Human and Social Dynamics: Competition for FY 2006 (HSD)

Program Solicitation

NSF 06-509
***Replaces Document* NSF 05-520**

National Science Foundation
Directorate for Social, Behavioral, and Economic Sciences
Directorate for Biological Sciences
Directorate for Computer and Information Science and Engineering
Directorate for Education and Human Resources
Directorate for Engineering
Directorate for Geosciences
Directorate for Mathematical and Physical Sciences
Office of International Science and Engineering
Office of Polar Programs

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

February 14, 2006

Exploratory Research Proposals
HSD Research Community Development Proposals

February 21, 2006

Full Research Proposals

REVISIONS AND UPDATES

Revisions are minimal:

1. The Program Description section has been revised to emphasize our interest in development of tools and infrastructure as part of research projects. The Program Description now also includes information on the study of human and social dynamics in the wake of disasters.

2. The Award Information section has been revised to clarify that the maximum budget amount refers to total across all institutions and years, and includes both direct and indirect costs.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Human and Social Dynamics: Competition for FY 2006 (HSD)

Synopsis of Program:

The Human and Social Dynamics (HSD) priority area fosters breakthroughs in understanding the dynamics of human action and development, as well as knowledge about organizational, cultural, and societal adaptation and change. HSD aims to increase our collective ability to (1) anticipate the complex consequences of change; (2) understand the dynamics of human and social behavior at all levels, including that of the human mind; (3) understand the cognitive and social structures that create, define, and result from change; and (4) manage profound or rapid change, and make decisions in the face of changing risks and uncertainty. Accomplishing these goals requires multidisciplinary research teams and comprehensive, interdisciplinary approaches across the sciences, engineering, education, and humanities, as appropriate.

The FY 2006 competition will include three emphasis areas (Agents of Change; Dynamics of Human Behavior; and Decision Making, Risk and Uncertainty). Support will be provided for Full Research projects and for shorter-term Exploratory Research and HSD Research Community Development projects.

Cognizant Program Officer(s):

- Keith N Crank, Competition Coordinator, Directorate for Social, Behavioral, and Economic Sciences, Office of the Assistant Director, Room 905, telephone: 703-292-4880, email: kcrank@nsf.gov
- Rachelle Hollander, Senior Advisor, Directorate for Social, Behavioral and Economic Sciences, Office of the Assistant Director, Room 905, telephone: 703-292-7272, fax: 703-292-9083, email: rholland@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.075 --- Social, Behavioral and Economic Sciences
- 47.078 --- Office of Polar Programs
- 47.049 --- Mathematical and Physical Sciences
- 47.079 --- International Science and Engineering (OISE)
- 47.050 --- Geosciences
- 47.041 --- Engineering
- 47.076 --- Education and Human Resources
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences

Eligibility Information

- **Organization Limit:**

  US universities and colleges, including two-and four-year colleges and community colleges, acting on behalf of their faculty members, may submit proposals. In addition, non-profit organizations in the US may submit proposals.

  Proposals from individuals, for-profit organizations, or foreign organizations will not be accepted. However, individual researchers and researchers at ineligible organizations may be included on proposals from eligible institutions through subawards or as consultants. NSF will not pay indirect costs on subawards to foreign organizations.

- **PI Eligibility Limit:**

  An individual may appear as Principal Investigator (PI), co-PI, other senior personnel or investigator on only one HSD proposal submitted in Fiscal Year 2006 in response to this Program Solicitation. This limitation includes proposals submitted by a lead organization, any sub-award submitted as part of a proposal, or any collaborative proposal, and this includes all types of projects: i.e. an individual may participate in only one Full Research proposal, or one Exploratory Research proposal, or one HSD Research Community Development proposal. Proposals that do not meet this requirement will be returned without review. These restrictions apply to this HSD solicitation only and are not meant to inhibit submissions of proposals by investigators to other NSF activities or programs.

  For the FY2006 HSD competition, all proposals must include three or more senior personnel from at least two different fields. Proposals involving fewer than three senior personnel will be returned without review. For the purposes of this solicitation, senior personnel include the Principal Investigator (PI), any co-PIs, and any other researchers actively involved in the scientific or technical management of the project. It does not include students, postdocs, or consultants who provide specific expertise on a limited portion of the project.

- **Limit on Number of Proposals:** None Specified.

Award Information

- **Anticipated Type of Award:** Standard Grant
- **Estimated Number of Awards:** 100 to 120 - A total of about 20 to 30 Exploratory Research and HSD Research Community Development awards of one to two years duration are expected; and 80 to 90 Full Research awards of up to three years duration, pending availability of funds.
- **Anticipated Funding Amount:** $50,000,000 (At least a total of $2,500,000 expected for Exploratory Research awards and HSD Research Community Development awards; the remainder for Full Research awards). These estimates are subject to the availability of funds.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Full Proposal Deadline Date(s)** (due by 5 p.m. submitter's local time):
  February 14, 2006
  Exploratory Research Proposals
  HSD Research Community Development Proposals
  February 21, 2006
  Full Research Proposals

Proposal Review Information

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Additional reporting requirements apply. Please see the full text of this solicitation for further information.

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I. INTRODUCTION

The arrival of the twenty-first century has brought with it new hopes and possibilities for improving the quality of life. Revolutionary technologies, and social innovations and adaptations have created a more closely linked world, within which there is almost instantaneous transmission of information that feeds a global economy. But it is also a world of change, uncertainty, and disruption that leaves many unprepared to respond effectively. The Human and Social Dynamics (HSD) priority area seeks to encourage research by multidisciplinary teams in order to stimulate breakthroughs in knowledge about human action and development as well as organizational, cultural, and societal adaptation and change. Such a transformation in basic understandings of human and social behavior would parallel the explosion of knowledge about the physical and biological worlds that characterized the twentieth century.

The new knowledge that HSD seeks to build will increase our collective ability to anticipate the complex consequences of change; will allow a better understanding of the dynamics of human and social behavior at all levels, including that of the human mind; will provide new insights into the cognitive, social, and socio-technical structures that create, define and result from change; and will help people and organizations better manage profound or rapid change.

In this third year of competition, the FY2006 HSD priority area will support research and research community development within and across three emphasis areas. Together these areas bear on the dynamics of change, behavior at different scales, individual and collective decision making, perceptions of risk and uncertainty, and human responses to changing situations. Topics encompassed by these emphasis areas are ripe for interdisciplinary synergies that hold special promise for important breakthroughs. The three emphasis areas are:

- Agents of Change (AOC)
- Dynamics of Human Behavior (DHB)
- Decision Making, Risk and Uncertainty (DRU)

II. PROGRAM DESCRIPTION

Human and Social Dynamics (HSD) is an NSF-wide priority area that includes all NSF disciplines and fields. The focus on dynamics – on how cognitive systems, individuals, formal and informal organizations, cultures, and societies evolve and change over space and time - distinguishes research in the HSD priority area. Projects will explore the dynamics of changes that range in time from nanoseconds to millennia and across scales ranging from the internal workings of the human mind to the interplay of global social and cultural systems.

Understanding the dynamics of individual behavior and social activity increasingly requires partnerships that span the different science and engineering research and education communities, and benefits from international involvement as well. Thus, the convergence of biology, engineering, the cognitive and social sciences, and computer and information sciences allows the development of basic knowledge about the evolution of individual, group, and organizational behavior with a rigor

never before possible. At the same time, the convergence offers scientists, engineers, and educators more realistic models with which to test and transform organizational and classroom practice.

Examination of the dynamic interactions of science, engineering, and technology with persons and social institutions requires integrative research efforts with broad and deep theoretical and methodological sophistication. Geographic information systems and related technologies, together with advances in the multilevel modeling of complex systems and network analysis from engineering and the mathematical and physical sciences, open new frontiers for understanding such diverse subjects as crime, environmental management, epidemics, linguistic behaviors, societal innovation and adaptation, appropriations of new technologies, and the interplay of biological and social aspects of behavior within our species.

For this competition, proposed activities should contribute to building interdisciplinary communities of researchers and educators prepared to meet the challenges of HSD research. Moreover, research teams and other collaborative arrangements through which diverse individuals work together in synergistic ways are required. NSF also encourages HSD projects to include junior researchers as team members and, when appropriate, to develop international collaborative partnerships. NSF is also interested in efforts related to the International Polar Year 2007-2008, for which it is the lead U.S. planning agency.

HSD awards will enable researchers and educators to pursue different kinds of activities:

Full Research projects will support multidisciplinary teams of three or more investigators from at least two different fields in projects that use interdisciplinary approaches to advance fundamental understanding about human and social dynamics. Projects are expected to have significant educational or other broader impacts in addition to advancing fundamental knowledge. Pending availability of funds, NSF anticipates that Full Research projects typically will be proposed for three years duration and have total award sizes ranging up to $750,000, including indirect costs.

Exploratory Research and HSD Research Community Development projects will support multidisciplinary teams of three or more investigators from at least two different fields, typically for one to two years, with a total award size of up to $125,000 including indirect costs, pending availability of funds.

Exploratory Research projects enable teams to perform preliminary activities that provide the basis for more elaborate work. HSD requires that these projects be new and innovative, for example, preliminary work on untested and novel ideas; ventures into emerging and potentially transformative research ideas; and application of new expertise or new approaches to "established" research topics. HSD Research Community Development projects will support interdisciplinary educational activities and other broad-ranging efforts, including research workshops and training activities that aim to increase awareness, capabilities, and networks within and across scholarly communities, with an eye to enabling interdisciplinary collaborations and increasing the quality of HSD research.

A. AREAS OF EMPHASIS

During Fiscal Year 2006, all proposals submitted to the Human and Social Dynamics priority area competition **must** identify one of the three emphasis areas described below (Agents of Change; Dynamics of Human Behavior; and Decision Making, Risk, and Uncertainty). Research projects that involve more than one of these emphasis areas are encouraged, but a primary area of emphasis must be identified. NSF encourages the development of models and tools as a part of any proposed research in any of the emphasis areas described below. There is particular interest in path-breaking ideas with relevance to the natural and physical sciences and engineering, as well as the social and behavioral sciences.

Agents of Change (AOC)

Research in the AOC Emphasis Area involves multidisciplinary teams whose contributions are necessary to address an important HSD/AOC question that promises results of broad scientific and societal interest. AOC research focuses on the dynamics that underlie, are part of, or result from large-scale transformational changes. Examples include globalization, population migration, infectious diseases, democratization, economic transformations, scientific and technological advances, and the development of human societies over time. AOC projects may also focus on processes and outcomes associated with such phenomena as human evolution and the evolution of culture; the interaction of culture with climate, geography, and environment in settings ranging from high-density cities to sparsely populated polar regions; the implications of human and social differences for conflict, cooperation, and assimilation; the implications of large-scale transformational changes for diversity and equality; and adaptation and resistance to technological change and new knowledge.

Research in the AOC priority area might also explore the dynamics and consequences of more focused systemic, organizational, or policy changes. These may involve political, economic, environmental and educational systems or subsystems, in relationship to phenomena such as technological innovation, economic growth, environmental sustainability, learning, or social equity. Research might examine the reciprocal relationships between organizational and social action or between technological developments and institutional change. It can look at how social systems and their constituent parts

react to a wide variety of drivers, ranging from catastrophes, such as war and other disasters, to ideology and terrorism and corruption, to the Internet and home computers. And it can focus on ethical and related issues that are raised by breakthroughs in scientific and engineering knowledge and technological development.

Dynamics of Human Behavior (DHB)

Research in this area focuses on multidisciplinary examinations of dynamics -- change in human behavior over time. Examples include the dynamics through which individuals and organizations (including families and other informal organizations) create, grow, learn, change, and act under the impetus of internal and external stimuli; the influence organizational, community, and environmental structures and processes have on these dynamics; the interplay of evolutionary forces and human behavioral change; and individual cognitive, computational, linguistic, developmental, social, biological, and other processes as dynamic evolving systems. These processes include systems of coordination and control in the behavior of individuals, the dynamics of coordination between individuals, and the dynamics of change across the lifespan of individuals and organizations.

DHB research may draw upon formal concepts about dynamics from biology and mathematics, the physical sciences, or information science and engineering to characterize dynamic behavior, such as work that calls upon complexity theory, agent-based or animal models, cognitive models, stochastic models, dynamical systems theory and bifurcation analysis. The interdisciplinary nature of the work may link the behavior of individuals and/or organizations and their social, cognitive or biological underpinnings, as they evolve over varying time scales, to influences including natural and built environments, geographical contexts, and social networks. Any tools and models for understanding human behavior that are developed as part of this competition should have applications across a broad array of HSD challenges.

Decision Making, Risk, and Uncertainty (DRU)

This emphasis area is concerned with the dynamics of human and societal attempts to identify, characterize, evaluate, and manage situations that call for choices and decisions, and involve changing perceptions of uncertainty and risk. Risks and uncertainties may be strategic – that is, dependent upon a judgment about what others will do – or may result from incomplete information about a situation, either unknown or unknowable. Risks and uncertainties can also arise from the objectives, priorities, desires and needs of individuals, groups, organizations, and institutions. Decision arenas of HSD interest include not just individual judgment but also governmental, industrial or corporate decisions, and multiple levels of group collective decisions.

Decision Making, Risk, and Uncertainty proposals may focus on comparing the dynamics of and variations in the mental and organizational processes that underlie risk evaluation or decision making in the face of uncertainty. They may focus on the challenges posed to risk assessment or decision making by the need to evaluate and adapt to changing social and environmental circumstances, especially rapid or unanticipated changes and system shocks. They may, for example, develop interdisciplinary models or tools that improve decision making under uncertainty, identify new indicators to capture the influence of spatial and temporal variability, or use stochastic methods or combined qualitative and quantitative representations of information to characterize uncertainty and to improve risk assessment and decision making practices. Priority will be given to projects that bring together researchers from fields and disciplines that do not ordinarily team up in the study of uncertainty, risk and decision making.

B. GENERAL INFORMATION REGARDING ALL EMPHASIS AREAS

NSF has special interest in proposals that develop and employ innovative approaches in the study of human and social dynamics and include research personnel from all ranks, who are representative of the diversity in US society. When appropriate, international collaborative partnerships are encouraged. HSD encourages research-intensive and extensive universities to partner with other types of colleges and universities, especially ones serving underrepresented minority populations.

All HSD proposals will be evaluated with respect to their intellectual merit, their broader impacts, and their responsiveness to the goals of the HSD competition. To that end, HSD-specific review criteria have been established and reviewers will be directed to comment on these criteria. Multidisciplinary advisory panels will evaluate all proposals.

Proposals submitted to the Human and Social Dynamics priority area may be of interest to other federal agencies. If so, NSF will ask investigators whether they are willing to have their proposals co-reviewed, prior to initiating any contact.

In addition to conducting the work outlined in their proposals, principal investigators are expected to attend annual HSD grantees meetings in the Washington, DC area. These meetings will enable awardees to develop into a community of Human and Social Dynamics researchers, establish connections and networks, share project results, discuss issues of common interest, and participate in activities designed to facilitate the integration of research and education and integrate diversity into project activities. Proposers are expected to include in their proposals the costs for one to two team members to participate in

these annual meetings.

III. ELIGIBILITY INFORMATION

There are limits on the types of organizations that can apply to this competition, and on the number of proposals with which an investigator can affiliate.

US universities and colleges, including two- and four-year colleges and community colleges, acting on behalf of their faculty members, may submit proposals. In addition, nonprofit organizations in the US may submit proposals.

An individual may appear as Principal Investigator (PI), co-PI, other senior personnel or investigator on only one HSD proposal submitted in Fiscal Year 2006 in response to this Program Solicitation. This limitation includes proposals submitted by a lead organization, any sub-award submitted as part of a proposal, or any collaborative proposal, and this includes all types of projects: i.e., an individual may participate in only one Full Research proposal, or one Exploratory Research proposal, or one HSD Research Community Development proposal. These restrictions apply to this HSD solicitation only and are not meant to inhibit submissions of proposals by investigators to other NSF activities or programs.

Proposals that do not meet all of the requirements listed above will be returned without review.

IV. AWARD INFORMATION

Pending availability of funds, NSF anticipates making approximately a total of 20-30 awards for Exploratory Research projects and for HSD Research Community Development projects. These awards will typically be for one to two years, with total award sizes (including indirect costs) not to exceed $125,000. **Proposals that exceed this maximum amount of $125,000 will be returned without review.**

Pending availability of funds, NSF anticipates making approximately 80-90 awards for Full Research projects. These awards will typically be for three years, with total award sizes (including indirect costs) not to exceed $750,000. This maximum is the total for the project. It is not a yearly maximum. **Projects that exceed this maximum amount of $750,000 will be returned without review.**

Anticipated Funding Amount: $50,000,000 (At least $2,500,000 expected for Exploratory Research awards and HSD Research Community Development awards; the remainder for Full Research awards). These estimates are subject to the availability of funds.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

Instructions for HSD proposal preparation are detailed below. The first section contains instructions for all proposals. The second section has information specific to Full Research proposals; the third section has information specific to Exploratory Research and HSD Research Community Development proposals. Note that in each case the HSD guidelines below specify that HSD proposals must include special information in addition to that identified in the Grant Proposal Guide (GPG) proposal preparation guidelines. NSF will direct reviewers' attention to these special requirements in the proposal evaluation process.

1. INSTRUCTIONS FOR ALL HSD PROPOSALS *(see other sections below for additional information about Project*

Description preparation for Exploratory Research, HSD Research Community Development proposals, and for Full Research proposals):

The information below supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. It pertains to all HSD submissions.

Proposal Cover Sheet. Indicate the solicitation number in the PROGRAM ANNOUNCEMENT/SOLICITATION NO./ CLOSING DATE block and select “Human and Social Dynamics” as the Program in the Unit Selection List. Begin your title with the one acronym corresponding to the primary area of emphasis (AOC, DHB, or DRU) chosen for your proposal. Failure to submit this information may delay or prevent processing. If your project includes **international activities,** you must check the box for “International Cooperative Activities Country Name” that appears under Other Information when the "remainder of cover sheet" is clicked, then select the countries involved.

Project Summary. Provide a summary description of the HSD project, including its research or development theme and key innovative features, in a manner that will be informative to a general technical audience. If the project includes international activities, they should be included in the project summary also. Project Summaries must be written carefully to explicitly point to and detail the two NSF evaluation criteria -- intellectual merit and broader impacts -- in separate paragraphs. **If the project summary does not explicitly address both the intellectual merit and the broader impacts of the proposed activity, the proposal will be returned without review.** At the top of this page include the title of the HSD project, the name of the principal investigator, and the lead organization. Also list any other participating institutions/organizations, including international collaborators.

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Biographical Sketches. Each proposal must include biographical sketches for all senior investigators, and also include biographical sketches for principal foreign collaborators. All sketches must adhere to the format given in the Grant Proposal Guide (Chapter II.C.2.f, http://www.nsf.gov/pubsys/ods/getpub.cfm?gpg).

Project Budget. The budget justification (up to 3 pages) should explain and justify major cost items. For undergraduate and graduate student participants and postdoctoral associates, include a breakdown of costs by types of participants. The budget should include costs for one or two team members to participate in annual HSD grantees meetings in the Washington, DC area. The total maximum (including indirect costs) budget for Full Research proposals is $750,000; for Exploratory Research and HSD Research Community Development proposals it is $125,000; proposals exceeding these limits will be returned without review.

Supplementary Documentation. Each proposal must include a Supplementary Documentation section with the following information:

(1) A document that lists the names, organizational affiliations, and primary academic fields of all senior personnel and paid consultants associated with the project. This information helps to insure that prospective reviewers do not have conflicts-of-interest. NSF defines senior personnel as the principal and co-principal investigators responsible for the scientific or technical direction of the project and other faculty members involved in the project. (A complete definition can be found in NSF’s Grant Proposal Guide, Appendix F). This list should also include all individuals on subawards who fall into the category of senior personnel. In the case of collaborative proposals, this document needs only to be included with the lead proposal.

(2) Because an individual may participate on just one HSD proposal submitted in FY 2006 as a PI, co-PI, other senior personnel or investigator – and violation of this PI Eligibility Limit will result in the proposal(s) being returned without review – each proposal must include a signed written statement from each senior personnel confirming participation in the project. This should be uploaded as a "Supplemental Document" in FastLane. This statement is also required of all individuals on subawards who fall into the category of senior personnel. The following text may be used as a template: “I am a member of the research team that is submitting a proposal to the FY 2006 HSD competition. The lead PI is [name of PI], at [name of institution]. I am not a PI, co-PI, senior personnel or investigator on any other proposal for this competition.”

For the FY2006 HSD competition, all proposals must include three or more senior personnel (Principal Investigator (PI), co-PI, or other researchers or investigators) from at least two different fields. **Proposals involving fewer than three senior personnel will be returned without review.**

(3) All senior personnel must also list primary thesis and post-doctorate advisors and advisees and collaborators within the last 48 months. This information helps to insure that prospective reviewers do not have conflicts-of-interest. This information must be uploaded into the Supplementary Documents section of the lead proposal.

This section may also include: letters of support from collaborating foreign researchers and/or institutions, and letters

indicating access to sites for research or other associated project activities, as needed; and certifications associated with the use of human or animal subjects.

Unless authorized here or in the NSF Grant Proposal Guide, no other materials should be included in this section. Investigators sometimes put survey protocols into this section; this is specifically not allowed.

Proposals Involving Multiple Organizations

Proposals involving multiple organizations may be submitted in one of two ways: (1) as a single proposal with one organization serving as the lead organization and with support to other organizations provided through subawards, or (2) collaborative proposals may be submitted by eligible organizations. Organizations eligible to submit proposals include US universities and colleges, including two- and four-year colleges and community colleges, acting on behalf of their faculty members. In addition, non-profit organizations in the US may submit proposals. See GPG Section II.D.3 for instructions regarding the preparation of collaborative proposals and carefully follow on-line instructions regarding their preparation in FastLane.

Proposals Involving Collaborators at Foreign Organizations

Proposers are reminded they must provide biographical sketches of all senior project personnel, including those at foreign organizations. In addition, as supplementary documentation, proposals involving foreign collaborators should provide documentation of a willingness to collaborate through letters of commitment from the international counterpart organizations. Please note that although eligibility for this competition is restricted to U.S. organizations, as described in section III of this solicitation, collaborations with foreign organizations may be considered.

Human Subjects

If the project involves human subjects, the Institutional Review Board (IRB) of the submitting organization must certify that the proposed project is in compliance with the Federal Government's "Common Rule" for the protection of human subjects. If IRB approval has been obtained and the date of approval is listed on the cover sheet, no other certification is required. If IRB approval is still pending, submit certification of IRB approval in electronic form as soon as approval is obtained to the cognizant program officer. (The name of this program officer will be listed in the Proposal Status module of FastLane.) Delays in obtaining IRB certification may result in NSF being unable to make an award. For more information regarding the protection of human subjects, consult http://www.nsf.gov/bfa/dias/policy/guidance.htm#human.

2. ADDITIONAL PROJECT DESCRIPTION INSTRUCTIONS FOR EXPLORATORY RESEARCH AND HSD RESEARCH COMMUNITY DEVELOPMENT PROPOSALS

The information below supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines with respect to the project description section.

Project Description. Project Descriptions are limited to 15 pages total. This page limit does not include pages devoted to references, the project budget or supplementary documentation. The project description must include:

Prior Results: Proposals must include relevant prior results from NSF support.

Description of Exploratory Research or Research Community Development Activities: The description should provide a clear statement of the exploratory or community development activities to be undertaken, including 1) objectives for the period of the proposed work and expected significance, and 2) the relation of the proposed activity to the present state of knowledge in the field, to work in progress by the PI under other support, and to work in progress elsewhere. These activities are expected to be novel and innovative by, for example, undertaking preliminary work on untested ideas or combinations of ideas, or applying new expertise or approaches to “established” research topics, or fostering cross-disciplinary education or discussion about an important HSD topic. A clear description of the grounds to expect positive results and plans to disseminate those results so as to achieve broad impacts should be provided.

Note: Specifically for workshop and similar community development activities:

a) See *Special Guidelines for Conferences, Symposia and Workshops* in the current Grant Proposal Guide (Chapter II.D.7, http://www.nsf.gov/pubsys/ods/getpub.cfm?gpg).

b) Include an event description, including agenda, scientific and community development justification and expected results and benefits. Include a discussion of mutual benefits for international activities.

c) Identify proposed U.S. and non-U.S. participants, their brief biographical sketches, and their roles in the workshop. Indicate all participants to be supported by NSF.

d) Describe the selection process for all participants who have and have not yet been selected, including intended efforts to include junior researchers and ensure diversity of the participants.

e) Plan for dissemination of conclusions/proceedings, which should include dissemination in electronic format on a workshop website.

f) Plan for anticipated new collaborative activities emerging from the workshop.

Management Plan (2 pages maximum as part of the 15 page project description): Each Exploratory Research or HSD Research Community Development proposal must contain a management plan, which includes 1) the specific roles of the PI, co-PIs, other senior personnel and paid consultants at all organizations involved, 2) how the project will be managed within and across organizations and disciplines, 3) identification of the specific coordination mechanisms that will enable cross-institution and/or cross-discipline scientific integration (e.g., regular meetings or teleconferencing, yearly workshops, graduate student exchange, project meetings at conferences, videoconferences, software repositories, etc.), and 4) pointers to the budget line items that support these coordination mechanisms.

Projects with **international activities** should include: a) details on the complementary expertise of the U.S. and foreign partners; b) a description of the proposed contributions and division of labor among participating researchers and institutions; c) plans for involving U.S. students and junior researchers.

Exploratory Research and HSD Research Community Development project descriptions should address the following special criteria. Reviewers will be asked to use these criteria to evaluate the proposals:

Fit to Human and Social Dynamics. HSD projects will enable novel and innovative activities not usually supported through other existing NSF programs. The project description should address the expected project significance: how its intellectual merits and broader impacts will add to the fundamental knowledge base across relevant fields related to human and social dynamics and how it will enhance the capabilities of people who engage in research and/or education in these areas.

Multidisciplinarity and Interdisciplinarity. The HSD competition intends particularly to stimulate research that brings together seldom-linked fields in new partnerships. Multidisciplinary contributions from members of the research team to the interdisciplinary goals of the project and contributions to separate or interdisciplinary fields should be identified and explained in the project description.

3. ADDITIONAL PROJECT DESCRIPTION INSTRUCTIONS FOR FULL RESEARCH PROPOSALS

The information below supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines with respect to the project description section for Full Research proposals.

Project Description. Project Descriptions are limited to 20 pages total, including several specific required parts described below. This 20 page limit does not include pages devoted to references, the project budget or supplementary documentation. The project description includes:

Prior Results: Proposals must include relevant prior results from NSF support.

Description of Research and Education Activities: The description should provide a clear statement of the research and education activities to be undertaken. It should include the empirical and theoretical foundations of the work, with reference to relevant work of the applicants and others; details of the methods to be used; and explain the significance of the outcomes. The narrative should reflect the intellectual merit of the work, and its innovativeness. As appropriate, a clear description of qualitative, quantitative, or experimental methods and procedures, and plans for interpretation or analysis, and for preservation, documentation, and sharing of data, samples, and physical collections should be provided. Projects involving international collaborations or other activities should describe them here. The broader impacts of the proposed activities should be an integral part of the narrative.

Management Plan (3 pages maximum as part of the 20 page project description): Each Full Research proposal must contain a management plan, which includes 1) the specific roles of the PI, co-PIs, other senior personnel and paid consultants at all organizations involved, 2) how the project will be managed within and across organizations and disciplines, 3) identification of the specific coordination mechanisms that will enable cross-institution and/or cross-discipline scientific

integration (e.g., regular meetings or teleconferencing, yearly workshops, graduate student exchange, project meetings at conferences, videoconferences, software repositories, etc.), and 4) pointers to the budget line items that support these coordination mechanisms.

Projects with **international activities** should include: a) details on the complementary expertise of the U.S. and foreign partners; b) a description of the proposed contributions and division of labor among participating researchers and institutions; c) plans for involving U.S. students and junior researchers.

Full Research project descriptions should address the following special criteria. Reviewers will be asked to use these criteria to evaluate the proposals:

Fit to Human and Social Dynamics. HSD projects will enable novel and innovative activities not usually supported through other existing NSF programs. The project description should address the expected project significance: how its intellectual merits and broader impacts will add to the fundamental knowledge base across relevant fields related to human and social dynamics and how it will enhance the capabilities of people who engage in research and/or education in these areas.

Multidisciplinarity and Interdisciplinarity. The HSD competition intends particularly to stimulate research that brings together seldom-linked fields in new partnerships. Multidisciplinary contributions from members of the research team to the interdisciplinary goals of the research and contributions to separate or interdisciplinary fields should be identified and explained in the project description.

Proposers are reminded to identify the program announcement/solicitation number (06-509) in the program announcement/ solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

Cost sharing is not required by NSF in proposals submitted under this Program Solicitation.

Other Budgetary Limitations:

Grantees Conference: One to two senior personnel are required to attend annual meetings of HSD grantees in the Washington, DC area, and costs for this participation must be included in the budget.

C. Due Dates

Proposals must be submitted by the following date(s):

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

February 14, 2006
Exploratory Research Proposals
HSD Research Community Development Proposals

February 21, 2006
Full Research Proposals

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: https://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically

sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: http://www.fastlane.nsf.gov

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

Additional Review Criteria:

In addition to the general criteria described above, the following criteria will be considered by peer reviewers and NSF staff in evaluating proposals submitted in response to this solicitation. The first two criteria apply to all HSD proposals; the third applies to Exploratory Research and HSD Research Community Development proposals.

1. Does the research team thoroughly integrate the perspectives of two or more disciplines, particularly seldom-linked disciplines, to specifically address issues in human and social dynamics -- agents of change, dynamics of human behavior, or decision making, risk and uncertainty?

2. Does the proposal provide a well-conceived management plan that will enhance the likelihood of success for interdisciplinary research and development efforts?

3. Is this Exploratory Research or HSD Research Community Development project novel and innovative? For example, does it undertake preliminary work on untested ideas or combinations of ideas, apply new expertise or approaches to “established” research topics, or foster cross-disciplinary education or discussion about an important HSD topic?

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/. Paper copies of these documents may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at http://www.gpo.gov.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

In addition, awardees are required to participate in HSD grantees' meetings in the Washington, DC area, and should budget for one to two investigators to attend each year.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Keith N Crank, Competition Coordinator, Directorate for Social, Behavioral, and Economic Sciences, Office of the Assistant Director, Room 905, telephone: 703-292-4880, email: kcrank@nsf.gov
- Rachelle Hollander, Senior Advisor, Directorate for Social, Behavioral and Economic Sciences, Office of the Assistant Director, Room 905, telephone: 703-292-7272, fax: 703-292-9083, email: rholland@nsf.gov

For questions involving the HSD emphasis areas, contact :

Agents of Change (AOC)

- Thomas Baerwald, Directorate for Social, Behavioral, and Economic Sciences
  phone: 703-292-7301
  email: tbaerwal@nsf.gov

- Mark Walbridge, Directorate for Biological Sciences
  phone: 703-292-8481
  email:mwalbrid@nsf.gov

Dynamics of Human Behavior (DHB)

- Anna Kerttula, Office of Polar Programs
  phone: 703-292-7432
  email: akerttul@nsf.gov

- Amber Story, Directorate for Social, Behavioral, and Economic Sciences
  phone: 703-292-7249
  email: astory@nsf.gov

Decision Making, Risk, and Uncertainty (DRU)

- Robert O'Connor, Directorate for Social, Behavioral and Economic Sciences
  phone: 703-292-7263
  e-mail: roconnor@nsf.gov

- Dennis Wenger, Directorate for Engineering
  phone: 703-292-7014
  email: dwenger@nsf.gov

Exploratory Research and Research Community Development

- Sarah Ruth, Directorate for Geosciences
  phone: 703-292-7594
  email: sruth@nsf.gov

For questions about **International Activities**, contact

- Bonnie Thompson, Office of International Science and Engineering
  phone: 703-292-7248
  email: bthompso@nsf.gov

General Inquiries

- Keith Crank, Directorate for Social, Behavioral, and Economic Sciences
  phone: 703-292-4880
  email: kcrank@nsf.gov

- Elizabeth Tran, Directorate for Social, Behavioral, and Economic Sciences
  phone: 703-292-5338
  email: etran@nsf.gov

For questions related to the use of FastLane, contact:

- Dana M. Walden, Program and Technology Specialist, Directorate for Social, Behavioral & Economic Sciences, Division of Social and Economic Sciences, 995 N, telephone: (703) 292-4927, fax: (703) 292-9068, email: dwalden@nsf.gov
- Kristin E. Kuyuk, Social Scientist/Science Assistant, Directorate for Social, Behavioral & Economic Sciences, Division of Behavioral and Cognitive Sciences, 995 N, telephone: (703) 292-4904, fax: (703) 292-9068, email: kkuyuk@nsf.gov
- Matthew M. Thomas, Science Assistant, Directorate for Social, Behavioral & Economic Sciences, Division of Behavioral and Cognitive Sciences, 995 N, telephone: (703) 292-8872, email: mthomas@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's MyNSF News Service (http://www.nsf.gov/mynsf/) to be notified of new funding opportunities that become available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center)**:** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090

- **To Order Publications or Forms:**

  Send an e-mail to: pubs@nsf.gov

  or telephone: (703) 292-7827

- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

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