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ANNUAL REPORT

APRIL 2005 - MARCH 2006

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HUMAN FRONTIER SCIENCE PROGRAM

FY 2005

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The following documents are available on the HFSP website
www.hfsp.org

Joint Communiqués (Berlin 2002, Washington 1997, Tokyo 1992):
http://www.hfsp.org/pubs/Pubs_reports_top.php

Statutes of the International Human Frontier Science Program Organization:
<http://www.hfsp.org/about/Aboutstatutes.php>

Guidelines for the Participation of New Members in the HFSP:
http://www.hfsp.org/about/AboutNew_Mem.php

General Reviews of the HFSP 1996 and 2001:
http://www.hfsp.org/pubs/Pubs_reports_top.php

Updated and previous lists of awards, including titles and abstracts:
<http://www.hfsp.org/awardees/AwardsLatest.php>

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Foreword

Since its inception in 1989, the core mission of the Human Frontier Science Program (HFSP) has been to promote innovative international research into fundamental problems in the life sciences, and this relatively new program has come to occupy a unique place in world science. Two external evaluations, conducted in 1996 and 2001, have confirmed the scientific and organizational excellence of the funding programs of HFSP. Yet a true frontiers funding program with such a modest budget must constantly work to ensure that it uses its funds most effectively, especially in the midst of a rapidly shifting scientific landscape. Thus, when Masao Ito and I were appointed as the President and Secretary-General of the International Human Frontier Science Program Organization (HFSP) in 2000, we worked with the Board of Trustees (Board), Council of Scientists (Council), scientific Review Committees and Secretariat staff to adapt and enhance our programs in order to most effectively meet the challenges of the post-genomic era of 21st century life science research. A recently conducted external review surveyed the results of these changes and new initiatives in the HFSP over the past five years. It concluded that the programs have succeeded in substantially enhancing the creation of scientific networks across national and disciplinary boundaries and have helped train and develop the careers of highly talented young scientists from all over the world.

The external review concluded that applicants to HFSP

“have very few, if any funding alternatives with the same profile and objectives as the HFSP... moreover, compared to other funding alternatives on all issues examined, a large proportion of HFSP applicants answer that the HFSP is better.”

Through its comprehensive survey of HFSP applicants, the review found that, even if small in size, the programs are viewed by scientists across the world as a highly valuable addition to domestic funding schemes and score especially high on prestige, building new international networks and opportunities of interdisciplinarity. It is also very gratifying to learn that a large proportion of HFSP-funded projects have resulted in continued collaboration beyond the grant period, helping to build a wide and interwoven global community of scientists whose work has been seeded by HFSP support at its critical early stages.

It is important to emphasize that the scientific creativity supported by HFSP rises from the “bottom up”: it is the scientists themselves, from postdoctoral fellows to senior grantees, who propose projects and collaborations. The boldness, imagination and scientific synergy, that HFSP promotes, arises from individuals working at the forefront of research into the complex mechanisms of living processes, ranging from genome expression programs in single-celled bacteria to the intricate neural networks governing perception and memory in the mammalian brain. With a potential applicant pool of creative scientists from all over the world, representing fields spanning the natural sciences, mathematics, computer science and engineering, the Program is ideally positioned with its rigorous international peer review process to identify and support pioneering new approaches to the challenge of biological complexity. Indeed, over the past few years, the pool of scientists with full member privileges has expanded significantly with the addition of Australia and the Republic of Korea to the HFSP. New Zealand was accepted as a member in March 2006 and we are in active discussion with representatives from other countries, including China and India.



The deepest problems in 21st century life sciences have in common the challenge of understanding the behavior of complex living systems with many interacting elements, from genetic networks to giant multi-protein machines, from the molecular pathways of plasticity at a single neural synapse, to the cellular pathways extending from sensory receptors to higher brain centers. HFSP has been a leader in recognizing that biologists increasingly will need to collaborate with talented colleagues from physics, chemistry, mathematics, engineering and computer science in order to develop new ways to study and image the basic elements of living systems, and new analytical and computational methods for modeling their interactions. Beginning in 2000, we have introduced a series of refinements and new initiatives to promote novel interdisciplinary studies of biological complexity, with a special emphasis on projects displaying a sense of risk-taking and originality, and with no requirement for preliminary data. While it is still too early to evaluate objectively (for instance, through bibliometric analysis) how the fruits of these projects will impact life science research as a whole, a number of initial discoveries presented in recent scientific papers and at our Awardees Annual Meetings are highly encouraging. The 2006 review concluded that there has been substantial growth in the interdisciplinarity of HFSP-supported research teams: "the share of the funded projects that contained more than one discipline (counting all life sciences as one discipline) increased from 30 percent in award year 2000 to almost 90 percent in award year 2005." This promotion of research across disciplinary boundaries was expanded last year with the introduction of our new Cross-Disciplinary Fellowships, which support young scientists with Ph.D.'s from the physical sciences, chemistry, mathematics, engineering and computer science who wish to pursue post-doctoral training in the life sciences.

Over the last few years, an increasing proportion of life science research has been carried out within an interdisciplinary framework. This has led to the need for scientists from different disciplines to find a common language to bridge their different conceptual and methodological approaches and to challenges to the way that the results of such studies are reviewed in the publication process. Indeed, our own market analysis has indicated a real need for a high-quality publication devoted to new interdisciplinary approaches to the life sciences, and we have taken major steps over the past year towards launching such a new journal that would bear the HFSP name and logo. The HFSP Board has approved the creation of a new legal entity, HFSP Publishing (HFSP), that is responsible for setting up and managing the HFSP Journal. We have organized an HFSP Editorial Advisory Council, which includes several Nobel laureates, and an Editorial Board with expertise across the natural sciences and associated disciplines such as computer science and engineering. This broad expertise will enable papers submitted to the HFSP Journal to be reviewed critically and with insight from all relevant disciplinary perspectives. We believe that this new HFSP Journal will further promote the HFSP mission of stimulating interdisciplinary, innovative life science research, and at the same time will further enhance the profile of HFSP within the international scientific community as an organization at the very leading edge of life science research.

Foreword

In 2000, we faced a rather worrying trend in which a large percentage of HFSP Long-Term Fellows were choosing to pursue careers in their host countries (or a third country) rather than returning home. In the hope of countering this, we extended the fellowships from two to three years and introduced the option of using the third year back in the home country. Crucially, we also inaugurated a new program, the Career Development Award (CDA), designed to support particularly outstanding repatriated HFSP fellows in their transition to independence. The recent external review concluded that the repatriation measures have been successful and are highly appreciated by the awardees. Moreover, nearly all Career Development Award holders say that the award helped them establish an independent research group. In the last few years, the Career Development Award has become a centerpiece of the HFSP Program, further enhancing the value of HFSP Fellowships to the most talented young scientists who wish to train abroad, as well as making HFSP Fellows especially appealing for a home country institution aiming to strengthen its research faculty. The scientific excellence of HFSP Career Development Award holders has been endorsed on four separate occasions by a critical review by the senior scientists of the HFSP Council, with advice from outside experts, and the awardees have especially good prospects for attracting research support from domestic and regional funding agencies.



Professor Masao Ito (left) and Professor Torsten Wiesel (right).
Photo by Sandro Weltn

Indeed, with its Long-Term Fellowships, Cross-Disciplinary Fellowships, Career Development Awards, Young Investigator Grants, and Program Grants, HFSP is unique: no other funding agency supports life science networks at an international level through all career stages from postdoctoral fellow to junior independent researcher to senior established investigator.

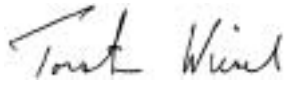
The external review also concluded that our Awardees Annual Meetings, the fifth of which was held last year in the U.S. at the National Institutes of Health in Bethesda, have played

“a substantial role in creating a sense of community among HFSP awardees, especially for the Fellows and the Career Development Award holders. Moreover, the large majority of participants report positive effects of the meeting in terms of giving them interdisciplinary input and widening their scholarly network.”

I should also add that beginning with our first awardees' meeting in Turin in 2001, these occasions have been wonderful opportunities for those of us in the Secretariat, the Council and Board to interact with awardees face to face, to learn about their research first-hand in a highly stimulating environment, and to answer their questions and hear suggestions for the further enhancement of our programs.

Many awardees have expressed an interest in creating an international HFSP alumni network, which could be coordinated through the HFSP web-site. Such an alumni network would hopefully stimulate new collaborations and scientific interchange, and promote an even stronger sense of a global HFSP community of scholars. We are currently discussing this with current and former awardees to assess how their needs can best be met. We plan to expand our web-site to include features on scientific projects and scientists funded by HFSP to highlight the Program's achievements and to explore the possibility of adding other new features for the alumni such as discussion forums, job-postings and contact information to further enhance links between HFSP awardees past and present.

Finally, the external review reported that a major reason for awardees' satisfaction with HFSP is the perception that its leadership is actively "monitoring and adjusting the funding schemes" to adapt to the ever-changing scientific landscape and needs of young scientists. We are all particularly pleased that, after having served as President of HFSP for the past six years, Masao Ito has agreed to remain in office for a further period. I am confident that together we can assure the continuation of the HFSP philosophy as we confront the exciting challenges of the future.



36th meeting of the Board of Trustees, Strasbourg, March 2006
Photo by Sandro Weltin



Foreword

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Scientific Profiles

By means of the range of awards available, HFSP makes a career-long commitment to researchers world-wide, providing them with opportunities for training, repatriation and international collaboration. In the 16 years of its existence, HFSP has built up an international constituency of imaginative scientists who put into practice the interdisciplinary approaches that will eventually unravel the complex mechanisms of living organisms. Examples of the research are given in the scientific profiles that follow.

A cradle for newborn proteins

In the Spring of 2004, Elke Deuerling took her entire Heidelberg University research group to Zurich to see a molecule shaped like a crouching dragon. Deuerling had just received a telephone call from Nenad Ban, her collaborator on her HFSP Young Investigator Grant team, who had exciting news. Ban had succeeded in solving the crystal structure of a bacterial protein, called Trigger Factor, bound to a ribosomal protein just adjacent to a ribosome's exit tunnel – the birth canal of all new proteins.

Deuerling had been studying Trigger Factor for seven years. She had published two highly-regarded Nature papers on Trigger Factor in 1999 and 2002, revealing it to be the first known direct link between protein translation on a ribosome and protein-folding mediated by a special class of molecules called "chaperones." Deuerling had strong experimental reasons for concluding that the Trigger Factor chaperone created some kind of protective environment that shielded nascent polypeptide chains as they left the ribosome's exit tunnel and began to fold into their mature three-dimensional forms. But before her group's trip to Zurich, Deuerling still had no idea what this "cradle for newborn proteins" looked like, how it sat on the ribosome or how it functioned.

The founders of molecular biology had not anticipated the need for chaperones. An essential point of early ideas on protein synthesis was that the amino-acid sequence of a nascent polypeptide held all the structural information needed to fold itself into three dimensions. As Francis Crick reminisced in a 1998 interview, "If you had asked us way back [in the 1950s whether proteins needed external assistance to fold correctly], we would have said, 'No, no – the protein will fold itself up and maybe the ribosome will help a little.'" But in fact, a newborn protein faces serious challenges upon being translated from messenger RNA. As the N-terminal end of the nascent protein emerges from the ribosomal tunnel in a largely unfolded state, it exposes hydrophobic patches that are very prone to aggregation, especially in the crowded environment of the cytosol. Thus a newborn, unfolded protein is highly vulnerable to proteolysis or aggregation. Indeed, several human disease states, such as Alzheimer's, are associated with protein misfolding and/or aggregation. "So nascent proteins need molecular chaperones to assist folding to the native state," said Deuerling, "binding to unfolded, newly translated proteins, and preventing aggregation or proteolysis."

Beginning in the late 1990s as a member of Bernd Bukau's laboratory in Freiburg, Deuerling focused her attention on bacterial Trigger Factor protein as a candidate for a chaperone acting at the earliest stages of protein synthesis: that is, at the ribosome itself. Deuerling showed that the Trigger Factor (TF) protein possesses an N-terminal ribosome binding domain with a "TF signature" motif. The exquisite power of bacterial genetics enabled Deuerling to pinpoint the crucial amino acid sites that mediate binding between the TF signature motif and a ribosomal protein called L23.

"These experiments", said Deuerling, "provided the first example demonstrating that two very basic processes in the cell are linked: protein translation and chaperone-assisted protein folding. And this link is provided by ribosomal protein L23, which is located right next to the polypeptide exit tunnel."



Elke Deuerling



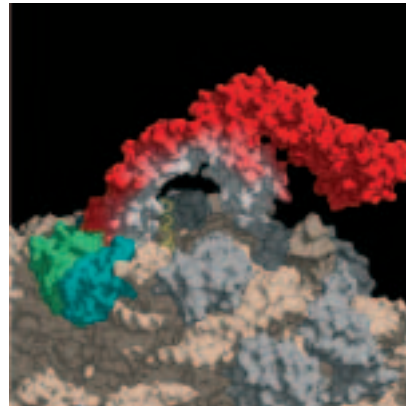
Nevertheless, the picture of Trigger Factor-mediated chaperone function remained quite murky. It was not until Deuerling arrived at Nena Ban's Zurich laboratory in the spring of 2004 that the "eureka moment" occurred in which Deuerling could see, to her surprise, "how sophisticated nature was in designing this chaperone." As Ban, Deuerling and their colleagues wrote in Nature in 2004 (431: 590-6), TF chaperone protein is shaped like a

"crouching dragon" which "hunches over the polypeptide exit [tunnel] of the ribosome," thus "providing a shielded environment" for the nascent, unfolded protein. The dragon-shaped TF protein binds L23 by its tail (its N-terminal domain), while its previously-mysterious C-terminal domain makes up part of the dragon's back and arms that help form the shielded environment, or "cradle for new proteins".

Moreover, the protein cradle beneath the TF-dragon's tail and arms seems relatively open to access by other cellular factors, such as those involved in protein targeting and secretion.

This success would not have been possible without HFSP support. Deuerling emphasised that the HFSP Young Investigator Grant was "absolutely crucial" in starting her own laboratory in Heidelberg, providing the critical seed funding for her research and allowing her to apply for and receive grant support from other sources. The HFSP-supported studies of a "molecular cradle for nascent proteins" has opened new biological paths, which, as Deuerling said "we would like to extend to higher organisms, and also to other cellular processes such as protein targeting which we think may be closely linked to Trigger Factor function."

Geoffrey Montgomery ■



Trigger factor chaperone, resembling a crouching dragon in red, forms a protective cradle over the exit of the ribosomal tunnel where newly synthesized peptides emerge illustrated as a yellow helix. The sticky hydrophobic "belly" of the trigger factor, shown in white, is uniquely suited for the interactions with the unfolded peptide.

Scientific
Profiles

Coding rules and the interpretation of visual information

Originally trained as a physicist at Tokyo University, Toshihiko Hosoya is an excellent example of HFSP's emphasis upon the principles of internationality, interdisciplinarity and opportunities for young people. In late 2003, Hosoya returned to Japan from the USA to head his own research unit at the RIKEN Brain Science Institute, where he is continuing pioneering studies of the vertebrate retina that he began as an HFSP Long-Term Fellow in Markus Meister's lab at Harvard University. These studies, published as an article in *Nature* in July, 2005 (436: 71-77), are at the forefront of a new wave of investigations demonstrating "that the retina is more clever than we thought," says Hosoya.

After receiving an undergraduate degree in physics, Hosoya's fascination with the inner logic of neural networks led him to become a *Drosophila* fruitfly molecular biologist as a graduate student.

"I thought that someday by identifying the molecular characteristics of different neurons and modifying their functions, one could develop a very powerful tool to analyze neural network functions."

Hosoya's graduate studies of a *Drosophila* gene governing neuronal development were successful and he obtained a large grant to continue them. But he felt he needed to learn new theoretical and experimental approaches to neural network function, and concluded that the vertebrate retina and Meister's Harvard lab were the best places in the world for him to pursue this goal.

During his HFSP fellowship at Harvard, Hosoya explored the "coding rules" used by neurons in the retina to extract behaviorally relevant information from the "onslaught of raw visual information" which enters the eye. The brain's information about the visual world arrives through the action potentials transmitted by retinal ganglion cells, whose axons make up the optic nerve. Classical electrophysiological studies in the 1950s revealed that retinal ganglion cells do not signal a pixel-by-pixel description of the raw image intensity of a scene, but rather register local contrasts in space and time. The neurons do not respond well to static stimuli, and generally fire action potentials only when there is a local difference in light intensity within the neuron's "center-surround" receptive field - the small region of space the cell surveys. "The retina transmits deviations from the average statistical structure of a scene," Hosoya said in an interview, providing the basic signals that enable the brain to perceive the edges and motion of objects, for instance. "Our question was: what if the statistical structure of a scene changes? For instance, if you go into the woods, the [tree-filled] scene is vertically very similar, but horizontally not similar."

Hosoya performed multi-electrode recordings in isolated salamander and rabbit retinas exposed to simplified, computer-generated versions of such highly-structured scenes, measuring how a ganglion cell's receptive field might change its normal circular, center-surround shape. Remarkably, he found that ganglion cells exposed to a scene dominated by vertical bars, for instance, change their receptive field within seconds so as to become less sensitive to vertical stimuli and more sensitive to horizontal stimuli. In Hosoya's forest analogy, it seems that the retina adapts its coding rules to filter out the unchanging vertical structure of the trees so as to be better able to detect some horizontal shape that might be predator or prey. "Thus," conclude Hosoya and Meister, "pattern adaptation is not merely a scheme for efficient recoding but rather serves to strip from the visual stream predictable and therefore less newsworthy signals."



Toshihiko Hosoya

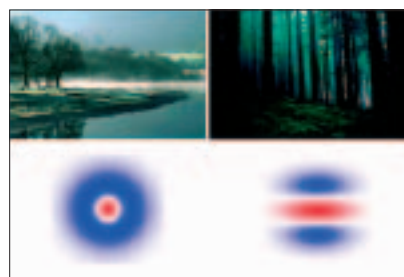


Hosoya and Meister have proposed an elegant new model to account for the dynamic retinal coding-rule changes they observe, involving plastic changes in the inhibitory synapses whose inputs generate the “surround” of a ganglion neuron’s center-surround receptive field. In experimental support of this model, these dynamic changes are eliminated by pharmacologically blocking the inhibitory neurotransmitters used by the amacrine cells that form these synapses.

Now leading his own research group at RIKEN, Hosoya aims to combine the sophisticated electrophysiological analysis he learned as a post-doctoral fellow with the genetic analysis and manipulation of neural circuits that he contemplated as an undergraduate and graduate student.

“From the beginning of my scientific career, I wanted to understand how neural networks process information,”
said Hosoya. *“I feel that the research I started through the HFSP [Long-Term Fellowship], is what I’ve always wanted to do.”*

Geoffrey Montgomery ■



Adaptation of retinal output neurons. Under average visual scenes (top left), receptive fields of output neurons are circularly symmetric (bottom left). When the scene is dominated by vertically oriented objects (top right), the neurons become less sensitive to them by modifying the receptive fields (bottom right).

Scientific
Profiles

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Activiteiten in EY 2005

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AIMS AND ACTIVITIES OF THE PROGRAM

Aims and activities

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.

The International Human Frontier Science Program Organization (HFSP/O) awards research grants and fellowships and organizes an Awardees Annual Meeting. These activities may be modified to meet the changing needs of the scientific community, on the recommendation of the Council of Scientists (Council) and by the decision of the Board of Trustees (Board), after due consideration of reviews and of the funding policies of individual countries and funding agencies. Since 1990, 696 Research Grants involving 2744 scientists, 2076 Long-Term Fellowships, 22 Cross-Disciplinary Fellowships and 72 Career Development Awards have been awarded. At its 36th meeting in March 2006, the Board approved the award of 32 Research Grants involving 101 scientists, 10 Cross-Disciplinary Fellowships, 83 Long-Term Fellowships and 29 Career Development Awards. Researchers from 69 countries have received HFSP funding so far (for more information about Research Grants and Fellowships, see the respective Guidelines on the website). Currently Japan provides about 56% of the 55.55 million USD annual budget of FY 2005.

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. To this end, HFSP maintains its vital place on the frontiers, promoting the most original of contemporary research.

Initially, HFSP supported two general research areas: brain science and the molecular mechanisms of biological functions. However, by 2000, there was a considerable overlap in the techniques and approaches used in the two broad areas and in March 2001 the Board decided to combine the two research areas so as to focus on the study of complex mechanisms of living organisms. The fields supported range from biological functions at the molecular level to brain functions and include all levels of analysis, as complexity is inherent at all levels of research. Applications are now reviewed by two committees; one for grants and one for fellowships, but all fields are covered by each committee. After five years of experience with this committee structure, it is clear that it works very well and has become an accepted feature of the Program. It enables a consistent set of criteria to be applied to all applications, regardless of their field and is proving to be an excellent mechanism for evaluating applications.

In parallel, 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 is particularly interested in involving scientists from outside the life sciences as part of research collaborations and as postdoctoral fellows.

HFSP seeks to be at the forefront of research management by instituting a flexible framework for its Research Grant and Fellowship programs. This enables the world's best scientists to collaborate internationally under optimum conditions and younger scientists to obtain training essential to their future independence. To that end, HFSP keeps in close contact with other funding agencies in countries interested in developing and implementing common policies aimed at enabling young investigators to achieve independence.

Recent Initiatives

Several program initiatives to meet the fresh challenges posed by science were introduced following the appointment of Prof. Torsten Wiesel as Secretary-General in April 2000. In addition to combining the two initial research areas into the study of complex mechanisms of living organisms, the other initiatives were aimed at reinforcing the frontier nature of the sciences supported by the Program, at supporting young scientists early in their careers, at encouraging postdoctoral fellows to return to their home countries and at increasing contact between scientists from different fields through an annual meeting of HFSP awardees. The measures taken are outlined below.

Research Grant Program

Research Grants

Research Grants are awarded to teams of two to four scientists from different countries and continents who wish to combine their expertise to approach problems in the life sciences that could not be answered by individual laboratories. Emphasis is placed on novel collaborations that bring together scientists from different disciplines (e.g. biology, chemistry, physics, mathematics, computer science, engineering). To stimulate novel, daring ideas and innovative approaches, preliminary results are not required and applicants are expected to develop new lines of research.

Research teams must be international and intercontinental. The Principal Applicant must be located in one of the member countries¹. However, those scientists collaborating with the Principal Applicant may be situated anywhere in the world.

Two types of Research Grant, both awarded for three years, are available:

Young Investigator Grants

The Young Investigator Grant scheme was introduced to encourage collaboration between young scientists who are within five years of obtaining their first independent positions. The first awards were made in 2001 and in that year Young Investigator teams received a flat amount of 250 thousand USD. Since 2005, to make the Young Investigator program equally attractive and provide a realistic amount for three and four member teams to carry out their projects, the Board decided to bring the amount awarded to Young Investigators in line with the Program Grants. Young Investigator Grant teams now receive 250 thousand USD per year for two members, 350 thousand USD for three members, and 450 thousand USD for four or more. In addition, local collaborations in the same institution, which are normally treated as one team member, receive funds equivalent to 1.5 team members if the collaboration is truly interdisciplinary. This measure aims to facilitate the formation of teams involving scientists from different disciplines since it is often difficult for scientists, especially younger investigators, to find appropriate partners internationally. Currently, applications from Young Investigators represent about 18% of the letters of intent received and these have a comparable success rate to those submitted for Program Grants, with the notable exception of 2006 where they were somewhat more successful, even bearing in mind the small numbers involved. Young Investigators are always invited to the Awardees Annual Meeting, which provides an excellent opportunity for them to make contacts and allows HFSP to follow their careers.

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. Priority will be given to new, innovative research projects for which preliminary results might not necessarily be available. Since 2004, the amount awarded depends on the size of the team and is currently 250 thousand USD for two members, 350 thousand USD for three members, and 450 thousand USD for four or more team members.

¹ Members as of the end of FY 2005: Australia, Canada, France, Germany, Italy, Japan, the Republic of Korea (Korea), Switzerland, the United Kingdom, the United States of America and the European Union (these members are defined in the Statutes of the HFSP as Management Supporting Parties "MSPs"). New Zealand will join HFSP early in FY 2006.

Interdisciplinarity in Research Grants

Two measures have been taken to increase the interdisciplinary nature of the Research Grants. First, since the end of 2001, HFSP has been working with scientific societies in the physical and mathematical sciences to promote the opportunities offered by the Program. Secondly, the two-step procedure for submitting grant applications, where only a limited number of full applications are invited, allows a stringent selection of the initial letters of intent with consideration of how an application is relevant to HFSP's interdisciplinary goals as well as the quality and potential impact of the scientific proposal. This aspect is developed *in section 3*.

Fellowship Program

Long-Term Fellowships

Because young scientists are most open to new ideas and experiences, HFSP established postdoctoral fellowship programs to increase the mobility of young scientists between countries as well as disciplines. With the increased complexity of science and its methodology, the process of learning new approaches requires longer periods of research training before a young investigator can achieve independence. Therefore applicants for Long-Term Fellowships are encouraged to seek training in new fields in order to broaden their scientific experience.

In response, HFSP has developed a more comprehensive approach to support outstanding young scientists, from the initial stages of their postdoctoral research training to the achievement of independent investigator status. In 2000 the duration of the Long-Term Fellowship award was increased from two to three years. The fellowship program provides young scientists with much broader training than in the past, thus enabling them to make a significant contribution to the new type of biology supported by HFSP programs. Parallel to the formal changes in fellowship tenure, increased emphasis is placed on encouraging applicants to propose a significant change in their research direction and on stimulating applicants with a different background and an interest in biological research to apply for HFSP fellowships. To this end, the Board approved the initiation of the Cross-Disciplinary Fellowship program, beginning in award year 2005.

Cross-Disciplinary Fellowships

Cross-Disciplinary Fellowships are intended for postdoctoral fellows with a Ph.D. degree in the physical sciences, chemistry, mathematics, engineering, computer sciences etc. who wish to receive training in the life sciences. Applicants for this program are encouraged to propose a significant change in discipline (e.g. from physics to cell biology) by demonstrating how their specific expertise will bear on the biological question under study and in which way the host laboratory may benefit from their technical skills. The financial support is the same as for Long-Term Fellowships and the option of using the third year of HFSP funding to return to the home country is also available.

All fellows are awarded three years of postdoctoral support for research training in a new scientific area in another country. The fellowship provides an annual living allowance, a research and travel allowance², and in the first year an allowance for language training. Fellows that are accompanied by family members may also qualify for a family allowance. The third (final) year of funding can either be used in the host laboratory or can be used to return to the home country, in which case, it can be deferred for up to two years while receiving support from other sources. To further improve the conditions of HFSP fellowship awards, the possibility of parental leave was introduced in December 2004. All current HFSP Long-Term Fellows may now apply for up to three months paid parental leave. The fellowship continues during parental leave and is extended for a corresponding period.

Career Development Awards

It is often difficult for young investigators to obtain independent funding to pursue their own line of research early in their career. To this end, HFSP initiated the Career Development Award in 2001. This award facilitates the fellow's transition from postdoctoral researcher to independent junior scientist, providing further prospects for becoming an established investigator in the home country. The Career Development Award enhances the distribution of outstanding scientists open to new ideas and international collaboration throughout the world. It helps young investigators to develop their own research program, thus building a culture of independent young researchers in all countries.

HFSP has introduced this competitive award to encourage HFSP Fellows to return to their home country as independent researchers in their own laboratories. The award amount is 180,000 USD³, which can be spent over two or three years, depending on the needs of the awardee. The first Career Development Awards were made in March 2003. Since then, 72 young scientists have received the award; they have returned to Argentina, Australia, Belgium, Canada, China, the Czech Republic, Denmark, Finland, France, Germany, Greece, Israël, Italy, Japan, Korea, the Netherlands, Spain, Switzerland and the USA.

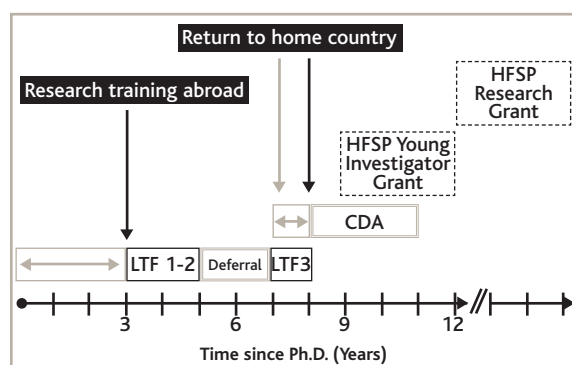
² The calculation of the living allowance is country dependent, while for research and travel a flat rate of 6500 USD is awarded. A table summarizing the allowances for different countries is included in the application guidelines that can be downloaded from the HFSP web site (www.hfsp.org).

³ At its 36th meeting the HFSP Board approved an increase for the Career Development Award to 100 thousand USD per year for a period of three years.

The Career Development Award is open to former HFSP Long-Term Fellows who intend to return to their home country and who have completed at least two years of tenure in the host laboratory. Applicants must either be in the process of obtaining or already hold a position in the home country in which they are able to conduct independent research. Since the inception of this award, 161 fellows from 24 different countries have applied for HFSP support. From the overview of HFSP's support system for young scientists given in Fig. 1-1, it is evident that beginning with the Fellowship program, HFSP provides long-term commitment to researchers up to the stage of senior investigator. By means of this system, HFSP offers outstanding young researchers a real perspective and encourages them to consider a scientific career.

Fig. 1-1:

HFSP Career and Research Support



Short-Term Fellowships

The Short-Term Fellowship program enables researchers early in their career to spend two weeks to three months working in a laboratory in another country to learn new techniques or establish new collaborations. Former Long-Term Fellows can use this support to complete work initiated under their past HFSP fellowship. The fellowship provides travel and per diem support.

Awardees Annual Meetings

Starting in 2001, HFSP has been organizing annual meetings to bring together Research Grant awardees, Long-Term Fellows and Career Development Award holders. The aim of these meetings is to allow greater interaction between HFSP awardees in the hope that this will encourage new collaborations and to build a greater sense of community among those who have been funded by the Program. The meeting is held in a different country each year, hosted by the Management Supporting Parties (MSP). The first five were held in Turin, Italy (2001), Ottawa, Canada (2002), Cambridge, UK (2003), Hakone, Japan (2004) and Washington, USA (2005). The sixth meeting is being organized at the Pasteur Institute in Paris, France on 2-5 July 2006.

All current awardees are invited to participate in the Awardees Annual Meeting. Other awardees are invited if space permits. At the fifth meeting in Washington, 5-8 June 2005, there were 194 participants: 39 grantees, 103 fellows and 52 other participants, including members of the Board, Council, Review Committees, the Secretariat and local participants. Awardees presented their results in the form of talks or posters. The plenary lectures, given by Drs. Linda Buck and Steven Chu, contributed greatly to the success of the meeting. The meetings have been welcomed enthusiastically by the awardees and have provided members of the HFSP Board, Council, Review Committees and staff with an excellent opportunity to evaluate the work being funded and to increase the visibility of the HFSP in the host country.

Other activities

Public relations and other outreach activities

The scientific achievements of awardees and other Program-related information are reported on the website. The Hot off the Press rubric features recent publications of special interest by HFSP awardees presented for a broad scientific readership. In addition, occasional e-mail newsletters are distributed to more than 6600 subscribers. The Secretary-General has met policy makers and administrators in several MSPs in order to update them directly as regards the activities of HFSP and to encourage them to lend firmer support to the Program. The Secretary-General also met leading members of the scientific community in China and India in the hope that these countries may be interested in joining HFSP in future years. Scientific Directors participated in scientific meetings so as to raise the visibility of the Program (see Annex 9).

HFSP Journal

The launch of a scientific journal dedicated to HFSP's mission to promote the Program's scientific goal of interdisciplinary and innovative research in the life sciences has now been agreed. A new, not for profit publisher, HFSP Publishing has been founded with responsibility for the journal and an editorial office is being established in Strasbourg. An eminent team of advisors and Editorial Board members has been assembled. The launch of the journal is expected before the end of 2006.

Aims
and
activities

2

BUDGET AND FINANCE

The Human Frontier Science Program (HFSP) is supported by contributions from its Management Supporting Parties (MSPs): Canada, France, Germany, Italy, Japan, Switzerland, United Kingdom, United States of America and the European Union. Australia and the Republic of Korea (Korea) joined the Program during FY 2004 and contributed to its budget for the first time in FY 2005.

1. Background

Accounting rules: Fiscal year 2005 (FY 2005) of the International Human Frontier Science Program Organization (HFSP) extends from 1 April 2005 until 31 March 2006. HFSP's legal accounts follow the French GAAP, applicable to the not-for-profit sector, and are reported on an accrual basis. Legal accounts are consolidated and stated in EUR by RSM-SEGEC. The currency of consolidation used for HFSP's internal reporting, including this annual report, is the USD. The method of consolidation is similar for both currencies and is based on monthly average exchange rates.

Certification of HFSP's financial statements

HFSP receives more than 150 thousand EUR from French public organisations. It is therefore mandatory to have its accounts audited by chartered accountants, designated by the Board for a period of six years. Deloitte & Associés have been mandated for the period FY 2002-FY 2008. Accounts for FY 2005, consolidated in EUR, have been certified by Deloitte.

Guidelines for HFSP funding

MSPs' contributions to HFSP are voluntary. The intended level of contribution is decided by the representatives of MSPs at HFSP Intergovernmental Conferences (IGC) and confirmed in the joint Communiqués as a guideline for contributions. These guidelines provide a general framework for HFSP funding.

At Washington in 1997, MSPs' representatives "reaffirmed the goals of the 1992 communiqué toward increased and equitable funding for the HFSP", and offered an example of a way to achieve these goals, calculated from a formula based on GNP for a total budget of 60 million USD (Table 2-1).

Table 2-1:
Washington Guideline

MSP	1997 Washington IGC Guideline (thousand USD)
CANADA	800
FRANCE	2 050
GERMANY	3 200
ITALY	1 550
JAPAN	37 000
SWITZERLAND	450
UK	1 500
USA	10 450
EU	3 000
TOTAL	60 000

At Berlin in 2002, MSPs “agreed that the scientific value of HFSP justifies a funding level of 60 million USD and stressed the urgency of attaining a funding level of this amount and an equal match in the amount contributed by Japan and other MSPs by 2004”.

At the latest IGC held in Berne in June 2004, MSPs’ representatives agreed in their Joint Communiqué (see Annex 1) “to adopt an indicative three-year budgetary plan (FY 2005-2007) as the fundamental framework for establishing the annual budget of HFSP” (Paragraph 3 “indicative three-year budgetary plan and target level for FY 2005-2007”). This three-year plan is based on an annual increase by all MSPs, although, “in an effort to achieve a balance between the contributions of Japan and the other IGC Members, Japan is exempt from this annual increase”.

Financial planning over a three-year period represents a significant step towards improved medium term funding visibility, despite the uncertainties inherent in the voluntary nature of actual contributions.

Implementation of Berne budgetary guideline

The budgetary plan was established in USD, the currency used by HFSP for consolidation. In order to facilitate implementation by MSPs using other currencies in their budgeting process (and also to remove exposure of HFSP awarding capacity to exchange rates variations), this plan was translated into local currency (LC), taking into account specific situations in some MSPs. The Berne budgetary guideline in LC is detailed in Annex 2.

Funding guidelines for new MSPs

Australia and Korea joined HFSP after the Berne IGC. Conditions for membership, including the financial contribution, were formalised by means of a Memorandum of Understanding (MOU), detailing the contribution at the time of membership and establishing the principle of an annual increase to match inflation.

The ten countries that joined the EU in 2004 are an intermediate case. As these countries are represented by an existing MSP, the European Union, no MOU was necessary. Their contribution was calculated on the same basis as that of Australia and Korea and added to the contribution of the European Union.

Exchange rates used in HFSP’s budget for FY 2005 are similar to those used for the implementation of the Berne budgetary guideline in LC (Table 2-2)

Table 2-2:

Exchange rates in FY 2005 budget

EXCHANGE RATE 1 USD=	CAD	CHF	EUR	GBP	JPY
FY 2005	1.30	1.24	0.80	0.55	108.14

During FY 2005, the difference between exchange rates budgeted and rates applied was limited to ~ 2.5% (with the exception of CAD: 10%). For the sake of simplicity, contributions are reported in USD at budget rates. The impact of the exchange rate on HFSP’s awarding capacity is analysed in more detail in section 2.6.

Finally, historical data can be consulted in Annex 3.

2. Income

The total income for FY 2005 reached 58.27 million USD: 55.55 million USD from MSPs' contributions and 2.72 million USD from financial income.

MSP contributions received in local currency for FY 2005 are given in Table 2-3.

Overdue contributions from previous fiscal years were entirely paid during FY 2005 (EU 1.5 million EUR and the USA 0.52 million USD).

FY 2005 Budget

The FY 2005 budget was established on the basis of the Berne budgetary guideline for IGC Members, the MOU for Australia and Korea and the contribution of the ten new EU members (Table 2-4).

Table 2-3:

Contributions received in FY 2005

Note	MSP	Organization (for abbreviations see Acknowledgement page 32)	Currency payment (LC)	Contribution FY 2005 (million LC)
1	AUSTRALIA	NHMRC	USD	0.47
2	CANADA		CAD	1.14
		CIHR	CAD	0.88
		NSERC	USD	0.20
	FRANCE		EUR	1.74
		MAE	EUR	0.73
		MER	EUR	0.62
3		CUS	EUR	0.23
3		Région Alsace	EUR	0.16
	GERMANY	BMBF	EUR	2.80
4	ITALY	CNR	EUR	0.70
5	JAPAN		USD	31.25
		METI	USD	11.58
		MEXT	USD	19.67
6	KOREA	MOST	USD	0.55
	SWITZERLAND	SER	CHF	0.85
7	UK		GBP	0.95
		BBSRC	EUR	0.23
		MRC	GBP	0.78
8	USA		USD	9.00
		NIH	USD	7.00
		NSF	USD	2.00
9	EU		EUR	3.61
		DG INFSO	EUR	1.50
		DG RTD	EUR	2.11

Notes

- 1 - Joined HFSP0 from FY 2005
- 2 - Payments consolidated in CAD at budget rate
- 3 - City of Strasbourg and Région Alsace as host to HFSP0 Secretariat
- 4 - Contribution not received but confirmed officially
- 5 - Japanese contribution based on JPY value, but budgeted and paid in USD
- 6 - Joined HFSP0 from FY 2005
- 7 - Payments consolidated in GBP at budget rate
- 8 - Shortfall of 0.5 million USD to be confirmed
- 9 - EU contribution including 10 new entrants for the first time

Table 2-4:

Budget FY 2005 in local currency

MSP	LC	Berne IGC Guideline FY2005 million LC	New MSPs million LC
AUSTRALIA	USD		0.5
CANADA	CAD	1.1	
FRANCE	EUR	1.8	
GERMANY	EUR	2.8	
ITALY	EUR	1.4	
JAPAN	USD	31.2	
KOREA	USD		0.5
SWITZERLAND	CHF	0.9	
UK	GBP	0.9	
USA	USD	11.4	
EU (15)	EUR	3.1	
EU+10	EUR		0.5

Since MSPs' contributions to HFSP0 are voluntary, one task of the Secretariat is to minimize uncertainty on income before the final selection of awardees at the March Board meeting at the start of a new award year. Board members were requested to confirm their contribution for FY 2005 in September 2004. This request was included in the agenda of Board meetings in December 2004 and March 2005. Nine MSPs confirmed their contribution. When no response was received, the contribution was assumed to be the same as in FY 2004 by default: 9.5 million USD for the USA and 0.7 million EUR for Italy (Italy confirmed its contribution shortly after the Board meeting in March 2005).

MSPs' contributions in LC are shown in Table 2-5 and set against several benchmarks.

Table 2-5:

FY 2005 contributions in LC vs. budget, IGC guideline and FY 2004

MSP	Currency payment (LC)	Contribution FY 2005 (kLC)	Contribution FY 2005 / Budget FY 2005	Contributions FY 2005 / Berne budgetary guideline or MOU	Evolution from FY 2004
AUSTRALIA	USD	0.47	100%	100%	n.a.
CANADA	CAD	1.14	100%	100%	109%
FRANCE	EUR	1.74	98%	98%	107%
GERMANY	EUR	2.80	100%	100%	108%
ITALY	EUR	0.70	100%	52%	100%
JAPAN	USD	31.25	100%	100%	100%
KOREA	USD	0.55	100%	100%	n.a.
SWITZERLAND	CHF	0.85	100%	100%	98%
UK	GBP	0.95	100%	100%	104%
USA	USD	9.00	95%	79%	95%
EU	EUR	3.61	100%	100%	120%

N.B. Switzerland decreased its contribution slightly, in accordance with the Berne IGC guideline. Switzerland still contributes more than it should according to the contribution calculation formula based on GDP.

Most MSPs paid the contribution budgeted for FY 2005. In particular, Japan maintained its high level of contribution, as did Switzerland. France achieved 98% of the target, the USA 79% and Italy 52% (the Italian contribution was not received at the end of FY 2005 but the Italian Ministry of Research confirmed its commitment to make this payment).

There is still uncertainty regarding the contribution of the USA: 9 million USD were received at end of FY 2005 without confirmation regarding the remaining 0.5 million USD. This amount has nevertheless been provisioned in FY 2005 legal accounts.

Eight out of eleven MSPs met the Berne IGC or the MOU budgetary guidelines with three exceptions (France, the USA and Italy).

MSPs increased their contributions from FY 2004, some very significantly. Most notable is the increase in the EU contribution as a consequence of enlargement (+20%). Exceptions to this trend are Italy whose contribution remained stable and the USA whose total contribution for FY 2005 is uncertain (see above).

MSP contributions consolidated in USD

Contributions, received or committed, consolidated in USD are summarised in Table 2-6.

Table 2-6:

Contributions received in FY 2005 in USD vs. budget and FY 2004

MSP	Contribution FY 2005	Budget FY 2005 million USD	Contribution FY 2004
AUSTRALIA	0.47	0.47	n.a.
CANADA	0.87	0.87	0.85
FRANCE	2.17	2.24	2.07
GERMANY	3.50	3.50	3.43
ITALY	0.88	0.88	0.93
JAPAN	31.25	31.25	31.25
KOREA	0.55	0.55	n.a.
SWITZERLAND	0.69	0.69	0.69
UK	1.72	1.72	1.63
USA	9.00	9.50	9.50
EU (25)	4.51	4.51	4.08
TOTAL	55.59	56.18	54.43

At 55.59 million USD, contributions for FY 2005 are 3.4% above FY 2004 and include the contributions of the two new MSPs. This figure is slightly below the initial budget of 56.18 million USD and 5.8% or 3.34 million USD below the Berne IGC/MOU guideline (Table 2-7).

As described above, most MSPs signatory to the Berne Communiqué are on budget and in phase with Berne budgetary guideline with the exception of Italy, the USA and, to a lesser extent, France.

Such divergence from the IGC target for FY 2005 and the consequent deficit observed in the first year of implementation of the three-year budgetary plan, is a source of concern for FY 2006.

Table 2-7:

Contribution FY 2005 in USD vs. Berne IGC/MOU guideline

MSP	Contribution FY 2005 at budget rate	Berne IGC Guideline FY 2005	MOU FY 2005	Difference
AUSTRALIA	0.47	n.a.	0.47	0.00
CANADA	0.87	0.87		0.00
FRANCE	2.17	2.24		-0.07
GERMANY	3.50	3.50		0.00
ITALY	0.88	1.69		-0.81
JAPAN	31.25	31.25		0.00
KOREA	0.55	n.a.	0.55	0.00
SWITZERLAND	0.69	0.69		0.69
UK	1.72	1.72		0.00
USA	9.00	11.42		-2.42
EU (25)	4.51	3.90	0.61	0.00
TOTAL	55.59	57.27	1.62	-3.30

Geographically, the Asia Pacific (Japan) remains the main source of funding of the Program, followed by Europe (24%) and North America (18%) (Table 2-8).

As regards the goal of an "equal match" between the contributions of Japan and other MSPs, it can be noted that the Japanese share decreased from 75% in FY 2000 to 56% in FY 2005; the North American share has remained stable since 2002 and European participation has increased steadily from 17% to 24% during the same period.

Table 2-8:

Regional distribution of annual contributions to HFSP0

REGIONAL DISTRIBUTION OF MSP'S CONTRIBUTIONS (%)						
REGION	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
ASIA-PACIFIC	75	72	64	60	57	58
(JAPAN)	(75)	(72)	(64)	(60)	(57)	(56)
EUROPE	13	13	17	18	24	24
NORTH AMERICA	12	15	19	21	19	18

Financial income

Income from financial operations amounted to 2.72 million USD. Capital gain on short term monetary SICAVs (UCITS) amounted to 0.88 million USD and 1.84 million USD were generated from medium term structured products invested with capital guaranty at maturity.

These investments follow the prudential rules elaborated by the HFSP0 Finance Committee. Particular importance is given to the elimination of risk on capital invested. Investments have contractual or implicit protection making negative performance impossible, the corollary being a reduction in positive performance when compared with investments without capital protection.

3. Expenditure

Total cash expenditure in FY 2004 amounted to 56 million USD.

Secretariat expenditure

Secretariat expenses are mostly in EUR and amounted to 3.21 million EUR before tax and depreciation, i.e. 6% below budget (Table 2-9) and 2.7% above FY 2004. Salaries and benefits accounted for 2/3 of the total, followed by meeting and travel expenses (17%), which do not include those incurred by the Awardees Annual meeting.

Table 2-9:

Secretariat expenditure in FY 2005 vs. budget in EUR

	BUDGET FY 2005	ACTUAL FY 2005	Difference	%
ADMINISTRATIVE EXPENDITURES	million EUR			
Salaries-social taxes	2.09	2.09	0.00	0%
Honorarium, services	0.35	0.29	- 0.06	- 18%
Meetings, travels	0.49	0.44	- 0.05	- 11%
Supplies, rental, maintenance ...	0.28	0.19	- 0.09	- 32%
TOTAL SECRETARIAT	3.21	3.01	- 0.21	- 6%
Depreciation, income tax	0.34	0.15	- 0.19	- 56%
TOTAL ADMINISTRATIVE EXPENDITURES	3.55	3.16	- 0.40	- 11%

90% of meeting and travel expenses are related to the statutory and scientific management of HFSP0 (Table 2-10)

Table 2-10:

Breakdown of meeting and travel costs

MEETING	million EUR	% TOTAL
Review Committees	0.14	32%
Board of Trustees	0.13	30%
Council of Scientists	0.07	16%
Selection Committee	0.05	11%
Staff travel	0.05	11%
TOTAL	0.44	

Consolidated in USD (Table 2-11), the Secretariat's operational expenses amounted to 3.65 million USD, i.e. 9% below budget. This was the combined result of actual cost control and a slightly stronger than budgeted USD against the EUR.

Table 2-11:

Secretariat expenditure in FY 2005 in USD

	BUDGET FY 2005	ACTUAL FY 2005	Difference	%
ADMINISTRATIVE EXPENDITURE	million USD			
Salaries-social taxes	2.62	2.54	- 0.08	- 3%
Honorarium, services	0.44	0.35	- 0.09	- 20%
Meetings, travels	0.61	0.53	- 0.08	- 13%
Supplies, rental, maintenance ...	0.35	0.23	- 0.12	- 34%
TOTAL SECRETARIAT	4.02	3.65	- 0.37	- 9%
Depreciation, income tax	0.42	0.18	- 0.24	- 57%
TOTAL ADMINISTRATIVE EXPENDITURE	4.44	3.83	- 0.61	- 14%

Office expenses before tax and provisions represented 6.6% of HFSP0's annual expenditure in FY 2005. About half of these costs are directly related to scientific program activities conducted by the Research Grant and Fellowship offices. Non allocated overheads therefore represent about 3.5% of total annual expenditure.

Provisions

Although not actual expenses, provisions are nevertheless unavailable for the payment of awards. Two provisions for risk were made at the end of FY 2005:

- 118 thousand EUR due to uncertainty as to payment of the unpaid balance of a contribution from the French Ministry of Research, overdue since FY 1997.
- 500 thousand USD, unconfirmed by the USA for FY 2005.

Program award expenditure (Research Grant and Fellowship programs)

Annual expenses for program activities amounted to 51.4 million USD (Table 2-12) and were 1.7 million USD below budget (- 3%).

Table 2-12:

Program expenditure in FY 2005

PROGRAM	BUDGET FY 2005	ACTUAL FY 2005	ACTUAL vs BUDGET
	million USD		
Program Grants	29.4	29.3	- 0.1
Young Investigators	6.1	6.1	0.0
Long Term Fellowships*	14.5	13.5	- 1.0
Career Development Awards	2.9	2.4	- 0.5
Short Term Fellowships	0.2	0.2	0.0
AWARDS PROGRAM ACTIVITIES	53.1	51.5	- 1.6

*Budget expenditure figures for fellowships do not distinguish between Long-Term Fellowships and Cross-Disciplinary Fellowships, for which the stipends and conditions are identical.



The difference is mainly explained by a “time shift” by which some payments planned for FY 2005 are postponed to later years for legitimate reasons: the late start of a Program Grant, parental leave, the deferral of the third year of a Long-Term Fellowship or Cross-Disciplinary Fellowship or a Career Development Award taken over three years instead of two etc. These variations should be seen in the context of the total cost of awards (Table 2-13) in and beyond FY 2005.

Table 2-13:
Program expenditure in and beyond FY 2005

PROGRAM	BUDGET FY 2005 (million USD)			ACTUAL FY 2005 (million USD)		
	FY 2005	BEYOND FY 2005	TOTAL	FY 2005	BEYOND FY 2005	TOTAL
Program Grants	29.4	30.9	60.3	29.3	31.0	60.3
Young Investigators	6.1	6.3	12.4	6.1	6.3	12.4
Long-Term Fellowships	14.5	16.0	30.5	13.5	17.3	30.8
Career Development Awards	2.9	6.1	9.0	2.4	6.4	8.8
Short-Term Fellowships	0.2		0.2	0.2		0.2
TOTAL AWARDS	53.1	59.3	112.4	51.4	61.0	112.4

In the Long-Term Fellowship program for instance, awards paid in FY 2005 were one million USD below budget, but awards payable beyond FY 2005 are 1.3 million USD above budget. Several factors explain these relatively small variations between the budget and actual program expenditure. These include exchange rate fluctuations, changes in family situation, the early termination or addition of parental leave etc.

Minor differences at the level of individual programs generally neutralise each other and the amount of awards paid and payable was almost exactly on budget at 112.4 million USD.

Research Grants account for 65%, Long-Term Fellowships for 27% and Career Development Awards for 8% of the total.

Other program activities:

- Awardees Annual Meeting in Washington: budgeted at 300 thousand USD, actual expenses amounted to 220 thousand USD.
- Feasibility study for the HFSP Journal: budgeted at 100 thousand USD, actual expenses amounted to 30 thousand USD.

Financial support to HFSP Publishing (HFSP)

- As a result of the feasibility study, a not-for-profit organisation was established under the name HFSP Publishing to support the HFSP Journal. Since HFSP is legally independent from HFSP, the HFSP Journal is not considered as a Program activity.
- Refundable loan: in accordance with a resolution of the HFSP Board, a contract was signed between HFSP and HFSP for a refundable loan of a maximum of 1300 thousand EUR in support of the creation and initial development of the HFSP Journal. Since both organizations operate on a not-for-profit basis, this loan is provided to HFSP without interest. A first instalment of 600 thousand EUR has been paid to HFSP during FY 2005.
- According to the terms of the resolution approved by the HFSP Board, the loan to HFSP can only be financed by income from financial investments and not directly from MSPs contributions⁴.
- By decision of the Board in December 2005, the unspent amount from the feasibility study was converted into a subsidy of 70 thousand USD to support the inception of HFSP.

⁴ Income from investment of the US contribution was also excluded.

4. Cash flow statement (consolidated in USD)

The net cash flow situation of HFSPo, consolidated in USD, shows a positive balance of 4.4 million USD (Table 2-14).

Table 2-14:
FY 2005 Cashflow statement

INFLOW - million USD		OUTFLOW - million USD	
Contributions from MSPs*	57.1	Administrative expenses	3.7
Interest and capital gains	2.7	Program activities	51.8
Misc reimbursements from awardees	0.8	Refundable loan to HFSP	0.7
TOTAL CASH INFLOW	60.6	TOTAL CASH OUTFLOW	56.2
		Cash balance (positive)	4.4
GRAND TOTAL	60.6	GRAND TOTAL	60.6

* including overdue contributions from FY 2004 (EU: 1.5 million EUR and USA: 0.52 million USD), not including unpaid contributions (Italy: 0.8 million EUR and USA: 0.5 million USD)

5. Statement of financial position (assets and liabilities)

HFSPo's financial position (Table 2-15) gives the balance between assets and liabilities. This must show a slight surplus at all times to ensure that the payment of current awardees is guaranteed for the whole period of their award.

Table 2-15:
FY 2005 Statement of financial position

ASSETS - million USD		LIABILITIES - million USD	
Current accounts	2.7	Program Grants	31.0
Mutual funds (UCITS)	16.0	Young Investigators	6.3
Structured products (EMTN)	43.0	Long Term Fellowships	17.3
Contributions to be received*	0.9	Career Development Awards	2.9
Fixed assets	3.4	Restricted funds (CDA set aside)	3.5
		Creditors	0.4
		Unrestricted assets	4.6
TOTAL	66.0	TOTAL	66.0

* Italy 0.7 million EUR

Assets: HFSPo assets are constituted by accounts receivable (MSP contributions), cash (current accounts and monetary UCITS), quoted investments (capital guaranteed medium term notes) and property at purchasing value (Secretariat offices). HFSPo has no intangible assets.

Liabilities: with limited accounts payable and no long term debts, HFSPo's liabilities lay mostly in grants payable. As stated above, grants payable to awardees beyond FY 2005 amount to 61 million USD.

Restricted funds are funds set aside for the payment of Career Development Awards to Long-Term Fellows who become eligible after the end of their fellowship, i.e. three to five years after they started. At the inception of the Career Development Award in FY 2000, ten Career Development Awards were allocated annually. The corresponding amount, although not strictly speaking a provision, was treated as a restricted fund. At the end of FY 2005, 20 Career Development Awards were included in this liability category (10 for FY 2004 fellows and 10 for FY 2005 fellows), at a value of 3.6 million USD. The Career Development Award is now mature and stands alone as a program activity. The number of Career Development Awards is therefore decided without any other restriction than resources available and scientific quality.

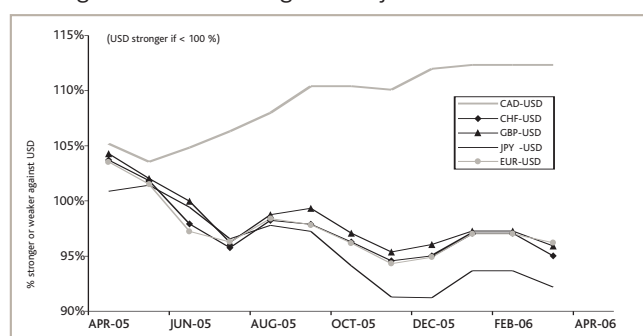
6. Impact of exchange rate fluctuations:

Variation of exchange rate

A monthly comparison of rates adopted for the FY 2005 budget with actual rates (Fig. 2-2) shows that the USD was weaker than expected relative to other major currencies during the first quarter and slightly stronger afterwards (2.5% on annual average), with the exception of the CAD which was significantly stronger than budgeted.

Fig. 2-2:

Exchange rate: actual vs budget for major currencies



Relatively speaking, this situation is favourable to HFSP0, should it be necessary to use the USD to buy other currencies to pay awards. Though it should not be necessary, this happens every year, as is shown below.

Exposure of HFSP0 funding capacity to exchange rate fluctuations

By design, Research Grants and Career Development Awards are committed in USD even though actual payment may be made in a different currency at the awardees request and at the exchange rate of the time. The exchange rate risk, positive or negative, is borne by the awardees.

Long-Term Fellowship stipends, being closely linked with the cost of living, are committed in the currency of the host country. Consequently, HFSP0 Fellows are not exposed to exchange rate fluctuation. This risk is borne by HFSP0.

Most Secretariat expenses are in EUR.

Because it handles several currencies, HFSP0 sees its funding capacity exposed to exchange rate fluctuation to an extent that depends on the balance of currencies received and currencies paid or committed. The balance in FY 2005 is given in Table 2-16 for major currencies (converted in USD for comparison's sake). Commitment in USD amounted to ~ 45.1 million USD (Long-Term Fellowships committed in USD, Research Grants and Career Development Award). This amount is closely matched by the 44 million USD that were received from MSPs, miscellaneous reimbursements and financial income.

The situation for other currencies shows a relatively good balance with the exception of the EUR of which there is a "surplus".

Table 2-16:

Balance of currencies committed and received

CURRENCY OF COMMITMENT	COMMITMENT (million USD)	INCOME(1) (million USD)	BALANCE
CAD	0.2	0.8	0.6
CHF	0.9	0.7	- 0.2
EUR	8.2	10.7	2.5
GBP	1.5	1.4	- 0.1
JPY	0.1	-	- 0.1
USD	45.1	44.3	- 0.8
GRAND TOTAL	56.0	57.9	1.9

(1) contributions + financial income + reimbursements

A cumulated currency deficit of 1.2 million USD indicates reduced exposure to the exchange rate risk, corresponding to 2% of total transactions (56 million USD).

However, this depends upon the availability of a given currency at the time of payment of awards. In reality, 9 million USD were converted into other currencies due to the payment of contributions later in the fiscal year. The early payment of contributions is highly desirable to prevent currency shortfalls and unnecessary and costly foreign exchange operations.

7. Activity Budget for FY 2006 (1 April 2006 – 31 March 2007)

HFSP0's budget preparation for FY 2006 was based upon several considerations and assumptions summarised below:

Income

Using the indicative contributions in LC as calculated from the Berne IGC financial guidelines and the MOU with Australia and Korea for FY 2006, the Secretariat contacted MSPs through their Board members with a request to confirm their intended contribution for FY 2006.

In the absence of confirmation, it was assumed that the contribution for FY 2006 would be the same as for FY 2005.

Table 2-17:
HFSP0 budget for FY 2006

B U D G E T F Y 2 0 0 6			
INCOME	million USD	EXPENDITURE AND COMMITTED FUNDS	million USD
1. CONTRIBUTIONS	57.1	1. ADMINISTRATIVE EXPENSES	4.5
AUSTRALIA	0.5	Provisions	0.5
CANADA	1.0	2. PROGRAM ACTIVITIES	55.7
FRANCE	2.4	Program Grants	28.3
GERMANY	3.8	Young Investigators	7.4
ITALY	0.9	Long Term Fellowships	14.7
JAPAN*	31.2	Career Development Awards	4.8
KOREA	0.6	Short-Term Fellowships	0.2
SWITZERLAND	0.7	Awardees meetings and outreach activities	0.3
UK	1.8	3. COMMITTED FUNDS BEYOND FY	58.2
USA	9.5	Program Grants	25.5
EU	4.7	Young Investigators	9.4
2. INTEREST AND CAPITAL GAIN (estimate)	0.8	Long Term Fellowships	16.6
3. COMMITTED FUNDS FROM PREVIOUS FY	61.0	Career Development Awards	6.7
Program Grants	31.0	4. REFUNDABLE LOAN TO HFSP - to be confirmed	0.4
Young Investigators	6.3		
Long Term Fellowships	17.3		
Career Development Awards	6.4		
4. UNRESTRICTED ASSETS FROM PREVIOUS FY	4.6		
TOTAL INCOME	123.5	TOTAL EXPENSES	119.3
		Annual balance (unrestricted assets)	4.2
GRAND TOTAL	123.5	GRAND TOTAL	123.5

*60 thousand USD in kind from Japan not included in this table

Activity

- A review of HFSP0 informatics was carried out in FY 2005. A major overhaul is under consideration and a budget set aside should the decision to change be taken (400 thousand USD over two years).

- There will be an increase in the Career Development Award allowance from 60 to 100 thousand USD per year over three years (i.e. total budget per Career Development Award increases from 180 to 300 thousand USD).

- The Program activity plan, decided by the Board in March 2006, on recommendation of the Council, includes:

- 20 Program Grants
- 12 Young Investigator Grants
- 93 Long-Term Fellowships
- 29 Career Development Awards

- A second payment of the refundable loan to HFSP is set aside for an amount of 350 thousand EUR.

Exchange rates are maintained at the level of the FY 2005 budget (and Berne IGC financial guideline).

The resulting activity budgeted for FY 2006 in USD is summarized in table 2-17.

8. HFSP0 Finance Committee

Chaired by Dr. Mark Bisby (Canada), ordinary members of the Committee are Dr. Isabella Beretta (Switzerland), Mr. Kaoru Naito (Japan) and Dr. Norka Ruiz-Bravo (USA). The Finance Committee met twice, on the day before the 34th Board meeting in December 2005 and before the 35th meeting in March 2006.

9. Auditors (April 1, 2005 – March 31, 2006)

Mr. Mike PAYNE

Director of Division of Financial Advisory Service
National Institutes of Health
Bethesda, USA

Mr. Patrick PIERRAT

SEGEC Audit et Conseil
Reichstett, France

Mr. Yoshiaki SATO

Senior Specialist for International Research Coordination
International Science and Technology Affairs Division
Science and Technology Policy Bureau
Ministry of Education, Culture, Sports, Science and
Technology (MEXT)
Japan

Acknowledgement

HFSP0 is grateful for the support of the following organizations:

Australia

National Health and Medical Research Council (NHMRC)

Canada

Canadian Institute of Health Research (CIHR)
Natural Sciences and Engineering Research Council (NSERC)

France

Ministère des Affaires Etrangères (MAE)
Ministère de la Recherche (MER)
Région Alsace
Communauté Urbaine de Strasbourg (CUS)

Germany

Bundesministerium für Bildung und Forschung (BMBF)

Italy

Consiglio Nazionale delle Ricerche (CNR)

Japan

Ministry of Economy, Trade and Industry (METI)
Ministry of Education, Culture, Sports, Science and
Technology (MEXT)

Republic of Korea

Ministry of Science and Technology (MOST)

Switzerland

State Secretariat for Education and Research (SER)

UK

Biotechnology and Biological Sciences Research Council
(BBSRC)
Medical Research Council (MRC)

USA

National Aeronautics and Space Administration (NASA)
National Institutes of Health (NIH)
National Science Foundation (NSF)

European Union

European Commission - Directorate General Information
Society (DG INFSO)
European Commission - Directorate General Research (DG RTD)

3

SELECTION OF AWARDEES

1. Research Grants

Research Grants are awarded for projects of basic research carried out jointly by a team of scientists from at least two different countries. In addition to these basic criteria, emphasis is placed on the intercontinentality of the collaboration and on its interdisciplinary nature, and young investigators are especially encouraged to apply. Two types of grant were awarded in FY 2006: Young Investigator Grants for groups of young scientists within five years of obtaining an independent position; and Program Grants for scientists at any stage of their careers. Grants are awarded for periods of three years.

Awardees starting their research work in FY 2006 were selected among the applications received in reply to the call for applications published in the international scientific journals *Science* and *Nature* and on the HFSP website. The call was also publicized via the web sites or newsletters of relevant scientific societies. For the selection of Research Grant awards, the two-step review process introduced in 2001 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 31 March 2005.



The letters of intent were initially screened on the basis of formal eligibility. Only a small number of letters of intent were rejected on these grounds. In March 2005, a further measure was introduced to reduce the response time for inappropriate applications; 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, 149 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 20-22 June to discuss about one third of the original submissions and following these discussions, 81 applicants were invited to submit a full 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 15 September 2005. 80 teams submitted full applications. 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 23-25 January 2006 in Strasbourg to discuss all 80 full applications and recommended 32 for awards, 12 Young Investigator and 20 Program Grants. Both awardees and unsuccessful applicants received feedback from the committee in the form of a short summary.

In summary, in award year 2006, out of 749 letters of intent, 81 were invited to submit a full application, 80 of which were submitted, and 32 awards were recommended by the Review Committee. The final selection of awards was made by the Council of Scientists (Council) and financial considerations (budgetary restrictions) were taken into account by the Board of Trustees (Board) before the recommendations were approved.

Fig. 3-1 Shows the number of applications and awards until award year 2006. The numbers of awards since the beginning of the Program are also shown in Table 3-1. Table 3.2 and table 3.3 present an analysis of gender distribution in award year 2006.

Fig. 3-1:
Research Grant applications and awards

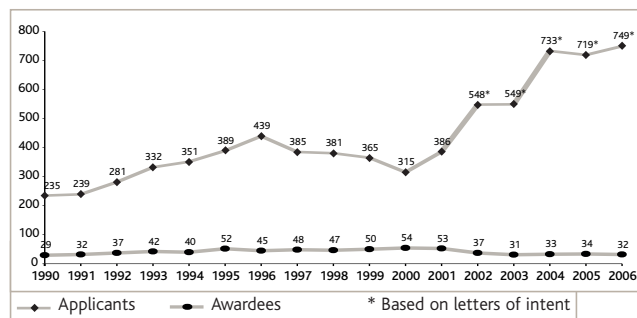


Table 3-1:

Research Grant applications and awards each year

Award year	Number of applications	Number of awards	Success rate (%)	Total cost in their 1 st year (million USD)
1990	235	29	12.3	7.67
1991	239	32	13.4	8.07
1992	281	37	13.2	8.07
1993	332	42	12.7	9.62
1994	351	40	11.4	9.30
1995	389	52	13.4	9.81
1996	439	45	10.3	10.32
1997	385	48	12.5	10.56
1998	381	47	12.3	10.56
1999	365	50	13.7	11.10
2000	315	54	17.1	12.50
2001	386	53	13.7	13.25
TOTAL	4098	529	12.9	

Award year	Letters of intent	Full applications invited	Awards	Success rate (%)	Total cost in their 1 st year (million USD)
2002	548	72	37	51.4*	12.35
2003	549	80	31	39.0*	10.85
2004	733	67	33	49.2*	11.75
2005	719	86	34	39.5*	12.75
2006	749	80	32	40.0*	11.05
TOTAL			696**		

* based on full applications

** grand total of awards (1990-2006)

Table 3-2:

Gender distribution in award year 2006

		Letter of intent		Invited applications	
		Program	Young	Program	Young
Female	Nb. scientists	292	89	30	9
	%	14.7	20.6	15.3	12.5
Male	Nb. scientists	1696	342	166	63
	%	85.2	79.2	84.7	87.5
TOTAL	Nb. scientists	1990*	432*	196	72

*2 Program Grants & 1 Young Investigator Grant: information refused

Table 3-3:

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

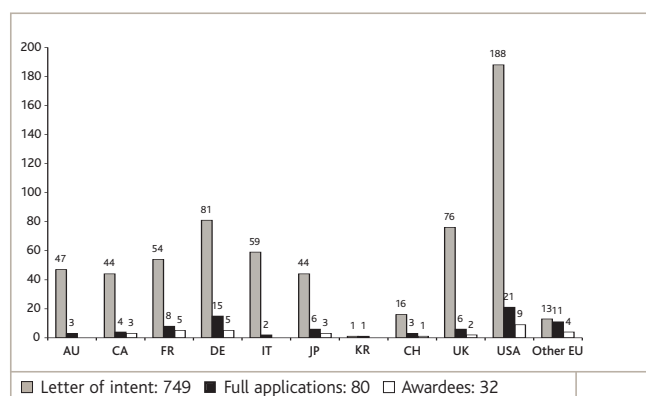
	Total	Female	% Female	(2005)	Female PI	(2005)
Program	72	10	13.9	19.3	3	7
Young	29	2	6.9	14.3	0	1
Total	101	12	11.9	18.3	3	8

Distribution of awards per country

(Figs. 3-2, 3-3, Table 3-4) Fig 3-2 shows the distribution of the Principal Investigator for the 2006 awards among various countries and Fig. 3-3 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 almost one third of successful applicants (all team members) were working in the USA.

Fig. 3-2:

Countries in which Principal Investigators are working



Others from EU letter of intent

6 Austria, 10 Belgium, 2 Cyprus (EU part), 2 Czech Republic, 4 Denmark, 1 Estonia, 6 Finland, 11 Greece, 3 Hungary, 8 Ireland, 21 The Netherlands, 3 Poland, 2 Portugal, 2 Slovakia, 21 Spain, 28 Sweden

Others from EU full applications

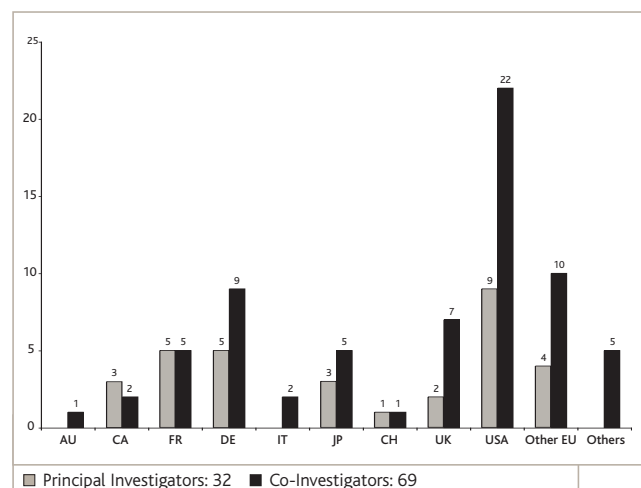
1 Denmark, 2 Greece, 5 Sweden, 2 The Netherlands, 1 Portugal

Others from EU awardees

1 The Netherlands, 1 Portugal, 2 Sweden

Fig. 3-3:

Countries in which awardees are working



Principal Investigators

Other EU: 1 Portugal, 2 Sweden, 1 The Netherlands

Co-Investigators

Other EU: 1 Belgium, 1 Estonia, 2 Hungary, 1 Slovenia, 1 Sweden, 4 The Netherlands
Others: 1 Argentina, 1 China, 3 Israël,

Table 3-4:

Number of applicants and awardees listed
by country of institution

	Letter of intent			Invited			Awardees		
	PG	YI	TOTAL	PG	YI	TOTAL	PG	YI	TOTAL
PG=Program Grants YI=Young Investigators									
AUSTRALIA	95	9	104	8	0	8	1	0	1
CANADA	93	20	113	6	2	8	4	1	5
FRANCE	143	23	166	11	5	16	6	4	10
GERMANY	182	37	219	25	9	34	11	3	14
ITALY	109	24	133	4	2	6	2	0	2
JAPAN	154	26	180	13	9	22	5	3	8
KOREA	22	6	28	2	1	3	0	0	0
SWITZERLAND	44	4	48	5	0	5	2	0	2
UK	185	29	214	20	4	24	9	0	9
USA	527	108	635	59	21	80	22	9	31
OTHERS FROM EU	314(a)	61(a)	375	29(b)	14(b)	43	9(c)	5(c)	14
OTHERS	172(a')	35(a')	207	14(b')	5(b')	19	1(c')	4(c')	5
TOTALS	2040	382	2422	196	72	268	72	29	101

(a) Others from EU letter of intent

PG: 14 Austria, 27 Belgium, 2 Cyprus (EU part), 7 Czech Republic, 21 Denmark, 3 Estonia, 21 Finland, 21 Greece, 8 Hungary, 12 Ireland, 50 The Netherlands, 10 Poland, 4 Portugal, 4 Slovakia, 4 Slovenia, 56 Spain, 50 Sweden

YI: 2 Austria, 2 Belgium, 2 Czech Republic, 7 Denmark, 1 Finland, 1 Greece, 3 Hungary, 2 Ireland, 13 The Netherlands, 4 Poland, 4 Portugal, 11 Spain, 9 Sweden

(b) Others from EU invited

PG: 2 Austria, 3 Belgium, 1 Denmark, 1 Estonia, 4 Greece, 2 Ireland, 8 The Netherlands, 1 Slovenia, 1 Spain, 6 Sweden
YI: 1 Czech Republic, 3 Denmark, 3 Greece, 3 The Netherlands, 1 Portugal, 3 Sweden

(c) Others from EU awardees

PG: 1 Belgium, 1 Estonia, 4 The Netherlands, 1 Slovenia, 2 Sweden

YI: 2 Hungary, 1 The Netherlands, 1 Portugal, 1 Sweden

(a') Others letter of intent

PG: 5 Argentina, 1 Armenia, 5 Brazil, 4 Chile, 11 China, 4 Croatia, 1 Cuba, 1 Cyprus, 1 Egypt, 1 Hong Kong, 9 India, 79 Israël, 1 Lebanon, 3 Mexico, 1 Monaco, 6 New Zealand, 6 Norway, 2 Romania, 15 Russia, 4 Singapore, 4 South Africa, 1 Sri Lanka, 2 Thailand, 1 Turkey, 1 Uganda, 2 Ukraine, 1 Vietnam

YI: 1 Argentina, 1 Brazil, 1 Chile, 4 China, 1 Hong Kong, 1 India, 1 Indonesia, 13 Israël, 1 Mexico, 2 New Zealand, 1 Norway, 2 Russia, 3 Singapore, 1 Thailand, 1 Ukraine, 1 Zimbabwe

(b') Others invited

PG: 1 Brazil, 1 China, 2 India, 8 Israël, 1 New Zealand, 1 Russia

YI: 1 Argentina, 2 China, 2 Israël

(c') Others awardees

PG: 1 Israël

YI: 1 Argentina, 1 China, 2 Israël

Interdisciplinarity in Research Grants

The Research Grant program continues to attract excellent teams including scientists from outside the life sciences.

As shown in Table 3-5, an increase in the proportion of applications from scientists located in departments outside the life sciences from ca. 7% to 16% was observed between 2001 and 2006 following greater publicity of the program in those scientific communities. At the same time, introduction of the two step procedure more than doubled the total number of applications from around 350 in 2001 to over 700 from 2004 onwards, accompanied by a significant increase in the number of physical scientists applying to the Program. Of the Research Grant awards made (Table 3-6 and Fig. 3-4), the proportion of scientists from outside the life sciences increased from 3% to 25% between 2001 and 2006. Considerable progress has therefore been made to enhance the interdisciplinary profile of the Research Grant program. This is reflected in a shift in the topics funded from important but rather "mainstream" biomedical research to more fundamental "frontier" approaches to biological problems (see Annex 4).

While initially interdisciplinarity was analysed on the basis of the institutions of individual applicants and awardees, by 2004 this approach was misleading. The regrouping of departments or the creation of new multidisciplinary centers (in both cases including a classical 'biology' element in their title) or indeed the hiring of physical scientists by 'traditional' biological departments meant that individuals in such institutes were not detected as bringing new skills to bear on biological questions. When based on the training and experience of the candidates 67% of the projects in the 2004 awards were in fact interdisciplinary. This trend was confirmed in the 2005 cycle where 85% were interdisciplinary on this basis and within the remaining five teams, there were two cases of scientists having PhDs in chemistry and one mathematician, all currently working in a traditional biological department. In 2006 although only 20 of the 32 awards include team members from 'non-biological' institutes,

three more included scientists from other disciplines working within a biological department while seven more include scientists with PhDs in mathematics, physics, chemistry or biophysics now holding posts as biologists. Thus only two projects (both 2 member teams of Young Investigators) are composed exclusively of biologists and in each there is an MD/PhD who was medically qualified some five years before obtaining a PhD. It therefore appears that successful applications come from interdisciplinary teams or include individuals who themselves have changed discipline in the course of their career.

For the sake of continuity the evolution of interdisciplinarity is presented as estimated from the institutions where applicants or awardees are located. Although clearly not exhaustive, this serves to illustrate the trends in interdisciplinarity.

Table 3-5:

All applicants per year in non-biological disciplines (%)

Year	Physics	Chemistry	Mathematics	Informatics	Engineering	Total
2001	0.9	2.9	0.3	1.1	1.9	7.1
2002	1.4	3.8	0.4	2.7	1.7	10.0
2003	1.8	2.6	1.1	2.6	2.6	10.7
2004	1.7	3.4	0.7	4.2	1.4	11.0
2005	2.3	4.0	0.8	4.9	2.2	14.2
2005*	5.3	4.6	2.0	5.3	3.6	20.8
2006	2.8	5.0	0.8	5.1	2.1	15.7
2006*	5.3	7.2	0.4	7.6	1.1	21.6

* based on full applications

Table 3-6:

Awardees per year in non-biological disciplines (%)

Year	Physics	Chemistry	Mathematics	Informatics	Engineering	Materials	Other	Total
2001	0.0	1.6	0.0	0.5	1.0			3.1
2002	1.7	4.2	0.0	4.2	0.8			10.9
2003	4.8	3.9	1.9	3.9	5.8			20.4
2004	9.4	6.6	0.9	1.9	2.8			21.7
2005	12.8	5.5	1.8	1.8	3.7	1.8	1.8	29.4
2006	4.0	7.9	4.0	2.0	5.9		1.0	24.8

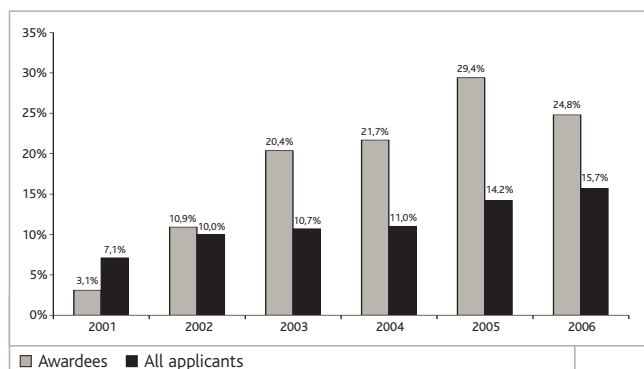


Fig. 3-4:

% scientists from non-biological disciplines participating in Research Grants

2. Long-Term and Cross-Disciplinary Fellowships

The aim of the Fellowship program is to provide postdoctoral training opportunities for talented young scientists in the world's best laboratories and to support the mobility of young scientists between countries. Long-Term Fellowships are intended to encourage young researchers with a background in the life sciences to seek additional research expertise and training in other fields. The new Cross-Disciplinary Fellowship program, which started in award year 2005, encourages young researchers with training in the physical sciences to use the fellowship for training in the life sciences. Upon completion of the fellowship, these well-trained scientists are expected to be able to promote truly interdisciplinary research in the life sciences.

Long-Term and Cross-Disciplinary Fellowships provide support for three years. The third year of support can either be used in the host laboratory or for a final postdoctoral year of training in a laboratory in the home country. Under the latter circumstance, support can be delayed for up to two years.

The call for applications for award year 2006 was announced in the English editions of *Science* and *Nature* and in the Japanese edition of *Nature*. The electronic newsletters of scientific societies and organizations, and internet lists were also used to publicize the call. The deadline for the electronic submission of fellowship applications was 1 September 2005. Evaluation was carried out electronically.

All applications were screened by the Secretariat for compliance with formal criteria and with the scientific scope of the Program. Depending on research subject, each application was assigned to two members of the Review Committee for pre-scoring. Review Committee members each reviewed around 50-60 applications. The Secretariat then ranked the applications on the basis of this pre-scoring. In the discussions during the Review Committee meeting on 16-18 January 2006, the top applications were scored by the entire committee and the most highly qualified candidates were recommended for funding.

The lists of Long-Term and Cross-Disciplinary Awardees for FY 2005 are given in *Annex 5*. Awardees were required to be within three years of receiving their Ph.D. at the time of application. They were expected to have at least one first author publication and to be moving into a new area of research in order to broaden their scientific experience. They must not have worked in the host institution for more than 12 months at the start of their fellowship.

Awards approved by the Board and the number of fellows funded since the beginning of the Program are shown in Table 3-7 (historical record of awards), while Figs. 3-5 to 3-8 give an overview of the distribution of the nationality and host country of 2006 applicants and awardees. In March 2006, the Board recommended 93 awards. Of the 684 applications for award year 2006, 38% of the applications were made by female candidates.



Table 3-7:

Long-Term and Cross-Disciplinary Fellowship applications and awards each year

Long-Term Fellowships

Award year	Number of applications	Number of awards	Success rate (%)	Female awardees Number	Female awardees (%)
1990	202	77	38.1	20	26%
1991	348	98	28.2	24	24%
1992	499	125 (128)	25.7	31	25%
1993	555	147 (152)	27.4	41	28%
1994	613	159 (160)	26.1	44	28%
1995	711	160	22.5	50	31%
1996	846	160	18.9	38	24%
1997	807	160	19.8	40	25%
1998	704	160	22.7	57	36%
1999	682	159 (160)	23.5	41	26%
2000	652	144 (160)	24.5	44	31%
2001	665	81	12.2	23	28%
2002	567	94	16.6	27	29%
2003	639	90	14.1	29	32%
2004	673	90	13.4	29	32%
2005	609	89	14.6	22	25%
2006*	629	83	13.2	29	35%
TOTAL	10401	2076 (2102)	20.2	589	28%

Cross-Disciplinary Fellowships

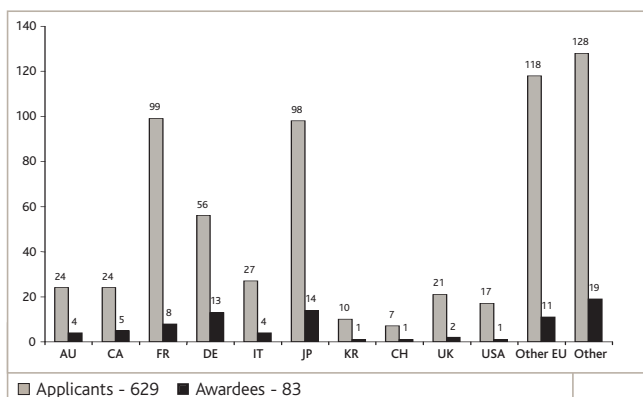
Award year	Number of applications	Number of awards	Success rate (%)	Female awardees Number	Female awardees (%)
2005	65	12	18.5	1	8.3%
2006*	55	10	18.2	1	10%
TOTAL	120	22	18.3	2	9%

* These figures correspond to the awards approved by the Board in March 2006 and may be subject to change.

Figures in brackets correspond to the number of awards approved by the Board if they differ from the actual number of funded fellows.

Fig. 3-5:

Nationality of reviewed Long-Term Fellowship applicants and awardees (as of March 2006)



Nationalities of other EU applicants:

5 Austria, 8 Belgium, 6 Czech Republic, 2 Denmark, 1 Estonia, 2 Finland, 3 Greece, 1 Hungary, 4 Ireland, 4 Poland, 8 Portugal, 2 Slovakia, 2 Slovenia, 44 Spain, 16 Sweden, 10 The Netherlands

Nationalities of other EU awardees:

1 Austria, 4 Belgium, 1 Finland, 1 Ireland, 3 Spain, 1 Sweden

Nationalities of other applicants:

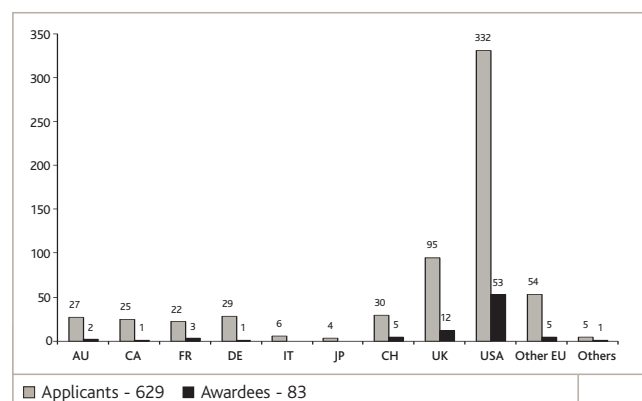
9 Argentina, 1 Belarus, 4 Brazil, 1 Chile, 11 China, 2 Colombia, 1 Croatia, 2 Egypt, 1 Hong Kong, 25 India, 1 Indonesia, 1 Iran, 22 Israël, 1 Kenya, 1 Lebanon, 8 Mexico, 1 Morocco, 2 New Zealand, 2 Nigeria, 2 Pakistan, 1 Peru, 1 Romania, 5 Russia, 1 Serbia, 1 Sri Lanka, 4 Taiwan China, 1 Turkey, 1 Ukraine, 15 dual nationality

Nationalities of other awardees:

3 Argentina, 1 Belarus, 3 China, 1 India, 1 Iran, 5 Israël, 1 Russia, 4 dual nationality (Argentina/Spain, Belgium/France, Germany/The Netherlands, Israël/UK)

Fig. 3-6:

Host country of reviewed Long-Term Fellowship applicants and awardees (as of March 2006)



Other EU host countries of Long-Term Fellowship applicants:

2 Austria, 4 Belgium, 3 Denmark, 1 Estonia, 1 Greece, 3 Ireland, 2 Portugal, 13 Spain, 8 Sweden, 17 The Netherlands

Other EU host countries of Long-Term Fellowship awardees:

1 Austria, 1 Denmark, 1 Sweden, 2 The Netherlands

Other host countries of Long-Term Fellowship applicants:

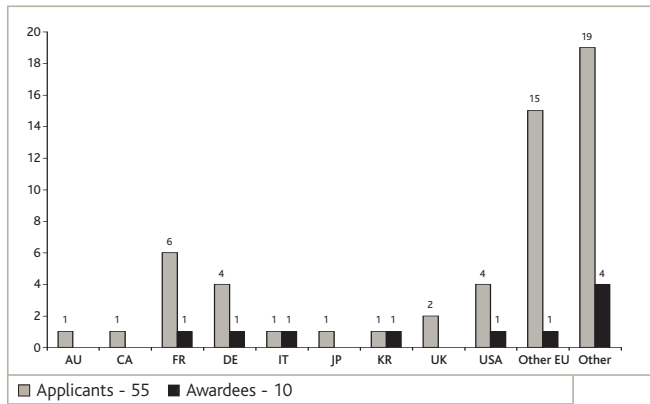
1 Hong Kong, 1 India, 2 New Zealand, 1 Norway

Other host countries of Long-Term Fellowship awardees:

1 Norway

Fig. 3-7:

Nationality of reviewed Cross-Disciplinary Fellowship applicants and awardees (as of March 2006)



Nationalities of other EU applicants:

1 Belgium, 3 Czech Republic, 3 Greece, 1 Lithuania, 1 Portugal, 4 Spain, 2 The Netherlands

Nationalities of other EU awardees:

1 The Netherlands

Nationalities of other applicants:

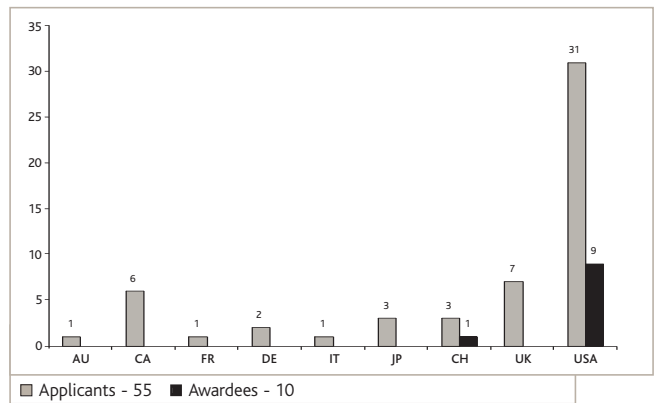
1 Argentina, 1 Armenia, 2 China, 6 India, 5 Israël, 2 Russia, 2 dual nationality

Nationalities of other awardees:

3 Israël, 1 dual nationality (Israël/Spain)

Fig. 3-8:

Host country of reviewed Cross-Disciplinary Fellowship applicants and awardees (as of March 2006)



3. Career Development Awards

The objective of the Career Development Award is to enable former Long-Term fellows to establish their own independent research team after return to the home country. The careful selection of Long-Term Fellows who propose projects with a strong interdisciplinary component extends the scientific strategy of HFSP into the Career Development Program. Career Development Award holders have the opportunity to intensify their international collaborations and experimental endeavors on emerging subjects in the life sciences by drawing on their experience of neighboring disciplines during the Long-Term Fellowship. Unlike fellowship stipends that are awarded to outstanding candidates to carry out a specific project, the Career Development Award is meant to support the initiation of an independent research program that builds on the accomplishments of the fellowship tenure but also includes new elements of international collaboration.

The procedure is for current fellows to be informed of the call for applications by email. This year, the deadline was 9 November 2005. Former fellows from award years 1999⁵, 2000, 2001, 2002, and 2003 were eligible to apply. The number of applications increased to 51 as compared with 47 last year. Applications were assigned for review to two members of the Council who ranked and commented

according to the selection criteria set out in the application guidelines. Each application was also sent to at least two external mail reviewers who were asked to provide written comments. After initial ranking by the two Council members and further discussions during the meeting on 7 March 2006, 32 applications were recommended for funding. The Board approved the funding of 29 applications. A detailed list of FY 2005 awardees is given in *Annex 6*. A further three applications were placed on the reserve list and recommended for an award if funds became available. Given the importance of the award to young investigators making the critical transition to scientific independence, the Council decided that all failed applicants should receive written feedback.

The effectiveness of the Career Development Award in providing support to start an independent laboratory is beginning to be visible in other HFSP Programs. In the 2006 competition for Young Investigator Grants, two recent Career Development Award holders, located in France and Argentina, who had met at the Awardees Annual Meeting in Hakone in 2004, successfully applied for an award. Furthermore, Career Development Award holders also recruit personal for their laboratories by acting as host supervisors to applicants to the Fellowship program.

Table 3-8:

CDA applications and awards each year

Award year	Number of applications	Number of awards*	Success rate (%)	Female awardees Number	Female awardees (%)
2003	22	8	36%	0	0
2004	41	17	41%	5	29
2005	47	18	38%	2	11
2006	51	29	57%	6	21
TOTAL	161	72	45%	13	18

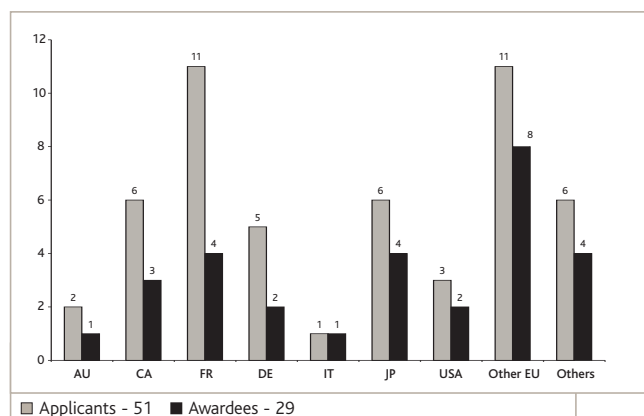


Fig. 3-9:

Nationality of CDA applicants and awardees

Nationality of other EU applicants:

2 Belgium, 1 Czech Republic, 1 Finland, 1 Greece, 4 Spain, 2 The Netherlands

Nationality of other EU awardees:

1 Belgium, 1 Czech Republic, 1 Finland, 1 Greece, 3 Spain, 1 The Netherlands

Nationality of other applicants:

4 Israël, 1 Mexico, 1 dual nationality (Argentina/Spain)

Nationality of other awardees:

4 Israël

⁵ For award year 2006, fellows from 1999 could participate in the competition for a Career Development Award if they could claim an interruption in their scientific career.

4. Short-Term Fellowships

Short-Term Fellowship applications are accepted throughout the year. Each application is examined by several external mail reviewers, the final decision being taken by the Chair of the Review Committee for Fellowships (a detailed list of FY 2005 Awardees is given in *Annex 7*). The main criteria are the scientific originality and excellence of the proposal, the accomplishments and potential of the candidate, the quality of the host supervisor and of the host environment, and the training potential of the fellowship experience. The overall benefit of international exchange in the achievement of the aims of the research project, and especially the interdisciplinary aspect, are also important considerations.

Short-Term Fellowships are intended for researchers who wish to spend two weeks to three months working in a laboratory of their own choice in another country. The objective of the fellowship is to enable successful applicants to develop new techniques or to use instruments or techniques not available in their home country. Preference is given to young researchers early in their career. Applicants are expected to have a doctoral degree or equivalent research experience.

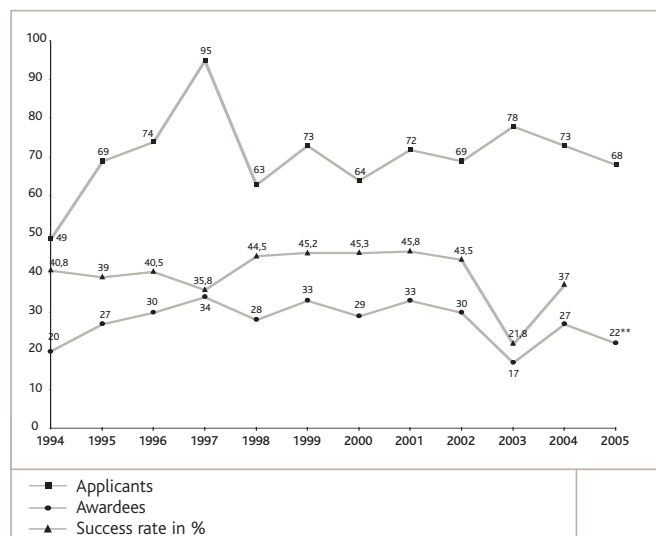
As Short-Term Fellowships can be submitted anytime during a year, the date of application, selection for award and payment of award may not occur in the same fiscal year. Thus, it is possible:

- to apply, to be awarded the fellowship and be paid in the same fiscal year
- to apply and be awarded the fellowship in one fiscal year but be paid in the following fiscal year
- to apply in one fiscal year but be awarded the fellowship and be paid in the following fiscal year

The number of applications received during each fiscal year since 1994 and the number of awards made among these applications is shown in Fig. 3-10. This enables us to calculate a success rate, which is also shown in this figure.

In fiscal years 1990 to 1993, a total of 89 Short-Term Fellowships have been awarded. The exact number of eligible applications* is not available for this period, as in 1989 and 1990 awardees only were registered in the database.

Fig. 3-10:
Short-Term Fellowship applicants and awardees from the same fiscal year

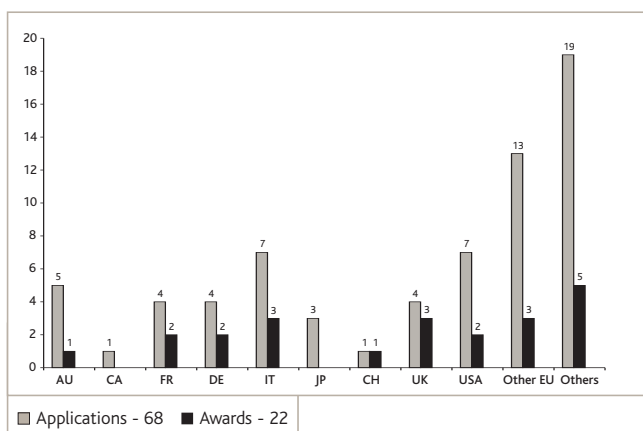


* Up to FY 2002, the graph shown in the Annual Report indicated the total number of applications received during each fiscal year, including ineligible applications.

** Number of awards as of 31 March 2006. 21 applications are still under review and some of them may be awarded the fellowship in FY 2006. Thus, it is not yet possible to calculate a success rate for FY 2005.

Fig. 3-11:

Nationality of Short-Term Fellowship applicants and awardees of FY 2005



Nationalities of other EU applicants:

1 Austria, 1 Denmark, 2 Greece, 1 Ireland, 3 Poland, 4 Spain, 1 Sweden

Nationalities of other EU awardees:

1 Ireland, 2 Poland

Nationalities of other applicants:

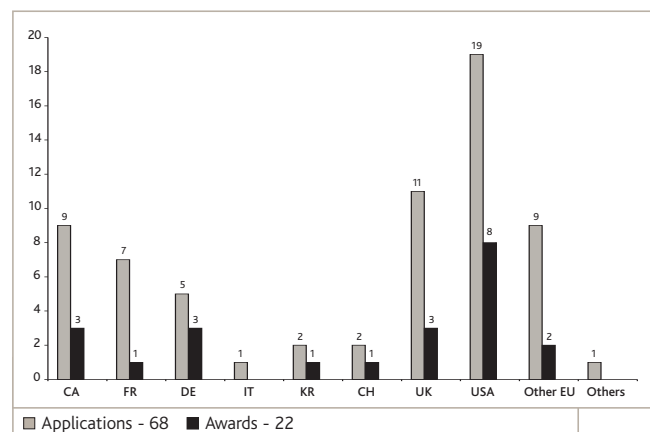
1 Argentina, 1 Chile, 2 China, 2 Colombia, 1 Cuba, 2 Egypt, 2 India, 2 Israël, 1 Malaysia, 1 Mauritius, 1 Mexico, 1 Morocco, 1 Nigeria, 1 dual nationality (Argentina/Italy)

Nationalities of other awardees:

1 Argentina, 1 Chile, 1 Colombia, 1 Israël, 1 dual nationality (Argentina/Italy)

Fig. 3-12:

Host country of Short-Term Fellowship applicants and awardees of FY 2005



Other EU host countries of Short-Term

Fellowship applicants:

1 Denmark, 1 Finland, 1 Hungary, 1 Ireland, 3 Spain, 2 The Netherlands

Other EU host countries of Short-Term

Fellowship awardees:

1 Denmark, 1 The Netherlands

Other host countries of Short-Term Fellowship applicants:

1 Israël



Table 3-9:

Gender of Short-Term Fellowship awardees

Award year	Number of awardees	Female awardees Number	Female awardees (%)
1990-1993	89	24	27.0
1994	22	6	27.3
1995	30	8	26.7
1996	31	11	35.5
1997	27	9	33.3
1998	29	14	48.3
1999	37	18	48.6
2000	30	14	46.7
2001	31	11	35.5
2002	29	11	37.9
2003	18	8	44.4
2004	29	10	34.5
2005	25	8	32.0
TOTAL	427	152	35.6

This table shows the total number of awards made in each fiscal year and the gender of these awardees. The total number of awardees includes applicants from one fiscal year who have been awarded the fellowship in the following fiscal year.

Selection of Awardees

4

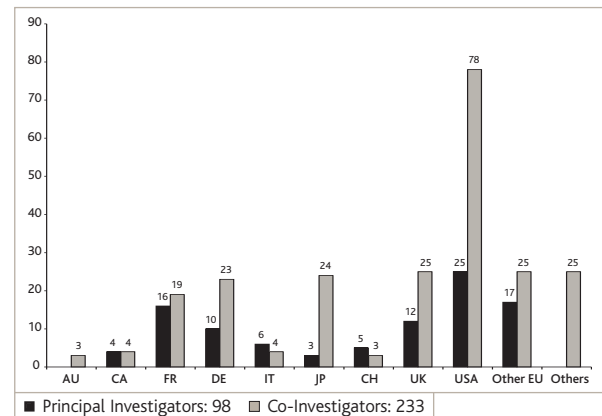
AWARDS PAID DURING FY 2005

During FY 2005, a total amount of 51.4 million USD was paid to awardees.

35.4 million USD was paid in **Research Grants** to 98 teams. The distribution of recipients according to the starting time was 31 teams for award year 2003, 33 for award year 2004 and 34 for award year 2005. A list of awardees in award year 2005 is given in *Annex 4*. The distribution of awardees by country is shown in Fig. 4-1.

Fig. 4-1:

Research Grants awardees paid during FY 2005 by country



Principal Investigators:

Other EU: 1 Austria , 1 Belgium , 1 Denmark, 1 Greece, 6 The Netherlands, 2 Spain, 5 Sweden

Co-Investigators:

Other EU: 1 Austria, 4 Belgium, 2 Denmark, 1 Hungary, 1 Ireland, 1 Luxembourg, 9 The Netherlands, 1 Portugal, 3 Spain, 2 Sweden

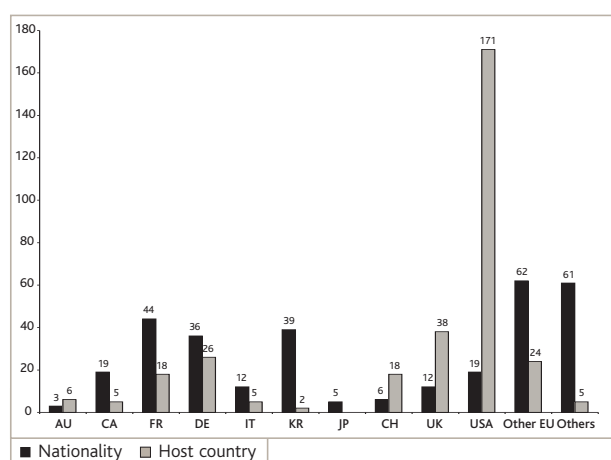
Others:

1 China, 2 India, 17 Israël, 3 Russia, 1 South Africa, 1 Uganda

Long-Term and Cross-Disciplinary Fellowships were paid to 318 fellows, for a total amount of 13.5 million USD. The distribution of recipients according to the starting time was 5 fellows for award year 2001, 40 fellows for award year 2002, 83 fellows for award year 2003, 89 fellows for award year 2004 and 101 fellows for award year 2005. A list of awardees in award year 2005 is given in *Annex 5*. The distribution of these fellows by nationality and host country is shown in Fig. 4.2.

Fig. 4-2:

Long-Term and Cross-Disciplinary Fellowship awardees (2001, 2002, 2003, 2004 and 2005) paid during FY 2005 by nationality and host country



Awardees from other EU countries:

5 Austria, 4 Belgium, 1 Czech Republic, 2 Denmark, 4 Finland, 6 Greece, 5 Hungary, 2 Ireland, 1 Poland, 3 Portugal, 1 Slovakia, 18 Spain, 2 Sweden, 8 The Netherlands

Awardees from other countries:

6 Argentina, 2 Brazil, 3 China, 1 Costa Rica, 1 Hong Kong, 5 India, 25 Israël, 1 Jamaica, 1 Malaysia, 1 Mexico, 1 Romania, 1 Russia, 1 Taiwan China, 1 Turkey, 1 Yugoslavia, 10 dual nationality (Austria/Israël, Canada/The Netherlands, 2 Canada/USA, Denmark/UK, Germany/UK, 2 Israël/The Netherlands, Israël/USA, Italy/UK)

Awardees going to other EU host countries:

3 Austria, 1 Belgium, 1 Denmark, 2 Finland, 7 Spain, 3 Sweden, 7 The Netherlands

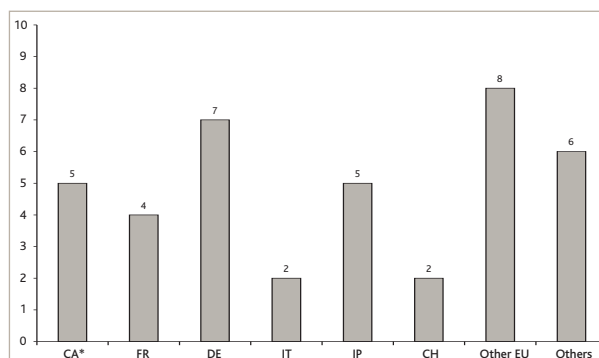
Awardees going to other host countries:

1 Argentina, 1 Brazil, 1 Israël, 1 India, 1 Mexico

Career Development Awards were paid to 39 awardees for a total of 2.4 million USD. The distribution of recipients according to the starting time was 6 for award year 2003, 15 for award year 2004 and 18 for award year 2005. The distribution of these awardees by country of CDA is shown in Fig. 4-3.

Fig. 4-3:

CDA awardees paid during FY 2005 by country of CDA



* One awardee working in Canada is a French citizen (Canada being the home country of the spouse)

Awardees in other EU countries:

2 Belgium, 1 Denmark, 2 Spain, 3 The Netherlands

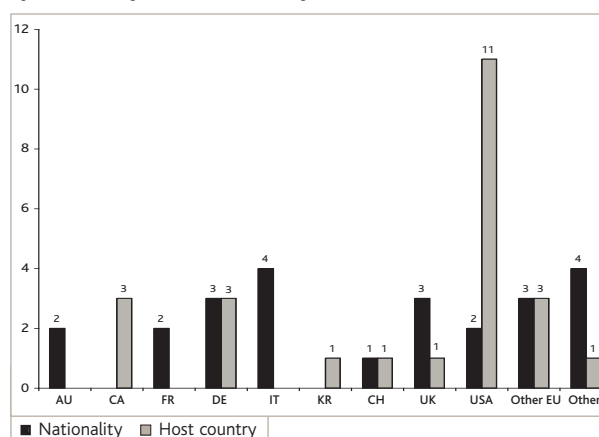
Awardees in other countries:

1 Argentina, 5 Israël

Short-Term Fellowships were paid to 24 fellows, for a total amount of 0.2 million USD. The distribution of these fellows by nationality and host country is shown in Fig. 4-4.

Fig. 4-4:

Short-Term Fellowship awardees paid during FY 2005 by nationality and host country



Awardees from other EU countries:

2 Poland, 1 Spain

Awardees from other countries:

2 Argentina, 1 Chile, 1 Israël

Awardees going to other EU host countries:

1 Denmark, 1 Spain, 1 The Netherlands

Awardees going to other host countries:

1 New Zealand

Vertical white line

Vertical light gray line

Vertical black line

Vertical black line

Program Administration

5

BOARD OF TRUSTEES

During FY 2005, three meetings of the Board of Trustees (Board) were held. The major decisions were as follows:

34th Board meeting **(7 June 2005, Bethesda, USA)**

- as regards the establishment of a scholarly journal to promote basic research in the life sciences throughout the world, with particular emphasis on interdisciplinary research, the Board expressed its support for such an initiative and recognised it as being compatible with the aims of the Program and statutory remit of the International Human Frontier Science Program Organization (HFSP). As such, it agreed to the establishment of HFSP Publishing as a not for profit publisher and to the use of the HFSP name and logo by HFSP Publishing under a licensing agreement to be negotiated. Further, the Board agreed to make available to HFSP Publishing a refundable loan of 600 thousand EUR in FY 2005 and of up to 1.3 million EUR in total.
- NIFU-STEP was selected to conduct a review to determine how far the initiatives introduced since 2000 have been successful.
- the Board was informed of the expiration of the contract of Mr. Shirao, Deputy Secretary-General, in July 2006 and authorised the initiation of the procedure for his replacement.

35th Board meeting **(5 December 2005, Strasbourg, France)**

- the Board was informed that the inquiry from New Zealand as to membership of HFSP was supported by Australian and US trustees who agreed to prepare a report for the Board.
- the Board agreed that the Berne formula, using the latest GDP data, should continue to be applied in calculating the financial contribution of all candidate countries prior to the Intergovernmental Conference (IGC) in 2007. At this meeting, a minimum contribution for countries with a small GDP may be considered.
- it was agreed that a working group should be established to prepare for the 2007 IGC. Canadian Board member, Dr. Bisby, agreed to chair the working group.
- the Board approved the business plan for the HFSP journal and approved the loan of up to 1.3 million EUR to HFSP. The Board also agreed to transfer the remaining 70 thousand USD of the 100 thousand USD, set aside by HFSP for a feasibility study of the journal (FY 2005 budget), to HFSP to assist the rapid launch of the journal.
- the Board accepted the offer from Australia to host the 7th Awardees Annual Meeting in 2007.

- the Board approved the short-list of three candidates for the post of Deputy Secretary-General and authorised the Secretary-General to select the most appropriate candidate in accordance with the Statutes.

- by consensus, the Board agreed to delay the election of a new President for three years from the end of the term of the current President, or until Japan replaces Professor Ito as its representative on the Board, whichever occurs sooner.

36th Board meeting (27 March 2006, Strasbourg, France)

- on the recommendation of the Council of Scientists, the Board agreed to make the following awards: 12 Young Investigator Grants, 20 Program Grants, 83 Long-Term Fellowships, 10 Cross-Disciplinary Fellowships and 29 Career Development Awards.

- the Board approved the recommendation that the Research Grant Review Committee following their examination of full applications should be empowered to invite a limited number of “fast-tracked” applications, by-passing the letter of intent for the following round of reviews.

- the Board approved the recommendation that, in both Young Investigator and Program Grants, two or more team members from the same country be considered as one member for funding purposes, unless they clearly represent different disciplines, in which case the amount should be increased to a level equivalent to 1.5 team members.

- the Board agreed to an increase in the amount of the Career Development Award to 100,000 USD per year for three years.

- the program activity plan and budget proposal for FY 2006 were approved.

- the New Zealand application for membership of HFSP was approved unanimously.

- the NIFU-STEP report was accepted as an independent evaluation of HFSP. It will be published on the HFSP website together with a statement by the Board.

- the Board accepted the German offer to host the 8th Awardees Annual Meeting in 2008.

- Dr. Kathie Olsen was elected Vice-President of the Board of Trustees as successor to Dr. Bisby.

- trustees approved the nomination of the following auditors for a term of one year:

- Mr. Michael Payne, National Institutes of Health, USA
- Mr. Patrick Pierrat, SEGEC Audit et Conseil, France
- Dr. Yasuyuki Yagi, Ministry of Economy, Trade and Industry, Japan

Table 5-1:

Board of Trustees (1 April 2005–31 March 2006)

President:

Prof. Masao ITO, Brain Science Institute, Riken, Japan

Australia

Ms. Sarojini MARTIN, National Health and Medical Research Council, Canberra

Ms. Suzanne NORTHCOTT, National Health and Medical Research Council, Canberra

Canada

Dr. Mark BISBY, Canadian Institutes of Health Research, Ottawa

Dr. Danielle MENARD, Natural Sciences and Engineering Research Council, Ottawa (from October 2005)

Mr. Stephen SHUGAR, Natural Sciences and Engineering Research Council, Ottawa (until October 2005)

France

Mr. Antoine GRASSIN, Ministry of Foreign Affairs, Paris

Dr. Eric KARSENTI, EMBL, Heidelberg, Germany

Germany

Dr. Ingrid OHLERT, German Research Council, Bonn

Dr. Ulrich SCHLÜTER, Research Centre Jülich

Italy

Prof. Piergiorgio STRATA, University of Turin

Prof. Glauco TOCCHINI-VALENTINI, Italian National Research Council, Rome

Japan

Mr. Kaoru NAITO, Nuclear Material Control Centre, Tokyo

Republic of Korea

Dr. Jung-Hye KIM, Ministry of Science and Technology, Seoul

Prof. Yoo-Hun SUH, Seoul National University, Seoul

Switzerland

Dr. Isabella BERETTA, State Secretariat for Education and Research, Bern

Prof. Pierre MAGISTRETTI, Ecole Polytechnique Fédérale de Lausanne and University of Lausanne

UK

Mrs. Jane LEE, Medical Research Council, London

Dr. Doug YARROW, Biotechnology and Biological Sciences Research Council, Swindon

USA

Dr. Mary CLUTTER, National Science Foundation, Arlington (until October 2005)

Dr. Kathie OLSEN, National Science Foundation, Arlington (from November 2005)

Dr. Norka RUIZ-BRAVO, National Institutes of Health, Bethesda

European Union

Dr. Octavi QUINTANA-TRIAS, Directorate-General Research, EC, Brussels

Dr. Thierry VAN DER PYL, Directorate-General Information Society, EC, Brussels

Honorary Member

Dr. Kozo IIZUKA, Japan Association for Metrology Promotion, Tokyo, Japan



COUNCIL
OF
SCIENTISTS

**23rd meeting of the Council of Scientists
(7 March 2006)**

- Prof. Rudi Balling was elected Chair of the Council of Scientists (Council). Prof. Judith Black and Prof. Reiko Kuroda were elected Vice-Chairs of the Council.
- Prof. Jean-François Joanny was elected Council delegate to the Research Grant Review Committee. Prof. Christopher Lamb was elected Council delegate to the Fellowship Review Committee.
- The members of the Council of Scientists examined the Career Development Award Applications and made their recommendation to the Board for the FY 2006 awards.

Table 6-1:

Members of the Council of Scientists
(1 April 2005 – 31 March 2006)

Chair:

Joachim SEELIG, University of Basel, Switzerland

Australia

Judith BLACK, University of Sydney

John MATTICK, University of Queensland

Canada

Lorne BABIUK, University of Saskatchewan, Saskatoon

Philip BRANTON, McGill University, Montreal (until
January 2006)

Paul LASKO, McGill University, Montreal (from January 2006)

France

Marie-France CARLIER, CNRS, Gif-sur-Yvette

Jean-François JOANNY, Institut Curie, Paris

Germany

Rudi BALLING, Gesellschaft für Biotechnologische
Forschung, Braunschweig

Hannah MONYER, University of Heidelberg

Italy

Giacomo RIZZOLATTI, University of Parma

Silvano RIVA, CNR, Pavia

Japan

Reiko KURODA, University of Tokyo

Shigekazu NAGATA, University of Osaka (from January 2006)

Toshio YANAGIDA, University of Osaka (until January 2006)

Republic of Korea

Seong Eon RYU, Korea Research Institute of Bioscience and
Biotechnology, Daejeon

Hee-Sup SHIN, Korea Institute of Science and Technology,
Seoul

Switzerland

Ernst HAFEN, University of Zurich

UK

Alan FERSHT, University of Cambridge

Christopher LAMB, John Innes Centre, Norwich

USA

Helen BERMAN, Rutgers, State University of New Jersey,
Piscataway

Linda GRIFFITH, Massachusetts Institute of Technology,
Cambridge

European Union

Guy ORBAN, Catholic University of Leuven, Belgium

Luis SERRANO, EMBL, Heidelberg, Germany

Honorary Member:

Masao ITO, Brain Science Institute, Riken, Japan

7

REVIEW COMMITTEES

The Review Committees met in January 2006 to recommend the awards to be made in March 2006.

Table 7-1:

Members of the Review Committee for Research Grants

Australia

Perry BARTLETT, University of Queensland

Canada

Gabrielle BOULIANNE, University of Toronto

France

Burkhard BECHINGER, Louis Pasteur University, Strasbourg

Michael SEAGAR, University of Marseille

Germany

Winfried DENK, Max-Planck Institute for Medical Research, Heidelberg

Fritz ECKSTEIN, Max-Planck Institute for Experimental Medicine, Göttingen

Jonathon HOWARD, Max-Planck-Institute for Molecular Cell Biology and Genetics, Dresden

Italy

Lawrence BANKS, International Centre Genetic Engineering and Biotechnology, Trieste

Antonio MALGAROLI, Università Vita-Salute San Raffaele, Milan

Nadia ROSENTHAL, EMBL, Monterotondo (Rome)

Japan

Akihiro KUSUMI, Kyoto University

Satoru MIYANO, University of Tokyo

Republic of Korea

Young-Joon KIM, Yonsei University, Seoul

Switzerland

Henry MARKRAM, Ecole Polytechnique Fédérale de Lausanne

Jerzy PASZKOWSKI, University of Geneva

UK

Dimitris KIOUSSIS, National Institute for Medical Research, London

Anthony WATTS, University of Oxford

USA

William BIALEK, Princeton University, California

Frances BRODSKY, University of California San Francisco

Angela GRONENBORN, National Institutes of Health, Bethesda

Marcelo MAGNASCO, The Rockefeller University, New York

European Union

Bror ALSTERMARK, Umea University, Sweden

Ryszard KIERZEK, Polish Academy of Sciences, Poznan, Poland

Frederick MACKINTOSH, Vrije Universiteit, Amsterdam, The Netherlands

Delegate from Council of Scientists

Jean-François JOANNY, Institut Curie, Paris, France

Table 7-2:

Members of the Review Committee for Fellowships

Australia

Peter CURRIE, The Victor Chang Cardiac Research Institute, Sydney

Paul GLEESON, University of Melbourne

Canada

Paul de KONINCK, Laval University Robert Giffard, Beauport, Quebec

Doug MUNOZ, Queen's University, Kingston

France

Emiliana BORRELLI, IGBMC, Illkirch

Bruno GOUD, Institut Curie, Paris

Marcel KNOSSOW, CNRS, Gif-sur-Yvette

Ioan NEGRUTIU, Ecole Normale Supérieure, Lyon

Germany

Nils BROSE, Max-Planck-Institute for Experimental Medicine, Göttingen

Frank JÜLICHER, Max-Planck Institute for Physics of Complex Systems, Dresden

Italy

Marco BIANCHI, San Raffaele Scientific Institute, Milan

Kristian HELIN, European Institute of Oncology, Milan

Japan

Thomas KNÖPFEL, Riken, Wako

Ko SAKAI, University of Tsukuba

Republic of Korea

Hong Gil NAM, Pohang University of Science and Technology

Switzerland

Ed PALMER, University Hospital, Basel

UK

Jonathon PINES, University of Cambridge

Daniela RHODES, Medical Research Council, Cambridge

Bonnie Ann WALLACE, University of London

USA

Michel NUSSENZWEIG, The Rockefeller University, New York

Norbert PERRIMON, Harvard Medical School, Boston

Peter WOLYNES, University of California, San Diego

European Union

Barry DICKSON, Institute of Molecular Biotechnology, Vienna, Austria

Christoph SCHMIDT, Vrije Universiteit, Amsterdam, The Netherlands

Gunter SCHNEIDER, Karolinska Institute, Stockholm, Sweden

Other

Ruth SPERLING, Hebrew University, Jerusalem, Israël

Delegate from Council of Scientists

Joachim SEELIG, University of Basel, Switzerland



SECRETARIAT

The Secretariat remained small. At the end of FY 2005, the number of staff members was 14.

Table 8-1:
HFSPO SECRETARIAT

|||||

Executive Office

- Secretary-General
Torsten WIESEL (USA)
- Deputy Secretary-General
Takayuki SHIRAO (Japan)
- Assistant
Jill HUSSER (UK)

|||||

- Director of Scientific Affairs and Communications
Martin REDDINGTON (UK)

|||||

Finance and Administration

- Director of Finance and Administration
Patrick VINCENT (France)
- Manager of Finance and Administration
Isabelle HEIDT-COQUARD (France)
- Assistant
Sarah NAETT (New Zealand)

|||||

Research Grant Program

- Director of Research Grants
Geoffrey RICHARDS (UK)
- Assistants
Carole ASNAGHI (France) (from October 2005)
Armelle KOUKOU (Bénin)
Sylvie KRONENBERGER (France) (to September 2005)

|||||

Fellowship Program

- Director of Fellowships
Guntram BAUER (Germany)
- Assistants
Marie-Claude PERDIGUES (France)
Carine SCHMITT (France)

|||||

- IT Systems Manager
Xavier SCHNEIDER (France)

|||||

- Administrative Officer
Yasushi SAITO (Japan)

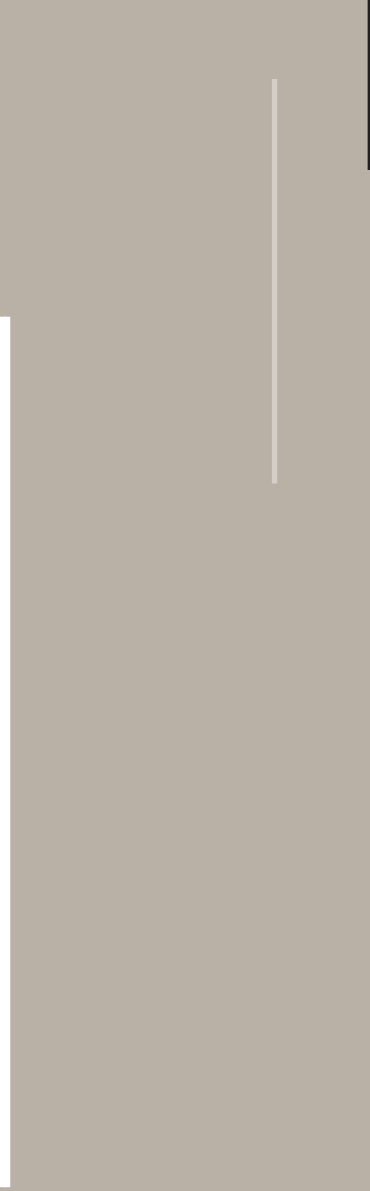
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Table 8-2:

Composition of staff members at the end of FY 2005


Grade	Staff					Secretarial Staff			Total
	A7	A6	A5	A3	A2	B5	B4	B3	
Number of Members	1(1)	1(1)	4(4)	1(1)	1(1)	2(2)	2(3)	2(1)	14(14) ¹

1. Figures in parentheses are the numbers at the end of the previous fiscal year.



The following documents are available on the HFSP website
www.hfsp.org

Joint Communiqués (Berlin 2002, Washington 1997, Tokyo 1992):
http://www.hfsp.org/pubs/Pubs_reports_top.php



Statutes of the International Human Frontier Science Program Organization:
<http://www.hfsp.org/about/Aboutstatutes.php>

Guidelines for the Participation of New Members in the HFSP:
http://www.hfsp.org/about/AboutNew_Mem.php

General Reviews of the HFSP 1996 and 2001:
http://www.hfsp.org/pubs/Pubs_reports_top.php

Updated and previous lists of awards, including titles and abstracts:
<http://www.hfsp.org/awardees/AwardsLatest.php>

1	Joint Communiqué for the HFSP, Berne, Switzerland, 2004	62
2	Berne Intergovernmental Conference three-year budgetary plan (2005-2007): implementation in local currency	66
3	History of the Program	68
4	Research Grant awards made in 2005	72
5	Long-Term and Cross-Disciplinary Fellowships awarded in 2005	74
6	Career Development Awards made in 2005	78
7	Short-Term Fellowships awarded in 2005	80
8	Awardees Annual Meeting	82
9	Public Relations	86

Annexes

ANNEX

1

**JOINT COMMUNIQUÉ OF
INTERGOVERNMENTAL CONFERENCE
ON
HUMAN FRONTIER SCIENCE PROGRAM
BERNE, 25 JUNE 2004**

Paragraph 1

Continuation of HFSP

Representatives of the Management Supporting Parties of Canada, France, Germany, Italy, Japan, Switzerland, the United Kingdom of Great Britain and Northern Ireland, the United States of America and of the European Union met on 25 June 2004 in Berne to review the progress made and discuss the future of the Human Frontier Science Program (HFSP). Conscious of the important role of the Program in promoting interdisciplinary and international cooperation in basic life sciences among excellent researchers, they agreed enthusiastically to the continuation of HFSP on the basis of the following understanding:

Paragraph 2

Strengthening governance

- a) The representatives supported the recommendation of the Working Group that consideration of international status be discontinued and instead agreed to strengthen the governance of HFSP by requesting the Board of Trustees (Board) to review the Statutes of the International Human Frontier Science Program Organization (HFSP/O). It is suggested that the IGC be renamed the HFSP International Conference (HFSP IC), that countries or international organizations be called "IC Members" and the HFSP IC be defined as having the responsibility to establish the overall strategy of HFSP and the total funding target.
- b) So as to facilitate the operations of HFSP/O, it is expected that the French government will address the issue of the duration of the contracts of senior HFSP/O staff to allow a regular turnover.

Paragraph 3

Indicative three-year budgetary plan and target levels for FY2005- 2007

- a) The representatives appreciate the continued efforts made to enhance the value and visibility of HFSP by the introduction of new initiatives and hold the achievements of HFSP in high regard. Taking into account past achievements and the projected scope and financial requirements of future HFSP activities, the representatives agreed to adopt an indicative three-year budgetary plan (FY2005-2007) as the fundamental framework for establishing the annual budget of HFSP/O (Table 1). It is expected that this new framework will provide target levels for contributions by IC members. One approach is given in Table 2.
- b) Within the framework of an indicative three-year budgetary plan, an annual increase is recommended to maintain the program as set out in Table 1. In an effort to achieve a balance between the contributions of Japan and the other IC members, Japan is exempt from this annual increase. At the same time, this plan is formulated in the strong expectation that Japan will maintain its current high level of support and that the other IC members will make every effort to achieve the target levels.

Paragraph 4

New membership

- a) The representatives welcomed membership of the Republic of Korea as approved by the Board at its meeting in March 2004. Membership of the Republic of Korea will become effective after the completion of the necessary procedures.
- b) Following discussion of membership of HFSP, the representatives agreed that IC Members should be urged to take steps to encourage potential candidates to take up membership of HFSP.
- c) It is noted that the contribution of new members is to be added to the total amount contributed by the current IC Members.

Paragraph 5

Review of HFSP

- a) HFSP will continue to be reviewed by various means, including regular audits and reports. The representatives agreed that a further external review, including an evaluation of the impact of the new initiatives, should be complete by the meeting of HFSP IC in 2007.
- b) The Board is asked to establish guidelines for the external review and to evaluate it on completion.

Paragraph 6

Next meeting

It was decided that the next meeting of HFSP IC will be held in Canada in 2007, unless unforeseen circumstances make it necessary to hold a meeting before that date.

Table 1:**Indicative three-year budgetary plan: 4 % annual increase of HFSPO budget**

The Program's awarding capacity would be maintained, taking into account the following:

- the alignment of Young Investigator Grants with Program Grants (decision in FY2003 implemented in FY2005)
- the adjustment of 5% for inflation in FY2005 .

HSFP IC MEMBERS	ANNUAL CONTRIBUTIONS (USD)		
	2005	2006	2007
JAPAN	30 000 000	30 000 000	30 000 000
Japan as % of total	54%	52%	50%
Non Japanese IC Members	25 129 990	27 457 234	30 000 000
Annual growth non Japanese IC Members	9,3%	9,3%	9,3%
Total contributions FY	55 129 990	57 457 234	60 000 000
Annual growth total	4,02%	4,22%	4,43%
"3 years plan" assumptions for Program activities budget (kUSD)*	2005	2006	2007
Secretariat	3546	3587	3630
Program Grants (total cost per new award)**	1155	1155	1155
Young Investigators Grants (total cost per new award)**	1155	1155	1155
Long Term Fellowships (total cost per new award)**	146	146	146
Short Term Fellowships (per annum)	200	200	200
Career Development Awards (total cost per new award)***	180	180	180
Workshops/ Annual Awardees meeting (per annum)	300	300	300
Senior Investigators	300	2625	
Number of new awards per year and total annual expenses for program activities (kUSD) (including on going awards from previous years)	2005	2006	2007
Number Program Grants	27	27	27
Number Young Investigators Grants	6	6	8
Number Long Term Fellowships	92	98	100
Number Career Development Awards	17	18	18

* Figures underlined highlight year of change ** over 3 years *** over 2 or 3 years

Table 2:**Target levels for contributions by IC members FY2005-2007: one approach**

HFSP IGC Members	2004 (based on Washington distribution reference)	ANNUAL CONTRIBUTIONS (USD)		
		2005	2006	2007
CANADA	800 000	874 087	955 034	1 043 478
FRANCE	2 050 000	2 239 847	2 447 275	2 673 913
GERMANY	3 200 000	3 496 346	3 820 137	4 173 913
ITALY	1 550 000	1 693 543	1 850 379	2 021 739
JAPAN	30 000 000	30 000 000	30 000 000	30 000 000
Japan as % of total	57%	53%	51%	50%
SWITZERLAND	450 000	491 674	537 207	586 957
UK	1 500 000	1 638 912	1 790 689	1 956 522
USA	10 450 000	11 417 756	12 475 134	13 630 435
EUROPEAN UNION	3 000 000	3 277 825	3 581 378	3 913 043
TOTAL CONTRIBUTIONS FY	53 000 000	55 129 990	57 457 234	60 000 000
Annual growth non Japanese IGC Members		9,3%	9,3%	9,3%
Annual growth total		4,02%	4,22%	4,43%

**JOINT COMMUNIQUÉ
OF
INTERGOVERNMENTAL CONFERENCE (IGC)
ON
HUMAN FRONTIER SCIENCE PROGRAM
BERNE, 25 JUNE 2004**

The Chair of the Conference Dr. Paul E. Zinsli 

Canada Prof. Stephanie Atkinson 

European Union Mr. Octavi Quintana Trias 

France Ms. Elisabeth Giacobino 

Germany Mr. Peter Lange *(for)* 

Italy Prof. Piergiorgio Strata 

Japan Mr. Tateo Arimoto 

Switzerland Dr. Jean Pierre Ruder 

United Kingdom Mr. Nick Winterton 

United States of America Dr. Kathie Olsen 

ANNEX

2

**BERNE INTERGOVERNMENTAL
CONFERENCE THREE-YEAR BUDGETARY
PLAN (2005-2007): IMPLEMENTATION
IN LOCAL CURRENCY (LC)**

Formula for MSP's contribution in LC	MSP		FY 2005	FY 2006	FY 2007
Maintain or keep close to FY 2004 level	JAPAN	Berne guideline (kUSD) Requested (kUSD)	30.000 31.247	30.000 31.247	30.000 31.247
	SWITZERLAND	Berne guideline (kUSD) Requested (kCHF)	492 850	537 850	587 850
4% annual increase from FY 2004 level or contribution based on Berne target level in LC, whichever the highest	UK	Berne guideline (kUSD) Requested (kGBP)	1.639 946	1.791 985	1.956 1.076
	*EU (excl. new entrants)	Berne guideline (kUSD) Requested (kEUR)	3.278 3.120	3.581 3.245	3.913 3.375
Contribution based on Berne target level converted into LC	CANADA	Berne guideline (kUSD) Requested (kCAD)	874 1.136	955 1.242	1.043 1.357
	FRANCE	Berne guideline (kUSD) Requested (kEUR)	2.240 1.792	2.447 1.958	2.674 2.139
	GERMANY	Berne guideline in kUSD Requested in kEUR	3.496 2.797	3.820 3.056	4.174 3.339
	ITALY	Berne guideline (kUSD) Requested (kEUR)	1.694 1.355	1.850 1.480	2.022 1.617
	USA	Berne guideline (kUSD) Requested (kUSD)	11.418 11.418	12.475 12.475	13.630 13.630
4% annual increase from contribution level indicated in Memorandum of Understanding (Australia, Korea) or confirmed (EU)	*EU 10 new entrants	Requested (kEUR)	487	506	527
	AUSTRALIA	Requested (kUSD)	466	485	504
	KOREA	Requested (kUSD)	546	568	591
*Combined EU contribution (Berne IGC member and 10 new entrants)	EU 15 + 10	Requested (kEUR)	3.607	3.751	3.901

ANNEX

3

HISTORY
OF THE PROGRAM

Chronology

During 1986-87, the government of Japan considered the establishment of the Human Frontier Science Program (HFSP) as a means of supporting international collaboration in basic research on biological functions. For Japan, this was a way of making a significant contribution to international efforts to promote basic science. Subsequently, specific areas of research were defined at a number of international meetings. The Japanese Prime Minister, Mr. Yasuhiro Nakasone, proposed the establishment of HFSP at the Venice Economic Summit in June 1987 and the initiative was welcomed by the Economic Summit partners. To facilitate the launch of HFSP, Japan offered to provide significant funding for an initial 3-year phase, with additional contributions from the other partners, called Management Supporting Parties (MSPs).

During the initial phase of the Program, from October 1989 to March 1992, HFSP supported an impressive range of projects that would have been difficult or impossible to fund through national research granting agencies. A second "full-fledged" phase of the Program began in April 1992 in accordance with the *Joint Communiqué for the Human Frontier Science Program, Tokyo 1992* adopted by MSPs at the 1st Intergovernmental Conference on the HFSP in Tokyo, on 21-22 January 1992. At this meeting, the representatives of the MSPs recommended the continued support of the Program beyond its initial phase.

In accordance with the Tokyo Joint Communiqué, a General Review, consisting of a scientific review and an evaluation of all aspects of the Program was carried out during FY 1995. Both reviews were conducted by external, independent organizations. On the basis of these reviews, the Board of Trustees (Board) prepared a report for MSPs in March 1996. The conclusions of the reviews were very positive and the HFSP was placed on the agenda of the G-7 Summit Meeting in Lyon, France, in June 1996.

The 2nd Intergovernmental Conference was held in Washington on 20 May 1997. At this meeting, the representatives of the MSPs recognized the desirability of continuing the HFSP for a further phase of five years. Importantly, the MSPs reaffirmed the goals of the Tokyo Joint Communiqué aimed at increased and equitable funding for the Program. Following the *Joint Communiqué for the Human Frontier Science Program, Washington 1997*, a further General Review was completed by the end of March 2001.

The 3rd Intergovernmental Conference was held on 21 June 2002, in Berlin. In the *Joint Communiqué for the Human Frontier Science Program, Berlin 2002*, the representatives reaffirmed the value of the Program's emphasis on interdisciplinary science, on the encouragement of researchers early in their careers and on international and especially intercontinental collaboration. The establishment of a unified program embracing the range of complex mechanisms of living organisms from molecular approaches to biological functions to higher brain functions was considered particularly appropriate given the recent convergence of these areas in

biology. New initiatives, such as the Young Investigator grant and the Career Development Award were highly commended. As a result, the representatives also recognized that the scientific value of the HFSP warranted its continuation for a further five years. Representatives at the 3rd Intergovernmental Conference also recognized the importance of expanding the membership of the Human Frontier Science Program Organization (HFSP/O) for the further development of international collaboration.

The 4th Intergovernmental Conference was held 25 June 2004, in Berne, Switzerland. In the *Joint Communiqué for the Human Frontier Science Program, Berne, 2004 (Annex 1)*, the representatives agreed enthusiastically to the continuation of HFSP and established an indicative three-year budgetary plan as the fundamental framework for establishing an annual budget. Within the framework of an indicative three-year budgetary plan, an annual increase was recommended to maintain the awarding capacity of the Program.

Preparations have begun for the 5th Intergovernmental Conference, to be held in 2007. To this end a further review of the Program was carried out in FY 2005 by NIFU-STEP, with positive results (*see Foreword*).

In following up the recommendation of the 3rd Intergovernmental Conference to expand the membership of HFSP/O, the *Guidelines for the Participation of New Members in the HFSP* were revised and in December 2004, Australia and the Republic of Korea were admitted to membership of HFSP/O. Memoranda of Understanding were concluded between the new members and HFSP/O and the Statutes of HFSP/O were modified to include the new MSPs. In March 2006, New Zealand was also welcomed as a member of HFSP/O by unanimous decision of the Board.

To make the aims of HFSP better known, the Board approved the launch of a journal for the promotion of basic interdisciplinary research in the life sciences. In June 2005, the Board also approved the establishment of HFSP Publishing (HFSP/P) as a not-for-profit organisation to support the journal and the use of the HFSP name and logo by HFSP/P. In December 2005, the Board approved a refundable loan to assist the launch of the journal on the basis of a sound business plan.

To mark the 10th and 15th anniversaries of the Program, ceremonies were held in different parts of the world to reflect HFSP's intercontinental character and enhance the visibility of the Program further⁶. Public relation activities continued in 2005, notably with the conclusion of a Memorandum of Understanding with the Council for Lindau Nobel Laureate Meetings. This agreement will enable a number of HFSP fellows to participate in the Lindau meeting each year.

⁶ For the 10th anniversary, ceremonies took place in Tokyo (December 1998), Strasbourg (June 1999) and in Washington D.C. (December 1999). For the 15th anniversary, celebrations were held in Strasbourg (March 2004) and in Hakone, Japan (May 2004) on the occasion of the 4th Awardees Annual Meeting.

Budgetary Evolution in million USD (including in-kind contributions)

Fig. 1:

Total contributions

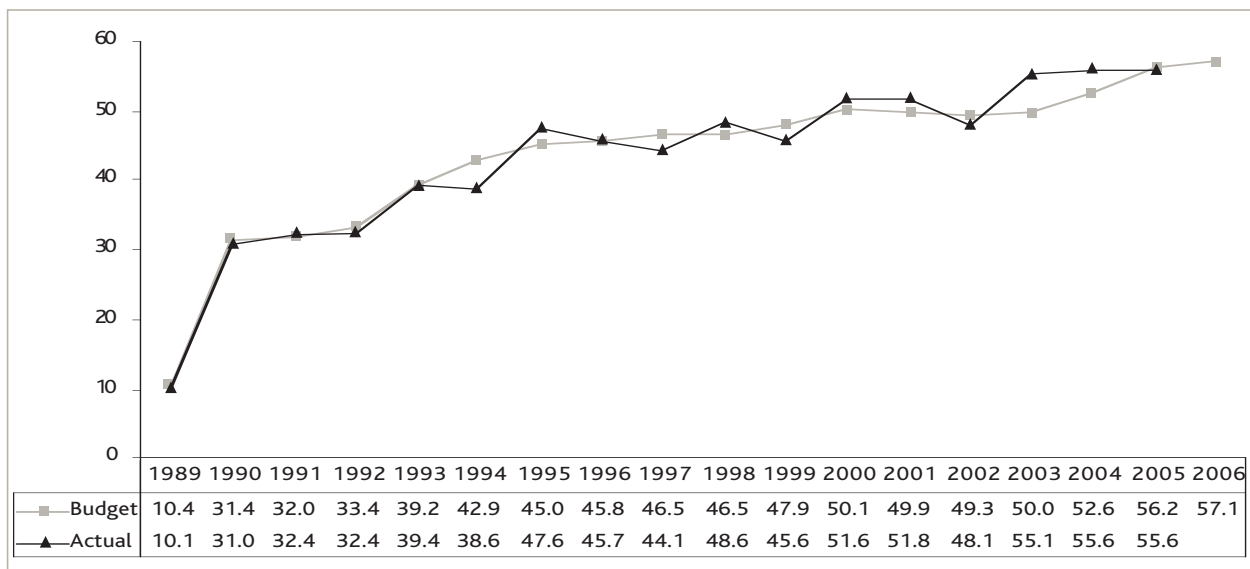


Fig. 2:

Evolution of contributions from Japan

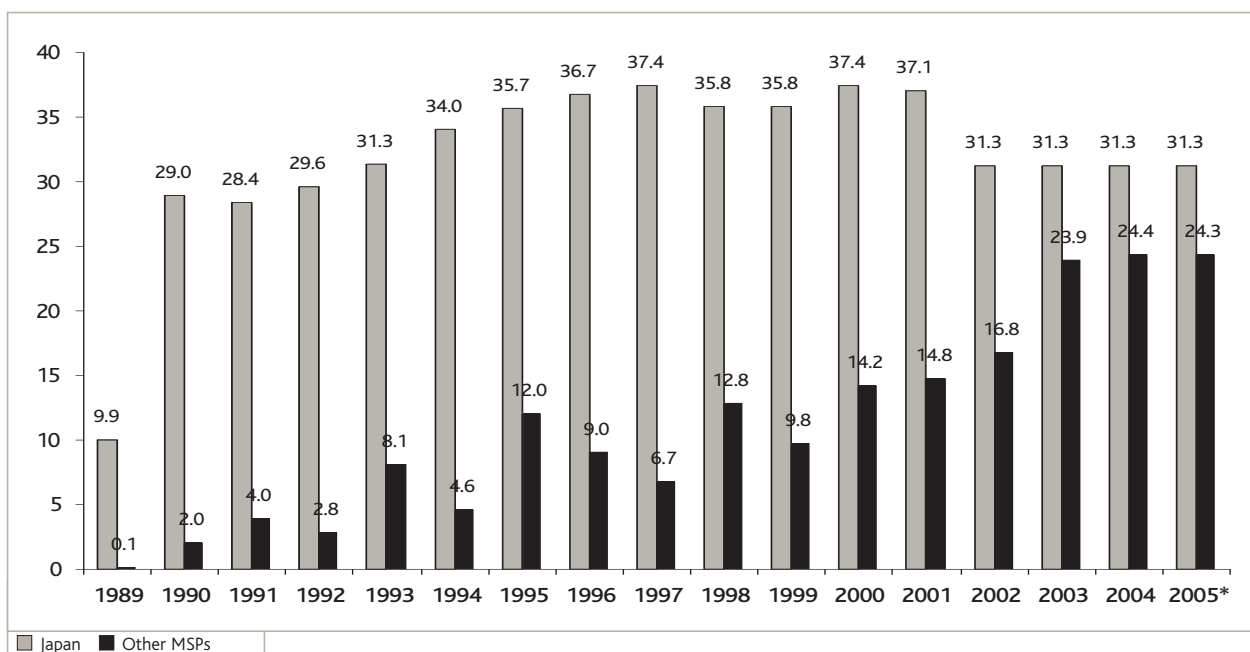


Fig.3:

Evolution of expenditure

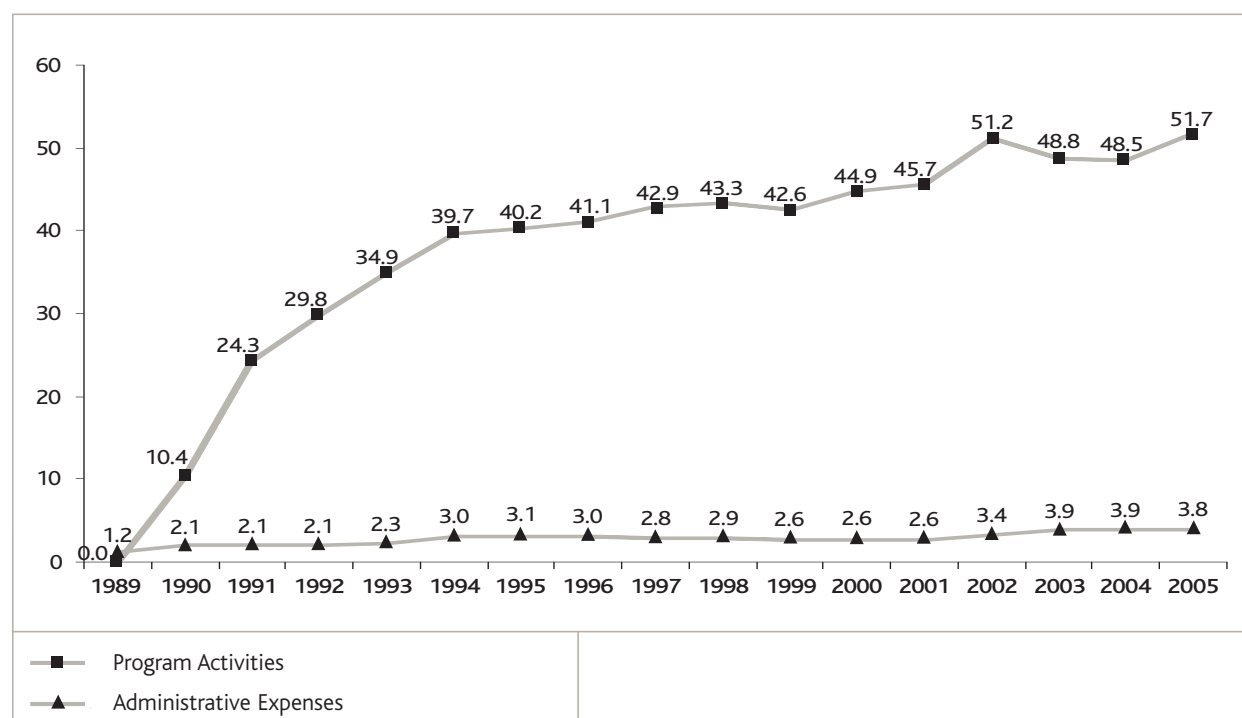


Table 1:

Contributions

	Australia	Canada	France	Germany	Italy	Japan	Korea	Switzerl.	UK	USA	EU
FY 1989		–	0.5	–	0.0*	9.9		–	–	–	–
FY 1990		0.2	1.7	0.3	0.3	29.0		–	–	–	–
FY 1991		0.0*	1.6	0.9	0.4	28.4		0.4	–	0.0*	0.2
FY 1992		0.4	1.3	0.8	0.2	29.6		0.4	0.5	0.0*	0.2
FY 1993		0.3	1.3	0.8	0.2	31.3		0.4	0.5	3.5	0.9
FY 1994		0.5	1.6	1.0	0.2	34.0		0.4	0.6	3.5	1.1
FY 1995		0.5	1.7	1.2	0.2	35.7		0.6	0.6	3.5	1.0
FY 1996		0.3	1.4	1.2	0.2	36.7		0.5	0.6	4.0	0.9
FY 1997		0.3	1.5	1.0	0.2	37.4		0.5	0.8	4.0	0.9
FY 1998		0.5	1.7	1.3	0.3	35.8		0.6	0.8	4.5	1.1
FY 1999		0.4	1.8	1.6	0.3	35.8		0.6	0.8	5.0	1.7
FY 2000		0.5	1.6	2.1	0.3	37.4		0.6	0.8	5.5	1.5
FY 2001		0.5	1.2	2.8	0.7	37.1		0.5	0.8	7.4	0.9
FY 2002		0.8	1.4	1.5	0.0	31.3		0.5	1.6	8.6	2.4
FY 2003**		0.8	1.9	3.9	0.0	31.3		0.6	1.5	10.4	4.7
FY 2004		0.9	2.1	3.4	2.1	31.3		0.7	1.6	9.5	4.1
FY 2005	0.5	0.9	2.2	3.5	0.9	31.3	0.5	0.7	1.7	9.0	4.5
TOTAL	0.5	7.7	26.2	27.4	6.5	543.0	0.5	8.0	13.0	78.5	26.0

* Less than 0.05 million USD

** Since FY 2003: payments received or confirmed by formal notification at the end of FY.

ANNEX

4

RESEARCH GRANT AWARDS MADE IN 2005⁷

Nationality of awardees is given in brackets if different from the country where the laboratory is located.

⁷ Abstracts are available on the website (www.hfsp.org)

1. Young Investigators

Peptide-coated nanotubes: toxicity and targeted cell ablation

DALTON Alan, (IRELAND), UK
COLEMAN Johnny, IRELAND
DIECKMANN Gregg, USA

Physics and adaptation: the evolution of dispersivity

GLOVER Beverley, UK
LLEWELLYN SMITH Stefan, (UK), USA

Mechanism of cohesin and related SMC complexes in chromosome biology

HOPFNER Karl-Peter, GERMANY
HA Taekjip, USA
UHLMANN Frank, (GERMANY), UK

Determining the functional contribution of a single glomerulus to odor perception

MARGRIE Troy, (AUSTRALIA), UK
OSTEN Pavel, (CZECH REPUBLIC), GERMANY
URBAN Nathaniel, USA

Building and testing mechanistic models for chromosome segregation

NEDELEC Francois, (FRANCE), GERMANY
DESAI Arshad, (INDIA), USA
TANAKA Tomoyuki, (JAPAN), UK

Unveiling role and functional specificity of individual kB sites in multi-site NFkB-dependent genes

PASPARAKIS Manolis, (GREECE), ITALY
BULYK Martha, USA
NATOLI Gioacchino, ITALY

A systems approach to epigenetic decisions in yeast

PAULSSON Johan, (SWEDEN), UK
KISHONY Roy, (ISRAEL), USA
QUESTEMBERT-BALABAN Nathalie, ISRAEL
RANDO Oliver, USA

2. Program Grants

PKA anchoring and cAMP signaling: genetic, proteomic, computational and cell biological approaches

ABEL Ted G., USA
BLACKWELL Kim, USA
GRANT Seth G., UK
ZACCOLO Manuela, ITALY

An in vitro model for evolution: precision control of directed evolution with micro fluidic devices

BIBETTE Jérôme, FRANCE
GRIFFITHS Andrew D., (UK), FRANCE
WEITZ David, (CANADA), USA

A new experimental framework for quantitative biophysical studies in developmental biology

BRAND Michael, GERMANY
MIYAWAKI Atsushi, JAPAN
SCHWILLE Petra, GERMANY

A combined in vivo/in vitro approach to study cell-cortex-regulated microtubule organization

DOGTEROM Marileen, THE NETHERLANDS
BRUNNER Damian, (SWITZERLAND), GERMANY
KAIBUCHI Kozo, JAPAN

Modelling the regulation of cell patterning in Arabidopsis root epidermis

DOLAN Liam, (IRELAND), UK
MONK Nick, UK
WADA Takuji, JAPAN

Discovery of Caenorhabditis elegans chemical ecology

EDISON Arthur S., USA
DE BONO Mario, (MALTA), UK
STERNBERG Paul, USA
TEAL Peter, USA

Oxidative lipidomics of programmed cell clearance: from nematodes to humans

FADEEL Bengt, SWEDEN
KAGAN Valerian, USA
QUINN Peter J., UK
XUE Ding, USA

Glycobiology meets nanotechnology: nanoparticle probes for the analysis of polysaccharides

FERNIG David, UK
BRUST Mathias, (GERMANY), UK
LOUNIS Brahim, FRANCE
SUGAHARA Kazuyuki, JAPAN

Systems analysis by quantitative cellular assays, network modeling and integration of meta-data

HUBER Wolfgang, (GERMANY), UK
BOUTROS Michael, GERMANY
GENTLEMAN Robert C., (CANADA), USA
KIGER Amy, USA

Optical detection and manipulation of protein signaling - sensory processing in the mammalian brain

ISACOFF Ehud Y., USA
CHARPAK Serge, FRANCE
REUVENY Eitan, ISRAEL
TRAUNER Dirk, (AUSTRIA), USA

How myosin walks: a molecular dynamics and engineering analysis of chemomechanical transduction

KARPLUS Martin, (USA), FRANCE
HOUDUSSE Anne, FRANCE
SWEENEY H. Lee, USA
TROUT Bernhardt, USA

The function of glycoprotein receptors in the transit from ER to Golgi

LINDQVIST Ylva, SWEDEN
ITO Yukishige, JAPAN
KAUFMAN Randal J., USA

Telomerase enzyme assembly, interactions and function

LINGNER Joachim, SWITZERLAND
DONTSOVA Olga, RUSSIA
RHODES Daniela, (ITALY), UK
VARANI Gabriele, (ITALY), USA
WESTHOF Eric, FRANCE

Folding kinetics and stability studies of individual RNA molecules, application to RNA interference

MELLER Amit, (ISRAEL), USA
ISAMBERT Herve, FRANCE
SAGI Irit, ISRAEL
SONENBERG Nahum, CANADA

Neural substrate of bottom-up and top-down visual attentional integration

MUNOZ Douglas, CANADA
ISA Tadashi, JAPAN
ITTI Laurent, (FRANCE), USA
THEEUWES Jan, THE NETHERLANDS

mRNA mistranslation in biological processes

PIERRE Philippe, FRANCE
DESJARDINS Michel, CANADA
SANTOS Manuel, PORTUGAL
SCHULTZ Carsten, GERMANY

Deciphering the function and dynamics of regulatory networks by high-throughput experiments and analysis

REGEV Aviv, (ISRAEL), USA
FRIEDMAN Nir, ISRAEL
O'SHEA Erin, USA

Ceramide containing rafts: structure and function

RIEZMAN Howard, (USA), SWITZERLAND
HANNUN Yusuf, USA
KURZCHALIA Teymuraz, (GEORGIA), GERMANY
MAYOR Satyajit, INDIA

Conformational changes and energies involved in SNARE-induced membrane fusion

ROTHMAN James E., USA
PEREZ Eric, FRANCE

The molecular mechanism of G protein-coupled receptor signalling

SCHERTLER Gebhard, (AUSTRIA), UK
OPRIAN Daniel, USA
RIEKEL Christian, (GERMANY), FRANCE

X-ray nano-tomography of higher order chromatin structure in a transcriptionally active domain

SCHNEIDER Gerd, GERMANY
MCNALLY James, USA

Decision making and strategies in the brain: a multidisciplinary approach for understanding social behaviour

SIRIGU Angela, (ITALY), FRANCE
CAMERER Colin, USA
DUHAMEL Jean-René, (CANADA), FRANCE
NAGEL Rosemarie, (GERMANY), SPAIN

Proteomics, genetics and ultrastructure of predator-prey interactions by Bdellovibrio bacteria

SOCKETT Renee Elizabeth, UK
AIZAWA Shin-Ichi, JAPAN
MADDOCK Janine, USA

Autopropulsion of liposomes in living systems, and mimicking with abiotic systems

SYKES Cécile, FRANCE
DEMING Timothy, USA
FRIEDERICH Evelyne, LUXEMBOURG
GETTEMANS Jan, BELGIUM

The interaction between physical forces and development at the shoot apical meristem

TRAAS Jan, (THE NETHERLANDS), FRANCE
COUDER Yves, FRANCE
MEYEROWITZ Elliot, USA
PETERSON Carsten, SWEDEN

Metabolons and complexity in plant secondary metabolism studied by BIA-MS and nanodisc anchoring

WERCK-REICHHART Danièle, FRANCE
MØLLER Birger Lindberg, DENMARK
ROEPSTORFF Peter, DENMARK
SLIGAR Stephen, USA

Signal integration by mixed chemoreceptor teams in bacterial chemotaxis

WINGREEN Ned, USA
MEIR Yigal, ISRAEL
SOURJIK Victor, (BELARUS), GERMANY

ANNEX

5

**LONG-TERM
AND CROSS-DISCIPLINARY
FELLOWSHIPS
AWARDED IN 2005⁸**

⁸ The full list of awards with titles and abstracts is available on the website (www.hfsp.org)

1. Long-Term Fellowships

Name	Nationality	Host institute	Host country
ALLEN Nicola	UK	Stanford University School of Medicine	USA
AMEDI Amir	ISRAEL	Harvard Medical School, Boston	USA
AONO Nobuki	JAPAN	Cold Spring Harbor Laboratory	USA
ARCHAMBAULT Vincent	CANADA	University of Cambridge	UK
ARCHETTI Marco	ITALY	Oxford University	UK
BARNECHE Frédy	FRANCE	Stazione Zoologica, Naples	ITALY
BEN-AROYA Shay	ISRAEL	University of British Columbia, Vancouver	CANADA
BERSET Thomas	SWITZERLAND	Victor Chang Cardiac Research Institute, Sydney	AUSTRALIA
BIRD Alexander	USA	MPI Molecular Cell Biology and Genetics, Dresden	GERMANY
BLANCHARD Nicolas	FRANCE	University of California, Berkeley	USA
CANALS Santiago	SPAIN	MPI for Biological Cybernetics, Tuebingen	GERMANY
CHTANOVA Tatyana	AUSTRALIA	University of California, Berkeley	USA
DAUMKE Oliver	GERMANY	Laboratory of Molecular Biology, Cambridge	UK
DE FELICE Fernanda	BRAZIL	Northwestern University, Evanston	USA
DEL BENE Filippo	ITALY	University of California, San Francisco	USA
DEL BIANCO Cristina	ITALY	Harvard Medical School, Boston	USA
DOYLE Michael	UK	Friedrich Miescher Institute, Basel	SWITZERLAND
DRUKKER Micha	ISRAEL/THE NETHERLANDS	Stanford University School of Medicine, Palo Alto	USA
ENNINGA Jost	GERMANY	Institut Pasteur, Paris	FRANCE
FIAUX Jocelyne	SWITZERLAND	University of Heidelberg	GERMANY
FIEVET Bruno	FRANCE	University of Cambridge	UK
FOXTON-FREELAND Jessica	UK	INSERM, Lyon	FRANCE
FRAZIER Ann	USA	La Trobe University, Melbourne	AUSTRALIA
FUKAMACHI Shoji	JAPAN	University of Konstanz	GERMANY
GALLIO Marco	ITALY	University of California, La Jolla	USA
GATFIELD David	GERMANY/UK	University of Geneva	SWITZERLAND
GODI Anna	ITALY	Institute of Cancer Research, London	UK
GOLLISCH Tim	GERMANY	Harvard University, Cambridge	USA
GOMPEL Nicolas	FRANCE	University of Cambridge	UK
GROSS Einav	ISRAEL	The Medical Research Council, Cambridge	UK
HACHET Olivier	FRANCE	ISREC, Epalinges	SWITZERLAND
HANAYAMA Rikinari	JAPAN	Harvard Medical School, Boston	USA
HARPER Shannon	USA	University Medical Center, Utrecht	THE NETHERLANDS
HATZIS Pantelis	GREECE	The Netherlands Inst. for Developmental Biology, Utrecht	THE NETHERLANDS
HSU Shang-Te Danny	TAIWAN CHINA	Cambridge University	UK
JONKER Johan	THE NETHERLANDS	The Salk Institute for Biological Studies, La Jolla	USA
JOSPIN Maelle	FRANCE	University of Utah, Salt Lake City	USA
KONISHI Akimitsu	JAPAN	The Rockefeller University, New York	USA
KOPROWSKI Piotr	POLAND	University of California, Berkeley	USA
LACHNER Monika	GERMANY	The Rockefeller University, New York	USA
LENART Peter	HUNGARY	Research Institute of Molecular Pathology, Vienna	AUSTRIA
LINDING Rune	DENMARK	Samuel Lunenfeld Research Institute, Toronto	CANADA
LIPPMAN Zachary	USA	Hebrew University, Rehovot	ISRAEL
MAIZEL Alexis	FRANCE	Cold Spring Harbor Laboratory	USA

Name	Nationality	Host institute	Host country
MARO Géraldine	FRANCE	Stanford University	USA
MCMANUS Edward	IRELAND	Walter & Eliza Hall Inst. of Medical Research, Melbourne	AUSTRALIA
MIYAMOTO Tetsuya	JAPAN	Duke University Medical Center, Durham	USA
MOUSSON Florence	FRANCE	University Medical Centre, Utrecht	THE NETHERLANDS
NAKANO Hiroaki	JAPAN	Royal Swedish Academy of Sciences, Fiskebackskil	SWEDEN
NIELSEN Thomas	DENMARK/UK	Harvard Medical School, Boston	USA
NIITTYLA Totte	FINLAND	Stanford University, Palo Alto	USA
NIWA Ryusuke	JAPAN	Yale University, New Haven	USA
OSE Toyoyuki	JAPAN	Oxford University	UK
PAPP Balazs	HUNGARY	University of Manchester	UK
PHILIPP Melanie	GERMANY	Duke University Medical Center, Durham	USA
POULET James	UK	Ecole Polytechnique Fédérale, Lausanne	SWITZERLAND
PROBST Hans Christian	GERMANY	MRC Laboratory of Molecular Biology, Cambridge	UK
PUIG Maria Victoria	SPAIN	Massachusetts Institute of Technology, Cambridge	USA
QUINTANA Francisco	ARGENTINA	Brigham and Women's Hospital, Boston	USA
RABUT Gwenaél	FRANCE	ETH, Zurich	SWITZERLAND
RIZZOLI Silvio	ROMANIA	MPI for Biophysical Chemistry, Goettingen	GERMANY
SANGHA Susan	CANADA	University Hospital, Münster	GERMANY
SANTOS DA SILVA Jorge Pedro	PORTUGAL	Cold Spring Harbor Laboratory	USA
SAVASKAN Nicolai	GERMANY	The Netherlands Cancer Institute, Amsterdam	THE NETHERLANDS
SCHMEING Thomas Martin	CANADA/USA	MRC Laboratory of Molecular Biology, Cambridge	UK
SCHMID Manfred	AUSTRIA	Aarhus University	DENMARK
SCHNEIDER Claudia	GERMANY	University of Edinburgh	UK
SEITZ Hervé	FRANCE	University of Massachusetts Medical School, Worcester	USA
SHEMER Gideon	ISRAEL	University of North Carolina, Chapel Hill	USA
SHIBUE Tsukasa	JAPAN	Whitehead Institute for Biomedical Research, Cambridge	USA
SHORT Benjamin	UK	The Rockefeller University, New York	USA
SIEMENS Jan	GERMANY	University of California, San Francisco	USA
SILBERBERG Gilad	ISRAEL/SWEDEN	Karolinska Institute, Stockholm	SWEDEN
SMITH Michael	USA	ETH, Zurich	SWITZERLAND
SOYANO Takashi	JAPAN	The Rockefeller University, New York	USA
STENSMYR Marcus	SWEDEN	The Rockefeller University, New York	USA
TANABE Seiji	JAPAN	National Institutes of Health, Bethesda	USA
TANAKA Hirokazu	JAPAN	University of Tuebingen	GERMANY
TERRILLON Sonia	FRANCE	Stony Brook University	USA
TOPALIDOU Iriani	GREECE	Columbia University, New York	USA
VAN BREUGEL Mark	GERMANY	MRC-LMB, Cambridge	UK
VOGEL Christine	GERMANY	University of Texas, Austin	USA
VOLZ Jennifer	GERMANY	Walter & Eliza Hall Inst. of Medical Research, Parkville	AUSTRALIA
VRONTOU Sophia	GREECE	California Institute of Technology, Pasadena	USA
WALSH Gregory	CANADA	Fred Hutchinson Cancer Research Center, Seattle	USA
WERNER Thomas	GERMANY	University of Wisconsin-Madison	USA
WULFF Brande	DENMARK	Inst. for Molecular and Cell Biology of Plants, Valencia	SPAIN
YERUSHALMI Roie	ISRAEL	Harvard University, Cambridge	USA
ZHU Ping	CHINA	University of California, La Jolla	USA

2. Cross-Disciplinary Fellowships⁹

Name	Nationality	Host institute	Host country
ALBERTIN Luca	ITALY	CNRS, Lyon	FRANCE
BEN-TABOU DE-LEON Smadar	ISRAEL	California Institute of Technology, Pasadena	USA
BIRON David	ISRAEL	Harvard Univ., Cambridge / Brandeis Univ., Waltham	USA
CHARVIN Gilles	FRANCE	The Rockefeller University, New York	USA
EBENSTEIN Yuval	AUSTRIA/ISRAEL	University of California, Los Angeles	USA
ELDAR Avigdor	ISRAEL	California Institute of Technology, Pasadena	USA
NARAYANAN Rishikesh	INDIA	University of Texas, Austin	USA
PÉCRÉAUX Jacques	FRANCE	MPI of Molecular Cell Biology and Genetics, Dresden	GERMANY
PUCHEAULT Mathieu	FRANCE	Yale University, New Haven	USA
ROUX Aurélien	FRANCE	Yale University School of Medecine, New Haven	USA
TAKAHASHI Koichi	JAPAN	The Molecular Sciences Institute, Berkeley	USA
VALERIO Roberto	SPAIN	CNRS, Gif-sur-Yvette	FRANCE

⁹ The full list of awards with titles and abstracts is available on the website (www.hfsp.org)

ANNEX

6

**CAREER DEVELOPMENT
AWARDS 2005¹⁰**

¹⁰ The full list of awards with titles and abstracts is available on the website (www.hfsp.org)

Name	Nationality	Institute of CDA	Country of CDA
BRAND Marjorie*	FRANCE	University of Ottawa	CANADA
CARLYLE James	CANADA	University of Toronto	CANADA
CORNEIL Brian D.	CANADA	University of Western Ontario, London	CANADA
DORRIS Michael	CANADA	Queen's University, Kingston	CANADA
GAREL Sonia	FRANCE	Ecole Normale Supérieure, Paris	FRANCE
GERBER Andre	SWITZERLAND	Swiss Federal Institute of Technology , Zurich	SWITZERLAND
GOTTSCHALK Alexander	GERMANY	Johann Wolfgang Goethe-University, Frankfurt	GERMANY
JANSSEN Peter	BELGIUM	Catholic University, Leuven	BELGIUM
KOBAYASHI Katsunori	JAPAN	Nippon Medical School, Tokyo	JAPAN
LAUVAU Gregoire	FRANCE	University of Nice-Sophia Antipolis, Valbonne	FRANCE
MEDENDORP Wijbrand	THE NETHERLANDS	Radboud University Nijmegen	THE NETHERLANDS
MIZRAHI Adi	ISRAEL	The Hebrew University, Jerusalem	ISRAEL
MORILLON Antonin	FRANCE	CNRS, Gif-sur-Yvette	FRANCE
NGUYEN Minh Dang	CANADA	University of Calgary	CANADA
PALATNIK Javier	ARGENTINA	Institute of Molecular and Cellular Biology, Rosario	ARGENTINA
SCHNEIDER Robert	GERMANY	Max-Planck-Institute of Immunobiology, Freiburg	GERMANY
ULMER Tobias	GERMANY	Forschungsinstitut für Molekulare Pharmakologie, Berlin	GERMANY
VAZQUEZ SENTIS Eugenio	SPAIN	University of Santiago de Compostela	SPAIN

* Returned to the home country of the spouse

ANNEX

7

**SHORT-TERM FELLOWSHIPS
AWARDED IN 2005¹¹**

¹¹ The full list of awards with titles is available on our website (www.hfsp.org)

Name	Nationality	Host institute	Host country
BONTEMPI Bruno	FRANCE	University of Toronto	CANADA
BRAGONZI Alessandra	ITALY	Université Laval, Québec	CANADA
CHIOLO Irene	ITALY	University of Toronto	CANADA
COUVE Andres	CHILE	Universitätsklinikum Hamburg-Eppendorf	GERMANY
DELLA-MAGGIORE Valeria	ARGENTINA/ ITALY	University of Oxford	UK
DERRFUSS Jan	GERMANY	University of Oregon, Eugene	USA
EGLI Martin	SWITZERLAND	Seoul National University	KOREA (REPUBLIC OF)
FLORES MORALES Amilcar	COLOMBIA	Oxford University	UK
FRY Bryan	USA	University of Geneva and Swiss Institute of Bioinformatics	SWITZERLAND
HOUGHTON Conor	IRELAND	Boston University	USA
ISBRANDT Dirk	GERMANY	Rutgers University, Newark	USA
LARSEN Delmar	USA	Vrije Universiteit, Amsterdam	THE NETHERLANDS
LEV Paola	ARGENTINA	Albert Einstein College of Medicine, New York	USA
LEVY Raphaël	FRANCE	Mayo Clinic, Rochester	USA
* MacFARLANE Craig	AUSTRALIA	Universitat de les Illes Balears, Palma de Mallorca	SPAIN
* MALLORQUI Maria Goretti	SPAIN	Cornell University, New York	USA
MANGONI Alfonso	ITALY	The Scripps Institution of Oceanography, San Diego	USA
McKAY Leanne	UK	Institut de Neurobiologie - CNRS, Paris	FRANCE
MICHAELVSKI Yizhak	ISRAEL	University of California, San Francisco	USA
* NIESLER Beate	GERMANY	Columbia University, New York	USA
O'NEILL Alexander John	UK	Universität Witten / Herdecke	GERMANY
OPANOWICZ Magdalena	POLAND	John Innes Centre, Norwich	UK
SEXTON Patrick	AUSTRALIA	The Scripps Research Institute, La Jolla	USA
SKOWRONSKI Mariusz Tomas	POLAND	University of Aarhus	DENMARK
TAYLOR Matthew Daniel	UK	University Clinic, Bonn	GERMANY

* These awardees applied in fiscal year 2004 but have been awarded the fellowship in fiscal year 2005.

ANNEX

8

5TH AWARDEES
ANNUAL MEETING

Bethesda, Maryland, USA, 5-8 June 2005

Sunday 5 June

15:00-19:00 Registration

18:30-20:30 Reception

Monday 6 June

8:45-9:05 Opening remarks/Welcoming address

Oral session 1 (Chair: Angela Gronenborn)

9:05-9:25 Proteorhodopsins: ecological diversity, structure/ function, and adaptation

Spudich, J.L., Spudich, E.N., Partha, R., Wang, W.W., Sineshchekov, O.A.,
Man-Aharonovich, D., Sabeji, G., Bèjà, O.

9:25-9:45 The origin of O₂ on earth: the innovation and evolution of photosynthetic water oxidation

Ananyev, G.M., Nguyen, T., Dasgupta, J., Dismukes, G.C., Wydrzynski, T., Klimov, V.V.

9:45-10:05 Elucidating the role of aqueous environments in biological function with a nano-mechanical probe

Uchihashi, T., Higgins, M.J., Polcik, M., Jarvis, S.P., Riener, C., Watari, M., McKendry, R.A., Katan, A., Klein, D.,
Oosterkamp, T.H.

10:05-10:25 Structural and functional studies of the yeast ribosome and elongation factors

Nissen, P., Nilsson, J., Jørgensen, R., Andersen, C., Boesen, T., Andersen, G.R.,
Goldman, Y., Ortiz, P., Anand, M., Balar, B., Ulloque, R., Kinzy, T.G.

10:25-10:45 Subcellular organization of the brassinosteroid signaling pathway in Arabidopsis

Vert, G., Chory, J.

10:45-11:15 Coffee

Oral session 2 (Chair: Piergiorgio Strata)

11:15-11:35 Shallow and deep: a framework for better understanding plasticity in first and second language acquisition

Werker J. F., Marcus, G.

11:35-11:55 Dual modification of excitatory and inhibitory synapses on single developing Zebrafish tectal neurons by visual stimulation

Gong, L.Q., Zhang, X.H., Poo, M.M.

11:55-12:15 Arc expression in new born granule cells is evidence of their integration into hippocampal networks

Ramirez-Amaya, V., Letts, P., Gage, F.H., Worley, P.F., Barnes, C.A.

12:15-12:35 Specification and refinement of visual pathways by novel homeoprotein signaling

Hensch, T.K., Sugiyama, S., Brunet, I., Ruiz i Altaba, A., Holt, C.E., Harris, W.A., Prochiantz, A.

12:35-12:55 In vivo imaging of newborn neurons in the mouse olfactory bulb

Mizrahi, A., Feng, G., Katz, L.C.

12:55-14:00 Lunch

14:00-16:30 Poster session I

Plenary Lecture (Chair: Torsten Wiesel)

17:00-18:00 Unraveling the sense of smell

Linda Buck

Tuesday 7 June

Oral session 3 (Chair: Dan Kiehart)

- 8:45-9:05 Regulatory mechanisms in ubiquitin-dependent endocytosis
Chen, H., Collesi, C., Cremona, O., De Camilli, P.
- 9:05-9:25 Compartmentalization of the plasma membrane in T-cells
Lillemeier, B.F., Pfeiffer, J.R., Zhang, J., Wilson, B.S., Davis, M.M.
- 9:25-9:45 The kinesin Klp2 mediates polarization of interphase microtubules in fission yeast
Carazo Salas, R.E., Antony C., Nurse, P.M.
- 9:45-10:05 Tea4p links microtubule plus ends with the formin for3p in the establishment of cell polarity in fission yeast
Martin, S.G., McDonald, W.H., Yates III, J.R., Chang, F.
- 10:05-10:25 Can skin stem cells give rise to blood?
Greco, V., Guasch, G., Polak, L., Fuchs, E.
- 10:25-10:55 **Coffee**

Oral session 4 (Chair: Marco Bianchi)

- 10:55-11:15 The let-7 MicroRNA has important roles in development and disease
Großhans, H., Johnson, S.M., Johnson, T., Gerstein, M., Brown, D., Slack, F.J.
- 11:15-11:35 Integration of transcriptional networks during development and their effects on Drosophila progenitors
Orian, A., Bianchi-Frais, D., Delrow, J., Vazquez, J., Eisenman, R.N., Parkhurst, S.M.
- 11:35-11:55 A family of negative regulators of the E3 ligase and notch signaling component, neuralized
Bardin, A.J., Schweisguth, F.
- 11:55-12:15 Chaperone activity of protein O-fucosyltransferase 1 promotes notch receptor folding
Okajima, T., Xu, A., Lei, L., Irvine, K.D.
- 12:15-12:35 Synthetic glycosaminoglycan molecules for elucidating molecular mechanisms of neuronal growth and survival
Hsieh-Wilson, L.C., Nishi, A., Seeberger, P.H.
- 12:35-14:00 **Lunch**
- 14:00-16:30 **Poster session II**
- 17:00-18:00 **Open discussion with HFSP staff**

Wednesday 8 June

Oral session 5 (Chair: Yoo-Hun Suh)

- 8:45-9:05 Genes, neurons and circuits: unraveling the neural networks that control how animals walk
Goulding, M., Gosgnach, S., Lanuza, G., Butt, S., Narayan, S., Geiman, E., Zhang, Y., Glover, J., Pearson, K., Kiehn, O.
- 9:05-9:25 Hippocampal cells activity modified by microstimulation during spatial learning in the rat
Ego-Stengel, V., Wilson, M.A.
- 9:25-9:45 Spike phase precession persists after transient intrahippocampal perturbation
Zugaro, M.B., Monconduit, L., Buzsáki, G.
- 9:45-10:05 A combined physiological, genetic and viral approach to understand the structure and function of neural circuits
Roska, B., Meister, M., Cepko, C.L.
- 10:05-10:25 A novel role for the microRNA pathway in the control of local protein synthesis in neuronal dendrites
Schratt, G.M., Nigh, E.A., Greenberg, M.E.
- 10:25-10:55 **Coffee**

Oral session 6 (Chair: John Mattick)

- 10:55-11:15 Probing regulation of gene transcription by single molecule analysis
Finzi, L., Lia, G., Dunlap, D., Nelson, P., Lewis, D.A.E., Adhya, S.
- 11:15-11:35 Dissecting the role of RNAi in heterochromatin assembly in fission yeast
Verdel, A., Colmenares, C., Motamedi, R.M., Gerber, A.G., Gygi, P.G., Moazed, D.
- 11:35-11:55 Requirements for the de novo induction and propagation of a yeast prion
Tyedmers, J., Lindquist, S.
- 11:55-12:15 CDK-dependent phosphorylation of BRCA2 as a regulatory mechanism for recombinational repair
Esashi, F., Christ, N., Gannon, J., Liu, Y., Hunt, T., Jasin, M., West, S.C.
- 12:15-12:35 Stochastic control of transcriptional regulatory networks
Becskei, A., Kaufmann, B.B., van Oudenaarden, A.
- 12:35-14:00 **Lunch**
- 14:00-16:30 **Poster session III**

Plenary Lecture (Chair: Reiko Kuroda)

- 17:00-18:00 A mechanistic view of the ribosome
Steven Chu
- 19:30 **Farewell dinner**

ANNEX

9

PUBLIC RELATIONS

Web-site

The HFSP web site (<http://www.hfsp.org>) continues to give information on ongoing scientific activities of HFSP. The Hot off the Press rubric on the home page features recent papers of special interest published by HFSP awardees. Further sections related to the awardees and their work are planned. The Japan Science Foundation presents information on HFSP in Japanese on its own site (<http://jhfsp.jsf.or.jp>).

According to the internet search engine Google, almost 1800 web pages in web sites around the world link to the HFSP home page. These are mostly sites dedicated to summarizing funding opportunities (e.g. GrantsNet, BioMedNet), academic institutions (especially pages summarizing funding opportunities) and other funding agencies. In particular, efforts are continuing to link with the web pages of academic societies both within and outside the biological sciences so as to inform scientists in all disciplines of the opportunities offered by HFSP. An occasional electronic newsletter is sent out to over 6600 subscribers to inform them about HFSP activities and point to new information on the web site.

Scientific and science policy meetings

The Secretary-General and scientific directors attended the following scientific and science policy meetings:

April 2005 – March 2006

Accountability in Science Research Funding Workshop, "Meeting the Challenge", 1-2 June, Bonn, Germany

55th Meeting of Nobel Laureates, 26 June – 1 July, Lindau, Germany

Visit to Manchester University, 27-28 June, Manchester, UK

Annual Meeting of Fellows from the Boehringer Ingelheim Fonds, 21-26 August, Braunwald, Austria

Marie-Curie Conference, 28-30 September, Livorno/Pisa, Italy,

International Neuroinformatics Coordinating Facility Review, OECD, 3 November, Paris, France,

5th Symposium, European Network on Research Careers, 11 October, Brussels, Belgium

Annual Meeting of the Korean Society for Brain and Neural Science, 28 October, Seoul, Korea

OECD Global Science Forum, 3 November, Paris, France

Inauguration of Instituto de Neurociencias, 10 November, Alicante, Spain

World Science Forum, 12 November, Budapest, Hungary,

European Conference on Complex Systems, 14-16 November, Paris, France

BBSRC Conference, "The Next Generation", 28-29 November, London, UK

International Research Organisation Programs Meeting, CNRS, 30 November, Paris, France

EMBL alumni meeting, 15 February, London, UK

Japanese National Commission for HFSP and visit to Riken Research Center, 15-17 March, Tokyo, Japan

100th anniversary of the Nobel Prize in Physiology and Medicine to Santiago Ramón y Cajal, CSIC, 23 March, Madrid, Spain

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