applied for while the project is ongoing with relative ease**

Gender equality grant

Individual and flexible career support for young women scientists

- Aimed at young women researchers (PhD students and postdocs)
- CHF 1000 per twelve months' approved project duration
- May be used to finance career support measures, but does not cover family support measures

Mobility grants in projects

Improve your scientific profile by going abroad (for six to twelve months)

- Aimed at PhD students who are employed in an ongoing SNSF research project
- Can cover travel and living costs as well as fees for conferences and workshops of up to CHF 20,000. They are awarded for six to twelve months
- If the applicant is accompanied by his/her family, a further CHF 5,000 per family member may be awarded

⇨ **Can be applied for during the running time of a project with relative ease**

Funding schemes

Career funding

Careers

*PhD or 3 years of research experience

Careers

What opportunities does the SNSF create for young researchers?

- Early scientific independence
- Mobility abroad
- Intersectoral mobility (academia – industry / institutions operating in the practical field)
- Carrying out an independent project with their own team
- Career progress thanks to SNSF support, particularly for women researchers (Gender Equality Grant)
- Balancing family and academic career thanks to resources from the SNSF (Flexibility Grants)

Doc.CH

Aim

- Dissertation
- In the humanities and social sciences
- Topic of your own choice
- At a university in Switzerland

- Approx. 45 grants per year

Doc.CH

Requirements

- Degree (master's or equivalent degree) with excellent grades
- Degree from a Swiss higher education institution or equivalent degree for Swiss nationals residing abroad
- Application can be submitted to the Research Commission of the SNSF up to two years after obtaining degree
- As a rule, at least one change of higher education institution between bachelor's degree and start of PhD, or plans for a stay abroad of at least one semester during doctoral studies

Doc.CH

Duration

- 2 to 4 years

Eligible costs

- Salary for doctoral students according to SNSF rates
- Costs directly related to project implementation: materials of enduring value, consumables, travel and conference costs, sundry expenses, etc.

Submission deadlines

- 10 March and 10 September

Doc.Mobility

Aim

- Fellowships for a stay abroad
- Aimed at doctoral students

- Approx. 140 fellowships per year
- This funding scheme will be discontinued as of 2021

Doc.Mobility

Requirements

- Matriculation as a doctoral student for at least 12 months
- At least 1 year working as a researcher in Switzerland (for applicants who are not Swiss nationals)

Doc.Mobility

Duration

- Funding duration of between 6 and 18 months

Eligible costs

- Grant towards living costs, flat-rate for travel expenses and contribution to research, conference and matriculation costs if necessary.

Submission deadlines

- 1 March and 1 September

Early Postdoc.Mobility

Aim

- Fellowships for a stay abroad
- Aimed at early-career postdocs

- Approx. 330 fellowships per year
- This funding scheme will be discontinued as of 2021

Early Postdoc.Mobility

Requirements

- Earliest possible submission 9 months before obtaining doctoral degree, latest submission up to 2 years thereafter
- Medical researchers: submission possible up to 6 years after obtaining the medical licence (Staatsexamen)
- Employed for at least 3 years at a research institution in Switzerland (for applicants from abroad)

Early Postdoc.Mobility

Duration

- Funding period of 18 months

Eligible costs

- Grant towards living costs, flat-rate for travel expenses and contribution to research, conference and matriculation costs if necessary.

Submission deadlines

- 1 March and 1 September

Postdoc.Mobility

Aim

- Fellowship for a stay abroad for postdocs who want to pursue an academic career in Switzerland
- Return option for Switzerland

- Approx. 150 fellowships per year (APM!) without return phase

Postdoc.Mobility

Requirements

- Doctorate (PhD, MD-PhD) or degree in human, dental, veterinary, social or preventive medicine
- Submission up to 3 years after obtaining doctorate (PhD, MD-PhD)
- Medical researchers without MD-PhD: submission possible up to 8 years after obtaining the medical licence (Staatsexamen) and at least 3 years' clinical experience after medical licence
- Employment of no less than 2 years' duration at a research institution in Switzerland (for applicants who are not Swiss nationals)

Postdoc.Mobility

Eligible costs

- Fellowship abroad:
  - Grant towards living costs, flat-rate for travel expenses and contribution to research, conference and matriculation costs if necessary.
- Return phase in Switzerland
  - Salary (incl. social security contributions) and research costs

Postdoc.Mobility

Duration

- Fellowship abroad:
  - Duration: 24 months, at least 12 months (not extendible)
- Return phase in Switzerland
  - Duration: 3-12 months (not extendible)

Submission deadlines

- 1 February and 1 August

Ambizione

Aim

- First step towards scientific independence
- Conduct an independent research project with your own team at a Swiss research institution
- Approx. 80 grants per year

Ambizione

Requirements

- Up to 4 years of research experience after doctorate
- Research stay of at least 12 months at a different higher education institution from the one(s) where the applicant conducted his/her doctorate or prepared for his/her medical licence
- For medical researchers: at least three years of clinical activity since graduation. Submission of applications up to 9 years after obtaining the medical licence

Ambizione

Duration

- 4 years

Eligible costs

- Ambizione grant: applicant's salary, project funds (CHF 400,000 max.)
- Ambizione project grant:
  Project funds (CHF 400,000 max.)

Submission deadlines

1 November

PRIMA

Aim

- The stepping stone to your professorship
- Conduct an independent research project with your own team at a Swiss research institution

PRIMA

Eligibility requirements

- Doctorate (PhD)
- At least 2 years of research experience since doctorate
- Submission between 2 and 10 years after doctorate

Requirements for clinical researchers

- Medical licence (Staatsexamen)
- At least 2 years of research experience since medical licence
- At least three years of clinical work since medical licence
- Submission up to 14 years after obtaining medical licence

PRIMA

Duration

- 5 years

Eligible costs

- Grantee's salary and project funds (CHF 750,000 max.)

Submission deadlines

1 November

SNSF Eccellenza

- Professorial Fellowships
- Grants

SNSF Eccellenza Professorial Fellowships

Aim

- Enables grantee to conduct an independent research project with their own team at a Swiss higher education institution
- For outstanding young researchers who want to obtain a permanent professorship

SNSF Eccellenza Professorial Fellowships

Requirements

- 3-8 years since doctorate or similar qualification
- For medical researchers: at least 3 years of clinical work since medical licence. Applications can be submitted up to 12 years after obtaining the medical licence
- At least 24 months' research experience as a postdoc at a different higher education institution from the one(s) where they conducted their doctorate, at least 12 months thereof abroad
- Swiss higher education degree, Swiss national or at least two years spent working as a researcher in Switzerland

SNSF Eccellenza Professorial Fellowships

Duration

- 5 years (not extendible)

Eligible costs

- Project funds of up to CHF 1,000,000
- Grantee's salary (at assistant professor level)

Submission deadlines

1 February

SNSF Eccellenza Grants

Aim

- Enables grantee to conduct an independent research project with their own team at a Swiss higher education institution
- For researchers who recently obtained a tenure-track assistant professorship
- Approx. 45 awards per year (fellowships and grants together)

SNSF Eccellenza Grants

Requirements

- Tenure-track assistant professorship in Switzerland
- Begin of employment at the most 18 months prior to submission of the application or no later than the start of the project

SNSF Eccellenza Grants

Duration

- 5 years (not extendible)

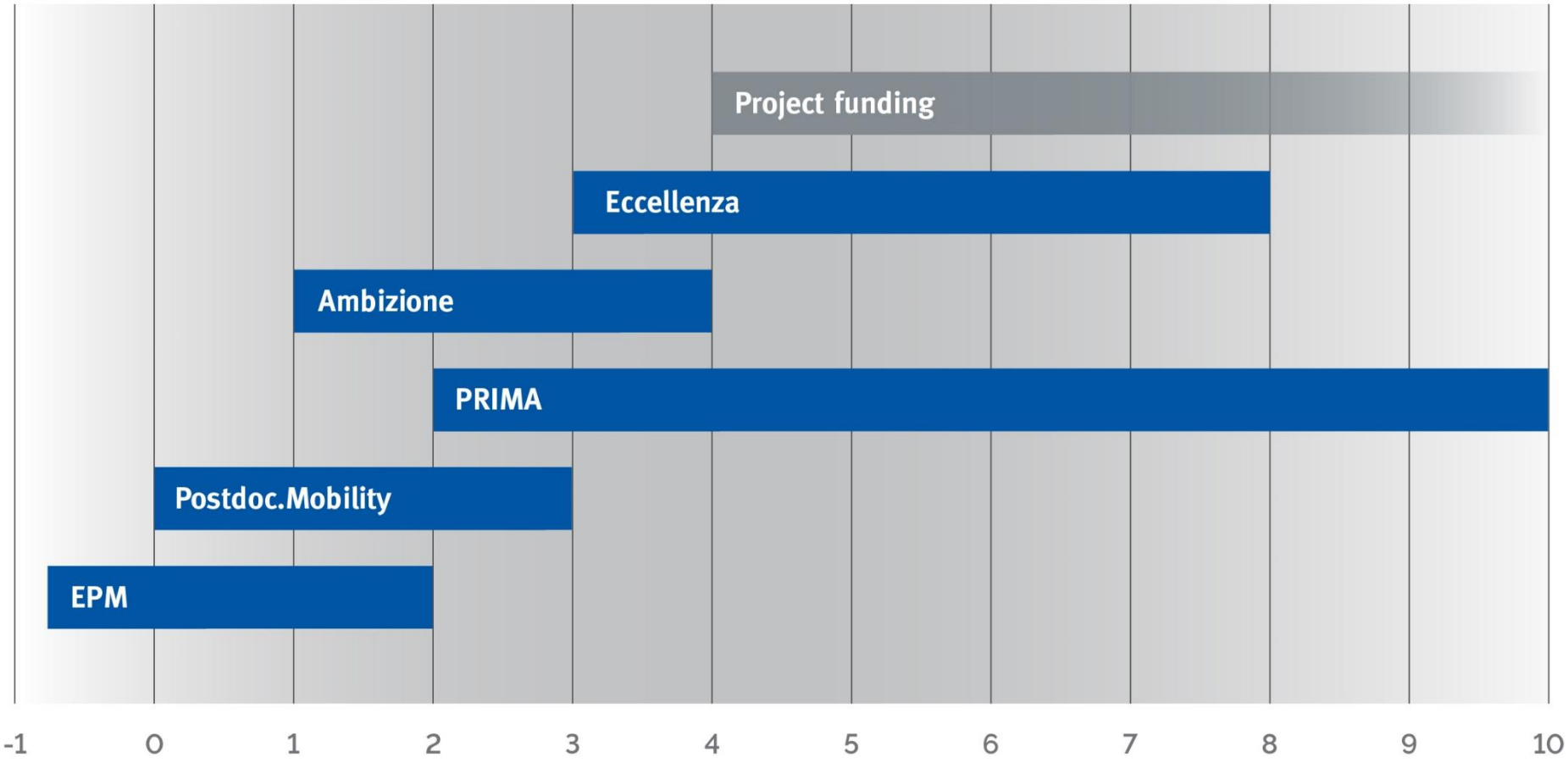
Eligible costs

Project funds of up to CHF 1,5000,000

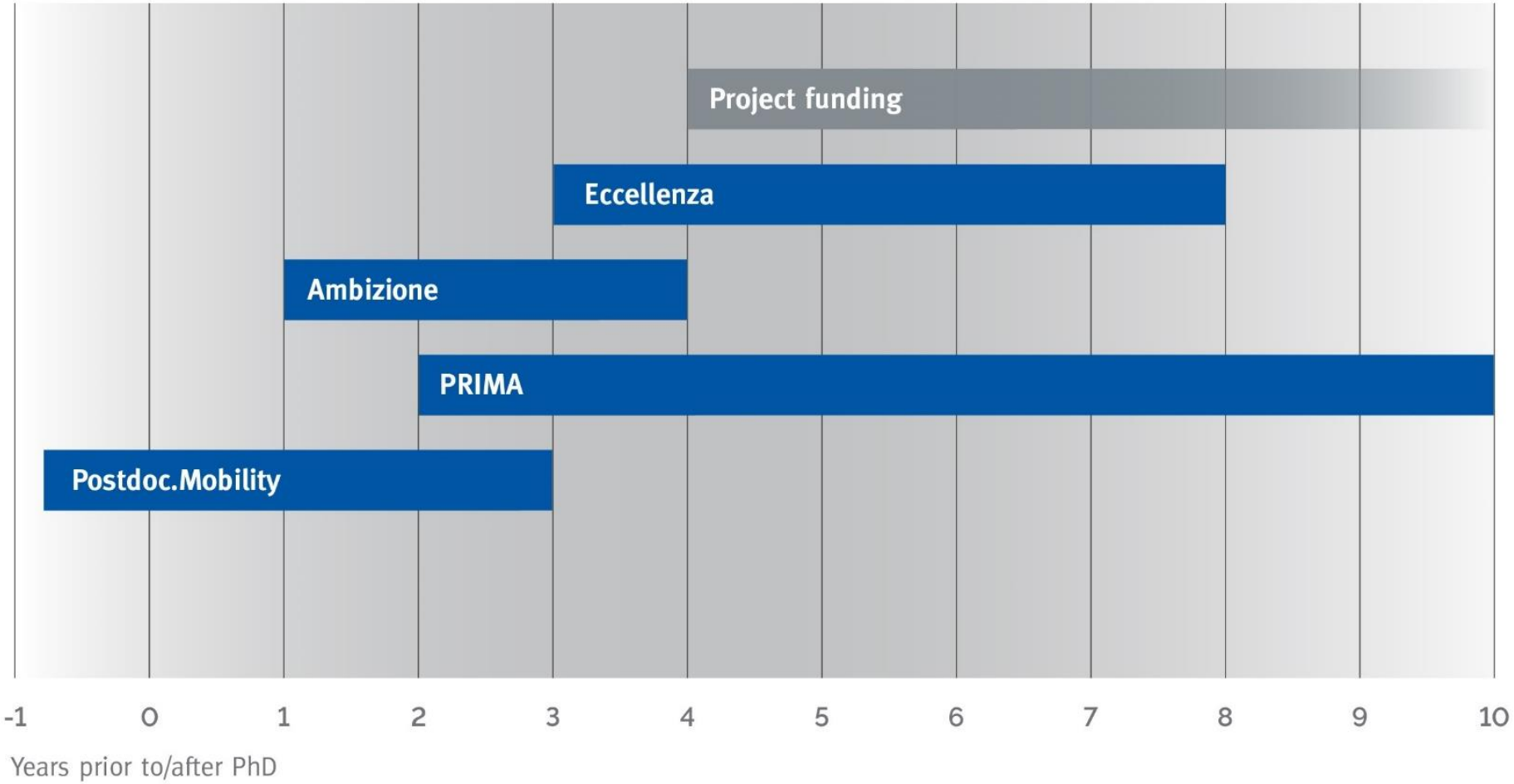
Submission deadlines

1 February

Overview of eligibility windows 2018-2020



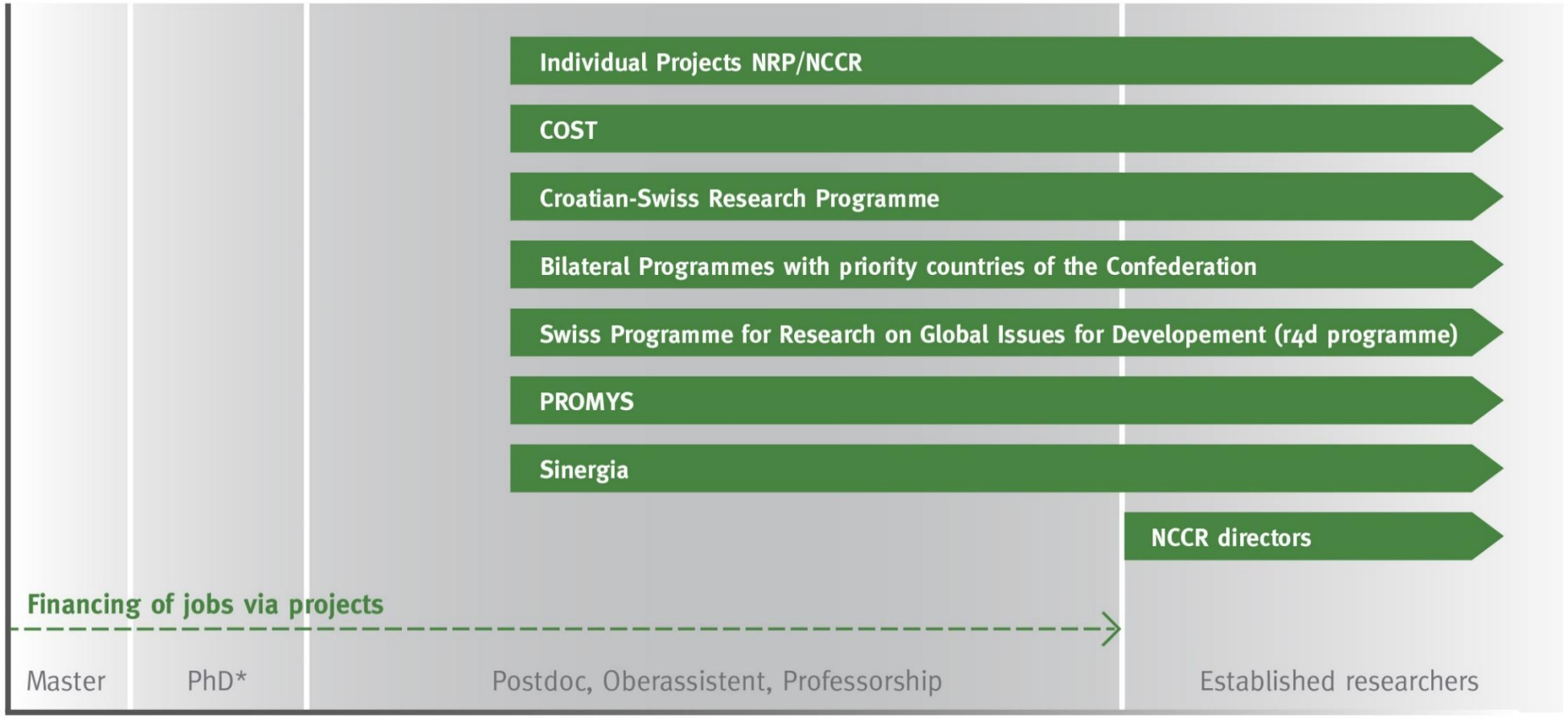
Overview of eligibility windows 2021



Funding schemes

Programmes

Programmes



*PhD or 3 years of research experience

Funding schemes

Programmes

National Research Programmes (NRPs)

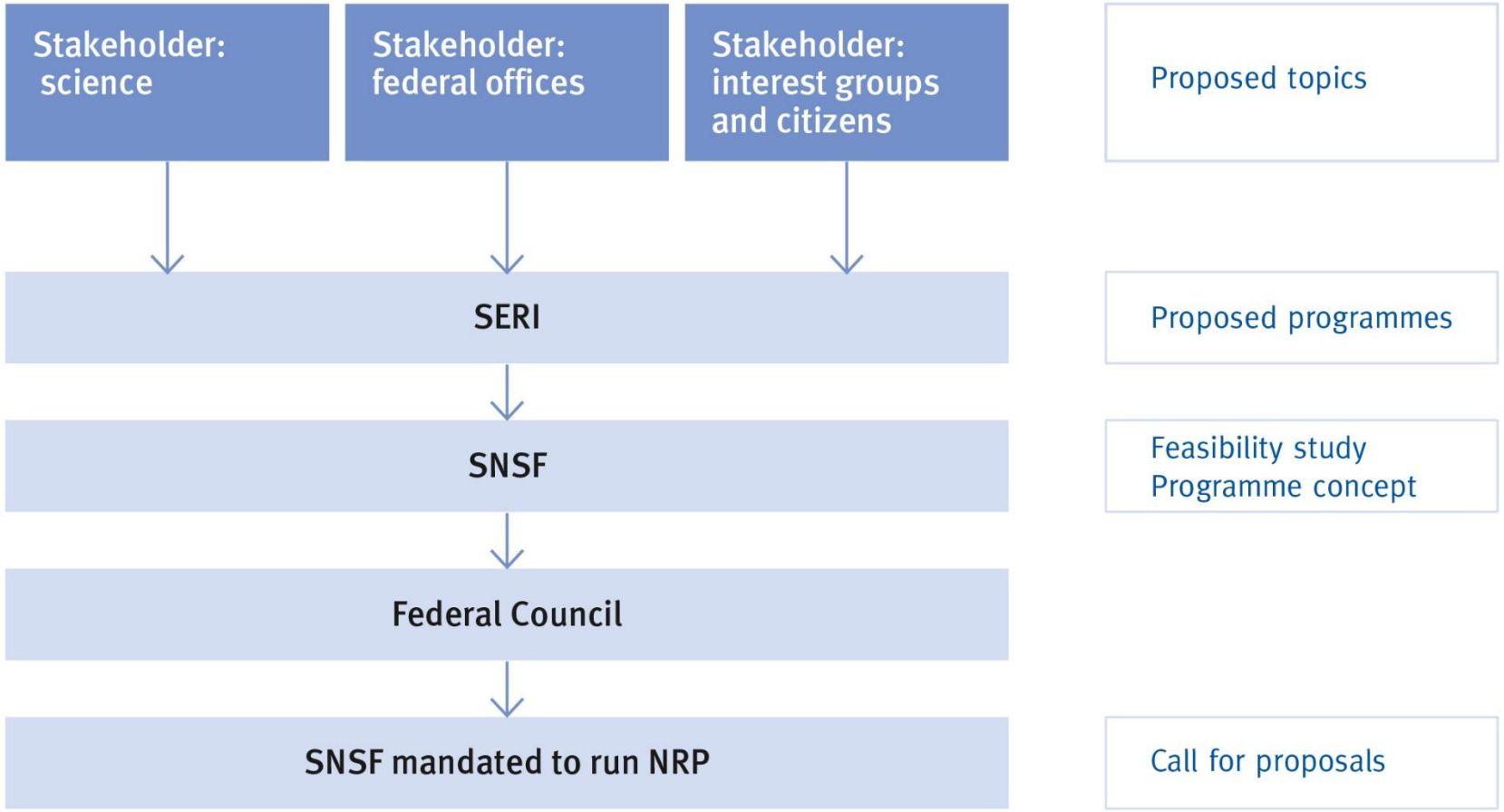
National Research Programmes (NRPs)

The NRPs generate scientific knowledge aimed at **solving Switzerland's most pressing problems.**

The topics are specified by the Federal Council

- New NRPs are launched every 3 years
- Duration: 5-7 years
- CHF 15-20 million for each NRP
- 12 NRPs are currently ongoing

National Research Programmes (NRPs)



Funding schemes

Programmes

National Centres of Competence in Research (NCCRs)

The Centres of Competence NCCRs

NCCRs promote **long-term research** projects in areas of vital strategic importance for the **development of science in Switzerland**, for the economy of the country, and for Swiss society.

robotics

Swiss National
Centre of Competence
in Research

SWISS NATIONAL CENTRE OF COMPETENCE IN RESEARCH
CHEMICAL BIOLOGY
VISUALISATION AND CONTROL
OF BIOLOGICAL PROCESSES USING CHEMISTRY

Figures

NCCRs have a maximum duration of 12 years. The SNSF contributes approx. CHF 3.5 to 5 million per year to each NCCR. In addition, grants of the home institution and the relevant research groups as well as third-party funding (from industry, administration, foundations, etc.) more than double the SNSF grant.

3rd series (as of 2010): 8 NCCRs

- 4th series (as of 2014): 8 NCCRs
- 5th series: from 2020
- Total budget 2017-2020 (3rd, 4th et 5th series): **CHF 284 million**

Funding schemes

Programmes

International co-operation

International cooperation strategy

Objectives of the SNSF's international cooperation activities

- Facilitate and optimise global scientific collaboration and exchange
- Foster cross-border cooperation to the benefit of Swiss research
- Contribute to the increase of research capacity in Switzerland and abroad

International cooperation strategy

Basic principles

- Scientific excellence
- Free choice of topics, interdisciplinary collaboration and scientific autonomy
- High ethical standards
- Simpler structures and multilateral approaches
- Freely accessible data

Funding: international mobility

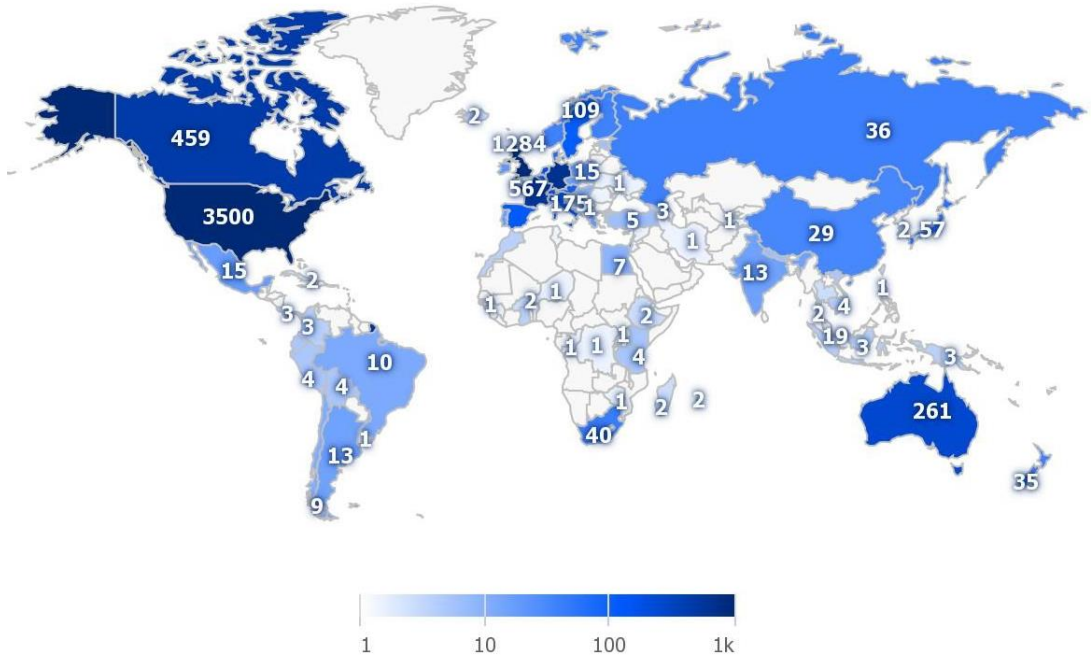
With any country:

Mobility grants in project funding (PhD students)

Mobility fellowships
Doc.Mobility, Postdoc.Mobility

Scientific Exchanges
Short and mid-term individual mobility grants

Money follows researcher
Continuation of SNSF project abroad



Data: Fellowships by Host Country (2005-2017). p3.snf.ch

Funding: international research collaboration

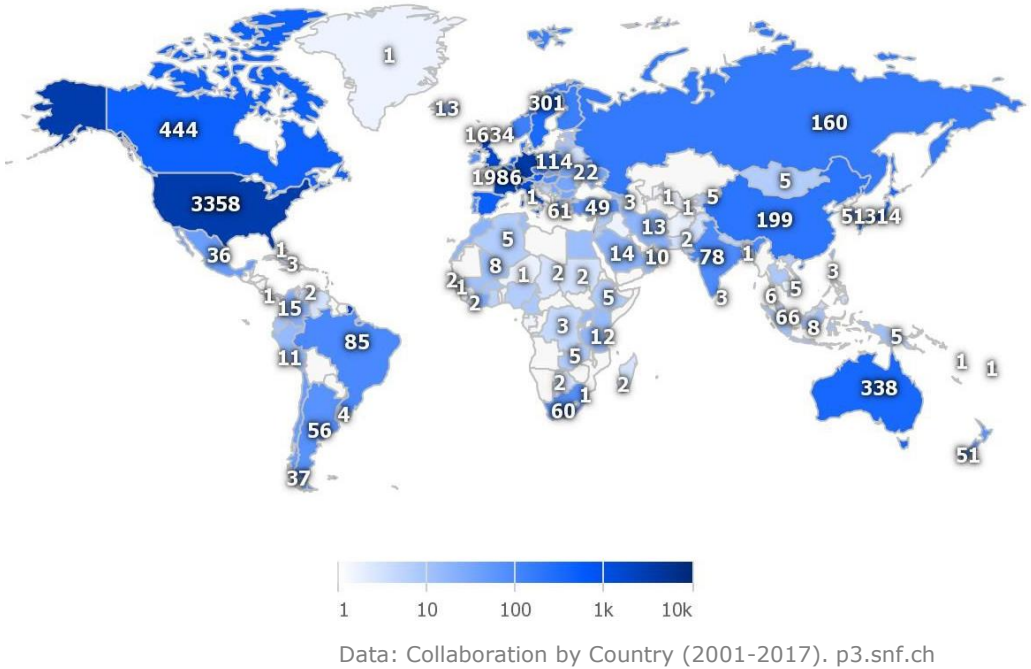
With any country:

Project partners in SNSF-funded projects can be based abroad (up to 20% of the project budget)

Sinergia (max. 1 applicant abroad among 3-4 applicants)

Specific:

International programmes
(e.g. bilateral programmes)



Data: Collaboration by Country (2001-2017). p3.snf.ch

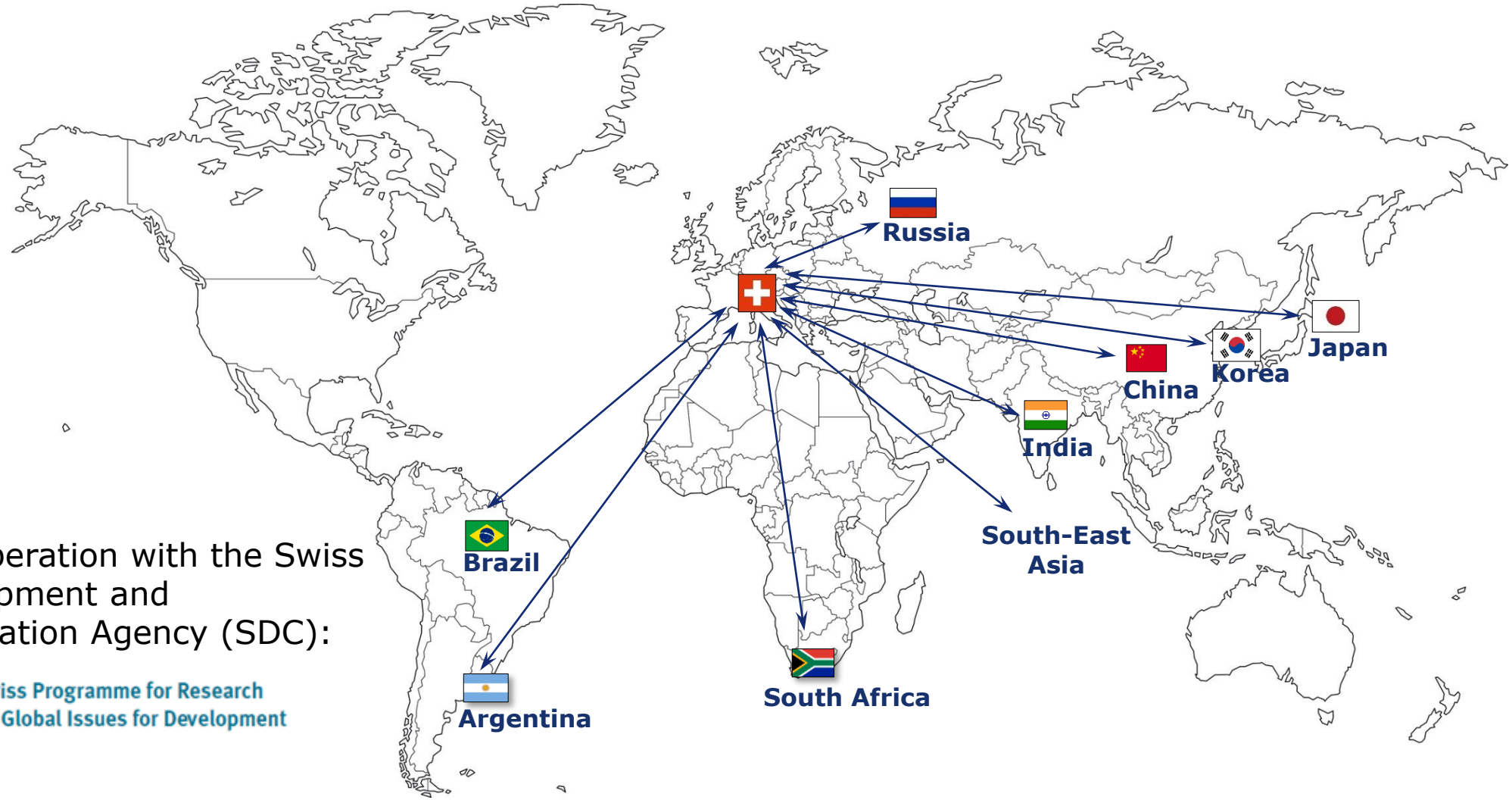
Programmes for international collaboration

Bilateral programmes of the Swiss Confederation
Bilateral research cooperation programmes with Argentina, Brazil, China, India, Japan, Russia, South Africa and South Korea

Swiss Programme for Research on Global Issues for Development (r4d programme)
Joint funding initiative by the Swiss Agency for Development and Cooperation (SDC) and the SNSF

Participation in multilateral research Initiatives
COST, ERA-NETs, Joint Programming Initiatives (JPIs), etc.

Programmes for international collaboration



In cooperation with the Swiss Development and Cooperation Agency (SDC):

Swiss Programme for Research on Global Issues for Development

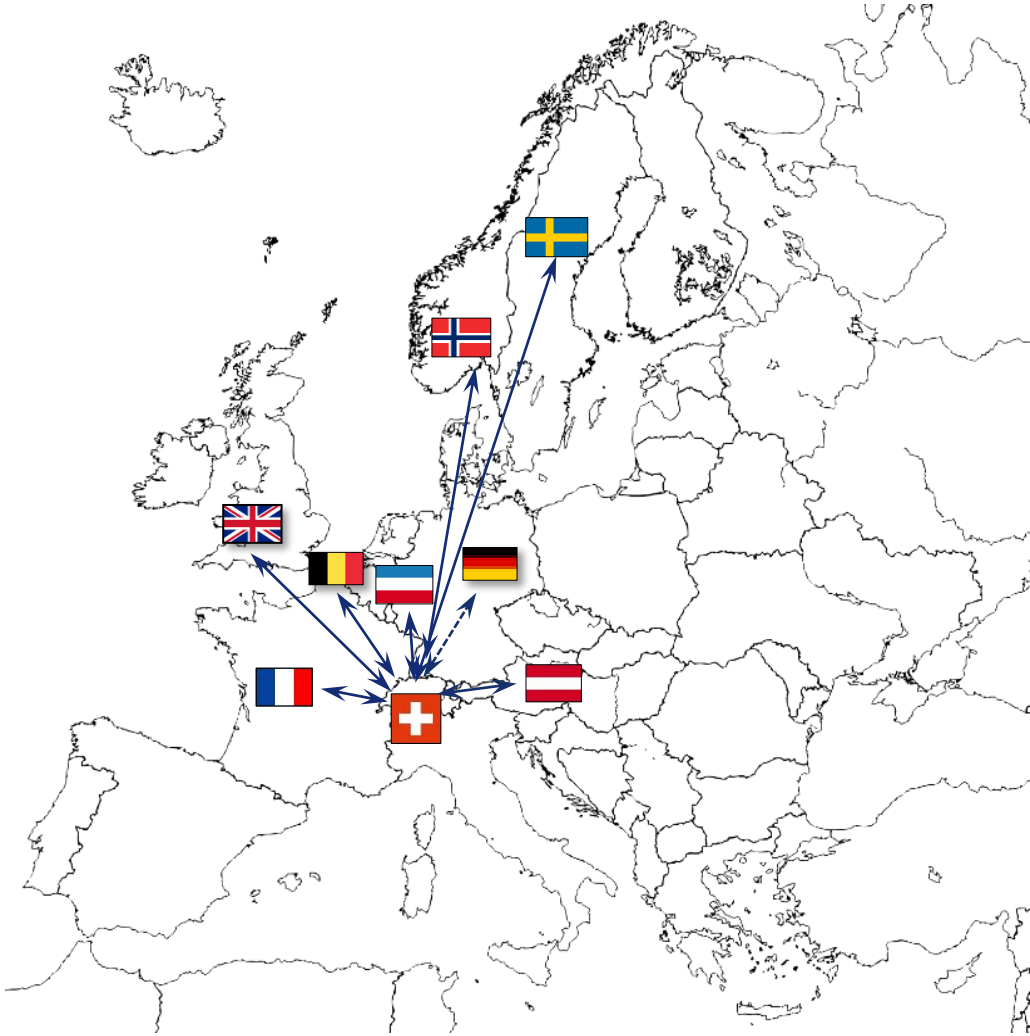
Institutional agreements in support of cross-border research projects

International Co-Investigator scheme
Reciprocal cross-border funding with:

- Austria, Germany, Norway, Sweden, United Kingdom (in social sciences and humanities only)

Lead Agency agreements and other bilateral schemes
Mutual recognition of funding decisions with:

- Austria, Belgium, France, Germany, Luxembourg



Collaboration among European partners

Enlargement contribution to the EU
Supporting efforts to reduce economic and social disparities: Croatia

PROMYS
Promotion of young scientists in Eastern Europe

COST networks and projects
European cooperation in science and technology promoted through networking

European multilateral initiative
Participation in ERA-NETs, Joint Programming Initiatives, etc.

Policy activities

European / International integration of the SNSF

Involvement of the SNSF in European and international science policy organisations and discussion fora (such as Science Europe or the Global Research Council)

Aims

- To contribute meaningfully and constructively to European and global policy debates and actions
- To communicate and argue positions (e.g. European Framework Programmes) in the interest of the Swiss research community
- To strengthen our network of contacts with sister organisations and other agencies
- To get inputs/feedback from the international research environment

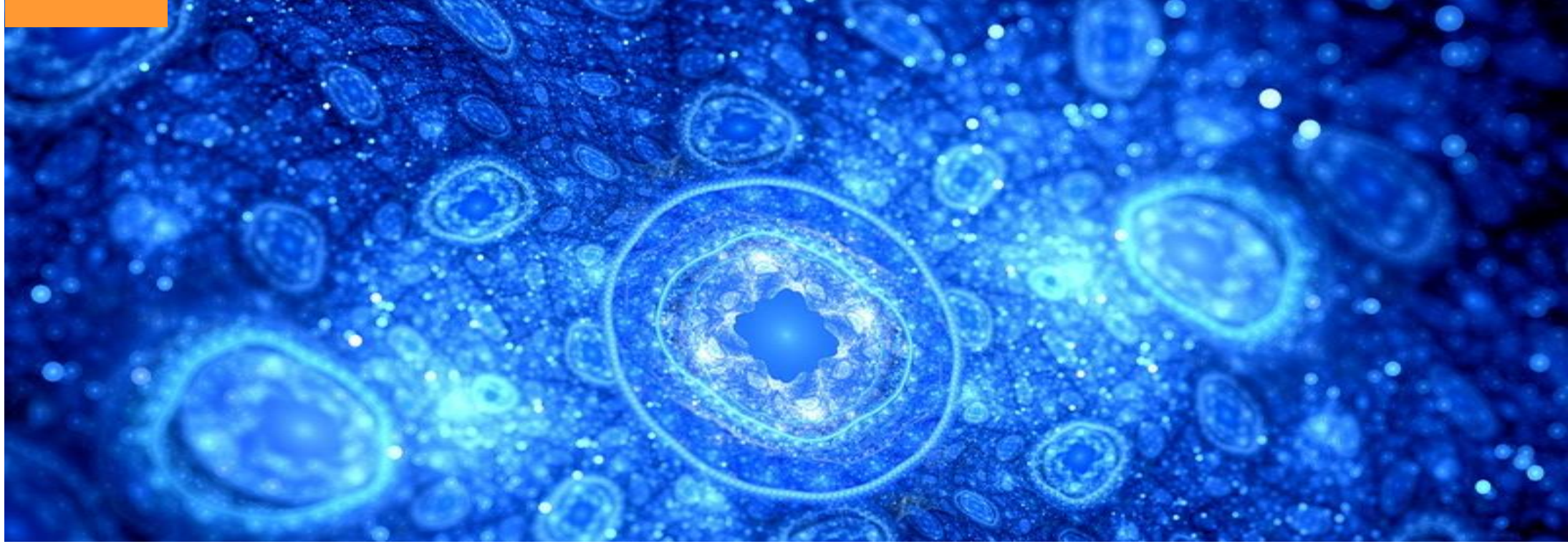
Policy activities

SwissCore

Liaison office for Swiss research and innovation in Brussels (co-funding with the Swiss Confederation and Innosuisse)

SwissCore

Contact Office for European Research Innovation and Education



Funding schemes

Programmes

Other programmes

Sinergia

Aim

- Promote interdisciplinary and collaborative research projects that propose breakthrough research

Requirements

- Research across disciplinary boundaries and beyond existing models, theories or methods
- Goals can only be reached through the integration of elements from two or more disciplines
- Joint research approach of applicants with complementary expertise and knowledge
- Similar importance of all disciplines and applicants involved

Sinergia

Grant conditions

- 2 to 4 applicants and their groups collaborate closely in a network
- When 3 or 4 applicants, 1 can be based abroad, if expertise is not available in CH
- Eligibility and eligible costs as in project funding
- Only one Sinergia grant per person and period for all applicants
- Only one Sinergia application per applicant and deadline

Duration

- 1 to 4 years

Submission deadlines

- 1 June and 1 December

Special programmes for biology and medicine

Longitudinal studies
Multicentric, population-based or indication-specific studies with a longitudinal design

BioLink
Linking up biobanks for research purposes

Investigator initiated clinical trials (IICT)
Independent trials on under-researched topics outside the industry focus

Special programmes in mathematics, natural and engineering sciences

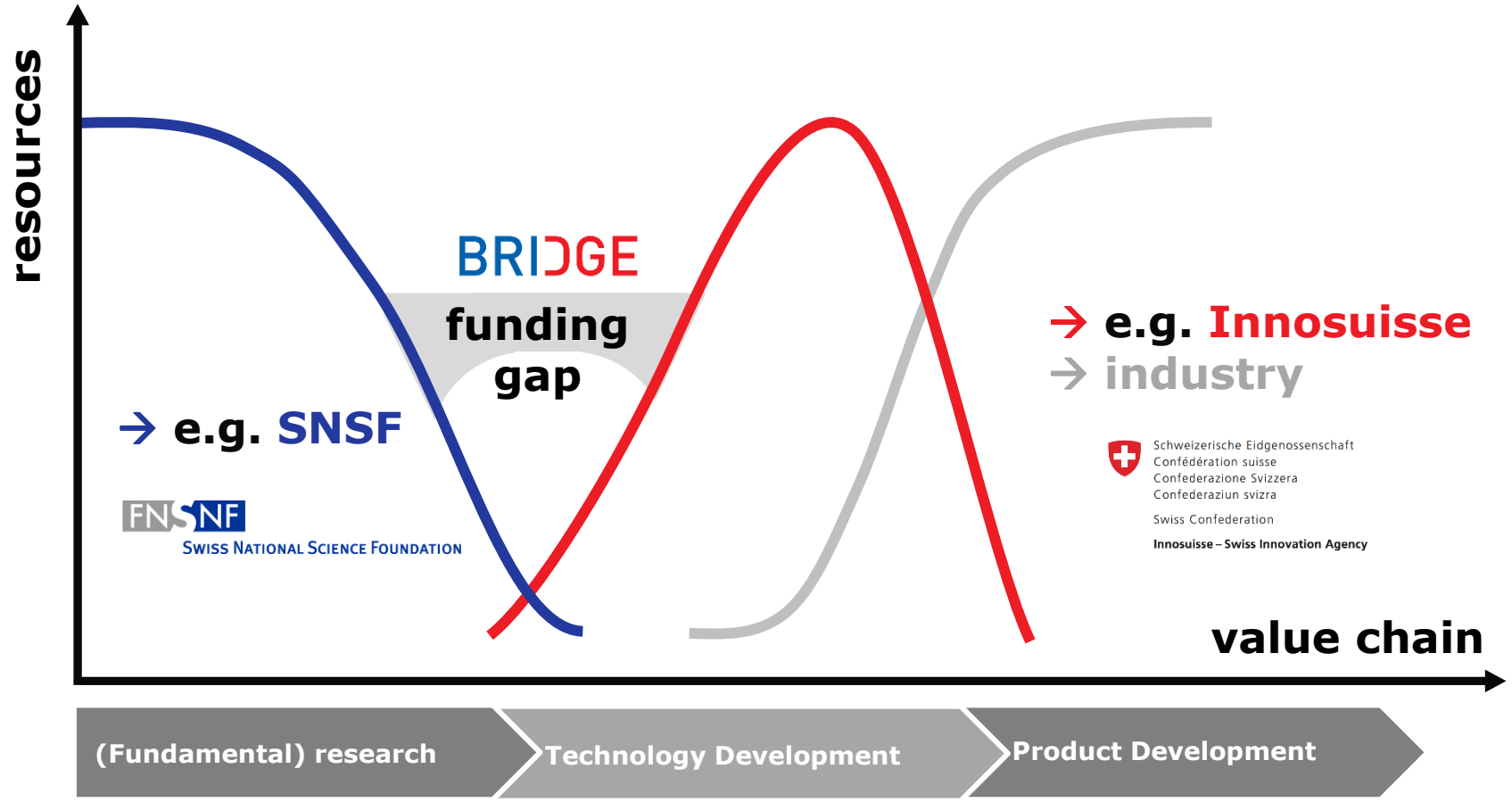
- **FLARE** (Funding LArge international REsearch projects)
- **CHIST-ERA** (Challenges in Information and Communication Sciences and Technologies
ERA-NET)

Funding schemes

Programmes

BRIDGE

BRIDGE the gap
«Bridge the gap between SNSF and Innosuisse funding»



Goal of the programme

Turn scientific results into economic or societal innovations

BRIDGE

- Fosters the economic and social potential of scientific research
- Supports projects in the critical precompetitive phase that have a clear vision of potential application
- Facilitates cooperation between Universities, ETHs, research institutes and Universities of Applied Sciences

BRIDGE – SNSF & Innosuisse funding scheme

Scientific findings as added value for the economy & society

Proof of concept

- Scientific results turned into market or societal potential
- Young researchers develop an application from their research results
- Open to all types of innovation

Discovery

- Interaction between basic and applied research to realise the innovation potential of scientific results
- Centred on technological innovation
- Importance of societal and economic impact

Proof of Concept (PoC)

	PoC (Proof of Concept) for individual young researchers
Applicants	At least bachelor's degree
Requirements for the project	Applicant's own scientific results Science is peer-reviewed or documented
Topic	Any type of innovation or research field
Calls	Up to 4 calls per year
Eligible costs	Max. 130,000 CHF per year – 100% of applicant's salary – Costs directly related to project Max. 15% overhead
Duration	12 months + possibly 6 months
Evaluation criteria	Expected economical or societal impact Feasibility Competences of the applicant: innovation, entrepreneurial and managerial
Evaluation procedure	PoC Evaluation Panel and external experts – Evaluation of submitted documents – Interview with the applicant Decision within 3 months
Support	Innosuisse Start-up Training Access to patent searches by the Swiss Federal Institute of Intellectual Property (IPI) Innosuisse Initial Coaching as an option

Discovery

	Discovery for individual applicants and small consortia
Applicants	Experienced researchers Up to 3 applicants from different research institutes
Requirements for the project	Excellent science and high-impact innovation
Topic	Technological innovation
Calls	Up to 2 calls per year (first call launched Dec 2016) One project per applicant
Eligible costs	Project budget: – Salaries of project personnel – Costs directly related to project Max. 15% overhead paid to the host institution
Duration	Up to 4 years
Evaluation criteria	Scientific quality going beyond state of the art Credible vision of impact and implementation Competence of the applicants: scientific, entrepreneurial and management The project must include a convincing roadmap towards implementation
Evaluation procedure	Discovery Evaluation Panel and external experts – Evaluation of submitted documents – External expert reviews – Interview with the applicant Decision within 5-7 months

Funding schemes

Infrastructures

Infrastructures

*PhD or 3 years of research experience

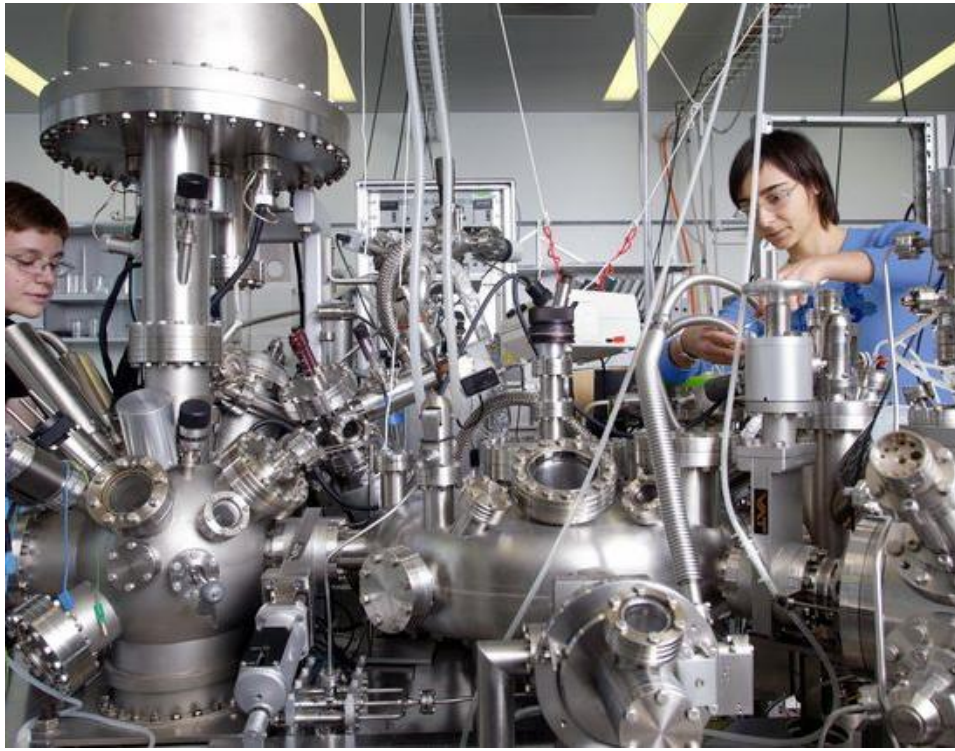
Infrastructures

The SNSF awards infrastructure grants that directly support specific research goals. These grants are in particular awarded as initial financing.

R’ Equip (Research Equipment)

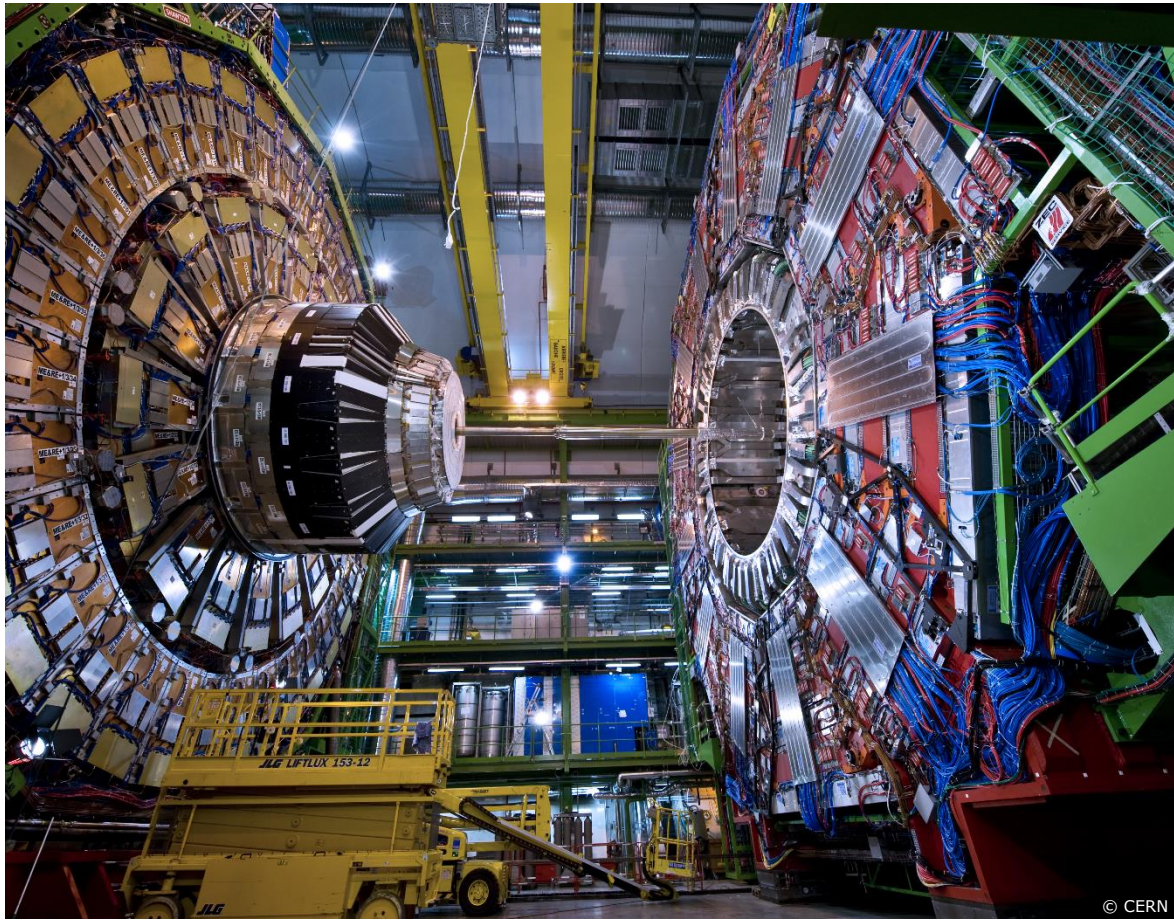
R’Equip is a separate funding scheme for equipment used in research projects:

- Only for apparatuses and instruments amounting to at least 100 kCHF
- SNSF contributes generally up to 50% and up to a maximum of 1 MCHF
- Not for research instrumentation, which is part of the basic infrastructure of a research laboratory



FLARE (Funding LArge international REsearch projects)

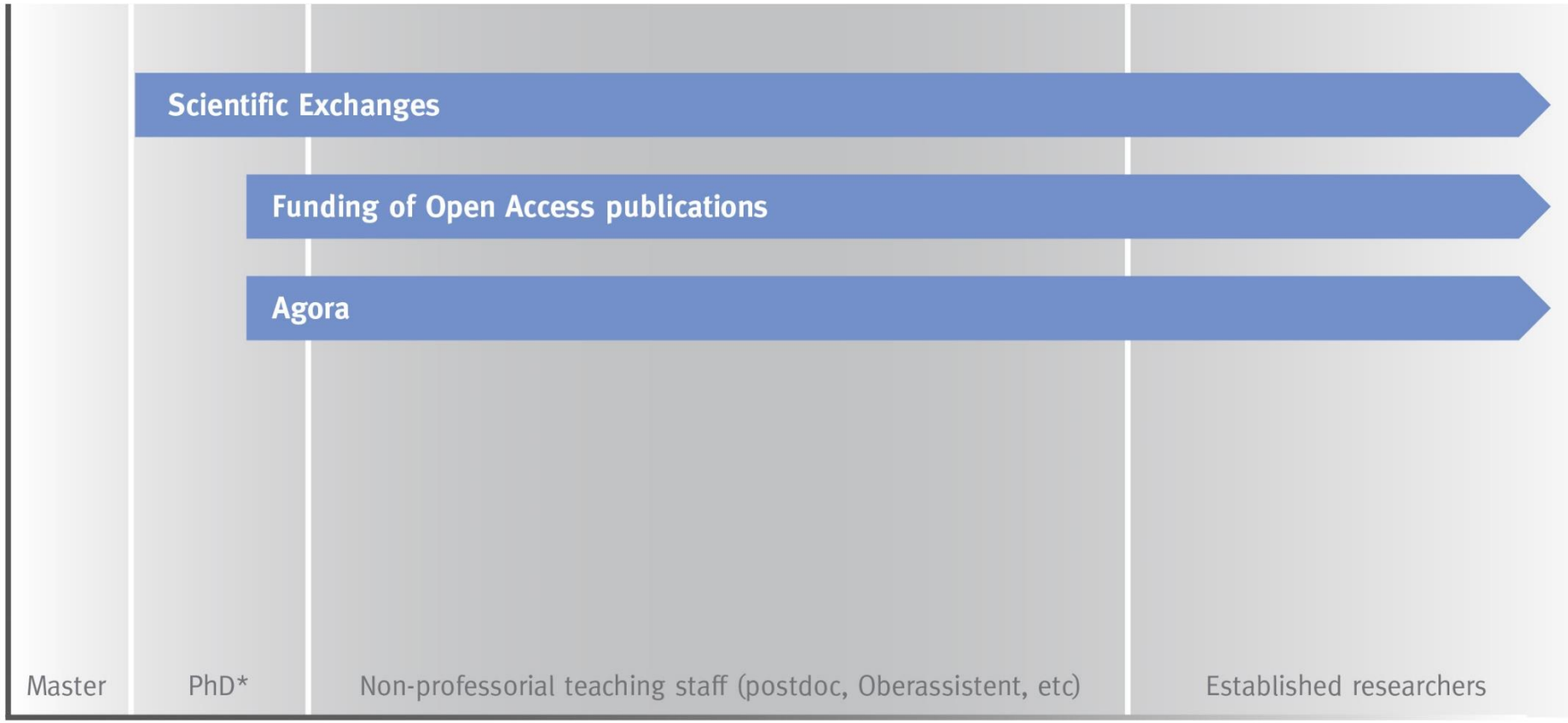
- Limited to the field of particle physics, astrophysics and astroparticle physics
- For participation in the development, construction, maintenance and operation of international instruments and experiments



Funding schemes

Science communication and exchange

Science communication and exchange



*PhD or 3 years of research experience

Science communication and exchange

Funds for communication between researchers and between science and society:

- Scientific Exchanges
- Funding of Open Access publications
- Agora

Scientific Exchanges

- Enables researchers in Switzerland to organise scientific conferences and workshops, as well as visits by Swiss researchers to other countries or visits by researchers from abroad to Switzerland
- Duration: 1-5 days / 1-6 months
- Covers the travel expenses and room and board costs of researchers taking part in the events or of visiting researchers

Funding of open access publications

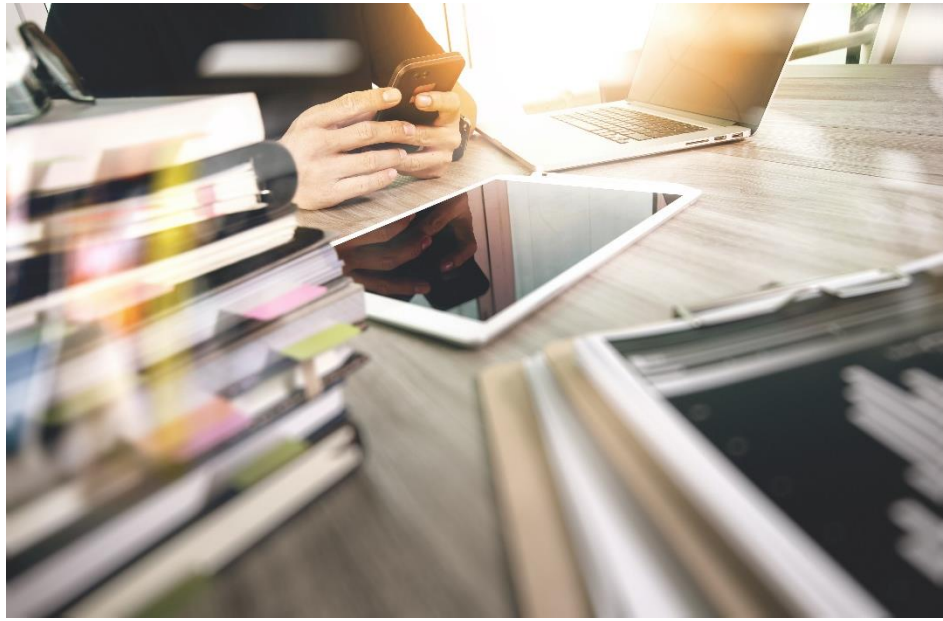
By 2020, all publications resulting from SNSF funding will need to be openly accessible, i.e. accessible to the public without paywall or any legal or technical obstacles.

- SNSF covers the costs of high-quality publications in pure OA journals, OA books and openly accessible book chapters (gold OA).
- Article processing charges (APCs), book processing charges (BPCs) and book chapter processing charges (BCPCs) can be requested via the OA platform of the SNSF regardless of the duration of the grant.

Open access book publications

Publishing open access books

- For book publications with or without links to SNSF-funded research and regardless of the grant duration
- Book processing charges (BPCs) for book publications that are available in open access without delay (gold OA)
- Only for peer-reviewed book publications
- Modular funding model, depending on length and degree of enrichment of the publication



Agora – promoting dialogue between science and society

Conditions

- Duration: max. 3 years
- Budget: CHF 5,000 – 200,000
- Submission: 1 September
- Doctoral students to established researchers
- Communication of peer-reviewed research
- Collaboration with experts in communication, knowledge transfer and culture

Agora

Agora Rolling Call

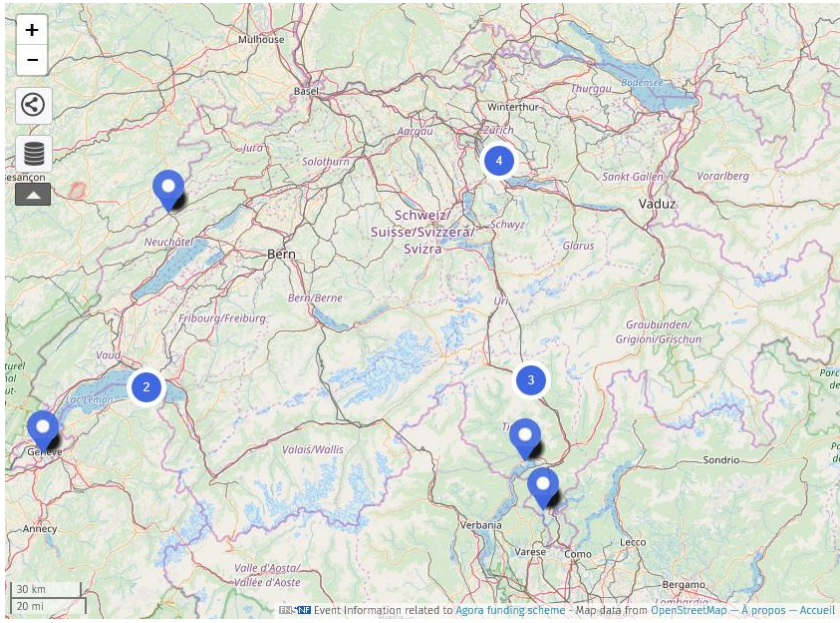
- Budget: CHF 5,000 – 50,000
- No submission deadline, 1 resubmission possible
- Funding decision within three months of submission

Optimus Agora

- Prize for promising projects with high communication potential
- Consolidate and extend communication knowledge
- Collaboration with Swissnex San Francisco

Agora map

- www.snsf.ch/agoramap
- Shows upcoming events
- Agora grantees can add their events
- Possibility of viewing previous events



The SNSF Open Research Data Policy

The SNSF values research data sharing as a fundamental contribution to the **impact**, **transparency** and **reproducibility** of scientific research. In addition to being carefully curated and stored, the SNSF believes research data should be shared as openly as possible.

For further information:

http://www.snf.ch/en/theSNSF/research-policies/open_research_data/

The SNSF Open Research Data Policy

- **Data Management Plans** (DMPs) are a **formal requirement** at project submission.

  ⇨ *applicants need to give thought to management of their data*

- DMPs are shared on **P3** (SNSF's **public database**) once the project has ended

  ⇨ *Open DMPs at end of funding period: community exposure*

- SNSF expects **published data** to be shared on **public repositories**: as soon as possible, but at the latest at the time of publication of the respective scientific output.

  ⇨ *publicly funded data are open to public*

Ethical, confidentiality, legal or technical issues can be mentioned in the DMP; the SNSF takes these comments into account

The SNSF Open Research Data Policy

- Repositories need to be digital and conform to the **FAIR data principles**: data sets are **F**indable, **A**ccessible, **I**nteroperable and **R**eusable.

  ⇨ *selection criteria for repositories*

- SNSF contributes with **CHF 10,000/grant** to data preparation efforts/services and data uploading costs. Service or repository providers have to be **non commercial entities**.

  ⇨ *SNSF always pays costs of data preparation*

  ⇨ *no other payments if the repository is commercial*

- SNSF values data sharing when assessing the scientific output of researchers (**DORA**)

Funding approved in 2020

Ongoing SNSF projects

6,000

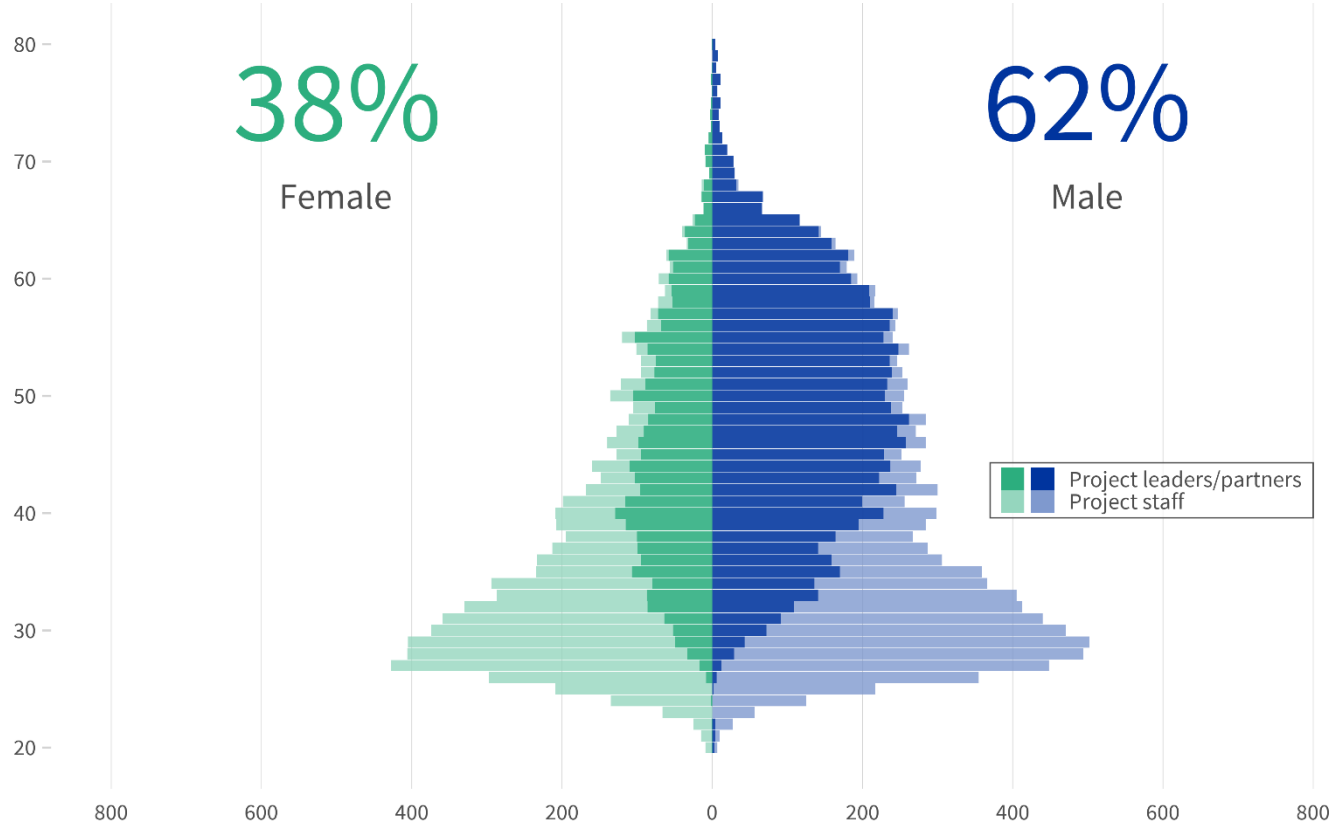
Ongoing SNSF projects

20,000

Researchers in projects

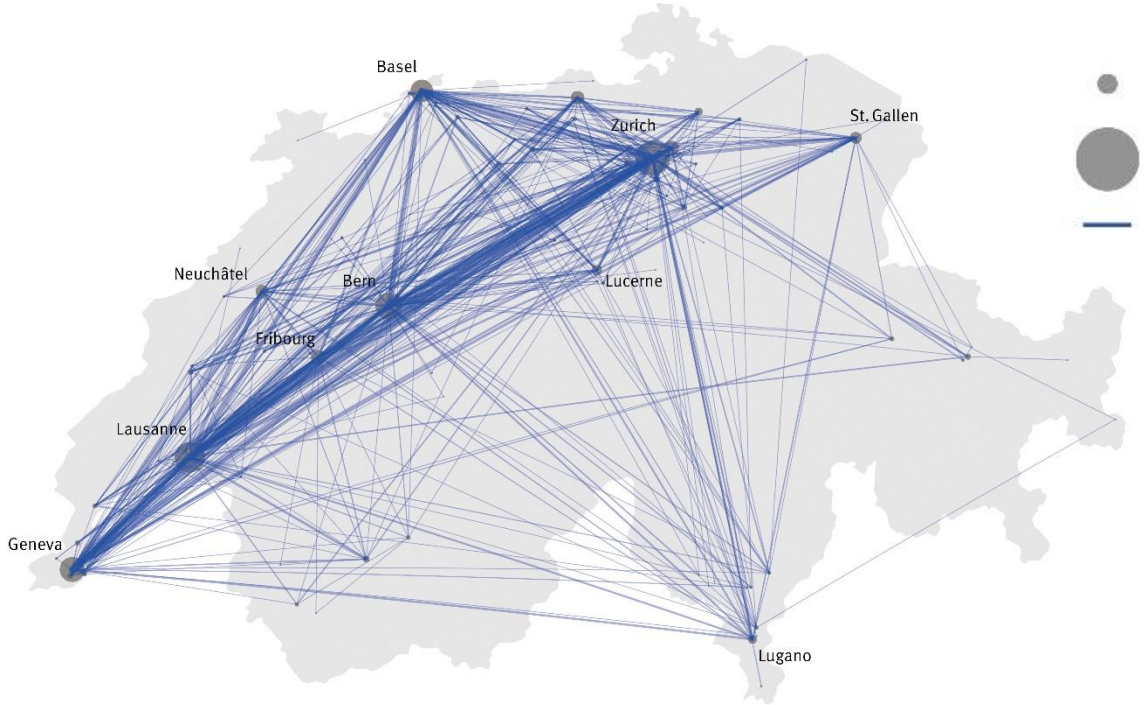
Data 2020

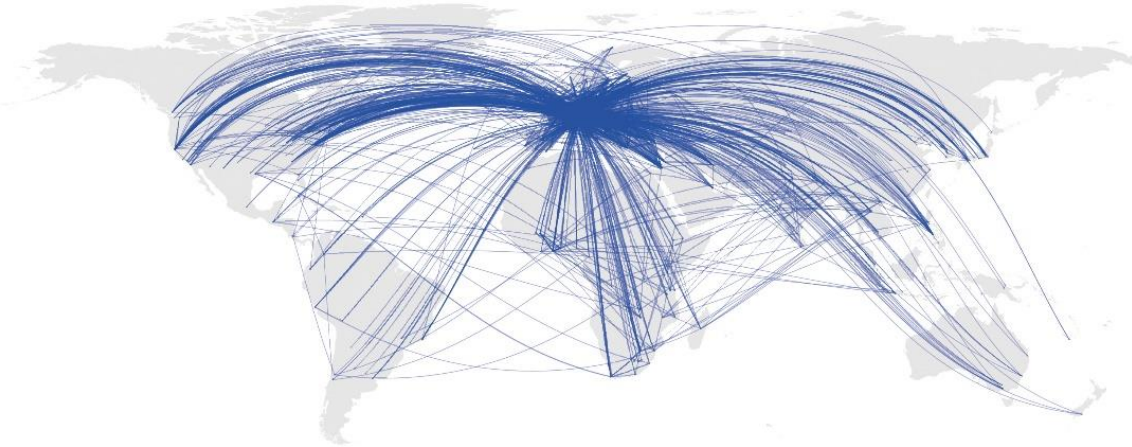
Researchers in projects according to age and gender



Data 2020

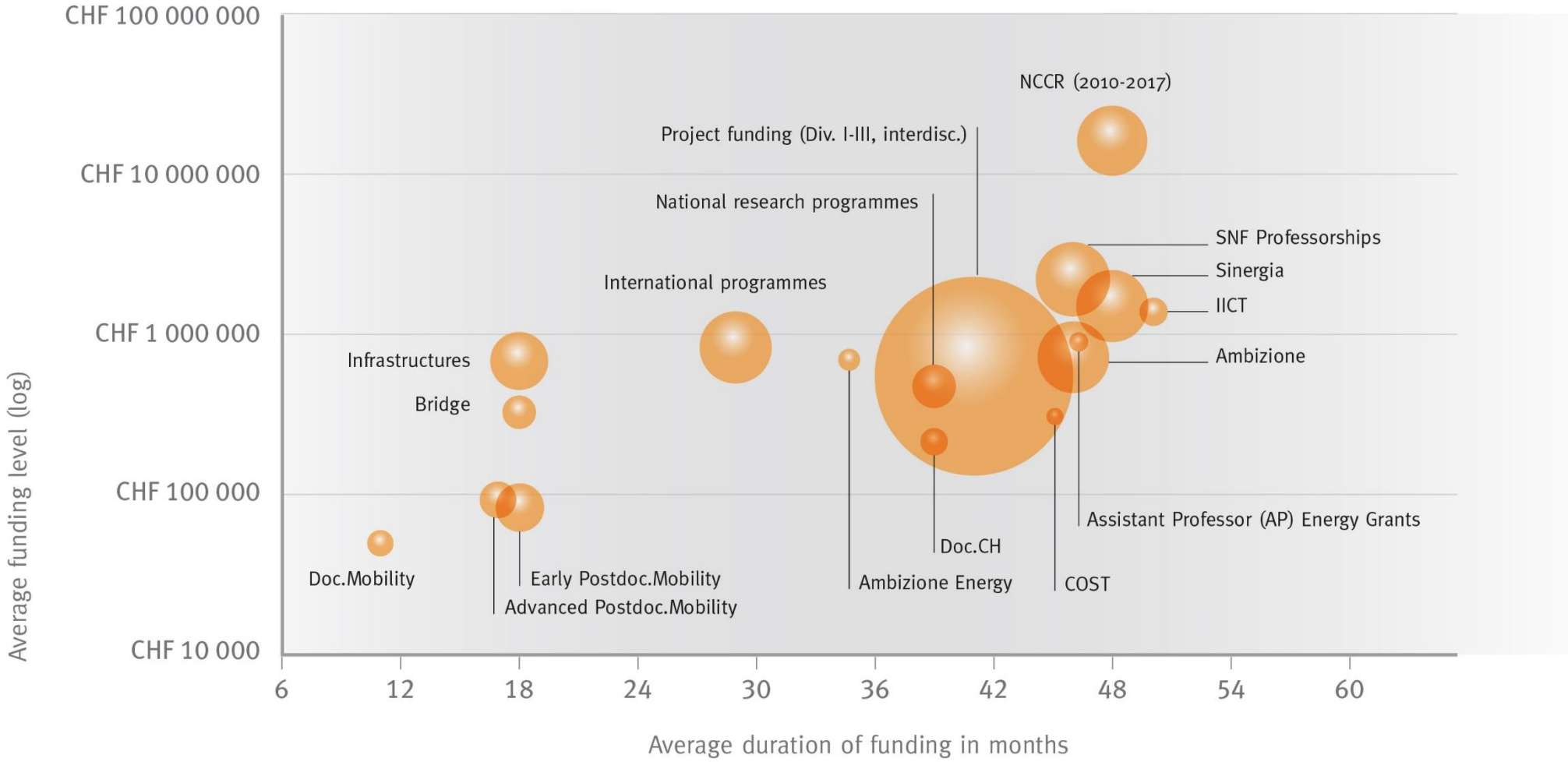
Collaboration at Swiss and international level





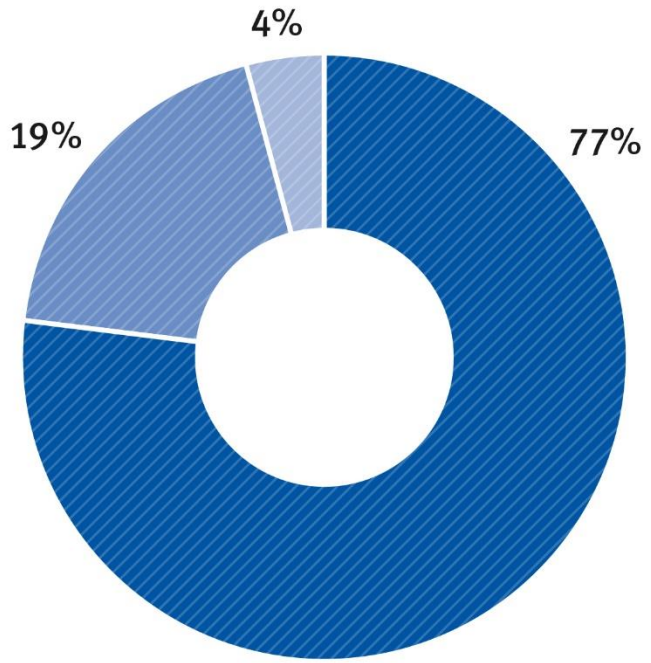
Data 2017

Approved funding – average grant amount and duration by funding scheme



Data 2017

Use of approved amounts

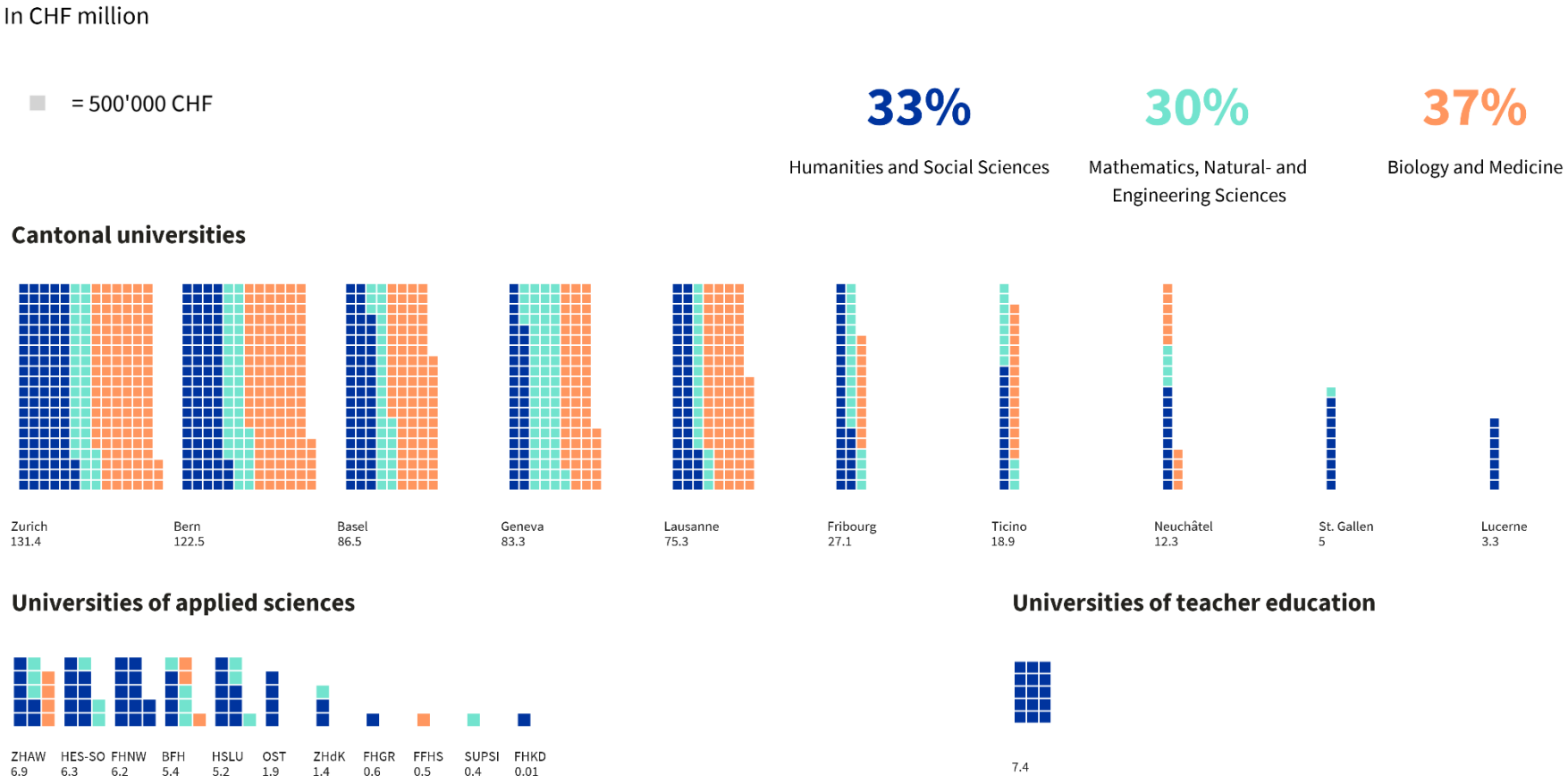


- Salaries and fellowships (incl. social security contributions)
- Research funds
- Materials of enduring value

Total: CHF 1037 million

Data 2017

Funding by institution and discipline (1)

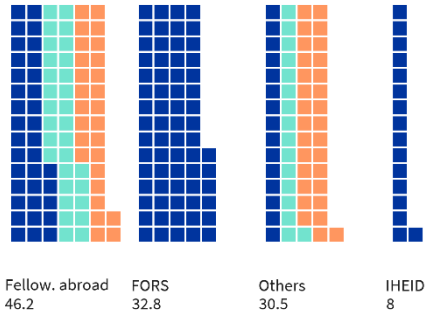


Data 2020

Funding by institution and discipline (2)

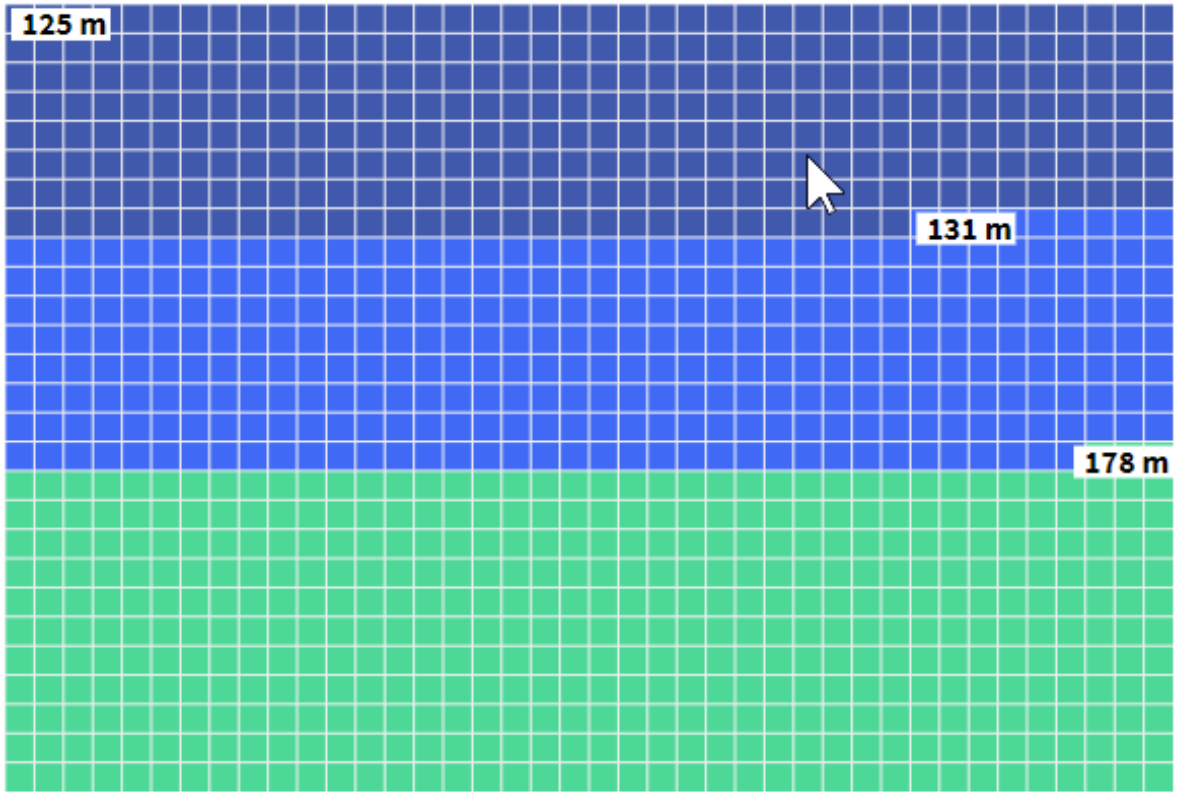
ETH domain

Others



Approved amounts in CHF million
Data 2020

Projects – Funding by research area



- Humanities and Social Sciences (125 m)
- Mathematics, Natural- and Engineering Sciences (131 m)
- Biology and Medicine (178 m)

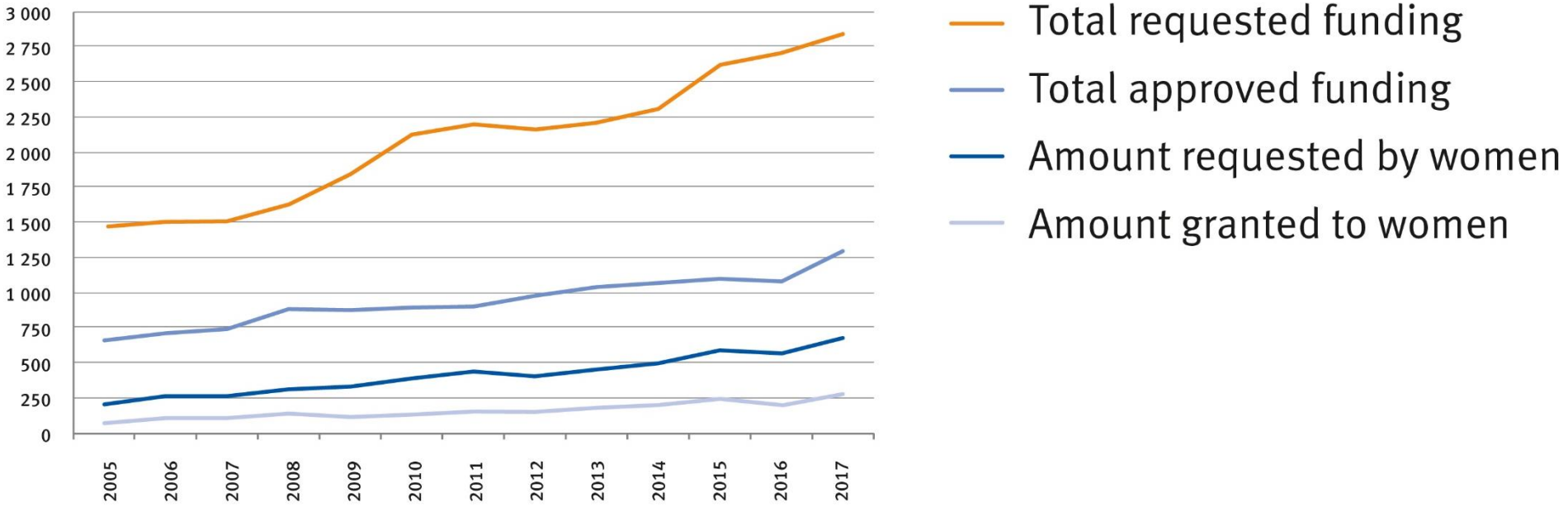
Total :

434

CHF million

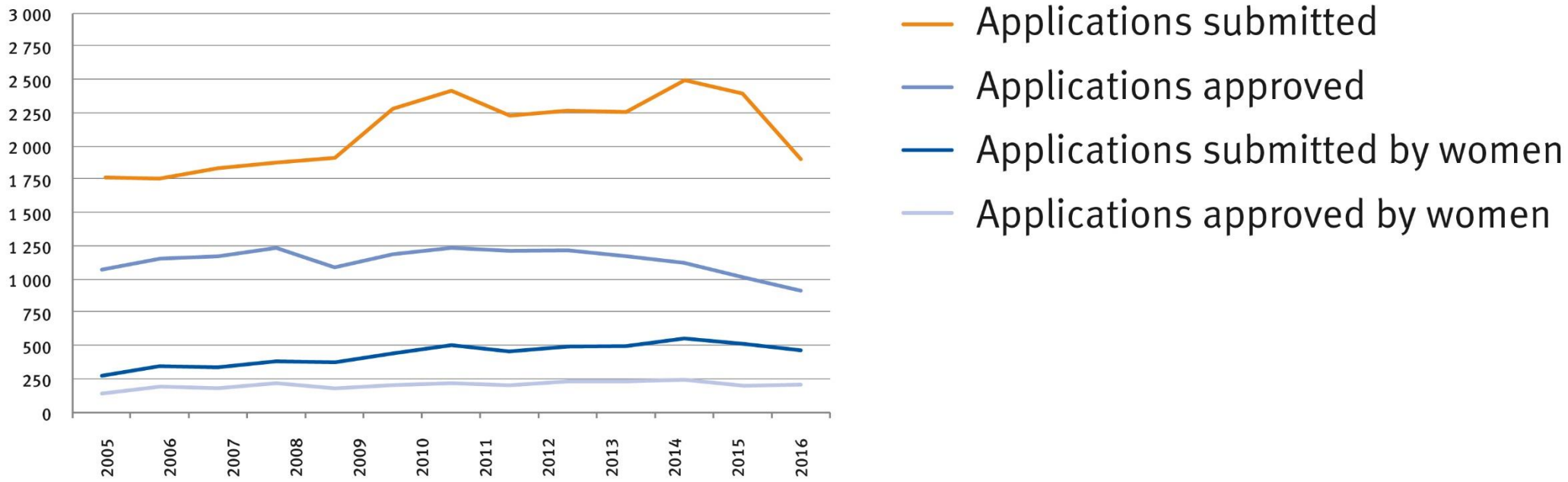
Data 2020

Projects - Amount of funding requested and approved since 2005



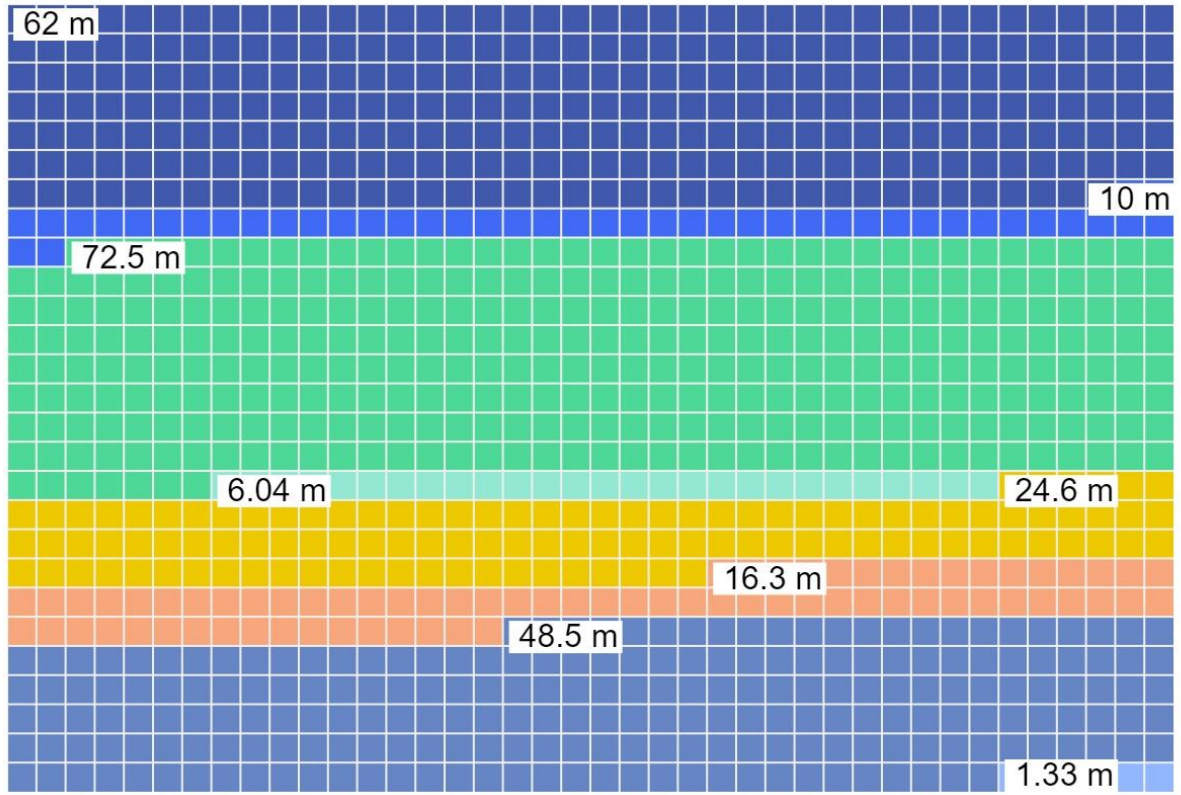
Data 2017

Projects - Number of applications and grants since 2005



Data 2017

Careers – Funding by scheme



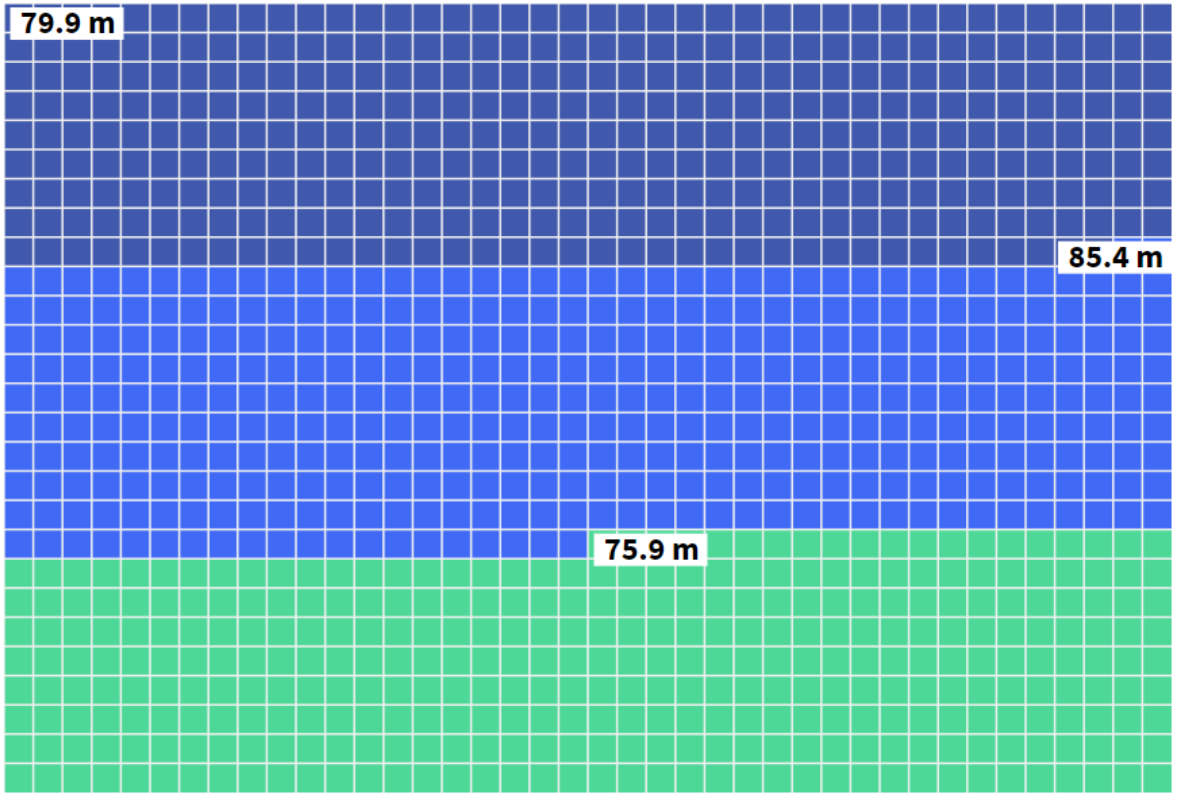
Total :

241

CHF million

Data 2020

Careers – Funding by research area



- Humanities and Social Sciences (79.9 m)
- Mathematics, Natural- and Engineering Sciences (85.4 m)
- Biology and Medicine (75.9 m)

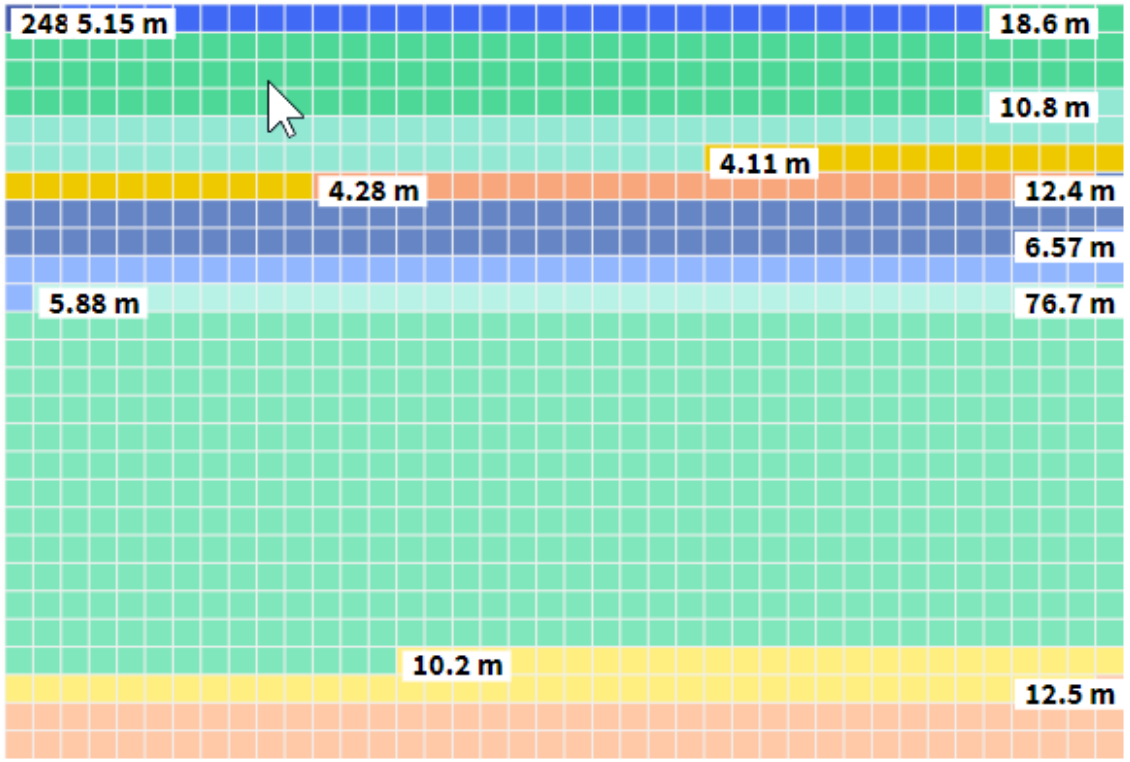
Total :

241

CHF million

Data 2020

Programmes – Funding by scheme



- Bilateral programmes (248,000)
- NRP 77 Digital Transformation (5.15 m)
- NRP 78 Covid-19 (18.6 m)
- Bridge - Discovery (10.8 m)
- Bridge - Proof of Concept (4.11 m)
- COST (European Cooperation in Science and Technology) (4.28 m)
- Investigator Initiated Clinical Trials (IICT) (12.4 m)
- r4d (Swiss Programme for Research on Global Issues for Development) (6.57 m)
- SPIRIT (5.88 m)
- Sinergia (76.7 m)
- ERA-NET (10.2 m)
- Special Call on Coronaviruses (12.5 m)

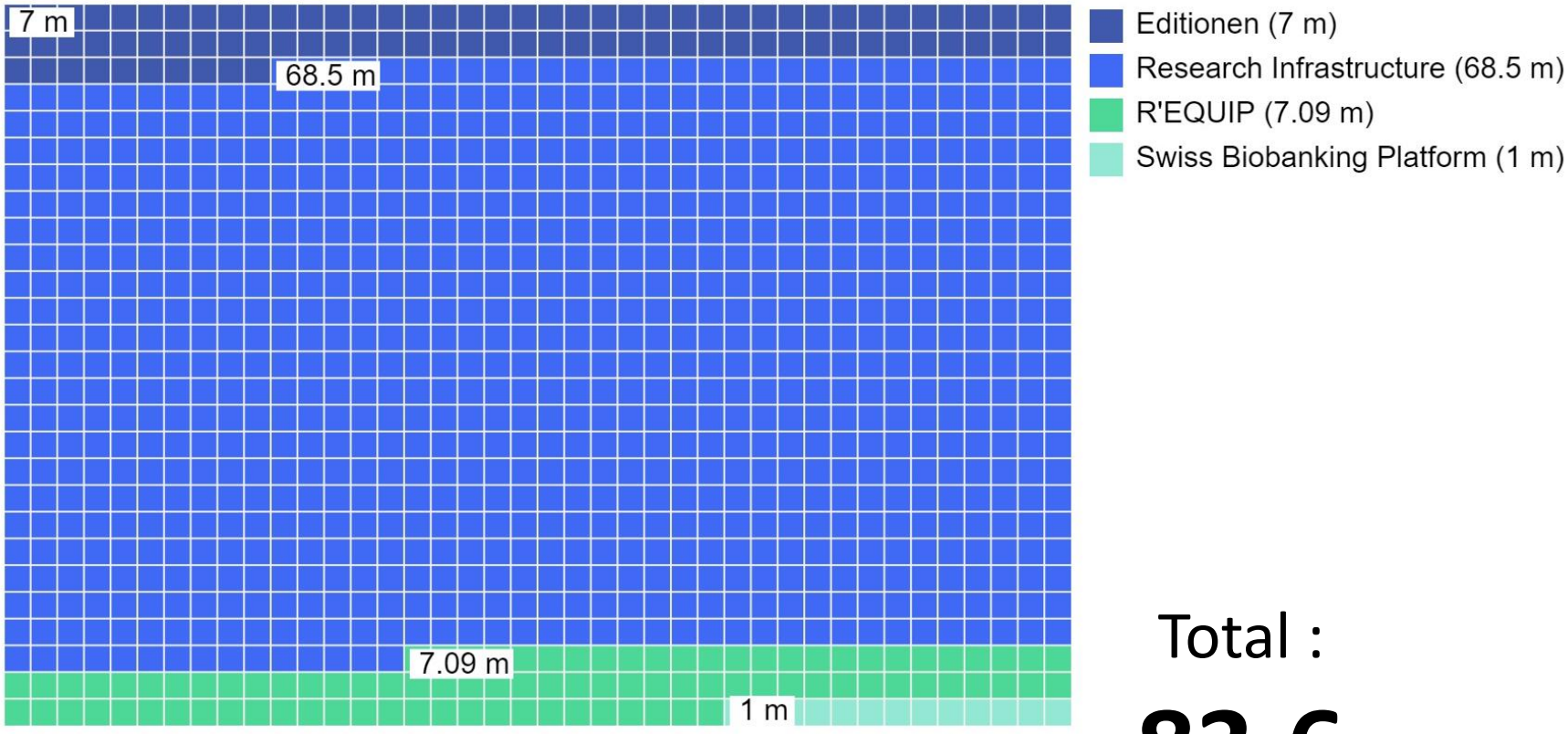
Total :

167

CHF million

Data 2020

Infrastructures – Funding by scheme



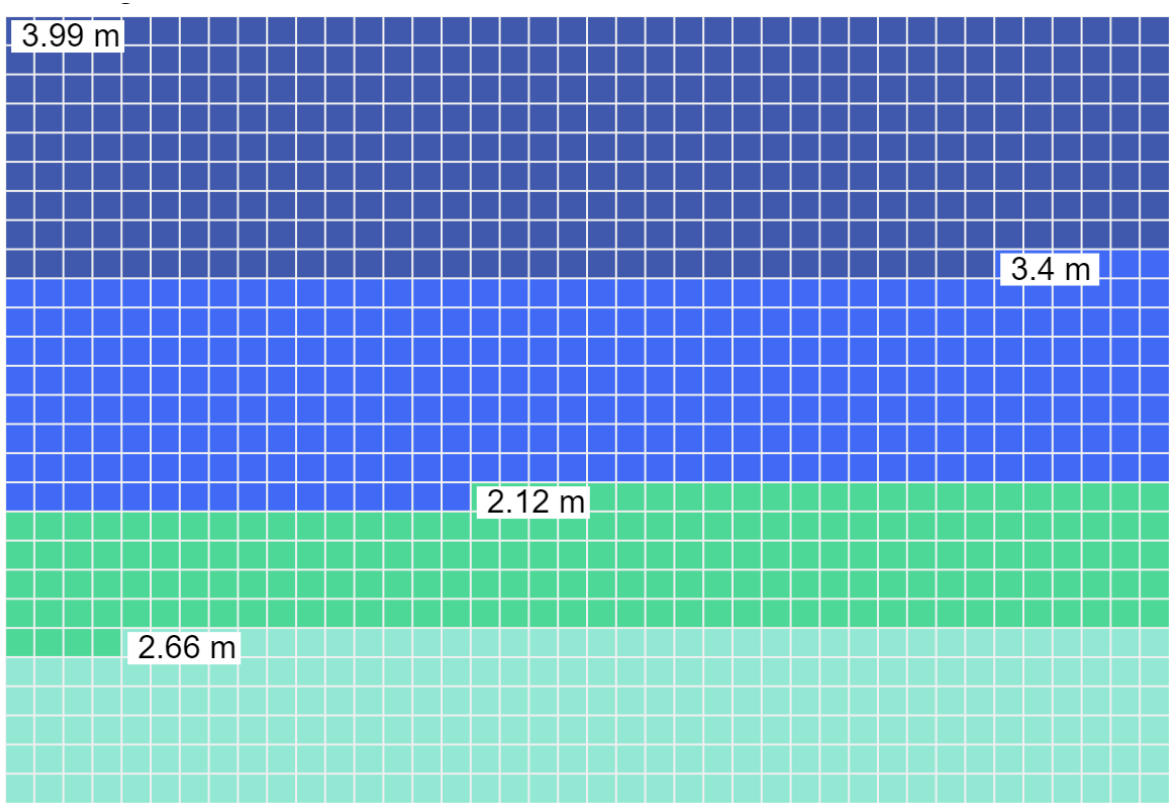
Total :

83.6

CHF million

Data 2020

Science communication – Funding by scheme



Agora (3.99 m)
Open Access Books (3.4 m)
Open Access Article (2.12 m)
Scientific Exchanges (2.66 m)

Total :

12.2

CHF million

Data 2020

Swiss research landscape

Switzerland – Key facts (I)

A small country

- Population: 8’619’259 people
- Area: 42,000 km2
- Limited natural resources

An open country

- Official languages: German, French, Italian, Rhaeto-Romance
- 25.1% of Swiss inhabitants of foreign origin
- 1 franc out of 2 in the GDP from exports

Switzerland – Key facts (II)

International higher education and research

- 25,7% of students are from abroad
- 56% of PhD candidates are from abroad
- 39% of teaching staff at universities are from abroad

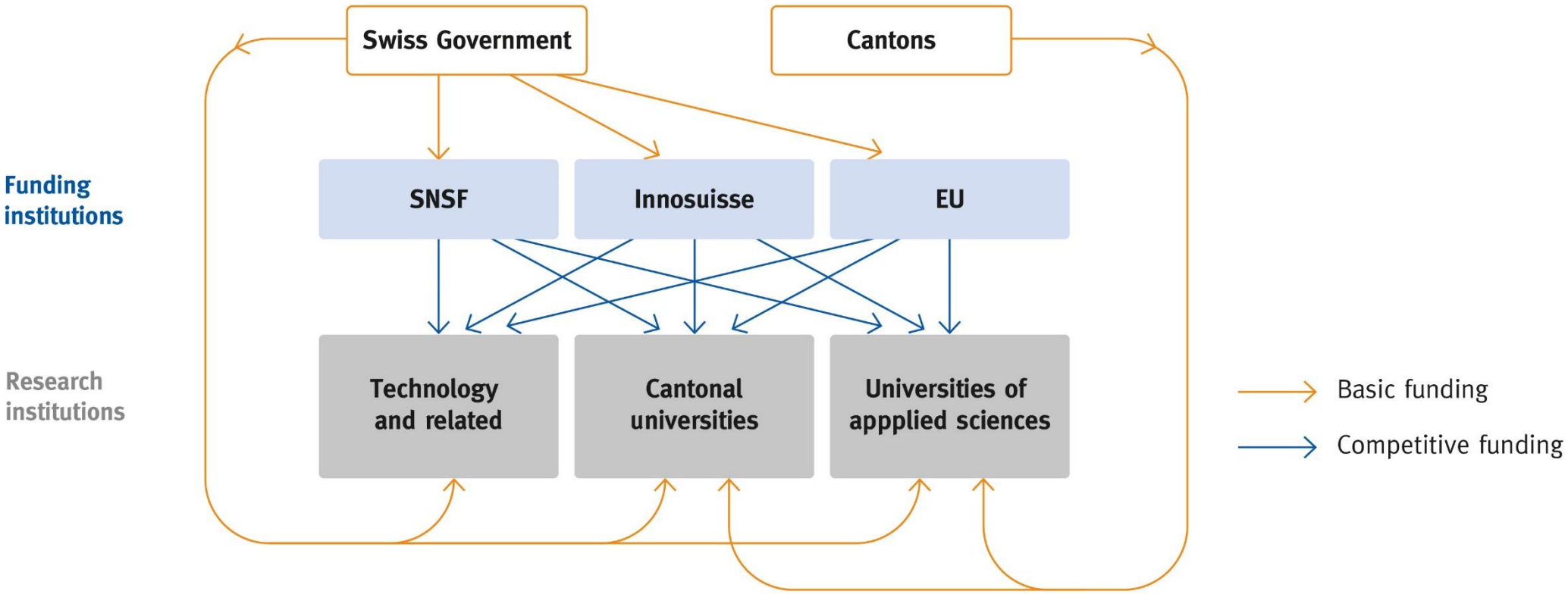
Policy context (I)

- Legal basis: Research and Innovation Promotion Act RIPA
- Every four years: Federal Council's Message/Dispatch on the Promotion of Education, Research and Innovation, approved by parliament
- Service Level Agreement between the SNSF and the State Secretariat for Education, Research and Innovation (SERI)
- Monitoring by SERI

Policy context (II)

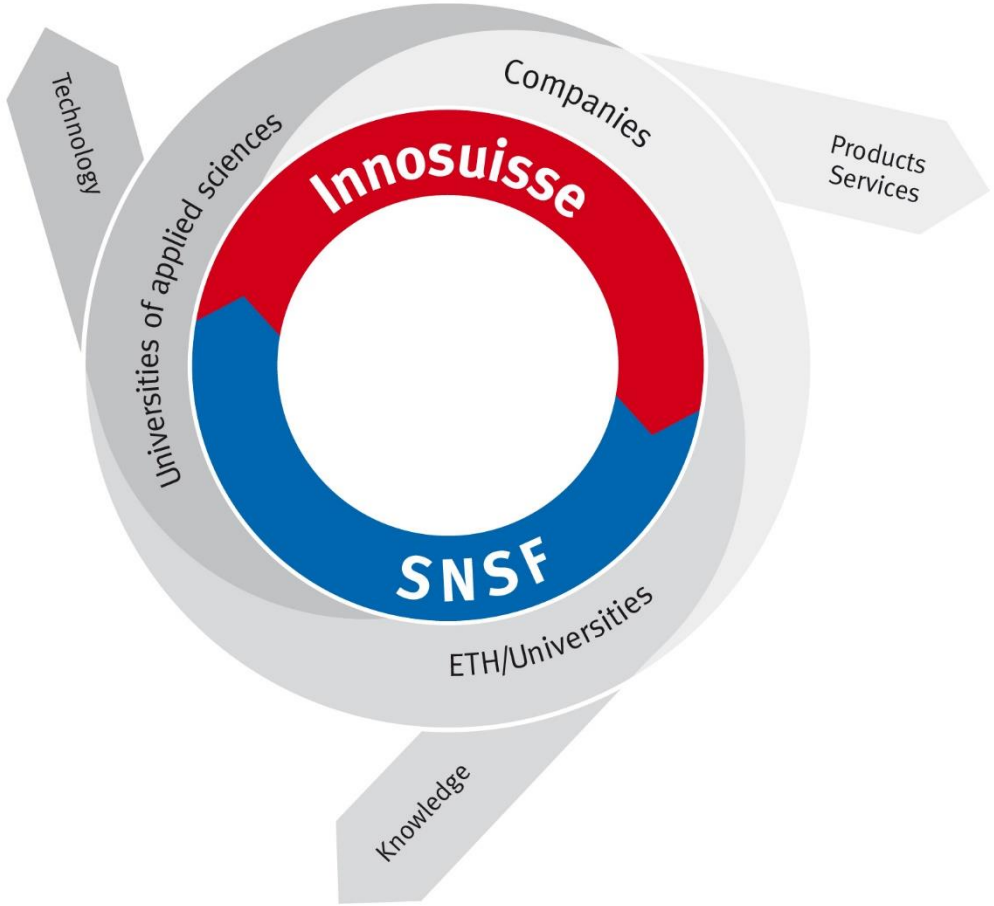
- Representation of Swiss science abroad: appointment of science counsellors to the Swiss embassies, Swissnex
- SwissCore: liaison office for Swiss research, innovation and education in Brussels

Main financial research flows in Switzerland



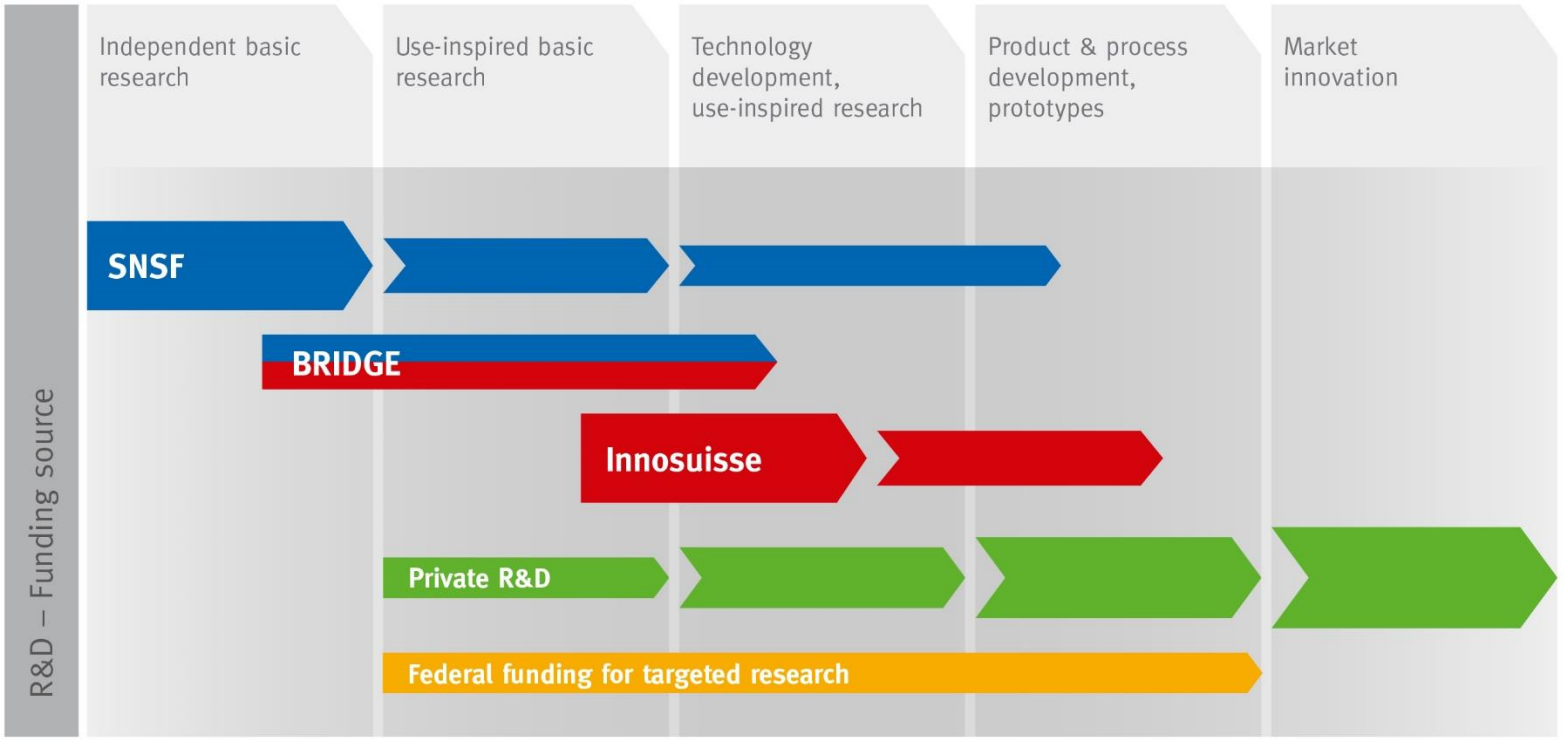
Partners in the innovation process

The SNSF and Innosuisse are important institutional partners and drivers of the innovation process spawned by research in Switzerland.



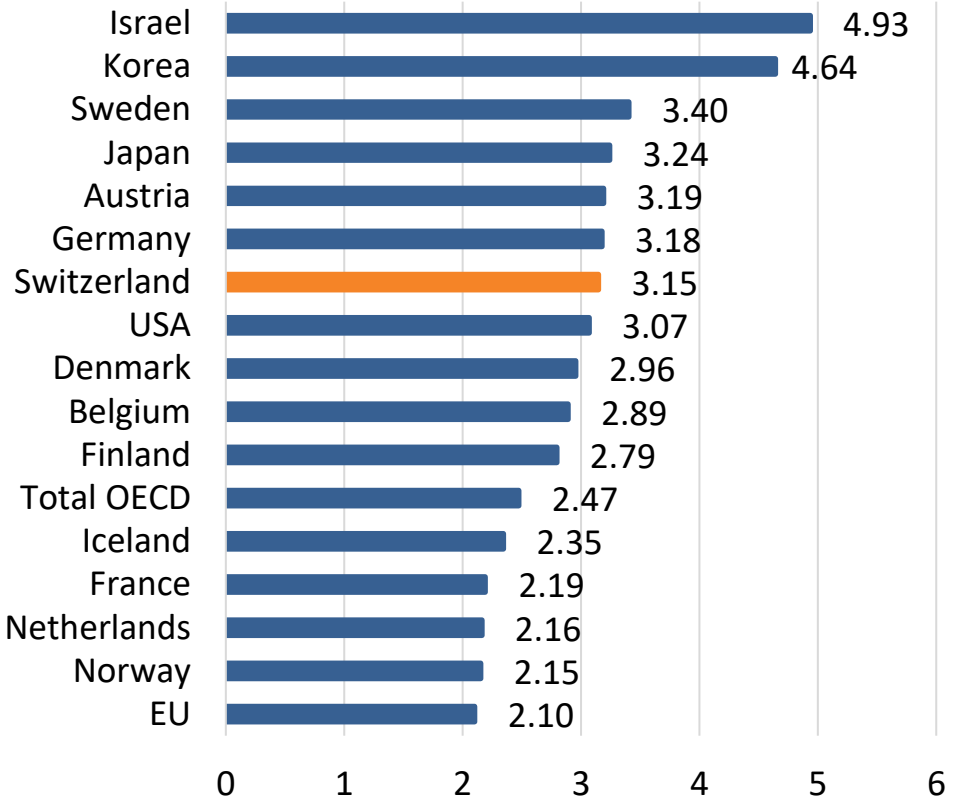
Partners in the innovation process

The SNSF and Innosuisse dovetail their services in project funding.



R&D: international comparison

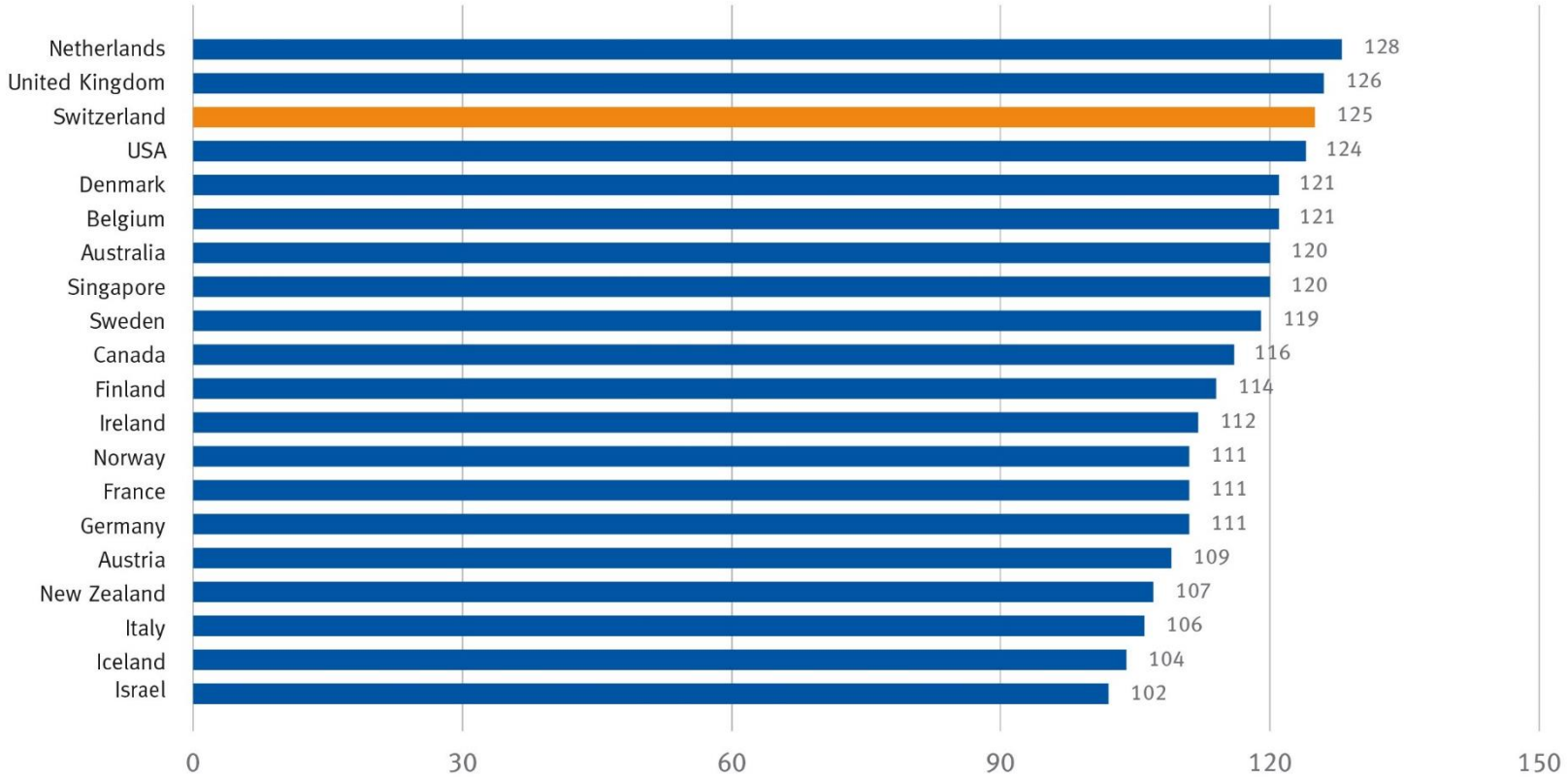
Gross domestic expenditure on R&D as a percentage of the GDP



Source: OECD; MSTI database. Data: 2019

R&D: international comparison

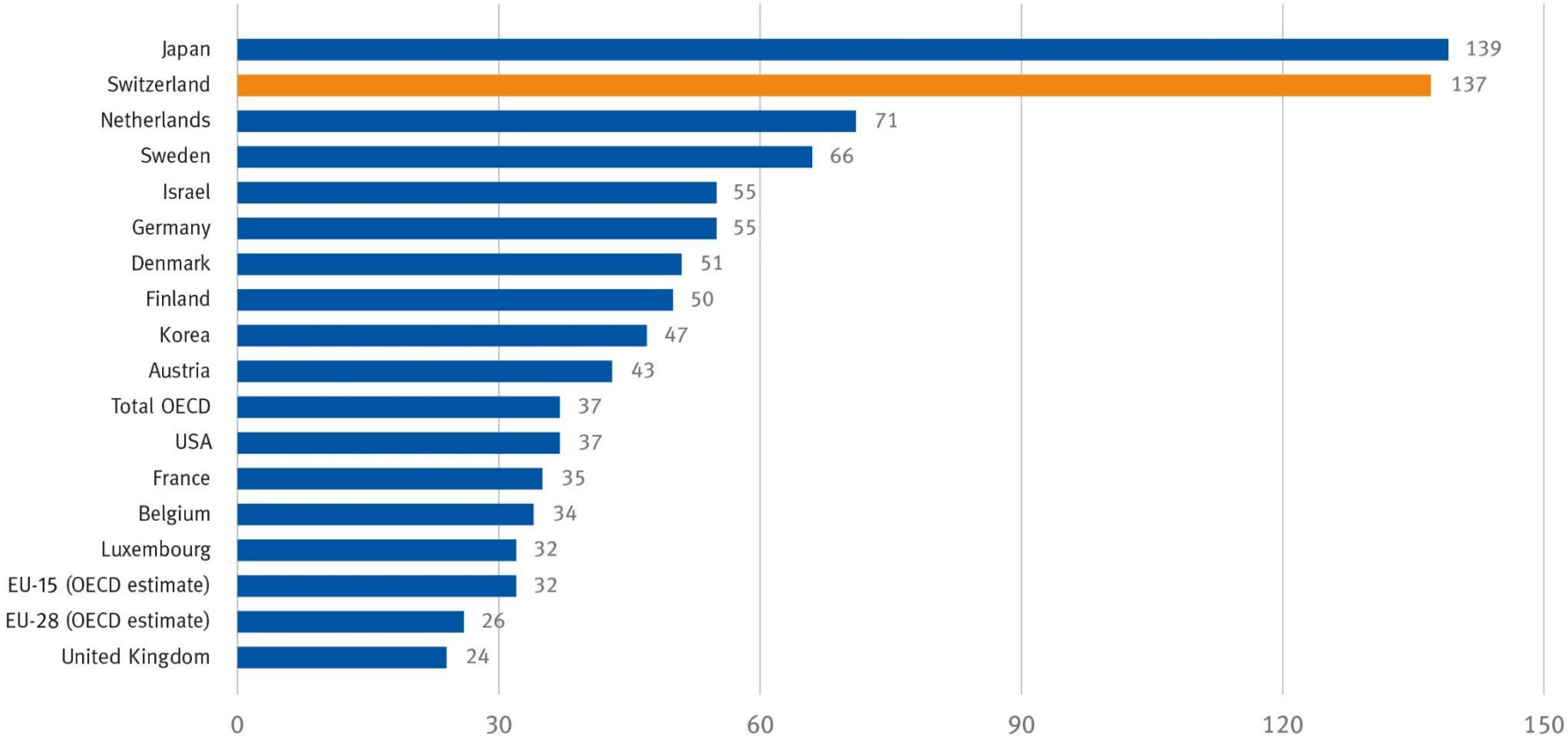
Relative citation index



Source: Clarivate Analytics (SCI/SSCI/A&HCI), adaptation SERI, 2020, calculations based on publications 2014-2018

Patents

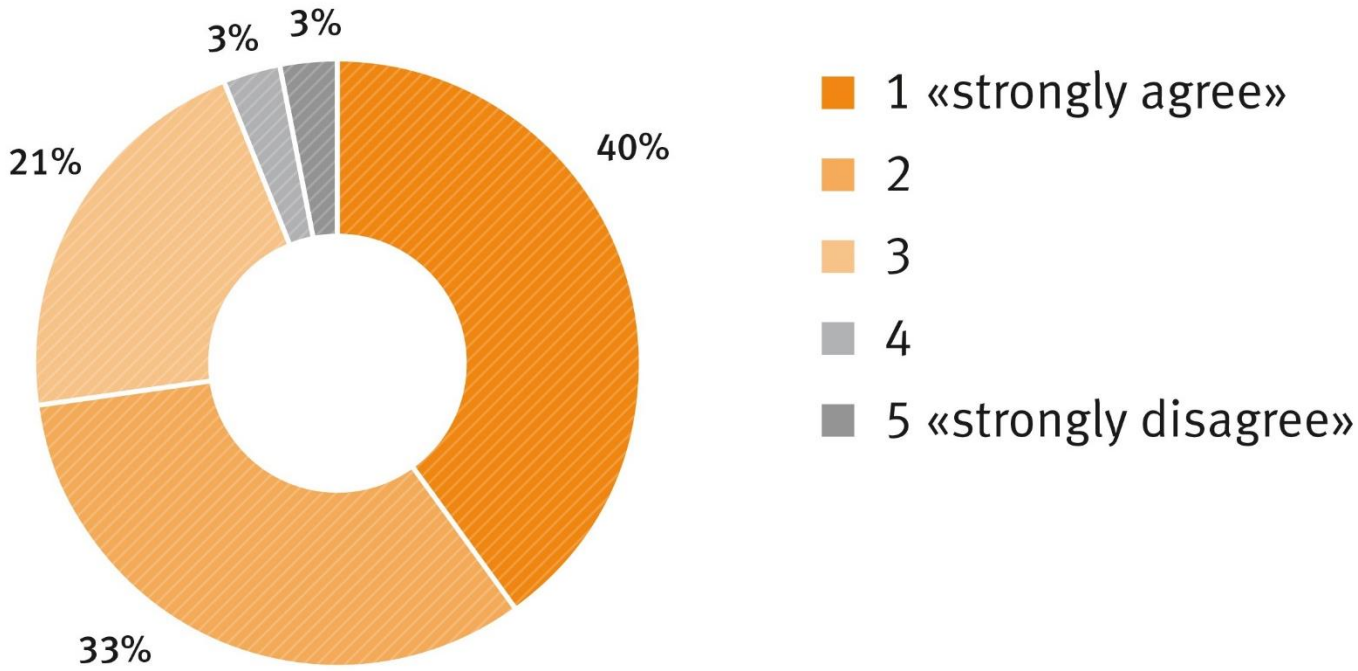
Number per million inhabitants



Source: Swiss Federal Statistical Office, OECD, MSTI database. Data 2017

Necessity of research

Is scientific research necessary even if there are no immediate practical benefits?
Scientific research should be state-funded – this is what most of the people in Switzerland think.



Based on interviews with 1,042 people; all data in percentages
Source: WissensCHaftsbarometer, University of Zurich and IPMZ. Data: 2019

Do you have any questions?

Further information

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Facebook.com/snf.fns.snsf.ch

Linkedin.com/company/snsf

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Twitter.com/snsf_ch

Instagram.com/swissnationalsciencefoundation

Final slides on the benefits of basic science

Humanities and social sciences

Knowledge is the key to the future

1950 Historian Rudolf Braun studies the daily lives of ordinary textile home-workers in Zurich.

2008 Switzerland adopts the UNESCO convention on safeguarding living traditions.

Knowledge is the key to the future

1994 Economist Ernst Fehr investigates the irrational motives that can guide economic decision-making.

2010 The consulting firm FehrAdvice begins to advise businesses and policy-makers on behavioural economics.

Knowledge is the key to the future

1932

Psychologist Jean Piaget publishes his book "The Moral Judgement of the Child".

Today

Many recognised teaching methods are still based on his work.

Knowledge is the key to the future

2005

Pedagogist Margrit Stamm investigates the reasons why children miss school.

2016

The cantons develop measures against truancy based on her findings.

Knowledge is the key to the future

2008

Computer scientists Marcus Hutter and Shane Legg draw up different definitions of intelligence.

2011

The start-up DeepMind sets out to develop artificial intelligence. The company is sold to Google in 2014, and in 2016 beats the reigning Go world champion.

Knowledge is the key to the future

1928 Statisticians Ronald Fisher and Leonard Tippet examine whether extreme values can be extrapolated from random samples.

2008 Regulatory bodies carry out stress tests with banks and insurances based on extreme event statistics.

Final slides on the benefits of basic science

Mathematics, natural and engineering sciences

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Knowledge is the key to the future

1834

Physiologist Ernst Heinrich Weber determines the minimum weight difference that is perceivable to humans.

1997

His findings are implemented in the cryptoglyph application, which renders original packaging fake-proof.

Knowledge is the key to the future

1946 Physicists Felix Bloch and Edward Purcell discover that atomic nuclei in a magnetic field absorb electromagnetic radiation.

1981 Magnetic resonance imaging (MRI) is used for the first time in clinical medicine.

Final slides on the benefits of basic science

Biology and medicine

Knowledge is the key to the future

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1946 Physicists Felix Bloch and Edward Purcell discover that atomic nuclei in a magnetic field absorb electromagnetic radiation.

1981 Magnetic resonance imaging (MRI) is used for the first time in clinical medicine.

Knowledge is the key to the future

1979 Biochemist Harry Towbin presents a method for detecting proteins using antibodies.

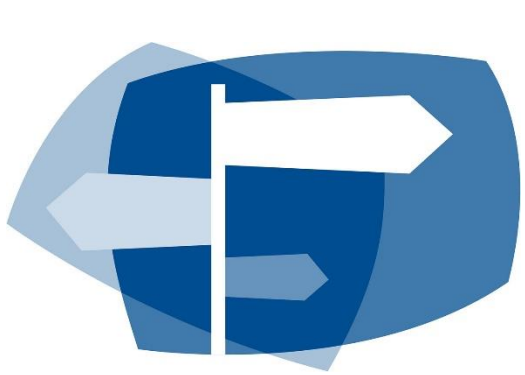
1987 US regulators approve western blotting as a diagnostic application for HIV infections.

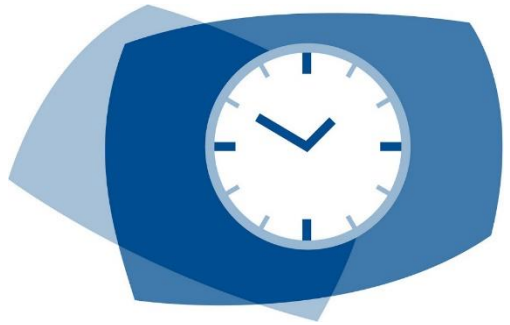
Knowledge is the key to the future

1957 Immunologists Alick Isaacs and Jean Lindenmann discover a substance that protects chicken embryos against flu viruses.

1983 Viral illnesses are frequently treated with interferon.

SNSF pictograms





SNSF pictograms