

Evaluating Interdisciplinary Research Proposals

The Experience of the Swiss National
Science Foundation

Andreas Sutter, Angelika Kalt, Bernhard Schmid



SWISS NATIONAL SCIENCE FOUNDATION

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- Introduction to the SNSF framework
- Characterisation of interdisciplinary proposals evaluated by the SNSF – applicants and projects
- Some thoughts and preliminary conclusions on the evaluation of interdisciplinary proposals
- Discussion: Inputs for improvement



Introduction to the SNSF framework



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Project Funding of the SNSF

- _ Main funding instrument of the SNSF (464 mio CHF in 2010)
- _ Free choice of research topics
- _ All scientific disciplines, including interdisciplinarity
- _ Two calls per year
- _ Evaluation by panels based on peer review
- _ Grant duration of 3 years, one continuation possible

Specialised Committee Interdisciplinary Research (FA-ID)

- _ Low success rates of interdisciplinary proposals in divisions
- _ Initiation of the FA-ID in 2006
- _ 8-12 members (2-3 from each division of the Research Council)

National Research Council (98 members)

Divisions

- I: Humanities and Social Sciences
- II: Mathematics, Natural and Engineering Sciences
- III: Biology and Medicine
- IV: Programmes

Specialised committees

Interdisciplinary research (currently 9 members)

Careers

International co-operation

Interdisciplinary proposals (IDS)

Evaluation

- _ Proposals declared interdisciplinary by applicants
- _ Prerequisites:
 - _ *Reciprocal interaction between and integration of two or more disciplines*
 - _ *Joint research aims and approach*
- _ Ca. 30-40 proposals per call (numbers increasing)
- _ Evaluation by ≥ 2 external reviewers (international) and referee + co-referee (FA-ID)
- _ Final decision taken by FA-ID through majority voting

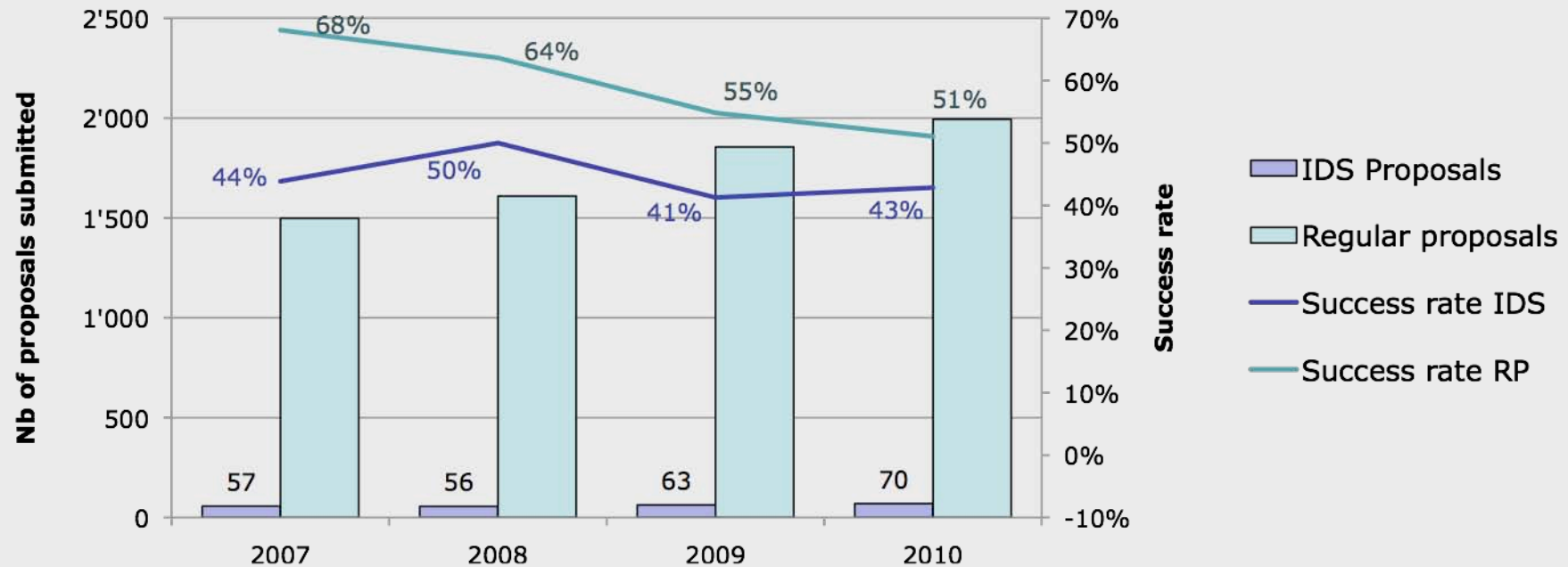
Interdisciplinary proposals (IDS)

Key figures

- _ 9 calls (October 2006 – October 2010)
- _ 264 interdisciplinary proposals (120.8 mio CHF)
- _ 118 projects funded (40 mio CHF)
- _ Research plans and CV
- _ Recommendations of referees, minutes, rejection letters

Interdisciplinary proposals (IDS)

Comparison with regular proposals



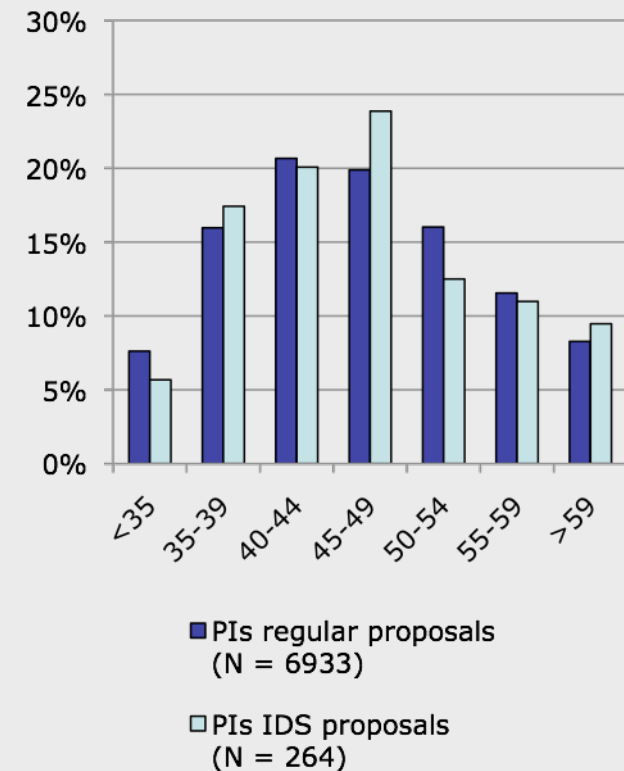
- _ Proposal numbers constantly increasing
- _ Success rates of regular proposals decreasing, IDS \pm stable

Interdisciplinary proposals (IDS)

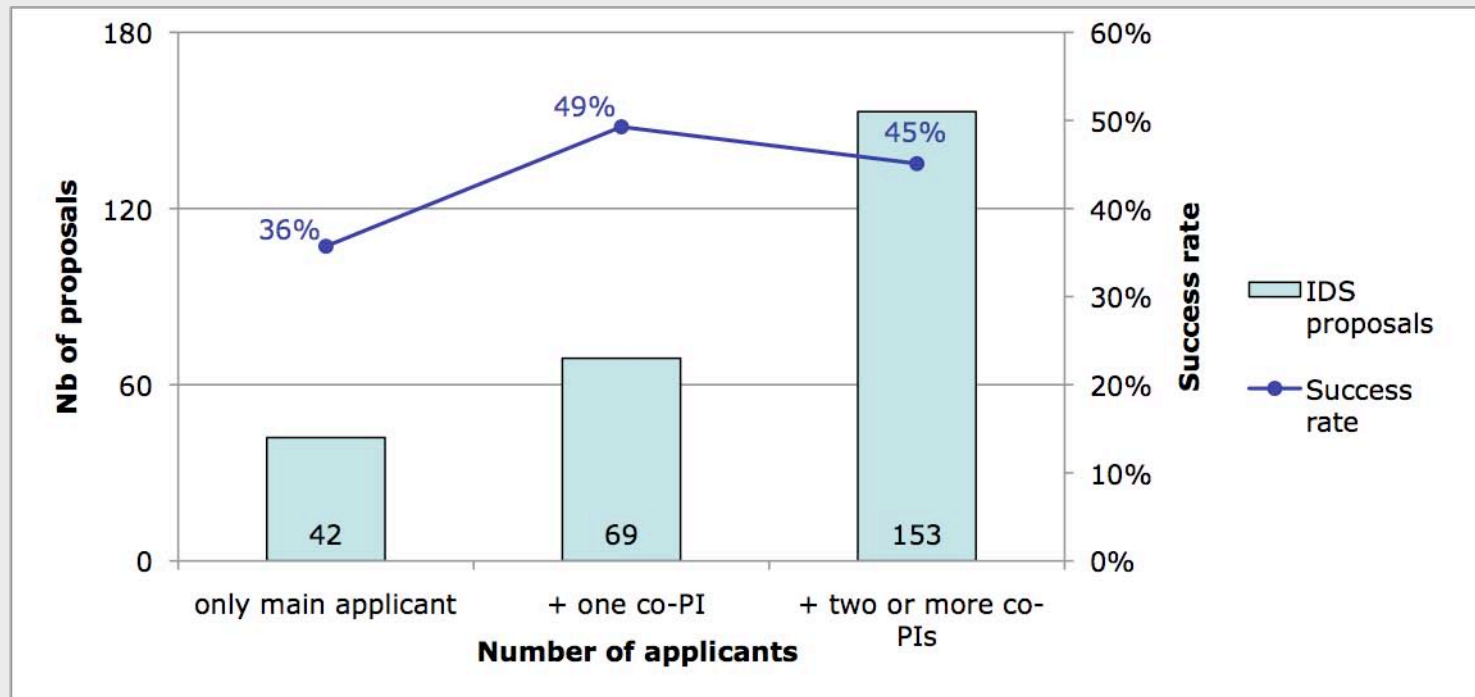
Main applicants

	IDS applicants	Regular proposal applicants
Mean age of PIs	46.3 years	46.5 years
Gender	24% female	18% female
SNSF Regular proposals	3.6 submitted	4.9 submitted
IDS proposals	1.4 submitted	-
Academic degree	58% Prof. 26% Dr. 16% other	61% Prof. 23% Dr. 16% other

Age distribution of PIs



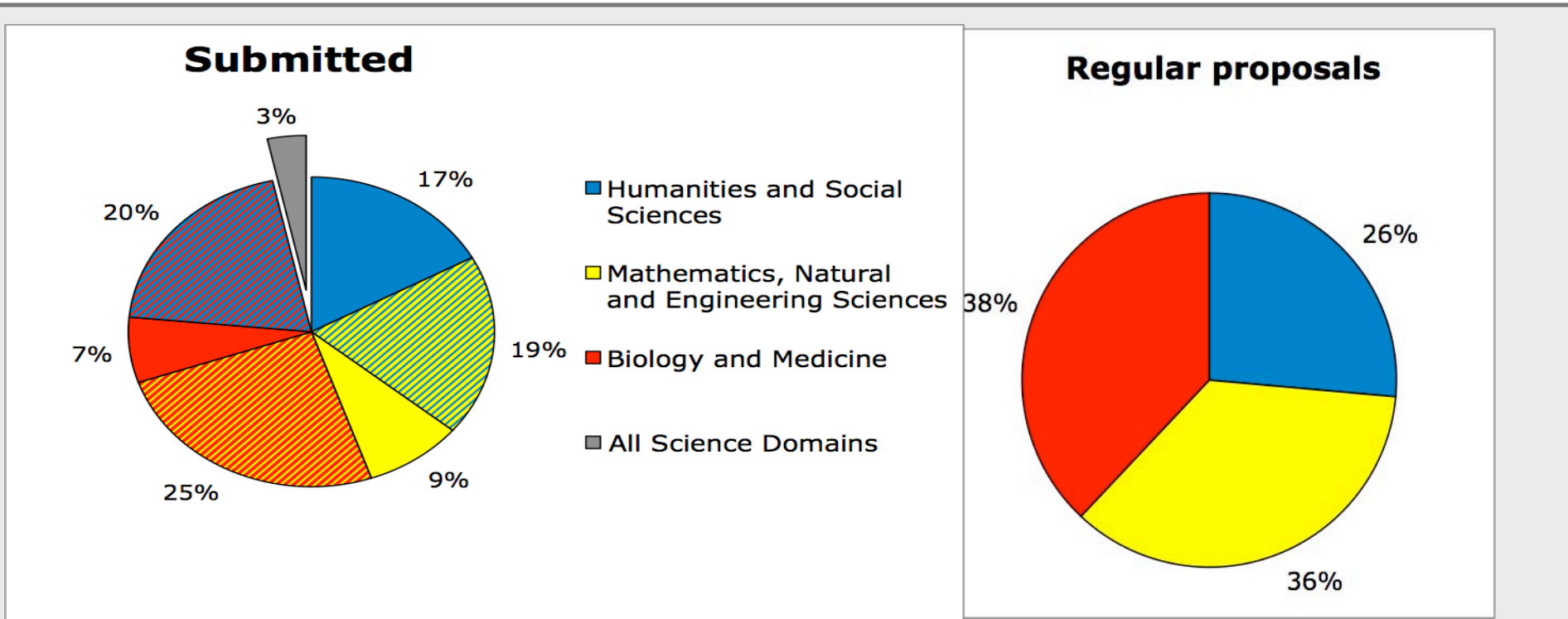
Interdisciplinary proposals (IDS) Applicants



- _ Number of co-PIs per proposal: 1.7 (IDS) and 0.8 (regular)
- _ Number of disciplines in IDS proposals: 2.9
- _ Main PIs with an interdisciplinary career: 25%

Interdisciplinary proposals (IDS)

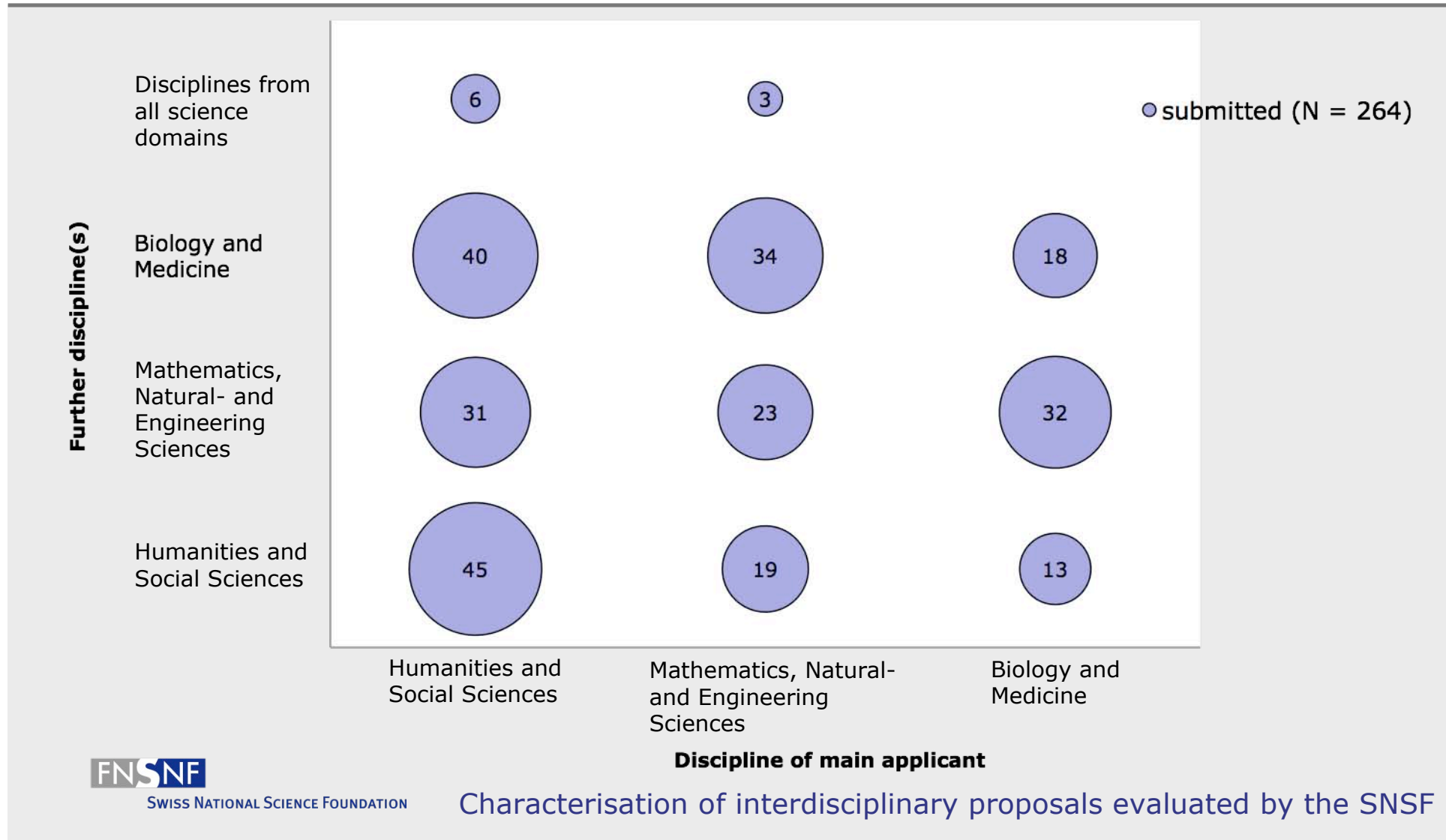
Science domains



Percentage of proposals with main discipline in Humanities and Social Sciences is larger than for regular proposals

Interdisciplinary proposals (IDS)

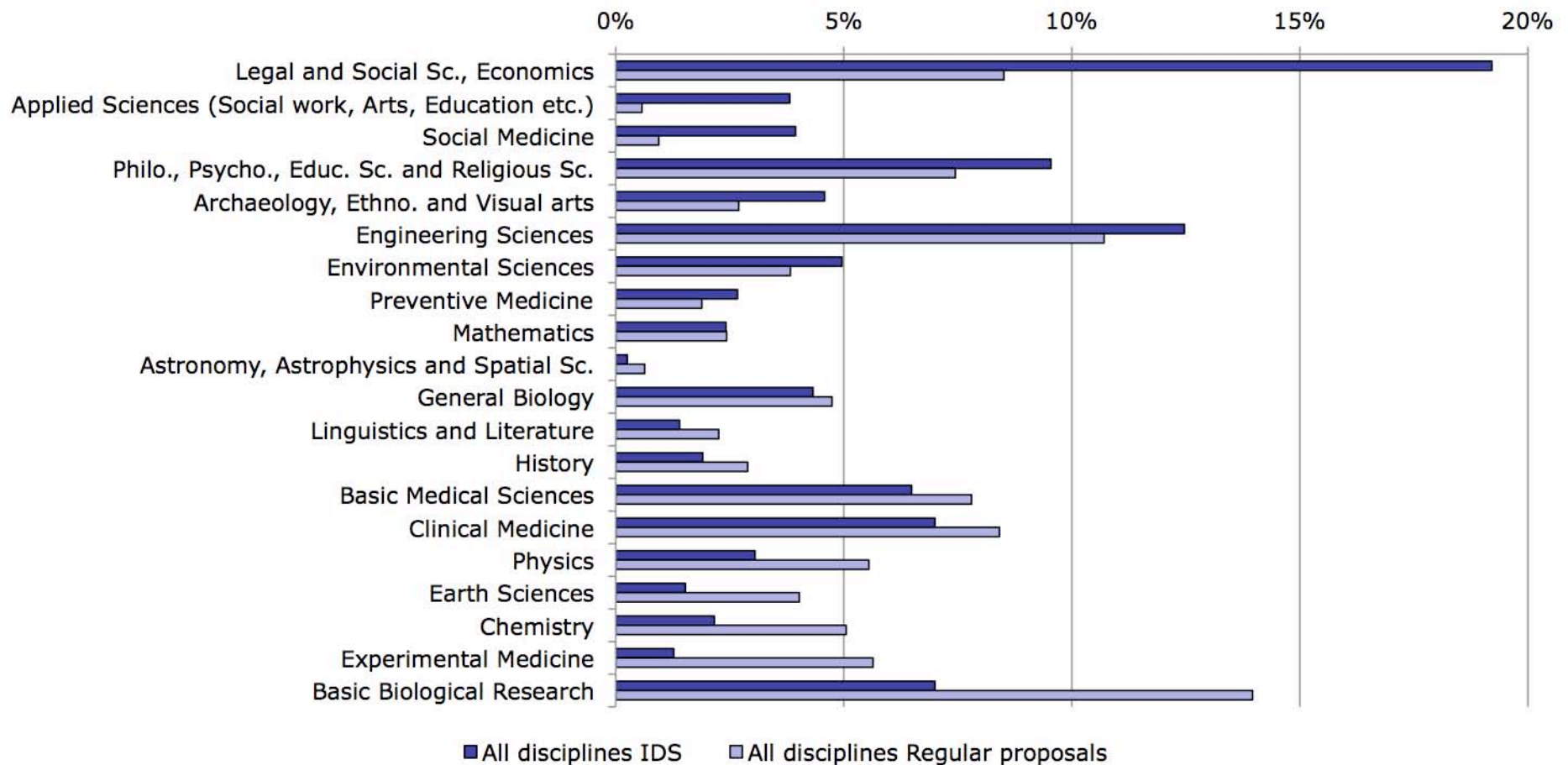
Interdisciplinary combinations



Interdisciplinary proposals (IDS)

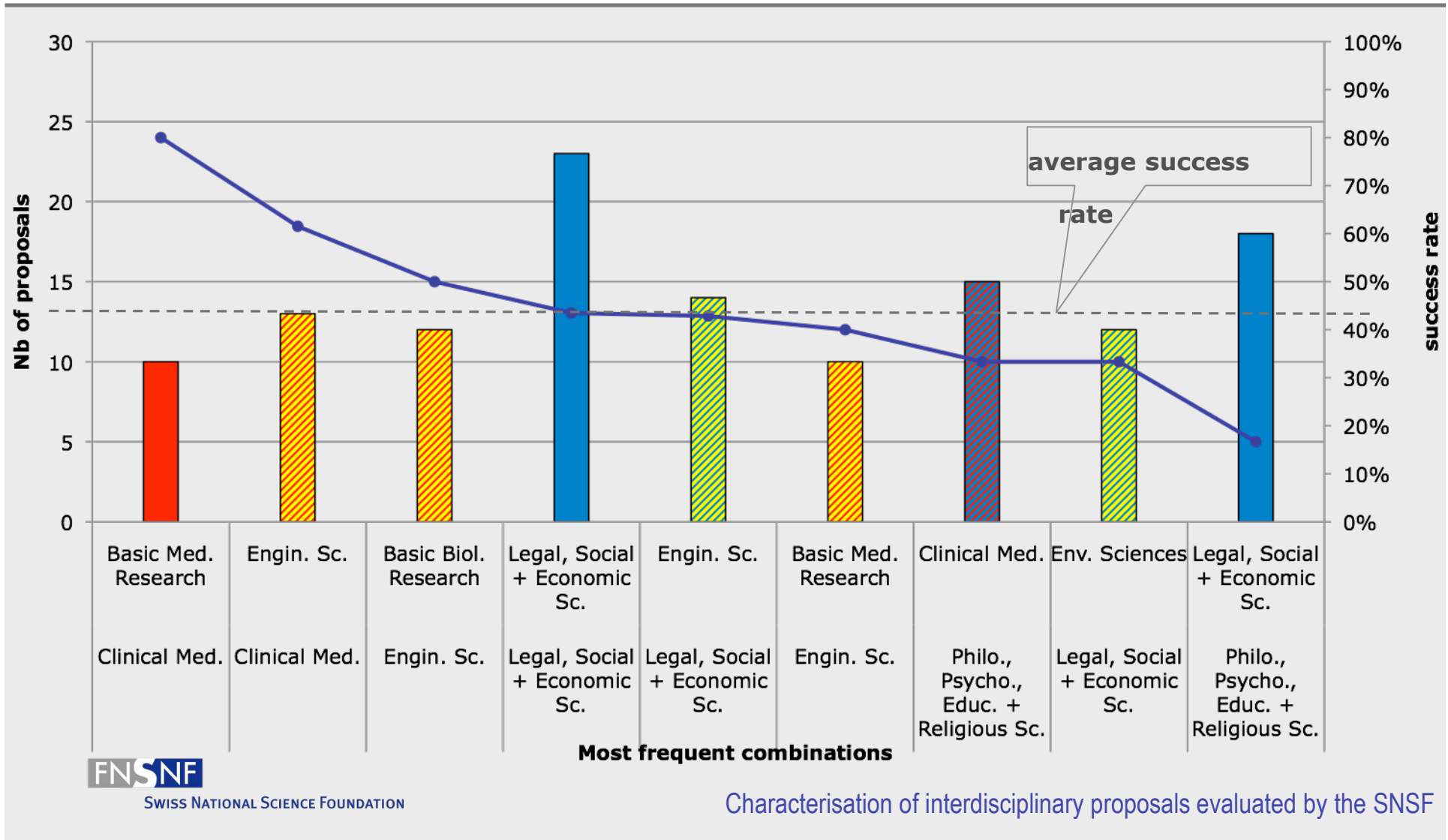
All disciplines

IDS vs. Regular proposals



Interdisciplinary proposals (IDS)

Interdisciplinary combinations



Interdisciplinary proposals (IDS)

Purpose of interdisciplinarity*

Fundamental understanding:

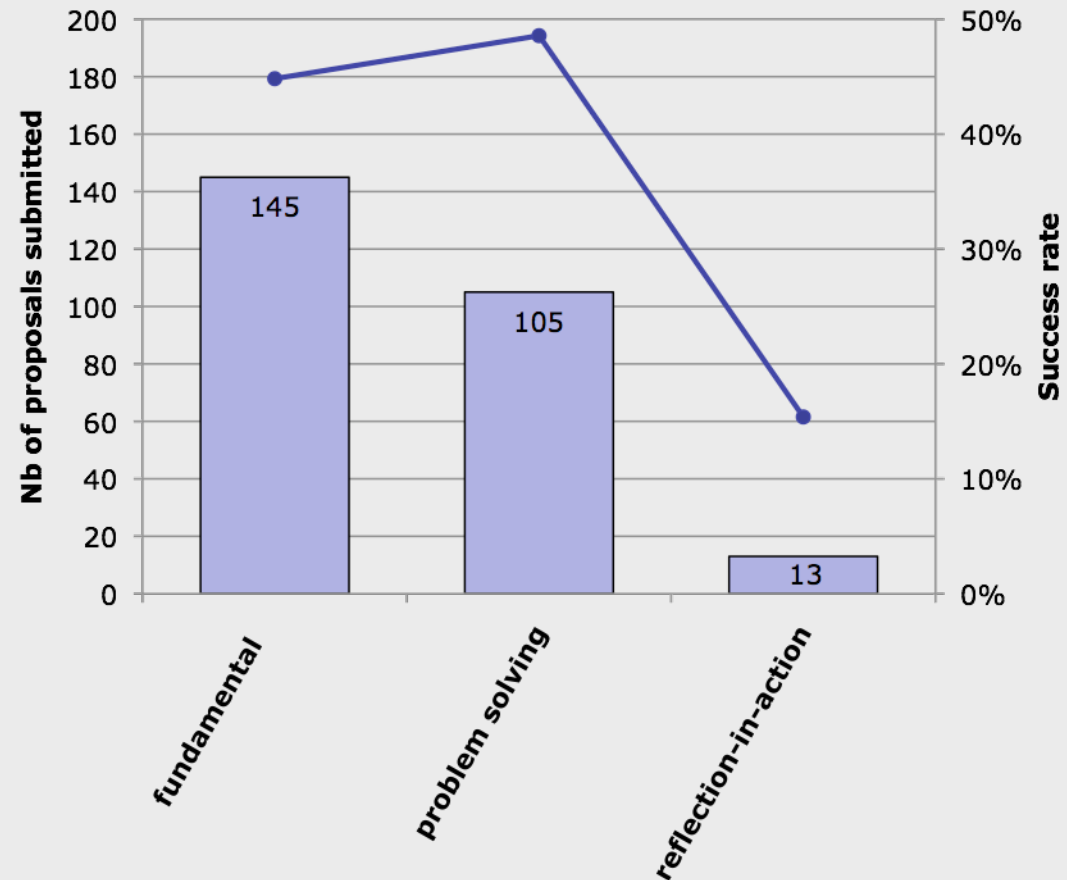
Advancement through a combination of theory and methodology of several disciplines

Problem solving:

Development (instrument or practice) through approaching a problem from a combined perspective

Reflection-in-action:

Critical review and modification of current practices and ongoing developments



*modified (sub-categories merged) after Pohl et al. 2010



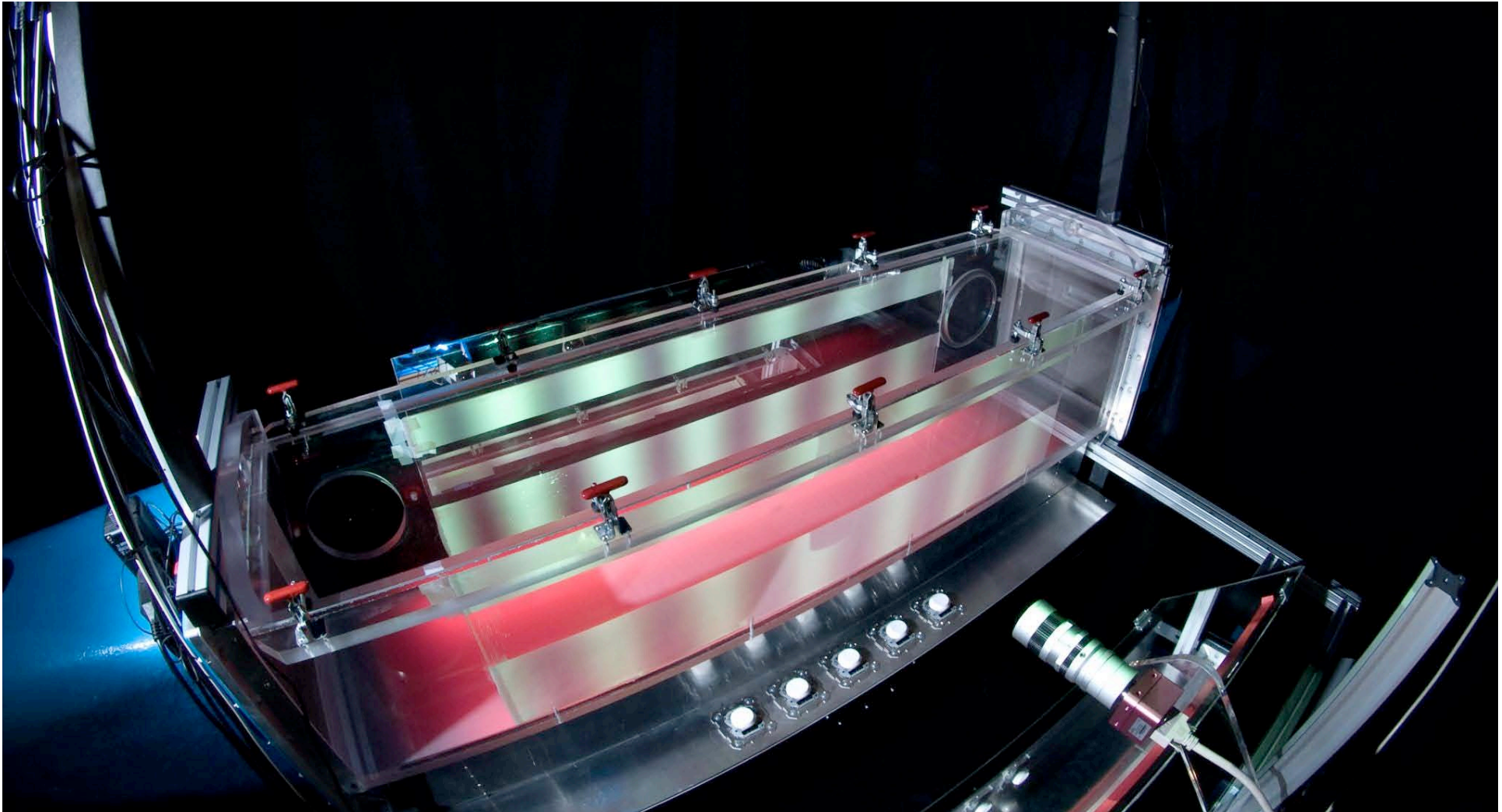
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Characterisation of interdisciplinary proposals evaluated by the SNSF

Interdisciplinary proposals (IDS)

Project examples

Project	ID purpose
Agequake in prisons: Reality, policies and practical solutions concerning custody and health care for ageing prisoners in Switzerland	problem solving
The Governance of Health Systems	fundamental understanding
Structuring the science-policy nexus in sustainability research	reflection-in-action
VisAsim - Visual-Acoustic Simulation for landscape impact assessment of wind farms	problem solving
Life (Beyond) Writing: Illness Narratives	reflection-in-action
Matching Gaze Patterns and Interaction Patterns in Collaborative Tasks	fundamental understanding
PathMate: Effects of Ubiquitous Healthcare Information Systems on Performance of Obesity Expert and Teenager Teams	problem solving



Some thoughts and preliminary conclusions on the evaluation of IDS proposals

FNSNF

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Interdisciplinary proposals (IDS)

Evaluation criteria

Common scientific assessment criteria:

relevance, originality, topicality

methodology, feasibility

track record, expertise

Specific additional criteria for **interdisciplinary proposals**:

- *Integration of interdisciplinarity into the scientific approach;*
- *Organisation of the interdisciplinary collaboration;*
- *Impact on the qualification of scientific trainees.*

Interdisciplinary integration and organisation

Interdisciplinary proposals (IDS)

Decisions

Main reasons for rejection



- _ Unclear methodology and lack of preliminary data
- _ Lack of expertise in certain disciplines was often criticised

Preliminary conclusions I

Interdisciplinary proposals at SNSF

Proposals and applicants

- _ There seems to be no systematic difference in profile between applicants for regular and for interdisciplinary projects.
- _ The Social Sciences and Humanities are more prominent in interdisciplinary proposals than in regular ones.
- _ Scientific disciplines with a consideration-of-use component are more often involved in interdisciplinary than in regular proposals.

Preliminary conclusions II

Interdisciplinary proposals at SNSF

Evaluation and success

- _ Differences between scientific fields regarding evaluation practice are reduced in the evaluation of interdisciplinary proposals.
- _ Projects that solve problems or advance fundamental understanding are more successful than those representing reflection-in-action.
- _ Interdisciplinary proposals mainly fail because of a lack of concreteness in methodology and project organisation.

Open questions

... some of the most important ones...

- _ Are we likely to fund the best interdisciplinary proposals or those most similar to regular ones?
- _ Are the evaluation criteria appropriate?
- _ Is the elaboration of a detailed research plan already part of an interdisciplinary project?
- _ What is the ideal composition of a panel for interdisciplinary proposals?

Contact

Interdisciplinary projects

Division CoRe

Interdivisionary coordination
and cooperative research

E-mail core@snf.ch

Swiss National Science Foundation (SNSF)

Wildhainweg 3
P.O. Box 8232
CH-3001 Berne

www.snsf.ch

+41 (0)31 308 22 22