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Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: General Science Files

OA/ID Number: 62039
Folder ID Number: 62039-009

Folder Title:
Life Sciences: Biotechnology [1 of 4] [1991]

Stack:

Row:

Section:

Shelf:

Position:

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TOP SECRET

RAYMOND J. SARNOSKY
GENERAL DELIVERY
POST OFFICE MALL
ANCHORAGE, AK 99510
SSN: 165 22 9740
DOB: -6 JULY 1929

Dear Sir,

Regarding the mysterious thyroid disease
of our president, George Bush, Mrs.
Barbara Bush, and their dog "Millie."

You are blind to the obvious.
I doubt that you are really looking
for the truth.

Micro wave ovens sell for about
\$99 each. There are millions of them
on the market.

If there ever was interference
on any channel of their television,
and a plane wasn't flying near,
then somebody left the ^{door} of their
micro wave oven open.

If president Bush or Mrs. Bush
ever felt sore muscles or numbness,
they were being cooked.

Fay

RAYMOND J. SARNOSKY
GENERAL DELIVERY
POST OFFICE MALL
ANCHORAGE, AK 99510

Dear Sir,

What is now called "science" is a joke. "Scientists" are wrong in ALL basic concepts. Gravity is completely misunderstood. The all-important unification of forces is ignored. Unification is the master key that determines whether the piece meal cause-and-effect experiments are correct. "Scientists" don't understand light, radio-x-rays, sub-atomic matter, the atom, the sun, electro-magnetism, mass, kinetic energy, and monopoles. The ridiculous idea that there is a black hole in space is utterly stupid. I can explain all this and much much more in simple English in a few sentences. You know Einstein. Well he had it all wrong. Thank goodness, for he left it for me to be the first to explain the basics which will become the truths with which "science" will really become science.

Ray

NATHANIEL C. SARNOBY #1151 233
WASHINGTON INTERNATIONAL HOSTEL
11TH & K ST (1009)
WASHINGTON, DC 20001
PH 703-549-0850 NO. 28

Dear Sir,

This science letter is at most one percent of the break thrus that I intend to teach the scientists of today. In order to evaluate my letter you need a unification theory, sometimes called the theory of everything, and sometimes called the string theory. Mr. Einstein's attempt to encompass sub-atomic, gravity, electro-magnetic, and the universe was called relativity; Max Planck called his attempt the Quantum theory. There is NO accepted theory; therefore, everything in science is suspect and subject to correction. My book will have the unification explanation that will become the master key to all science.

My science letter also requires an accurate knowledge of gravity. "Scientists" mistakenly believe that heat causes gravity, along with pressure and mass. Heat detracts from gravity. So the text books are wrong. Heat a magnet, and see what happens!

Also, evaluation of my science letter requires a correct understanding of light. "Scientists" can't agree whether or not light has mass, whether light is a beam, a ray, a wave, or if it travels as falling dominoes, or whether it travels at all.

"Scientists" are mathematical champions. They can use mathematics to prove that the entire universe came out of a space the size of a pin head. The numbers speak for themselves. To Hell with logic and common sense.

The temperatures of stars are calculated at millions of degrees. There is no thermometer. "Scientists" estimate that the tremendous gravity needs X no. of degrees to create the gravity. But heat does not create gravity. The book has to be changed. From the man to do it.

"Scientists" over and over repeat the same mistakes. \$8B is being spent on a super collider in Texas to find a top quark. There is none. If they had my unification explanation they could realize that sub-atomic building blocks have all been misinterpreted and the testing is entirely erroneous. Two protons repel each other, so they make a chargeless "anti-proton" to shoot into the proton. The scratches on the film plates is misinterpreted as sub-atomic indications like bottom quarks. What they see is X-rays - NOT sub-atomic particles. An X-ray only shows the degree of resistance encountered before the massless force is turned into light.

Ray Sarnoby

From wherever you are on Earth you can look up into a dome of a convex lens. The Earth's gravity force field is also a natural gravitational optic lens. The blurry-eyed Hubble telescope reportedly has a flaw in a mirror. It is not flawed; the telescope was not designed to correct the distortion caused by the Earth's lens. Scientists have failed to recognize the Earth's gravitational lens, even while describing "atmospheric spherical aberrations." The Hubble telescope designers mistakenly calculated that when the telescope was above the atmosphere the aberrations would disappear. That didn't happen because the gravity force field and its function as a lens extends far into space. When scientists finally recognize the gravitational optic lens, they will be able to resolve the problem of the atmospheric spherical aberrations.

One of the missions of the Hubble space telescope is to reach the horizon of the universe and examine the first stars created at the moment of the "big bang." By plotting the trajectories of these stars, their place of origin can be ascertained. Just look through a telescope lens, and you can see that the universe is expanding, and it is very disrupted outwardly. The stars on the horizon can be classified by using a spectrograph. The farthest stars appear to be accelerating away at double their normal speed. This is the accepted science. From these basics all data is calculated, interpreted, and classified.

It is totally incorrect. Instead of common sense scientists favor in depth cryptographic mathematics that mystifies rather than clarifies. Unfortunately scientists have excluded the truth in favor of perpetuating the mistakes printed in their text books in depth with mathematical embellishment.

It has been calculated that the sun has a strong enough gravity to bend light. It isn't the strength of the gravity that counts. The gravity fields of stars and planets extend far into space. The incoming light is received by the gravity force fields, and the light follows the naturally curved lens. The force fields are natural optic lenses for light. Most bodies in the universe are both spinning and orbiting, and the shortest distance between two points in space is an arc. The illusion that the stars are moving away from Earth and away from each other occurs when you look at space through a telescope. Light arriving on Earth from space has been arced, and the effect is like looking through a lens from horizon to horizon across a lens, not perpendicular through the center of the lens excluding the horizons; this space lens effect simulates a double strength red shift on the horizon of the universe. All this is the basis for the "big bang" theory and the apparent red shift. Everything ever seen through a telescope has been distorted as to its size, color, its travelling speed, temperature, composition, density, distance from Earth, direction it travels, etc. Everything ever computed about space has been in error. Scientists have wondered incredulously how the stars on the horizon of the universe double their speed. The Earth's gravitational optic lens and the space arced light have created a false red shift, when all the while the universe is relatively stable and regulated, just as it is in the solar system and the Milky Way galaxy.

Atmospheric spherical aberrations can be seen with the naked eye. Above the 360° of the Earth's horizon the clouds ring above the horizon. During an eclipse the clouds appear to ring the sun in ever widening circles. The trajectories of stars plotted backwards return to a pin point at the blind spot in front of the center of the lens; this blind spot becomes a mathematical singularity, and it computes to returning 20 billion light years in time space. It is the mythical place where the "big bang" occurred. When looking into a telescope the universe appears to be exploding away. The Earth's natural gravitational lens cannot be corrected. The corrections must be done within the telescope. The viewer and his telescope is additionally within the Earth's own optic lens, so that the

PLEASE ACKNOWLEDGE

distortion will vary with the time of day or night of observation, as the influence of the gravitational optic lenses of the sun and the moon overlap the Earth's lens. The distortion will be more pronounced during an eclipse.

The rainbow is irrefutable proof that the atmospheric spherical aberrations are in the sky above and not fashioned exclusively from manufacturing mistakes in telescope lenses and mirrors. The rainbow is a natural circular prism in the foreground of the gravitational lens within your horizon, so you can see not only atmospheric spherical aberrations with the naked eye, but you can also enjoy the beautiful technicolor panorama of the light refracted by the atmospheric prism. The prism and gravitational lens are the one and the same light refractor. The setting sun is greatly magnified as it settles toward the horizon. This is further proof that the sky has been magnified by the Earth's gravitational lens. As with any uncorrected lens, the Earth's gravitational lens has its most severe atmospheric spherical aberrations near the horizon.

Gravity fields are physical and at the same time optical as lenses. A meteor shower radiant is assumed to be arriving with the meteors parallel to each other, as rain drops fall parallel to each other, but the meteors appear to be expanding from a single point. The lens of the human eye has a blind spot in front of it where the light converges and the images are inverted; the light expands from this single point. This makes depth perception possible. With the Earth's lens this blind spot becomes the singularity that is the one and the same point of origin of the "big bang." All trajectories converge on this blind spot in every telescope, and it creates a perpetual "big bang," for the universe appears to be expanding from that point.

Abracadabra! From the horizon of the universe 20 billion light years into the past, as well as 20 billion light years into the Earth's future materialized in an instant through a blind spot in front of your telescope and you can create the fantasy world on which astro physics has been based. Credit the non-Euclidian geometry mathematicians with their in-depth studies in creating the mythical point of origin of the "big bang;" credit RAYMOND J. SARNOSKY with finding it.

You are invited to prove or disprove the concept that the Earth has a natural gravitational lens, because all gravity force fields are also lenses. Your further dissemination and publication of all or in part of this information is encouraged. Please reply. I have not received any negative arguments against this concept.

I have drafted a book of my corrections of the many mistakes in the astrophysics field. The book will explain the many unknowns to "scientists." It also disproves many supposed truths believed by "scientists." Even the atomic weights will have to be corrected. The unification theory will be put to rest once for all. Gravity will be explained so that everyone on Earth will know how and why it exists. I expect my theories to become the new textbook of the future, and the spin offs will produce the new technology, inventions, and industries of the future. This knowledge is worth billions of dollars in economic progress in commercial gains. Your interest in publishing this book is invited.

RAYMOND J. SARNOSKY

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9125243
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: THAMKITTIKASEM, Trin

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 12/16/91

SUBJECT: A LETTER EXPRESSING HIS VIEWS ON ETHICAL CONSTRAINTS
UPON SCIENTIFIC RESEARCH. HE REQUESTS DR. BROMLEY
CONSIDER HIS POSITION AND REPLY.

DIRECTORATE STAFF
ASSIGNED: LIFE SCIENCES ASSIGNED:

ACTION STAFF
REQUIRED: DIRECT REPLY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 01/13/91 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

OSTP RECEIVED: 12/30/91 DEPT RECEIVED:
FILE: LIFE SCIENCES-MISCONDUCT IN SCIENCE
CENTRAL FILES:

5243 A

524 W. Markland Drive

RECEIVED

Monterey Park, CA 91754

December 16, 1991

91 DEC 30 P2:23

Allan Bromley

Department of Science and Technology Policy

OSTP
MAIL ROOM

1600 Pennsylvania Avenue, NW 205000

Dear Mr. Bromley:

Recently, news headlines have been discussing scientific research with an increased intensity. This intensity, however, is not without its own improper ramifications. Protests and public displays which focus on matters of science have put pressure upon your department to impose ethical constraints upon scientific research. I am writing to you in the hopes of dissuading you from such actions. By imposing ethical constraints upon scientific research, the department would only be weighing down any chances of progress man has left.

With the millions of people dying of disease such as AIDS, Parkinson's, and Alzheimer's every day, scientific research to find a cure for these diseases is needed now more than ever. Though some argue that tampering with life is unethical, they fail to see the wondrous advantages of such tampering. Through genetic engineering, science can hope to end mental retardation and other genetic disorders. Through fetal experimentations, science will also be able to help those whose only need is a fetal tissue transplant. Some say that such experimentation will only serve to increase abortions by making it a market, but they are also wrong. Science

has the purpose of preserving and furthering life, not promote its death. Scientists will not go shopping for aborted fetuses, but will only use those supplied by justifiable abortions, which include victims of rape or incest. Abortions will also not increase in the hopes of finding the perfect child. When genetic engineering is able to determine the present and future conditions of babies, scientists will also be able to utilize the results of their research to solve any problems which might afflict them or others. Furthermore, many cures come about through animal testing. Arguments have been brought about questioning the pertinence of animal testing, but animal research is only an expression of the Utilitarian philosophy, which is the greatest good for the greater amount of people. Though animal testing has been seen by many to be an unethical act, animal research only serves to preserve millions of lives at the price of a few. By placing ethical constraints, these experimentations and the cures that come from them will become scarce and very possibly nonexistent.

What I ask of you, Mr. Bromley, is that you stand firm and not place ethical constraints upon scientific research. Some argue that science can work as effectively with ethical constraints as without, but it is simply not true. Scientists will no longer have the means to research possible harms or cures. Without being able to test their discoveries, they may end up killing millions. I would like for you and your department to not succumb to any outside pressure, and continue the progress you have already begun. Do not let ethical constraints impede upon progress or our quality of life; keep them from weighing down scientific research.

Mr. Bromley, I would like to thank you for taking the time to address my letter and would like to ask of you a response to this letter.

letter. I know your decision will not be an easy one and will take into mind a wide variety of aspects, but please consider mine and respond. Thank you for your attention.

Sincerely,

Trin Thamkittikasem

Trin Thamkittikasem

"Document Control for Division of Life Sciences"

TYPE: ACTION DOCUMENT NUMBER: 9200014
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS C

FROM: SARMA, Mukti H.: CANCER WATCH

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 12/28/91

SUBJECT: HE IS PROVIDING DR. BROMLEY WITH AN AUTOGRAPHED COPY
OF THE PREMIER ISSUE OF THE MONTHLY NEWS AND
EDUCATIONAL MAGAZINE, CANCER WATCH. COMMENTS AND
SUGGESTIONS ARE APPRECIATED.

DIRECTORATE STAFF
ASSIGNED: LIFE SCIENCES ASSIGNED:

ACTION STAFF
REQUIRED: AS APPROPRIATE ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 02/05/92 STAFF DUE DATE
DATE COMPLETED: 01/13/92 DATE COMPLETED/DEPT: 01/13/92

COPIES TO: D. Allan Bromley



WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS: PLEASE NOTE: THE DUE DATE FOR THIS ITEM HAS BEEN EXTENDED.--Per
Marian, DAB responded to this action item on 1/13/92.
[dic/1/23/92]

OSTP RECEIVED: 01/06/92 DEPT RECEIVED:
FILE: P-LIFE SCIENCES

CENTRAL FILES:



"Document Control"

TYPE: ACTION
ORIGINATOR: 02

DOCUMENT NUMBER: 9200014
DIRECTORATE STATUS

FROM: SARMA, Mukti H.: CANCER WATCH

TO: DR. D.A. BROMLEY

*1/23/92 per Sarma
- - - - -
MHA
responder*

DATE OF
CORRESPONDENCE: 12/28/91

SUBJECT: HE IS PROVIDING DR. BROMLEY WITH AN AUTOGRAPHED COPY
OF THE PREMIER ISSUE OF THE MONTHLY NEWS AND
EDUCATIONAL MAGAZINE, CANCER WATCH. COMMENTS AND
SUGGESTIONS ARE APPRECIATED.

DIRECTORATE
ASSIGNED: L.F.F.

ACTION
REQUIRED:

OSTP DUE D
DATE COMPLE

COPIES TO:

*1/7/92
Waiting for arrival
of publication, which
has been routed
 thru 358*

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE:

EXT:

REMARKS: PLEASE NOTE: THE DUE DATE FOR THIS ITEM HAS B

*1/23/91
Chandler will
change due
date*

OSTP RECEIVED: 01/06/92
FILE: LIFE SCIENCES

DEPT RECEIVED:

CENTRAL FILES:

THE WHITE HOUSE
WASHINGTON

1/23

Donna,
Thanks for
catching this...

Marian

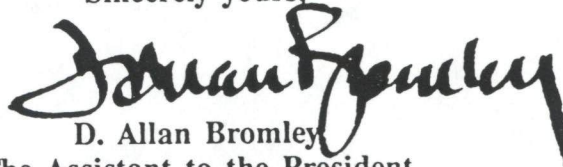
January 13, 1992

Dear Dr. Sarma:

Many thanks for a copy of the initial issue of your new magazine. It is attractively produced and I have read it with both interest and profit. I would also congratulate you on your outstanding graphics.

With all best wishes,

Sincerely yours,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley", written in a cursive style.

D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Mukti H. Sarma
Editor
Cancer Watch
Adenine Press
2066 Central Avenue
Schenectady, New York 12304

0014

CANCER WATCH

Mukti H. Sarma, Ph.D. Editor
Phone: 518-442-4431
518-456-0784
FAX: 518-452-4955

The Monthly News and Educational Magazine of Cancer Research

RECEIVED
92 JAN 6 P2:45
OSTP
MAIL ROOM

Honorable D. Allan Bromley
Office of Science & Technology
Old Executive Office Bldg
17th St Pennsylvania Ave NW
Washington DC 20506

Dear Honorable Bromley:

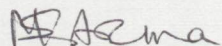
It is with great pleasure I send you the enclosed autographed premier issue of the monthly news and educational magazine, CANCER WATCH. A major mission of the magazine is to bring advanced information in cancer research in simple form to the interested people. We explain complex scientific discoveries in understandable language without compromising the quality of the information. In order to avoid overloading the readers with information the magazine focuses only on what is truly significant and is limited to 16 pages. Extensive illustrations and paintings are included in the hope that materials of this type could be used in high schools and in the education of non-science majors in colleges and universities. In addition the magazine features a glossary. Many students have a built-in resistance to science education. We hope that this innovative presentation of science will help to overcome this resistance.

I will greatly value your comments and suggestions.

Looking forward to hearing from you.

Wishing you a happy New Year.

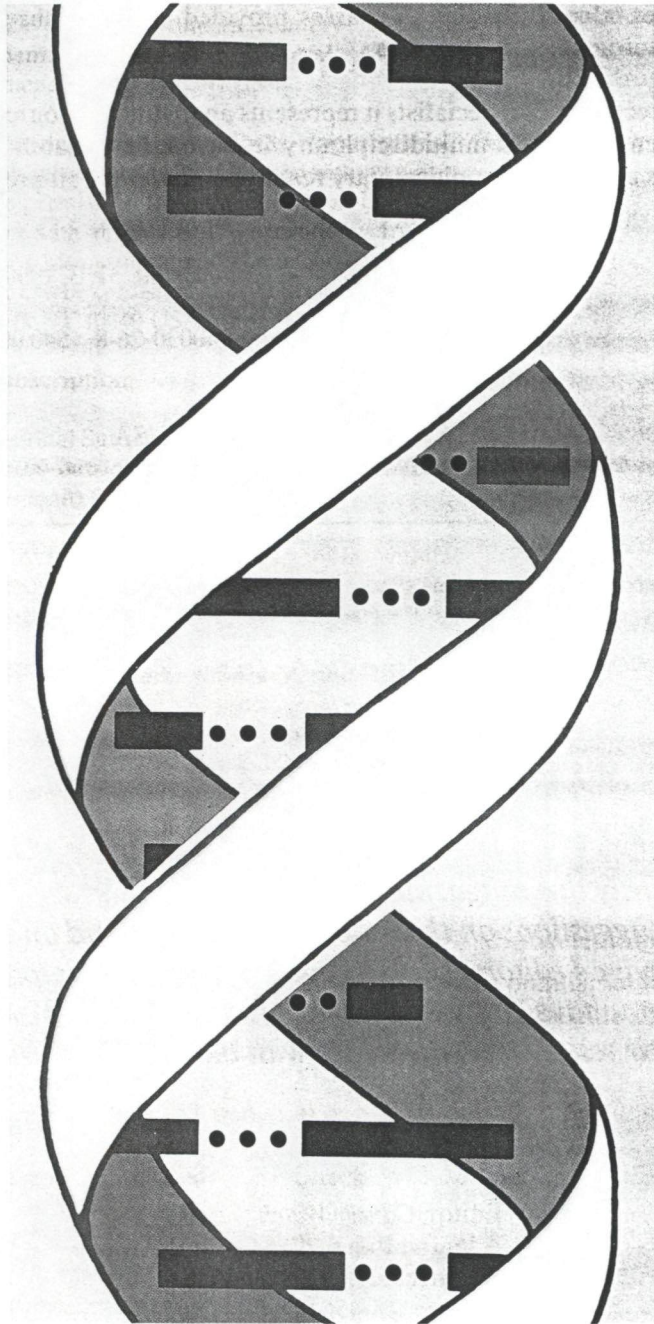
Sincerely,



Mukti H. Sarma
Dec. 28, 1991

CANCER WATCH

The Monthly News and Educational Magazine of Cancer Research



JANUARY 1992

VOLUME 1 NUMBER 1 PAGES 1-16

The mission of this magazine is to transform the expanding technical information on cancer research into understandable language to the curious and the informed.

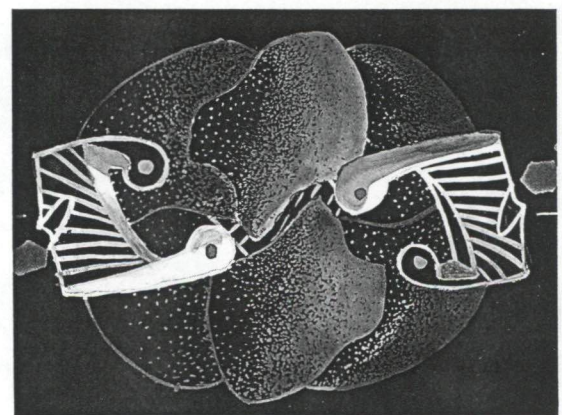
Breast Cancer: Diagnosis

DNA, The Master Molecule & Cancer

Chromosome Imprinting:
A Novel Model for Cancer

Cell Suicide and Oncogenesis

Multiple Drug Resistance and Cancer



Adenine Press, 2066 Central Avenue, Schenectady, New York NY 12304 USA

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9125128

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: GREEN, Jerome G.: DEPARTMENT OF HEALTH AND HUMAN SERVICES

TO: DR. D.A. BROMLEY

① DAB
② Tom Ratchford

DATE OF
CORRESPONDENCE: 12/10/91

SUBJECT: HE IS PROVIDING DR. BROMLEY WITH A COPY OF THE HUMAN
FRONTIER SCIENCE PROGRAM REPORT.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT: 12/24/91

COPIES TO: D. Allan Bromley
LIFE SCIENCES

Tom Ratchford

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

CLOSED

OSTP RECEIVED: 12/17/91
FILE: P-LIFE SCIENCES

DEPT RECEIVED:

CENTRAL FILES:



DEPARTMENT OF HEALTH & HUMAN SERVICES

5128 I
Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

RECEIVED

91 DEC 17 A 9: 51

December 10, 1991

OSTP
MAIL ROOM

TO: Dr. D. Allan Bromley
The Assistant to the President
for Science and Technology

FROM: Director
Division of Research Grants, NIH

SUBJECT: Report of the Human Frontier Science Program

Sir James Gowans, the Secretary General of the Human Frontier Science Program (HFSP) has asked me to forward a copy of the HFSP report to you. He told me that an earlier, proof copy had been sent to Dr. Ratchford. The report, in three thin volumes, covers the program through July 1991.

As you know, Dr. Mary Clutter of NSF and I are serving as Trustees.

If you have any questions, please let me know (301-496-7211).

Jerome G. Green
Jerome G. Green, M.D.

Attachment

THE WHITE HOUSE
WASHINGTON

December 24, 1991

Dear Dr. Green:

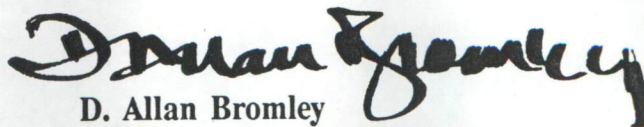
Many thanks for sending me the reports of the Human Frontier Science Program. When I was in Strasbourg in early December I had an opportunity to meet with Sir James Gowans and a few of his senior staff. I also had an opportunity to meet with the Mayor of Strasbourg and the President of the University of Strasbourg and was treated to a rather remarkable display of local support for Sir James and the Human Frontier Science Program by his Strasbourg neighbors.

As you know, when I was in Japan in October, I told the Japanese that the President would be announcing our firm financial support for the HFSC during his visit now scheduled in Tokyo for January 7-10. As you also know, the funding that had been agreed to for this particular support of the program was obtained equally from DOE, NSF, NIH and partially from NASA. Although the President clearly will make the announcements in Japan, there has, I am afraid, been a wide array of leaks so that the exact amount that we have been contemplating is already known to the Japanese and clearly expected.

In my discussion yesterday with Dr. Healy, she mentioned the possibility that NIH might be unable to be forthcoming with its agreed contribution to the HFSC and while I understand the pressures that might suggest such a course of action, I would very much hope that because of the President's personal involvement in this matter that NIH would find it possible to make the original contribution.

With all best wishes,

Sincerely yours,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Jerome G. Green
Director
Division of Research Grants
National Institutes of Health
Bethesda, Maryland 20892

THE WHITE HOUSE

WASHINGTON

December 24, 1991

Dear Dr. Green:

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With all best wishes,

Sincerely yours,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley", written in a cursive style.

D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Jerome G. Green
Director
Division of Research Grants
National Institutes of Health
Bethesda, Maryland 20892

AWARDEES 1990



THE INTERNATIONAL HUMAN FRONTIER SCIENCE PROGRAM

(HFSP)

CONTENTS

pp.	1-15	Research Grants
	17- 31	Long-Term Fellowships
	33-37	Short-Term Fellowships
	39-41	Workshops

RESEARCH GRANTS

ANRAKU, Yasuhiro	Dept. of Biology, Faculty of Science University of Tokyo - JAPAN
GENNIS, Robert B.	Dept. of Biochemistry University of Illinois, Urbana - U.S.A.
FUTAI, Masamitsu	Inst. of Scientific & Industrial Research Osaka University - JAPAN
FILLINGAME, Robert H.	Dept. of Physiological Chemistry . University of Wisconsin Medical School, Madison - U.S.A.

Molecular Mechanics of Electron Transport-Coupled Phosphorylation.

US\$ 1,200,000

BERNS, Anton	Division of Molecular Genetics The Netherlands Cancer Institute, Amsterdam THE NETHERLANDS
TONEGAWA, Susumu	Howard Hughes Medical Institute M.I.T., Cambridge - U.S.A.
HOOPER, Martin Leslie	Dept. of Pathology, Med. School University of Edinburgh - U.K.
ANSELL, John	Dept. of Zoology University of Edinburgh - U.K.

Mutagenesis of T Cell Receptor Genes to Study the Role of $\alpha\beta$ and $\gamma\delta$ T Cells in Normal and Aberrant T Cell Maturation and Function.

US\$ 750,000

BRENT, Roger	Dept. of Molecular Biology Massachusetts General Hospital, Boston - U.S.A.
ISH-HOROWICZ, David	Imperial Cancer Research Fund, Developmental Biology Unit Oxford University - U.K.

Control of Development and Cell Growth by Helix Loop Helix Proteins.

US\$ 450,000

DELISI, Charles	College of Engineering Boston University - U.S.A.
KANEHISA, Minoru	Institute for Chemical Research Kyoto University - JAPAN
SANDERS, Chris	Biocomputing Program European Molecular Biology Laboratory Heidelberg - GERMANY

Advanced Computation and Artificial Intelligence in Genomic Research.

US\$ 600,000

ENDO, Toshiya	Dept. of Chemistry, Faculty of Science Nagoya University - JAPAN
SCHATZ, Gottfried	Biocenter, University of Basel SWITZERLAND
WEISBEEK, Peter	Dept. of Molecular Cell Biology University of Utrecht - THE NETHERLANDS

Molecular Recognition in the Assembly of Mitochondria and Chloroplasts.

US\$ 600,000

FUKASAWA, Toshio	Keio University School of Medicine Tokyo - JAPAN
KORNBERG, Roger D.	Dept. of Cell Biology Stanford University - U.S.A.
JOHNSTON, Stephen A.	Dept. of Botany Duke University, Durham - U.S.A.
HANDA, Hiroshi	Dept. of Bacteriology, Faculty of Medicine University of Tokyo - JAPAN

Structure and Mechanisms of a Eukaryotic Gene Regulatory Circuit.

US\$ 900,000

GHYSEN, Alain	Lab. of Genetics Free University of Brussels - BELGIUM
DAMBLY-CHAUDIERE, Christine	Lab. of Genetics Free University of Brussels - BELGIUM
UEDA, Ryu	Lab. of Cell Biology Mitsubishi Kasei Institute of Life Sciences, Tokyo - JAPAN
KIMURA, Ken-Ichi	Lab. of Biology Hokkaido University of Education, Iwamizawa - JAPAN

Genesis of the Peripheral Nervous System in Drosophila : Cell Biology, Genetics and Molecular Biology.

US\$ 600,000

GLOVER, David Moore	Dept. of Biochemistry The University of Dundee - U.K.
YANAGIDA, Mitsuhiro	Dept. of Biophysics, Faculty of Science Kyoto University - JAPAN
COHEN, Patricia T. W.	Dept. of Biochemistry The University of Dundee - U.K.
COHEN, Philip	Dept. of Biochemistry The University of Dundee - U.K.
KARSENTI, Eric	European Molecular Biology Laboratory Heidelberg - GERMANY

Phosphatases and Other Proteins Essential in all Higher Organisms to the Fundamental Process of Cell Division.

US\$ 1,050,000

HONJO, Tasuku	Dept. of Medical Chemistry, Faculty of Medicine Kyoto University - JAPAN
LOH, Dennis	Washington University School of Medicine St. Louis - U.S.A.
MAK, Tak	The Ontario Cancer Institute Toronto - CANADA

Regulation of DNA Rearrangement and Lymphocyte Differentiation.

US\$ 750,000

INAGAKI, Fuyuhiko	Dept. of Molecular Physiology Tokyo Metropolitan Institute of Med. Science - JAPAN
SCHLESSINGER, Joseph	Dept. of Pharmacology New York University Med. Center - U.S.A.
ULLRICH, Axel	Max-Planck-Institute für Biochemie Martinsried - GERMANY
GO, Nobuhiro	Dept. of Chemistry, Faculty of Science Kyoto University - JAPAN

Elucidation of Molecular Mechanisms of Hormone-Receptor Interaction and Signal Transduction.

US\$ 1,200,000

KLUG, Aaron	MRC, Lab. of Molecular Biology Cambridge - U.K.
THØGERSEN, Hans Christian	Lab. of Gene Expression, Dept. of Chemistry & Molecular Biology University of Aarhus - DENMARK
MORIKAWA, Kosuke	Dept. of Protein Crystallography Protein Engineering Research Institute, Osaka - JAPAN
NAGAI, Kiyoshi	MRC, Lab. of Molecular Biology Cambridge - U.K.
RHODES, Daniela	MRC, Lab. of Molecular Biology Cambridge - U.K.

Structural Studies on Nucleic Acid Binding Proteins and Their Interactions with Nucleic Acids.

US\$ 600,000

LATHROP, Gregory Mark	INSERM, Human Polymorphism Study Center Paris - FRANCE
NAKAMURA, Yusuke	Division of Biochemistry Cancer Institute, Tokyo - JAPAN
JULIER, Cécile	INSERM, Human Polymorphism Study Center Paris - FRANCE
JAMES, Michael	INSERM, Human Polymorphism Study Center Paris - FRANCE

Ataxia-Telangiectasia and Other Genetic Diseases on Chromosome 11.

US\$ 600,000

ROTHMAN, James Edward Dept. of Biology
Princeton University - U.S.A.

ORCI, Lelio Institute of Histology & Embryology, Faculty of Medicine
University of Geneva - SWITZERLAND

WIELAND, Felix Theodor Institute for Biochemistry I
University of Heidelberg - GERMANY

Molecular Recognition in Protein Targetting and Vesicular Traffic

US\$ 600,000

SÖLL, Dieter Dept. of Molecular Biophysics & Biochemistry
Yale University, New Haven - U.S.A.

OKADA, Kiyotaka Division of Gene Expression and Regulation
National Institute for Basic Biology, Okazaki - JAPAN

PALME, Klaus Max-Planck-Institut für Züchtungsforschung
Köln - GERMANY

Molecular Analysis of Auxin-Specific Signal Transduction in Plant Cell Communication.

US\$ 900,000

SOMLYO, Andrew Paul Dept. of Physiology
University of Virginia, Charlottesville - U.S.A.

TAKAI, Yoshimi Dept. of Biochemistry
Kobe University School of Medicine - JAPAN

TRENTHAM, David R. Division of Physical Biochemistry
National Institute for Medical Research, London - U.K.

KITAZAWA, Toshio Dept. of Physiology
University of Virginia, Charlottesville - U.S.A.

KOBAYASHI, Sei Dept. of Physiology
University of Virginia, Charlottesville - U.S.A.

Signal Transduction and Cellular Regulation in Smooth Muscle.

US\$ 900,000

WEISSMAN, Sherman	Dept. of Human Genetics Yale University School of Medicine, New Haven - U.S.A.
YASUKOCHI, Yukio	Dept. of Human Genetics, Medical Research Inst. Tokyo Medical & Dental University - JAPAN
GERMINO, Joseph	Dept. of Human Genetics Yale University School of Medicine, New Haven - U.S.A.
SIGLER, Paul	Dept. of Molecular Biophysics & Biochemistry Yale University School of Medicine, New Haven - U.S.A.
BIGGIN, Mark	Dept. of Molecular Biophysics & Biochemistry Yale University School of Medicine, New Haven - U.S.A.
WARD, David	Dept. of Human Genetics Yale University School of Medicine, New Haven - U.S.A.

Structure and Function of the General Transcription Apparatus of Animals Cells.

US\$ 450,000

YOKOYAMA, Shigeyuki	Dept. of Biophysics & Biochemistry University of Tokyo - JAPAN
SCHIMMEL, Paul	Dept. of Biology M.I.T., Cambridge - U.S.A.
EBEL, Jean-Pierre	Institut de Biologie Moléculaire et Cellulaire du CNRS Strasbourg - FRANCE

Molecular Recognition of Transfer RNA.

US\$ 900,000

BLAKEMORE, Colin	Laboratory of Physiology University of Oxford - U.K.
LARKMAN, Alan Urquhart	Laboratory of Physiology University of Oxford - U.K.
TOYAMA, Keisuke	Kyoto Prefectural University of Medicine JAPAN
YAMAMOTO, Nobuhiko	Dept. of Physiology Kyoto Prefectural University of Medicine - JAPAN
KOMATSU, Yukio	Kyoto Prefectural University of Medicine JAPAN
LYNCH, Gary	Center for the Neurobiology of Learning and Memory University of California, Irvine - U.S.A.
BAUDRY, Michel	Center for the Neurobiology of Learning and Memory University of California, Irvine - U.S.A.
GRANGER, Richard H. Jr.	Center for the Neurobiology of Learning and Memory University of California, Irvine - U.S.A.
CREPEL, Francis	CNRS Lab. de Neurobiologie & Neuropharmacologie du Développement, Université Paris XI - FRANCE
HIRSCH, June	CNRS Lab. de Neurobiologie & Neuropharmacologie du Développement, Université Paris XI - FRANCE
AUDINAT, Etienne	CNRS Lab. de Neurobiologie & Neuropharmacologie du Développement, Université Paris XI - FRANCE
CONDE, Françoise	CNRS Lab. de Neurobiologie & Neuropharmacologie du Développement, Université Paris XI - FRANCE
CYNADER, Max	Dept. of Ophthalmology University of British Columbia, Vancouver - CANADA
ALEKSANDER, Igor	Electrical Engineering Dept. Imperial College of Science, Technology & Medicine, London - UK
JACK, Julian	Laboratory of Physiology University of Oxford - U.K.
TRAUB, Roger Dennis	Dept. of Physiological Sciences IBM T.J. Watson Research Center, Yorktown Heights - U.S.A.
KAWATO, Mitsuo	ATR Auditory & Visual Perception Research Labs Kyoto - JAPAN
DUFOSSE, Michel	Lab. de Neurosciences Fonctionnelles CNRS, Marseille - FRANCE
MARANNE, Eric	CNRS Lab. NeuroInformatique Mediterranean Institute of Technology, Marseille - FRANCE

BURNOD, Yves	Institut des Neurosciences Institut National de la Recherche Medicale, Paris - FRANCE
SWINDALE, Nicholas	Dept. Ophthalmology University of British Columbia, Vancouver - CANADA

Mechanisms of Plasticity and Principles of Neuronal Computation in the Cerebral Cortex.

US\$ 675,000

BLISS, Timothy V.P.	Div. of Neurophysiology & Neuropharmacology National Inst. for Medical Research, London - U.K.
ABRAHAM, Wickliffe Carson	Dept. of Psychology University of Otago, Dunedin - NEW ZEALAND
ANGELIDES, Kimon	Dept. of Physiology & Molecular Biophysics Baylor College of Medicine, Houston - U.S.A.
ASCHER, Philippe	Laboratoire de Neurobiologie Ecole Normale Supérieure, Paris - FRANCE
BEAR, Mark F.	Center for Neural Science Brown University, Providence - U.S.A.
COLLINGRIDGE, Graham L.	Dept. of Pharmacology, School of Med. Sciences University of Bristol - U.K.
FINE, Alan	Dept. of Physiology & Biophysics Dalhousie University, Halifax - CANADA
HUNT, Stephen Philip	MRC Molecular Neurobiology Unit Cambridge - U.K.
JOHNSON, Jon W.	Dept. of Behavioral Neuroscience University of Pittsburgh - U.S.A.
LAROCHE, Serge	Dépt. de Psychophysiologie CNRS, Gif-sur-Yvette - FRANCE
MALLET, Jacques	Dept. of Molecular Genetics CNRS, Gif-sur-Yvette - FRANCE
MORRIS, Richard G. M.	Dept. of Pharmacology University of Edinburgh - U.K.
SUGIYAMA, Hiroyuki	National Inst. for Psychological Sciences Okazaki National Research Institute - JAPAN
TATE, Warren Perry	Dept. of Biochemistry University of Otago, Dunedin - NEW ZEALAND

Functions and Mechanisms of Long-Term Potentiation and Long-Term Depression in the Hippocampus.

US\$ 990,000

BURROWS, Malcolm	Dept. of Zoology University of Cambridge - U.K.
LAURENT, Gilles Jean	Biology Division CalTech, Pasadena - U.S.A.
HISADA, Mithuhiko	Zoological Institute, Faculty of Science Hokkaido University, Sapporo - JAPAN
PFLÜGER, Hans-Joachim	Fachbereich Biologie, Institut für Neurobiologie Freie Universität Berlin - GERMANY

Functional Analysis of Local Circuits Controlling Movements.

US\$ 540,000

GRAYBIEL, Ann Martin	Dept. of Brain & Cognitive Sciences M.I.T., Cambridge - U.S.A.
KIMURA, Minoru	Dept. of Physiology Jichi Medical School, Tochigi-ken - JAPAN
KAWAGUCHI, Yasuo	Lab. for Neural Systems, Frontier Research Program Institute of Physical and Chemical Research, Saitama - JAPAN
IMAI, Hisamasa	Dept. of Neurology Juntendo University School of Medicine, Tokyo - JAPAN
KRUK, Zygmunt	The London Hospital Medical College University of London - U.K.
ROBERTSON, Harold	Dept. of Pharmacology Dalhousie University, Halifax - CANADA
COCHRAN, Brent	Biology Dept. M.I.T., Cambridge - U.S.A.

The Biology of Information Processing in the Striatum.

US\$ 1,050,000

JEANNEROD, Marc	Faculty of Medicine Université Claude Bernard, Lyon - FRANCE
ARBIB, Michael Anthony	Center for Neural Engineering University of Southern California, Los Angeles - U.S.A.
JORDAN, Michael Irwin	Dept. of Brain & Cognitive Sciences M.I.T., Cambridge - U.S.A.
JOSEPH, Jean-Paul	INSERM Unit 94 Bron - FRANCE
PRABLANC, Claude	INSERM Unit 94 Bron - FRANCE
RIZZOLATTI, Giacomo	Dept. of Physiology, School of Medicine University of Parma - ITALY
SAKATA, Hideo	Dept. of Physiology Nihon University School of Medicine, Tokyo - JAPAN

Neural and Behavioural Control of Reaching and Grasping.

US\$ 870,000

KUBOTA, Kisou	Dept. of Neurophysiology, Primate Research Institute Kyoto University - JAPAN
GOLDMAN-RAKIC, Patricia S.	Dept. of Neuroanatomy Yale University School of Medicine, New Haven - U.S.A.
RAKIC, Pasko	Dept. of Neuroanatomy Yale University School of Medicine, New Haven - U.S.A.
ARIKUNI, Tomio	Dept. of Anatomy Nihon University School of Medicine, Tokyo - JAPAN
KOJIMA, Shozo	Dept. of Psychology, Primate Research Institute Kyoto University - JAPAN
MIKAMI, Akichita	Dept. of Neurophysiology, Primate Research Institute Kyoto University - JAPAN

Comprehensive Approach to Working Memory in Monkey Prefrontal Cortex.

US\$ 990,000

MALLET, Jacques Lab. de Neurobiologie Cellulaire et Moléculaire
CNRS, Gif-sur-Yvette - FRANCE

BJÖRKLUND, Anders Dept. of Medical Cell Research
University of Lund - SWEDEN

LINDVALL, Olle Dept. of Neurology
University of Lund - SWEDEN

LE GAL-LA-SALLE, Gildas Lab. de Physiologie Nerveuse
CNRS, Gif-sur-Yvette - FRANCE

*Genetically Engineered Cells Producing Neurotransmitters and their Use for
Transplantation in Neurological Diseases.*

US\$ 1,155,000

MEHLER, Jacques Ecole des Hautes Etudes en Sciences Sociales
CNRS, Paris - FRANCE

CUTLER, Anne MRC Applied Psychology Unit
Cambridge - U.K.

HATANO, Giyoo Dokkyo University, Soka-shi - JAPAN

PERETZ, Isabelle Psychology Dept.
University of Montreal - CANADA

SEBASTIAN, Nuria Dept. Psicologia Basica
University of Barcelona - SPAIN

JUNCA DE MORAIS, José Lab. de Psychologie Expérimentale
Université Libre de Bruxelles - BELGIUM

Processing Consequences of Contrasting Language Phonologies.

US\$ 600,000

SPIESS, Joachim Dept. of Molecular Endocrinology
Max-Planck Institute for Experimental Medicine
Göttingen - GERMANY

HEINEMANN, Stephen Fox Molecular Neurobiology Lab.
The Salk Institute for Biological Studies, La Jolla - U.S.A.

*Functional and Structural Analysis and Cloning of the Human and Rodent Brain Glutamate
Receptors.*

US\$ 900,000

TERZUOLO, Carlo Agostino	Dept. of Physiology University of Minnesota, Minneapolis - U.S.A.
BERTHOZ, Alain	Lab. de Physiologie Neurosensorielle CNRS, Paris - FRANCE
LACQUANITI, Francesco	Istituto Fisiologia Centri Nervosi National Research Council, Milan - ITALY
SHINODA, Yoshikazu	Dept. of Physiology Tokyo Medical & Dental University - JAPAN
GEORGOPOULOS, Apostolos	Dept. of Neuroscience Johns Hopkins University School of Medicine, Baltimore - U.S.A.
POPPELE, Richard	Dept. of Physiology University of Minnesota, Minneapolis - U.S.A.

Computational, Adaptive and Cognitive Aspects of Motor Behaviors and Their Neuronal Basis.

US\$ 750,000

TSUMOTO, Tadaharu	Dept. of Neurophysiology Osaka University Medical School - JAPAN
STRYKER, Michael P.	Dept. of Physiology University of California, San Francisco - U.S.A.
SINGER, Wolf	Dept. of Neurophysiology Max-Planck Institute for Brain Research, Frankfurt - GERMANY
DAW, Nigel W.	Dept. of Cell Biology & Physiology Washington University School of Medicine, St. Louis - U.S.A.
FREGNAC, Yves	Lab. de Neurobiologie & Neuropharmacologie du Développement. Université Paris XI - FRANCE
HICKS, T. Philip	Dept. of Psychology University of North Carolina, Greensboro - U.S.A.
FREEMAN, Ralph D.	School of Optometry University of California, Berkeley - U.S.A.
VON DER MALSBERG, Christoph	Departments of Computer Science and Biology University of Southern California, Los Angeles - U.S.A.
KOCH, Christof	Divisions of Biology and Engineering and Applied Science CalTech, Pasadena - U.S.A.

An Integrative Approach to the Study of Visual Cortical Plasticity: From Molecular Mechanisms to Modelling.

US\$ 600,000

YOSHIZAWA, Tôru	Dept. of Biophysics, Faculty of Science Kyoto University - JAPAN
MAEDA, Akio	Dept. of Biophysics, Faculty of Science Kyoto University - JAPAN
SHICHIDA, Yoshinori	Dept. of Biophysics, Faculty of Science Kyoto University - JAPAN
FUKADA, Yoshitaka	Dept. of Biophysics, Faculty of Science Kyoto University - JAPAN
TOKUNAGA, Fumio	Dept. of Biology, Faculty of Science Osaka University - JAPAN
ABDULAEV, Najmoutin	Lab. of Light Sensitive Membrane Proteins Shemyakin Institute of Bioorganic Chemistry USSR Academy of Science, Miklukho-Maklaya - USSR
LUGTENBURG, Johannis	Dept. of Chemistry Leiden University - THE NETHERLANDS
NAKANISHI, Koji	Dept. of Chemistry Columbia University, New York - U.S.A.
LIU, Robert S. H.	Dept. of Chemistry University of Hawaii, Honolulu - U.S.A.

Molecular Mechanisms of Signal Transduction in Light and Color Receptor Cells.

US\$ 840,000

LONG - TERM FELLOWSHIPS

AROETI, Benjamin (Israel)

From : Dept. of Biochemistry, Tel Aviv University, Israel
To : Dept. of Anatomy, University of California, San Francisco, USA
2 years
Transepithelial Transport of Immunoglobulins.

BARABINO, Silvia Maria Luisa (Italy)

From : European Molecular Biology Laboratory, Heidelberg, Germany
To : European Molecular Biology Laboratory, Heidelberg, Germany
1.5 year
Structural and Functional Analysis of the Splicing Complex.

BARDWELL, Vivian June (Canada)

From : Dept. of Biochemistry, University of Wisconsin, Madison, USA
To : Imperial Cancer Research Fund, London, UK
2 years
DNA-Protein and Protein-Protein Interactions at the Serum Response Element.

BENECH, Philippe David (France)

From : Division of Hematology/Oncology, Children's Hospital, Boston, USA
To : Division of Hematology/Oncology, Children's Hospital, Boston, USA
2 years
Study of Macrophage Gene Expression : the Mannose and Fc Receptor Genes.

BILSLAND, Caroline A. G. (UK)

From : MRC Lab. of Molecular Biology, Cambridge, UK
To : The Center for Blood Research, Harvard Medical School, Boston, USA
2 years
Interaction of LFA-1 with its Ligand Molecules.

BORGMEYER, Uwe Karl (Germany)

From : The Salk Institute for Biological Studies, San Diego, USA
To : The Salk Institute for Biological Studies, San Diego, USA
1 year
Impact of the Retinoic Acid Receptor on Vertebrate Development.

BOULTON, Jane Catherine (UK)

From : Psychology Department, McGill University, Canada
To : Dept. of Medical Physics, Utrecht University, The Netherlands
2 years
The Mechanisms that Underlie Human Visual Perception of Image Motion.

BRAAKMAN, Ineke (The Netherlands)

From : Dept. of Cell Biology, Yale University School of Medicine, New Haven, USA
To : Dept. of Cell Biology, Yale University School of Medicine, New Haven, USA
1 year
Quality Control in the Secretory Pathway : Folding, Oligomerization and Transport of Membrane Glycoproteins.

CARRIER, France (Canada)

From : Lab. of Developmental Pharmacology, NIH, Bethesda, USA
To : Lab. of Developmental Pharmacology, NIH, Bethesda, USA
2 years
Molecular Characterization of the Ah Receptor.

CHELAZZI, Leonardo (Italy)

From : Institute of Human Physiology, University of Verona, Italy
To : Lab. of Neuropsychology, National Institute of Mental Health, Bethesda, USA
2 years
Neurophysiological Bases of Selective Visual Attention in Primates.

DAIGNAN FORNIER, Bertrand (France)

From : Laboratory of Molecular Genetics, University Paris Sud, France
To : Whitehead Institute for Biomedical Research, Cambridge, USA
2 years
Study of Yeast Regulatory Proteins Specificity and Identification of their Target Genes.

ELLIOTT, David James (UK)

From : Institute of Genetics, University of Glasgow, UK
To : Dept. of Biology, Brandeis University, Waltham, USA
2 years
Analysis of the Early Steps in Spliceosome Formation.

ELLIOTT, Robert C. (USA)

From : Stanford University, USA
To : Genetics Dept., John Innes Institute, Norwich, UK
0.5 year
Molecular Genetics of Floral Development in Antirrhinum

FUJITA, Takashi (Japan)

From : Institute of Molecular and Cellular Biology, Osaka University, Japan
To : Whitehead Institute for Biomedical Science, Cambridge, USA
2 years
Analysis of Control Mechanisms in B Cell Development and Differentiation by Transcription Factors.

GIBBONS, Simon James (UK)

From : Dept. of Physiology & Pharmacology, University of Southampton, UK
To : Dept. of Pharmacological & Physiological Sciences, University of Chicago, USA
2 years
Effect of Phosphoinositide Turnover Linked Excitatory Amino Acid Receptors on Intracellular Calcium and Neuronal Excitability.

GONZALEZ, Daniel Hector (Argentina)

From : Faculty of Pharmacy and Biochemistry, National University of Rosario, Argentina
To : Institut de Biologie Moléculaire des Plantes, Strasbourg, France
2 years
Definition of an in vitro System to Study RNA Editing in Plant Mitochondria.

GOTO, Koji (Japan)

From : Dept. of Biophysics, Faculty of Science, Kyoto University, Japan
To : Division of Biology, CalTech, Pasadena, USA
2 years
Genetical Analysis of Molecular Mechanisms of Arabidopsis Flower Morphogenesis.

GULYAS, Balazs (Belgium/Hungary)

From : Dept. of Clinical Neurophysiology, Karolinska Hospital, Stockholm, Sweden
To : Dept. of Clinical Neurophysiology, Karolinska Hospital, Stockholm, Sweden
2 years
Exploration of the Functional Anatomy of the Human Visual System with Positron Emission Tomography.

HAGAN, Iain Michael (UK)

From : Dept. of Biophysics, Faculty of Science, Kyoto University, Japan
To : Dept. of Biophysics, Faculty of Science, Kyoto University, Japan
2 years
*A Genetic and Biochemical Study of Fission Yeast Microtubule Organising
Centre Components and their Regulation.*

HEARD, Edith (UK)

From : Dept. of Eukaryotic Gene Organisation & Expression, Imperial Cancer Research Fund, London, UK
To : Institut Pasteur, Paris, France
2 years
Analysis of the Region of the Mouse X Chromosome Containing the X-Inactivation Centre.

HERMANS-BORGMEYER, Irmgard (Germany)

From : The Salk Institute for Biological Studies, San Diego, USA
To : The Salk Institute for Biological Studies, San Diego, USA
2 years
Neuronal Nicotinic Acetylcholine Receptors : Regulation and Function.

HUGHES, David Anthony (UK)

From : The Institute of Medical Science, University of Tokyo, Japan
To : The Institute of Medical Science, University of Tokyo, Japan
2 years
*Identification of an Activator of the Human ras Proto-Oncogene Proteins Related
to the Yeast ste6/CDC25 Products.*

HUNDAL, Harinder Singh (UK)

From : Dept. of Anatomy & Physiology, University of Dundee, UK
To : Hospital for Sick Children, Toronto, Canada
2 years
Insulin Receptor Signalling : Stimulation of Amino Acid Transport in Muscle.

INSDORF, Neil (USA)

From : Dept. of Pharmacological Sciences, State University of New York, Stonybrook, USA
To : Institute of Molecular Pathology, Vienna, Austria
0.5 year
Genetic Analysis of Cell Cycle Commitment in Saccharomyces Cerevisiae.

JOHNSON, Mark H. (UK)

From : MRC Cognitive Development Unit, London, UK
To : Institute of Cognitive & Decision Sciences, University of Oregon, Eugene, USA
2 years
Brain Maturation and the Development of Visual Attention.

JONES, Robert Hugh (UK)

From : Imperial Cancer Research Fund, London, UK
To : Dept. of Molecular Biology, Research Institute of Scripps Clinic, USA
0.5 year
The Importance of Transcriptional Control for the Cell Cycle Regulation of CDC25+ mRNA Levels in Fission Yeast.

KAMIMURA, Shinji (Japan)

From : Dept. of Biology, College of Arts and Sciences, University of Tokyo, Japan
To : Research Unit of Structural Molecular Biology, MPI, Hamburg, Germany
2 years
Study of the Molecular Mechanisms of Interaction Between Microtubules and Microtubule-associated Proteins.

KATAHIRA, Masato (Japan)

From : Institute for Protein Research, Osaka University, Japan
To : Dept. of Chemistry, University of Utrecht, The Netherlands
2 years
NMR Studies of the Structure of DNA-Binding Proteins and their Interaction with DNA.

KATZ, Jonathan David (USA)

From : Dept. of Microbiology and Immunology, UCLA School of Medicine, USA
To : Lab. de Génétique Moléculaire des Eucaryotes, Strasbourg, France
2 years
Transgenic Mice Carrying Rearranged T Cell Receptor Genes from a Diabetogenic T Cell Clone.

KIMURA, Fumitaka (Japan)

From : Dept. of Neurophysiology, Biomedical Research Center, Osaka University Medical School, Japan
To : Dept. of Neurobiology, Harvard Medical School, Boston, USA
2 years
Role of Noradrenaline and Acetylcholine in Plasticity and Synaptic Function in the Visual Cortex.

KIMURA, Hideo (Japan)

From : The Salk Institute, San Diego, USA
To : The Salk Institute, San Diego, USA
2 years
Molecular Biology of Neurotrophic Factors.

KOBAYASHI, Toshihide (Japan)

From : School of Food and Nutritional Sciences, University of Shizuoka, Japan
To : European Molecular Biology Laboratory, Heidelberg, Germany
2 years
Identification of the Sorting Protein Involved in Glycolipid and Apical Protein Sorting in MDCK Cells.

KOROMILAS, Antonis (Greece)

From : Dept. of Medical Chemistry, Faculty of Medicine, Kyoto University, Japan
To : Dept. of Biochemistry, McGill University, Montreal, Canada
2 years
Post-transcriptional Regulation of HIV-I Gene Expression.

KRAFT, Robert (USA)

From : Dept. of Molecular Genetics, Albert Einstein College of Medicine of Yeshiva University, USA
To : Ludwig Maximilian University Institute for Microbiology & Genetics, Munich, Germany
2 years
The Evolutionary Divergence of Gap Segmentation Gene Functions and Expression Patterns in Insect Embryogenesis.

KULLMANN, Dimitri Michael (UK)

From : National Hospital for Nervous Diseases, London, UK
To : Dept. of Pharmacology & Physiology, School of Medicine, Univ. of California, San Francisco, USA
2 years
Fluctuation Analysis of Synaptic Currents in the Mammalian Hippocampus.

LAGNADO, Leon (UK)

From : Physiological Laboratory, University of Cambridge, UK
To : Dept. of Neurobiology, Stanford University School of Medicine, USA
2 years
Information Processing in the Vertebrate Retina.

LAMPHIER, Marc Stephan (USA)

From : Dept. of Biochemistry and Molecular Biology, Harvard University, Cambridge, USA
To : Institute of Cellular & Molecular Biology, Osaka University, Japan
2 years
Genetic Regulation of the Beta-Interferon Response.

LAPCHAK, Paul Andrew (Canada)

From : Neuroanatomy Laboratory, Montreal Neurological Institute, Canada
To : Andrus Gerontology Center, University of Southern California, Los Angeles, USA
2 years
Regulation of Cholinergic Neuron-Specific Gene Expression and Transmitter Function by Trophic Factors.

LEE, Juliet (UK)

From : Dept. of Cell Biology & Anatomy, University of North Carolina, Chapel Hill, USA
To : Dept. of Cell Biology & Anatomy, University of North Carolina, Chapel Hill, USA
2 years
The Dynamics of Plasma Membrane Components During Cell Locomotion.

LEES, Emma Margaret (UK)

From : Imperial Cancer Research Fund, London, UK
To : Cold Spring Harbor Laboratory, USA
2 years
The p60/p34 cdc2 is a Novel Cell Cycle Regulated Kinase.

LEES, Jacqueline Anne (UK)

From : Imperial Cancer Research Fund, London, UK
To : Cold Spring Harbor Laboratory, USA
2 years
The Role of Retinoblastoma Protein Phosphorylation in Cell Cycle Control.

LI, Ping (China)

From : MPI for Psycholinguistics, Nijmegen, Netherlands
To : Dept. of Psychology, University of California, San Diego, USA
2 years
Cues and Cue Interactions in the Processing of Chinese Sentences by Child and Adult Speakers.

LO, Donald Ching-Tze (USA)

From : Ludwig Institute for Cancer Research, London, UK
To : Ludwig Institute for Cancer Research, London, UK
2 years
The Role of Retinoic Acid Receptors in Limb Morphogenesis.

MARSCHAL, Philippe (France)

From : Centre de Neurochimie, CNRS, Strasbourg, France
To : Dept. of Psychiatry, University of California, San Francisco, USA
2 years
Roles of Endogenous Lectins in the Nervous System.

MESSIER, Claude (Canada)

From : Lab. de Psychophysiologie, CNRS, Université de Bordeaux I, Talence, France
To : Lab. de Psychophysiologie, CNRS, Université de Bordeaux I, Talence, France
2 years
Cholinergic Mechanisms Underlying the Memory Improving Action of Glucose in Young and Old Mice.

MOINE, Hervé Maurice (France)

From : Institut de Biologie Moléculaire et Cellulaire, CNRS, Strasbourg, France
To : Division of Biology & Medicine, Brown University, Providence, USA
2 years
Intron in Phage T4 : Structure and Function of the Gene 60 Intron.

NISHIE, Eiichiro (Japan)

From : Dept. of Physiology, University of Virginia Medical Center, Charlottesville, USA
To : Dept. of Physiology, University of Virginia Medical Center, Charlottesville, USA
2 years
Kinetics of Energy Transduction through the Crossbridge Cycle in Smooth Muscle Studied with Laser Flash Photolysis.

OHKUMA, Yoshiaki (Japan)

From : The Rockefeller University, New York, USA
To : The Rockefeller University, New York, USA
2 years
Mechanism of Action of the General Transcription Factor IIE in the Initiation of Eukaryotic Transcription.

OLSSON, Christine Louise (USA)

From : Dept. of Biological Chemistry, University of California School of Medicine, Davis , USA
To : Institut de Biologie Physico-chimique, CNRS, Paris, France
2 years
Genes Involved in Translational Regulation.

OTANI, Satoru (Japan)

From : INSERM, Hôpital de Port-Royal, Paris, France
To : INSERM, Hôpital de Port-Royal, Paris, France
2 years
Macromolecule Contributions to Long-Term Potentiation in the Hippocampus.

PILGRIM, David B. (Canada)

From : Division of Cell Biology, MRC Laboratory of Molecular Biology, Cambridge, UK
To : Division of Cell Biology, MRC Laboratory of Molecular Biology, Cambridge, UK
9 months
The fem-2 Gene of C. elegans : a Molecular and Genetic Analysis

POPHAM, David Lee (USA)

From : Institut de Biologie Physico-chimique, CNRS, Paris, France
To : Institut de Biologie Physico-chimique, CNRS, Paris, France
1 year
Regulation of Sporulation Genes in Bacillus subtilis.

RATTY, Anil Kumar (Singapore)

From : Roswell Park Memorial Institute, Buffalo, USA
To : Roswell Park Memorial Institute, Buffalo, USA
1 year
Molecular Biology and Neurobiochemistry of a Transgenic Mouse Insertional Mutant Exhibiting Circling Behavior.

REINER, Orly (Israel)

From : Dept. of Chemical Immunology, The Weizmann Institute of Science, Rehovot , Israel
To : Institute for Molecular Genetics, Baylor College of Medicine, Houston, USA
2 years
Elucidation of the Molecular basis of Emery-Dreifuss Dystrophy.

REITH, Jakob (Denmark)

From : Montreal Neurological Institute, Montreal, Canada
To : Montreal Neurological Institute, Montreal, Canada
2 years
Pathophysiology of Dopaminergic Neurotransmission in Schizophrenia.

RENUCCI, Armand (France)

From : European Molecular Biology Laboratory, Heidelberg, Germany
To : European Molecular Biology Laboratory, Heidelberg, Germany
2 years
The Mouse HOX5 Genes : a Key System to Understand Vertebrate Limb Morphogenesis.

ROMAIGUERE, Patricia (France)

From : Laboratoire de Neurosciences Fonctionnelles, CNRS, Marseille, France
To : Dept. of Physiology, Charing Cross & Westminster Medical School, London, UK
1 year
The Role of Spinal Mechanisms in Abnormal Discharges of Motor Units in Parkinson's and Motoneurone Disease.

SADOSHIMA, Junichi (Japan)

From : Research Institute of Angiocardiology, Faculty of Medicine, Kyushu University, Fukuoka, Japan
To : Molecular Medicine Unit, Harvard Medical School, Boston, USA
2 years
Molecular Studies of Stretch-Activated Ion Channels and Mechano-Growth Coupling.

SADOUL, Rémy (France)

From : Dept. of Neurobiology, University of Heidelberg, Germany
To : Dept. of Experimental Medicine, McGill Cancer Center, Montreal, Canada
2 years
Homeogene Products and the Transcriptional Regulation of Developmental Target Genes.

SAKAI, Hajime (Germany)

From : Institute for Genetics and Microbiology, University of Munich, Germany
To : Division of Biology, CalTech, Pasadena, USA
2 years
Molecular Analysis of the Flower Development in Arabidopsis thaliana.

SADOUL/SHELLENBERGER, Karin (Germany)

From : Institute for Neurobiology, University of Heidelberg, Germany
To : McGill Cancer Center, Montreal, Canada
2 years
Role of CEA Family Members in the Development of Malignancy in Human Colonic Epithelium.

SCHONTHAL, Axel (Germany)

From : Theodore Gildred Cancer Facility, University of California, San Diego, USA
To : Theodore Gildred Cancer Facility, University of California, San Diego, USA
1 year
Functional Analysis of Gene Regulation by Microinjection of Purified Transcription Factors.

SHIBA, Kiyotaka (Japan)

From : Dept. of Biology, MIT, Cambridge, USA
To : Dept. of Biology, MIT, Cambridge, USA
2 years
Molecular Dissection and Manipulation of an Enzyme that recognizes Transfer RNA.

SHIBASAKI, Yoshikazu (Japan)

From : Third Dept. of Internal Medicine, University of Tokyo, Japan
To : Dept. of Cellular & Molecular Physiology, Harvard Medical School, Boston, USA
2 years
Molecular Biology of Glucose Transporters.

SHIFFMAN, Dov (Israel)

From : Dept. of Genetics, Stanford University School of Medicine, USA
To : Dept. of Genetics, Stanford University School of Medicine, USA
2 years
Giant linear plasmids in Streptomyces.

STEIN, David S. (USA)

From : Dept. of Genetics, MPI, Tübingen, Germany
To : Dept. of Genetics, MPI, Tübingen, Germany
2 years
The Role of the Dorsal Gene in the Establishment of Dorso-Ventral Polarity during Drosophila Embryogenesis.

STERRER, Sylvia (Austria)

From : Dept. of Neurochemistry, MPI for Neurochemistry, Martinsried, Germany
To : Dept. of Molecular Cell Biology, MPI for Biophysical Chemistry, Göttingen, Germany
2 years
Structural and Functional Analysis of the Gene Encoding the Murine Octanucleotide Binding Factor-2.

TABATA, Tetsuya (Japan)

From : Dept. of Botany, Faculty of Science, Kyoto University, Japan
To : Dept. of Biochemistry, University of California, San Francisco, USA
2 years
Studies on cis- and trans-acting Elements that Regulate Expression of the Drosophila Engrailed Gene.

TAKAHASHI, Yoshiko (Japan)

From : Institut d'Embryologie, C.N.R.S., Nogent-sur-Marne, France
To : Institute of Neuroscience, University of Oregon, Eugene, USA
2 years
Role of the Proto-Oncogene c-kit in the Neural Crest Cell Differentiation.

THEVENIAU, Magali Andrée (France)

From : Institut de Chimie Biologique, CNRS, Université d'Aix-Marseille, France
To : Dept. of Pharmacology, University of Pennsylvania, Philadelphia, USA
2 years
Biochemical Properties of Somatostatin Receptors.

THORBURN, Andrew Meek (UK)

From : Dept. of Biochemistry, University of Oxford, UK
To : San Diego Cancer Center, USA
2 years
The Role of Higher Order Sub-nuclear Structures in the Regulation of Globin Gene Expression.

TZAMARIAS, Dimitris (Greece)

From : Institute of Molecular Biology & Biotechnology, Heraklion, Greece
To : Dept. of Biological Chemistry & Molecular Pharmacology, Harvard Medical School, Boston, USA
2 years
Structural and Functional Analysis of DNA Binding and Dimerization Domains of GCN4 Protein in Yeast.

VAN DER BLIEK, Alexander Mark (The Netherlands)

From : Division of Biology, CalTech, Pasadena, USA
To : Division of Biology, CalTech, Pasadena, USA
2 years
Molecular Analysis of Shibire, a Mutation Causing Temperature-Sensitive Paralysis in Drosophila.

VILGRAIN, Isabelle (France)

From : Dept. of Molecular & Cellular Growth Biology, The Whittier Institute, La Jolla, USA
To : Dept. of Molecular & Cellular Growth Biology, The Whittier Institute, La Jolla, USA
2 years
Is Phosphorylation an Important Post-translational Modification of bFGF for its Biological Activities.

WU, Shu Hui (China)

From : Shanghai Institute of Physiology, China
To : Psychology Dept., Carleton University, Ottawa, Canada
2 years
Physiological Studies of the Superior Olivary Complex.

YAMADA, Gen (Japan)

From : Institute for Molecular and Cellular Biology, Osaka University, Japan
To : Dept. of Molecular Cell Biology, MPI of Biophysical Chemistry, Göttingen, Germany
2 years
Isolation and Functional Characterization of the Genes Controlling Mouse Development.

YOSHIDA, Tomoaki (Japan)

From : Dept. of Immunology, Nagoya University School of Medicine, Japan
To : Dept. of Biology, The Johns Hopkins University, Baltimore, USA
2 years
Lymphocyte Homing Receptors and Endogenous Ligands.

SHORT - TERM FELLOWSHIPS

Awards in March 1990

AOSHIMA, Hitoshi (Japan)

From : Dept. of Chemistry, Faculty of Liberal Arts, Yamaguchi University, Japan
To : Section of Biochemistry, Molecular & Cell Biology, Cornell University, Ithaca, USA
3 months
Responses of Receptors and Transporters Expressed in Xenopus Oocytes to a Laser Photolysis of Caged Compounds.

ASOU, Hiroaki (Japan)

From : Dept. of Physiology, Keio University School of Medicine, Tokyo, Japan
To : Lab. of Molecular Oncology, Centre Henri-Becquerel, Rouen, France
3 months
Origin, Structure and Function of Human Brain Hyaluronectin.

FUJITA, Shohei (Japan)

From : Dept. of Computer Science, Tokyo Institute of Technology, Japan
To : International Computer Science Institute, Berkeley, USA
3 months
Distributed Real-Time Simulation System for Modeling on Integrative Functions of the Nervous System.

MOMBAERTS, Peter (Belgium)

From : Dept. of Biology, MIT, Cambridge, USA
To : Dept. of Pathology, University of Edinburgh Medical School, UK
1.5 months
Mutagenesis of the T-cell Receptor Alpha Constant Gene Segment.

Awards April 1990 - March 1991 New Regulations: awards made throughout the year

BARRANTES, Francisco José (Argentina)

From : Instituto de Investigaciones Bioquímicas, University of the South, Bahia Blanca, Argentina
 To : MRC Laboratory of Molecular Biology, Cambridge, UK
 3 months
Three-dimensional Structure of Acetylcholine Receptor by Electron Crystallography and Modelling Studies.

BERG, Barbara (USA)

From : Dept. of Microbiology, Cornell University, Ithaca, USA
 To : Dept. of Genetics & Microbiology, University of Munich, Germany
 3 weeks
Translational Control of Selenocysteine Incorporation in Escherichia coli.

FOUREL, Geneviève (France)

From : Unité de Recombinaison et Expression Génétique, Institut Pasteur, Paris, France
 To : Albert Einstein College of Medicine, Bronx, USA
 2.5 months
Analysis of the Mechanism of Viral Integration in a Proto-oncogene.

GODFRAIND, Catherine (Belgium)

From : Lab. of Pathology, Catholic University of Louvain, Brussels, Belgium
 To : Lab. of Viral and Molecular Pathogenesis, NIH, Bethesda, USA
 1.5 months
In vivo Studies of Central Nervous System Cell Lineage Involved in Myelination.

HE, Ping (China)

From : Dept. of Forestry, Central South Forestry, Hunan, China
 To : Lehrstuhl für Zellphysiologie, Fakultät für Biologie, Universität Bielefeld, Germany
 3 months
Effect of Cyanide, Hydroxylamine and Hydrazine on Photosystem II-Activity in Cyanobacteria and Higher Plants.

LATRON, France (France)

From : Human Immunogenetics Unit, Institut Pasteur, Paris, France
 To : Institute of Molecular Medicine, John Radcliffe Hospital, Oxford, UK
 3 months
Effect of Mutations of HLA-A2 Molecule on Antigen-Specific T-Cell Recognition.

LAYCOCK, John Francis (UK)

From : Dept. of Physiology, Charing Cross & Westminster Medical School, London, UK
To : Dept. of Physiology, Dartmouth Medical School, Hanover, USA
3 months
*Role of Protein Kinase A in the Renal Action of Vasopressin,
Transfection of Renal Cells in Culture*

MANNHERZ, Hans-Georg (Germany)

From : Institut für Anatomie u. Zellbiologie, Marburg University, Germany
To : MRC Laboratory of Molecular Biology, Cambridge, UK
3 months
Crystallization of Gelsolin with actin-DNase I.

MARTIROSOV, Sergey (USSR)

From : Orbeli Institute of Physiology, Yerevan, USSR
To : Dept. of Molecular Genetics and Cell Biology, University of Chicago, USA
3 months
Significance of Thiols in Formation of Multienzyme Transport.

WORKSHOPS

Awards in March 1990

Leuven, Belgium
27-29 September 1990

Object and Scene Perception.
Prof. G. d'Ydewalle, Prof. I. Biederman
(29) US\$ 24,830

Milan, Italy
26-27 November 1990

PET Studies of Cognitive Functions.
Prof. F. Fazio, Dr. R. Frackowiak, Prof. W.D. Heiss,
Prof. G.L. Lenzi, Prof. L.A. Vignolo
(69) US\$ 74,800

Les Arcs, France
17-23 March 1991

The Regulatory Mechanisms of DNA Replication.
Dr. M. Kohiyama, Dr. J. Tomizawa, Dr. E. Boye, Dr. P. Hughes,
Prof. J. Campbell, Prof. E. Fanning
(70) US\$ 82,400

Brandeis University, USA
28-31 July 1990

Model Neural Networks; The Stomatogastric Nervous System.
Prof. E. Marder
(66) US\$ 40,000

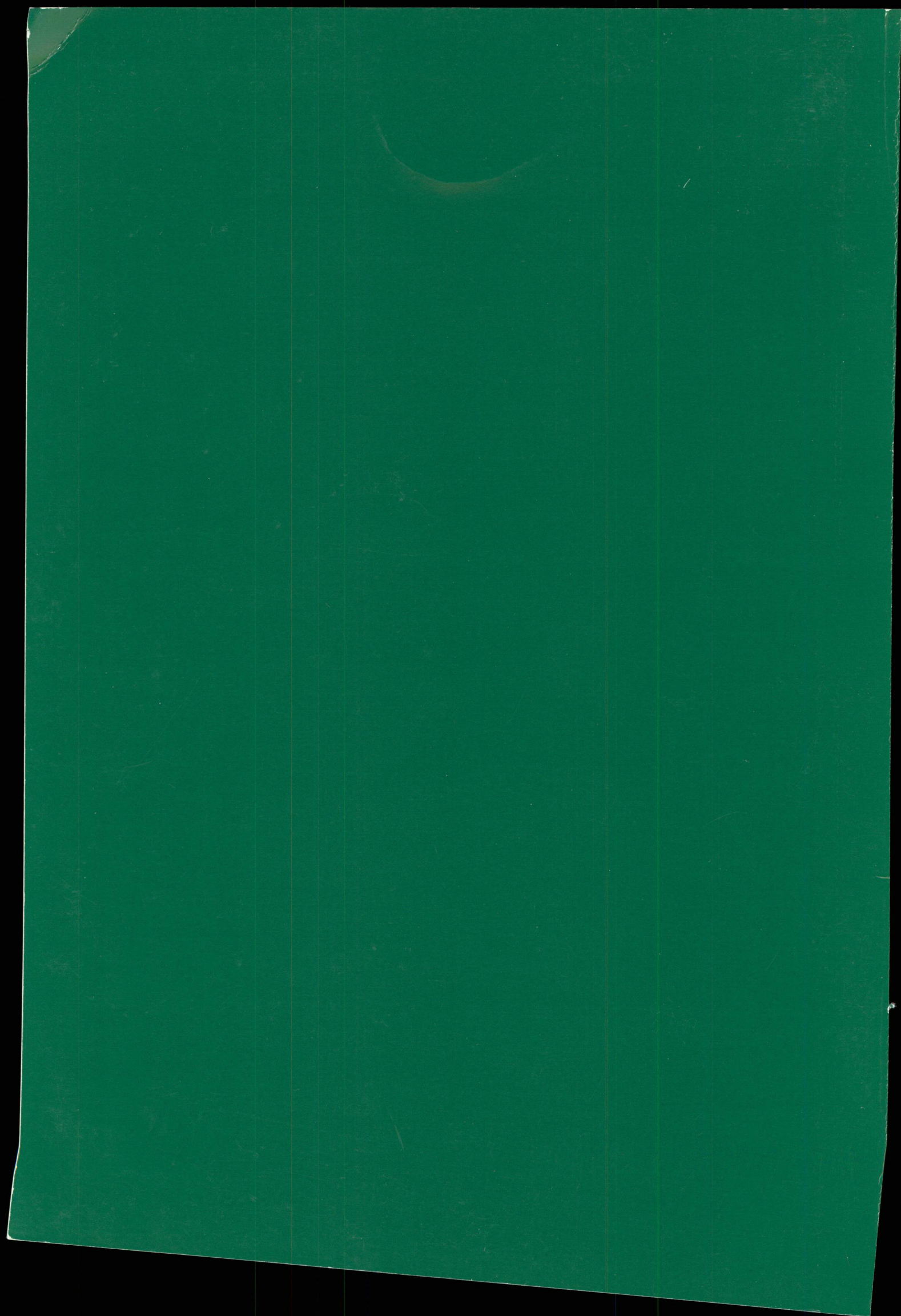
Cassis, France
1-3 October 1990

Structure-Function Relationships in Cytochrome b.
Prof. B. Trumpower, Prof. A.M. Colson-Corbisier, Dr. D. Meunier-Lemesle
(25) US\$ 28,000

Urbino, Italy
September 1991

Molecular Recognition : RNA-Protein Interactions.
Prof. M. Wickens, Prof. O. Uhlenbeck, Prof. G. Tocchini-Valentini,
Prof. W. Keller
(90) US\$ 89,100

() indicates the number of participants



A W A R D E E S 1 9 9 1



THE INTERNATIONAL HUMAN FRONTIER SCIENCE PROGRAM

(HFSP)

CONTENTS

pp.	1-15	Research Grants
	17-35	Long-Term Fellowships
	37-41	Short-Term Fellowships
	43-45	Workshops

RESEARCH GRANTS

AUGUSTINE, George Neurobiology Section
University of Southern California, Los Angeles - U.S.A.

KONNERTH, Arthur Max-Planck Institute for Biophysical Chemistry
Göttingen - GERMANY

KASAI, Haruo Dept. of Physiology, Faculty of Medicine
University of Tokyo - JAPAN

*Molecular Basis of Long-Term Synaptic Depression: Glutamate Receptors, Ca Channels,
and their Dendritic Topology.*

US \$ 600,000

COLLEWIJN, Han Dept. of Physiology I, Faculty of Medicine
Erasmus University Rotterdam - THE NETHERLANDS

KAWANO, Kenji Neuroscience Section
Electrotechnical Lab., Tsukuba - JAPAN

MILES, Frederick Lab. of Sensorimotor Research
National Eye Institute, Bethesda - U.S.A.

BALLARD, Dana Computer Science Dept.
University of Rochester - U.S.A.

Visuomotor Coordination in 3-D Space.

US \$ 865,000

COWEY, Alan Dept. of Experimental Psychology
University of Oxford - U.K.

ROLAND, Per Ebbe Dept. of Clinical Neurophysiology, PET Center
Karolinska Institute and Hospital, Stockholm - SWEDEN

ZILLES, Karl Institut 1 für Anatomie
Universität Köln - GERMANY

MIYASHITA, Yasushi Dept. of Physiology
University of Tokyo - JAPAN

GULYAS, Balázs Dept. of Clinical Neurophysiology, PET Center
Karolinska Hospital, Stockholm - SWEDEN

*Quantitative Studies of the Functional Anatomy of the Human Cerebral Cortex and
Homologues in Sub-Human Primates.*

US \$ 634,000

GLOWINSKI, Jacques	Lab. de Neuropharmacologie, INSERM Collège de France, Paris - FRANCE
KITAI, Stephan	Dept. of Anatomy & Neurobiology, College of Medicine University of Tennessee, Memphis - U.S.A.
KITA, Hitoshi	Dept. of Anatomy & Neurobiology, College of Medicine University of Tennessee, Memphis - U.S.A.
WILSON, Charles	Dept. of Anatomy & Neurobiology, College of Medicine University of Tennessee, Memphis - U.S.A.
GERFEN, Charles	Lab. of Cell Biology National Institute of Mental Health, Bethesda - U.S.A.
BESSON, Marie-Jo	Dept. de Neurochimie & Anatomie Université Paris VI - FRANCE
DENIAU, Jean-Michel	Dept. de Neurosciences de la Vision Université Paris VI - FRANCE
HIKOSAKA, Okihide	Lab. of Neural Control National Inst. for Physiological Sciences, Okazaki - JAPAN

Limbic and Motor Processing in Basal Ganglia and Related Structures: from Neurons to Circuits and Behavior.

US \$ 630,000

HAAS, Helmut L.	Heinrich-Heine-Universität Physiologisches Institut II, Düsseldorf - GERMANY
BUZSAKI, György	Center for Molecular & Behavioral Neurosciences Rutgers University, Newark - U.S.A.
FREUND, Tamas	Institute of Experimental Medicine Hungarian Academy of Sciences, Budapest - HUNGARY
MILES, Richard	Lab. de Neurobiologie Cellulaire, Dept. of Biotechnology Institut Pasteur, Paris - FRANCE
TAMAMAKI, Nobuaki	Dept. of Anatomy Fukui Medical School - JAPAN

Network Mechanisms of Memory Trace Formation.

US \$ 899,000

HUMPHREYS , Glyn William	School of Psychology University of Birmingham - U.K.
DESIMONE , Robert	Lab. of Neuropsychology National Institute of Mental Health, Bethesda - U.S.A.
DUNCAN , John	MRC Applied Psychology Unit Cambridge - U.K.
BUNDESEN , Claus	Laboratory of Psychology Copenhagen University - DENMARK
INUI , Toshio	Dept. of Psychology, Faculty of Literature Kyoto University - JAPAN
HILLYARD , Stephen	Dept. of Psychology University of California, San Diego - U.S.A.
ORBAN , Guy	Lab. voor Neuro- en Psychofysiologie, Medical School Katholieke Universiteit te Leuven - BELGIUM

Brain Mechanisms of Visual Selection.

US \$ 831,000

KANEKO , Akimichi	Dept. of Physiology Keio University School of Medicine, Tokyo - JAPAN
AYOUB , George Stephen	Dept. of Neurobiology & Behavior State University of New York, Stony Brook - U.S.A.
TACHIBANA , Masao	Dept. of Psychology, Faculty of Letters University of Tokyo - JAPAN
PICCOLINO , Marco	Institute of General Physiology, Faculty of Science University of Ferrara - ITALY
WU , Samuel Miao-sin	Cullen Eye Institute Baylor College of Medicine, Houston - U.S.A.
YANG , Xiong-Li	Shanghai Inst. of Physiology Chinese Academy of Sciences - REPUBLIC OF CHINA

The Synaptic Mechanisms of the Retina.

US \$ 811,000

KURIHARA, Kenzo	Faculty of Pharmaceutical Sciences Hokkaido University, Sapporo - JAPAN
LANCET, Doron	Dept. of Membrane Research The Weizmann Institute of Science, Rehovot - ISRAEL
TROTIER, Didier	CNRS, Paris - FRANCE
DESIMONE, John	Dept. of Physiology, Medical College of Virginia Virginia Commonwealth University, Richmond - U.S.A.
SATO, Toshihide	Dept. of Oral Physiology Nagasaki University School of Dentistry - JAPAN

Molecular Recognition and Transduction in Chemoreceptor Systems.

US \$ 900,000

LECOURS, André Roch	Centre de Recherche du Centre Hospitalier Côtes-des-Neiges Montreal - CANADA
CARAMAZZA, Alfonso	Cognitive Science Center The Johns Hopkins University, Baltimore - U.S.A.
NESPOULOS, Jean-Luc	Lab. Jacques Lordat, Sect. des Sciences du Langage Université de Toulouse-Le Mirail - FRANCE
BUB, Daniel	Centre de Recherche du Centre Hospitalier Côte-des-Neiges Montreal - CANADA
VIVIANI, Paolo	Faculty of Psychology & Educational Sciences University of Geneva - SWITZERLAND
YAMADORI, Atsushi	Neurology Service Hyogo Brain & Heart Center at Himeji - JAPAN
FOX, Peter	Div. of Neuroradiology The Johns Hopkins Medical Institutions, Baltimore - U.S.A.

Acquired Reading and Writing Disturbances in Brain-Damaged Adults: Neurological, Cognitive and Cultural Aspects.

US \$ 840,000

MARDER, Eve	Biology Dept. Brandeis University, Waltham - U.S.A.
TAZAKI, Kenro	Biological Laboratory Nara University of Education - JAPAN
REICHERT, Heinrich	Lab. of Neurobiology, Dept. of Zoology University of Geneva - SWITZERLAND
HEINZEL, Hans-Georg	Dept. Neurophysiology/Biophysics, Inst. of Zoology University of Bonn - GERMANY
MOULINS, Maurice	Lab. de Neurobiologie et Physiologie Comparées University of Bordeaux, Arcachon - FRANCE
NUSBAUM, Michael	Neurobiology Research Center University of Alabama, Birmingham - U.S.A.
GRAUBARD, Katherine	Dept. of Zoology University of Washington, Seattle - U.S.A.
HARRIS-WARRICK, Ronald	Section of Neurobiology & Behavior Cornell University, Ithaca - U.S.A.
AYERS, Joseph	Marine Sciences Center Northeastern University, Nahant - U.S.A.

Modulation of Oscillatory Neural Networks: Cellular Mechanisms to Behavior.

US \$ 677,000

ROSS, William Noel	Dept. of Physiology New York Medical College, Valhalla - U.S.A.
ELLISMAN, Mark H.	Dept. of Neurosciences, School of Medicine University of California, San Diego - U.S.A.
MIYAKAWA, Hiroyoshi	Dept. of Physiology, School of Medicine Yamagata University - JAPAN
FURUICHI, Teiichi	Div. of Behavior and Neurobiology National Institute of Basic Biology, Okazaki - JAPAN

Regulation of Calcium Dynamics in Cerebellar Purkinje Cells.

US \$ 530,000

SOKOLOWSKI, Marla	Dept. of Biology York University, North York - CANADA
KYRIACOU, Charalambos P.	Dept. of Genetics University of Leicester - U.K.
JALLON, Jean-Marc	Lab. de Biologie et Genetique Evolutives University of Paris XI - FRANCE
HALL, Jeff C.	Dept. of Biology Brandeis University, Waltham - U.S.A.
HEISENBERG, Martin	Institute für Genetik und Microbiologie, University of Würzburg - GERMANY

Neuro- and Molecular Genetic Analysis of Complex Behavior Patterns in Drosophila.

US \$ 741,000

CHAMBON, Pierre Institut de Chimie Biologique
Faculté de Médecine, Strasbourg - FRANCE

MORRISS-KAY, Gillian Mary Dept. of Human Anatomy,
University of Oxford - U.K.

DUBOULE, Denis European Molecular Biology Laboratory
Heidelberg - GERMANY

Roles and Molecular Mechanisms of Action of Retinoids in Mammalian Morphogenesis.

US \$ 600,000

COWAN, Nicholas Dept. of Biochemistry
New York University Medical Center - U.S.A.

HIROKAWA, Nobutaka Dept. of Anatomy & Cell Biology
University of Tokyo Medical School - JAPAN

Dynamics and Localization of Cytoskeletal Proteins in Neuronal Cells - A Molecular Cell Biological Approach.

US \$ 634,907

EARNSHAW, William Charles Dept. of Cell Biology and Anatomy,
The Johns Hopkins University, Baltimore - U.S.A

SCHLEGEL, Robert Lab. of Toxicology
Harvard School of Public Health, Boston - U.S.A.

NISHIMOTO, Takeharu Dept. of Molecular Biology, Graduate School of Medical Science
Kyushu University, Fukuoka - JAPAN

GASSER, Susan Margaret Swiss Institute for Experimental Cancer Research
Epalinges/Lausanne - SWITZERLAND

Chromosome Condensation in Somatic Cells: Regulation and Structural Characterization.

US \$ 750,000

FINNEGAN, David John	Institute of Cell and Molecular Biology University of Edinburgh - U.K.
BOEKE, Jef D.	Dept. of Molecular Biology & Genetics, School of Medicine The Johns Hopkins University, Baltimore - U.S.A.
BUCHETON, Alain	Centre de Génétique Moléculaire CNRS, Gif-sur-Yvette - FRANCE
CORCES, Victor	Dept. of Biology The Johns Hopkins University, Baltimore - U.S.A.

Molecular Mechanisms of Retrotransposition and its Control.

US \$ 750,000

KIMURA, Narimichi	Dept. of Membrane Biochemistry Tokyo Metropolitan Institute of Gerontology - JAPAN
KATADA, Toshiaki	Dept. of Life Science Tokyo Institute of Technology - JAPAN
LIOTTA, Lance A.	Lab. of Pathology, National Cancer Institute NIH, Bethesda - U.S.A.
SHEARN, Allen D.	Dept. of Biology The Johns Hopkins University, Baltimore - U.S.A.

NDP Kinases: Novel Link Between Signal Transduction, Morphogenesis, and Cancer.

US \$750,000

KORNBERG, Arthur	Dept. of Biochemistry Stanford University - U.S.A.
LEHMAN, Robert	Dept. of Biochemistry Stanford University - U.S.A.
MAKI, Hisaji	Dept. of Biochemistry Kyushu University, Fukuoka - JAPAN

Fidelity of Genome Replication by Mutator and Wild Type Enzyme Systems.

US \$ 750,000

LOSICK, Richard The Biological Laboratories
Harvard University, Cambridge - U.S.A.

STRAGIER, Patrick Inst. of Physico-Chemical Biology
CNRS, Paris - FRANCE

Checkpoints that Couple Developmental Gene Expression to Morphogenesis.

US \$ 600,000

MEYEROWITZ, Elliot M. Division of Biology
CalTech, Pasadena - U.S.A.

COEN, Enrico Sandro Genetics Dept.
John Innes Institute, Norwich - U.K.

Genes Controlling Flower Development.

US \$ 600,000

MONACO, Anthony Human Genetics Laboratory
Imperial Cancer Research Fund, Oxford - U.K.

POUSTKA, Annemarie Institut für Tumorstudiologie
DKFZ, Heidelberg - GERMANY

LEHRACH, Hans Genome Analysis Laboratory
Imperial Cancer Research Fund, London - U.K.

GOODFELLOW, Peter Human Molecular Genetics Lab.
Imperial Cancer Research Fund, London - U.K.

WILLARD, Huntington Dept. of Genetics
Stanford University Medical Center - U.S.A.

Construction and Ordering of YAC, Jumping and Linking Clone Libraries, and Irradiation Hybrids of the Human X Chromosome.

US \$ 750,000

NEUPERT, Walter	Institut für Physiologische Chemie, Physikalische Biochemie und Zellbiologie der Universität München - GERMANY
MIZUSHIMA, Shoji	Institute of Applied Microbiology University of Tokyo - JAPAN
SCHEKMAN, Randy Wayne	Division of Biochemistry & Molecular Biology University of California, Berkeley - U.S.A.
WICKNER, William Tobey	Molecular Biology Institute UCLA - U.S.A.
ZIMMERMANN, Richard	Zentrum Biochemie/Abt. Biochemie II Universität Göttingen - GERMANY

Fundamental Mechanisms of Intracellular Protein Targeting.

US \$ 750,000

RAJEWSKY, Klaus	Dept. of Immunology, Institute of Genetics University of Cologne - GERMANY
KISHIMOTO, Tadimitsu	Div. of Immunology, Inst. for Molecular & Cellular Biology Osaka University - JAPAN
NOSSAL, Sir Gustav	The Walter & Eliza Hall Institute of Medical Research Royal Melbourne Hospital, Victoria - AUSTRALIA

Molecular Mechanisms of B Lymphocyte Signalling.

US \$ 900,000

RUVKUN, Gary	Dept. of Molecular Biology Massachusetts General Hospital, Boston - U.S.A.
SULSTON, John	MRC Lab. of Molecular Biology Cambridge - U.K.
WATERSTON, Bob	Dept. of Genetics Washington University School of Medicine, St. Louis - U.S.A.
HOPE, Ian	Depts. of Genetics and Pure and Applied Biology Leeds University - U.K.

Analysis of C. Elegans Homeobox and Nuclear Hormone Receptor Genes and Genes Identified by the Genome Sequence.

US \$ 750,000

SCHÄFER, Eberhard	Institute for Biology II University of Freiburg, GERMANY
FURUYA, Masaki	Plant Biology Regulation Team, Frontier Research Program Institute of Physical and Chemical Research, Saitama - JAPAN
CHUA, Nam-Hai	Lab. of Plant Molecular Biology The Rockefeller University, New York - U.S.A.

Molecular and Physiological Functions of Type I and II Phytochrome.

US \$ 750,000

SCHEDL, Paul	Dept. of Molecular Biology Princeton University - U.S.A.
KARCH, François	Lab. of Genetics, Dept. of Zoology & Animal Biology University of Geneva - SWITZERLAND
GAUSZ, Janos	BRC Institute of Genetics Szeged - HUNGARY
GYURKOVICS, Henrik	BRC Institute of Genetics Szeged - HUNGARY

Molecular and Genetic Analysis of Higher Order Chromatin Domains in the Bithorax Complex

US \$ 487,575

SHEETZ, Michael P.	Dept. of Cell Biology Duke University Medical Center, Durham - U.S.A.
KUSUMI, Akihiro	Dept. of Pure & Applied Sciences, College of Arts & Sciences University of Tokyo - JAPAN
LEPTIN, Maria	Max-Planck-Institut für Entwicklungsbiologie Tübingen - GERMANY

Membrane Glycoprotein Aggregation and Movement in Development of Tissue Contacts.

US \$ 750,000

TOCCHINI-VALENTINI, Glauco Institute of Cell Biology
National Research Council, Rome - ITALY

ABELSON, John N. Division of Biology
CalTech, Pasadena - U.S.A.

PARDI, Arthur Dept. of Chemistry & Biochemistry
University of Colorado, Boulder - U.S.A.

UHLENBECK, Olke C. Dept. of Chemistry & Biochemistry
University of Colorado, Boulder - U.S.A.

A Detailed Study of the Mechanism of tRNA Splicing.

US \$ 750,000

VILCEK, Jan T. Dept. of Microbiology,
New York University Medical School - U.S.A.

WEISSMANN, Charles Institute of Molecular Biology I
University of Zurich - SWITZERLAND

AGUET, Michel Institute of Molecular Biology I
University of Zurich - SWITZERLAND

TANIGUCHI, Tadatsugu Institute of Molecular Biology
Osaka University - JAPAN

Cytokine Gene Deletions: Effects on Development, Host Resistance and Autoimmunity.

US \$ 750,000

WALDEN, David Burton Dept. of Plant Sciences
The University of Western Ontario, London - CANADA

ATKINSON, Burr G. Dept. of Zoology
The University of Western Ontario, London - CANADA

BOUCHARD, Robert A. Dept. of Biology
College of Wooster - U.S.A.

DUMAS, Christian Reconnaissance Cellulaire et Amélioration des Plantes
Université Lyon I - FRANCE

Molecular Analysis of Meiosis, Development of the Gametophyte and Gametogenesis in Maize.

US \$ 750,000

WOLGEMUTH, Debra J.	Dept. of Genetics & Development Columbia University, New York - U.S.A.
GEHRING, Walter	Dept. of Cell Biology, Biozentrum University of Basel - SWITZERLAND
KRUMLAUF, Robb	Div. of Eukaryotic Molecular Genetics MRC National Institute for Medical Research, London - U.K.
KUROIWA, Atsushi	Dept. of Cell Biology, Research Inst. for Tuberculosis & Cancer Tohoku University, Sendai - JAPAN
WILLIAMSON, Robert	Dept. of Biochemistry & Molecular Genetics St. Mary's Hospital Medical School, Univ. of London - U.K.

Evolution of Regulatory Interactions and Function of Homeobox-Containing Genes and Their Target Genes.

US \$ 750,000

YOUVAN, Douglas	Dept. of Chemistry M.I.T., Cambridge - U.S.A.
BRETON, Jacques	Dept. de Biologie Centre d'Etudes Nucléaires de Saclay, Gif-sur-Yvette - FRANCE
MICHEL-BEYERLE, M. E.	Institut für Physikalische und Theoretische Chemie Technische Universität München, Garching - GERMANY

Structural and Functional Characterization of Genetically Modified Reaction Centers from Photosynthetic Bacteria.

US \$ 750,000

LONG - TERM FELLOWSHIPS

ADAMS, Josephine Clare (UK)

From : Imperial Cancer Research Fund, London, UK
To : Vascular Research Division, Dept. of Pathology, Brigham & Women's Hospital, Boston, USA
2 years
Structural and Functional Analysis of the Cell-binding Sites of Thrombospondin and their Receptors.

ADAMS, Richard John (UK)

From : Computational Neurobiology Lab., The Salk Institute, San Diego, USA
To : Computational Neurobiology Lab., The Salk Institute, San Diego, USA
2 years
Dynamics of Calcium in Hippocampal Neurons during Long-Term Potentiation.

ALBERINI, Cristina (Italy)

From : Istituto di Chimica e Prop. Biochimica, Facolta di Medicina, University of Brescia, Italy
To : Center for Neurobiology & Behavior, Columbia University, New York, USA
2 years
Learning Related Growth : Mechanisms Controlling the Expression of Cell Adhesion Molecules.

ALEXANDRE, Cyrille (France)

From : Ecole Normale Supérieure de Lyon, France
To : Cold Spring Harbor Laboratory, USA
2 years
Cloning of a Mammalian Homologue of the Yeast MAT Alpha 1 Gene.

ALTSCHMIED, Lothar (Germany)

From : Plant Biology Laboratory, The Salk Institute, San Diego, USA
To : Plant Biology Laboratory, The Salk Institute, San Diego, USA
1 year
Characterization of Light Signal Transduction Mutants of Arabidopsis thaliana.

ARAI, Motomi (Japan)

From : Dept. of Neurology, Hospital of the University of Pennsylvania, Philadelphia, USA
To : Dept. of Neurology, Hospital of the University of Pennsylvania, Philadelphia, USA
2 years
Characterization of a Novel Gene (F5) Selectively Expressed in Lymphocytes and Neurons.

ASANO, Mahaside (Japan)

From : Osaka Bioscience Institute, Japan
To : MPI for Biophysical Chemistry, Göttingen, Germany
2 years
Analysis of the Function of Genes which Control Mammalian Development.

BARIBAULT, Helene (Canada)

From : La Jolla Cancer Research Foundation, USA
To : La Jolla Cancer Research Foundation, USA
1 year
*Function(s) of Keratins in Mouse Embryonic Development :
Targeted Point and Null-Mutations of mK8 and mK18 Genes.*

BENGAL, Eyal (Israel)

From : Molecular Biology & Virology Lab., The Salk Institute, San Diego, USA
To : Molecular Biology & Virology Lab., The Salk Institute, San Diego, USA
2 years
Transcriptional Regulation by Fos Proteins.

BOSCHERT, Ursula (Germany)

From : Institute for Biology 3, Albert-Ludwigs University, Freiburg, Germany
To : Laboratoire de Génétique Moléculaire des Eucaryotes, Strasbourg, France
2 years
Characterization of Three Newly Cloned Drosophila Serotonin Receptors.

BOURGOUIN, Catherine (France)

From : Molecular Neurobiology Laboratory, The Salk Institute, San Diego, USA
To : Molecular Neurobiology Laboratory, The Salk Institute, San Diego, USA
1 year
*Molecular Genetics of Misguided: a Gene Controlling Axon Guidance
in Drosophila.*

BRADBURY, Andrew (UK)

From : Institute of Neurobiology, National Research Council, Rome, Italy
To : Institute of Neurobiology, National Research Council, Rome, Italy
1 year
*Neuroantibodies: Inhibition of NGF Action in Transgenic Mice by the Ectopic
Expression of Specific Monoclonals.*

BUESCHER, Marita (Germany)

From : Regulatory Biology Laboratory, The Salk Institute, San Diego, USA
To : Regulatory Biology Laboratory, The Salk Institute, San Diego, USA
1 year
Tissue-specific Control of the Chorionic Gonadotropin Alpha-Subunit Gene.

CASASNOVAS, Jose M. (Spain)

From : Unidad de Quimica Macromolecular, Spanish Research Council, Barcelona, Spain
To : Center for Blood Research, Pathology Dept., Harvard Medical School, Boston, USA
2 years
*Interaction of ICAM-1 with the Rhinovirus Receptor Sites :
Physical Characterization.*

CLARKE, Paul Andrew (UK)

From : Dept. of Biochemistry, St George's Hospital Medical School, University of London, UK
To : Cold Spring Harbor Laboratory, USA
2 years
The Role of Human Immunodeficiency Virus TAR RNA in Translational Control.

COBAS, Alberto (Spain)

From : Bonney Center, University of California, Irvine, USA
To : Bonney Center, University of California, Irvine, USA
1 year
*Computational Simulation and Analysis of Primary Auditory Neocortex
and Thalamus.*

COLEMAN, William J. (USA)

From : Dept. of Chemistry, MIT, Cambridge, USA
To : Dept. of Biology, Centre d'Etudes Nucléaires de Saclay, France
2 years
*Engineering a Purple Bacterial Model for the Primary Electron
Donor of Plant Photosystem II.*

CRAMER, Louise P. (UK)

From : Dept. of Biochemistry, Imperial College, London, UK
To : Dept. of Pharmacology, University of California, San Francisco, USA
2 years
Actin Dynamics and its Regulation in Neuronal Growth.

DAVIES, Brendan Henry (UK)

From : Imperial Cancer Research Fund, London, UK
To : MPI for Plant Breeding Research, Köln, Germany
2 years
Analysis of Homeotic Genes Involved in Floral Morphogenesis in Antirrhinum majus.

DAVIS, Claytus Andrew (Canada)

From : Dept. of Medical Genetics, University of Toronto, Canada
To : Division of Biology, CalTech, Pasadena, USA
2 years
*Isolation of Genes Expressed in Distinct Patterns
in the Developing Mammalian Central Nervous System.*

DE WEERD, Peter (Belgium)

From : Lab. voor Neuro- en Psychofysiologie, Katholieke Universiteit Leuven, Belgium
To : Lab. of Neuropsychology, NIMH, Bethesda, USA
2 years
*Effects of Extrastriate Cortex Lesions on Visual Discrimination Performance
in the Rhesus Monkey.*

DIDIER, Michel (France)

From : University of Sciences and Techniques of Languedoc, Montpellier, France
To : Ralph Lowell Lab., Mailman Research Centre, McLean Hospital, Belmont, USA
2 years
Novel Approaches in the Localization of Transcripts at a Single Cell Level.

DOSTATNI, Nathalie (France)

From : Dept. de Biotechnologie, Institut Pasteur, Paris, France
To : The Rockefeller University, New York, USA
2 years
*The Role of Protein-Protein Interactions in Specifying DNA Binding
by Homeodomain Proteins.*

D'MELLO, Santosh (India)

From : Division of Biomolecular Medicine, Boston University Medical Center, USA
To : Institute of Neurobiology, National Research Council, Rome, Italy
2 years
Interaction of Signalling Pathways in NGF Gene Expression

FANNON, Allison M. (Canada)

From : Research Institute, Hospital for Sick Children, Toronto, Canada
To : Dept. of Anatomy & Cell Biology, Columbia University, New York, USA
2 years
Functional Domains in the Po Glycoprotein of Myelin that Mediate Membrane Adhesion.

FASANO, Laurent (France)

From : CNRS, Marseille, France
To : Howard Hughes Medical Institute, The Rockefeller University, New York, USA
2 years
Functional Dissection of the Paired Protein.

FEDELE, Ernesto (Italy)

From : Dept. of Pharmacology & Pharmacognosy, University of Genova, Italy
To : Merck, Sharp & Dohme Neuroscience Research Centre, Harlow, UK
1 year
Control of Synaptic Glycine in Relation to N-methyl-D-aspartate Receptor Function.

FLOTOW, Horst (Germany)

From : Friedrich Miescher Institut, Basel, Switzerland
To : Friedrich Miescher Institut, Basel, Switzerland
2 years
Substrate Recognition Determinants and Biological Role of S6 Kinase.

GOH, Phuyay-Yee (Singapore)

From : Institute of Molecular & Cell Biology, National University of Singapore
To : MRC Lab. of Molecular Biology, Cambridge, UK
2 years
Genetic and Molecular Characterization of Components of the Yeast Spindle Pole Body.

GOTO, Jun (Japan)

From : Center for Research in Neuroscience, McGill University, Montreal, Canada
To : Center for Research in Neuroscience, McGill University, Montreal, Canada
2 years
Linkage Mapping of Familial Amyotrophic Lateral Sclerosis.

GU, Qiang (China)

From : MPI for Brain Research, Frankfurt, Germany
To : Dept. of Ophthalmology, University of British Columbia, Vancouver, Canada
2 years
Investigation of Factors Involved in Neuronal Plasticity of Mammalian Visual Cortex.

GYURIS, Jeno (Hungary)

From : Dept. of Molecular Biology, Massachussetts General Hospital, Boston, USA
To : Dept. of Molecular Biology, Massachussetts General Hospital, Boston, USA
1 year
Isolation and Characterization of Mammalian Cell Cycle Regulatory Genes Using Yeast Genetics.

HALSBAND, Ulrike (Germany)

From : Dept. of Neurology, University of Düsseldorf, Germany
To : Dept. of Physiology, Tohoku University School of Medicine, Sendai, Japan
2 years
*Neurophysiological and Neuropsychological Studies of Motor Learning in Monkeys (*Macaca fuscata*) and Man.*

HANISCH, Uwe-Karsten (Germany)

From : Dept. of Neurochemistry, Paul Fleschig Inst. for Brain Research, Univ. of Leipzig, Germany
To : Douglas Hospital Research Center, Verdun, Canada
2 years
Intrinsic Brain Lymphokine Systems: Localization, Pharmacology and Interactions with the Cholinergic Innervation .

HATAKEYAMA, Masanori (Japan)

From : Institute for Molecular and Cellular Biology, Osaka University, Japan
To : MIT, Cambridge, USA
2 years
Biological Function of LAR, a Transmembrane Protein Tyrosine Phosphatase.

HERMES, Michael (The Netherlands)

From : Netherlands Institute for Brain Research, Amsterdam, The Netherlands
To : Division of Neurology, Ottawa Civic Hospital, Canada
2 years
Central Peptidergic-Monoaminergic Interactions in Regulation of the Hypothalamo-Pituitary-Adrenal Axis.

HOCHSTENBACH, Frans (The Netherlands)

From : Lab. of Immunochemistry, Dana-Farber Cancer Inst., Harvard Medical School, Boston, USA
To : Dept. of Immunology, School of Medicine, Juntendo University, Tokyo, Japan
1 year
Role of Perforin in Effector Functions of Cytotoxic T Lymphocytes.

HOLLON, Tom (USA)

From : Génétique Cellulaire, Institut Pasteur, Paris, France
To : Génétique Cellulaire, Institut Pasteur, Paris, France
1 year
Application of Gene Targeting to the Behavioral Genetics of Beta-Endorphin.

HOSOKAWA, Toshiyuki (Japan)

From : Dept. of Physiology & Biophysics, Dalhousie University, Halifax, Canada
To : Dept. of Physiology & Biophysics, Dalhousie University, Halifax, Canada
2 years
Confocal Microscopic Studies of Synaptic Plasticity In Vitro.

HUI, Chi-chung (UK)

From : National Institute for Basic Biology, Okazaki, Japan
To : Mt. Sinai Hospital, Toronto, Canada
2 years
Identification of Genes that the Murine Engrailed-like Genes Regulate and their Roles in CNS Development.

HWANG, Jung-Joo (Korea)

From : University of Pittsburgh School of Medicine, USA
To : Institute of Chemical Biology, Faculty of Medicine, Strasbourg, France
2 years
Characterization of Transcriptional Intermediate Factors for Estrogen Receptor-responsive Gene Expression.

IIZUKA, Narushi (Japan)

From : Dept. of Microbiology, Tokyo Metropolitan Institute of Medical Science, Japan
To : Health Science Center, University of Colorado, Denver, USA
2 years
Translational Control of the Drosophila Antennapedia mRNA by a Novel Internal Ribosome Binding Mechanism.

JUPIN, Isabelle (France)

From : Institut des Sciences Végétales, CNRS, Gif-sur-Yvette, France
To : Lab. of Plant Molecular Biology, The Rockefeller University, New York, USA
2 years
In vitro and in vivo Studies of a Plant Transcription Factor.

KANO, Masanobu (Japan)

From : Dept. of Physiology, Jichi Medical School, Tochigi, Japan
To : MPI für Biophysikalische Chemie, Göttingen, Germany
1 year
Studies of Cellular Mechanisms of Long-term Modification of Synaptic Transmission in the Cerebellar Cortex.

KASHLEV, Mikhail (USSR)

From : Institute of Molecular Genetics, USSR Academy of Sciences, Moscow, USSR
To : Dept. of Microbiology, Columbia University, New York, USA
2 years
A Structure/Function Analysis of Escherichia coli RNA Polymerase.

KATAGIRI, Fumiaki (Japan)

From : Lab. of Plant Molecular Biology, The Rockefeller University, New York, USA
To : Dept. of Molecular Biology, Massachusetts General Hospital, Boston, USA
2 years
Identification and Characterization of Genes Involved in Plant Defense Mechanisms.

KATAYAMA, Tsutomu (Japan)

From : Institute for Virus Research, Kyoto University, Japan
To : Dept. of Biochemistry, Stanford University, USA
2 years
Analysis of Regulation for Replication Initiation at the E. Coli Chromosomal Origin oriC in vitro.

KINOSHITA, Noriyuki (Japan)

From : Dept. of Biophysics, Faculty of Science, Kyoto University, Japan
To : Dept. Biochemistry & Biophysics, University of California, San Francisco, USA
2 years
Biochemical and Mutational Analyses on Activation and Inactivation of Frog p34cdc2 Kinase/Cyclin Complex.

KOIDE, Shohei (Japan)

From : Dept. of Agricultural Chemistry, University of Tokyo, Japan
To : Dept. of Molecular Biology, Research Institute of Scripps Clinic, La Jolla, USA
2 years
Study on Initiation of Protein Folding. Conformational Characterization of Peptide Fragments of Myoglobin.

KOZASA, Tohru (Japan)

From : Dept. of Pharmacology, University of Illinois, Chicago, USA
To : Dept. of Pharmacology, University of Texas Southwestern Medical Center, Dallas, USA
2 years
The Analysis of the Functional Domain of Adenylyl Cyclase.

KUBO, Yoshihiro (Japan)

From : Dept. of Neurophysiology, Tokyo Metropolitan Institute for Neurosciences, Japan
To : Dept. of Physiology and Biochemistry, University of California, San Francisco, USA
2 years
Molecular Cloning and Expression Study of Potassium Channels Significant in Long Term Potentiation.

LABOUESSE, Michel (France)

From : Dept. of Biology, MIT, Cambridge, USA
To : Dept. of Biology, MIT, Cambridge, USA
1 year
Genes Controlling the Assymetry of Cell Division during Caenorhabditis elegans Development.

LALAND, Kevin Neville (UK)

From : Dept. of Genetics and Biometry, University College, London, UK
To : Dept. Biochemistry and Molecular Biology, University of California, Berkeley, USA
2 years
Brain's Role in Evolution.

LANKENAU, Dirk-Henner (Germany)

From : Dept. of Biology, The John Hopkins University, Baltimore, USA
To : Dept. of Biology, The John Hopkins University, Baltimore, USA
2 years
Interactions of Suppressors and Enhancers with Gypsy-Retrotransposon-Induced Forked Mutants in Drosophila

LAOIDE, Brid Maire (Ireland)

From : Dept. of Genetics, Trinity College, Dublin, Ireland
To : Laboratoire de Génétique Moléculaire des Eucaryotes, Strasbourg, France
2 years
*Cloning of the Gene Encoding ABP, an Auxiliary Bridging Protein
which Stabilises Fos-Jun Binding to Target DNA.*

LEWIS, Joe (UK)

From : Research Institute of Molecular Pathology, Vienna, Austria
To : European Molecular Biology Laboratory, Heidelberg, Germany
2 years
*Identification and Characterization of RNA Polymerase III Specific
Factors Involved in U6 snRNA Transcription.*

LIM, Dukhwan (Korea)

From : School of Electrical Engineering, Cornell University, Ithaca, USA
To : Division of Biology, CalTech, Pasadena, USA
2 years
Neural Correlates of Birdsong Learning.

MADER, Sylvie (France)

From : Lab. de Génétique Moléculaire des Eucaryotes, Faculté de Médecine de Strasbourg, France
To : Dept. of Biochemistry, McGill University, Montreal, Canada
2 years
Translational Control of Oncogenesis.

MASSE, Thierry (France)

From : Dept. of Neurobiology & Anatomy, Texas University, Houston, USA
To : Dept. of Neurobiology & Anatomy, Texas University, Houston, USA
2 years
*Dendritic Targeting of mRNAs in Hippocampal Neurons :
Functions in Synaptic Mechanisms of Learning and Memory.*

MATSUNO, Kenji (Japan)

From : National Institute for Basic Biology, Okazaki, Japan
To : Dept. of Cell Biology, Yale University, New Haven, USA
2 years
*Regulation of Drosophila Neurogenesis Genes by Notch and Delta
Proteins through Cell-Cell Interaction.*

MAYEDA, Akila (Japan)

From : Cold Spring Harbor Laboratory, USA
To : Cold Spring Harbor Laboratory, USA
2 years
Mechanisms of Pre-mRNA Splice Site Selection.

MCINTYRE, Joseph (USA)

From : Dept. of Brain and Cognitive Sciences, MIT, Cambridge, USA
To : Lab. de Physiologie Neurosensorielle, CNRS, Paris, France
1 year
Internal Models Affecting the Execution of Movement.

MERKENSCHLAGER, Matthias Michael (Germany)

From : Dept. d' Immunologie, Institut de Chimie Biologique, Strasbourg, France
To : Dept. d' Immunologie, Institut de Chimie Biologique, Strasbourg, France
2 years
*In vitro Studies on the Thymic Selection of Murine T Lymphocytes :
Thymic Organ Culture Complemented by Gene Transfer.*

MITSUI, Ken-ichi (Japan)

From : Lab. Molecular & Cellular Neuroscience, Rockefeller University, New York, USA
To : Lab. Molecular & Cellular Neuroscience, Rockefeller University, New York, USA
2 years
Regulation of Protein Synthesis by Phosphorylation of Elongation Factor 2.

MIYAGAWA, Kiyoshi (Japan)

From : Third Dept. of Internal Medicine, University of Tokyo, Japan
To : MRC Human Genetics Unit, Western General Hospital, Edinburgh, UK
2 years
Functional Studies on the Wilms' Tumor Gene.

MORI, Koichi (Japan)

From : Division of Biology, CalTech, Pasadena, USA
To : Division of Biology, CalTech, Pasadena, USA
1 year
Neuronal Mechanisms Involved in the Recognition of Biologically Significant Sounds.

MURRELL, Ruth Dorothy (UK)

From : Dept. of Molecular and Cellular Physiology, Stanford University Medical Center, USA
To : Dept. of Molecular and Cellular Physiology, Stanford University Medical Center, USA
2 years
Molecular Mechanisms of Potassium Channel Gating.

OHYA, Yoshizaku (Japan)

From : Dept. of Biology, University of Tokyo, Japan
To : Dept. of Genetics, Stanford University School of Medicine, USA
2 years
Genetic Study on Roles of Calmodulin Binding Proteins in Mitotic Process.

PERARNAU, Béatrice (France)

From : Hopital Cochin, Paris, France
To : Centre for Animal Genomic Research, University of Edinburgh, UK
2 years
Isolation of H-2Db and H-2Kb Negative Mice by Homologous Recombination.

PEVERALI, Antonio Fiorenzo (Italy)

From : Department of Genetics and Microbiology, University of Pavia, Italy
To : European Molecular Biology Laboratory, Heidelberg, Germany
2 years
Identification of New Genes Encoding Helix-Loop-Helix Protein Involved in Cell-Cycle and Differentiation Control.

PICAUD, Serge (France)

From : Laboratoire de Neurobiologie, CNRS, Marseille, France
To : University of California, Berkeley, USA
2 years
Visual Motion Perception : Analysis of the Underlying Neural Circuitry in the Vertebrate Retina.

PICCIOTTO, Marina (USA)

From : The Rockefeller University, New York, USA
To : Lab. de Neurobiologie Moléculaire, Institut Pasteur, Paris, France
2 years
Transcriptional Control of the Acetylcholine Receptor.

PROSSNITZ, Eric Robert (Canada)

From : Dept. of Immunology, Research Institute of Scripps Clinic, La Jolla, USA
To : Dept. of Immunology, Research Institute of Scripps Clinic, La Jolla, USA
2 years
Signal Transducing Domains of the Neutrophil Formyl Peptide Receptor.

RAMASWAMI, Mani (India)

From : Division of Biology, CalTech, Pasadena, USA
To : Dept. of Biochemistry and Biophysics, University of California, San Francisco, USA
2 years
Genetic and Molecular Analysis of Synaptic Vesicle Morphogenesis and Function.

RHEE, Seung (Korea)

From : Dept. of Biophysics, The John Hopkins University, Baltimore, USA
To : Institute for Protein Research, Osaka University, Japan
2 years
Structure and Function of Inositol 1,4,5-trisphosphate Receptor in Neuronal Cells.

ROBBINS, Stephen Mark (Canada)

From : Dept. of Microbiology, University of British Columbia, Vancouver, Canada
To : The G.W. Foundation, University of California, San Francisco, USA
2 years
The Role of Protein-Tyrosine Kinases during Cellular Differentiation.

ROGGE, Lars (Germany)

From : Institute of Biochemistry, University of Munich, Germany
To : Stanford University School of Medicine, USA
2 years
Functional Analysis of Replication Factors Promoting G1- to S-phase Transition of Eukaryotic Cells.

ROSEN, Barry S. (USA)

From : A F R C Centre for Animal Genome Research, University of Edinburgh, UK
To : A F R C Centre for Animal Genome Research, University of Edinburgh, UK
2 years
Chimera Analysis of the Role of TGF-Beta Family Growth Factors in Mammalian Pattern Formation.

ROTH, Siegfried (Germany)

From : MPI für Entwicklungsbiologie, Tübingen, Germany
To : Dept. of Biology, Princeton University, USA
2 years
Molecular Analysis of the Pattern Formation Gene Cornichon, a Potential Ligand of the Drosophila EGF Receptor.

SABE, Hisataka (Japan)

From : Lab. of Molecular Oncology, The Rockefeller University, New York, USA
To : Lab. of Molecular Oncology, The Rockefeller University, New York, USA
2 years
Transformation and Abrogation of Growth Factor Requirement Mediated by Various Mutants of p60 src.

SAP, Jan (Belgium)

From : Dept. of Chemical Immunology, Weizmann Institute of Science, Rehovot, Israel
To : Dept. of Pharmacology, New York University Medical Centre, USA
2 years
Signal Transduction by Receptor Protein Tyrosine Phosphatases.

SCHWEISGUTH, François (France)

From : Institut Jacques Monod, Paris, France
To : Dept. of Biology, University of California, San Diego, USA
1 year
Regulatory Function of HLH Proteins in Drosophila Peripheral Nervous System Pattern Formation.

SKARNES, William Carl (USA/Canada)

From : Dept. of Molecular & Medical Genetics, University of Toronto, Canada
To : AFRC Center for Animal Genome Research, University of Edinburgh, UK
2 years
The Cellular and Molecular Basis of Genetic Mutants, New and Old, that Perturb Early Mouse Development.

STROM, Molly (USA)

From : Dept. of Biochemistry, University of Wisconsin, Madison, USA
To : MPI for Biophysical Chemistry, Göttingen, Germany
2 years
Biochemical and Molecular Genetic Analysis of proteins Interacting with Ryh1p.

SZCZUPAK, Lidia (Argentina)

From : Dept. of Biology, University of California, San Diego, USA
To : Dept. of Biology, University of California, San Diego, USA
2 years
Segmental Specificity of the Response to Acetylcholine of Retzius Cells of the Leech.

TAKADA, Shinji (Japan)

From : Roche Institute of Molecular Biology, Nutley, USA
To : Roche Institute of Molecular Biology, Nutley, USA
2 years
Functional Analysis of the Wnt-5a Gene in Mouse Limb Morphogenesis.

TAKAGI, Masaru (Japan)

From : Fermentation Research Institute, Tsukuba, Japan
To : Plant Research Lab., Michigan State University-DOE, East Lansing, USA
1 year
Control of mRNA Stability in Dicotyledonous Plants.

TAKUMI, Toru (Japan)

From : Institute for Immunology, Kyoto University Faculty of Medicine, Japan
To : Whitehead Institute for Biomedical Research, Cambridge, USA
2 years
Molecular Analysis of a GTP-binding Protein Involved in Translocation of the Glucose Transporter.

TATEI, Kazuaki (Japan)

From : Dept. of Applied Biological Science, Science University of Tokyo, Noda, Japan
To : Dept. of Biological Sciences, Columbia University, New York, USA
2 years
Characterization of the PRTF/SRF Family of Transcriptional Factors in Drosophila.

THEOPOLD, Ulrich (Germany)

From : Institute for Biology III, University of Freiburg, Germany
To : Dept. of Microbiology, University of Stockholm, Sweden
2 years
Cloning of Immune Genes from Drosophila melanogaster.

VALGE-ARCHER, Vila Epp (USA)

From : Dept. of Biology, MIT, Cambridge, USA
To : MRC Lab. of Molecular Biology, Cambridge, UK
2 years
Functional Studies of the Oncogene, Rhombotin.

VASSEROT, Alain Philippe (Switzerland)

From : Institute of Molecular Pathology, Vienna, Austria
To : Dept. of Molecular & Cell Biology, University of California, Berkeley, USA
2 years
Isolation and Characterization of Co-activators, a Novel Class of Transcription Factors.

VIGNALI, Dario Angelo (UK)

From : Institute for Immunology & Genetics, German Cancer Research, Heidelberg, Germany
To : Dept. of Biochemistry & Molecular Biology, Harvard University, Cambridge, USA
2 years
Mechanisms Involved in T Cell Ontogeny and Tolerance.

VILLEMAIN, Françoise (France)

From : Neuroanatomy Lab., Montreal Neurological Institute, Montreal, Canada
To : Neuroanatomy Lab., Montreal Neurological Institute, Montreal, Canada
1 year
Origin, Localization and Putative Functional Role of Interleukin-2 in the Central Nervous System.

VIVIANO, Carolyn Marie (USA)

From : College of Physicians & Surgeons, Columbia University, New York, USA
To : Ludwig Institute for Cancer Research, London, UK
2 years
Retinoic Acid and its Role in the Specification of Pattern during Limb Regeneration in the Adult Newt.

YAN, Honggao (China)

From : Ohio State University, Columbus, USA
To : Dept. of Biochemistry, University of Wisconsin, Madison, USA
2 years
NMR Study of HIV-1 Protease.

YOKOTA, Akira (Japan)

From : Institute for Molecular and Cellular Biology, Osaka University, Japan
To : Pathology Dept., Harvard Medical School, Boston, USA
2 years
Molecular Mechanism Regulating the Function of Adhesion Molecules.

ZHANG, Xiaohua (China)

From : Dept. of Biology, MIT, Cambridge, USA
To : Dept. of Biology, MIT, Cambridge, USA
1.5 year
Structural Studies of Translational Repression : The reg A-RNA Complex.

SHORT - TERM FELLOWSHIPS

Awards April - July 1991 New Regulations: awards made throughout the year

BOMMER, Ulrich-Axel (Germany)

From : Institute of Molecular Biology, Berlin-Buch, Germany
 To : Dept. of Biochemistry, McGill University, Montreal, Canada
 3 months
*Translational Regulation of the Growth-related Protein P23 :
 Role of Phosphorylation of Initiation Factor eIF-4E.*

COLOMBO, Lucia (Italy)

From : Dept. of General Psychology, University of Padua, Italy
 To : Dept. of Psychology, University of Western Ontario, London, Canada
 3 weeks
Form Priming as a Tool for Modeling Word Recognition.

DENISOT, Marie-Ange (France)

From : Lab. Bioorganic & Biotechnology, Ecole Normale Supérieure de Paris, France
 To : Dept. of Biochemistry, Purdue University, West Lafayette, USA
 3 months
*Active Site Mapping of Glucosamine-6-Phosphate Synthase Using
 Site-directed Mutagenesis.*

GOEL, Anurag (Canada)

From : MPI für Züchtungsforschung, Köln, Germany
 To : Plant Research Lab., Michigan State University-DOE, East Lansing, USA
 3 months
*Characterization of Cis and Trans Elements Regulating Expression of ENOD2,
 an Early Nodulin Gene.*

KOEHL, Patrice (France)

From : Institut de Biologie Moléculaire et Cellulaire, CNRS, Strasbourg, France
 To : Dept. of Chemistry, Faculty of Science, Kyoto University, Japan
 1.5 months
*Reconstruction of NMR Relaxation Matrix in which Conformational
 Dynamics is Included.*

MEYER, Hans-Martin (Germany)

From : Zentralinstitut für Genetik und Pflanzenforschung, Gatersleben, Germany
To : Lab. Genetica, Rijksuniversiteit Gent, Belgium
3 months
Agrobacterium mediated Transformation of Arabidopsis thaliana

PALCZEWSKI, Krzysztof (Poland)

From : R.S. Dow Neurological Sciences Institute, Portland, USA
To : Institut für Biophysik u. Strahlenbiologie, Freiburg University, Germany
0.5 month
The Phosphorylation of Rhodopsin.

REICHARDT, Werner (Germany)

From : Institute of Microbiology & Experimental Therapy, Jena, Germany
To : Bacterial Antigens Unit, Institut Pasteur, Paris, France
3 months
Cloning and Sequence Determination of the Streptococcal Erythrogenic Toxins.

ROBINSON, Jane Suzanna (Ireland)

From : CalTech, Pasadena, USA
To : Molecular Biology Unit, Tata Institute for Fundamental Research, Bombay, India
3 months
The Isolation and Preliminary Characterization of S. pombe Mutants with Defects in Secretion.

SCHNEIDER, Regine (Germany)

From : Institute of Neurobiology and Brain Research, Magdeburg, Germany
To : University of Wales, Swansea, UK
2 months
Neurogenetics - Hormonal Regulation of Aggressive Behaviour.

SHIMIZU, Takashi (Japan)

From : Research Institute for Polymers and Textiles, AIST, MITI, Ibaraki, Japan
To : Dept. of Pharmacology, University of California, San Francisco, USA
2.5 months
Identification of Molecular Motors in Mitotic Processes by Substrate Fingerprinting.

SONOBE, Selji (Japan)

From : Dept. of Biology, Faculty of Science, Osaka University, Japan
To : University Louis Pasteur, Strasbourg, France
3 months
Mitosis and Cell Cycle Regulation in Higher Plants.

SONOIKE, Kintake (Japan)

From : Dept. of Biology, Faculty of Science, University of Tokyo, Japan

To : Dept. of Biology, Washington University, St Louis, USA

3 months

*Targeted Mutagenesis of a Low Molecular Weight Protein of the Photosystem I
Complex of Anabaena variabilis ATCC 29413.*

VAN EERDENBURG, Franck Jan (The Netherlands)

From : Netherlands Institute for Brain Research, Amsterdam, The Netherlands

To : Faculty of Medicine, University of Calgary, Canada

3 months

*To Explore Peptide-Glutamate Interaction in the Ventral Septal Area
of the Brain in Identified Cell Populations.*

WORKSHOPS

Awards in April 1991

Heidelberg, Germany
6-9 September 1991

Genes Controlling Cell Growth and Tumorigenesis in Drosophila.
Prof. B.M. Mechler, Prof. E. Gateff, Prof. M.F. Hoffmann
(50) US\$ 50,000

Hamburg, Germany
4-6 May 1992

Molecular Evolution of Neuropeptides in Relation to Behavior.
Prof. D. Richter, Prof. D. Pfaff, Prof. M. Suzuki
(80) US\$ 57,834

Leuven, Belgium
4-7 May 1992

*The Control and Modulation of Patterns of Interlimb Coordination.
A. Multidisciplinary Perspective.*
Prof. Dr. S.P. Swinnen, Dr. J. Massion, Prof. Dr. H. Heuer,
Prof. P. Casaer
(45) US\$ 64,090

Les Diablerets, Switzerland
26-31 May 1991

Genetic Control of Vertebrate Development.
Prof. P. Gruss, Prof. E. Boncinelli, Dr. D. Duboule,
Dr. R. Krumlauf, Dr. J. Papamatheakis
(70) US\$ 50,000
Co-sponsored with the European Science Foundation
and the European Molecular Biology Organization

() indicates the number of participants



Awards In April 1991

Heidelberg, Germany
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INTERNATIONAL HUMAN FRONTIER SCIENCE PROGRAM

(H F S P O)

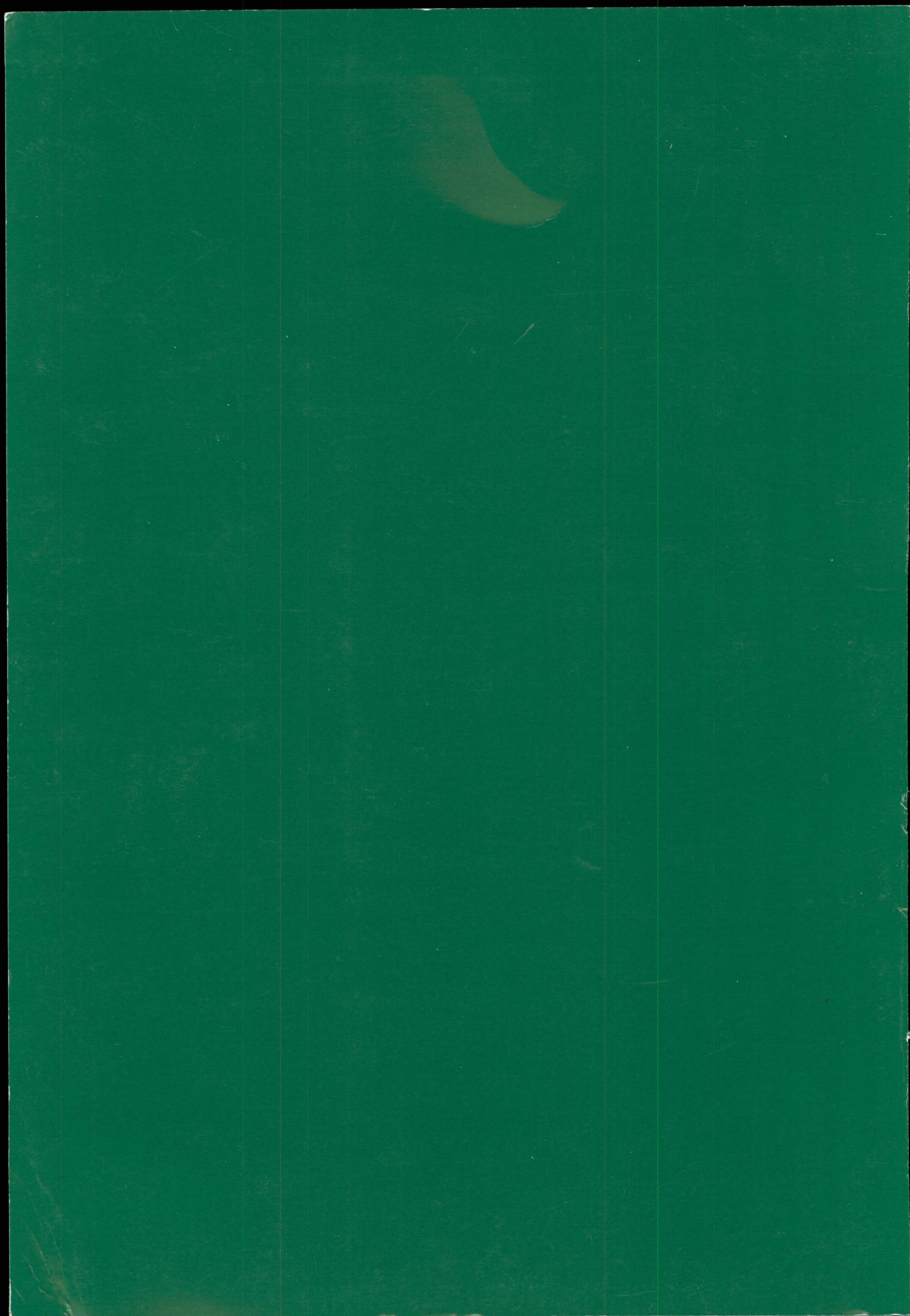
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REPORT 1989 - 91

(until march 1991)



THE INTERNATIONAL HUMAN FRONTIER SCIENCE PROGRAM

(HFSP)

Erratum:

On the cover of the report "until March 1991" should read
"until July 1991"

CONTENTS

pp.	1	Introduction
	2-3	Aims of the HFSP
	4	History of the HFSP, Membership, Eligibility for Awards
	5	Structure of the HFSP
	7	Meetings of the Board of Trustees Council of Scientists Review Committees
	8	Membership of the Board of Trustees
	9	Membership of the Council of Scientists
		Membership of the Review Committees :
	10	Research Grants (<i>Brain Functions</i>)
	11	Research Grants (<i>Molecular</i>)
	12	Fellowships and Workshops (<i>Brain Functions</i>)
	13	Fellowships and Workshops (<i>Molecular</i>)
	15	HFSP Secretariat
		Awards, 1990 and 1991 :
	19-23	Research Grants
	25-29	Long-Term Fellowships
	31	Short Term Fellowships
	32	Workshops
	33	Scientific Assessment of the Program
	35-45	Finance

Annex I

HFSP Awardees, 1990

pp.	1-15	Research Grants
	17- 31	Long-Term Fellowships
	33-37	Short-Term Fellowships
	39-41	Workshops

Annex II

HFSP Awardees, 1991

pp.	1-15	Research Grants
	17-37	Long-Term Fellowships
	39-43	Short-Term Fellowships
	45-47	Workshops

INTRODUCTION

During the period 1986-87, the government of Japan introduced the concept of a program to support international collaboration in basic research on biological functions called the Human Frontier Science Program (HFSP). In proposing to initiate the HFSP, Japan noted the need to increase its contribution to the world's overall effort in basic science, and, subsequently, at a number of international meetings of experts, specific areas of research and methods of supporting them were defined.

The Japanese Prime Minister proposed the HFSP at the Venice Economic Summit in June 1987, an initiative which was welcomed by Japan's Economic Summit partners. In order to ensure early implementation of the HFSP, Japan offered to provide significant funding for an initial 3-year phase, with some additional contributions from the other partners, called Management Supporting Parties (MSP). The current MSP's are Canada, France, Germany, Italy, Japan, Switzerland, the United Kingdom, the United States of America and the Commission of the European Communities.

The HFSP operates, uniquely, as an intercontinentally-managed research funding agency, applying international peer review and focussing on programs of research that require collaboration between teams in different countries. The operating principles of the Program are, therefore:

- to support basic research of the highest quality;
- to promote international (and particularly, intercontinental) collaboration in research; and
- to support interdisciplinary science.

The initial phase of the Program has witnessed the support of an impressive array of excellent science that would have been difficult or impossible to fund through traditional or national research granting agencies.

THE AIMS

The Human Frontier Science Program (HFSP) promotes, through international collaboration, basic research in two areas of the biological sciences; within these areas certain priority fields have been selected:

Basic research

- A. basic research for the elucidation of brain functions
 - Perception and cognition
 - Movement and behavior
 - Memory and learning
 - Language and thinking

- B. basic research for the elucidation of biological functions through molecular level approaches.
 - Expression and transfer of genetic information
 - Morphogenesis
 - Molecular recognition and responses
 - Energy conversion

Research in these areas is advancing rapidly, both conceptually and technically, and promises to provide fundamental new insights into the complex mechanisms which underlie the activities of living organisms.

Internationality

The opportunity to participate in the basic research sponsored by the HFSP is available to all scientists, worldwide. The **international** and **intercontinental** character of the Program is reflected in the nature of its awards. **Research grants** are awarded only for programs that involve collaboration between teams in different countries; **fellowships** are available for post doctoral scientists who wish to work in a different country; and support is provided for international **workshops**.

**Young
scientists**

In addition to its international character, a second emphasis of the HFSP is to encourage, early in their careers, scientists who are expected to play an important role in originating and pursuing creative research. Young scientists are encouraged to apply as team leaders in the research grants awarded by the HFSP.

**Interdisciplinary
research**

The third emphasis of the HFSP is on interdisciplinary research because it is at the boundaries between disciplines that new ideas, techniques and discoveries are often generated. The complexity of modern research may limit the ability of individual national laboratories to exploit fully all the techniques and ideas that hold promise for making fundamental advances in biology. Internationality and interdisciplinarity will encourage the convergence of the resources necessary for achieving advances more rapidly and efficiently.

**Results from
HFSP research**

The HFSP provides resources for international collaboration in basic research and requires that the results of this research are made available, freely and rapidly, to scientists worldwide. It will not become involved in any claim about **intellectual or industrial property rights** that may arise from the work it sponsors. The attribution of such rights, if any, will be determined by the scientists themselves, following the practices they normally follow in their own organizations or institutions.

**Conduct of
HFSP research**

The highest **ethical standards** must be observed in research funded by the HFSP. Where applications for support raise significant bioethical issues, these will be considered by the Organization having regard, *inter alia*, to the provisions and practices of the particular country where research is to be conducted, and to relevant international practice.

HISTORY

The HFSP is an initiative of the Japanese Government, originally proposed at the Venice Economic Summit in June 1987. The Program was further developed by international committees representing the seven Economic Summit countries and the European Community. Intergovernmental meetings were held in June and July, 1989, in Tokyo and Berlin, respectively, and the "Chairman's Summary" of the agreement reached at the Berlin meeting set out the form in which the International Human Frontier Science Program was to be implemented. In October 1989, the International Human Frontier Science Program Organization (HFSPPO) was incorporated in Strasbourg, France, where the Secretariat is now located, and an announcement was made advertising the availability of grants for international programs of research, fellowships and scientific workshops. The first awards were made in March 1990, the second in April 1991 and the third will be made in March 1992. The initial phase of the Program runs until the end of March 1992.

MEMBERSHIP

The countries which take part in the management of the Program and nominate members of the Board of Trustees are the Management Supporting Parties (MSP's). The founding MSP's were the members of the seven Economic Summit countries: **Canada, France, Germany, Italy, Japan, the United Kingdom and the United States of America.** The **Commission of the European Communities** was admitted as an MSP in 1990 and **Switzerland** in 1991.

ELIGIBILITY for awards

Scientists from countries which are MSP's are **eligible** to apply for awards.

Following the admission of the CEC as an MSP, scientists from EC member states which are not themselves MSP's - **Belgium Denmark, Greece, the Republic of Ireland, Luxembourg, The Netherlands, Portugal and Spain** - are also eligible to apply for awards on the same basis as scientists in MSP countries.

Research institutions in the eligible countries may host HFSP fellows from **any** other country. Similarly, scientists from **any country** may be co-applicants for research grants as long as the application is submitted by a scientist (the principal applicant) who is a national of an eligible country and works in an institution located in one of them. (The country of nationality can be different from that in which the research institution is located.)

STRUCTURE

The HFSP has a structure which ensures that the scientific merit of applications and their relevance to the aims of the Program are determined solely by **International peer review**. The Organization has been fortunate in securing the cooperation of scientists, worldwide, in assessing applications for its awards.

The Board of Trustees (*Table 1*), is responsible for the overall policy concerning the conduct and operation of the Program and for the allocation of resources to the various forms of support. Each MSP contributes two representatives to the Board.

The Council of Scientists (*Table 2*), consisting of nominees from each MSP, decides on scientific matters related to the operation of the Program. It receives recommendations from the Review Committees and, within the available budget, draws up a list of awards for the approval of the Trustees.

The Review Committees (*Tables 3 a-d*), composed of scientists engaged in research in the subject areas sponsored by the Organization, are responsible for the scientific evaluation of the applications. The four Committees meet each year in Strasbourg and are assisted in their evaluations by opinions solicited by mail from an international panel of mail-reviewers.

The Review Committees draw up short-lists of candidates, ranked according to scientific merit, and assess the budgets requested by each applicant.

The Secretariat (*Table 4*) of the HFSP, which occupies accommodation provided by the City of Strasbourg, solicits applications for awards through advertisements and announcements, and assigns them to the appropriate mail-reviewers and Review Committees. The Secretariat services all the Committees and the Board of Trustees. It also administers the awards and answers enquiries about the HFSP throughout the year.

The Board of Trustees, the Council of Scientists and the Review Committees have met on the following occasions:

Board of Trustees

1st Meeting	November 21, 22	1989	Strasbourg
2nd Meeting	April 25, 26	1990	Strasbourg
3rd Meeting	January 21, 22, 23	1991	Ottawa
4th Meeting	April 10, 11	1991	Strasbourg
5th Meeting	June 5, 6	1991	Strasbourg

Council of Scientists

1st Meeting	December 19	1989	Rome
2nd Meeting	March 16, 17	1990	Strasbourg
3rd Meeting	May 26	1990	Rome
4th Meeting	March 18, 19	1991	Strasbourg
5th Meeting	May 21, 22	1991	Rome

Review Committees (all in Strasbourg)

1990 Fellowships/Workshops	Brain*	February 19, 20
	Molecular†	February 20, 21, 22
Research Grants	Brain	March 5, 6
	Molecular	March 7, 8
1991 Fellowships/Workshops	Brain	January 14, 15
	Molecular	January 16, 17, 18
Research Grants	Molecular	January 28, 29
	Brain	February 4, 5

* "Brain" = *Basic research for the elucidation of brain functions*

† "Molecular" = *Basic research for the elucidation of biological functions through molecular level approaches*

MEMBERS OF THE BOARD OF TRUSTEES

Chairman: Ambassador Hiromichi MIYAZAKI (Council for Science and Technology, Japan)

Canada	Dr. Henri C. ROTHSCHILD (Vice-Chairman) Dr. Allan S. POOLE	Technology Policy Branch, Industry, Science and Technology, Ottawa Dept. of External Affairs, Science and Technology Division, Ottawa
France	Mr. Jean de GLINIASTY Dr. Claude AMIEL	Ministry for Foreign Affairs, Paris Ministry for Research and Technology, Paris
Germany	Dr. Helmut KLEIN Dr. Heinrich PFEIFFER	Project Management Biology, Energy and Ecology (BEO), Research Center, Jülich Alexander von Humboldt Foundation, Bonn
Italy	Prof. Alberto ALBERTINI Dr. Michele LENER (Vice-Chairman)	Institute of Chemistry, University of Brescia Ministry of University and Scientific Research, Rome
Japan	Dr. Kozo IIZUKA	Ministry of International Trade and Industry, Tokyo
Switzerland	Mr. Yves DEPEURSINGE Mr. Patrick PIFFARETTI	Federal Department of Interior, Bern Federal Department of Foreign Affairs, Bern
UK	Dr. Robin RITZEMA Dr Anne V. HARRISON	Dept. of Education and Science, Science Branch, London Agricultural and Food Research Council, Swindon
USA	Dr. Mary CLUTTER Dr. Jerome GREEN	National Science Foundation, Washington National Institutes of Health, Bethesda
CEC	Mr. Giorgio BOGGIO Mr. George METAKIDES	Commission of the European Communities Division XII-G-3, Brussels Commission of the European Communities, Division DG-XIII, Brussels

Table 2

MEMBERS OF THE COUNCIL OF SCIENTISTS

Chairman: Dr. J. Edward RALL (National Institutes of Health, USA)

<i>Canada</i>	Dr. James FRIESEN Prof. Vivian ABRAHAMS	Hospital for Sick Children, Toronto Dept. of Physiology, Queen's University, Kingston
<i>France</i>	Prof. Pierre CHAMBON Prof. Jean-Pierre CHANGEUX	Louis Pasteur University, Strasbourg Institut Pasteur, Paris
<i>Germany</i>	Prof. E. L. WINNACKER Prof. K. P. HOFFMANN	Institute for Biochemistry, Ludwig-Maximilians University, Munich Institute for General Zoology and Neurobiology, Ruhr University, Bochum
<i>Italy</i>	Prof. Giorgio PARISI Dr. G.P. TOCCHINI-VALENTINI	University of Rome (Tor Vergata) Scientific National Research Council, Rome
<i>Japan</i>	Dr. Masao ITO Prof. Akiyoshi WADA	Institute of Physical and Chemical Research, Saitama Sagami Chemical Research Center, Kanagawa
<i>Switzerland</i>	Dr. Michel CUENOD	University of Zürich
<i>UK</i>	Lord ADRIAN Sir Walter BODMER	Pembroke College, Cambridge University Imperial Cancer Research Fund, London
<i>USA</i>	Prof. Joseph VARNER	Dept. of Biology, Washington University, Saint-Louis
<i>CEC</i>	Prof. André GOFFEAU Prof. Niels BERNSEN	University of Louvain, Belgium University of Roskilde, Denmark

Table 3 a

**MEMBERS OF THE REVIEW COMMITTEE
FOR RESEARCH GRANTS 1990 - 1991**

Brain Functions

Canada	Dr. Max S. CYNADER	Eye Care Center, University of British Columbia, Vancouver
	Dr. André R. LECOURS	Centre de Recherche du Centre Hospitalier Côte-des Neiges, Montreal
France	Dr. Pierre BUSER	Université Paris VI, Paris
	Dr. Anne FELTZ	Lab. d'Etude des Régulations Physiologiques, Strasbourg
Germany	Prof. Dr. Martin HEISENBERG	Institute of Genetics and Microbiology, Würzburg
	Prof. Dr. Klaus Peter HOFFMANN (Chairman)	Fakultät für Biologie, Allg. Zoologie und Neurobiologie, Ruhr-Universität, Bochum
Italy	Prof. Piergiorgio STRATA	Dept. of Anatomy and Human Physiology, Torino
	Prof. Giorgio BERNARDI	Dept. of Clinical Neurology, 2d University of Rome, Rome
Japan	Prof. Hideo SAKATA	Dept. of Physiology, Nihon University School of Medicine, Tokyo
	Prof. Mei SATAKE	Brain Research Institute, Niigata University
UK	Dr. Susan D. IVERSEN	Neuroscience Research Centre, Harlow
	Dr. Alan ROBERTS (1990 only)	Dept. of Zoology, University of Bristol
	Prof. Michael O'SHEA (1991)	Cell Biology Laboratory, School of Life Sciences, Royal Holloway & New Bedford College, Egham
USA	Dr. David ROBINSON (1991)	The Wilmer Institute, The Johns Hopkins Hospital, Baltimore
	Dr. Marek-Marsel MESULAM (1991)	Dept. of Neurology, Beth Israel Hospital, Boston
CEC	Prof. Guy ORBAN	Lab. of Neuro-and Psychophysiology, Catholic University, Louvain-la-Neuve, Belgium
	Prof. Ramon LOPEZ de MANTARAS	CEAB - CSIC, Blanes, Gerona, Spain

Table 3 b

**MEMBERS OF THE REVIEW COMMITTEE
FOR RESEARCH GRANTS 1990-1991**

Molecular Approaches to Biological Functions

Canada	Dr. Tak W. MAK Dr. Johan H. VAN DE SANDE	The Ontario Cancer Institute, Toronto Dept. of Medical Biochemistry, University of Calgary
France	Dr. Marianne GRUNBERG-MANAGO <i>(Chairman)</i> Prof. Claude KEDINGER Pr. Patrick CHARNAY <i>(1990 only)</i>	Institut de Biologie Physico-Chimique, Paris Lab. de Génétique Moléculaire des Eucaryotes, Strasbourg CNRS, Ecole Normale Supérieure, Paris
Germany	Prof. Dr. Peter GRUSS <i>(1990 only)</i> Prof. Dr. Walter NEUPERT Prof. Dr. Werner FRANKE <i>(1991)</i>	MPI for Biophysical Chemistry, Göttingen Institut für Physiologische Chemie, University of Munich Institute of Cell and Tumour Biology, Heidelberg
Italy	Prof. Maurizio IACCARINO Dr. Ernesto di MAURO	International Institute of Genetics and Biophysics, Naples Dept. of Genetics and Molecular Biology, University "La Sapienza", Rome
Japan	Dr. Susumu NISHIMURA Prof. Michio UI	National Cancer Institute, Tokyo Dept. of Physiological Chemistry, University of Tokyo
UK	Dr. Kay E. DAVIES Dr. Peter GOODFELLOW	Institute of Molecular Medicine, John Radcliffe Hospital, Oxford Imperial Cancer Research Fund Labs, London
USA	Dr. Robert A. WEISBERG Dr. George THOMAS	Lab. of Molecular Genetics, NIH, Bethesda Friedrich Miescher Institute, Basel, Switzerland
CEC	Dr. M. BOUTRY Dr. Ioannis ECONIMIDIS	Unit of Physiological Biochemistry, Catholic University, Louvain-la-Neuve, Belgium CEC, Science, Research and Development, Brussels, Belgium

**MEMBERS OF THE REVIEW COMMITTEES
FOR FELLOWSHIPS and WORKSHOPS 1990-1991**

Brain Functions

Canada	Dr. Quentin J. PITTMAN (Chairman) Dr. Hugh McLENNAN	Department of Medical Physiology, University of Calgary Dept. of Physiology, University of British Columbia, Vancouver
France	Dr. M. M. IMBERT Dr. GERSCHENFELD (1990 only) Dr. P. ASCHER (1991)	Lab. des Neurosciences de la Vision Université P. et M. Curie, Paris Laboratoire de Neurobiologie, Ecole Normale Supérieure, Paris Laboratoire de Neurobiologie, Ecole Normale Supérieure, Paris
Germany	Dr. H. C. SCHALLER Dr. D. RICHTER	ZMBH, University of Heidelberg Institute of Cellular Biology and Clinical Neurobiology University of Hamburg
Italy	Prof. Giacomo RIZZOLATTI Prof. Andrea LEVI	Institute of Human Physiology, University of Parma Institute of Neurobiology, Rome
Japan	Prof. Keisuke TOYAMA Prof. Kunihiko OBATA	Dept. of Physiology, Kyoto Prefectural University Dept. of Biophysics, Okazaki National Research Institute
UK	Dr. John ROBSON Dr. Trevor ROBBINS (1990 only) Dr. B. J. EVERITT (1991)	Physiological Laboratory, University of Cambridge Dept. of Experimental Psychology, University of Cambridge Dept. of Anatomy, University of Cambridge
USA	Dr. Carlton Cuyter HUNT Prof. Luis BORGES de ALMEIDA (1990 only) Dr. Michael GOLDBERG (1991)	Dept. of Neurology, Washington University Medical School, St Louis I.N.E.S.C., Lisbon, Portugal Lab. of Sensory Motor Research, National Eye Institute, Bethesda
CEC	Dr. G. A. RIBEIRO Prof. LOPES da SILVA	Laboratory of Pharmacology Instituto Gulbenkian de Ciencia, Oeiras, Portugal Dept. of Experimental Zoology, University of Amsterdam, The Netherlands

**MEMBERS OF THE REVIEW COMMITTEES
FOR FELLOWSHIPS AND WORKSHOPS 1990-1991**

Molecular Approaches to Biological Functions

Canada	Dr. John C. RODER	Molecular Immunology & Neurobiology Division Mount Sinai Hospital Research Institute, Toronto Dept. of Biochemistry, University of Alberta, Edmonton
	Dr. Douglas SCRABA	
France	Prof. Pierre CAZENAVE	Institut Pasteur, Paris Institut J. Monod, Université Paris VII
	Dr. Raymond PICTET	
Germany	Prof. Dr. Lothar WILLMITZER (1990 only)	Institute for Gene Biology, Berlin Institute for Biochemistry, University of Munich Institute for Gene Biology, Berlin
	Prof. E. FANNING	
	Prof. A. BRENNECKE (1991)	
Italy	Prof. A. LANZAVECCHIA (1990 only)	Institute for Immunology, Basel, Switzerland Dept. of Cell & Developmental Biology, University "La Sapienza", Rome International Institute of Genetics and Biophysics, Naples
	Prof. L. FRONTALI	
	Prof. Edoardo BONCINELLI (1991)	
Japan	Prof. Nobuhiro GO	Dept. of Chemistry, Kyoto University Institute for Molecular and Cellular Biology Osaka University
	Prof. Tadatsugu TANIGUCHI	
UK	Dr. Nick HASTIE (Chairman)	MRC Human Genetics Section, Western General Hospital, Edinburgh Imperial Cancer Research Fund, London
	Dr. Mike STERNBERG	
USA	Dr. Thressa STADTMAN	Laboratory of Biochemistry National Institute of Heart, Lung & Blood, Bethesda Division of Hematology and Oncology Washington University, St. Louis
	Dr. John ROGERS	
CEC	Dr. P. MICHELS	International Institute of Cellular and Molecular Pathology, Brussels, Belgium Dept. of Genetics, Trinity College, Dublin Republic of Ireland
	Prof. P. HUMPHRIES (1990 only)	

Secretary-General

Sir James GOWANS (UK)

Deputy Secretary-General

Dr. Kiichiro TAKAGI (Japan) - until June 1991

Mr. Saichiro YOSHIMURA (Japan) - from June 1991

Directors

Research Grants

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(Japan)

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Workshops**

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and Finance**

Prof. Jacques NOUGIER
(France)

Staff

Scientific

Ms Stephanie DITTA
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Administrative

Mr. Satoru OHTAKE
(Japan)

Scientific Advisor : Prof. Jacques WEIL (Strasbourg, France)

Secretarial Staff:

Mrs. Corinne FORCET
Mrs. Solange METZGER
Mrs. Sarah NAETT
Mrs. Patricia THEOBALD

AWARDS 1990 and 1991

RESEARCH GRANTS

Detailed information about HFSP awards is set out in its guidebooks which may be obtained on application to the Secretariat.

A principal applicant for a research grant must organize an international program involving research teams in at least two different countries. Grants are awarded for periods up to 3 years to cover the expense of the new , collaborative elements in the program; they are not intended to subsidize ongoing, domestic programs. Requests can be made for equipment, materials and supplies, salaries for assistants and travel.

The awards during the first two years were as follows:

	<i>Applications</i>	<i>Awards</i>	<i>Total cost in 1st year</i>
March 1990	235	29	US \$ 7.7
April 1991	239	32	US \$ 8.0

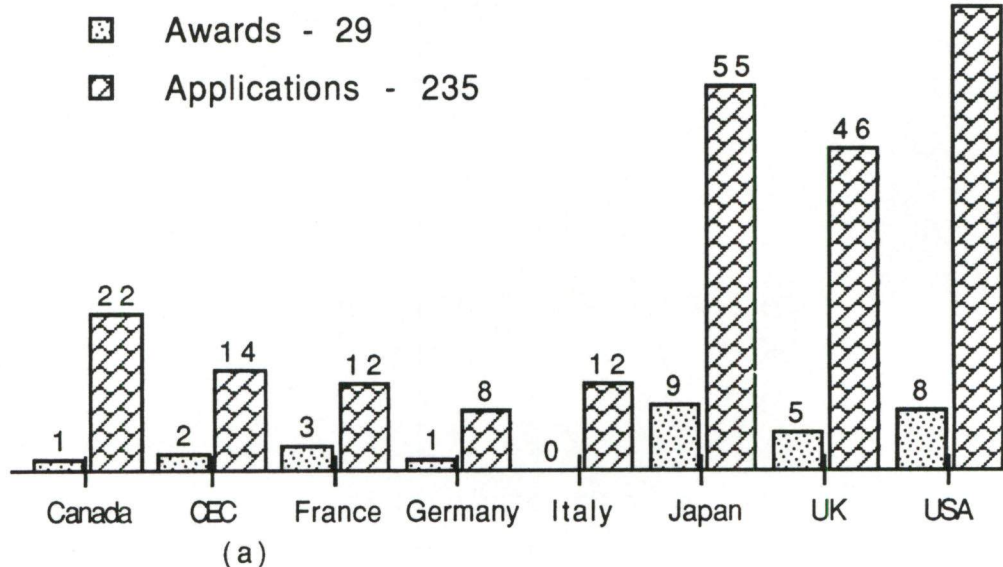
Figures I and II show the distribution of these awards among various countries and the total number of scientists from different countries participating in the international teams.

The full lists of awardees and the size of the 3-year grant to each group of international teams are given in Annexes 1 and 2

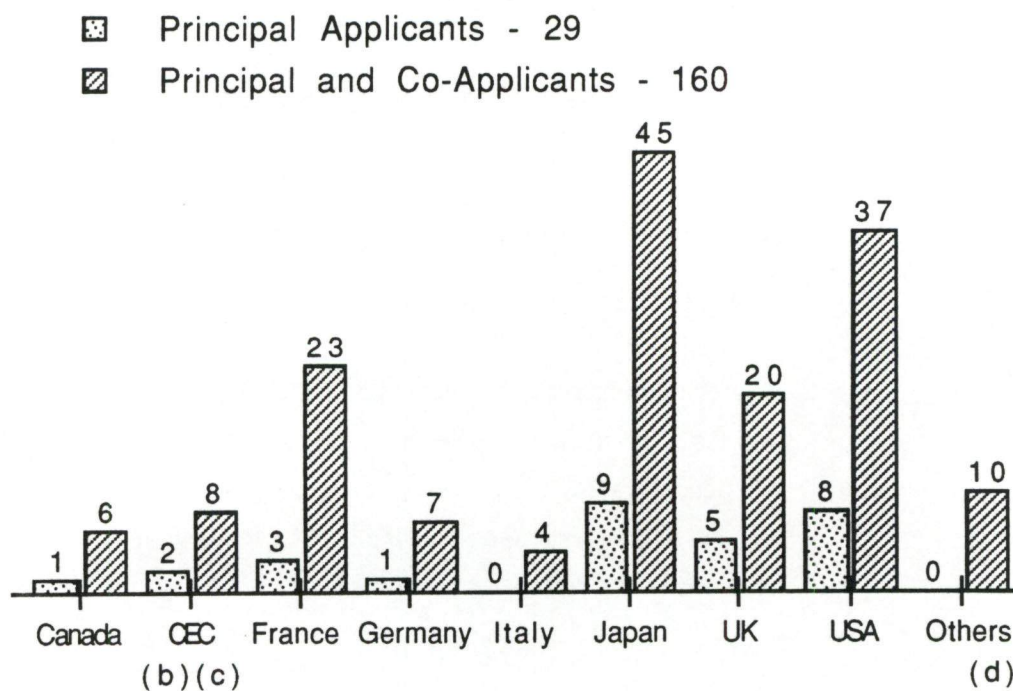
Fig. 1

RESEARCH GRANTS - 1990

A) Nationality of Principal Applicants



B) Nationality of Awardees



***Nationalities of Applicants and Awardees
("CEC" and "Others") from Fig. 1***

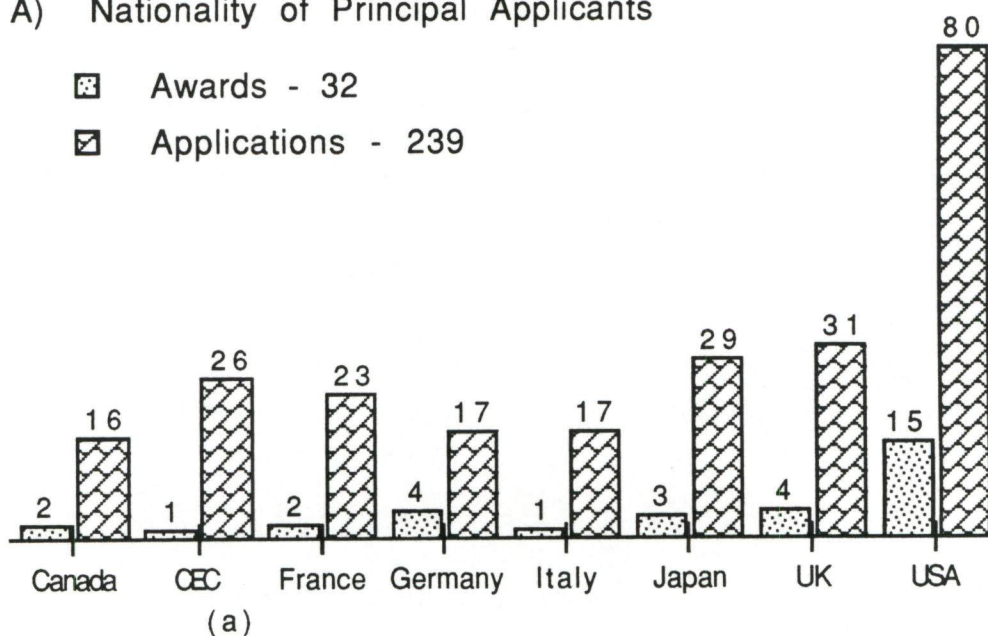
(a)	Belgium 6, Denmark 3, Greece 2, The Netherlands 1, Spain 2	(= 14)
(b)	Belgium 1, The Netherlands 1	(= 2)
(c)	Belgium 2, Denmark 1, The Netherlands 3, Portugal 1, Spain 1	(= 8)
(d)	Australia 2, Austria 1, China 1, New Zealand 2, Sweden 2, USSR 1, Yugoslavia 1	(= 10)

Fig. II

RESEARCH GRANTS - 1991

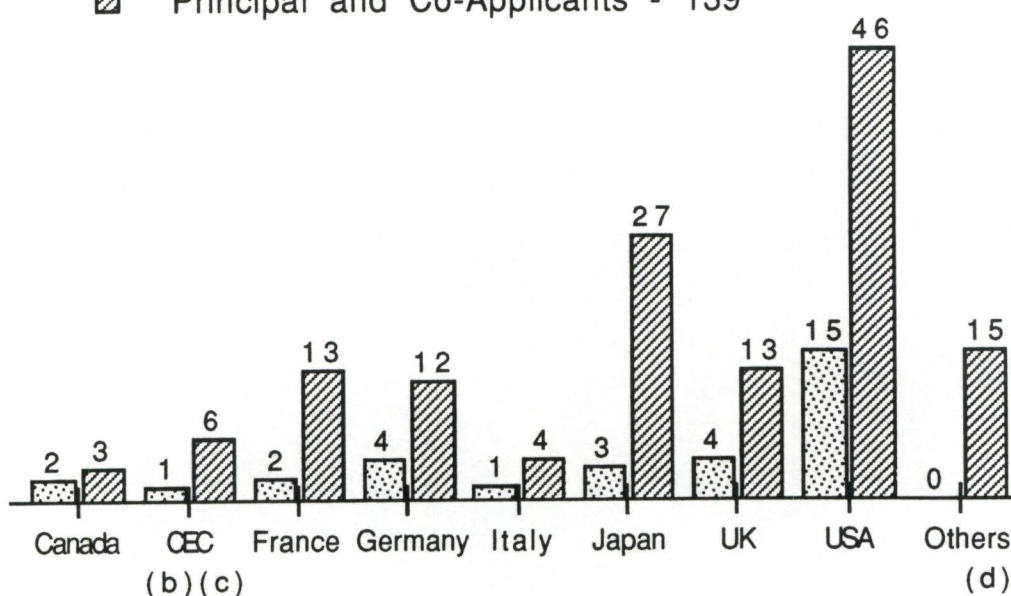
A) Nationality of Principal Applicants

- ▣ Awards - 32
- ▤ Applications - 239



B) Nationality of Awardees

- ▣ Principal Applicants - 32
- ▤ Principal and Co-Applicants - 139



***Nationalities of Applicants and Awardees
("CEC" and "Others") from Fig. II***

(a)	Belgium 4, Denmark 1, Greece 3, The Netherlands 13, Spain 5	(= 26)
(b)	The Netherlands 1	(= 1)
(c)	Belgium 2, Denmark 2, The Netherlands 1, Spain 1	(= 6)
(d)	Australia 1, Austria 2, China 1, Hungary 4, Israel 1, Singapore 1, Switzerland 5	(= 15)

LONG-TERM FELLOWSHIPS

Long-term fellowships provide support for periods of 3 months to 2 years at a rate of up to US \$ 40,000 a year to young scientists who wish to undertake research or training abroad. Preference is now given to those who are applying not later than 5 years after obtaining their doctoral degree and who are seeking their first post-doctoral fellowship. Applications to move from one laboratory to another in the same country are not eligible; an applicant who has already spent one year in an institution abroad is eligible for an additional 2-year award at that institution. The number of applications and awards in the first two years are as follows:

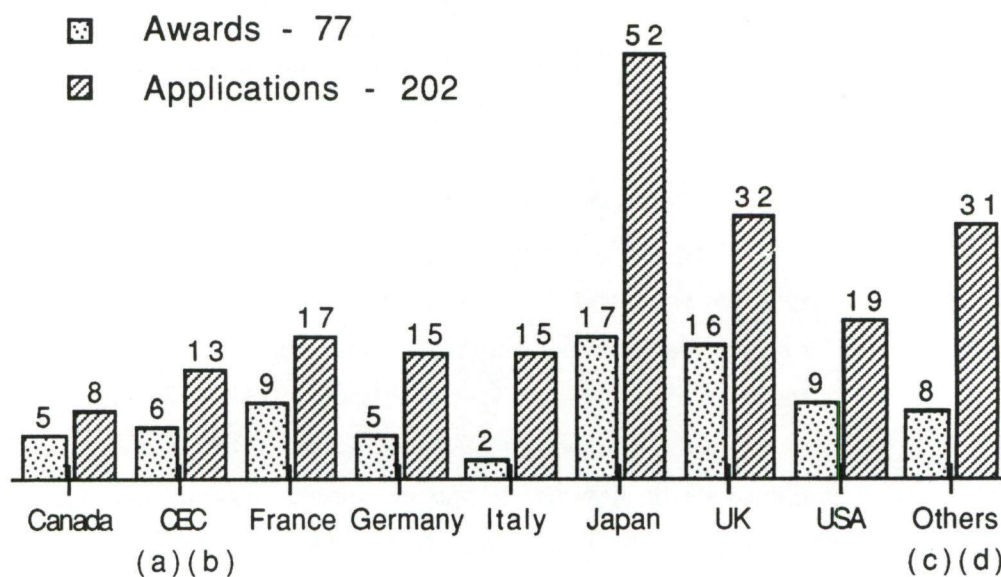
	<i>Applications</i>	<i>Awards</i>
March 1990	202	77
April 1991	348	98

The award rate fell from 38% to 28% due to the large increase in the number of applications in the second year. Figures III and IV show the nationalities of the applicants and awardees and destination of the fellows. The largest number of applications in each of the two years came from Japan. A striking feature is the high proportion of fellows wishing to study in the USA : 65% and 67% of non-US awardees in 1990 and 1991, respectively. Lists of those who have been awarded long-term fellowships are given in Annexes 1 and 2 .

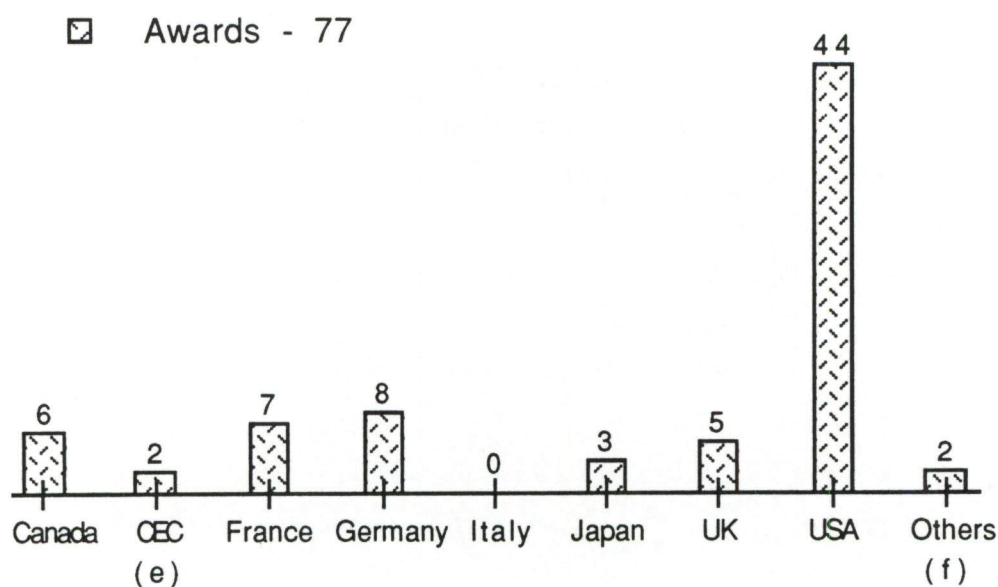
Fig. III

LONG-TERM FELLOWSHIPS - 1990

A) Nationality of Applicants and Awardees



B) Host Country of Fellows



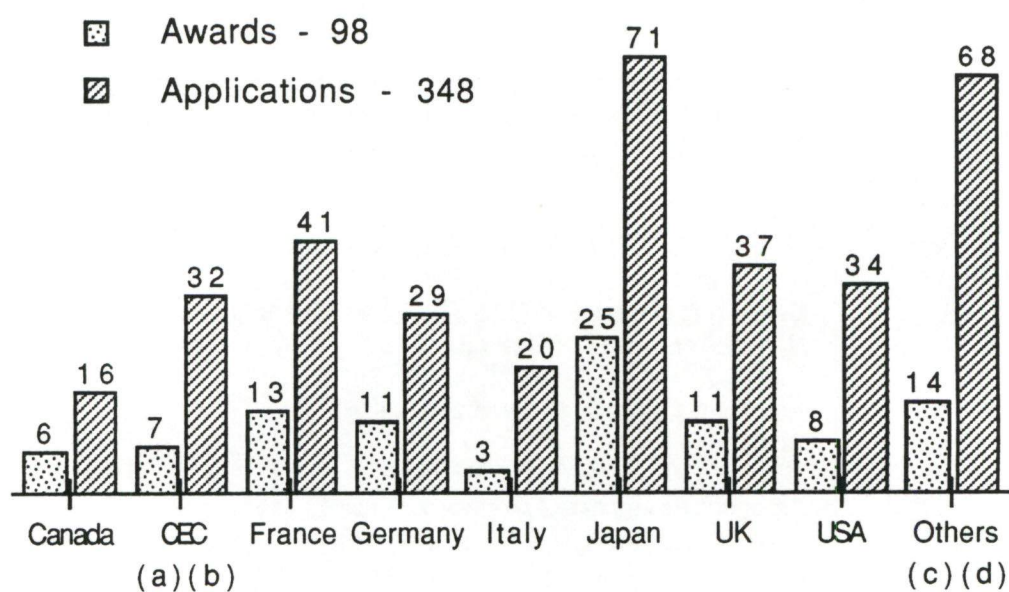
***Nationalities of Applicants and Awardees
("CEC" and "Others") from Fig. III***

(a)	Belgium 1, Denmark 1, Greece 2, The Netherlands 2	(= 6)
(b)	Belgium 2, Denmark 2, Greece 3, The Netherlands 3, Republic of Ireland 1, Spain 2	(= 13)
(c)	Argentina 1, Austria 1, China 2, Israel 3, Singapore 1	(= 8)
(d)	Argentina 3, Australia 1, Austria 1, Brazil 1, China 8, Hungary 1, India 2, Israel 4, Korea 2, Malagasy Republic 1, Malaysia 1, Philipines 1, Poland 1, Singapore 1, Sweden 1, Switzerland 1, USSR 1	(= 31)
(e)	The Netherlands 2	(= 2)
(f)	Austria 1, Sweden 1	(= 2)

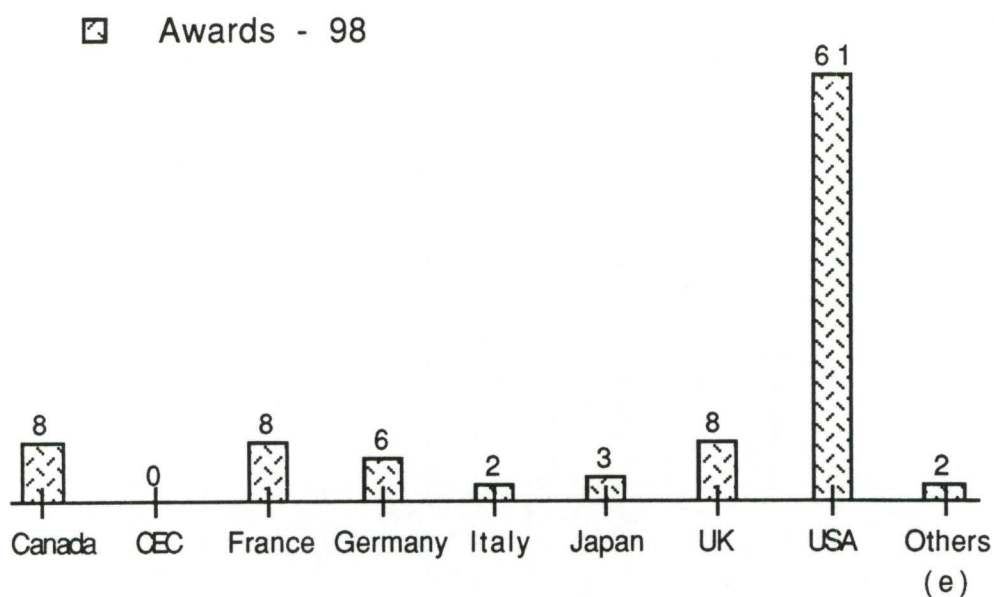
Fig. IV

LONG-TERM FELLOWSHIPS - 1991

A) Nationality of Applicants and Awardees



B) Host Country of Fellows



**Nationalities of Applicants and Awardees
("CEC" and "Others") from Fig. IV**

(a)	Belgium 2, The Netherlands 2, Republic of Ireland 1, Spain 2	(= 7)
(b)	Belgium 5, Denmark 1, Greece 7, The Netherlands 4, Portugal 2, Republic of Ireland 3, Spain 10	(= 32)
(c)	Argentina 1, China 3, Hungary 1, India 2, Israel 1, Korea 3, Singapore 1, Switzerland 1, USSR 1	(= 14)
(d)	Argentina 5 , Australia 3, Austria 1 , Brazil 1, Bulgaria 3, China 12, Hong Kong 1, Hungary 4, India 9, Israel 11, Korea 3, Mexico 1, Nigeria 1, Philipines 2, Poland 1, Republic of South Africa 1, Singapore 1, Switzerland 2, Turkey 2, USSR 4	(= 68)
(e)	Sweden 1, Switzerland 1	(= 2)

SHORT-TERM FELLOWSHIPS

Short-term fellowships provide travel and living expenses to young scientists who wish to spend 2 weeks to 3 months working in a laboratory abroad in order, for example, to learn or develop new techniques or to use instruments or technology not available in their own country. They are not intended to provide support for sabbatical leave or for attending meetings. The first awards were made in March 1990 after which the regulations were changed to enable applications to be made at any time during the year; a decision is given within 3 months of submission. Lists of those who have been awarded short-term fellowships are given in Annexes 1 and 2. The numbers of applications and awards up to July 1991 are as follows:

		<i>Applications</i>	<i>Awards</i>	
	March 1990	11	4	(Annex 1)
April 1990	- March 1991	18	9	(Annex 1)
April 1991	- July 1991	28	14	(Annex 2)

WORKSHOPS

Up to US \$ 80,000 can be requested for the support of a workshop in the scientific areas of the Program. Small, interdisciplinary meetings are favoured. The membership must be international. Awards were made in March 1990 and April 1991. The regulations have now been changed to enable applications to be made throughout the year. Awards will be made with a minimal delay to allow workshops in rapidly moving fields to be held at short notice.

Lists of workshops sponsored by the HFSPPO alone or jointly with another organization are given in Annex 2 .

	<i>Applications</i>	<i>Awards</i>
March 1990	36	6
April 1991	23	4 *

* One workshop was cosponsored by the HFSPPO, the European Science Foundation and the European Molecular Biology Organization (*see Annex 2*)

SCIENTIFIC ASSESSMENT OF THE PROGRAM

In April and June, 1991 the Board of Trustees received reports from the Council of Scientists on the scientific achievements of the Program. The Council had reviewed the quality of the research supported during the first two rounds of awards and whether it was meeting the aims of the HFSP. The Council was assisted in its assessment by a scientific meeting in Rome in May 1991 at which eight principal applicants of research grants awarded in 1990 gave an account of their work and discussed, with the Council, the value of the Program.

The Council of Scientists was impressed with the exceptionally high quality of the science being supported by the research grants and by the argument that funds for such international collaborations could not have been obtained from other agencies. Many unfunded applications were also of very high quality.

Similarly, the Council reported that the quality of the applications for long-term fellowships were outstanding and that many of the unfunded candidates merited support.

The Council concluded that, in its initial phase, the awards and the mechanisms for selecting them by international peer-review, were meeting fully and successfully the aims of the Program: namely, to support research of the highest quality, to encourage international collaboration, to sponsor interdisciplinary research and to provide opportunities for young scientists. The only regret expressed by the Council was that the resources available to the HFSP were inadequate to support a high enough proportion of the excellent applications made to it.

FINANCE 1989-1991

Table 5 and 6, respectively gives the **accounting summaries** for fiscal years (FY's) 1989 and 1990 ; Table 7 gives the **budget proposal** for FY 1991.

Contributions to the Program are either in cash or in-kind. In-kind contributions are earmarked by the contributing countries for particular purposes and are described in detail in the attachments to Tables 6 and 7.

During the initial phase of the Program 90% or more of the budget has been provided by Japan. (*Figure V*)

The different program activities run for different periods of time : research grants for 3 years, long-term fellowships for 2 years, while the expenditure on short-term fellowships and workshops is annual. Thus, the Program will only reach a steady state in the third year.

The length of FY 1989 was 5 months because the Program only began in November 1989. This resulted in a reserve fund of US \$ 9.38 million which was carried over to the next FY and from which the first awardees were paid in 1990. The financing of program activities each year from a reserve fund created in previous years (*Figure VI*) is necessary because the contributing countries are not usually in a position to provide their contributions at the beginning of each financial year.

ACCOUNTING SUMMARY FOR FISCAL YEAR 1989 **(From November 1st 1989 to March 31th, 1990)**

Table 5

All figures are in US \$ at the currency exchange rate as of March 31th, 1990
1 US \$ = 5.698 FF = 157.49 Yen = 1250.50 ITL

INCOME				EXPENDITURE			
I. CONTRIBUTIONS	Program activities		Administration		1. ADMINISTRATIVE COSTS	US \$	in-kind
	US \$	in-kind	US \$	in-kind			
1. France					1 Salaries	141,021	
- City of Strasbourg				136,013	2 Investments	144,323	19,192
2. Italy					3 Meetings	370,296	321,165
					4 Office expenses	183,795	
3. Japan					TOTAL 1	839,435	340,357
- Science & Technology Agency	8,114,801			1,104,832	2. PROGRAM ACTIVITIES		
- Ministry of International Trade and Industry				723,855	3. RESERVE FUND	9,377,847	
					4. CURRENCY EXCHANGE EFFECT	-136,263	
TOTAL 1	8,114,801	---		1,964,700	TOTAL 2	10,081,019	340,357
2. INTERESTS	1,518						
TOTAL 2	8,116,319	---		1,964,700			
GRAND TOTAL				10,421,376	GRAND TOTAL	10,421,376	

ACCOUNTING SUMMARY FOR FISCAL YEAR 1990
(From April 1st 1990 to March 31th, 1991)

Table 6

All figures are in US \$ at the currency exchange rate as of March 31th, 1991
1 US \$ = 5.82 FFf = 140.2 Yen = 1267 ITL = 1.1583 CND \$

EXPENDITURE

INCOME

I. CONTRIBUTIONS	Program activities		Administration		1. ADMINISTRATIVE COSTS	US \$	in-kind
	US \$	in-kind	US \$	in-kind			
1 Canada			198,567		1 Salaries	810,613	137,232
2 France	515,464				2 Investments	40,812	
- Ministry of Foreign Affairs					3 Meetings	225,807	91,911
- Ministry of Research					4 Office expenses	528,022	249,141
- and Technology							
- Région Alsace					TOTAL 1	1,605,254	478,284
- City of Strasbourg	283,505	(*)429,553		(*)223,143			
3 Germany			(*)34,589	(*)163,230	2. PROGRAM ACTIVITIES		
4 Italy	236,780	(*)183,164	(*)111,366		1 Research Grants (29)	7,002,499	
5 Japan	12,500,000				2 Long-term Fellowships (77)	2,449,559	562,717
- Science & Technology Agency					3 Short-term Fellowships (12)	81,589	
- Ministry of International					4 Workshops (5)	250,030	50,000
Trade and Industry	14,346,077						
TOTAL 1	27,881,826	612,717	1,105,635		TOTAL 2	9 783,677	612,717
2. CARRY OVER FROM FY 89	9,377,847		999,886		3. CURRENCY EXCHANGE EFFECT	- 841,705	
3. INTERESTS	754,613				4. RESERVE FUND	29,925,765	
4. OTHERS	8,662						
TOTAL 2	in US \$: 40,472,991		2,450,043	478,284	TOTAL 3	40,472,991	1,091,001
	in-kind : 1,091,001						
GRAND TOTAL			41,563,992		GRAND TOTAL	41,563,992	

For FY 1990 in-kind contributions

- *1. 10 long-term fellowships support for French nationals or those wishing to work in France.
- *2. Salary of 1 French staff member, and guidebook for intellectual property rights.
- *3. Salary of 1 secretary.
- *4. Office rental and investments.
- *5. 10 long-term fellowships support for German nationals or those wishing to work in Germany, plus 1 workshop support.
- *6. Salary of 1 German staff member.
- *7. Support for Council of Scientists in Rome

BUDGET PROPOSAL FOR FISCAL YEAR 1991 **(From April 1st 1991 to March 31th, 1992)**

Table 7

All figures are in US \$ at the currency exchange rate as of March 31th, 1991
1 US \$ = 5.82 FFf = 140.2 Yen = 1267 ITL

EXPENDITURE

INCOME

I. CONTRIBUTIONS	Program activities		Administration		1. ADMINISTRATIVE COSTS	US \$	in-kind
	US \$	in-kind	US \$	in-kind			
1 France - Ministry of Foreign Affairs - Ministry of Research and Technology - Région Alsace - City of Strasbourg	343,643	(*2)463,918	(*1)137,457	(*3)196,564	1 Salaries 2 Investments 3 Meetings 4 Office expenses	945,017 30,928 255,155 510,911	171,821 197,316 106,530
2 Germany	283,505		(*4)39,519	(*5)81,787	TOTAL 1	1,742,011	475,667
3 Italy	236,780		(*7)137,457	(*8)197,316	2. PROGRAM ACTIVITIES 1-1990 Awardees - Research Grants (29) - Long-term Fellowships (69) - Workshops (1)	7,972,501 1,838,712 89,100	902,919
4 Japan - Science & Technology Agency - Ministry of International Trade and Industry	15,464,403		1,296,983		2-New 1991 Awardees - Research Grants (32) - Long-term Fellowships (98) - Short-term Fellowships - Workshops (3)	8,069,000 3,786,000 160,000	762,691 172,000
5 Switzerland	10,309,597		1,292,703		3-Other activities	40,000	
6 United States of America	400,000	(*9)42,000			TOTAL 2	21,955,313	1,837,610
7 European Community		(*10)172,000			3. TAX ON FY 1990 & 1991 INTEREST (24%) 4. RESERVATION FOR CURRENCY RATE FLUCTUATION 5. RESERVE FUND	740,000 250,000 38,105,930	
TOTAL 1	27,037,928	1,837,610	2,904,119	475,667	TOTAL 3 in US \$ <i>in-kind</i>	62,793,254 2,313,277	
2. CARRY OVER FROM FY 90	29,925,765				GRAND TOTAL	65,106,531	
3. INTERESTS	2,890,442						
4. OTHERS	35,000						
TOTAL 2	in US \$: in-kind :	62,793,254 2,313,277					
GRAND TOTAL			65,106,531				

For FY 1991 in-kind contributions

- *1. Salary of 1 French staff member.
- *2. 16 long-term fellowships support for French nationals or those wishing to work in France.
- *3. Salary of 1 French staff member, and guidebook for intellectual property rights.
- *4. Salary of 1 secretary.
- *5. Office rental and investments.
- *6. 16 long-term fellowships support for German nationals or those wishing to work in Germany.
- *7. Salary of 1 German staff member.
- *8. Support for Council of Scientists, workshops and related conference in Italy .
- *9. 1 long-term fellowship to the NIMH (United States)
- *10. 3 workshops

EVOLUTION OF NATIONAL CONTRIBUTIONS FROM FY 89 TO FY 91
(including in-kind contributions)

In millions of US dollars

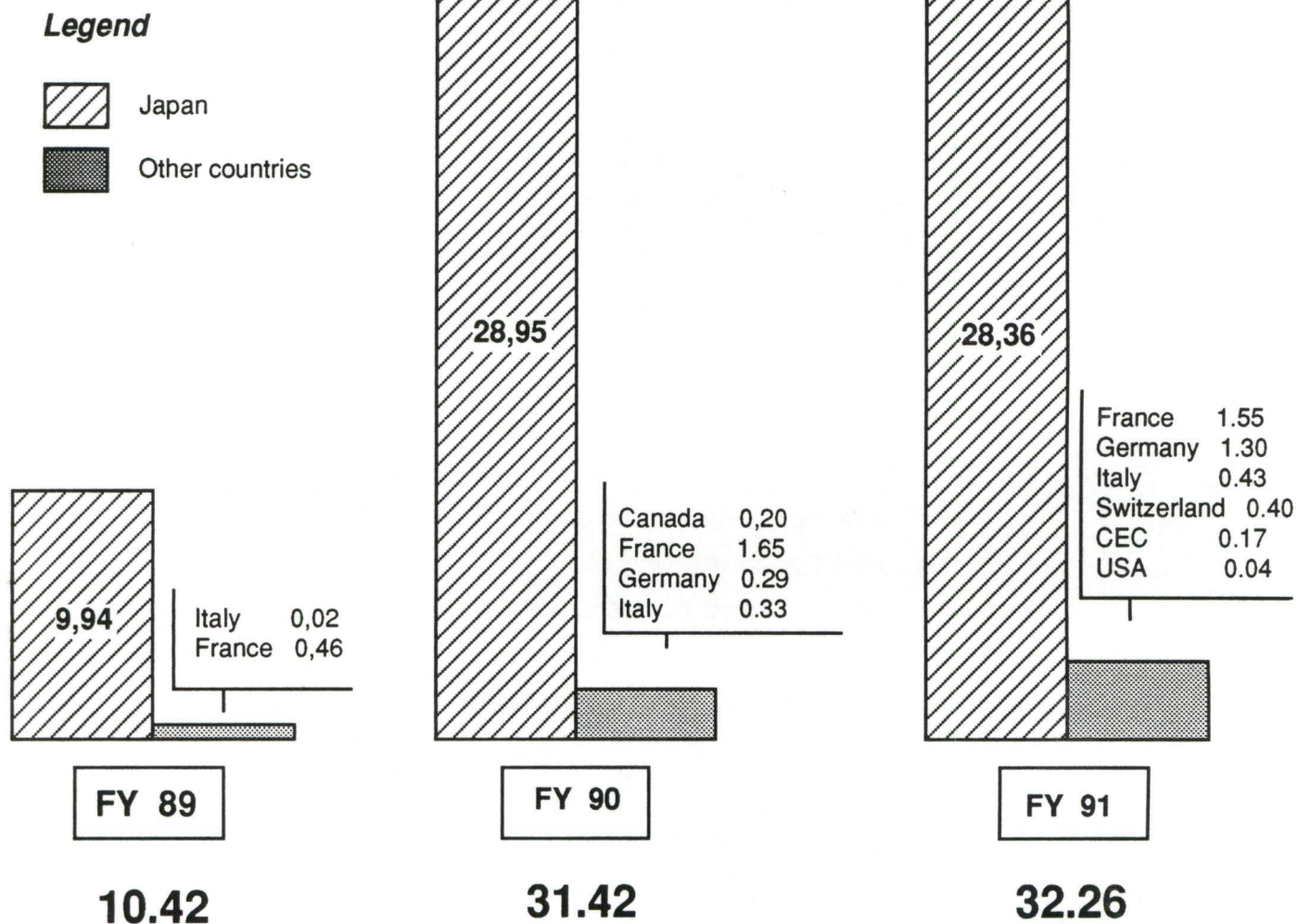
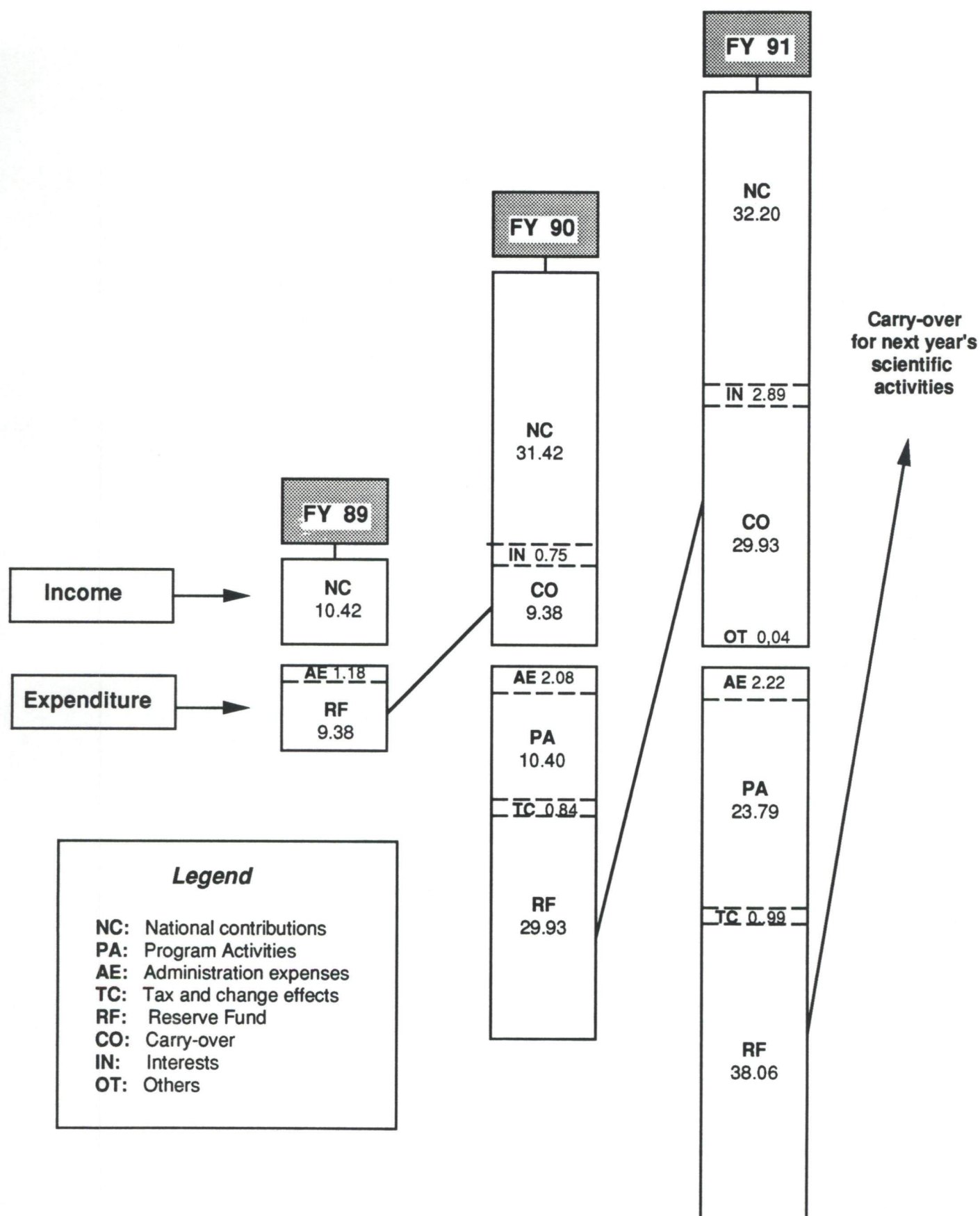


Fig. VI

EVOLUTION OF THE GENERAL BUDGET FROM FY 89 TO FY 91
(in millions of US dollars)
and including in-kind contributions



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