



Human Frontier Science Program

Science without Borders

Funding for international research collaboration
and training in the life sciences

Dr. Guntram Bauer

Director of Fellowships, HFSP

International Opportunities Expo, NIH

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History

- Initiated by the government of Japan in 1986
- Proposed at the G7 Venice Economic Summit 1987
- Program implemented in 1989 in Strasbourg/France
- First grants awarded in 1990



G7 Economic Summit
Venice 1987



Member Countries

Founding members: G7 Countries

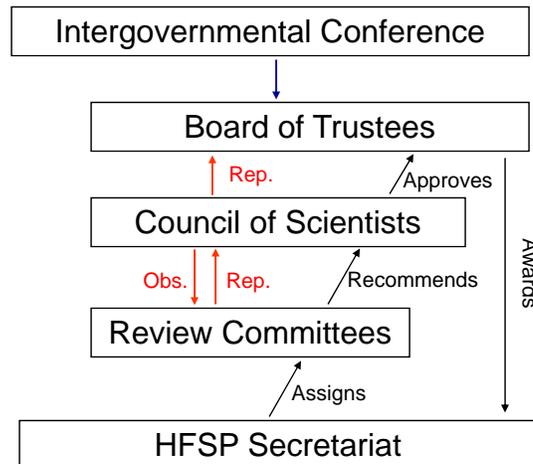
Canada, France, Germany, Italy, Japan, UK, USA
together with the **European Union**

**Switzerland, Australia, Republic of Korea, New Zealand,
India**

All finance is 'public' – ministries or research councils



Governance of HFSP





Budget

	% total
Asia-Pacific <i>of which Japan</i>	56.5 53
Europe	26.5
N. America <i>of which USA</i>	17 15
Total contributions	58.8 million USD



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Scientific scope of HFSP funding

Basic research focused on the elucidation of complex mechanisms of living organisms ranging from biological functions at the molecular and cellular level to biological systems including higher cognitive functions

Not supported are studies concerned with crop yield or bioremediation, ecosystem research, development of patient treatment or diagnosis

Annual budget ~59 mill. USD



Promotion of excellence - strategies

HFSP support emphasizes:

- **international** and **intercontinental** scientific collaborations,
- novel, **innovative** and **interdisciplinary** approaches to basic research, and
- scientists who are early in their careers.

HFSP Statutes, Art. 3:

“Importance is attached to scientific merit, internationality, especially intercontinentality, and interdisciplinarity in implementing the program activities.”



Funding Programs

Individual Fellowships (Postdoctoral Level)

- Long Term Fellowships (LTF)*
- Cross Disciplinary Fellowships (CDF)*
- Career Development Awards (CDA)*
- Short Term Fellowships*

Research Teams

- Program Grants
- Young Investigator Grants*

* Special programs for young scientists (~70% of HFSP funds support scientists under 40 years of age)

HFSP support begins at the postdoctoral level!



Postdoctoral Fellowship Types

- **Long-Term Fellowships:** To enable **life scientists** to obtain postdoctoral training abroad in a different research area
- **Cross-Disciplinary Fellowships:** To enable **scientists from outside the life sciences** (chemistry, mathematics, bio-informatics, physics, engineering & material sciences) to obtain **postdoctoral training in biology**
- Applicants **must** change field of research **and** country
- Success rate: ~13%
- About 90-100 fellowship awards per year



HFSP Fellowship Support

Eligibility Criteria

- Applicants from any country can apply to work in one of the HFSP member countries
- Application within 3 years after obtaining PhD degree
- Must have 1st authorship paper (discipline dependent)

Support

- Tenure up to 3 years
- 3rd year can be used for repatriation to home country and can be deferred for up to two years
- Repatriating fellows are eligible for an HFSP Career Development Award
- Paid parental leave
- Family & child allowance



Review Process

- Screening of applications after submission deadline in **September** (HFSP Fellowship Office)
- Pre-evaluation through members of Review Committee (RC) assigning scores (,'Short list for discussion')
- Full evaluation during Review Committee meeting (**January**) followed by recommendation for funding to Council of Scientists (COS)
- Consideration by Council of Scientists COS (**early March**)
- Final approval by Board of Trustees (**late March**)



A successful fellowship application...

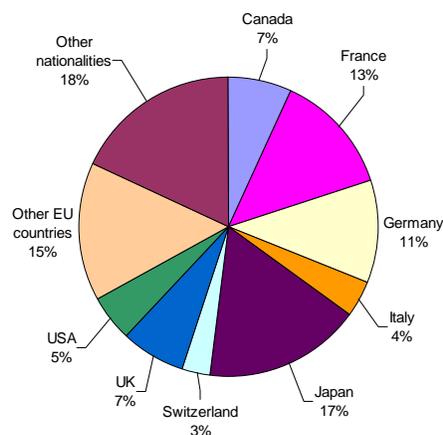
... is an original study that marks a clear departure from the previous research (**change in research direction**) because it

- ...exposes the applicant to new theory (literature) and methodology,
- ...contains new elements (e.g. developing or learning new methods) that open a completely new approach to the research problem even if risky (**originality**),
- ... and is deemed to make a major contribution to the research field.

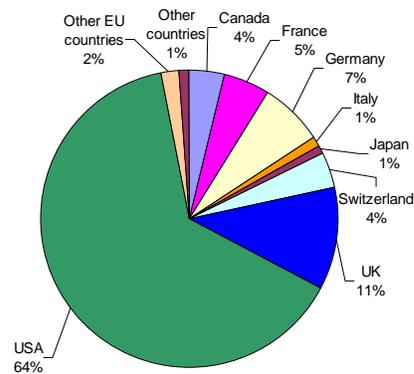


Long Term Fellowships 1990-2003

Nationality of Fellows



Host Countries





Career Development Award

To enable **HFSP Fellows** to develop their independent research program upon **return to their home country**

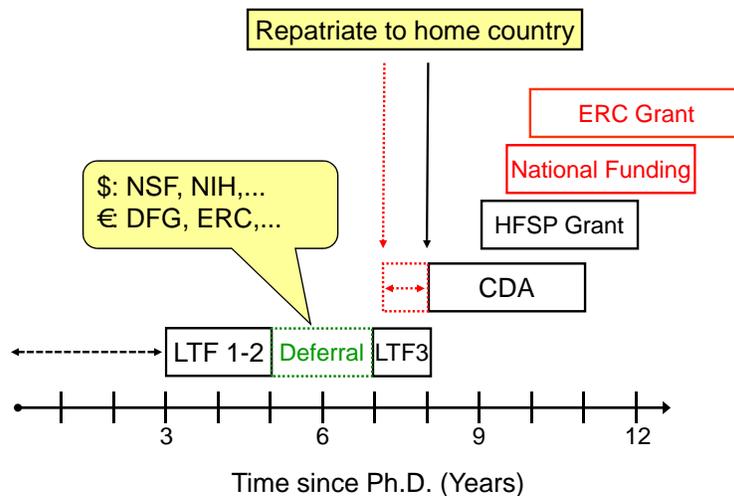
- Provides 300K USD for 3 years to support research costs and salaries of lab personal
- Applicants must be appointed to a salaried position allowing them to perform independent research (lab space, infrastructure)

Eligibility:

- Completion of at least 2 full years of HFSP Fellowship at the start of CDA
- Application within 2 years after completion of the LT Fellowship
- Success rate: ~40% (15-20 awards each year)



The Importance of the HFSP CDA





HFSP Research Grants

Program Grants

For scientists at any stage of their careers

Young Investigator Grants

All team members within 5 years of obtaining an independent position; not more than 10 years after the Ph.D.



HFSP Research Grants



- International, especially **Intercontinental** collaboration between 2-4 labs
- Novel, **Innovative**, and **Interdisciplinary** research
- 93% of HFSP-funded research grants involve intercontinental collaborations (figures from 2002-2007)



HFSP Research Grants

From the guidelines...

- ...**a clear need for participation from scientists outside the life sciences** to understand the complex structures and networks that characterize the living state...*
- ...To **stimulate novel, daring ideas** and innovative approaches, **preliminary results are not required** in research grant applications...
- ...Applicants are expected to **develop new lines of research** through the collaboration....

*not applied as strictly in the Young Investigator Grants



HFSP Research Grants

Team

- Principal Investigator must have lab in a member country
- International/intercontinental composition
- Individual team members come from different scientific areas (life sciences, physics, chemistry,...)

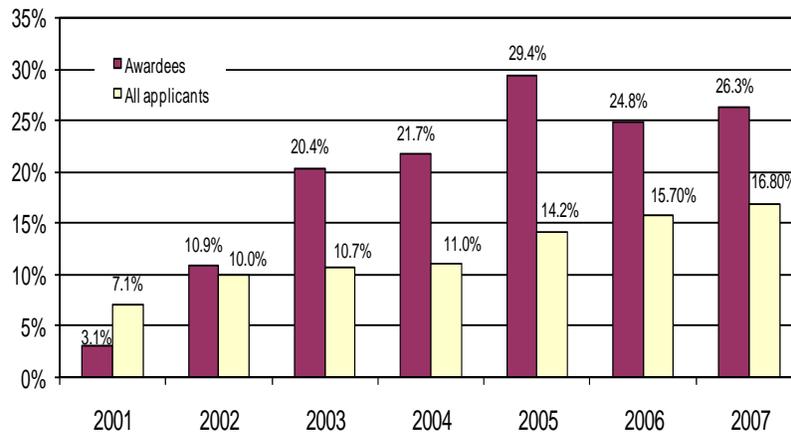
Budget

- \$250,000 per year for a team of 2; \$ 350,000 for a team of 3; \$450,000 for a team of 4 or more (maximum funds) – three year grant
- **No salary support for grant team members!**
- 2 or more members from the same country will count as 1.5 team members **if they form an interdisciplinary team**, otherwise they are counted as a single team member



Interdisciplinary Collaboration

Participation of scientists (%) from non-biological disciplines in HFSP Research Grants



Research Grants – review cycle

Letter of intent

1. Submission deadline **March/April** (~ 750 app.)
2. Triage (~ 15%)
3. Initial review by Review Committee members
4. Discussion of ~250 promising applications by Selection Committee
5. Invitation by Selection Committee to ~ 80-90 teams to submit full applications (**beginning of July**)

Full applications

1. Submission deadline **mid-September**
2. Reviewed by external reviewers and Review Committee members
3. Recommendations made by full review committee meeting **end of January**
4. Consideration by Council of Scientists (**early March**)
5. Final approval by Board of Trustees (**late March**)



Research Grants – good ideas

- Setting up a project with labs bringing in a totally new approach to your research problem – even if risky
- Setting up your project with one or two (Young Investigator) or no more than three (Program Grants) other research groups
- Joining a project where there is clear interaction between team members
- Proposing clear iterations between theoretical and experimental approaches



Other activities

Short-Term Fellowships

- To support short research visits of up to 3 months to establish new collaborations or to learn new techniques

Annual Meeting

- An annual meeting held in rotation in different member countries
- Approx. 200 awardees
- All grant, fellowship and CDA awardees are invited
- Purpose: to facilitate network of scientists in different fields

HFSP Journal

- Journal for interdisciplinary approaches to the life sciences
- Three issues are now online at <http://hfspj.aip.org>



HFSP Journal



Examples from volume 1, issue 3:

Commentaries

- Measuring variability

Perspectives

- The origin of modern terrestrial life

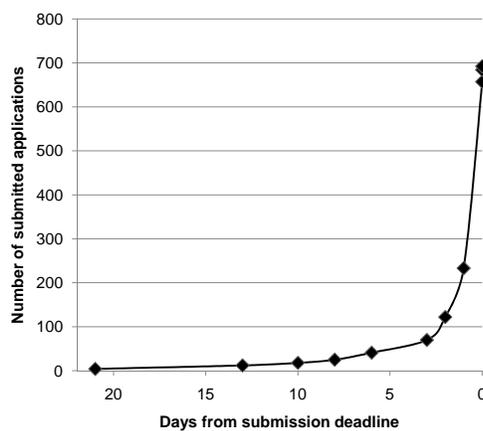
Original articles

- How molecular motors shape the flagellar beat

More information at <http://hfspj.aip.org>



Through the year with HFSP...



LT & CD Fellowships

Deadline for submission:

11 September 2008

Career Development Award:

Application by invitation only!

Short Term Fellowships:

Throughout the year

Research Grants:

2 April 2008

Password protected online submission for all programs!



HFSP contact info

- HFSP website: www.hfsp.org
- Concerning fellowships: fellow@hfsp.org
- Concerning research grants: grant@hfsp.org