

International (Regional) Cooperation and Exchange

In its funding of international collaboration in 2010, NSFC will continuously implement the scientific concept on development, precisely hold on to its strategic position, and put into effect the NSFC Regulations, while focusing on the core task of NSFC. It will encourage undertakers of NSFC projects to make full use of international research resources and conduct rewarding international cooperation and exchange, so as to boost the innovation of basic research in China.

2010 is the last year of the 11th Five-Year Plan period. It is the only remaining time to complete various tasks set in the 11th Five-Year Plan, and meanwhile to get prepared for the implementation of 12th Five-Year Plan. In line with the overall planning of its 11th Five-Year Plan, NSFC will take personnel exchange program as the basis of its international funding framework, substantial joint research as the priority, fully attracting and utilizing overseas resources to upgrade indigenous innovative capability as the target, and steadily pushing ahead strategic cooperation as the ultimate goal.

NSFC will, in 2010, make steady headway in substantial cooperation with the USA in more areas, extend cooperation with Germany, UK, France and EU, consolidate cooperation with Russia, continue to strengthen collaboration with Japan, Korea and international science organizations, and explore the possibilities of establishing cooperation with developing countries.

Correspondingly, the following tasks will be given priority in 2010:

- (1) Continue to strengthen the organization and implementation of substantial joint research projects and facilitate researchers to make full use of global scientific and research resources;
- (2) Give full play to the key role of bi/multilateral cooperative agreements, consolidate strategic cooperation with overseas funding organizations, and plan and organize substantial joint research projects at higher level;
- (3) Adopt the management of excellence approach, further improve the management regulation, standardize evaluation and approval procedures and strictly implement the budgeting system, so as to raise the managerial and funding efficiency and create a favorable environment for researchers to conduct international (regional) collaboration and exchange;
- (4) Continue to do a good job in funding international (regional) exchanges, international

conferences (including conferences and workshops under the framework of NSFC and its partner funding agencies) and international young scientist fellowships.

Please refer to NSFC website for detailed information concerning the requirement for applicants and management regulations of various programs, the mission of the Bureau of International Cooperation (BIC), its organizational structure and related responsibilities, the agreements signed between NSFC and its partners abroad, and the list of agreements.

It is worth noting that the funding structure and managerial regulations for NSFC's international cooperation projects are in the process of adjustment, and the funding portfolio will be restructured into 4 categories of programs: international (regional) exchange program (a combination of the former international exchange program and the fund for Chinese scholars abroad to work or lecture in China), international conference program, which consists of international conferences held in China and bi/multilateral workshops funded with partner organizations; international (regional) joint research program, which consists of major joint research projects and joint research projects funded with partner organizations, and international young scientist fellowship (in a trial period).

Currently, the revision for the regulations of international (regional) joint research program has been completed, and that of other programs are expected to be finished in 2010. The international cooperation and exchange programs will, therefore, be introduced according to the new categories in this guide.

In 2010, applications for Major International (Regional) Joint Research Program should still be submitted during NSFC's concentrated application period. Applications for other categories of international (regional) cooperation programs shall avoid this period for submission except for special requirement. The guides to other programs that NSFC jointly runs with overseas science funding organizations and scientific institutions will be published on NSFC website whenever necessary.

Project Categories

International (regional) exchange program

This program aims to encourage NSFC grantees to participate in extensive international cooperation and exchange activities, and to enhance the innovativeness, talent training, disciplinary construction and research quality of the on-going NSFC projects. Meanwhile, it encourages scientists to maintain sound bi/multilateral relations with overseas partners

through wide cooperation and exchange.

The Program funds Chinese scientists to carry out joint research with foreign scientists on subjects of common interest and closely related to NSFC ongoing projects. The Program mainly funds scientific exchange activities, and funding for this program covers international travel costs for Chinese scientists and accommodation for foreign collaborators in China.

Researchers undertaking on-going NSFC projects can apply to the relevant scientific departments. For information about international exchange projects under the framework of agreements between NSFC and overseas national funding agencies, academic institutions and international organizations, please refer to the specific guide to programs published on NSFC website.

International (Regional) joint research program

This program funds researchers to effectively utilize international scientific resources and carry out substantial cooperation according to the principles of equal cooperation, mutual benefits and result sharing, so as to enhance the quality and international competitiveness of research in China and achieve breakthroughs in cutting edge areas. This program consists of major international (regional) joint research program and joint research program funded under the framework of agreements between NSFC and its partner organizations.

1. Major international (regional) joint research program

The Program gives priority to research in the following areas: joint research in the priority funding areas of NSFC, joint research in areas that China urgently needs to develop, large international projects and programs with Chinese participation, and joint research projects utilizing large-scale scientific facilities abroad.

Researchers applying for this program shall, in accordance with the priority funding areas published by relevant scientific departments, choose innovative joint research subjects centering on major scientific issues, and clarify the necessity and complementarities of the cooperation. The partners shall have long-term steady collaboration and the overseas partners shall have matching funds for this research. In the process of cooperation, attention shall be given to the protection of intellectual property rights.

In 2009, 47 major international cooperation projects were funded with a total funding of 50.5 million yuan and an average funding of 1.07 million yuan per project, representing respective increases of 38.2% and 48.5% over that of 2008. It is expected that funding for this program will increase dramatically in 2010. The average funding intensity will be

2-3 million yuan per project and each project usually lasts 3 years.

Proposals for this program are submitted during NSFC's concentrated application period and the scientific departments are responsible to handle applications.

In order to be eligible for this program, applicants should be principal investigators of on-going NSFC projects or completed NSFC 3-year projects.

2. Joint research projects funded under the framework of agreements between NSFC and its partner organizations

Joint research projects funded by NSFC and its partner organizations are bilateral or multilateral joint research projects organized and funded by NSFC and its overseas partner funding agencies, scientific institutions or international organizations. Eligibility of applicants, funding scope, funding period and managerial methods of this program are in accordance with the cooperative agreements or MOUs signed between NSFC and its overseas funding partners. Please refer to the guide to programs for the year 2010 and specific guides published in NSFC website for application to this program.

To be eligible for this program, applicants shall be principal investigators of on-going NSFC projects or completed NSFC projects that last at least 3 years.

To encourage substantial cooperation among scientists, the following areas have been identified as priority areas of international cooperation after thorough investigation and study of the scientific departments and discussion and approval of the expert panels.

The priority funding areas in the Department of Mathematical and Physical Sciences

- (1) Intelligence materials and structural mechanics
- (2) Dynamics and control for major equipment
- (3) Sky patrol and astronomical observation
- (4) New astronomical techniques related to large telescopes
- (5) Precision spectroscopy
- (6) Ultra-fast, ultra-intense photophysics
- (7) High performance radiation detector research
- (8) Nuclear action mechanism in superheavy nucleus composition
- (9) Physics in neutral beam injection in magnetic confinement fusion
- (10) Physics in new energy

In the above areas, top priority will be given to joint research projects with distinctive characteristics and clear targets, and projects which combine the strength of collaborative partners, make use of lab equipment built in China or large-scale lab devices abroad, or

actively participate in major international experiments.

The priority funding areas in the Department of Chemical Sciences

- (1) Surface, interface and catalytic chemistry
- (2) Chemico-biology and nano-biomedicine
- (3) Supramolecular assembly, structure and function
- (4) Theoretic and computational chemistry
- (5) New energy chemical material system

The priority funding areas in the Department of Life Sciences

- (1) Key tissue and organ development at cellular and molecular levels
- (2) Structure and function of gene and genome
- (3) Protein structure and the related functions
- (4) Regulation and function of cell signal transduction
- (5) Molecular mechanism of cell migration
- (6) Membrane system and transmembrane transportation of substances
- (7) Stem cell characteristics and directional differentiation
- (8) Cellular and molecular mechanism of immune response and tolerance
- (9) Neurobiological basis of mental, psychological and behavioral study
- (10) Life and its mechanism under extreme conditions
- (11) Phylogenetic reconstruction and molecular evolution
- (12) Relation between species diversity and ecosystem function
- (13) Theory on the mechanism of ecosystem degradation and restoration
- (14) Efficient utilization of agricultural resources
- (15) Prevention and sustainable control of biological disaster of crops and woods
- (16) Etiology of major animal diseases and the pathogenetic mechanism
- (17) Basic issues on the culture of aquatic organisms
- (18) Major basic research of food safety
- (19) Nutrition metabolism

The priority funding areas of the Department of Earth Sciences

- (1) Internal water circulation modeling and control
- (2) Soil-plant-microorganism interaction and carbon-nitrogen cycle
- (3) N/P biogeochemical processing and nitrogen compounds in lakes
- (4) Urbanization and its effects on resources and environment
- (5) Origin, evolution and environmental restrictions of biological groups through geologic time
- (6) Basic research on deep mine exploration
- (7) Solar-terrestrial energy transfer and the effects on human activities
- (8) Geological and Geophysical processing of land earthquakes
- (9) Physical and chemical processes and parameterization of clouds in East Asia

- (10) Development and application of Earth Climate System Model
- (11) Multi-time-scale change and air-sea interaction of ocean circumfluence
- (12) Marine ecosystems and biogeochemical processes
- (13) Ocean-firn-air interaction and polar region environmental evolvement
- (14) Ocean-bottom hydrothermal systems and polymetallic metallization

The priority funding areas of the Department of Engineering and Materials Sciences

- (1) Information functional materials
- (2) Biomedical materials
- (3) High performance structural materials
- (4) Energy materials
- (5) Stability of rock mass structure
- (6) Micro/nano devices and micro/nano systems
- (7) Comprehensive utilization of fossil energy and sustainable energy
- (8) Engineering problems in the frontiers of biomedicine
- (9) Disaster prevention and mitigation on cities and major projects
- (10) Intelligent structures and systems
- (11) Basic research and key technologies in the utilization of deep-sea resources
- (12) Research in manufacturing science and technology of major equipment
- (13) Basic research in the improvement of environmental quality and safety assurance technology
- (14) Basic theories and key technologies in resource recycling utilization

The priority funding areas of the Department of Information Sciences

- (1) Mobile network and its applied research
- (2) Space-sky-ground network and information processing
- (3) New electromagnetic devices
- (4) Multimedia presentation
- (5) Network information processing and application
- (6) Audio-visual information recognition calculation, and trusted software
- (7) Theories, techniques and typical application of advanced control
- (8) New theories, methods and application of pattern reorganization and intelligent system
- (9) Microelectronics and photoelectron integration
- (10) MEMS technology, sensor technology and information devices

The priority funding areas of the Department of Management Sciences

Research in the basic management issues closely related to macro and micro social organizational management and practice in China under new historical situations and academic development, such as post financial crisis times, global climate change,

governmental and social transformation, introduction of behavioral factors, complexity and evolution, etc.

The priority funding areas of the Department of Health Sciences

- (1) Cardio-cerebrovascular diseases
- (2) Nutrition metabolism and the pathogens of related diseases
- (3) Immunology related diseases
- (4) Tumor
- (5) Aging related diseases
- (6) Pain and analgesia
- (7) Mental diseases and psychological health
- (8) Infectious diseases
- (9) EENT and oral diseases
- (10) Wound and repair
- (11) Reproductive health
- (12) Women and children health
- (13) Stem cell and diseases
- (14) Regeneration medicine
- (15) Medical imaging and biomedical engineering
- (16) New technologies and methodologies for diagnosis
- (17) Epidemiology and precaution strategies for major diseases and injuries
- (18) Environmental and inherent causes of major diseases
- (19) Food hygiene
- (20) Innovative medicine
- (21) Drug genomics and metabonomics
- (22) Traditional Chinese medicine

International Conferences (including those within the framework of MoUs)

To enhance the international reputation and competitiveness of basic research in China, create an environment conducive to the development of basic research as well as foster scientists of international visibility and leading innovative research groups, NSFC funds its project undertakers to hold international conferences in China, aiming at improving the research quality of NSFC projects and expanding their international impact.

This fund supports Chinese scientists to organize and hold various bi/multilateral academic conferences. These conferences shall be closely connected with NSFC projects, and the themes of these conferences shall be of major significance to the progress of relative scientific disciplines in China and in line with NSFC priority areas, and facilitate the implementation of Major Research Plans. NSFC also supports its project undertakers

to organize and take part in academic workshops held in China or abroad within the framework of its agreements with overseas partners.

Research Fellowship for International Young Scientists

NSFC set up this fellowship in Feb, 2009. It aims to attract excellent foreign young scholars to carry out basic research in Chinese mainland universities and academic institutes, so as to enhance the international competitiveness of Chinese universities and academic institutes, and cultivate a batch of friendly partners with excellent academic record and great potential. This fellowship targets at foreign young researchers with excellent educational background, Ph.D. degrees and great potential. Eligible applicants should have certain research experience and host institutions in China. The Fellowship is jointly run by the Chinese Academy of Sciences, Ministry of Education (MOE) and NSFC during the trial period. Candidates are selected from those recommended by CAS and MOE, and they then have to submit individual applications which will be evaluated by NSFC expert panel. The host institutions in China are responsible for providing necessary working and living conditions for the applicants and NSFC provides the research fees.

The applicants shall satisfy the following requirements

- (1) Excellent foreign young researchers with Ph.D. degrees, less than 35 years old;
- (2) Have 3-year experience in basic research in renowned universities and academic institutes, or postdoctoral experience;
- (3) Work in Chinese universities or research institutes successively for half a year or one year;
- (4) Obey Chinese laws and NSFC's managerial rules during stay in China.

The host institutions shall satisfy the following requirements:

- (1) Already registered in NSFC as qualified universities or academic institutes to apply for NSFC funds;
- (2) Designate a contact person to provide consultation for foreign applicants and assist them in managing the fund;
- (3) Sign agreements with the applicants, in which the following contents shall be included:
 - (i) Topic, direction and targets of the research;
 - (ii) Living and working conditions that the host institutions provide for the applicants during their stay in China;
 - (iii) Time period the applicants promise to work in the host institutions;
 - (iv) Issues concerning intellectual property rights.

In 2009, 40 applications were funded after the recommendation of CAS and MOE and

the panel evaluation organized by NSFC, with a total funding of 7.4 million yuan.

Please refer to the special notice for 2010 International Young Scientist Fellowship for issues concerning the recommendation and application of this program in 2010.

International (Regional) Cooperation and Exchange with Different Countries and Regions

NSFC has signed 68 bilateral agreements or memoranda of understanding on S&T cooperation with 36 countries and regions in the world, and under this framework, bi/multilateral cooperation is supported. During the past years, the organization and implementation of joint research projects under the agreement framework have played an indispensable role in utilizing overseas research resources, enabling Chinese scientists to do better research and enhancing the cooperation among funding agencies.

The application procedure for international (regional) joint research or exchange programs under the framework of bilateral agreements and MOUs:

Log in the NSFC information system (<http://isis.nsf.gov.cn>) with the username and password assigned by on-going NSFC projects by selecting the user group “applicants”; click “apply for international cooperation projects” in the column of “application and evaluation”, then click “new proposal” and select “international (regional) cooperation and exchange projects”; select the name of the agreement according to the categories of the agreements, then click “fill in an application form” and write the proposal, and finally submit the proposal online.

After the online proposal has been submitted, the applicant has to print a copy, which shall be approved and sealed by the home institution and submitted to the relative regional division of BIC along with the following documents:

- (i) Cooperation agreements signed by both collaborators;
- (ii) Invitation letters and confirmation letters of visit to China provided by the foreign partners;
- (iii) Other necessary supplementary documents.

Please refer to the specific guides to programs for these collectively submitted bi/multilateral research projects and note the specific requirement.

Asia and Africa

By 2009, NSFC has signed bilateral agreements or memoranda of understanding on S&T

cooperation with 11 scientific funding organizations in Asia and Africa and 6 international organizations in the world.

1. A3 Foresight Program

Jointly sponsored by NSFC, Japan Society for Promotion of Science (JSPS) and Korea Science and Engineering Foundation (KOSEF), the A3 Foresight Program supports the cooperation of scientists from China, Japan and Korea to conduct cutting edge research in selected strategic areas, so as to foster excellent young researchers and make contributions to the solution of common regional issues. The joint research area of current year is the same as the topic of the Northeastern Asian Symposium organized by NSFC, JSPS and KOSEF in the previous year. The joint research area of A3 Foresight Program is basic research in renewable energy for 2010.

Simultaneous calls for proposals will be published on the websites in December by the three parties and two projects will be finally approved. NSFC invests 2 million yuan for each project which lasts 3 years. In accordance with the agreement of NSFC, JSPS and KOSEF, the three parties will give a successive funding of 1.5 million yuan to those approved projects with sound progress and the necessity to be renewed for another two years.

The Bureau of International Cooperation, together with relevant scientific departments, will organize expert committees to conduct mid-term examination and renewal evaluation after the projects have been in progress for two years. Decision will be finally made in accordance with the discussion and consultation with JSPS and KOSEF.

2. NSFC-JST Joint Research Project

Since 2004, NSFC and Japan Science and Technology Agency (JST) have developed cooperation on the theme of “S&T for Environmental Conservation and Construction of a Society with Less Environmental Burden”. Each year, both organizations will decide the joint research areas through discussion, and workshops with topics selected from the jointly decided research areas will be organized in China and Japan alternatively.

Area for joint research in 2010 is “Evaluation and mitigation of environment impacts of earthquake and typhoon disasters on urban area and infrastructures”, and specific topics for research are:

- (i) Evaluation and mitigation of earthquake disaster on urban areas and infrastructure;
- (ii) Evaluation and mitigation of strong typhoon disasters on urban areas and infrastructure;
- (iii) Evaluation and monitoring research of environmental disaster impacts on urban areas and infrastructure.

Both sides will announce the cooperation research areas and call for proposals on the websites in July each year, and a maximum of five 3-year projects will be selected for support. Starting from 2009, NSFC will increase its funding to each project from 1 million yuan to 1.5 million yuan and the Japanese side will also increase its funding correspondingly.

The Bureau of International Cooperation, together with relevant scientific departments, will organize expert committees to conduct mid-term examination after the projects have been in progress for two years. After the projects are finished, a joint closing and evaluation meeting will be organized to evaluate and close the project. Projects with excellent assessment results and the necessity to be renewed can apply for another 3-year funding, and up to two projects will be granted renewed funding of 1.5 million yuan each year.

3. Bilateral cooperation between NSFC and JSPS

The memorandum of understanding on scientific exchange between NSFC and JSPS stipulates that the two sides jointly support ten 3-year exchange projects (the exchange volume shall not exceed 60 person/day each year) and four bilateral workshops per year organized by Chinese and Japanese scientists, of which two are held in China and two in Japan. Participants of the bilateral workshops from each side must come from at least 3 institutions.

Both organizations will issue call for proposals on their websites in June every year. The application deadline is the Friday of the first complete week in September.

4. Bilateral cooperation between NSFC and NRF

NSFC and the National Research Foundation of Korea (NRF) jointly support bilateral activities including joint research projects and academic seminars. The duration of each project is two years. Participants of bilateral seminars from each side must come from at least three institutions.

Both organizations will issue call for proposals on their websites in October and the deadlines for joint research projects and bilateral academic seminars are December 15 and January 15 of the next year, respectively. Each year the Sino-Korean Joint Committee on Basic Science co-decide the joint research projects through meetings. In 2009, the Committee approved 38 bilateral cooperation and exchange projects, including 25 personnel exchange projects and 13 bilateral academic workshops. In 2010, both sides will fund around 37 projects.

5. Bilateral cooperation between NSFC and CSIR

NSFC and Indian Council of Scientific and Industrial Research (CSIR) jointly fund

bilateral cooperation and exchange programs, such as bilateral workshops and joint research projects with a duration of three years. In 2010, both sides will co-sponsor up to five exchange projects in organic chemistry, chemical biology, nano-science and astronomical science, and up to four bilateral workshops.

6. Bilateral cooperation between NSFC and ISF

NSFC and ISF Joint Fund gives priority to joint research and bilateral workshops in natural science areas such as nano-science, information science, chemical science, agriculture and irrigation. The themes of two workshops are decided by both sides through discussion and the themes in 2010 are theory and experiment of medicine design and quantum adjustment and control.

7. Others

NSFC has signed scientific agreements with the Academy of Scientific Research and Technology of the Arab Republic of Egypt, Pakistan Science Foundation, National Research Council of Thailand and the Department of Science and Technology of India, and jointly fund research projects and bilateral workshops co-organized with them. Specific projects will be subject to discussions by the sponsoring organizations.

International Scientific Organizations

1. Center of European Nuclear Research (CERN)

According to the cooperation agreement with CERN, NSFC supports Chinese scientists' participation in LHC experiment at CERN as a major international program together with the Ministry of Science and Technology and the Chinese Academy of Sciences.

2. International Center for Theoretical Physics (ICTP)

Every year, NSFC supports about 50 Chinese young scholars in the areas of mathematics, physics and earth science to participate in various research activities at ICTP, such as summer seminars, short-term joint research or post-doctoral research.

Each November, the list for specific activities and an open call for candidates will be published on NSFC website. The Steering Committee of the Tianyuan Fund for Mathematics, that of the Special Fund for Theoretical Physics and expert panels for relevant research areas in earth science are responsible for recommending qualified scholars to ICTP.

3. International Rice Research Institute (IRRI)

According to the bilateral agreement between NSFC and IRRI in 2007, both sides co-support two 3-year major joint research projects each year from 2008 to 2010. NSFC provides 1 million yuan to each project. The collaborative areas agreed by both sides are

(i) identification, analysis and utilization of durable resistant genes for major rice diseases, (ii) centralized management of high efficiency water and nutrient in rice, (iii) sustainable management of major rice insect pests and diseases, (iv) genetics, physiology and breeding for abiotic (drought, high temperature, salt) tolerance in rice, (v) identification and utilization of good quality, high yield and unique genes in rice resources, and (vi) C₄ rice.

Call for proposals will be publicized on the website every January and the deadline for proposal submission will be March 31.

4. International Maize and Wheat Improvement Center (CIMMYT)

According to the agreement reached between NSFC and CIMMYT in 2006, both sides co-supported two 3-year major international cooperation projects each year from 2007 to 2009 in such areas as disease resistance, quality and output of wheat, disease and drought resistance and high oil content in maize. NSFC provided 1 million yuan for each project. Call for proposals were announced on the website each January and the deadline for proposal submission was March 31.

At the end of 2009, both sides co-organized a meeting to exchange research results achieved, systematically summed up the cooperation from 2007-2009 and discussed cooperation areas and forms in 2010 and afterwards.

5. International Institute of Applied Systems Analysis (IIASA)

Approved by the State Council in January, 2001, NSFC joined IIASA on behalf of China as one of IIASA's 19 National Member Organizations. NSFC encourages Chinese scientists to conduct multilateral cooperation with various IIASA project groups in the areas of energy, environment, land use, population, etc., and to jointly apply for research funding from various governmental organizations, private and national foundations, World Bank and EU Framework Program.

NSFC fully or partially supports several Chinese young scholars to take part in the annual 3-month Young Scientists Summer Program from May to August at IIASA. 3 young scholars were funded in 2009. For detailed information, please refer to IIASA website at <http://www.iiasa.ac>. NSFC sponsors Chinese and IIASA scientists to jointly apply for funding for workshops, cooperation and exchange and joint research projects.

From 2008, both sides co-fund up to two 3-year major joint research projects in simulation and control mechanism of complex system every year with 1 million yuan for each project from the Chinese side.

Call for proposals will be announced every January on the website and the deadline for

application is March 31.

America, Oceania and Eastern Europe

NSFC has signed scientific cooperation agreements or MoUs with counterpart science funding organizations and research institutions in 12 countries in America, Oceania and Eastern Europe. A detailed list can be found on the website of BIC, NSFC. Categories of programs to be funded include joint research, short-term visits and bilateral academic workshops.

For joint research and exchange activities under the framework of agreements (or MOUs) between NSFC and its overseas funding agencies, NSFC and its partner funding agencies will make joint call for proposals, organize evaluation according to the procedures agreed on, and make funding decisions after reaching consensus on the cooperative areas, program categories, funding intensity and scope. All these must be based on the principle of equality, complementariness, mutual benefits, equal input and sharing of the risks and results.

1. USA

NSFC steadily promotes substantial collaboration between China and the USA in more areas with emphasis on mutual benefit, talent fostering and research achievements. In 2010, priority will be continuously given to Sino-US cooperation in areas of mathematical and physical science, chemical science, life science, engineering and materials science, information science and management science.

In 2010, NSFC and NSF will continue to fund bilateral academic workshops and substantial cooperation between scientists of the two countries in areas of common interest. Projects funded under the NSF and NSFC agreement can be classified into two categories.

(1) Chinese applicants apply to NSFC at any time of the year together with NSF approval materials provided by the American counterparts, while American counterparts apply to NSF according to NSF's specific requirement.

(2) NSFC and NSF together receive joint research projects in the areas of mathematics and chemistry at a certain time of the year.

(i) NSFC-NSF Exchange Program in Mathematics

To promote cooperation between Chinese and US young scientists and encourage undertakers of NSFC projects to carry out active and fruitful cooperation and exchange, NSFC and NSF together support cooperation and exchange between researchers of both

countries. The joint research projects usually last two years with a total funding of 80 thousand yuan/project, covering the international travel costs and local accommodation of visiting scientists. Around 10 projects are approved each year. The call for proposals will be publicized on the website at the beginning of the year.

(ii) NSFC-NSF Joint Research Projects in Chemical Science

To promote joint research in chemical science between Chinese and US scientists, NSFC and NSF together fund joint research projects with an implementation period of three years between scientists of both countries. NSFC provides up to 1.5 million yuan for each project, covering research costs, international travel costs and local accommodation of visiting researchers.

The call for proposals usually comes out on NSFC's website in the second half of the year. Chinese applicants shall first fill in the simplified pre-application form and submit it as an attachment to the BIC, NSFC. The pre-applications submitted to NSFC and NSF shall be the same in content and can not be changed once submitted. NSFC and NSF will conduct preliminary evaluation on the pre-applications and applicants who pass the evaluation shall submit full proposals. NSFC and NSF will organize peer review for these full proposals. Please refer to the call for proposals publicized each year for detailed information concerning the number of projects to be funded and the specific amount of money to be approved.

(iii) NSFC-NSF PIRE Program

If the US researchers have been granted the PIRE (Partnerships for International Research and Education) fund by NSF, their Chinese partners can apply for major joint research program from NSFC before March 30 for matching fund as long as they are qualified applicants for this program.

2. Russia

In 2010, NSFC and Russia Foundation for Basic Research (RFBR) will jointly support cooperation and exchange activities in mathematical, mechanical and information science, physical and astronomical science, chemical and material science, biological and medical science, earth science, telecommunications and computer science, basic engineering and management science. Projects to be supported can be classified into two categories:

(1) Exchange projects under the agreement framework (exchange between researchers)

In accordance with the agreement between NSFC and RFBR, the joint call for proposals for this program is publicized once a year and the Chinese and Russian teams shall each have five researchers. Projects approved will receive a two-year funding with 90 thousand yuan from NSFC, among which 40 thousand yuan is for international travel costs of Chinese researchers to Russia and local costs of Russian researchers in China in

the two years, and 50 thousand yuan for additional cooperation costs. Altogether both sides fund around 50 projects. The call for proposals for 2010 will be announced on the websites of NSFC and RFBR at the beginning of 2010. Scientists of the two countries shall submit proposals respectively to NSFC and RFBR according to the relative regulations and requirement based on mutually agreed cooperative plans.

(2) Bilateral workshops under the agreement framework

NSFC and RFBR continue to fund bilateral workshops in order to encourage Chinese and Russian scientists to explore issues of common interest and therefore set up long-term cooperative relationship. Around 10 such projects are funded each year.

The themes of the workshops shall focus on the priority areas of both countries and aim at fostering substantial cooperation. The workshops may be held in either China or Russia. In principle, the number of participants from the sending party shall not exceed 8 while those from the host party shall not exceed 12. The program encourages participants to be from more institutions and Chinese participants shall be from at least two research institutions. Workshops with Chinese participants from one institution only will not be funded. Participants who do not come from the institutions that submit the applications shall present confirmation letters from their home institutions in order to attend the meeting. The sending party will fund the international travel costs and the host party will cover the local subsistence of the participants as well as costs related to the organization of the workshops.

Besides completing the online application form, the Chinese applicants shall fill in and submit the attached English application form in the joint call and turn in the paper version application and relative documents to NSFC. (Please refer to the guide to the English application for details.)

Please refer to NSFC website for detailed requirement of call for proposals for the year 2010.

3. Canada

(1) NSFC and Canadian Institutes of Health Research (CIHR) will jointly support cooperation programs in neuroscience, diabetes and obesity, cardiovascular system, genetics, infection and immunology, child and youth health, aging studies, etc. The specific areas for funding, the number of projects to be funded and the procedure for application for the year 2010 were published in the joint call for proposals at the end of 2009. Each approved project will usually last 3 years, and around 15 to 20 projects will be funded each year. NSFC will provide 450 thousand yuan to each project.

(2) In 2010, NSFC and Fonds de la Recherche en Sante du Quebec (FRSQ), Canada will

continue to support exchange projects under the framework of agreement between FRSQ and NSFC. Scientists of the two countries may submit proposals to NSFC and FRSQ respectively according to their respective requirements.

(3) In 2010, NSFC and NSERC will continue to support exchange projects under the framework of the agreement between NSERC and NSFC. Scientists of the two countries may submit proposals to NSFC and NSERC respectively according to their respective requirements

4. Australia

(1) The China/Australia Special Fund co-sponsored by NSFC and the Department of Innovation, Industry, Science and Research (DIISR) have supported more than 110 projects since 2001. The priority areas for funding are agriculture, ICT, environment, mining, energy and advanced materials. Approved projects last 1 to 3 years and NSFC provides up to 40,000 yuan to each project every year to cover the international cooperation and exchange activities among researchers.

The call for proposals for the year 2010 is yet to be confirmed and will be publicized once it is ready.

(2) In 2010, NSFC and the Australia Research Council (ARC) will continue to fund exchange projects within the framework of bilateral agreement between ARC and NSFC.

5. Others

NSFC and ASCR, FRST and funding agencies in other countries will continue to fund exchange projects within the framework of bilateral agreements in 2010.

Western Europe

NSFC has signed agreements and memoranda of understanding on scientific cooperation with 29 science foundations or research councils in 16 countries in North, South and West Europe, providing funds for joint research among scientists on topics of common interest. Activities to be funded include short-term exchange visits, bilateral academic workshops and joint research.

Based on the principles of equality, mutual benefit, equal input and sharing of the risks and results, funding for international cooperation with Western European countries will give priority to such areas as information science, life science, agriculture, materials science, healthcare, energy and environment, etc.; to bilateral workshops and substantial joint research projects, especially substantial cooperative projects under the framework of agreement or MOU between NSFC and its partner organizations; and to prominent young

and middle-aged undertakers of NSFC projects, excellent research groups and researchers back from abroad who already have collaboration with overseas partners. It will encourage Chinese researchers, research groups and institutions to set up long-term steady cooperation with European counterparts and carry out substantial cooperation and exchange.

NSFC will reach consensus with overseas partners on collaboration areas, project categories, funding intensities and funding scope. For those case-by-case applications (including bilateral workshops), researchers from both sides shall submit applications to their respective funding organizations in advance (for NSFC at least 3 months in advance). The funding organizations will together decide whether to fund the projects according to the evaluation and approval procedures mutually agreed upon. Funding includes international travel costs, living expenses, inter-city travel fees as well as some other costs related to the organization of academic workshops. Funding of joint research projects between NSFC and its partner organizations usually starts, as agreed upon by both sides, with joint calls for proposals, followed by the jointly agreed evaluation procedures and ended up with a funding decision made together by both sides. Funding from NSFC includes not only international travel costs and living expenses for personnel exchange, but also research fees for Chinese scientists.

NSFC's cooperation and exchange with western European countries are listed below.

1. UK

(1) Exchange Program

NSFC and the Royal Society of UK (RS) support up to 20 joint projects with a duration of 2 years. NSFC provides international travel costs of Chinese scientists and local costs of British scientists in China. RS provides at most 6,000 pounds for each project, covering the international travel costs of British scientists to China and local costs of Chinese scientists in UK. In July 2010, NSFC and RS will publish call for proposals simultaneously in both countries. Chinese scientists should submit proposals directly to NSFC and UK scientists to RS, and the results will come out at the end of January 2011. Projects approved will start on April 1, 2011 and end on March 31, 2013. Please refer to the call for specific requirement for application.

NSFC and the Royal Society of Edinburgh (RSE) support 2-year joint research projects between scientists from China and Scottish region in areas of common interest, according to the MOU signed between NSFC and RSE. The specific areas for cooperation and the number of projects to be approved each year are decided by both sides through discussion. NSFC provides international travel costs of Chinese scientists to UK and local costs of British scientists in China. RSE provides at most 6,000 pounds for each project, covering the international travel costs of British scientists to China and local

costs of Chinese scientists in UK. NSFC and RSE will publicize call for proposals simultaneously in both countries in the second half of 2010. Chinese scientists should submit proposals directly to NSFC and Scottish scientists to RSE, and the result will come out before the end of 2010. Projects approved start on Jan. 1, 2011 and end on Dec. 31, 2012. Please refer to the call for specific requirement for application.

NSFC will continue to cooperate with UK research councils such as EPSRC, BBSRC, NERC and MRC to fund small-scaled bilateral workshops co-organized by Chinese and British scientists. Chief organizers from both sides should submit applications to their funding organizations respectively, which will make funding decisions based on evaluation.

(2) Joint Research Program

NSFC and Research Councils in UK support substantial cooperation between scientists of both countries in areas of common interest, in consideration of the existing cooperation between scientists. NSFC and the Research Councils will publish call for proposals after discussion, and scientists from both countries shall submit proposals to their respective funding agencies. According to the evaluation results, NSFC and RCUK will together make funding decisions to cover research fees, and international travel costs and living expenses for exchange of personnel.

2. Germany

According to the agreement on cooperation between NSFC and DFG of Germany, both sides will support short-term research visits, bilateral workshops and joint research projects.

(1) Exchange Program

Chinese and German scientists shall submit their applications to their own funding organizations, which will make the final funding decision jointly after evaluation and consultation.

(2) Joint Research Program

NSFC and DFG encourage substantial joint research between scientists of both countries. Applicants should make joint research plans and then submit applications to their own funding organizations. NSFC and DFG will organize evaluation and make the final funding decision together. Funding for the projects includes research fees, international travel costs and living expenses for exchange of personnel. In 2009, both sides funded 4 joint research projects in the area of stem cell with a total funding of 1.8 million yuan. Cooperative areas for 2010 will be publicized at the beginning of 2010.

3. France

(1) Exchange Program

NSFC and French National Center for Scientific Research (CNRS) support joint projects and summer institutes under the framework of bilateral agreements between the two organizations.

NSFC-CNRS joint project: Both sides support exchange between Chinese and French scientists. NSFC funds international travel costs of Chinese scientists to France and the local costs of French scientists in China, and CNRS funds the local expenses of Chinese scientists in France and international travel costs of French scientists to China. The call for proposal will be publicized in June 2010, the deadline for submission is the end of September, 2010, and the results will come out at the end of January, 2011. Approved projects will start on Feb. 1, 2011 and end on December 31, 2011. Please refer to the call for specific requirement for application.

China-France summer institute project: NSFC and CNRS co-fund two summer institute projects every year, one in the area of basic mathematics and the other in applied mathematics. Each summer institute lasts 3 weeks. The first week is for lecture in mathematics and the following two weeks are for discussion and cooperation. The number of participants shall be around 20-40. Major participants shall be from the applicants' home institutions, the rest can come from other institutions and a few of them can be even from the third countries. NSFC will provide 100,000 yuan and CNRS will provide 50,000 Euros to each institute. The funding is for the organization of the activities, reception of participants and international costs and local subsistence of French researchers and participants of the third countries. Both sides make simultaneous call for proposals around June 2010 with the deadline at the end of September 2010. The funding result will come out before the end of 2010. Projects approved will start on Jan. 1, 2011 and end on Dec. 31, 2011. Please refer to the call for specific requirement of the application.

(2) Joint Research Projects

According to the MoU signed between NSFC and ANR, both sides encourage substantial cooperation in areas of common interest between scientists and research groups of both countries. NSFC and ANR decide through discussion the collaborative areas and the number of projects to be funded, make simultaneous call for proposals, and receive proposals from scientists of their respective countries. They will evaluate the proposals according to the rules and procedures agreed upon and make the final funding decision together.

Both sides agree that the cooperative areas for 2010 is material and engineering, information and communication (including nano science). NSFC provides up to 450

thousand yuan to each project, covering research costs, international travel costs and living expenses for personnel exchange. Each project lasts 3 to 4 years. Both sides will publicize call for proposals in January, 2010 with the deadline of early April, 2010, and the funding results will come out at the end of September. Projects approved will start on Jan. 1, 2011 and usually up to 15 projects will be finally approved. Please refer to the call for specific requirement of application.

(3) Other cooperation and exchange projects

NSFC supports cooperation and exchange programs, such as joint research and bilateral academic workshops between Chinese and French scientists in basic research and applied basic research areas under its respective agreements with INRA, IFREMER and CEA. Both sides receive proposals submitted by Chinese and French researchers at any time of the year and make joint funding decisions based on respective evaluations.

4. Finland

According to the agreement of scientific cooperation between NSFC and the Academy of Finland (AF), both sides will support exchange activities and joint research projects.

(1) Exchange Program

NSFC and AF support short-term academic studies, personnel exchange and bilateral academic workshops between Chinese and Finnish researchers. Chinese and Finnish researchers shall submit their applications to their respective funding agencies, and both organizations will make joint funding decisions based on respective evaluations.

(2) Joint Research Program

NSFC and AF encourage scientists or research teams of both countries to carry out substantial joint research in areas of common interest. Each year, both sides decide through discussion collaborative areas and the number of projects to be funded, make simultaneous call for proposals, and receive proposals from scientists of their respective countries. NSFC and AF organize international evaluation together and make the final funding decision according to the evaluation results. Both sides will fund up to four 3-year joint research projects in 2010. Projects approved will start on Jan. 1, 2011. NSFC provides up to 400 thousand yuan to each project, covering research and exchange costs. Both sides will make simultaneous call for proposals in the first half of 2010.

5. Denmark

According to the agreement of scientific cooperation between NSFC and Danish National Research Foundation (DNRF), both sides support joint research projects between excellent research groups of China and Denmark. Both sides decide through discussion collaborative areas and the number of projects to be funded each year, make simultaneous call for proposals and receive proposals from scientists of their respective

countries. They will co-organize international evaluation and make the final funding decision according to evaluation results.

In 2010, both sides will fund up to three 3-year joint research projects in areas of information and communication technology. Projects approved will start on Jan. 1, 2011. NSFC will provide 1 million yuan to each project, covering research fees, international travel costs and living expenses for personnel exchange. Both sides will publish call for proposals at the beginning of 2010.

6. Austria

According to the agreement of scientific cooperation between NSFC and Austrian Science Fund (FWF), both sides support academic exchanges and joint research in areas of common interest. Each year, both sides will decide through discussion the collaborative areas and the number of projects to be funded, make simultaneous call for proposals, and receive proposals from scientists of their respective countries. NSFC and FWF will carry out separate evaluations for academic workshops and international evaluation for joint research projects, and make the final funding decision together. Both sides will publish call for proposals at the beginning of 2010 and up to five projects will be finally approved. Projects approved will last 3 years, starting from Jan. 1, 2011. NSFC provides up to 400 thousand yuan for each project.

7. Netherlands

According to the MOU between NSFC and the Netherlands Organization for Scientific Research (NWO), both sides fund exchange programs and joint research projects between scientists of both countries.

(1) Exchange Program

NSFC and NWO support short-term academic studies, personnel exchange (usually less than 3 months) and bilateral academic workshops between Chinese and Dutch researchers. Chinese and Dutch researchers shall submit applications to their respective funding agencies, and both organizations will make joint funding decisions based on respective evaluations.

(2) Joint Research Program

NSFC and NWO encourage scientists or research teams of both countries to carry out substantial joint research in areas of common interest. Each year, both sides decide through discussion collaborative areas and the number of projects to be funded, make simultaneous call for proposals, and receive proposals from scientists of their respective countries. NSFC and NWO organize international evaluation together and make the final funding decision according to evaluation results. Both sides will fund up to 4 joint research projects in 2010, each lasting 3 to 4 years. Projects approved will start on Jan. 1,

2011. NSFC provides up to 450 thousand yuan to each project, covering research and international exchange costs. Both sides will make simultaneous call for proposals in January 2010.

Hong Kong and Macao SARs and Taiwan Region of China

Adhering to the principles of "one country, two systems" and the Basic Law of the Special Administrative Region of Hong Kong of the People's Republic of China, NSFC will continue its active support to various forms of cooperation and exchange between the inland and Hong Kong scientists in areas of mutual interests. In such cooperation, the principles of complementary strength, mutual promotion and sharing of results should be carried through, priorities of cooperation be stressed and flexible means of cooperation and exchange be adopted. For instance, joint research, jointly holding international and domestic scientific conferences and exchange of scientists may be chosen as approaches to the cooperation.

On November 23, 1998, NSFC and the Research Grant Council of Hong Kong (RGC) reached the agreement on establishing a joint research fund. According to the agreement, the joint research fund is 7.5 million yuan and 15 million Hong Kong dollars in 2010. Priority funding areas include information science, biological science, new materials, ocean and environmental science, traditional Chinese medicine and management science. For detailed information, please refer to the announcement of application for 2010, which came out at the end of November, 2009.

NSFC will continue to support various activities of scientific cooperation and exchange with substantial contents between inland and Macao scientists. Emphasis will be put on research projects related to environmental protection, urban development and modernization of traditional Chinese medicine.

NSFC has been committed to encourage and promote scientific cooperation and exchange between scientists on both sides of the Taiwan Straits. In 2010, NSFC will continue to support cross-Straits academic workshops held by scientists from mainland China and Taiwan. It will also fund substantial joint research projects in biodiversity for scientists across the Straits, according to the consensus reached between NSFC and K.T. Li Foundation for the Development of Science and Technology. NSFC provides 7.5 million yuan for this program and K.T. Li Foundation provides a matching fund of 30 million NTD. Please refer to the guide to this program published in December, 2009 for specific information about application to this program.

Sino-German Center for Research Promotion

The Sino-German Center for Research Promotion, jointly founded by NSFC and DFG of

Germany in October, 2000, aims to promote scientific cooperation and exchange among institutions of higher learning in China and Germany in the fields of basic research and applied basic research. NSFC and DFG each cover 50% of the Center's budget and the budget for 2010 is 25 million yuan.

Scientists from universities and academic institutions of both China and Germany can apply to the Center. The Center accepts proposals submitted jointly by Chinese and German scientists at any time of the year, but applications have to be submitted at least 3 months before the implementation of the projects.

The Center currently funds projects of the following categories:

1. Bilateral academic workshops

This project funds Chinese and German scientists to have in-depth discussion on cutting edge issues in a certain research area. The main purpose of the workshop which can be held either in China or in Germany is to foster joint research projects through discussion and exchange. Each workshop can have 15 participants from the sending party and 25 participants from the host party. Participants shall represent the academic level of the relative country and come from different universities or scientific institutions. The Center funds international travel expenses and local subsistence of all formal participants and other necessary costs for the workshop. The Center does not fund participants from industries or administrative institutions or postgraduates, nor multilateral or international workshops. Organizers of the meeting can invite participants from the third countries as long as the number does not exceed 20% of the total number from the sending party.

2. Joint research projects

In principle, applicants of such projects shall have been supported by the Center in the past, usually through bilateral workshops funded by the Center. The areas of cooperation shall be the priority funding areas of NSFC, and funding covers consumables, publishing and travel costs, as well as expenses related to the organization of meetings. The Center does not fund personnel salaries, but German applicants can apply to DFG for salaries. Funding for each project approved is usually 600 thousand yuan for both Chinese and German scientists. The duration of the projects shall not exceed 3 years.

3. Sino-German joint research group

Chinese and German research institutions with long term cooperation can apply to the Center to establish Sino-German joint research group so as to enhance the quality and competitiveness of the research and foster young researchers. This program mainly funds long term and in-depth scientific cooperation in certain areas. Projects can cover several research topics with complementary interests and usually last at most three years. Funding for the projects covers costs for bilateral workshops, short-term personnel

exchange, publications, consumables, etc. Each project shall have one Chinese and one German coordinators, who will apply to the Center and be responsible for the project.

4. Funding schemes for young scientists

(1) Short-term seminar

The program aims to introduce advanced scientific methods, techniques and their applications and provide training of specific issues in a certain area. The Center can fund 4 to 6 senior scientists from both countries as lecturers and participants are mainly university undergraduates, graduates or young researchers. The number of participants is decided according to specific conditions, such as equipment and volume of the laboratory, but it shall not exceed 40 in total. The number of participants that travel internationally shall not exceed 15. The lecture can be held either in Germany or in China and usually lasts at most 14 days, including two days for arrival and departure. Funding includes international travel, local accommodations as well as costs for the organization of the meeting and academic tours.

(2) Lindau Ph.D. Students Fund and Lindau Postdoc Scholarship

The Center, together with Lindau Nobel Laureates Foundation, funds 25 excellent Ph.D. students or posdocs under the age of 35 to participate in the Nobel Laureate meeting in Lindau, Germany, followed by a week-long visit to the German research institutions. Candidates to the meeting are selected throughout the country and must be recommended by their home institutions. The final approval list is decided by correspondence review and interview by Chinese and German reviewers.

Grantees of this program with Ph.D. degrees got invitations from German research institutes or universities can apply to the Center for a 6-month stay in Germany.

(3) Visit of German Excellent Young Researchers to China

This is a new funding scheme the Center has launched, targeting at excellent young German scientists. During the trial period, grantees of DFG's Emmy Noether program or other programs of equivalent quality, such as the principle investigators of SFB-excellent young research groups, grantees of the ESF Starting Grants, Lichtenberg professorship and principle investigators of young research teams, can apply for this program. The program mainly funds German young scientists to come to China for academic visits and research, and for them to discuss and explore bilateral cooperation with Chinese partners they have chosen. The funding covers international and domestic travel costs and local subsistence in China. Short-term academic visits usually last less than two weeks and the grantees can visit at most three cities during that period. They shall already have had host institutions and hosts in China.

(4) Young Scientists Forum

The program aims to provide an opportunity for Chinese and German young scientists to know the outstanding scientists in their own fields and carry out in-depth discussions with these prominent scientists. Each forum, which shall have a specific focus, can in principle invite at most 15 Chinese and German young scientists each under the age of 40, and several senior scientists according to the scale of the forum. Funding includes international and domestic travel costs, local subsistence and other necessary costs for the meeting.

5. Publication

This program funds publication of proceedings, joint publications and special journals for scientific results of Chinese and German cooperation. Funding will be at most 5,000 euros or 50,000 yuan. The Center does not fund publication of textbooks, translated works, etc.

6. Pre-activity planning

The Center receives applications that make preparation and plans for a meeting or a project, as well as small meetings to make such plans. The funding limits the duration and the number of people.

The Center receives applications jointly submitted by Chinese and German scientists from universities and research institutions in China and Germany. Applications must be written in both Chinese and German or Chinese and English, and submitted 3 months before the start of the applied activities (8 copies in written form and one electronic copy for each application). The content of the Chinese and German (English) version applications shall be the same. In the applications, the content, theme, academic significance and academic purpose of the project, the participants, contact information, detailed schedule as well as specific costs and distribution shall be specified. Related personnel costs shall be listed according to the funding standard set by the Center on its website. The applications will be evaluated by Chinese and German reviewers and the Center will make final decision according to the evaluation results.

Specific requirement and relevant information are available on the website of the Center:
<http://www.sinogermanscience.org.cn>.