

APRIL 2013 - MARCH 2014

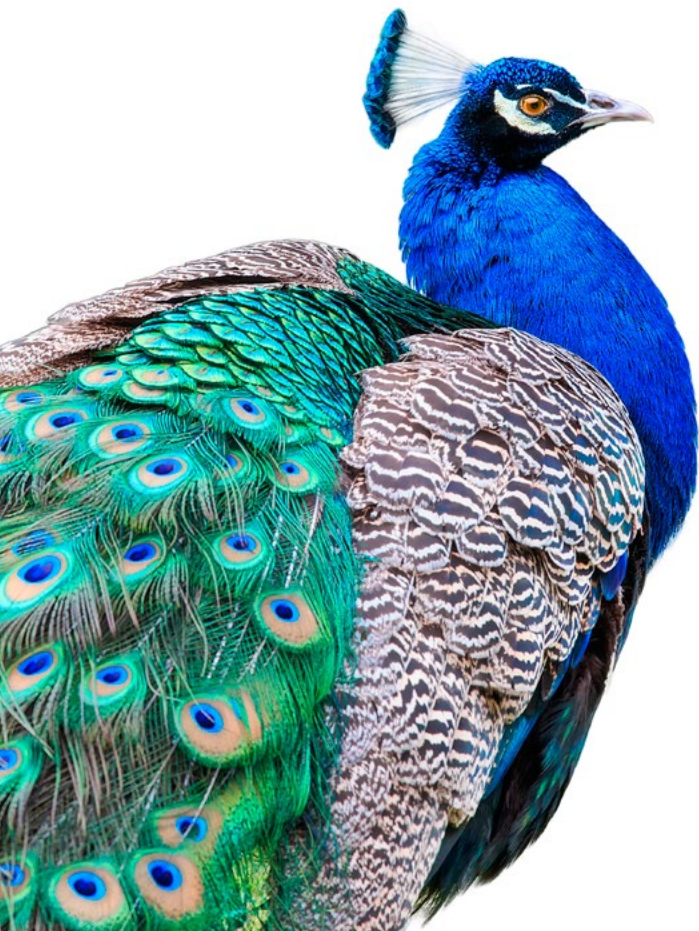
ANNUAL REPORT FY 2013



THE INTERNATIONAL
HUMAN FRONTIER SCIENCE PROGRAM
ORGANIZATION

HUMAN FRONTIER SCIENCE PROGRAM

The Human Frontier Science Program is unique, supporting international collaboration to undertake innovative, risky, basic research at the frontier of the life sciences. Special emphasis is given to the support and training of independent young investigators, beginning at the postdoctoral level. The Program is implemented by an international organisation, supported financially by Australia, Canada, France, Germany, India, Italy, Japan, the Republic of Korea, New Zealand, Norway, Switzerland, the United Kingdom, the United States of America, and the European Union. Since 1990, over 6000 awards have been made to researchers from more than 70 countries. Of these, 18 HFSP awardees have gone on to receive the Nobel Prize.





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ANNUAL REPORT



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www.hfsp.org

Joint Communiqués
 (Tokyo 1992, Washington 1997, Berlin 2002, Bern 2004, Ottawa 2007, Canberra 2010, Brussels 2013):
<http://www.hfsp.org/about-us/governance/intergovernmental-conference>

Statutes of the International Human Frontier Science Program Organization:
<http://www.hfsp.org/about-us/governance/statutes>

Guidelines for the participation of new members in HFSP:
<http://www.hfsp.org/about-us/new-membership>

General reviews of the HFSP (1996, 2001, 2006-2007, 2010):
<http://www.hfsp.org/about-us/reviews-hfsp>

Updated and previous lists of awards, including titles and abstracts:
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INTRODUCTION



Introduction

Highlights in FY 2013
Message of the Secretary General
Board of Trustees
Council of Scientists
Secretariat



INTRODUCTION

The Human Frontier Science Program (HFSP) promotes fundamental research in the life sciences with special emphasis on novel and interdisciplinary research, international and, in particular, intercontinental collaboration and support for young investigators. Since its establishment in 1989, HFSP has demonstrated the value of creating a framework for competitive, collaborative, international research of the highest caliber and of providing young scientists with the opportunity to emerge as talented researchers capable of shaping the science of the future.

The International Human Frontier Science Program Organization (HFSP/O) implements the Program through the following mechanisms of research support, details of which can be found in Chapters 1 and 2 of this report:

- **Long-Term Fellowships** – for young scientists within three years of obtaining their Ph.D who wish to broaden their scientific experience in a foreign laboratory
- **Cross-Disciplinary Fellowships** – modeled on the Long-Term Fellowships but specifically for scientists with Ph.Ds in non-biological disciplines who seek training in the life sciences.
- **Career Development Awards** – for former HFSP Fellows to help them set up their own independent laboratories in the home country or another HFSP member country.
- **Young Investigator Grants** – grants for interdisciplinary teams of young researchers who are within the first five years of their first independent positions and located in different countries.
- **Program Grants** – for interdisciplinary teams of researchers in different countries at any stage of their careers.

Since 1990, 966 Research Grants involving 3,606 scientists, 2,755 Long-Term, 91 Cross-Disciplinary Fellowships and 193 Career Development Awards have been awarded. Researchers from more than 70 countries have received HFSP funding so far.

The focus of research supported by HFSP is on the complex mechanisms of living organisms, ranging from the biomolecular level to that of behaving organisms. The life sciences have undergone a revolution in recent years, emerging as a leading scientific area with a convergence of interest from other disciplines such as physics, mathematics, chemistry, computer science and engineering on solving biological questions. HFSP aims to stay at the forefront of research by involving scientists from outside the life sciences as part of research collaborations and as postdoctoral fellows. To this end, the Young Investigator and Program Grants are specifically geared to fostering interactions between scientists from different disciplines and this is a major factor in the review of applications in these programs. In addition, HFSP has extended its commitment to interdisciplinary research by introducing Cross-Disciplinary Fellowships to equip young scientists from outside biology with the skills needed to tackle problems in the life sciences.

With a mission to the frontiers of science, HFSP supports the next generation of researchers who are in the strongest position to open new avenues of research. Several of the HFSP programs are specifically targeted towards early career scientists: the Fellowship programs, Career Development Award and Young Investigator Grant. In addition, Program Grant teams are encouraged to include young scientists with the result that a significant number of scientists under the age of 40 participate in this program. Taking these researchers together, approximately 70% of annual HFSP funds are awarded to early career researchers.

The HFSP/O is financed and managed by representatives of the Management Supporting Parties (MSPs). The MSPs are those countries that directly fund the HFSP Programs plus the European Union, which represents the EU countries that do not contribute directly. The MSPs are: Australia, Canada, France, Germany, India, Italy, Japan, the Republic of Korea, New Zealand, Norway, Switzerland, the United Kingdom, the United States of America and the European Union. Japan provided about 40 % of MSPs' contributions for FY 2013.

The HFSP/O is governed by a Board of Trustees (Board) consisting of representatives of the MSPs. The Board is advised by a scientific advisory body, the Council of Scientists (Council) and the Organization is run from the Secretariat in Strasbourg, France.

HIGHLIGHTS IN FY 2013



Left to right:
Ernst-Ludwig Winnacker and Nobutaka Hirokawa

Highlights in FY 2013

- The 7th Intergovernmental Conference on HFSP was held in Brussels on 11 June 2013.
- The recipient of the HFSP Nakasone Award 2013 was Stephen Quake, Stanford University, USA.
- Uri Alon, Weizmann Institute of Science, Israel, was selected as the recipient of the HFSP Nakasone Award 2014.
- The 2013 Awardees Meeting was held in Strasbourg, France, on 7-10 July 2013.
- Alumni Meetings were held at the University of California, San Francisco, USA, on 19 February 2014 and at The Weizmann Institute of Science, Rehovot, Israel on 27 March 2014.



MESSAGE FROM the Secretary General

It's kind of fun to do the impossible!

Walt Disney



Ernst-Ludwig Winnacker,
Secretary General of HFSP

The HFSP year had many highlights. The most important was possibly the successful conclusion of the tri-annual Intergovernmental Conference (IGC). It took place in Brussels on 11 June at the invitation of Robert-Jan Smits, Director-General of the Directorate General for Research and Innovation of the European Commission. Collaboration with him and his staff during the preparation of the IGC was a great pleasure. The IGC rotates around the world as it receives invitations from its Management Supporting Parties (MSPs). The previous IGC was held in Canberra, Australia; the next one, in 2016, will take place in the UK. In 2013, in Brussels, our financial situation was particularly difficult. Due to budgetary constraints in many MSPs, a special Board meeting was called in September 2012 as part of the IGC preparations in order to set funding priorities. What would we do if worst came to worst and some research programs had to be prioritized, others cancelled? The Board came to the conclusion that in such a case we would try to retain the Research Grant program, at the very least. This program is unique. No other funding agency in the world is able to offer this type of intercontinental collaboration.

The dire prospect of having to part with one or the other pillar of our highly esteemed program made us double our efforts to secure HFSP funding for another three years. Such efforts were indeed required from the very day I took up office. On that day, I was informed of a letter from the French Ministry of Foreign Affairs, announcing an immediate reduction in its support by 1 M USD, almost 50% of the French contribution. Until that time the French contribution was distributed between the Ministry of Higher Education and Research, the Ministry of Foreign Affairs and the City and the Region of Alsace.

It took almost three years of intense negotiations to recover most of this amount from the Ministry of Higher Education and Research, the City and the Region of Alsace. Similar difficulties were to arise for other contributors. Most readers of this preface will be aware of the precarious situation of research funding in the USA in 2012 and 2013. Could we really expect an increase from the US in the face of the “sequestration” debate, which at one time or another closed down the entire US government? Would other MSPs make their contribution dependent on US support, since the US is after all the greatest beneficiary of HFSP awards? In the end, reason prevailed. But not just that. All of Japan’s partners increased their support by between 2 and 4%, permitting us to regain some of our strength for the years to come. This is not trivial since supra-national support always is a challenge for national agencies. I felt like Goethe after the battle of Valmy: “At this place and on this day a new epoch in the history of the world (of HFSP) begins, and we shall be able to say that we were present at its beginnings”.

I would like to thank all the MSPs most warmly for their continued support of HFSP and its mission. In particular, I would like to remind the HFSP community that the government of Japan remains the largest contributor to HFSP. We are extremely grateful for this gracious and generous contribution. Given the budget increases agreed upon by all other MSPs, by 2016 the share of Japan will drop to about 32%. We are all very appreciative of Japan’s continuing, altruistic support.

One other important aspect of the Brussels IGC in June 2013 was the presence of guest observers from a number of potential member countries, namely Brazil, China, Mexico, South Africa and Turkey. In the meantime, the Government of Singapore, which was not present at the IGC but at a preparatory Conference in May 2012, has applied for membership. This application was approved by the HFSP Board in March 2014, pending the signing of a Memorandum of Understanding by the Government of Singapore.

In early July 2013 we enjoyed the first Awardees Meeting ever held in Strasbourg. Awardees Meetings were introduced in 2001 and have become very popular among our awardees, but also among our Board and other committee members because of the unique opportunity they provide to observe HFSP “in action”. The meetings consist in talks and poster sessions by awardees, with additional keynote lectures and a lecture by the Nakasone Award winner who also receives his award on this occasion. The scientific program is complemented by various get-togethers. In Strasbourg, we could count on the hospitality of the City and the Region, who invited us to a boat tour and to various dinners in restaurants of the old City (“La Petite France”). For Guntram Bauer and Rosalyn

Huie, who masterminded this event, the challenges of meeting organisation were rewarded by high praise from our visitors. Luckily enough the weather could not have been better.

A final surprise came in the first week of October, the so-called ‘Nobel week’. It turned out that three of the awardees in Medicine and Physiology and two of the three in Chemistry had been HFSP awardees at one time or another. This raised our total score of Nobel Prize winners to 23 within the last 25 years. But HFSP awardees obtain other prizes as well. The Secretariat keeps a record of some of these; NAS membership, ERC grants, EMBO medals, the Louis-Jeantet Prize, the Albert Lasker Award and many others. There is little doubt that the concept of frontier research in the life sciences is understood by the members of our Review Committees and taken seriously. In this spirit, HFSP has become an indispensable and model funding agency. If it didn’t exist, it would have to be invented.

Are we successful in communicating these successes to the scientific community and/or to society at large? We try. This task begins with our Review Committees. Their work is meticulously prepared and coordinated by our three scientific directors, Geoff Richards, Carmen Gervais and Guntram Bauer. Isabelle Coquard, our financial director, was instrumental in keeping our budget under control during times of austerity in the MSPs and with the help of our financial advisors succeeded in securing a small profit for our program.

The management team would not be complete without my Deputy, Toru Nakahara, who was seconded from the Japanese Ministry of Education, Culture, Sports, Science and Technology and left us in March 2014 after the completion of a five year term. His main task was to keep up the connections with the Japanese government, in particular the two ministries responsible for supporting HFSP. And with our President. In the course of his tenure, he has served two of them, Akito Arima and Nobutaka Hirokawa. A true friend of HFSP, Toru Nakahara, if anyone, managed to convince his partners and superiors in Tokyo to remain patient and to continue to be proud of the Program which originated 25 years ago in Japan, through an initiative of the then Prime Minister Yasuhiro Nakasone.

Goethe’s words, on the occasion of the defeat of the Prussian army by the ragged French militia at the battle of Valmy, September 20th, 1792, quoted by Jack D. Dunitz, in *Helvetica Chimica Acta* 96, 545-563 (2012)

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Winnacker and Toru Nakahara

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Members of the Secretariat

CHAPTER 1



Fellowship Program



Left to right: Carine Schmitt, Marie-Claude Perdigues and Carmen Gervais

- 1.1 Introduction
- 1.2 Long-Term and Cross-Disciplinary Fellowships
- 1.3 Fellowship Awards in 2014
- 1.4 The 2014 Review Committee for Fellowships
- 1.5 Career Development Awards
- 1.6 Career Development Awards in 2014
- 1.7 The 2014 Review Committee for Career Development Awards



1.1 INTRODUCTION

One of the pillars of HFSP's mission is to support international research opportunities for talented early career scientists in the world's best laboratories. HFSP fellowships support research in the life sciences that uses quantitative and system-level approaches to respond to the increasing complexity of biological questions and to provide the scientific methodology needed to advance the understanding of fundamental mechanisms.

Fellows are selected based on their proven excellence as scientists and their potential to become leading researchers. The emphasis that is placed on broadening expertise and novel research projects focusses support on scientists who show the greatest potential for becoming frontier researchers.

Career development is integral to the Fellowship programs, not only by enabling international research training, but also in offering flexibility and support in the transition from postdoctoral fellow to independent researcher. Fellows can either repatriate or move to another HFSP member country during the third year of the fellowship, and are also exclusively eligible to apply for the HFSP Career Development Award for support to set up their first independent laboratory.

The synergistic combination of fellowship and lab start-up support is exemplary in enabling career development at a particularly critical stage, and HFSP fellows emerge as well-trained, well-connected scientists doing truly frontier research.

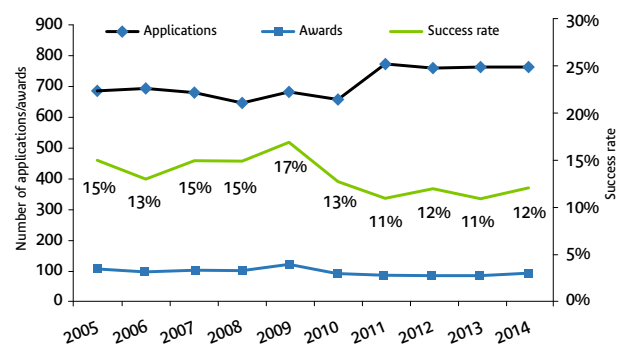
1.2 LONG-TERM AND CROSS-DISCIPLINARY FELLOWSHIPS

There are two types of fellowship; Long-Term (LTF) and Cross-Disciplinary (CDF). The value of the fellowships is identical.

- LTF applicants hold a Ph.D in a biological discipline
- CDF applicants hold a Ph.D outside the life sciences (e.g. physics, chemistry, mathematics, engineering, computer sciences, etc.)

LTFs support applicants with innovative research projects, prioritizing those who propose a significant change in research direction. CDFs support applicants who demonstrate the innovation potential of combining their previous disciplinary knowledge with the expertise of the host laboratory to address a biological question. Fig. 1-1 shows the number of applicants and awardees, as well as the competition success rates since 2005.

Fig. 1-1:
Fellowship applications, awards and success rates 2005-2014



CDFs were first awarded in 2005 and account for about 8% of fellowship applications (Table 1-1).

The diversity of disciplines of applicants to both fellowships programs – which focus on research in basic biology – is a strong indicator that HFSP's objective to provide a bridge across disciplinary boundaries is indeed being fulfilled.

The LTF and CDF programs are designed to enable international postdoctoral research opportunities and to support work with new collaborators. To be eligible, fellowship applicants must not have worked in the host institution for more than 12 months by the proposed start date of their fellowship, must be within three years of receiving their Ph.D at the time of application and must have at least one first author publication.

The third year of funding can be deferred for up to two years, while the fellow is supported through other sources, allowing the researcher to extend their stay in the host laboratory if needed.

The fellowship provides an annual living allowance as well as a research and travel allowance. Fellows with children qualify for a child allowance and fellows who have a child during the fellowship can take up to 3 months of paid parental leave.

A list of researchers who activated their award in FY 2013 can be found in Appendix 4.

Table 1-1:
Number of applications and awards offered in competition years 2005-2014 (numbers for award year 2014 are subject to change).

Long-Term Fellowships

Award year	Number of		Success rate (%)	Female awardees	
	applications	awards		number	(%)
2005	609	89	15	22	25
2006	629	83	13	29	35
2007	614	95	15	32	34
2008	580	89	15	32	36
2009	633	109	17	39	36
2010	592	75	13	32	43
2011	699	76	11	20	26
2012	680	80	12	19	24
2013	695	75	11	29	39
2014	672	80	12	25	31
TOTAL	6,403	851	13	279	33

Cross-Disciplinary Fellowships

Award year	Number of		Success rate (%)	Female awardees	
	applications	awards		number	(%)
2005	65	12	18	1	8
2006	55	10	18	2	20
2007	54	5	9	0	0
2008	56	11	20	1	9
2009	39	10	26	2	20
2010	55	11	20	1	9
2011	63	9	14	2	22
2012	67	5	7	0	0
2013	55	8	15	4	50
2014	75	10	13	2	20
TOTAL	584	91	16	15	16



1.3 FELLOWSHIP AWARDS IN 2014

The call for applications is announced annually through the HFSP web site. The deadline for the submission of fellowship applications was 29 August 2013.

All applications were screened by the Secretariat for compliance with formal criteria and with the scientific scope of the Program.

Applications were assigned to two members of the review committee for evaluation; approximately 50-60 applications per member. Applications were triaged based on ratings submitted in advance of the committee meeting, and the top 20% of applications were discussed during the meeting on 13-15 January 2014.

The review committee ranked the applications and made recommendations on the most meritorious applications that could be supported within expected budgetary constraints. They also established a reserve list of applications in case any awards were declined or new funding became available.

At its meeting in March 2014, the Board approved 90 awards for the coming fiscal year with a reserve list of 8 fellowships should anyone decline the award or extra funds become available.

Figure 1-2 shows the distribution of the 2014 applicants and awardees according to proposed host country. The nationalities of the 2014 applicants and awardees are shown in Table 1-2.

Fig. 1-2:
Proposed host country of Long-Term and Cross-Disciplinary Fellowship applicants and awardees in FY 2014 (distribution of awards is subject to change)

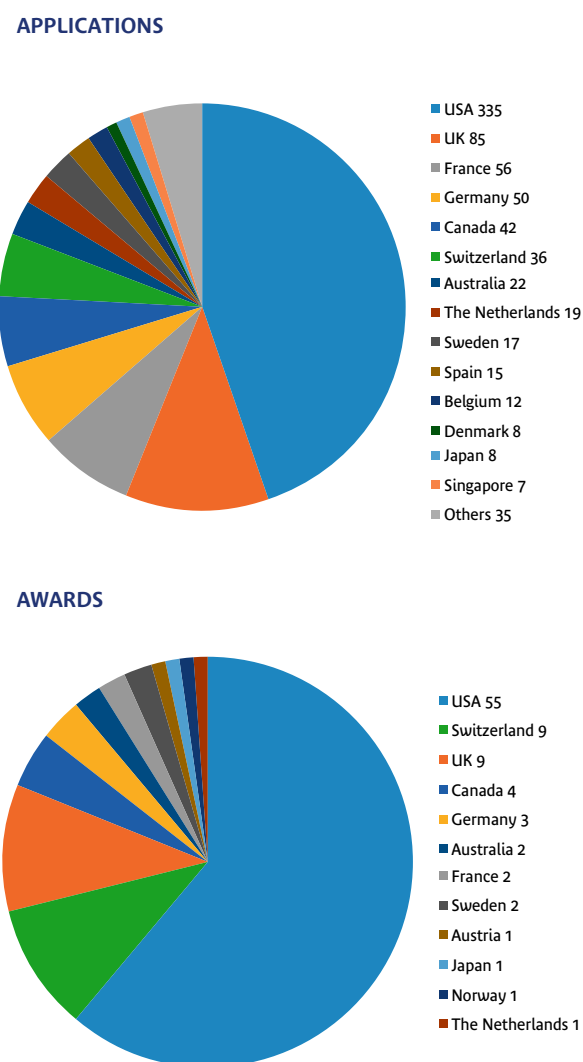


Table 1.2:
Nationality of Long-Term (LTF) and Cross-Disciplinary Fellowship (CDF) applicants and awardees for FY 2014

Nationality	Total applicants	Total awardees	LTF applicants	LTF awardees	CDF applicants	CDF awardees
Australia	9	2	8	2	1	0
Canada	30	2	27	2	3	0
EU	167	19	147 (a)	16 (a')	20 (c)	3 (c')
France	72	4	70	4	2	0
Germany	58	9	53	8	5	1
India	78	4	68	3	10	1
Italy	34	6	32	6	2	0
Japan	34	5	34	5	0	0
Korea	13	1	12	1	1	0
New Zealand	3	0	3	0	0	0
Norway	0	0	0	0	0	0
Switzerland	8	2	8	2	0	0
UK	25	6	21	5	4	1
USA	30	5	27	5	3	0
Other	186	25	162 (b)	21 (b')	24 (d)	4 (d')
TOTAL	747	90	672	80	75	10

Long-Term Fellowship applicants:

(a) EU:

Austria 6, Belgium 5, Croatia 5, Cyprus (EU) 1, Czech Republic 2, Denmark 1, Estonia 1, Finland 4, Greece 2, Hungary 1, Ireland 3, Lithuania 2, Luxembourg 1, The Netherlands 14, Poland 13, Portugal 17, Romania 1, Slovakia 2, Slovenia 2, Spain 53, Sweden 11

(b) Other:

Algeria 1, Argentina 9, Armenia 1, Bangladesh 1, Belarus 3, Benin 1, Brazil 9, Chile 3, China 14, Colombia 3, Cuba 1, Ghana 1, Iran 5, Israel 33, Lebanon 1, Malaysia 2, Mali 1, Mexico 3, Nigeria 1, Pakistan 2, Philippines 2, Russia 6, Serbia 1, Singapore 1, South Africa 1, Taiwan 3, Turkey 4, Ukraine 3, Uruguay 1, Venezuela 1, dual nationalities 44

Long-Term Fellowship awardees:

(a') EU:

Austria 3, Estonia 1, Finland 1, Lithuania 1, Luxembourg 1, The Netherlands 1, Poland 2, Portugal 1, Spain 3, Sweden 2

(b') Other:

Argentina 2, China 2, Israel 12, Malaysia 1, Russia 1, Turkey 1, Brazil/France 1, Germany/Israel 1

Cross-Disciplinary Fellowship awardees:

(c') EU:

Austria 1, The Netherlands 1, Spain 1

(d') Other:

China 1, Israel 1, France/Morocco 1, Germany/Israel 1

Cross-Disciplinary Fellowship applicants:

(c) EU:

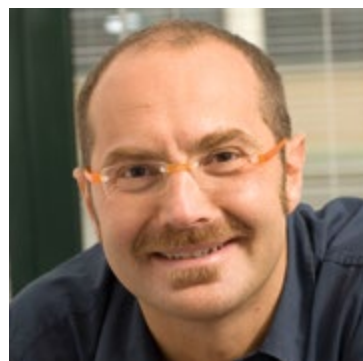
Austria 1, Belgium 1, Cyprus, (EU) 1, Denmark 1, The Netherlands 3, Poland 3, Portugal 1, Romania 1, Spain 8

(d) Other:

Bangladesh 1, China 6, Cuba 1, Iran 4, Israel 2, Taiwan 1, dual nationalities 9

1.4

THE 2014 REVIEW COMMITTEE FOR FELLOWSHIPS



Diego Di Bernardo, Chair of the Fellowship Review Committee

Chair

Diego DI BERNARDO, Telethon Institute of Genetics and Medicine, Naples, Italy

Vice-Chair

Vidita VAIDYA, Tata Institute of Fundamental Research, Mumbai, India

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Sheila SINGH, Faculty of Health Sciences, Hamilton

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Martijn HUYNEN, Radboud University Nijmegen, The Netherlands

France

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Karsten KRUSE, Saarland University, Saarbrücken
Jane PARKER, Max-Planck Institute of Plant Breeding Research, Cologne

India

Vidita VAIDYA, Tata Institute of Fundamental Research, Mumbai

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Diego DI BERNARDO, Telethon Institute of Genetics and Medicine, Naples
Giacchino NATOLI, European Institute of Oncology, Milan

Japan

Yoshie HARADA, Kyoto University

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Claudio STERN, University College London

United States of America

Anjon AUDHYA, University of Wisconsin-Madison
Nicholas HATSOPOULOS, University of Chicago
Yingxi LIN, MIT, Cambridge
Piali SENGUPTA, Brandeis University, Waltham
Tatyana SHARPEE, The Salk Institute for Biological Studies, La Jolla

Other

Ye-Guang CHEN, Tsinghua University, Beijing, China

Delegate of the Council of Scientists

Pico CARONI, Friedrich-Miescher Institute, Basel, Switzerland

1.5

CAREER DEVELOPMENT AWARDS

Early career researchers bring fresh ideas and technologies to existing research problems and pioneer new areas of investigation. Entry of new researchers into the ranks of independent scientists is essential to the health and development of every country's research enterprise.

The transition from a mentored position into a principle investigator role is one of the most challenging career stages. It is a time characterized by scarce resources, frequently coupled with the need to move and with significant pressure to be productive and demonstrate impact.

HFSP mitigates this challenge and facilitates career development for global top talent with the Career Development Award (CDA) which offers timely support to set up an independent research laboratory.

The award provides 300,000 USD of support over three years and is open exclusively to HFSP fellows who are either in the process of obtaining, or already hold, their first independent research position either in their home country or another HFSP member country. The funds are used to cover the costs of research and to pay the salaries of team members (students, postdocs, etc.).

Many research-intensive countries have programs to assist new investigators in obtaining independent research funding, however countries that are developing their research capacity may not have strong incentive or support programs to attract back their best.

The CDA program is one of the tools HFSP provides to enable early career development and strengthen the global network of researchers open to new ideas and international collaboration.

The CDA program was launched in 2003. Applications were evaluated by the HFSP Council of Scientists until 2011; a review committee has evaluated applications for the past three competitions.

Since the inception of this award, 585 applications have been submitted, proposing to hold the award in 31 different countries. There have been 193 award recipients. Table 1-3 shows the number of applicants, awardees and the success rates over the past 10 years.

A list of researchers who activated their CDA in FY 2013 is found in Appendix 5.

Table 1-3:
Career Development Award applications and awards in competition years 2005-2014 (numbers for award year 2014 are subject to change)

Award year	Number of		Success rate (%)	Female awardees (%)
	applications	awards		
2005	47	18	38	11
2006	51	29	57	21
2007	48	24	50	25
2008	57	20	35	25
2009	49	24	49	8
2010	47	16	34	13
2011	40	9	23	11
2012	55	8	15	25
2013	66	8	12	13
2014	62	12	19	33
TOTAL	522	168	32	18



1.6

CAREER DEVELOPMENT AWARDS IN 2014

A call for applications is sent to all current and former fellows who are eligible to apply for a CDA. The deadline for applications was 14 November 2013; 62 eligible applications were received. Fellows from award years 2006-2011 were eligible to apply.

Applications were assigned to two members of the review committee for evaluation; approximately 12-15 applications per member. Mail reviews were solicited from experts in the proposed field of research for each application, and between 2-6 evaluations were secured.

Applications were triaged based on ratings submitted in advance of the committee meeting, and approximately 30% of the applications were discussed during the meeting on 7 February 2014.

The review committee ranked the applications according to excellence and fit with the HFSP vision of supporting frontier research, and recommended 12 applications for funding along with a reserve list of 4 applications should any awards be declined or new funding become available.

At its meeting in March 2014, the HFSP Board approved 12 CDAs for the coming fiscal year, with a reserve list of 4 CDAs should funds become available. Figure 1-3 shows the host country of the awardees in the 2014 competition, and Figure 1-4 shows aggregate data from the last ten years.

Fig. 1-3: Host country for Career Development Awards in the 2014 competition

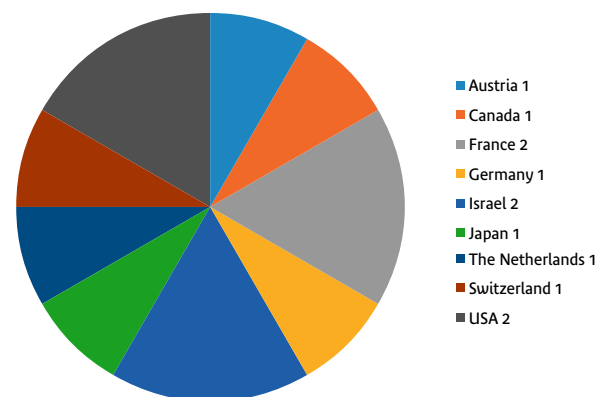
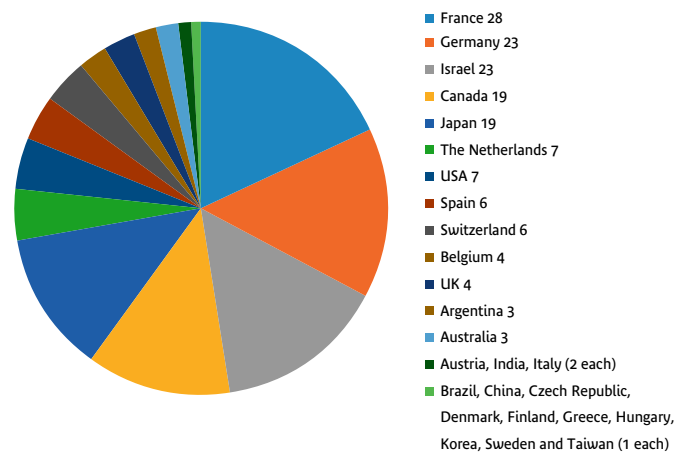


Fig. 1-4: Host country for Career Development Awards from 2005-2014



1.7

THE 2014 REVIEW COMMITTEE FOR CAREER DEVELOPMENT AWARDS



Daniel Kiehart, Chair of the Career Development Award Review Committee

Chair

Daniel KIEHART, Duke University, Durham, USA

Vice-Chair

Frederick MACKINTOSH, Free University, Amsterdam, The Netherlands

Canada

Emil PAI, University of Toronto

European Union

Frederick MACKINTOSH, Free University, Amsterdam, The Netherlands

France

Eric VIVIER, Université de la Méditerranée, Marseille

Germany

Michael KIEBLER, Ludwig-Maximilians University, Munich

Italy

Marco BIANCHI, San Raffaele University, Milan

Japan

Ko SAKAI, University of Tsukuba

United Kingdom

Iain HAGAN, University of Manchester

United States of America

Daniel KIEHART, Duke University, Durham
Marja TIMMERMANS, Cold Spring Harbor Laboratory

Delegate of the Council of Scientists

Hermann GAUB, Ludwig-Maximilians University, Munich, Germany (absent)

HFSP Fellows at the 2013 Falling Walls conference, Berlin, Germany

'Which are the next walls to fall?' On November 9, about 750 international attendees participated in the fifth Falling Walls Conference in commemoration of the fall of the Berlin Wall in 1989. In the Radialsystem V Conference Center on the Spree River, 20 experts discussed future breakthroughs in society, science and technology.

The previous day, 100 young scientists were invited to share their breakthrough ideas before an international jury at a Falling Walls Lab. Among them were two HFSP Long-Term fellows: Falling Walls Lab-finalists and A.T. Kearney Scholars Anne-Cécile Reymann (MPI Dresden) and Benjamin Philipp Born (Weizmann Institute, Rehovot). Both met with other young minds in a very unique atmosphere backstage where they discussed innovative ideas that would be conducive to bridging the gap between science and a suite of other fields, ranging from language studies to medicine and from engineering to philosophy. Both then participated in the Falling Walls Conference which was opened by Germany's Minister for Education and Science, Johanna Wanka, who emphasized the importance of science communication in fostering intercultural relations, an issue touched upon during a live-broadcast with the Chinese artist, Ai Weiwei.

Like the HFSP Awardees Meeting, the Falling Walls Lab and the Falling Walls Conference 2013 together fostered an atmosphere of open interdisciplinary exchange between attendees, speakers and distinguished participants, particularly in the informal "non-breaks" connecting conference sessions during which there was the opportunity to interact with speakers in a more direct manner. Barriers between participants were as absent as the Berlin Wall itself in the spirit of a Conference specially intended to "tear down walls". In retrospect, Anne-Cécile Reymann reflects that the Falling Walls Conference gave the opportunity to "broaden our perspective and to consider controversial topics with a high impact on society, such as civil rights, fair distribution of resources, or sustainability among others, stepping out of our own narrow subject of research."



HFSP fellow Anne-Cécile Reymann at Falling Walls Lab 2013



HFSP fellow Benjamin Born at Falling Walls Lab 2013

CHAPTER 2



Research Grant Program

- 2.1 Overview of the Grant Program
- 2.2 Young Investigator Grants
- 2.3 Program Grants
- 2.4 Research Grant Awards in 2014
- 2.5 The 2014 Review Committee for Research Grants



Left to right: Geoffrey Richards, Armelle Koukoui and Carole Asnaghi

2.1

OVERVIEW OF THE GRANT PROGRAM

Research Grants are awarded for innovative collaborative projects of fundamental biological research carried out by an international, and preferably intercontinental, team of two to four scientists having their laboratories in different countries. In fact, over the last 5 years, 98.8% of the awards have gone to intercontinental teams. Successful teams with five members are rare as the majority of larger teams have a weak link or show a redundancy in expertise so that the overall research plan is not convincing. Grants are awarded for a period of three years to teams who propose to combine their expertise to approach problems in the life sciences that could not be answered by the individual laboratories. In order to help break down traditional barriers between disciplines, from 2001 to 2008, HFSP emphasized the importance of interdisciplinarity in the grant program. By 2008 this had become widespread and that year the review committee asked for more freedom in weighting the innovative, international and interdisciplinary components when assessing applications. Currently

most emphasis is placed on the innovative nature of the collaboration although this often involves novel combinations of expertise. Particular attention is given to collaborations that bring together scientists from different disciplines (e.g. biology, chemistry, physics, mathematics, computer science and engineering). Applicants are expected to develop new lines of research, rather than continuing their ongoing program, and so as to encourage novel ideas and innovative approaches, preliminary results are not required. The Principal Applicant's laboratory must be located in one of the member countries while the other team members may be situated anywhere in the world.

There are two categories of grant: Young Investigator Grants for groups of young scientists establishing their research groups, and Program Grants for scientists at any stage of their careers. The applications are processed in parallel but the grant review committee in January examines and ranks each category separately.

Where are the frontiers?

The biggest challenge for the review committee is to identify novel frontier research applications often incorporating diverse expertise from both the biological and physical sciences. For this the committee must include members familiar with disciplines such as chemistry, physics, mathematics and engineering in addition to the more traditional biological sciences. A major change in the grant program over the last five years is the increasingly quantitative nature of the biology being proposed. A decade ago, a biophysicist and a computational neuroscientist on the grant committee handled almost all things numerical. In the January 2014 committee there were five biophysicists, two theoretical systems biologists as well as two computational neuroscientists and a computational structural biologist (others had experience in both of these areas). Five years ago the 'quantitative' projects were largely speculative (the computational modeler was most often an 'add-on' to a team of biologists) whereas many systems projects today are considered 'routine'.

The range of applications is such that the committee may lack the expertise necessary to assess the contribution of some of the team members. In these cases we solicit opinions from mail reviewers working in departments that may be unfamiliar with the Program. Fortunately, not only do we observe the same willingness to help in the review process from such experts as those in more traditional biological departments, but also we often receive spontaneous remarks confirming the originality and interest of the project. However these same specialist reviewers sometimes point out that the 'innovative' approach is routine in their discipline and that furthermore the applicants grasp of the approach is superficial.

The concept of novelty is related to the development of certain fields or techniques. Frontier science is often the first appearance of a novel technology (microscopy, protein labelling, transgenic models, computational programs etc.) which may become widely available within two or three years of its first appearance in the HFSP competition and will start to appear as a tool in a large number of applications which we see as a 'second wave'. A recent example would be the use of optogenetics. Similarly a project considered cutting-edge one year, because of a novel combination of expertise, may be considered as routine a couple of years later. In fact, in the absence of technological breakthroughs, fields can appear to stagnate for a year or two while teams concentrate on exploiting the last wave of innovation. This may well be high quality science destined for major journals, but the committee members must have sufficient stature so as to decide whether an approach has become standard or is truly innovative.

Face to face collaborations

Many successful teams organize regular meetings to discuss problems face to face, or visit each others' laboratories for a few weeks so as to understand the scope of their partners' contributions. The flexibility in the use of HFSP funds allows the reactivity that is essential for such collaborations – notably for travel and team meetings when critical decision points are reached. Scientists are learning the interest of making such collaborations reality (rather than continuing their ongoing projects in parallel) and the review committee gives considerable importance to the details of interactions between the team members envisaged in the full application. With the expansion of HFSP membership in recent years we are seeing changes in the profiles of collaborations.

2.2

YOUNG INVESTIGATOR GRANTS

The Young Investigator Grant scheme was introduced in the 2001 award year to encourage collaboration between young scientists who are within five years of obtaining their first independent positions. Young Investigator Grant teams receive 250 thousand USD per year for two members, 350 thousand USD for three members, and 450 thousand USD for four or more. Local collaborations in the same country are permitted but teams only receive funds equivalent to 1.5 team members and then only if the collaboration is truly interdisciplinary. This measure aims to facilitate the formation of teams involving scientists with different expertise since it is often difficult for scientists, especially younger investigators, to find appropriate partners internationally. In the 2014 award year, applications from Young Investigators represented about 21% of the letters of intent received.

As a group they were slightly more successful than the applications to the Program Grants (Table 2-1).

2.3

PROGRAM GRANTS

These are awarded to teams of independent researchers at any stage of their careers. The research team is expected to develop new lines of research through the collaboration. Applications including independent investigators early in their careers are encouraged. Funding is based on team size and is the same as for the Young Investigators including the rules concerning team members from the same country. The quality of applications in this competition has been boosted by the arrival of a cohort of younger investigators who have acquired expertise in several areas of research during their doctoral and post-doctoral training. As many of these have now established their laboratories more than five years ago they are no longer eligible for the Young Investigator competition.

In 2014 it was noticeable that a large percentage of Program Grants teams were led by investigators between 36 and 40 years old.

2.4

RESEARCH GRANT AWARDS IN 2014

Awardees for FY 2014 were selected among the applications received in reply to the call published in the journals Science and Nature, on the HFSP web site and the web sites or newsletters of relevant scientific societies. A two-step review process was used. Guidelines and application forms for both the letter of intent (the first step) and for full applications (the second step) were provided on the web, and the submission and review of applications were entirely electronic. The deadline for letters of intent was 27 March 2013. Interest in the 2014 cycle was higher than in the 2013 cycle (Fig. 2-1) and a record number of letters of intent was received.

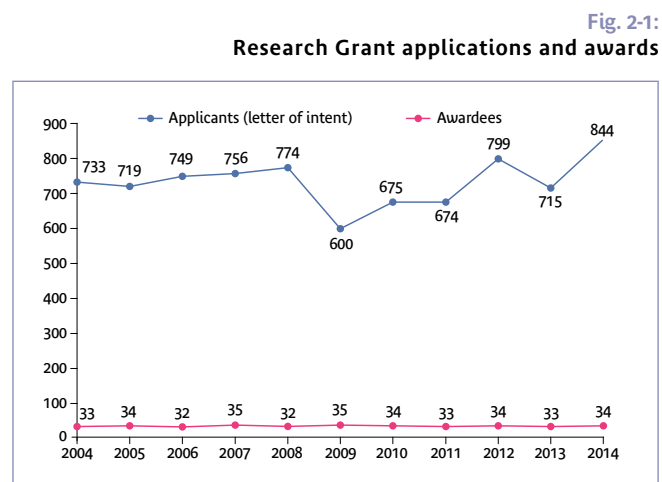


The 844 letters of intent were initially screened for formal eligibility. This included 3 renewal applications for Young Investigator teams (a trial initiative authorised by the Board of Trustees in December 2009). Only a few letters of intent were rejected on the grounds of eligibility. Since 2005, triage has been introduced; a small scientific committee including the Chair and Vice-Chair of the Review Committee screened the letters of intent and those that did not meet the scientific aims of the Program, 82 applications in all, did not enter the full review process. The Principal Applicant was informed as soon as possible so that the team might apply for funding elsewhere. Each remaining letter of intent was evaluated by two Review Committee members. The top-scoring projects were examined by a Selection Committee consisting of previous and past members of the Review Committees. The Selection Committee met on 4-6 July to discuss some 35% of the original submissions (294 new applications and the 3 Young Investigator renewal applications) and following these discussions, 92 applicants were invited to submit a full application including 1 Young Investigator renewal application. Teams that were not asked to submit full applications were given brief feedback concerning the selection procedure, the evaluation criteria and the general classification of their application.

Invitations were sent out immediately after the Selection Committee meeting with the deadline for submission of full applications as 12 September 2013. All but two of the invited teams submitted full applications which were reviewed. Each full application was evaluated by mail (external) reviewers who submitted a written report and by two members of the Review Committee for Research Grants.

Scientific merit, innovation and interdisciplinarity were the most important criteria in the evaluation of the projects. Internationality, and especially intercontinentality, and the participation of researchers early in their careers also ranked highly, not only in the case of Young Investigator but also in Program Grant applications. The Young Investigators' applications were reviewed separately in the same manner as Program Grants. The Review Committee met on 20-22 January 2014 in Strasbourg to discuss the 90 full applications and recommended 34 for awards, 10 Young Investigator and 24 Program Grants (including 2 Program Grants on a reserve list should funds be available). The selection of awards was monitored by Council members and financial considerations (budgetary restrictions) were taken into account by the Board before the recommendations for 34 awards were approved. Both awardees and unsuccessful applicants received feedback from the committee in the form of a short summary.

Fig. 2-1 shows the number of applications and awards between award years 2004 and 2014. Between 1990 and 2001 there was a single step procedure with an average success rate of c.13%. This was simplified from 2002 onwards by the introduction of shorter Letters of Intent where applicants outline their collaboration and project. Following an initial review by members of the grant review committee, a smaller Selection Committee invites full applications for the more promising proposals. The numbers of applications and awards using this two step procedure from 2002 onwards are shown in Table 2-2.



**Table 2-1:
Recommendations of Review Committee - Summary Table**

	Program Grants	Young Investigators	Total
Number of letters of intent	663	181	844
Number of full applications	65	27	92*
% of recommended grants, based on letters of intent	3.6	5.5	4.0
% of recommended grants, based on full applications	37.5	38.5	37.8

*2 invited but not submitted (1 PG and 1 YI)

**Table 2-2:
Research Grant applications and awards each year since 2002 (2 step procedure)**

Award year	Letters of intent	Full applications received	Awards		Success rate* (%)	Total cost in their 1 st year (USD million)
			PG	YI		
2002	548	72	26	11	51.4	12.35
2003	549	80	22	9	39.0	10.85
2004	733	67	27	6	49.2	11.75
2005	719	86	27	7	39.5	12.75
2006	749	80	20	12	40.0	11.05
2007	756	80	25	10	44.3	12.70
2008	774	88	18	14	36.8	10.65
2009	600	88	26	9	39.8	12.10
2010	675	84	25	9	40.5	11.25
2011	674	88	22	11	37.5	11.40
2012	799	95	25	9	35.8	12.20
2013	715	91	23	10	36.2	11.70
2014	844	90	24	10	37.8	11.80
TOTAL			966**			

In 2012 an additional award was made in September (after the publication of FY2011 report).

* based on full applications ** Grand total of awards (1990-2014)

Table 2-3 and Table 2-4 present an analysis of gender distribution in award year 2014

**Table 2-3 and 2-4:
Gender distribution in award year 2014**

		Letter of Intent		Invited	
		Program	Young	Program	Young
Female	No. Scientists	441	129	46	16
	%	20.5%	27.2%	21.1%	21.9%
Male	No. Scientists	1707	344	172	57
	%	79.5%	72.6%	78.9%	78.1%
TOTAL	No. Scientists	2149*	474*	218	73

* Program: 1 information refused

The distribution of female scientists in awarded applications is the following:

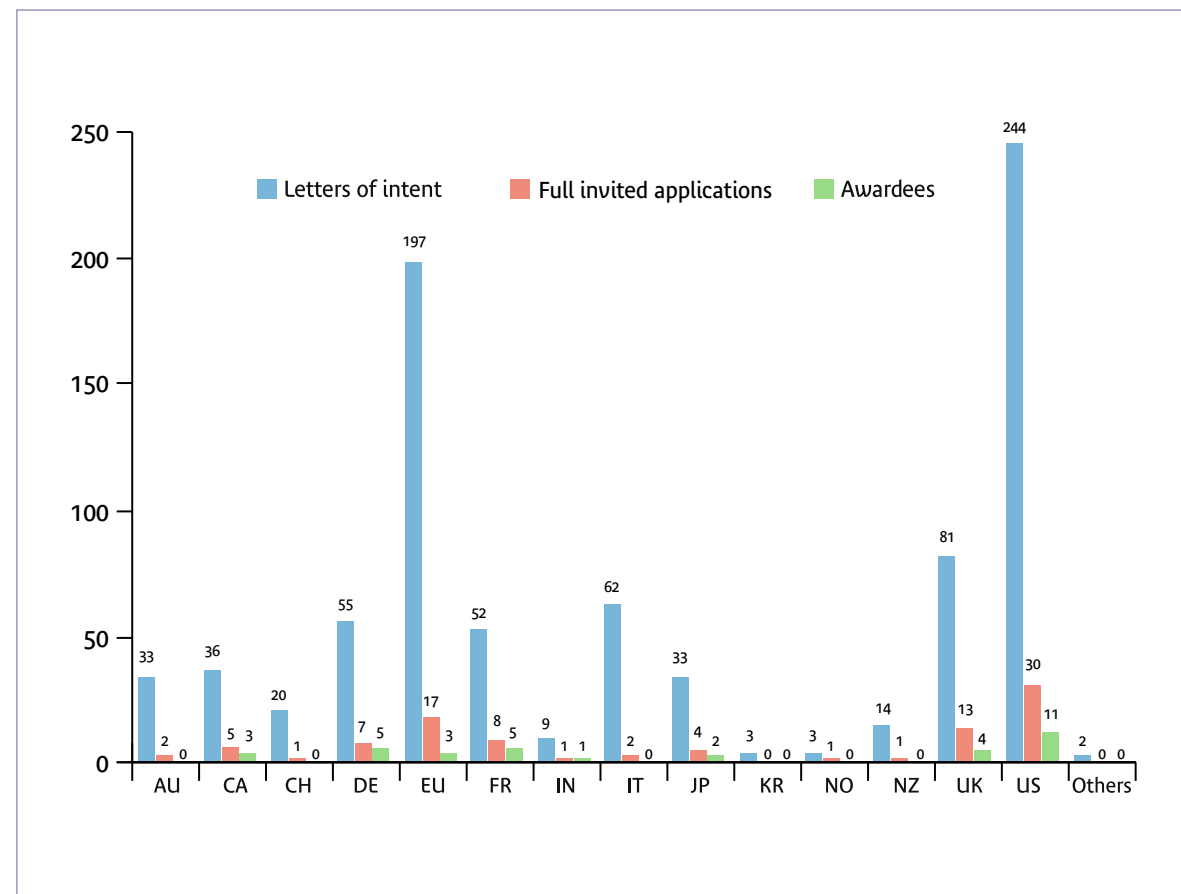
	Total	Female	% Female	(2013)	Female PI	(2013)
Program	78	11	14.1	19.7	3	5
Young	28	8	28.6	17.9	3	1
TOTAL	106	19	17.9	19.3	6	6

Distribution of awards per country

(Figs. 2-2, 2-3, Table 2-5) Fig 2-2 shows the distribution of Principal Investigators for the 2014 awards among various countries and Fig. 2-3 shows the total number of scientists in different countries participating in the international teams.

The largest number of applications came from Principal Investigators in the USA and nearly one third of successful applicants (all team members) were working in the USA.

Fig. 2-2:
Countries in which Principal Investigators are working



EU Letters of Intent

PG: Austria 5, Belgium 6, Czech Republic 4, Denmark 6, Estonia 1, Finland 6, Greece 4, Hungary 2, Ireland 4, Luxembourg 1, The Netherlands 27, Portugal 18, Romania 2, Slovenia 1, Spain 64, Sweden 9
 YI: Austria 2, Denmark 1, Estonia 1, Finland 2, Greece 2, The Netherlands 11, Portugal 3, Spain 12, Sweden 3

EU Invited

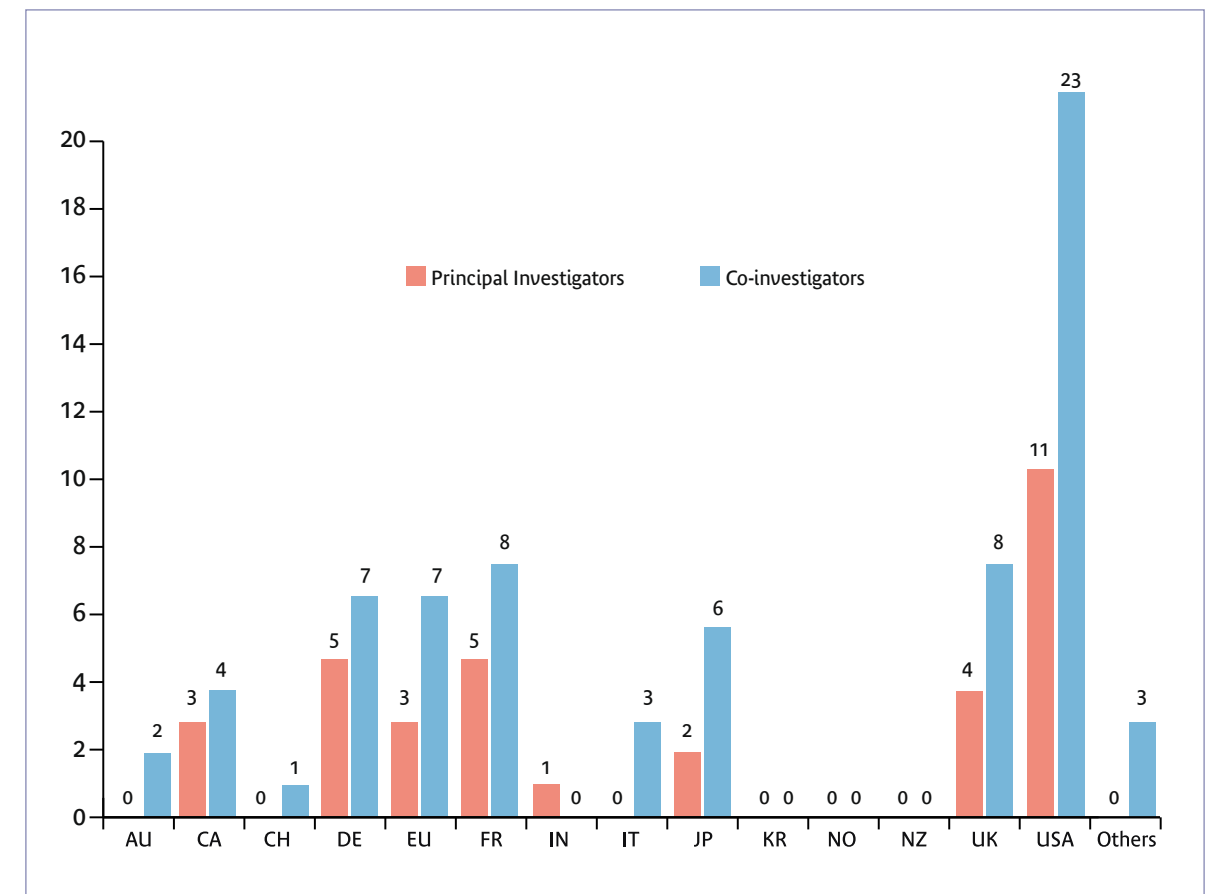
PG: Austria 1, The Netherlands 4, Portugal 1, Spain 5, Sweden 2
 YI: The Netherlands 2, Spain 1, Sweden 1

EU Awarded

PG: The Netherlands 2
 YI: Sweden 1

Others: CDA awardees not in a MSP
 Letters of Intent: Israel 2 (2 PG)

Fig. 2-3:
Countries in which awardees are working



Principal Investigators

EU: The Netherlands 2, Sweden 1

Co-Investigators

EU: Austria 1, Denmark 2, The Netherlands 2, Spain 1, Sweden 1
 Others: Argentina 1, China 1, Mexico 1

Table 2-5
Number of applicants and awardees listed by country of institution

	Letter of Intent			Invited			Awarded		
	PG	YI	Total	PG	YI	Total	PG	YI	Total
PG=Program Grants YI=Young Investigators									
Australia	78	12	90	9	1	10	1	1	2
Canada	86	29	115	10	5	15	4	3	7
EU	361(a)	88(a)	449(a)	27(b)	13(b)	40(b)	6(c)	4(c)	10(c)
France	121	26	147	19	4	23	10	3	13
Germany	165	32	197	24	3	27	11	1	12
India	17	11	28	2	0	2	1	0	1
Italy	104	16	120	8	1	9	2	1	3
Japan	142	21	163	17	2	19	8	0	8
Korea	14	8	22	0	1	1	0	0	0
New Zealand	23	4	27	2	0	2	0	0	0
Norway	7	1	8	1	1	2	0	0	0
Switzerland	49	6	55	4	0	4	1	0	1
UK	203	43	246	26	8	34	9	3	12
USA	601	130	731	57	24	81	24	10	34
Non MSPs	178(a')	47(a')	225(a')	12(b')	10(b')	22(b')	1(c')	2(c')	3(c')
TOTAL	2149	474	2623	218	73	291	78	28	106

(a) EU Letter of Intent

PG: Austria 18, Belgium 14, Bulgaria 1, Croatia 2, Cyprus (EU) 2, Czech Republic 8, Denmark 25, Estonia 1, Finland 21, Greece 9, Hungary 7, Ireland 5, Luxembourg 2, The Netherlands 61, Poland 1, Portugal 32, Romania 2, Slovakia 2, Slovenia 4, Spain 116, Sweden 28

YI: Austria 5, Belgium 3, Czech Republic 3, Denmark 6, Estonia 2, Finland 6, Greece 5, Hungary 1, Ireland 2, The Netherlands 20, Poland 1, Portugal 7, Romania 1, Spain 20, Sweden 6

b) EU Invited

PG: Austria 2, Czech Republic 1, Denmark 1, Finland 1, Greece 1, Hungary 1, The Netherlands 8, Portugal 1, Spain 9, Sweden 2

YI: Czech Republic 1, Denmark 1, Estonia 1, The Netherlands 4, Portugal 1, Spain 1, Sweden 4

(c) EU Awarded

PG: Austria 1, Denmark 1, The Netherlands 3, Spain 1

YI: Denmark 1, The Netherlands 1, Sweden 2

(a') Non MSPs Letter of Intent

PG: Argentina 11, Brazil 18, Brunei 1, Chile 3, China 17, Taiwan 7, Colombia 2, Cuba 1, Ethiopia 1, French Polynesia 1, Gabon 1, Ghana 1, Israel 67, Kenya 1, Malawi 1, Mexico 9, Puerto Rico 1, Russia 5, Saudi Arabia 1, Singapore 19, South Africa 6, Thailand 2, Turkey 1, Uruguay 1

YI: Argentina 1, Brazil 5, Chile 4, China 9, Taiwan 1, Iceland 1, Israel 10, Malaysia 1, Mexico 4, Russia 1, Senegal 1, Singapore 5, South Africa 1, Thailand 1, Turkey 1, Vietnam 1

(b') Non MSPs Invited

PG: Argentina 2, Brazil 1, Chile 1, China 1, Taiwan 2, Israel 5

YI: Chile 1, China 4, Israel 3, Mexico 2

(c') Non MSPs Awarded

PG: Argentina 1

YI: China 1, Mexico 1

2.5

THE 2014 REVIEW COMMITTEE FOR RESEARCH GRANTS



Declan Bates, Chair of the Research Grant Review Committee

Chair

Declan BATES, University of Warwick, United Kingdom

Vice-Chair

Wendy SUZUKI, New York University, United States of America

Australia

Merlin CROSSLEY, University of New South Wales, Victoria

Canada

Nancy FORDE, Simon Fraser University, Burnaby

European Union

Pieter MEDENDORP, Radboud University Nijmegen, The Netherlands

Barbara NAWROT, Polish Academy of Sciences, Lodz, Poland

France

Hidde DE JONG, INRIA, Saint-Ismier

Sophie ZINN-JUSTIN, Institute of Biology and Technology Saclay, Gif-sur-Yvette

Germany

Christoph SCHMIDT, Georg-August-University, Goettingen

Ulrich SCHWARZ, University of Heidelberg

India

Anna GEORGE, National Institute of Immunology, New Delhi

Italy

Leonardo CHELAZZI, University of Verona

Japan

Yasunori HAYASHI, RIKEN, Wako

Masataka KINJO, Hokkaido University, Sapporo

Republic of Korea

Sung Hee BAEK, Seoul National University

New Zealand

Vickery ARCUS, University of Waikato

Norway

Gareth GRIFFITHS, University of Oslo

Switzerland

Christian FANKHAUSER, University of Lausanne

United Kingdom

Declan BATES, University of Warwick, **David STRUTT**, University of Sheffield,

United States of America

Ivet BAHAR, University of Pittsburgh

Mary DICKINSON, Baylor College of Medicine, Houston

Boris SHRAIMAN, University of California, Santa Barbara

Wendy SUZUKI, New York University

Other

Misha TSODYKS, Weizmann Institute of Science, Rehovot, Israel

Delegate from the Council of Scientists

Young-Joon KIM, Yonsei University, Seoul, Republic of Korea

Hedgehog's long snout finds a cure

In 1993, HFSP funded a research grant to address questions on the patterning of the mid-hindbrain region of the vertebrate embryo. This transatlantic project is a textbook example of a collaboration between three investigators who followed their instincts in curiosity driven research and two decades later achieve a major breakthrough in the treatment of skin cancer.

Andrew McMahon, then at Harvard University and now at the University of Southern California, Clifford Tabin, Harvard Medical School, and Philip Ingham, then at the Imperial Cancer Research Fund in Oxford and now at A*STAR Singapore, joined efforts to investigate fundamental mechanisms that regulate the development of the early mid-hindbrain region in zebra fish, chick and mouse. They wanted to unravel the regulation of gene expression patterns during vertebrate brain development and to determine whether the signaling molecule hedgehog known in the fruit fly *Drosophila* is evolutionarily conserved in vertebrate species.

The team's early findings were spectacular: not only did their collaborative research result in the discovery of three distinct hedgehog genes but they also found that one of them - the so called Sonic hedgehog gene (Shh) - encodes a signal that specifies the identity of a variety of neuronal progenitor cells along the developing neural tube of the vertebrate embryo. Moreover, results of misexpression in the chick limb showed that Shh also acts as the long sought after signal that specifies digit number and pattern.

Subsequent studies by the team, as well as by many other researchers who followed their lead, showed that Shh plays multiple roles in development, including the induction of hair follicles in the skin and most importantly that inappropriate activation of the pathway controlled by Shh in skin progenitors is a major cause of Basal Cell Carcinoma (BCC). Patents filed over the coming years helped facilitate the establishment of a small biotech company, Ontogeny, that began screening for Shh agonists and antagonists. Ontogeny gave rise to Curis Inc., which together with Genentech developed the anti-Shh drug Erivedge. In 2013, exactly 20 years after receiving their HFSP Research Grant, the European Medicines Agency approved the use of Erivedge as an anti-cancer drug, whose origins can be traced back to this initial collaboration. The decision in Europe followed approval of the drug in the USA by the FDA in 2012. The drug is now in use for the treatment of metastatic BCC. The team's landmark discovery of Shh was the stepping stone for further important discoveries in animal development and the hedgehog pathway proved to be a rich treasure trove for a plethora of processes including several other cancers.



Andrew McMahon, University of Southern California, Los Angeles, USA (Principal Investigator)



Phil Ingham, A*Star, Singapore (Co-Investigator)



Co-Investigator, Clifford Tabin, Harvard Medical School, Boston, USA (Co-Investigator)





Program Highlights

- 3.1 HFSP Nakasone Award
- 3.2 Awardees Meeting
- 3.3 Outreach activities
- 3.4 Honours and prizes



Left to right: Xavier Schneider (IT manager and webmaster), Rosalyn Huie and Guntram Bauer (Communications)



3.1

HFSP NAKASONE AWARD



Uri Alon of the Weizmann Institute of Science,
Israel

The 2014 HFSP Nakasone Award to Uri Alon of the Weizmann Institute of Science

The idea of establishing the prestigious HFSP Nakasone Award was proposed in July 2009 when HFSP held its 20th anniversary celebrations in Tokyo in the presence of former Prime Minister Nakasone. The award honours the vision of former Prime Minister Nakasone for his efforts to launch a program of support for international collaboration and to foster early career scientists in a global context.

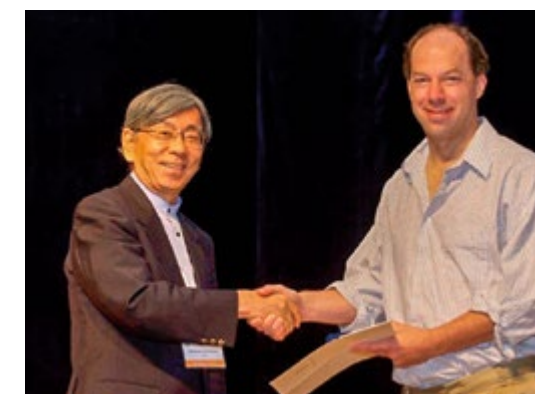
The HFSP Nakasone Award recognizes scientists who have undertaken frontier-moving research in biology, whether these be conceptual, experimental or technological breakthroughs. Both senior and junior scientists are eligible and peer-recognised excellence is the major criterion for selection. Awardees receive an unrestricted research grant of USD 10,000, a medal and a certificate. The award ceremony is held at the annual HFSP Awardees Meeting where the awardee delivers the HFSP Nakasone Lecture. The prize is open to all scientists, not only those who have received funding from HFSP programs.

Uri Alon was selected for the 2014 HFSP Nakasone Award for his pioneering work in discovering network motifs, which provided the single most important foundation for the field of systems biology, because it opened up the previously impenetrable complexity of genetic circuits to systematic analysis and understanding.

Alon discovered that complex genetic networks can be understood in terms of much simpler building blocks, called network motifs. He discovered these motifs and elucidated their functional roles in diverse biological systems from bacteria to animal cells. His work established the modern paradigm for understanding the design principles of cells resulting in a theory of how genetic circuits evolve. The principle of motif-based analysis of networks has numerous applications beyond biology since it can be used to identify important functional building blocks in social, ecological and economic networks. Moreover, as biology increasingly expands to include synthetic approaches to building new genetic circuitry, Alon's motifs are providing the guiding design principles for the new field of synthetic biology.

3.2

AWARDEES MEETING



Stephen Quake of Stanford University receives the 2013 HFSP Nakasone Award from HFSP President Nobutaka Hirokawa at the Thirteenth HFSP Awardees Meeting in Strasbourg, France

13th HFSP Awardees Meeting, Strasbourg, France, 7-10 July 2013

HFSP Awardees Meetings have become an important event in the HFSP calendar. Their aim is to bring together Grant, Fellowship and Career Development Award holders from all over the world and from different scientific disciplines in order to present and discuss their work. These interactions have become a source of inspiration for awardees and have led to new collaborations. The meetings have thus become an integral element in strengthening the HFSP community, creating an international network of scientists at all stages of their careers and on all fronts of the biological frontiers.

After visiting a large number of HFSP member countries in previous years, the 2013 Awardees Meeting took place in Strasbourg, France, where the HFSP office is located. The historic town center provided a scenic backdrop that was much appreciated by over 200 participants.

"The meeting is a terrific opportunity to see cutting edge research from many disciplines and to be able to discuss the work with the presenters. I find the meetings very stimulating in that they foster creativity by exposing awardees to a broad range of science and to an engaged group of people."

The meeting venue, Le Palais de la Musique et des Congrès, offered ample space during the poster sessions and breaks for get-togethers of grant teams and general networking. The meeting started with the Nakasone Award ceremony and was followed by the Nakasone Lecture by Stephen Quake of Stanford University. Additional invited speakers were Ulrich Hartl (Germany), Yigong Shi (China), and Jack Szostak (USA) who gave inspiring keynote presentations that ended each day on a high note. A special lecture was given by Martin Fenner from ORCID, who provided first rate information on the Open Researcher and Contributor ID – a new principle to which HFSP also adheres. HFSP is very grateful to the city of Strasbourg, the Region of Alsace and the French Ministry of Research and Higher Education for their financial support of the 2013 Awardees Meeting.

"This year I was hoping to find future collaboration partners in areas I am not expert in, and met several interested people. With two of them I am already planning future joined experiments, so it was very successful."

"It again was a great meeting with many inspiring discussions. I always enjoyed the meetings and profited from them. It's sad we can only attend them while supported, and not as alumni."

3.3 COMMUNICATIONS



Guntram Bauer (on the right) meets with Haim Garty, Vice President of the Weizmann Institute of Science, at the Alumni meeting

The HFSP web site remains one of our primary communication tools and awardees are closely following new content in a regular fashion. During the past 12 months we registered over 290,000 site visits of which 40% were return visitors. It is not surprising that the section with funding information is among the most attractive. The Frontier Science section continues to maintain a high profile, not least due to our efforts to keep HFSP's social media channels up to date. In 2013 we published three issues of the redesigned newsletter, HFSP Matters. The diversity of topics was very well received and HFSP Matters is now sent to almost 8,000 recipients.

In June 2013 we were present with an information booth for the first time at the RNA Society Annual Meeting in Davos, Switzerland. The meeting is organized only every other year outside the USA and our presence was very much appreciated by the conference participants. Another first was our presence at the 58th Annual Meeting of the

Biophysical Society in San Francisco (February 15-19, 2014) which attracted over 7,000 participants. We recorded the highest number of visitors to the HFSP booth since we began representing the Program in this way at international conferences.

Early in 2014 we also organized two HFSP alumni meetings. The first, organized by Katja Brückner (former HFSP fellow and now head of a laboratory at UCSF), was held on 19 February in Genentech Hall. We were delighted that Bruce Alberts, former President of the AAAS and Editor in Chief of Science magazine, accepted our invitation for a plenary lecture.

On 27 March we organized the first alumni meeting at the Weizmann Institute of Science in Israel. This drew the attention of alumni from all over the country who welcomed HFSP enthusiastically to Israel.

HFSP participation in scientific meetings and science policy meetings

2013

Max Delbrück Center Career Day
11-12 April 2013, Berlin, Germany

EU delegation to Japan, 'Europe/Japan Career Day'
20 May, Tokyo, Japan

Dryad - ORCID - Data Publication Events
21-24 May, University of Oxford, UK

2nd Annual Global Meeting of the Global Research Council
28 May, Berlin, Germany

Annual Meeting of the Global Virus Network
30-31 May, Munich, Germany

Japan Society for the Promotion of Science, University of Strasbourg and CNRS Joint Forum on "Frontiers in Innate Immunity"
6-7 June, Strasbourg, France

Meeting of French EMBL Alumni, Institut Pasteur
7 June, Paris, France

Booth at The RNA Society 18th Annual Meeting
11-15 June, Davos, Switzerland

EMBO fellows meeting
13-14 June, Heidelberg, Germany

63rd Nobel Laureate Meeting
30 June-5 July, Lindau, Germany

HFSP lecture at Tokyo Women's Medical University and Waseda University (TWIns)
4 October, Tokyo, Japan

Science and Technology in Society (STS) Forum
6-8 October, Kyoto, Japan

Meeting of European Network on Research Careers
21 October, Brussels, Belgium

European Foundation Center, "Evaluation for Scientific Foundations"
22-23 October, Brussels, Belgium

Society for Experimental Biology (SEB) workshop
25 October, London, UK

Robert Bosch Foundation, 8th Berlin Debate on Science and Science Policy
8 November, Berlin, Germany

World Science Forum
24-27 November, Rio de Janeiro, Brazil

Polish Foundation for Science (FNP) symposium on peer review
30 November, Warsaw, Poland

Indian Society of Developmental Biologists Conference
1-4 December, Mumbai, India

Kastler Foundation (FNAK) 20th Anniversary Meeting
6 December, Strasbourg, France

2014

Ministry of Science and Technology Workshop on 'Challenges and Opportunities for China's Science and Technology Development'
16-18 January, Beijing, People's Republic of China

58th Annual Meeting of the Biophysical Society
15-19 February, San Francisco, USA

HFSP Alumni meeting at University of California, San Francisco
19 February, San Francisco, USA

Dinner hosted by Derek Hanekom, Ministry of Science and Technology of South Africa, on the occasion of the Innovation Convention
9 March, Brussels, Belgium

DFG and BBAW International Symposium on Reprogrammed Stem Cells
20-22 March, Berlin, Germany

HFSP alumni meeting at the Weizmann Institute of Science
27 March, Rehovot, Israel

International Symposium 'From Functional Genetics to Systems Biology' (BioSysNet)
31 March, Munich, Germany





3.4

HONOURS AND AWARDS

HFSP GRANTEES AWARDED THE NOBEL PRIZE

	Grant awarded	Nobel Prize
Christiane NÜSSEIN-VOLHARD	1993	1995 (Physiology or Medicine)
Rolf ZINKERNAGEL	1994	1996 (Physiology or Medicine)
Stanley PRUSINER	1994	1997 (Physiology or Medicine)
John WALKER	1996	1997 (Chemistry)
Steven CHU	1993	1997 (Physics)
Paul NURSE	1994	2001 (Physiology or Medicine)
Tim HUNT	1992/1997	2001 (Physiology or Medicine)
John SULSTON	1991	2002 (Physiology or Medicine)
Peter AGRE	2000	2003 (Chemistry)
Linda BUCK	1995	2004 (Physiology or Medicine)
Avram HERSHKO	1998	2004 (Chemistry)
Roger KORNBERG	1990/1993/1997/2000	2006 (Chemistry)
Roger TSIEN	1995	2008 (Chemistry)
Jack SZOSTAK	2000	2009 (Physiology or Medicine)
Venkatraman RAMAKRISHNAN	2000/2009	2009 (Chemistry)
Ada YONATH	2003	2009 (Chemistry)
Jules HOFFMANN	1995	2012 (Physiology or Medicine)
Ralph STEINMAN	1996, 2006	2012 (Physiology or Medicine)
Randy SCHEKMAN	1991, 1995	2013 (Physiology or Medicine)
Thomas SÜDHOF	1995	2013 (Physiology or Medicine)
James ROTHMAN	1990, 1994, 2005	2013 (Physiology or Medicine)
Martin KARPLUS	2005	2013 (Chemistry)
Michael LEVITT	2008	2013 (Chemistry)

The following section lists other awards and prizes to HFSP awardees or alumni that have come to our attention in FY 2013²

Name	Nationality	Current affiliation	Year of HFSP award
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE			
FELLOW			
BIOLOGICAL SCIENCES			
Geneviève ALMOUZNI	France	Institut Curie, Paris, France	Research Grant 1997
Job DEKKER	The Netherlands	University of Massachusetts Medical School, Boston, USA	Program Grant 2011
Stefan JENTSCH	Germany	Max Planck Institute of Biochemistry, Martinsried, Germany	Research Grant 1992
Julin MALOOF	USA	University of California, Davis, USA	Young Investigator 2004
Tom STEVENS	USA	University of Oregon, Eugene, USA	Research Grant 1994
Karen VOUSDEN	UK	The Beatson Institute for Cancer Research, Glasgow, UK	Research Grant 1996
Peter Anthony WEIL	USA	Vanderbilt University School of Medicine, Nashville, USA	Research Grant 1998
Richard WOOD	USA	University of Texas, Houston, USA	Research Grant 1994
ENGINEERING			
Hang LU	USA	Georgia Institute of Technology, Atlanta, USA	Program Grant 2012
MEDICAL SCIENCES			
Edward PLOW	USA	Cleveland Clinic, USA	Research Grant 1995
Marc Elliot ROTHENBERG	USA	University of Cincinnati College of Medicine, USA	Research Grant 1999
NEUROSCIENCE			
Bart DE STROOPER	USA	Yale University School of Medicine, New Haven, USA	Short-Term Fellow 1994, Research Grant 1996
Scott GRAFTON	USA	National Institute of Mental Health, Bethesda, USA	Research Grant 1993
Nobutaka HIROKAWA	Japan	University of Tokyo, Graduate School of Medicine, Japan	Research Grant 1991
Wolf SINGER	Germany	Max Planck Institute for Brain Research/ Ernst Strüngmann Institute for Neuroscience, Frankfurt am Main, Germany	Research Grant 1990, 1993
Leslie THOMPSON	USA	University of California, Davis, USA	Research Grant 1999
ACADÉMIE DES SCIENCES			
LAMONICA PRIZE FOR NEUROLOGY			
Jean-Antoine GIRAULT	France	INSERM, Institut du Fer à Moulin, Paris, France	Research Grant 2000
ACADEMY OF MEDICAL SCIENCES			
FELLOWS			
Giulio COSSU	Italy	University College London, UK	Research Grant 1998
Russell FOSTER	UK	University of Oxford, UK	Research Grant 1995
Kevin FOX	UK	Cardiff University, UK	Research Grant 1998
Jeremy HENLEY	UK	University of Bristol, UK	Program Grant 2001
Peter MCNAUGHTON	New Zealand	King's College London, UK	Program Grant 2007
Nancy PAPALOPULU	Greece	University of Manchester, UK	Long-Term Fellow 1992
Magdalena ZERNICKA-GOETZ	UK/Poland	University of Cambridge, UK	Research Grant 2000
AMERICAN PHILOSOPHICAL SOCIETY			
MEMBER			
James DARNELL	USA	The Rockefeller University, New York, USA	Research Grant 1994

² It should be noted that Research Grants were awarded up until 2001 when Program Grants and Young Investigator Grants were introduced. The Short-Term Fellowship program was terminated in April 2010.

AMERICAN ACADEMY OF ARTS AND SCIENCES

FELLOWS

Steven HILLYARD	USA	University of California, San Diego, USA	Research Grant 1991
Terrence SEJNOWSKI	USA	The Salk Institute, La Jolla, USA	Research Grant 1996, 2000
Marc TESSIER-LAVIGNE	USA	The Rockefeller University, New York, USA	Research Grant 1995, 2000

BETTENCOURT SCHUELLER FOUNDATION

LILIANE BETTENCOURT PRIZE

Monsef BENKIRANE	Morocco	Institute of Human Genetics, Montpellier, France	Young Investigator 2003
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BREAKTHROUGH PRIZE IN LIFE SCIENCES FOUNDATION

BREAKTHROUGH PRIZE IN LIFE SCIENCES

Richard LIFTON	USA	Yale University, New Haven, USA	Research Grant 1996, 2000
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JOSÉ CARRERAS FOUNDATION

JOSÉ CARRERAS AWARD

Hind MEDYOUF	France/Morocco	DKFZ Heidelberg, Germany	Long-Term Fellow 2008
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CNRS

SILVER MEDAL

Anne HOUDUSSE	France	Institut Curie, Paris, France	Long-Term Fellow 1993, Program Grant 2005
Jean-Philippe GIRARD	France	IPBS-CNRS, University of Toulouse, France	Long-Term Fellow 1993
Angela SIRIGU	France	Institute of Cognitive Sciences, Bron, France	Program Grant 2005

BRONZE MEDAL

Francois LEULIER	France	CNRS, Université Aix-Marseille II, France	Long-Term Fellow 2004
Teva VERNOUX	France	Ecole Normale Supérieure, Lyon, France	Long-Term Fellow 2003, Career Development Award 2007, Program Grant 2013

CLAUDE PAOLETTI PRIZE

Jérôme GROS	France	Institut Pasteur, Paris, France	Long-Term Fellow 2007
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EUROPEAN MOLECULAR BIOLOGY ORGANISATION

MEMBERS

Asifa AKHTAR	Germany	Max-Planck Institute of Immunobiology and Epigenetics, Freiburg, Germany	Long-Term Fellow 1998
Herwig BAIER	Germany/USA	Max-Planck Institute of Neurobiology, Munich, Germany	Program Grant 2009
Buzz BAUM	UK/USA	MRC Laboratory for Molecular Cell Biology, London, UK	Long-Term Fellow 1998
Anne BERTOLOTTI	UK/France	MRC Laboratory for Molecular Biology, Cambridge, UK	Long-Term Fellow 1999
Michael BOUTROS	Germany	German Cancer Research Center (DKFZ) & University of Heidelberg, Germany	Program Grant 2005
Frank BRADKE	Germany	German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany	Long-Term Fellow 2000, Career Development Award 2003
Marileen DOGTEROM	The Netherlands	FOM Institute AMOLF, Amsterdam, The Netherlands	Program Grant 2005
Isabel FARIÑAS	Spain	University of Valencia, Spain	Long-Term Fellow 1994
Eileen FURLONG	Ireland	European Molecular Biology Laboratory, Heidelberg, Germany	Program Grant 2008
Anne HOUDUSSE	France	Institut Curie, Paris, France	Long-Term Fellow 1993, Program Grant 2005
Matthias MERKENSCHLAGER	Germany	MRC Clinical Sciences Centre, London, UK	Long-Term Fellow 1991
Daniel METZGER	France	Institute of Genetics and Molecular and Cellular Biology, Illkirch, France	Research Grant 1999
Gioacchino NATOLI	Italy	European Institute of Oncology, Milan, Italy	Young Investigator 2005

EUROPEAN MOLECULAR BIOLOGY ORGANISATION

MEMBERS

Rosario RIZZUTO	Italy	University of Padua, Italy	Research Grant 2001
Peter SCHEIFFELE	Germany	Biozentrum, University of Basel, Switzerland	Long-Term Fellow 1999
Petra SCHWILLE	Germany	Max-Planck Institute of Biochemistry, Martinsried, Germany	Program Grant 2002, 2005, 2009
Shahragim TAJBAKHSH	Canada	Institut Pasteur, Paris, France	Research Grant 1998
Kostas TOKATLIDIS	Greece	University of Glasgow, UK	Long-Term Fellow 1993
Wolfgang ZACHARIAE	Germany	Max-Planck Institute of Biochemistry, Martinsried, Germany	Research Grant 1999

ASSOCIATE MEMBER

Satyajit MAYOR	India	National Centre for Biological Sciences, Bangalore, India	Research Grant 1996, Program Grant 2005, 2012
Nahum SONENBERG	Canada	McGill University, Montreal, Canada	Research Grant 1995, 1998, Program Grant 2005

YOUNG INVESTIGATOR

Ido AMIT	Israel	The Weizmann Institute of Science, Rehovot, Israel	Long-Term Fellow 2008, Career Development Award 2011
Manuel THÉRY	France	CEA/Institute of Life Sciences Research and Technologies, Grenoble, France	Young Investigator 2012
Julien VERMOT	France	Institute of Genetics and Molecular and Cellular Biology, Illkirch, France	Long-Term Fellow 2004, Career Development Award 2010

EUROPEAN RESEARCH COUNCIL

ADVANCED GRANTS

Naama BARKAI	Israel	The Weizmann Institute of Science, Rehovot, Israel	Program Grant 2003, 2012
Yohanns BELLAICHE	France	Institut Curie, Paris, France	Program Grant 2007
Vania BROCCOLI	Italy	San Raffaele Scientific Institute, Milan, Italy	Short-Term Fellowship 1996
Neil BROCKDORFF	UK	University of Oxford, UK	Research Grant 1999
Serge CHARPAK	France	INSERM, Paris Descartes University, France	Program Grant 2005, 2009
Daniel CHOQUET	France	CNRS, Université de Bordeaux, France	Program Grant 2006
Graham COLLINGRIDGE	UK	University of Bristol, UK	Research Grant 1990
George COUPLAND	UK	Max Planck Institute for Plant Breeding, Cologne, Germany	Research Grant 1997
Caroline DEAN	UK	John Innes Centre, Norwich, UK	Research Grant 1997
Elaine DZIERZAK	USA/The Netherlands	Erasmus University Medical Center, Rotterdam, The Netherlands	Research Grant 1999
Michael FAINZILBER	Israel	The Weizmann Institute of Science, Rehovot, Israel	Long-Term Fellow 1996, Research Grant 1997
Patrick FORTERRE	France	Université Paris-Sud, France	Program Grant 2002
Nir FRIEDMAN	Israel	The Hebrew University, Jerusalem, Israel	Program Grant 2005
Magdalena ZERNICKA-GOETZ	UK/Poland	University of Cambridge, UK	Research Grant 2000
Pierre GÖNCZY	Switzerland/Italy	Swiss Federal Institute of Technology Lausanne, Switzerland	Long-Term Fellow 1996
Marcos GONZALEZ-GAITAN	Spain	University of Geneva, Switzerland	Program Grant 2004
Bruno GOUD	France	Institut Curie, Paris, France	Research Grant 1992, 1996
Carlos IBANEZ	Spain	Karolinska Institute, Stockholm, Sweden	Research Grant 1997
Dirk INZE	Belgium	Flanders Institute of Biotechnology (VIB), Ghent, Belgium	Research Grant 1994

EUROPEAN RESEARCH COUNCIL

ADVANCED GRANTS			
Stefan JENTSCH	Germany	Max Planck Institute of Biochemistry, Martinsried, Germany	Research Grant 1992
Israel NELKEN	Israel	The Hebrew University, Jerusalem, Israel	Research Grant 1998
Pier Giuseppe PELICCI	Italy	European Institute of Oncology, Milan, Italy	Research Grant 1994
Alain PROCHIANTZ	France	INSERM, Collège de France, Paris, France	Research Grant 1996, Program Grant 2002
Felix REY	France	Pasteur Institute, Paris, France	Research Grant 1996
Willem VERMEULEN	The Netherlands	Erasmus University Medical Center, Rotterdam, The Netherlands	Program Grant 2004
Herman WALDMAN	UK	University of Oxford, UK	Research Grant 1993
Detlef WEIGEL	Germany	Max Planck Institute for Developmental Biology, Tübingen, Germany	Research Grant 1997, Program Grant 2001, 2007
Derek WOOLFSON	UK	University of Bristol, UK	Program Grant 2007

STARTING GRANTS			
Ilka DIESTER	Germany	Ernst Strüngmann Institute (ESI) for Neuroscience, Frankfurt am Main, Germany	Long-Term Fellow 2009
Yuval EBENSTEIN	Israel	Tel-Aviv University, Israel	Cross-Disciplinary Fellow 2005
Jérôme EPSZTEIN	France	INSERM, Mediterranean Institute of Neurobiology (INMED), Marseille, France	Long-Term Fellow 2007
Sarel FLEISHMAN	Israel	The Weizmann Institute of Science, Rehovot, Israel	Long-Term Fellow 2006, Career Development Award 2012
Jérôme GROS	France	Pasteur Institute, Paris, France	Long-Term Fellow 2007
Shalev ITZKOVITZ	Israel	The Weizmann Institute of Science, Rehovot, Israel	Long-Term Fellow 2010, Career Development Award 2013
Martin JINEK	Czech Republic	University of Zurich, Switzerland	Long-Term Fellow 2007
Gijsje KOENDERINK	The Netherlands	AMOLF, Foundation for Fundamental Research on Matter (FOM), Amsterdam, The Netherlands	Young Investigator 2009
Cristina LO CELSO	Italy	Imperial College of Science, Technology and Medicine, London, UK	Long-Term Fellow 2006, Program Grant 2011
James LOCKE	UK	University of Cambridge, UK	Long-Term Fellow 2007, Career Development Award 2012
David MARGULIES	Israel	The Weizmann Institute of Science, Rehovot, Israel	Cross-Disciplinary Fellow 2006, Career Development Award 2010
Sophie POLO	France	Institut Curie, Paris, France	Long-Term Fellow 2007
Alena SHKUMATAVA	Belarus	Institut Curie, Paris, France	Long-Term Fellow 2006
Kristin TESSMAR-RAIBLE	Germany	University of Vienna, Austria	Young Investigator 2010

FEBS/EMBO

WOMEN IN SCIENCE AWARD			
Geneviève ALMOUZNI	France	Institut Curie, Paris, France	Research Grant 1997

GRUBER FOUNDATION

NEUROSCIENCE PRIZE			
Eve MARDER	USA	Brandeis University, Waltham, USA	Research Grant 1991, 1994

HOWARD HUGHES MEDICAL INSTITUTE

HHMI INVESTIGATOR			
Karl DEISSEROTH	USA	Stanford University, USA	Nakasone Award 2010

INSTITUTE OF MEDICINE

MEMBER			
Gideon DREYFUSS	USA	University of Pennsylvania School of Medicine, Philadelphia, USA	Research Grant 1998
Pat LEVITT	USA	Children's Hospital Los Angeles, University of Southern California, USA	Research Grant 1996
Eve MARDER	USA	Brandeis University, Waltham, USA	Research Grant 1991, 1994
Christopher WALSH	USA	Children's Hospital Boston, Harvard Medical School, USA	Research Grant 1995

LOUIS JEANTET FOUNDATION

DOSSIER			
Elena CONTI	Italy	Max Planck Institute of Biochemistry, Martinsried, Germany	Long-Term Fellow 1997, Program Grant 2002

LASKER FOUNDATION

ALBERT LASKER BASIC MEDICAL RESEARCH AWARD			
Thomas SÜDHOF	USA	Stanford University School of Medicine, USA	Research Grant 1995

GRETE LUNDBECK EUROPEAN BRAIN RESEARCH FOUNDATION

BRAIN PRIZE 2014			
Stanislas DEHAENE	France	INSERM-CEA Cognitive Neuroimaging Unit, Gif-sur-Yvette, France	Program Grant 2007
Giacomo RIZZOLATTI	Italy	University of Parma, Italy	Research Grant 1990, 1993
Trevor ROBBINS	UK	University of Cambridge, UK	Research Grant 1993

NATIONAL ACADEMY OF SCIENCES

MEMBERS			
Ian BALDWIN	USA	Max-Planck Institute for Chemical Ecology, Jena, Germany	Program Grant 2012
Jef BOEKE	USA	Johns Hopkins University, Baltimore, USA	Research Grant 1991
Edward DE ROBERTIS	USA	Howard Hughes Medical Institute and University of California, Los Angeles, USA	Research Grant 1992
Xing-Wang DENG	USA	Yale University, New Haven, USA	Research Grant 1997
Christopher GOODNOW	Australia/USA	Australian National University, Canberra	Research Grant 1997
Martin GRUEBELE	USA/Germany	University of Illinois, Urbana, USA	Program Grant 2004
David HEEGER	USA	New York University, USA	Research Grant 1999
Mitzi KURODA	USA	Harvard Medical School, Boston, USA	Research Grant 1997
Joseph LEDOUX	USA	New York University, USA	Program Grant 2001
Norbert PERRIMON	France	Harvard Medical School, Boston, USA	Research Grant 1996, 2000
Stephen QUAKE	USA	Stanford University, USA	Nakasone Award 2012
Gina TURRIGIANO	USA	Brandeis University, Waltham, USA	Nakasone Award 2011
Gerhard WAGNER	Germany/USA	Harvard Medical School, Boston, USA	Research Grant 1999
Huntington WILLARD	USA	Duke University, Durham, USA	Research Grant 1999

FOREIGN ASSOCIATES			
Kari ALITALO	Finland	University of Helsinki, Finland	Program Grant 2001
Winfried DENK	Germany	Max-Planck Institute for Medical Research, Heidelberg, Germany	Program Grant 2004

NATIONAL BERNSTEIN NETWORK COMPUTATIONAL NEUROSCIENCE

BERNSTEIN AWARD 2012

Ilka DIESTER	Germany	Ernst Strüngmann Institute for Neuroscience in cooperation with Max Planck Society, Frankfurt am Main, Germany	Long-Term Fellow 2008
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NATIONAL INSTITUTES FOR HEALTH

PIONEER AWARD

Edward BOYDEN	USA	MIT, Cambridge, USA	Program Grant 2010
Rafael YUSTE	Spain/USA	Columbia University, New York, USA	Research Grant 1997, Program Grant 2003

L'OREAL-UNESCO FOUNDATION

L'OREAL-UNESCO PRIZE FOR WOMEN AND SCIENCE

Brigitte KIEFFER	France	IGBMC, Illkirch, France	RG 2000
Kayo INABA	Japan	Kyoto University, Japan	RG 1996

ROYAL SOCIETY

FELLOW

Mervyn BIBB	UK	John Innes Centre, Norwich, UK	Research Grant 1998
William EARNSHAW	USA/UK	University of Edinburgh, UK	Research Grant 1991
Edith HEARD	UK	Institut Curie, Paris, France	Long-Term Fellow 1990, Program Grant 2003

FOREIGN MEMBER

Kyriacos NICOLAOU	USA/UK	The Scripps Research Institute, La Jolla, USA	Research Grant 1992
Randy SCHEKMAN	USA	University of California, Berkeley, USA	Research Grant 1991, 1995

WILEY FOUNDATION

WILEY PRIZE IN BIOMEDICAL SCIENCES

Jeffrey HALL	USA	University of Maine, Orono, USA	Research Grant 1991, 2000
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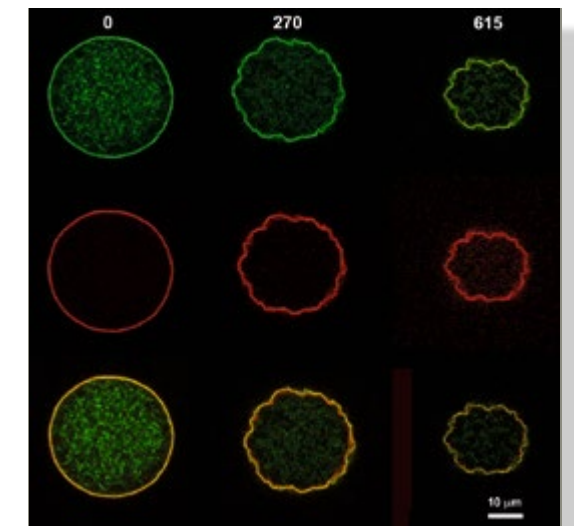
Ending the grant on a high note

In 2010, HFSP decided to fund a grant team that set out to reconstruct molecular complexes capable of reproducing functions of bacterial division in a test tube. At the centre of the team's interest was the question of how the so-called divisome would work. A synthetic biology approach seemed to be best to support already existing conclusions derived from cellular and molecular analysis. Given the highly dynamic and membrane associated nature of this machine, and the difficulty of assaying its inputs and outputs, its reconstitution in vitro was a daunting prospect. A risky idea but the project promised to really test the state of knowledge. The collaboration was born out of the combination of unique expertise in new technologies with a deep cellular, genetic and biophysical understanding of the divisome. The program grant worked out tremendously well and encouraged the team, led by Principal Investigator Miguel Vicente, to organize a scientific workshop on 28 February, 2014.

During the course of their work, the team reproduced some mechanisms that bacterial cells use to determine their middle and to assemble a divisome. The workshop on "Cell Division Reconstruction" took place at the Centro Nacional de Biotecnología (Spain) and was led by the project researchers and two additional invited speakers. In total, fifty-nine scientists from Algeria, France, Germany, Italy, Spain, Sweden and the UK attended the meeting which also attracted several posters presenters.

The question of how bacterial cells identify their middle has been investigated for over two decades. Placing the septum at midcell is important to ensure that cell division yields two equal daughters. This placement is mediated by proteins that are distributed differentially along the bacterial cell length and have a "measuring tape" function. Components of the Min and nucleoid occlusion (NO) systems of *Escherichia coli* have a spatial distribution compatible with this role. Both systems have one protein, MinC or SlmA respectively, that prevent assembly of FtsZ, a major structural component of the division apparatus at positions other than midcell. The Min system works because of a cell pole to cell pole oscillation of its three components (MinC, D and E), allowing FtsZ polymers to form preferentially at the cell centre where the concentration of MinC is lowest. During the workshop the team members presented their results on individual aspects of the divisome control and functioning.

Team members of the Program Grant (Synthetic Biology of cell division: reconstructing the bacterial division machinery in the test tube; HFSP RGP 50/2010) were: Miguel Vicente and German Rivas (CSIC Madrid), Petra Schuille (then at TU Dresden) and William Margolin (University of Texas).



Two components of the divisome, FtsZ and ZipA have been studied inside artificial vesicles. The images show the shrinking of these vesicles as a result of their action.

Figure published in: E.J. Cabré, A. Sánchez-Gorostiaga, P. Carrara, N. Roperio, M. Casanova, P. Palacios, P. Stano, M. Jiménez, G. Rivas, and M. Vicente. 2013. Bacterial division proteins FtsZ and ZipA induce vesicle shrinkage and cell membrane invagination. *J. Biol. Chem.* 288: 26625-26634.

HFSP grant teams may organize small gatherings of team members, including students and post-docs involved in the work. For the meeting, the team may invite a limited number of additional experts who are not part of the HFSP grant. HFSP does not otherwise support scientific meetings or workshops

CHAPTER 4



Budget and **Finance**

- 4.1 Guidelines for HFSP0 funding
- 4.2 Key financial figures for FY 2013
- 4.3 FY 2013 financial summary
- 4.4 Budget for program activities FY 2014



*Left to right: Takashi Arai, Jennifer Sayol, Sarah Naett and
Isabelle Heidt-Coquard*



4.1

GUIDELINES FOR HFSP FUNDING

HFSP is supported by voluntary contributions from its 14 Management Supporting Parties (MSPs): Australia, Canada, France, Germany, India, Italy, Japan, Republic of Korea, New Zealand, Norway, Switzerland, the United Kingdom, the United States of America and the European Union. MSPs hold regular Intergovernmental Conferences (IGCs) at which the intended level of contribution for the next budgetary period is established as a guideline for the Board.

The 14 MSPs met at an Intergovernmental Conference (IGC) on 11 June 2013 in Brussels, Belgium, to review the progress made and discuss the future of the Human Frontier Science Program. They all renewed their commitment to HFSP and acknowledged the need to ensure a sustained budget in order to maintain the attractiveness of the Program, improve awarding capacity and be inclusive of fields as they emerge on the frontiers of the life science.

At this Conference, the MSPs established a three-year indicative budgetary guideline for the period FY 2014 to FY 2016. The Brussels guideline is based on a 4 % annual increase of MSPs' contributions for 6 countries (Australia, Canada, Germany, New Zealand, Switzerland and the United Kingdom) and a 2 % annual increase for 7 countries (European Union, France, India, Italy, Republic of Korea, Norway and the United States of America). Japan maintains the same level of contribution throughout the period.

4.2

KEY FINANCIAL FIGURES FOR FY 2013

At HFSP, the fiscal year (FY) extends from 1 April in one year to 31 March the following year.

Figures are reported in million USD unless stated otherwise. Different exchange rates are used in this report for different purposes:

- IGC Canberra reference rates: these are used to monitor the implementation of the IGC budgetary guideline in USD over extended periods and avoid the risk of distortion arising from variations in the exchange rate. Reference rates may differ from actual rates.
- FY 2013 budget rate: the exchange rate used for the budget.
- FY 2013 daily accounting rates: these are used for HFSP's legal accounts and their consolidation in EUR or in USD. They are updated daily on the basis of data published by the European Central Bank.

Table 4-1:
Exchange rates used in FY 2013 report

Exchange rates 1 USD =	CAD	CHF	EUR	GBP
Canberra IGC for 2011 to 2013	1.00	1.14	0.75	0.65
Budget FY 2013	1.00	1.14	0.75	0.65
Actual FY 2013 (average)	1.05	0.92	0.75	0.63



4.2.1

CONTRIBUTIONS

Contributions received from MSPs during FY 2013 are shown in Table 4-2 below. Actual payments were made in the agreed currencies, as shown in the first column. The second column shows them in USD, exchanged at the daily accounting rate.

Table 4-2:
Contributions received in FY 2013 in currencies (1 April 2012 to 31 March 2013)

	Payments		Canberra Joint Communiqué for 2013 USD
	Actual payment LC (Local Currency)	Actual payment in USD (at accounting rate)	
Australia	673 000 USD	\$ 673 000	\$ 673 000
Canada	1 742 000 CAD	\$ 1 662 030	\$ 1 742 000
EU	4 672 000 EUR	\$ 6 103 045	\$ 6 229 000
France	2 187 120 EUR	\$ 2 935 765	\$ 2 916 000
Germany	4 105 000 EUR	\$ 5 451 455	\$ 5 473 000
India*	697 854 USD	\$ 697 854	\$ 989 000
Italy	883 000 EUR	\$ 1 198 930	\$ 1 177 000
Japan	22 457 000 USD	\$ 22 457 000	\$ 29 523 000
Korea	781 000 USD	\$ 781 000	\$ 781 000
New-Zealand	128 000 USD	\$ 128 000	\$ 128 000
Norway	608 000 USD	\$ 608 000	\$ 608 000
Switzerland	818 000 CHF	\$ 867 185	\$ 718 000
UK	1 361 000 GBP	\$ 2 036 320	\$ 2 094 000
USA	9 930 320 USD	\$ 9 930 320	\$ 11 170 000
		\$ 55 529 904	\$ 64 221 000

*not yet received in full

Total contributions amounted to 86.5 % of the Canberra goal shown in the third column (compared to 89.4 % last year). Due to a further decrease in the Japanese contribution and difficulties in the USA to increase beyond the 2010 level, it was not possible to achieve the Canberra goal.

- During FY 2013, 12 MSPs settled their confirmed contribution in full;
- METI (Japan) decreased its contribution by 16 % and paid 5,741 million USD as compared to 6,829 million USD last year (8,057 million USD in 2011 and 11,582 million USD in 2009);
- The US contributed the same amount as last year (no increase since FY2010) and reached 88.9 % of the Canberra budgetary guideline;
- India paid a first instalment of 697 thousand USD. The additional amount of 291 thousand USD is outstanding.

GEOGRAPHICAL DISTRIBUTION

At the end of FY 2013, the total amount contributed by the MSPs since the beginning of the Program reaches 1.206 billion USD. Japan, the founder of the Program, has provided 768 million USD, representing 63.7% of the total. All the other MSPs have contributed 438 million USD together, of which 12.9% was provided by the USA, 5.9% by the EU, 5.5% by Germany and 3.9% by France. Other MSPs contributed less than 2.5%.

Table 4-3:
Actual contributions from MSPs per fiscal year current exchange rate* (million USD)

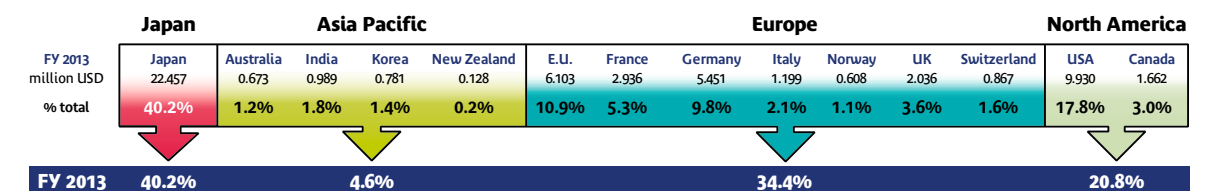
	Australia	Canada	EU	France	Germany	India	Italy	Japan	Korea	New Zealand	Norway	Switzerland	UK	USA	TOTAL	% **
FY 1989				0.500			0.000	9.900							10.42	
FY 1990		0.200		1.650	0.290		0.330	28.950							31.42	201.54
FY 1991			0.150	1.620	0.910		0.440	28.440				0.400		0.040	32.00	1.85
FY 1992		0.400	0.180	1.320	0.770		0.190	29.570				0.400	0.510	0.040	33.38	4.31
FY 1993		0.330	0.910	1.250	0.810		0.180	31.300				0.400	0.540	3.500	39.22	17.50
FY 1994		0.540	1.110	1.560	0.990		0.180	34.010				0.400	0.590	3.500	42.88	9.33
FY 1995		0.530	1.000	1.740	1.220		0.190	35.650				0.590	0.580	3.500	45.00	4.94
FY 1996		0.260	0.260	1.370	1.170		0.180	36.730				0.510	0.630	4.000	45.77	1.71
FY 1997		0.250	0.250	1.470	1.020		0.170	37.380				0.530	0.760	4.000	46.45	1.49
FY 1998		0.450	0.450	1.700	1.250		0.290	35.840				0.580	0.760	4.500	46.48	0.06
FY 1999		0.440	1.680	1.750	1.600		0.290	35.770				0.610	0.750	5.000	47.89	3.03
FY 2000		0.450	1.520	1.580	2.100		0.260	37.380				0.550	0.750	5.500	50.09	4.59
FY 2001		0.510	0.870	1.160	2.840		0.680	37.050				0.520	0.800	7.390	51.82	3.45
FY 2002		0.830	2.380	1.400	1.530			31.250				0.530	1.550	8.600	48.07	-7.24
FY 2003		0.810	4.720	1.910	3.940			31.250				0.630	1.470	10.400	55.13	14.69
FY 2004		0.850	4.080	2.070	3.430		2.120	31.250				0.690	1.630	9.500	55.62	0.89
FY 2005	0.466	0.870	4.510	2.170	3.500		0.840	31.248	0.550			0.690	1.720	9.000	55.564	-0.10
FY 2006	0.485	1.063	4.690	2.545	3.913		0.916	31.248	0.568	0.095		0.697	1.878	9.000	57.098	2.76
FY 2007	0.504	1.286	5.500	2.951	4.174	0.780	1.561	31.248	0.591	0.099		0.698	2.146	9.000	60.538	6.02
FY 2008	0.534	1.240	5.570	3.039	4.910	0.812	0.909	31.248	0.624	0.103	0.500	0.780	2.240	9.364	61.873	2.20
FY 2009	0.566	1.331	5.762	2.439	5.266	0.844		31.248	0.658	0.108	0.520	0.862	1.915	9.832	61.351	-0.84
FY 2010	0.598	1.441	5.334	2.000	5.037	0.879	1.092	29.523	0.694	0.113	0.541	0.818	1.816	9.930	59.817	-2.50
FY 2011	0.622	1.614	6.254	2.701	5.036	0.914	1.073	24.773	0.722	0.118	0.563	0.923	2.010	9.930	57.253	-4.29
FY 2012	0.647	1.680	5.590	2.736	5.115	0.837	1.102	23.545	0.751	0.123	0.585	0.849	2.047	9.930	55.537	-3.00
FY 2013	0.673	1.662	6.103	2.936	5.451	0.989*	1.199	22.457	0.781	0.128	0.608	0.867	2.036	9.930	55.821	+0.51
TOTAL	5.10	19.04	70.81	47.53	66.27	5.07	14.21	768.30	5.94	0.89	3.32	14.52	29.13	155.39	1205.58	
	0.4%	1.6%	5.9%	3.9%	5.5%	0.4%	1.2%	63.7%	0.5%	0.1%	0.3%	1.2%	2.4%	12.9%	1205.58	

* India: outstanding payment of 291 kUSD

** comparison with previous year in percentage (+ for increase, - for decrease)

The Asia Pacific region, which includes Japan, remains the main source of funding, contributing 44.5 % of the total in FY 2013. After the Asia Pacific region, Europe contributed 34.5 % and North America provided 21 %.

Fig. 4-1:
Geographical distribution per continent



4.2.2

PAYMENT OF AWARDS

HFSP paid 52.191 million USD to its awardees during FY 2013 (compared to 53.079 million USD for FY 2012). Fig. 4-2 shows the breakdown of the amount by activity:

- Research Grant payments amounted to 35.207 million USD (25.325 million USD for Program Grants and 9.882 million USD for Young Investigator Grants. This constitutes 67.5% of payments made in FY 2013 (compared to 66% last year).
 - Some fellows terminated earlier than scheduled e.g. to take up a permanent position.
- Payments to CDA holders amounted to 2.5 million USD and constitute 4.8% of FY 2013 payments (compared to 6% last year and 8.9% the year before).
- Resources allocated to the Awardees Meeting in Strasbourg, France, and other outreach activities, including Program meetings, the Nakasone Award or Alumni meetings, amounted to approximately 684 thousand USD.
- Payments to Long-Term and Cross-Disciplinary Fellows correspond to 27.8% of payments in FY 2013 (compared to 28% last year). Actual payments were slightly below budget for two reasons observed every year:
 - Some payments planned for FY 2013 were postponed for reasons such as parental leave or deferral of the third year in the event of repatriation. These payments were transferred to following fiscal years;

Fig. 4-2: Payments made in FY 2013 by type of award

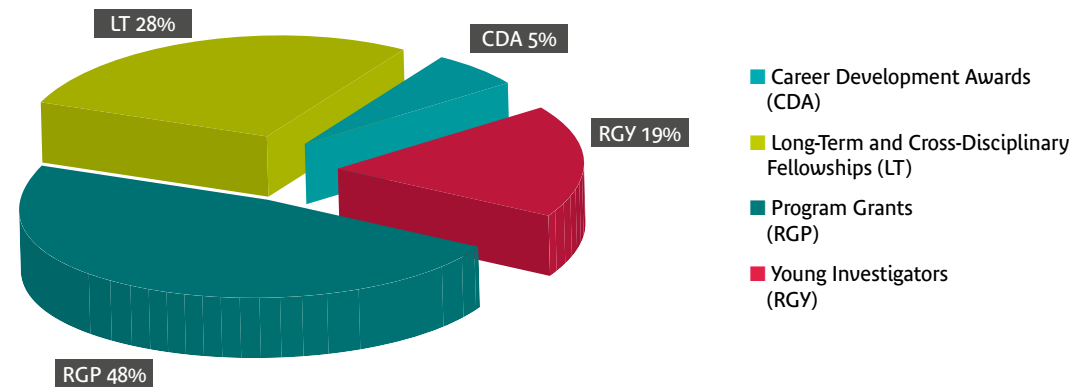


Table 4-4 and Fig. 4-3 show the geographical distribution of award payments.

Table 4-4: Geographical distribution of award payments per MSP for the major programs in FY 2013 (million USD)

MSP	Research Grants	%	Long-Term + Cross-Disciplinary Fellowships	%	Career Development Awards	%	Total	% Total
Australia	2.097	5.96%	0.286	1.98%	—	—	2.283	4.57%
Canada	1.771	5.03%	0.207	1.43%	0.200	8.00%	2.179	4.18%
EU	3.806	10.81%	1.148	7.92%	0.200	8.00%	5.153	9.87%
France	1.897	5.39%	0.466	3.22%	0.100	4.00%	2.464	4.72%
Germany	4.241	12.05%	1.031	7.12%	0.400	16.00%	5.672	10.87%
India	0.281	0.80%	0.015	0.10%	—	—	0.295	0.57%
Italy	1.137	3.23%	—	—	—	—	1.137	2.18%
Japan	2.641	7.50%	0.197	1.36%	0.200	8.00%	3.038	5.82%
Korea	0.317	0.90%	—	—	—	—	0.317	0.61%
New Zealand	0.100	0.28%	—	—	—	—	0.100	0.19%
Norway	—	—	—	—	—	—	—	—
Switzerland	0.964	2.74%	1.407	9.71%	0.300	12.00%	2.671	5.12%
UK	4.332	12.30%	0.984	6.79%	0.200	8.00%	5.516	10.57%
USA	9.802	27.84%	8.505	58.72%	0.100	4.00%	18.407	35.27%
Non MSPs	1.821	5.17%	0.238	1.64%	0.800	32.00%	2.858	5.48%
Grand Total	35.207	100.0%	14.484	100.0%	2.500	100.0%	52.191	100.0%
	67.46%		27.75%		4.79%			

43.3 % of the total amount of awards paid in FY 2013 supported HFSP awardees in Europe (cf. 42.5 last year and 46.3 % in FY 2011), 39.4 % was allocated to awardees in North America (cf. 41.1 % last year and

38.4 % in FY 2011), 11.8 % went to awardees in the Asia-Pacific region (cf. 11.9 % last year and 11.7 % in FY 2011) and 5.5 % to non MSPs (cf. 4.5 % last year).

Fig. 4-3: Geographical distribution of total awards over all programs paid by HFSP in FY2013

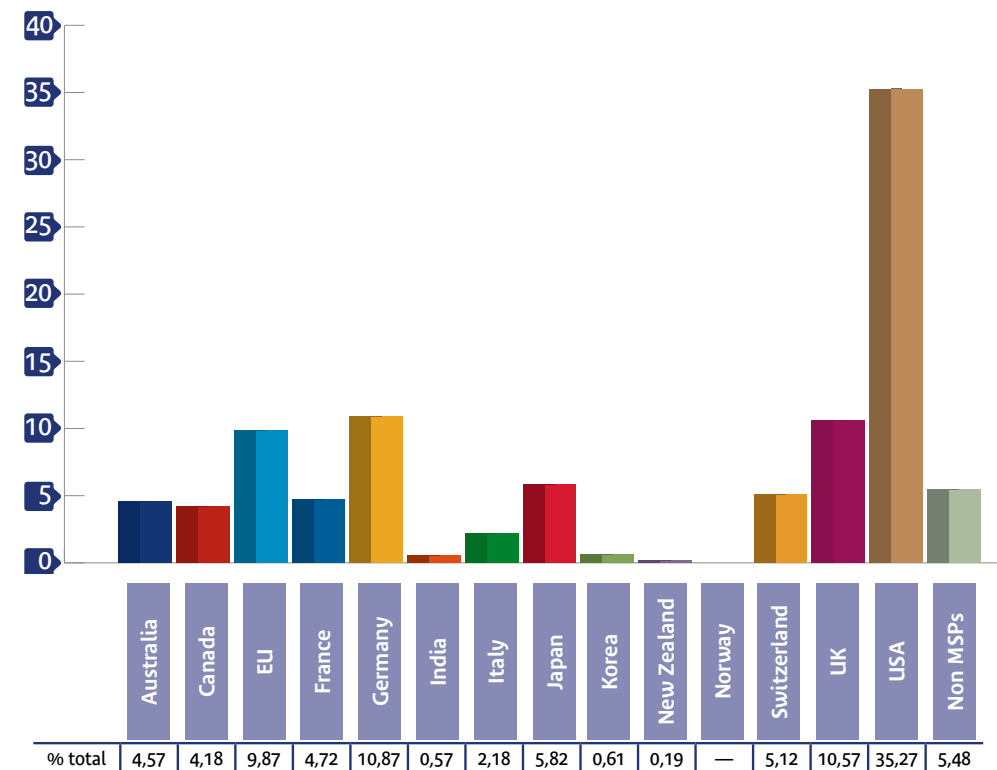


Fig. 4-4:
Overview of FY 2013 payments to grant team members according to country

Research Grants

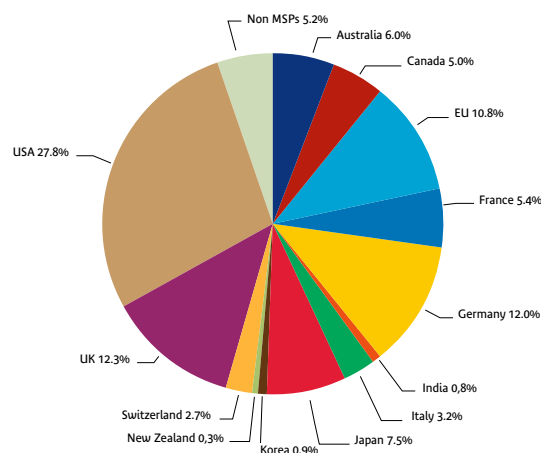


Fig. 4-6:
Overview of FY 2013 payments to HFSP fellows according to host country

Fellowships

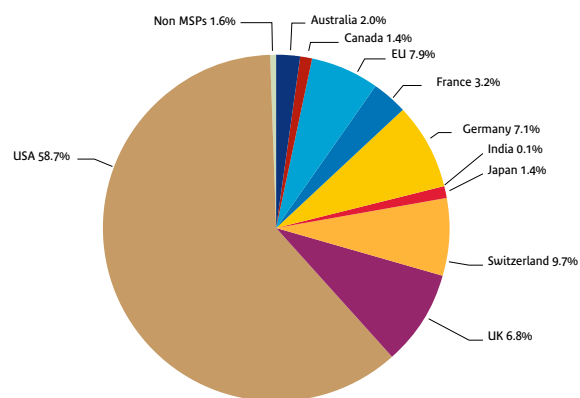
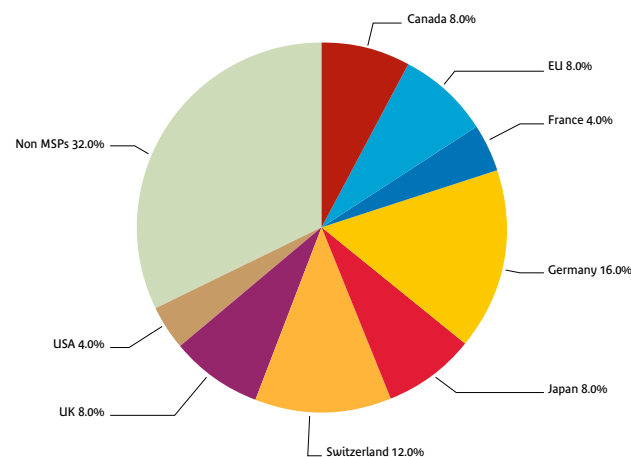


Fig. 4-5:
Overview of FY 2013 payments to CDA holders according to host country

Career Development Awards



In FY 2013, 13 out of 14 MSPs benefited from HFSP Research Grants, highlighting sustained efforts to participate in international collaboration.

4.3

FY 2013 FINANCIAL SUMMARY

The accounting summary (Table 4-5) provides an overview of income and expenditures. Together, these result in the cash net financial position. Contributions paid in currencies other than the USD are consolidated at the exchange rate of the date of payment.

As regards the FY 2013 budget, all expected contributions were paid by all MSPs. The Indian contribution has been included in the accounting summary since payment has been confirmed, though not received in total. Overall financial income will be higher than expected due to the performance of several long-term investments.

Expenditures have been closely monitored and were lower than expected. The expenses of the Secretariat for FY2013 amounted to 3.747 million USD, 6.7 % of the annual amount of contributions. These include meeting and travel costs for the Board, office costs and salaries. Other meeting costs for the Review Committees, Council and Selection Committee are included under "Meetings and outreach activities".

All Research grant, Fellowship and Career Development Award payments for FY 2013 have been made in full. Program expenses reached 54.734 million USD. Some fellows terminated earlier than expected because they were either offered

a permanent position or they opted for another fellowship. Taking into account both the cash flow and commitments to awardees (i.e. commitments from previous years at the beginning of the year and those still to be paid at closing), there should be a positive balance of around 2.5 million USD at the end of FY 2013.

Note on FY 2013 accounts

Accounts for FY 2013, consolidated in EUR have been prepared by the chartered accountants MAZARS. Price Waterhouse Coopers audited and certified these accounts. HFSP's legal accounts are reported on an accrual basis. They follow the French regulations (GAAP) applicable to not-for-profit organisations. Legal accounts are consolidated and stated in EUR. The currency of consolidation used for HFSP's internal reporting, including this annual report, is the USD.

Table 4-5:
HFSP0 accounting summary FY 2013 (budget and actual rates) – income

Income/ current commitments	Budget 2013 in m USD	Report FY 2013 in m USD (actual rate)	Expenditures/ new commitments	Budget 2013 in m USD	Report FY 2013 in m USD
1. Contributions	55.916	56.076	1. Administrative expenses	4.473	3.747
Australia	0.673	0.673	2. Program activities	54.950	54.734
Canada	1.742	1.662	Program Grants	25.275	26.120
European Union	6.229	6.103	Young Investigators	9.933	9.619
France	2.916	2.936	Fellowships	16.385	15.803
Germany	5.473	5.451	Career Development Awards	2.500	2.508
India*	0.989	0.989	Meetings and outreach activities	0.857	0.684
Italy	1.177	1.454	3. Committed funds beyond FY	57.640	56.873
Japan	22.457	22.457	Committed funds from previous year	2.845	
Korea	0.781	0.781	Program Grants	26.050	25.800
New Zealand	0.128	0.128	Young Investigators	9.450	9.450
Norway	0.608	0.608	Fellowships	16.895	18.323
Switzerland	0.718	0.867	Career Development Awards	2.400	3.300
UK	2.095	2.036			
USA	9.930	9.930			
2. Interest and capital gain (estimate)	0.250	1.187	Total Expenses	117.063	115.354
3. Miscellaneous reimbursements	1.369	0.385	Annual balance	0.193	2.453
4. Treasury	59.721	59.868	GRAND TOTAL	117.256	117.807
EMTN	29.500	35.500			
UCITS in USD	23.721	20.834			
UCITS in EURO	2.497	1.149			
CURRENT BANK ACCOUNTS	4.003	2.385			
	(01/2013)	(03/2014)			
Total income	117.256	117.516			
Contribution to receive from previous fiscal year (IT, IN)		0.291			
Balance (negative)		0.000			
GRAND TOTAL	117.256	117.807			

*India: outstanding payment of 291 kUSD

4.4

BUDGET FOR PROGRAM ACTIVITIES FY 2014

CONTRIBUTIONS

PROGRAM ACTIVITIES

Planning for the FY 2014 budget was based on MSPs' contributions as confirmed at the 48th Board meeting (March 2014). This amounted to 56.66 million USD. The Brussels IGC guideline indicated a 4% annual increase for 6 countries and a 2% increase for 7 others.

Compared to the Brussels goal, there is a slight decrease:

- this is due to the exchange rate impact on the contribution of METI which is Yen based (-0,581 million USD). As a consequence, Japan confirmed a smaller amount than anticipated at the Brussels IGC

- this decrease is partly mitigated by the anticipated accession of Singapore as a new MSP, providing the minimum contribution of 0,500 million USD.

Financial income, at a similar level to last year, is expected to amount to approximately 250 thousand USD.

- The Program Activity Plan was adopted by the Board on 18 March 2014. Within the limits of the projected budget, it decided to make the following awards:

- 24 Program Grants
- 10 Young Investigators
- 80 Long-Term and 10 Cross-Disciplinary Fellowships, with a reserve list;
- 12 Career Development Awards with a reserve list of 4, should additional funds become available.

- Program activities in FY 2014 will cost 56.05 million USD.

- Of this amount, Program activities for FY 2014 include the 25th Anniversary of HFSP, the 14th HFSP Awardees meeting, both to be held in Lugano, Switzerland, the Nakasone Award 2014, an Alumni network meeting, attendance at scientific meetings and travel for Council and Review Committee members. These expenses will amount to 857 thousand USD.

- Payments to awardees in FY 2014 will amount to 55.19 million USD as compared to 54.09 million USD last year and 54.35 million USD in FY 2012.

Table 4-6:
Overview of HFSP0 budget for FY 2014 including all commitments for future years

INCOME		Budget 2014 in m LC	Canberra IGC-USD in m USD	Budget 2014 in m USD	EXPENDITURES		Budget 2014 in m LC	Budget 2014 in m USD
1. Contributions			56.70	56.66	1. HFSP Operations		EUR 3.41	4.55
Australia	USD	0.70	0.70	0.70	2. Program Activities			56.05
Canada	CAD	1.81	1.81	1.81	Program Grants (24)			26.30
European Commission	EUR	4.77	6.35	6.35	Young Investigators (10)			9.35
France - not confirmed	EUR	2.23	2.97	2.97	Long-Term Fellowships (90)			16.74
Germany	EUR	4.27	5.69	5.69	Career Development Awards (12)			2.80
India	USD	1.01	1.01	1.01	Awardees meetings	EUR 0.25		0.33
Italy - not confirmed	EUR	0.90	1.20	1.20	Program meetings	EUR 0.26		0.35
Japan	USD	21.62	22.20	21.62	Outreach activities - Alumni network	EUR 0.10		0.14
Korea	USD	0.80	0.80	0.80	Nakasone Award	EUR 0.03		0.04
New Zealand	USD	0.13	0.13	0.13	3. Not paid by end FY 2013			2.46
Norway	USD	0.62	0.62	0.62	CDA			0.40
Switzerland	CHF	0.85	0.95	0.95	LT			1.00
UK	GBP	1.42	2.18	2.18	Carry over from FY 2013			1.06
USA	USD	10.63	10.13	10.13	4. Committed funds beyond FY			54.29
*Singapore	USD	0.50	0.50	0.50	Program Grants			25.80
2. Interest and capital gain				0.25	Young Investigators			9.45
				0.00	Long-Term Fellowships			18.14
3. Treasury				62.51	Career Development Awards			0.90
EMTN				33.50	5. Negative balance from previous FY			
UCITS in mUSD				23.80	Total expenses + Committed			117.33
Saving accounts in EUR				2.13	Balance (positive)			2.089
Current Bank Accounts				3.08	GRAND TOTAL			119.42
Total Income + Assets				119.42				
GRAND TOTAL				119.42				

* Contribution pending signature of the Memorandum of Understanding

OVERVIEW OF HFSP0 2014 BUDGET

HFSP0 continues to operate on a sound financial basis. For Program activities in FY 2014 and beyond, and for operational costs, 119.42 million USD were committed. HFSP0 expects to receive 56.66 million USD in MSPS' contributions for FY 2014.

Together with resources from past contributions, interest and income from investments, the total amount available for FY 2014 and beyond will be over 119.42 million USD. The balance between income and expenditure is positive and amounts to about 2 million USD.



HFSP Fellow Hind Medyouf wins the 2013 José Carreras Career Award

Hind Medyouf obtained her PhD at the Institut Curie (Paris), working under Jacques Ghysdael on the biology of pediatric T cell acute lymphoblastic leukemia (T-ALL) with emphasis on signal transduction and gene regulation. Her work was mostly centered on a signaling pathway that has been shown to play a critical role in normal T cell development, namely the calcineurin/NFAT (Nuclear factor of activated T-cells) pathway. Using two different mouse models of T-ALL as well as primary patient samples, Hind was able to show that constitutive activation of this pathway was involved in hematologic malignancies and that calcineurin inhibitors, currently used as immunosuppressants in the context of organ transplantation, could have a therapeutic potential for lymphoid malignancies (1). After completion of her PhD, she joined Françoise Pflumio at the CEA (Commissariat à l'Énergie Atomique) for a short period in order to gain insight into xenograft modeling, an expertise she planned to use in her next position.

In 2008 she was awarded a Long-Term HFSP Fellowship to work at the Terry Fox Laboratory (Vancouver, Canada) with Andrew Weng on Notch signaling-induced leukemogenic transformation of murine and human cells. Her research was very successful with two first author publications investigating the importance of key signaling pathways in T-ALL pathogenesis (2-3). Hind discovered that signaling downstream of a particular growth factor called IGF1 (Insulin like growth factor 1) was essential for T-ALL maintenance (3). When this factor was blocked, blood cancer cells ceased to grow further. Moreover, the cancer stem cells, which are particularly dangerous and often the main source of relapse in patients, lost their ability to self-renew and so propagate disease in serial transplants. Inhibitors of this signaling pathway are already available and might help improve the treatment of this type of leukemia and also prevent recurrence.

For her third year as an HFSP fellow, Hind moved to the German Cancer Research Centre (DKFZ, Heidelberg) to work with Andreas Trumpp on the biology of myelodysplastic syndromes (MDS), a group of syndromes with ineffective production of mature blood cells and the propensity to evolve to acute myeloid leukemia. Studying the abnormal behavior of human MDS stem cells has so far been hampered by the fact that they could not be efficiently expanded in mice. Together with colleagues, Hind overcame this limitation by co-transplanting the MDS stem cells with their so-called «niche cells» and as such developed a unique *in vivo* model of human MDS (4). Niche cells from the bone marrow produce factors required for the survival of hematopoietic stem cells thus providing a type of micro-environment in which stem cells flourish. Using their newly established model, Hind and her colleagues discovered that niche cells from MDS patients were much better than those from healthy donors in supporting MDS expansion in mice, thanks to their ability to overproduce factors that promoted the settling-in of transplanted MDS blood stem cells. Importantly, MDS cells triggered the expression of some of these factors by niche cells. The authors will now use the model to therapeutically target candidate factors involved in this bi-directional cross-talk between niche cells and MDS hematopoietic cells- thus, there is hope to break the cycle and interfere with MDS early on in order to prevent progression. Hind has recently been awarded the José Carreras Career Award to continue her work on MDS and is now preparing to establish her own laboratory. More information on the award is available at www.carreras-stiftung.de



Hind Medyouf,
German Cancer Research Centre (DKFZ), Heidelberg

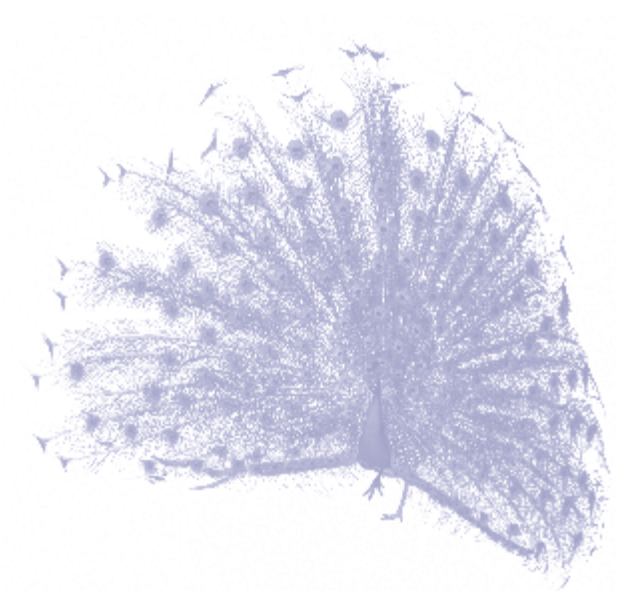
1: Hind Medyouf, H el ene Alcalde, Caroline Berthier, Marie-Claude Guillemain, Nuno R Dos Santos, Anne Janin A, Pierre Decaudin, Hugues De Th e, Jacques Ghysdael: Targeting calcineurin activation as a therapeutic strategy for lymphoid malignancies. *Nat Medicine*. 2007. (13): 736-741.

2: Hind Medyouf, Samuel Gusscott, Hongfang Wang, Carol Wai, Oksana Nemirovsky, Andreas Trumpp, Fran oise Pflumio, Joan Carboni, Marco Gottardis, Michael Pollak, Jon C. Aster, Martin Holzenberger and Andrew P. Weng: High level IGF1R expression is required for leukemia-initiating cell activity in TALL and is supported by Notch signalling. *Journal of Experimental Medicine*, 2011, DOI:10.1084/jem.20110121

3: Hind Medyouf, Gao X, Florence Armstrong, Samuel Gusscott S, Liu Q, Gedman AL, Larry H Matherly, Kirk R. Schultz, Fran oise Pflumio F, James M. You, Andrew P. Weng: Acute T-cell leukemias remain dependent on Notch signaling despite PTEN and INK4A/ARF loss. *Blood*. 2010. 115(6): 1175-84.

4: Hind Medyouf, Maximilian Mossner, Johann-Christoph Jann, Florian Nolte, Simon Raffel, Carl Herrmann, Amelie Lier, Christian Eisen, Verena Nowak, Bettina Zens, Katja M udder, Corinna Klein, Julia Obl ander, Stephanie Fey, Jovita Vogler, Alice Fabarius, Eva Riedl, Henning Roehl, Alexander Kohlmann, Marita Staller, Claudia Haferlach, Nadine M uller, Thilo John, Uwe Platzbecker, Georgia Metzgeroth, Wolf-Karsten Hofmann, Andreas Trumpp and Daniel Nowak: Myelodysplastic cells in patients re-program mesenchymal stromal cells to establish a transplantable stem cell-niche disease unit. *Cell Stem Cell* 2014, DOI: 10.1016/j.stem.2014.02.014

APPENDIX



- A. 1 History of the Program
- A. 2 Joint Communiqué of the Intergovernmental Conference on the Human Frontier Science Program, Brussels, 11 June 2013
- A. 3 Summary of decisions of the Board of Trustees in 2013
- A. 4 Long-Term and Cross-Disciplinary Fellowships awarded in 2013
- A. 5 Career Development Awards made in 2013
- A. 6 Research Grants awarded in 2013

A.1

HISTORY OF THE PROGRAM

A1.1 Beginnings

1986 A feasibility study was carried out by leading Japanese scientists under the auspices of the Japanese Prime Minister's Council for Science of Technology, to explore possible means to encourage international collaboration in basic research.

1987 Discussion was expanded to include scientists from the G7 summit nations and the European Union, resulting in the «London Wise Men's Conference» in April 1987, which endorsed the suggestion. Prime Minister Nakasone of Japan proposed the Human Frontier Science Program at the Venice Economic Summit in June. The Economic Summit partners and the Chairman of the European Community welcomed the initiative and activities aimed at implementing it as soon as possible were started.

1988 Further international talks were held from November 1987 to March 1988 in the form of an International HFSP Feasibility Study Committee, which culminated in April 1988 in the «Bonn Wise Men's Conference» - this established an outline of the program activities and defined the general scientific areas and types of activity to be supported. Prime Minister Takeshita of Japan reported the conclusions of the international feasibility study at the Toronto Economic Summit in June. The assembled Heads of State welcomed the proposal for implementation in the near future.

1989 An International Scientists Committee, which had started work in 1987, gave further shape to the Program, defining its organization and the details of its program activities, research areas and selection procedures. Intergovernmental conferences were held in June and July 1989 in Tokyo and Berlin, respectively, which led to endorsement of the plan by the participating governments. It was agreed to implement the HFSP for an initial experimental phase of 3 years.

The Secretariat of the Program, the International Human Frontier Science Program Organization, was founded in October 1989 in Strasbourg, France. The first President of the Program was Ambassador Miyazaki (Japan), the first Chairman of the Council of Scientists was Dr. Edward Rall (US) and the first Secretary General was Sir James Gowans, former Secretary of the Medical Research Council, UK.

1990 The peer review process was established and the first awards were made in March.

A1.2 Further development of the Program

Intergovernmental Conferences bring together representatives of the Management Supporting Parties, i.e. those countries that support the Program directly, plus the European Union, representing the remaining EU countries, to discuss overall policy and strategy. Since 2004, they also establish an indicative financial framework for the following three years.

1st Intergovernmental Conference, Tokyo, Japan, January 1992: This conference recognised the achievements made in the initial phase of the Program and the desirability of continuing the HFSP. It was decided to carry out a general review of the program from both scientific and organisational standpoints.

2nd Intergovernmental Conference, Washington DC., USA, May 1997: It was decided to continue the HFSP for another five years. The MSPs reaffirmed the goals of the Tokyo Joint Communiqué aimed at increased and equitable funding for the Program. A further review of the Program was requested for March 2001.

3rd Intergovernmental Conference, Berlin, Germany, June 2002: The MSPs agreed to the continuation of HFSP for a further five years on the basis of its scientific value and the implementation of a number of initiatives introduced by the Secretary General. A working group was set up to consider the future finances, status and scope of the Program.

4th Intergovernmental Conference, Bern, Switzerland, June 2004: The delegates agreed upon a general indicative financial framework for 2005-2007 in order to reach a total budget of 60 million USD and a 50:50 distribution of contributions from Japan and the other countries. An annual increase was recommended to maintain the awarding capacity of the Program.

5th Intergovernmental Conference, Ottawa, Canada, June 2007: The representatives agreed on an indicative three year budgetary plan 2008-2010 and endorsed the Board recommendation of March 2007 that an annual minimum contribution be required of any new MSP.

6th Intergovernmental Conference, Canberra, Australia, May 2010: The representatives recognised the success of HFSP in setting new paradigms for research and in funding excellent individual and collaborative projects over a 20 year period. As the Program enters a new phase of its development, representatives asked the Board to develop a new financial framework for consideration at the next IGC. For the period 2011-2013, an indicative financial framework was agreed.

7th Intergovernmental Conference, Brussels, Belgium, June 2013: The representatives renewed their commitment to the Program on the basis of its added value as the only bottom-up global program supporting frontier research in the life sciences and recognised the need for a sustained budget to maintain the attractiveness of the Program. They adopted indicative budgetary guidelines for the Program (2014-2016).

A1.3 Membership of HFSP

HFSP was established at the initiative of the Japanese government, led by Prime Minister Nakasone. The founding MSPs were Canada, France, Germany, the European Union, Italy, Japan, the UK and the USA. Switzerland took up membership in 1990. At the 3rd Intergovernmental Conference (Berlin, 2002), MSPs agreed to take active steps to expand the membership of HFSP to enhance the intercontinental balance of the Program and promote international collaboration. The Guidelines for membership were subsequently revised and the Board accepted the following new members:

2004 Australia and Republic of Korea
2006 New Zealand and India
2008 Norway

A1.4 Reviews of HFSP

A number of reviews have been carried out at the request of the MSPs.

1996 General Review: a questionnaire based review, with comments by an expert scientific panel.

2001 Second General Review: a questionnaire based review, with a bibliometric analysis.

2006 Review of the Human Frontier Program's Initiatives 2000-2005: a questionnaire based review to evaluate the success of the initiatives introduced under the leadership of Secretary General, Torsten Wiesel.

2007 Report of the expert review panel on HFSP: an additional review by a panel of eminent scientists, who were invited to comment on the 2006 report and to identify issues for further evaluation.

2010 Review of the Human Frontier Science Program: a questionnaire based review to evaluate the success of the initiatives since 2000 and a bibliometric analysis of awardees' publications. A further study of commercialization resulting from HFSP funded research was carried out at the request of the Ministry of Trade, Economy and Industry, Japan.

A1.5 Leadership and management

The MSPs nominate representatives to the Board of Trustees to take responsibility for the management of the Program in collaboration with the Council of Scientists. A President and two Vice-Presidents are elected by the members from among the Trustees for a three-year term. The Board of Trustees appoints a Secretary General for a term of three years to execute the Program in accordance with the decisions of the Board of Trustees and the Council of Scientists.

President of the Board of Trustees

Hirokichi MIYAZAKI (Japan)	November 1989 – March 1995
Kozo IIZUKA (Japan)	April 1995 – March 2000
Masao ITO (Japan)	April 2000 – March 2009
Akito ARIMA (Japan)	April 2009 – March 2012
Nobutaka HIROKAWA (Japan)	April 2012 to present

Chair of the Council of Scientists

Edward RALL (USA):	March 1990 (2 nd meeting) to March 1993 (8 th meeting),
Klaus-Peter HOFFMANN (Germany)	November 1993 (9 th meeting) to March 1995 (12 th meeting)
Pierre CHAMBON (France)	March 1996 (13 th meeting) and March 1997 (14 th meeting)
Albert AGUAYO (Canada)	March 1998 (15 th meeting) and March 1999 (16 th meeting)
Arturo FALASCHI (Italy)	March 2000 (17 th meeting) and March 2001 (18 th meeting)
Pierre MAGISTRETTI (Switzerland)	March 2002 (19 th meeting) and March 2003 (20 th meeting)
Heinrich BETZ (Germany)	March 2004 (21 st meeting)
Joachim SEELIG (Switzerland)	March 2005 (22 nd meeting) and March 2006 (23 rd meeting)
Rudi BALLING (Germany)	March 2007 (24 th meeting)
Paul LASKO (Canada)	March 2008 (25 th meeting) to March 2010 (27 th meeting)
Rae SILVER (USA)	March 2011 (28 th meeting) to July 2012 (31 st meeting)
Young-Joon KIM (Korea)	July 2013 (32 nd meeting)

Secretary General

James GOWANS (UK)	November 1989 – March 1993
Michel CUÉNOD (Switzerland)	April 1993 – March 2000
Torsten WIESEL (USA)	April 2000 – June 2009
Ernst-Ludwig WINNACKER (Germany)	July 2009 to present

A.2

JOINT COMMUNIQUÉ OF THE INTERGOVERNMENTAL CONFERENCE ON THE HUMAN FRONTIER SCIENCE PROGRAM, BRUSSELS, 11 JUNE 2013

Representatives of the Management Supporting Parties (MSPs) of Australia, Canada, France, Germany, Italy, India, Japan, The Republic of Korea, New Zealand, Norway, Switzerland, the United Kingdom of Great Britain and Northern Ireland, the United States of America and of the European Union met at an Intergovernmental Conference (IGC) on 11 June 2013 in Brussels, Belgium to review the progress made and discuss the future of the Human Frontier Science Program (HFSP).

1 : Mission and added value of the Human Frontier Science Program

- Representatives recognise that the ever-growing complexity and diversity of science makes international collaboration more imperative than ever.
- Independent reviews acknowledge that HFSP has an impressive track record in stimulating world-class excellence in high-risk/high-impact science and career development which, because of HFSP's particular niche (small-scale, bottom-up, high-risk, interdisciplinary, intercontinental), has significant added value.
- Representatives confirm their aim to maintain the uniqueness of HFSP in supporting innovative, frontier research in the life sciences, encouraging high risk research and promoting international collaboration in the spirit of science without borders.
- Representatives acknowledge the role of Japan as the initiator of HFSP, its largest contributor and the cornerstone of its hitherto success and sustainability.

2 : Continuation of the Human Frontier Science Program

- Representatives renew their commitment to HFSP
- Representatives confirm the mission given to HFSP to promote research into the 'complex mechanisms of living organisms' along the lines of the HFSP Strategic Outlook 2010-2016

- Representatives confirm the mission given to HFSP to promote research into the 'complex mechanisms of living organisms' along the lines of the HFSP Strategic Outlook 2010-2016
- Representatives note that the range of programs within the HFSP portfolio complement each other in providing scientists with opportunities to carry out frontier research at all stages of their career, with particular attention to early career scientists. The representatives recognise the value of all three programs (Research Grants, Fellowships and Career Development Awards), and agree that the Research Grant program has the highest priority on account of its unique value in supporting emerging fields.
- Representatives acknowledge the need of ensuring a sustained budget to maintain the attractiveness of the programme, improve awarding capacity and be inclusive of fields as they emerge on the frontiers of the life sciences

3 : Finances

- While representatives acknowledge and commend the leading role of Japan in supporting HFSP for over 20 years, they also acknowledge that the time has come for greater burden-sharing to ensure that the Program continues to make profound contributions in extending the frontiers.
- Representatives accept a financial framework for their indicative contributions to HFSP for the period 2014-2016 (see Annex).
- Representatives recognise the need to move towards the development and application of new principles for calculating financial contributions in the long-term, taking into account quantitative and/or qualitative indicators.
- Representatives intend to consider the possibility of seeking additional resources from the private sector.

4 : New membership

- Representatives acknowledge that HFSP should invite potentially interested new parties to apply for membership of HFSP.
- Agreement on new memberships should be subject to (i) the quality and capacity of frontier research in the life sciences conducted by the interested new party(ies); (ii) the willingness and ability of the interested new party(ies) to support HFSP financially in the long-term, in accordance with a GDP-based formula and a minimum contribution set by the Board.
- Representatives note that the contributions of any new party are to be added to the total amount contributed by the other MSPs.

5 : Next Meeting

- The next meeting of the HFSP IGC will be held in United Kingdom in 2016, unless unforeseen circumstances make it necessary to hold a meeting before that date.

ANNEX

Indicative budgetary guidelines 2014 – 2016 (in k local currencies)

MSP	Currency	Budget FY 2014	Budget FY 2015	Budget FY 2016
Australia	USD	700	728	757
Canada	CAD	1,812	1,884	1,960
EU ³	EUR	4,765	4,861	4,958
France	EUR	2,231	2,275	2,321
Germany	EUR	4,269	4,440	4,617
India	USD	1,009	1,029	1,050
Italy	EUR	901	919	937
Japan ⁴	USD	22,200	22,200	22,200
New Zealand	USD	133	138	144
Norway	USD	620	633	645
Republic of Korea	USD	797	813	829
Switzerland	CHF	851	885	920
UK	GBP	1,415	1,472	1,531
USA ⁵	USD	10,129	10,331	10,538

³ Financial contribution of the EU is subject to adoption of the future relevant Work Programmes under Horizon 2020 (the EU Framework Programme for Research and Innovation 2014-2020)

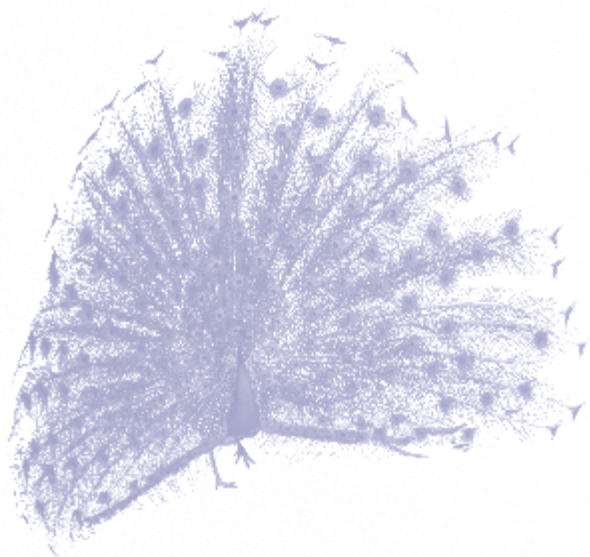
⁴ A review of this program's performance in Japan may be conducted. This amount is subject to change, depending on its results, and on exchange-rate fluctuations due to the yen based contributions from METI

⁵ Numbers subject to revision for 2015 and 2016

		
Australia Tony Kingdon (Chair of the Conference)	Canada Kelly van Koughnet	European Union Robert-Jan Smits
		
France Roger Genet	Germany Hans Michael Biehl	India XXXXXXXXXXXXXXXX
		
Italy Raffaele Liberali	Japan Sotaro Ito	New Zealand Bruce McCallum
		
Norway Director Anders HANNEBORG	Republic of Korea Mr Sanghun Lee	Switzerland Dr Isabella BERETTA
		
United Kingdom Dr Mark PALMER	United States of America Ms Carmen Huber	

A.3

SUMMARY OF DECISIONS OF THE BOARD OF TRUSTEES IN FY 2014



48th BOARD MEETING (MARCH 2014)

The Board approved the Budget and Program Activity plan for FY 2014.

On the basis of the above, the Board approved the following awards for funding:

24 Program Grants, 10 Young Investigator Grants;
80 Long-Term Fellowships and 10 Cross-Disciplinary Fellowships, with a reserve list of 8 Fellowships;

12 Career Development Awards, with a reserve list of 4, should additional funds become available.

The Board approved the continuation of Young Investigator renewals.

The Board approved the recommendation to increase the eligibility window for the CDA from 2 to 3 years and to reduce the number of applications per fellow to 2.

The Board approved the membership of Singapore, pending signature of the Memorandum of Understanding.

The Board decided to formulate Terms of Reference for the internal statutory auditors, who will be tasked with the development of a risk management framework for HFSP.

The Board decided to publish on the HFSP web site a statement encouraging awardees to make research results available as soon as possible within the limits of their institution's guidelines.

The Board established a working group to explore the possibility of receiving private funds.

The Board agreed that the MSPs should establish a working group to prepare for the 2016 Intergovernmental Conference, hosted by the United Kingdom.

A.4

LONG-TERM AND CROSS-DISCIPLINARY FELLOWSHIPS AWARDED IN 2013⁶

1. Long-Term Fellowships

Name	Nationality	Host institute	Host country
ACETO Nicola	ITALY	Harvard Medical School, Boston	USA
ADLER Avital	ISRAEL	New York University School of Medicine	USA
ARNOULT Nausica	FRANCE	The Salk Institute for Biological Studies, La Jolla	USA
BADRINARAYANAN Anjana	INDIA	Massachusetts Institute of Technology, Cambridge	USA
BEHARRY Andrew	CANADA	Stanford University	USA
BEN-ZVI Danny	ISRAEL	Harvard University, Cambridge	USA
BERCHTOLD Doris	GERMANY	University of Zurich	SWITZERLAND
BHATTACHARYYA Moitrayee	INDIA	University of California, Berkeley	USA
BRAUN Joerg	GERMANY	University of Massachusetts Medical School, Worcester	USA
CALDERON DOMINGUEZ Lesly	CUBA	Imperial College London	UK
CHEN Simon	CANADA	University of California, San Diego	USA
CHIO lok In Christine	MACAU	Cold Spring Harbor Laboratory	USA
CHOI Jaemyung	KOREA	University of California, Berkeley	USA
COLES Charlotte	UK	German Centre for Neurodegenerative Disease, Bonn	GERMANY
CUI Jixin	CHINA	University of California, San Diego	USA
CUNHA FERREIRA Ana Inês	PORTUGAL	University of Utrecht	THE NETHERLANDS
CUYLEN Sara	GERMANY	Institute of Molecular Biotechnology, Vienna	AUSTRIA
DAMBOURNET Daphné	FRANCE	University of California, Berkeley	USA
DEGNER Jacob	USA	European Molecular Biology Laboratory, Heidelberg	GERMANY
DEGUINE Jacques	FRANCE	University of California, Berkeley	USA
DENKER Annette	GERMANY	Hubrecht Institute, Utrecht	THE NETHERLANDS
DOMINISSINI Dan	ISRAEL	University of Chicago	USA
DOUPE David	UK	Harvard Medical School, Boston	USA
FORNASIERO Eugenio	ITALY	European Neuroscience Institute, Göttingen	GERMANY
FUJII Kotaro	JAPAN	Stanford University, Palo Alto	USA
GOFMAN Yana	ISRAEL/RUSSIA	Stanford University	USA
HAGAI Tzachi	ISRAEL	University of California, San Francisco	USA
HAREL Itamar	ISRAEL	Stanford University School of Medicine	USA
HEIDENREICH Matthias	GERMANY	Broad Institute of Harvard and MIT, Cambridge	USA
HEMPEL Antje Marie	GERMANY	University of Basel	SWITZERLAND

Name	Nationality	Host institute	Host country
HOTZ Manuel	BELGIUM/CANADA	Stanford University	USA
HUSSIN Julie	JAPAN	University of Oxford	UK
ITO Daisuke	ITALY	Instituto Gulbenkian de Ciencia, Oeiras	PORTUGAL
IURILLI Giuliano	JAPAN	Harvard Medical School, Boston	USA
IWASAKI Shintaro	INDIA	University of California, Berkeley	USA
JAIN Devanshi	GERMANY	Memorial Sloan-Kettering Cancer Center, New York	USA
JANICH Peggy	JAPAN	University of Lausanne	SWITZERLAND
KAWAOKA Shinpei	GREECE	Cold Spring Harbor Laboratory	USA
KOURTIS Nikos	ISRAEL	New York University School of Medicine	USA
LAVIV Tal	AUSTRALIA	Max Planck Florida Institute, Jupiter	USA
LEHRBACH Nicolas	FRANCE	Harvard University, Boston	USA
LEVAYER Romain	ISRAEL	Bern University	SWITZERLAND
LEVY Sagi	GERMANY/ISRAEL	The Rockefeller University, New York	USA
LIVNEH Uri	ISRAEL	Cold Spring Harbor Laboratory	USA
MANN Mati	GERMANY	California Institute of Technology, Pasadena	USA
MAYER Andreas	CHILE	Harvard Medical School, Boston	USA
MENDIBURO María José	CYPRUS (EU)	Max F. Perutz Laboratories, Vienna Biocenter	AUSTRIA
MICHAEL Iacovos	SWITZERLAND	Swiss Federal Institute of Technology, Lausanne	SWITZERLAND
MORF Jörg	SPAIN	The Babraham Institute, Cambridge	UK
NOVOA Eva Maria	ISRAEL	Massachusetts Institute of Technology, Cambridge	USA
OREN Meital	FRANCE	Columbia University, New York	USA
PAPOUIN Thomas	KOREA	Tufts University School of Medicine, Boston	USA
PARK Jiyong	GERMANY/ISRAEL	University of California, San Diego	USA
PENN Osnat	SPAIN	University of Washington, Seattle	USA
PINEIRO UGALDE Alejandro	INDIA	The Netherlands Cancer Institute, Amsterdam	THE NETHERLANDS
RAY CHAUDHURI Arnab	SPAIN	National Cancer Institute, NIH, Bethesda	USA
SANCHEZ-ALCAÑIZ Juan Antonio	JAPAN	University of Lausanne	SWITZERLAND
SANO Teruyuki	GERMANY/ROMANIA	New York University School of Medicine	USA
SCHWALIE Petra Catalina	ISRAEL	EPFL, Lausanne	SWITZERLAND
SEGEV BEN-YAIR Einat	SWITZERLAND	Harvard Medical School, Boston	USA
SENDÖL Ataman	PORTUGAL	The Rockefeller University, New York	USA
SILVA Mariana	FRANCE/POLAND	Research Institute of Molecular Pathology, Vienna	AUSTRIA
SLIWA Julia	GERMANY	The Rockefeller University, New York	USA
TODESCO Marco	ITALY	University of British Columbia, Vancouver	CANADA
TOGNINI Paola	ITALY	University of California, Irvine	USA
TOWBIN Benjamin	SWITZERLAND	Weizmann Institute of Science, Rehovot	ISRAEL
TRENHOLM Stuart	CANADA/UK	Friedrich Miescher Institute, Basel	SWITZERLAND
TRITSCHLER Felix	GERMANY	University of Illinois, Urbana	USA
VASAS Vera	HUNGARY	University of London	UK
WEBER Franz	GERMANY	University of California, Berkeley	USA
WHITE Martin	IRELAND/UK	Harvard University, Cambridge	USA
WILLIGE Björn	GERMANY	The Salk Institute for Biological Studies, San Diego	USA
WU Qingfeng	CHINA	Johns Hopkins Medical Institute, Baltimore	USA
YAO Zhizhong	CHINA	INRA Research Centre of Jouy-en-Josas, Paris	FRANCE
ZHAO Tongtong	GERMANY	Harvard Medical School, Boston	USA
ZIBLAT Roy	ISRAEL	Harvard University, Cambridge	USA

⁶ These awards were initiated during FY 2013.
For a list of fellowships awarded in 2014, see the HFSP web site (<http://www.hfsp.org/>).

2. Cross-Disciplinary Fellowships

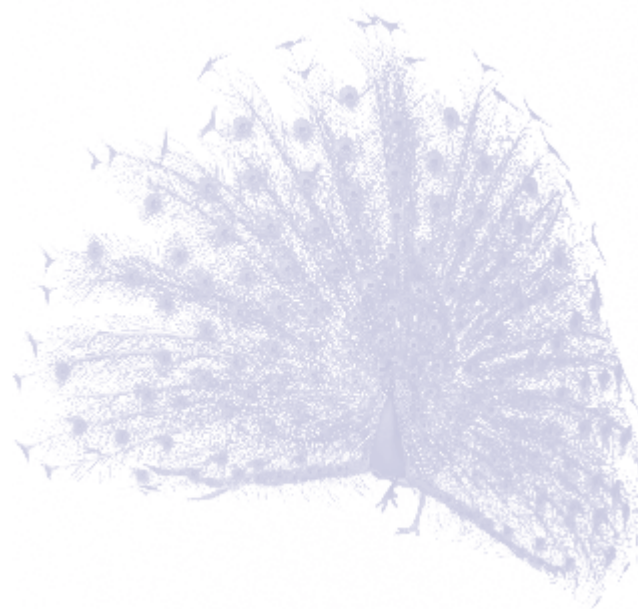
Name	Nationality	Host institute	Host country
BASTINGS Maartje	THE NETHERLANDS	Harvard University, Boston	USA
BITBOL Anne-Florence	FRANCE	Princeton University	USA
BRUMLEY Douglas	AUSTRALIA	Massachusetts Institute of Technology, Cambridge	USA
KEIL Wolfgang	GERMANY	The Rockefeller University, New York	USA
KOEHLER Simone	GERMANY	University of California, Berkeley	USA
SANCHEZ Goar	SPAIN	University College, Dublin	IRELAND
SARIC Andela	CROATIA	University of Cambridge	UK
SCHMOLLER Kurt	AUSTRIA	Stanford University	USA

A.5

CAREER DEVELOPMENT AWARDS MADE IN 2013⁷

Name	Nationality	Institute of CDA	Country of CDA
BELTRAO Pedro	PORTUGAL	EMBL, Hinxton	UK
GARI Kerstin	GERMANY	University of Zurich	SWITZERLAND
HAESLER Sebastian	GERMANY	Neuroelectronics Research Flanders, Leuven	BELGIUM
ITZKOVITZ Shalev	ISRAEL	Weizmann Institute of Science, Rehovot	ISRAEL
MANAVELLA Pablo	ARGENTINA/ITALY	Instituto de Agrobiotecnología del Litoral / CONICET, Santa Fe	ARGENTINA
MUELLER Patrick	GERMANY	Max Planck Institute for Developmental Biology, Tübingen	GERMANY
SIGAL Alex	CANADA/ISRAEL	Max Planck Institute for Infection Biology K-RITH, University of Kwazulu-Natal, Durban	GERMANY SOUTH AFRICA
YIZHAR Ofer	ISRAEL	Weizmann Institute of Science, Rehovot	ISRAEL

⁷These awards were initiated during FY 2013. The list of CDA awards in 2014 are on the HFSP web site (<http://www.hfsp.org/>).



A.6

RESEARCH GRANTS AWARDED IN 2013⁸

Note that nationality is given in brackets if different from country of laboratory

1. YOUNG INVESTIGATORS

Defining the functional and structural interface between voltage-activated sodium channels and beta-subunits

BOSMANS Frank, (Belgium), USA
VAN PETEGEM Filip, (Belgium), Canada

Interplay between mechanical and biological mechanisms during cell cortex assembly (renewal)

CHARRAS Guillaume, (Canada), UK
PALUCH Ewa, (Poland), Germany*
ROMET-LEMONNE Guillaume, France
ROUX Philippe, Canada

Mechanical properties of tiled composites – lessons from shark skeletons

DEAN Mason, (USA), Germany
WEAVER James, USA

Neurons feel the force - new photonic tools to unravel the development of the nervous system

GATHER Malte C., Germany*
FRANZE Kristian, (Germany), UK
SCARCELLI Giuliano, (Italy), USA

The chemistry of visual trickery: mechanisms of identifying and characterizing bacterial cytoskeletal elements and small molecules that target them (renewal)

GITAI Zemer, USA
KOLLMAN Justin, (USA), Canada
THANBICHLER Martin, Germany
WEIBEL Douglas B., USA

The role of alternative splicing in tissue specific protein interaction networks

KIM Philip M, (Germany), Canada
FALTER-BRAUN Pascal, Germany
KAIDA Daisuke, Japan

Optogenetic manipulation and functional characterization of adult neurogenesis in the olfactory bulb

KOMIYAMA Takaki, (Japan), USA
GRADINARU Viviana, (Romania), USA
IMAYOSHI Itaru, Japan

Assessing the function of neocortical Layer 1 with genetically-encoded indicators of synaptic activity

PETREANU Leopoldo, (Argentina), Portugal
TIAN Lin, (China), USA

Pathways ensuring the integrity of mitochondrial DNA

SFEIR Agnel, (Lebanon), USA
BRUNET Erika, France

Pathways ensuring the integrity of mitochondrial DNA

VENKADESAN Madhusudhan, India
BANDI Mahesh, (India), Japan
MANDRE Shreyas, (India), USA

2. PROGRAM GRANTS

Visual control of flight modes and transitions in birds

ALTSHULER Douglas, (USA), Canada
LENTINK David, (Netherlands), USA
SRINIVASAN Mandyam, Australia

An innovative, interdisciplinary model system for studying the developmental origins of sleep and brain rhythms

BALABAN Evan, (USA), Canada
DI PASCOLI Stefano, Italy
RATTENBORG Niels, (USA), Germany
VAQUERO Juan José, Spain

Taking snapshots of photosynthetic water oxidation: simultaneous X-ray spectroscopy and crystallography

BERGMANN Uwe, USA
WERNET Philippe, Germany
YANO Junko, (Japan), USA
ZOUNI Athina, Germany

The birth and death of the chloroplast

BOCK Ralph, Germany
REICH Ziv, Israel

(T)Race back in space – recovering protein evolvability from multifunctional ancestors

BORNBERG-BAUER Erich, (Austria), Germany
HOLLFELDER Florian, (Germany), UK
TOKURIKI Nobuhiko, (Japan), Canada

From stochastic cell behavior to reproducible shapes: the coordination behind morphogenesis

BOUDAOUZ Arezki, France
LI Chun Biu, (China), Japan
ROEDER Adrienne, USA
SMITH Richard S., (UK), Switzerland*

Investigating the role of secreted RNAs in bacterial virulence

COSSART Pascale, France
PALMER Amy, USA
SOREK Rotem, Israel

Magnetic sense receptors in avian inner ear

DICKMAN J. David, USA
WINKLHOFER Michael, Germany

Neuroscience of knowledge: neural representation of concepts and their role in perception and memory

FREIWALD Winrich, (Germany), USA
DIAMOND Mathew E., Italy
QUIAN QUIROGA Rodrigo, (Argentina), UK
SOMPOLINSKY Haim, Israel
ZOCOLAN Davide, Italy

Actin and actin-related proteins: probing their nuclear function

GASSER Susan M., Switzerland
HARATA Masahiko, Japan
HEINIS Christian, Switzerland
HOZAK Pavel, Czech Republic

Dynamics of actin anchoring in synaptic plasticity and learning

HAYASHI Yasunori, Japan
MENENDEZ DE LA PRIDA Liset, Spain
PONCER Jean Christophe, France
TING Alice, USA

Evolution of light perception networks in plants

HILTBRUNNER Andreas, (Switzerland), Germany
FLECK Christian, Germany*
HUQ Enamul, USA

Developmental assembly and synthesis of membrane nano-domains for oscillating cardiac regulation

HOSHIJIMA Masahiko, (Japan), USA
SOELLER Christian, (Germany), New Zealand*
TAKESHIMA Hiroshi, Japan

Artificial synthesis of the bacterial flagellar motor with DNA nanostructures

LEE Lawrence, Australia
BERRY Richard, UK
NAMBA Keiichi, Japan
TURBERFIELD Andrew, UK

Assembly and activity of multidrug efflux machines

LUIZI Ben F., (USA), UK
HAMOEN Leendert, (Netherlands), UK*
MURAKAMI Satoshi, Japan
POS Klaas M., (Netherlands), Germany
VAN VEEN Hendrik W., (Netherlands), UK

Multimodal sensing in the natural environment

MOSS Cynthia, USA
HALLAM John, (Jersey), Denmark
PAGE Rachel, (USA), Panama
SURLYKKE Annemarie, Denmark
YOVEL Yossi, Israel

Revealing the fundamental limits of cell growth

PAULSSON Johan, (Sweden), USA
BOLLENBACH Tobias, (Germany), Austria
EHRENBERG Måns, Sweden
TOPRAK Erdal, Turkey

Evolutionary innovation in bacterial signal processing networks

PINNEY John, UK
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Evolutionary ecology of chronobiology in host-parasite interactions

REECE Sarah, UK
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MIDEO Nicole, (Canada), USA*
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Biomimetic nanoelectrodes for stable intracellular neural recordings

SCHAEFER Andreas, Germany*
MELOSH Nick, USA

Memory and chance during nutrient sensing in budding yeast

SWAIN Peter, UK
MICHNICK Stephen W., Canada
VERSTREPEN Kevin, Belgium

Cell fate decision by integration of information from multiple plant hormones

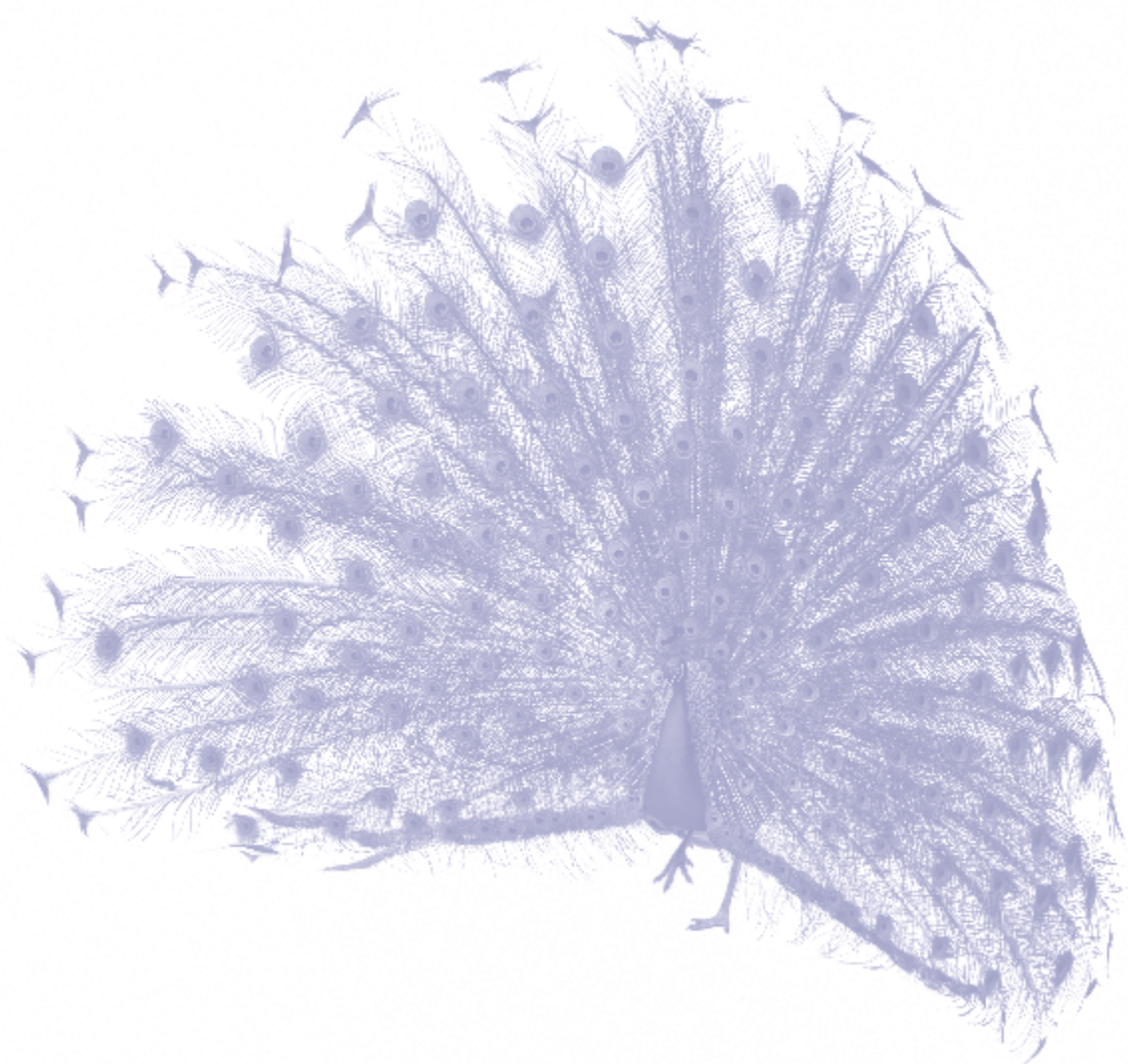
VERNOUX Teva, France
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Interplay between motility appendages, exopolysaccharides, and hydrodynamics in early biofilms

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