



**Department of Biotechnology
Global Innovations Directorate
(DBT – NSF Joint call for proposals)**

(LAST DATE OF PROPOSAL SUBMISSION – 11TH APRIL, 2024)

Guidelines for Submitting Collaborative Proposals under Department of Biotechnology (DBT), Government of India and U.S. National Science Foundation (NSF) Collaborative Research Opportunities

Department of Biotechnology (DBT), Government of India and National Science Foundation (NSF) of U.S. have signed an Implementation Agreement (IA) on research Cooperation. This Implementation Arrangement provides a framework to encourage collaboration between U.S. and Indian research communities and sets out the principles by which joint activities might be supported. Through this research agency partnership, U.S. researchers may receive funding from NSF and India researchers may receive funding from DBT respectively. This NSF-DBT collaborative research opportunity focuses specifically upon discoveries and innovations in areas of mutual interest to support advancing knowledge, technologies, and innovation that advance biotechnology and promote the bioeconomy.

Proposals may be submitted that address complex scientific challenges and innovate novel solutions that leverage advances in synthetic and engineering biology, systems and computational biology, and other associated fields that are foundational to developing future biomanufacturing solutions and advance the bioeconomy. Examples of challenge areas include but are not limited to:

- Development of innovative tools, technologies, and resources for genome engineering, and genome manipulations of plants and other organisms of relevance in synthetic and engineering biology
- Designing organelles (ribosomes, mitochondria, membranes, regulatory modules, molecular machines, etc.), or synthetic components that could be integrated into cells or cell-like systems
- Understanding the biological principles for cell programming and strain engineering in microbes and host (plant) microbe interactions in phytobiomes and rhizosphere
- Engineering DNA, RNA, and protein/enzyme
- Modelling of metabolic networks and interactions among networks
- Designing host expression system for recombinant proteins
- Engineering novel microbial chassis
- Developing and applying synthetic gene circuits
- Engineering novel plant chassis
- Predictive models of cells and subcellular systems that support mechanistic understanding and engineering design

Proposals submitted to this opportunity may focus on the development of foundational tools that would support all application spaces or focus on specific applications. Examples of application domains of interest include:

- The production of smart proteins and high value small chemical molecules of industrial importance
- Development of climate resilient crops as well as plants tailored as feedstocks
- Engineering microorganisms for enhanced CO₂ capture and conversion abilities
- Expanding protein functional diversity to expand the biochemical diversity for bioeconomy applications
- Engineering of microbial communities that reduce fertilizer use, enhance plant productivity, improve sustainability, and/or have the ability to improve the circularity of biomanufacturing production

The list of examples is intended to be illustrative, not exhaustive.

Through a research agency partnership, NSF and DBT will allow investigators from both countries to collaborate to write a single proposal that will undergo a single review process at NSF, the Coordinating Agency.

The collaborative opportunity described in the Dear Colleague Letter (DCL) remains in effect until archived.

Eligibility Criteria of Principal Investigators for DBT Support:

- Any Indian National holding a regular position in any Indian academic and scientific research institutions (Govt./Private) may apply. This call is open to all applicants eligible for Govt. funding. The research institutions must be recognized by DSIR as a Scientific and Industrial Research Organization (SIRO). Private institutions/ NGOs should also be registered with Darpan Portal of NITI Aayog. There should be at least one co-investigator from each participating institute and either one of the PI or Co-PI should have remaining service in co-terminus to the duration of the project.
- Number of proposal submission for Indian investigators as PI is limited to one proposal while they can involve as Co-PIs in maximum of two proposals.
- The Indian scientists who are in any way involved in the implementation of two or more projects that were previously supported by the DBT (International Cooperation Programme) and that are not expected to be completed before 31st March, 2024 are also not eligible to be a member of the research team.

Guidelines:

1. The proposed work submitted under an NSF-DBT collaboration must represent an integrated collaborative effort. The Project Summary and Project Description of the

proposal must include a description of the collaboration, including an explanation of the role(s) of the India collaborator(s) and an explanation of how the team will work together. The Project Summary, Project Description, and references used must be exactly the same when submitted to both NSF and DBT.

2. The proposal must describe the intellectual merits of the proposed research, including the value of the international collaboration and the anticipated broader impacts (including societal benefits) of the effort. As broader impacts are a review requirement for both NSF and DBT, the proposal should include relevant societal benefits as well.
3. The proposal should describe the full proposed research program, including the total U.S. and Indian resources that will be part of the project. NSF investigators should indicate only the NSF expenses in the NSF budget. DBT investigators should indicate only the DBT research expenses on the DBT budget form. **The DBT budget and budget justification must be included in the NSF proposal as a Supplementary Document.** The Budget Justification section of the NSF proposal should clearly differentiate the NSF budget from any similar funds requested by the India team and justify the full NSF project budget. Proposals that request duplicative funding may be returned without review.
4. The proposal may be considered for funding for 3 years with a maximum budget limit up to 25 million Indian Rupees (Rs. 2.50 Crores) by DBT.
5. DBT investigators will submit their full proposal as per DBT guidelines (<https://dbtindia.gov.in/>) through DBT **eProMIS**: <https://dbtepromis.nic.in/>, **DBT-NSF portal** under Global Innovations Directorate (International Cooperation Bilateral Program).
6. Proposals must be submitted to a participating NSF program following the requirements outlined in this DCL as well as the guidance contained in the relevant program solicitation or program description. As specified in the relevant funding opportunities, proposers are to comply with the proposal preparation requirements outlined in NSF's Proposal and Award Policies and Procedure Guide (PAPPG – <https://www.nsf.gov/publications/pubsumm.jsp?odskey=pappg>) and submit the proposal through Research.gov (<https://www.research.gov/research-web/>) or Grants.gov (<http://grants.gov>). Where programs have a solicitation, the requirements in the solicitation take precedence over those listed in the PAPPG.
7. By submitting, PIs and their organizations agree that NSF may share proposal materials, unattributed reviews and information pertaining to the review process with DBT.
8. If applicable, for NSF investigators, involvement in a joint international proposal will count towards the limit on the number of submissions in which an individual may participate as PI, co-PI, or senior personnel, as specified in the relevant program solicitation to which the proposal is submitted.
9. The title of the proposal should be prefixed with "NSF-DBT:", after any solicitation-specific title requirements, to indicate that the document is to be considered by both NSF and DBT.
10. If the proposal is arranged as separate submissions from multiple U.S. organizations, it must be submitted via Research.gov and the title of the proposal should begin with "Collaborative Research:" followed by "NSF-DBT". **Do not check "separately submitted collaborative proposal" unless more than one U.S.-based organization will be submitting the same proposal for separate funding** (i.e., the "separately submitted collaborative proposal" check box only applies if there is more than one collaborating organization on the U.S. side, each submitting the same proposal).
11. For proposals submitted to NSF, DBT investigators should be listed in the Overview section of the Project Summary as "Non-NSF funded collaborators." This listing is for

administrative purposes and is not intended to characterize the level or value of the contribution of DBT investigators to the project. Guidance on information to provide for "Non-NSF funded collaborators" is below.

- Biographical Sketch – Required. The biographical information must be clearly identified as "non-NSF funded collaborators" biographical information and uploaded as a single PDF file in the Other Supplementary Documents section of the proposal. Use of a specific format is not required.
- Current and Pending (Other) Support – Not required for DBT investigators.
- Results from Prior NSF Support – Not required for DBT investigators.
- Collaborators and Other Affiliations (COA) information must be provided through the use of the COA template, identified as "non-NSF funded collaborators" information, and uploaded as a PDF file in the Single Copy Documents section of the proposal.

12. NSF investigators should indicate only the NSF expenses in the NSF budget. DBT investigators should indicate only the DBT research expenses on the DBT budget form. The DBT budget and budget justification must be included in the NSF proposal as a Supplementary Document including expenses in U.S. dollars. The Budget Justification section of the NSF proposal should clearly differentiate the U.S. budget from any similar funds requested by the India team and justify the full U.S. project budget requested. Proposals that request duplicative funding may be returned without review.
13. The Data Management Plan must include mechanisms for sharing and archiving data including experimental data, results, and software developed, in accordance with NSF and DBT policy and U.S. and India statutes, with consideration of associated privacy and security aspects. Please review and follow the program specific requirements for data management plans.
14. For projects involving human subjects/participants or vertebrate animals, investigators should follow both NSF and DBT policies, submitting documentation to each as appropriate.
15. Letters of collaboration may be included; however, they must comply with the requirements in PAPPG Chapter II.D.2.i.
16. For DBT Investigators, there are limits on the number of submissions per NSF-DBT call for proposals:
 - PIs can submit one proposal.
 - Co-PIs can be involved in up to two proposals.
 - DBT Investigators involved in the implementation of two or more projects that were previously supported by the DBT International Cooperation programme and that are not expected to be completed before 31 March 2024 are not eligible to be a member of a research team. This limitation does not apply to projects supported by other divisions or groups within DBT.

Instructions for submission of proposal in DBT through e-ProMIS:

- Log on to eProMIS portal of DBT (<https://dbtepromis.nic.in/Login.aspx>) and register (For new user). After registration, log in and submit the joint project proposal in prescribed format under **DBT-NSF Portal**, Global Innovations - Bilateral Programme.
- Before filling up the form Indian applicants are advised to carefully go through the Relevant Advertisement published at the DBT Website (<https://dbtindia.gov.in/>) and also available under proposal formats in the e-ProMIS Portal after logging in the portal site.
- To save time and avoid data loss, please download the appropriate proposal format and fill all the information required as per the format as a Word and PDF file and then keep it ready for upload during submission of mandatory documents.
- Click on “**Submit proposals**” link which would take to a page seeking multiple information starting with – General information, Principal investigator etc.:
- After filling all above particulars, there is provision to preview your details before final submission of application form on clicking on “Preview” button. Preview page will display all facts/particulars that have mentioned on entry time. If the applicant is sure with filled details, then click on “Submit” button to finally push data into server.
- Applicants are advised to carefully fill in and verify the details required for the online application themselves, as no change will be possible/ entertained after clicking the FINAL SUBMIT BUTTON.

Documents Required for Indian Investigators:

- Complete Project Proposal - DBT- NSF Joint Call for Proposals (**Annexure I**)
- Certificate from Investigator(s) (**Annexure II**)
- Endorsement from the Head of Organization (on letter head) (**Annexure III**)
- Conflict of Interest (**Annexure IV**)
- Biodata of entire project team members (Max: 3 pages per Investigator) including date of superannuation / tenure completion, their affiliation, date of birth, field of specialization, highlights of academic and research activities / awards, significant accomplishment etc., in a single pdf file.

Contact Details:

DBT, Govt. of India	U.S. NSF
Dr. Shahaj Uddin Ahmed Scientist 'F' Global Innovations Directorate Department Biotechnology Ministry of Science & Technology CGO Complex, Block-2, Lodhi Road, New Delhi E-mail: gi-division@dbt.nic.in	Cate Flanley, PhD Program Director Office of International Science and Engineering, National Science Foundation E-mail: india-collaboration@nsf.gov

DBT- NSF Joint Call for Proposals

- 1 Title of the project:
- 2 Indian PI & Co-PI details
(should include name,
designation, email id, date of
birth, date of retirement,
mobile number & institutional
details)
- 3 US PI & Co-PI details (should
include name, designation,
email id & institutional
details)

4 Technical Details

Duration :

Total Cost (INR) :

Scheme :

Broad Area :

Sub-Area :

Summary :

Keywords defining the scope of the proposal:

Theme of proposed work :

Synopsis

- 5 Objectives :

- 6 Methodology/Relevance in the context of state of the art to be highlighted.

- 7 Outcome
- 8 How are your ideas executed today and the limits of current practice?
- 9 Novelty of proposed approach and why will it be successful.
- 10 What impact will it make to the scientific community or society?
- 11 What are suggested midterm and long-term success indicators?

Other technical details

- 12 Review of status of R & D in the subject
- 13 Work plan
- 14 Methodology
- 15 Expertise available with the investigators executing the project.
- 16 Necessity and the significance of the proposed research exchange with US
- 17 Key publications published by the investigators pertaining to the theme of the proposal during last 5 years.
- 18 Proposed methodology for joint utilization of results
(Joint Publications, transfer of results to industry, setting up of joint ventures etc.)

19 Planned Targets :

Timeframe	Target	Indian responsibilities	US responsibilities
(a)	(b)	(c)	(d)
1 st six months			
2 nd six months			
3 rd six months			
4 th six months			
5 th six months			
6 th six months			

20 Ongoing / completed projects with the Indian principal Investigator (last 5 years)

National Projects:

S.No.	ProjectTitle	Sponsoring Agency	Budget	Status
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International Projects:

S.No.	ProjectTitle	Name of the Collaborating Scientist & Institute	Sponsoring Agency	Budget	Status
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21 Exchange visit which may be required to meet targets:

	INDIA TO US		US TO INDIA	
	Number of persons visits	Duration for each person's visit	Number of person's visits	Duration for each person's visit
1 st Year				
2 nd Year				
3 rd Year				

A. Funding requested from DBT. Detailed justification should be submitted for each item.

Project costs (in INR):	Year 1	Year 2	Year 3	TOTAL
A. Grant in Capital Assets (NR) - Minor Equipment/ Spares - Accessories				
B. Grant-in-General:				
1. Manpower costs				
2. Consumables				
3. Travel				
4. Contingencies				
5. Other Costs				
6. Overheads				
Total budget requested from DBT				

B. Funding requested from NSF. Detailed justification should be submitted for each item.

Project costs	Year 1	Year 2	Year 3	TOTAL
A. Grant in Capital Assets (NR) - Minor Equipment/ Spares - Accessories				
B. Grant-in-General:				
1. Manpower costs				
2. Consumables				
3. Travel				
4. Contingencies				
5. Other Costs				
6. Overheads				
Total budget requested				

Equipment available with the Institute/ Group/ Department/ Other Institutes for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI& his group			
PI's Department			
Other Inst In the region			

25 OTHER SOURCES OF SUPPORT

- i. Is this research currently being supported by other sources?

YES	NO
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If yes, please indicate the sources, amounts and periods of support.

Indian side:

US side:

- ii. Has this project been submitted to other agencies for financial support?

YES	NO
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If yes, please indicate which agencies, and when.

Indian side:

US side:

(Signature of Project Investigator)

CERTIFICATE FROM THE INVESTIGATOR**PROJECT TITLE:**

1. We agree to abide by the terms and conditions of the DBT grant.
2. We did not submit this or a similar project proposal elsewhere for financial support.
3. We have explored and ensured that equipment and basic facilities will actually be available as and when required for the purpose of the project. We shall not request financial support under this project, for procurement of these items.
4. We undertake that spare time on permanent equipment will be made available to other users.
5. We have enclosed the following materials:

ITEMS	NUMBER OF COPIES
a) Endorsement from the Head of the Institution (on letter head)	One
b) Certificate from Investigator	One
c) Certificate from Investigator regarding conflict of interest	One
d) Name and address of experts/institution interested in the subject/ outcome of the project	One
e) Copies of the proposals	One hard Copy

Date :

Name & Signature of
Principal Investigator

Name & Signature Of
Co-Investigator(s)

ENDORSEMENT FROM THE HEAD OF INSTITUTION
(TO BE GIVEN ON LETTER HEAD)

PROJECT TITLE:

1. Certified that the Institute welcomes participation of Dr./ Shri/ Smt./ Km. _____ as the Principal Investigator and Dr./ Shri/ Smt./ Km. _____ as the Co-Investigator for the project and that in the unforeseen event of discontinuance by the Principal Investigator, the Co-Investigator will assume the responsibility for the fruitful completion of the project (after obtaining consent in advance from DBT).
2. Certified that the equipment, other basic facilities and such other administrative facilities as per terms and conditions of the grant, will be extended to investigator (s) throughout the duration of the project.
3. Institute assures financial and other managerial responsibilities of the project.
4. Certified that the organization has never been blacklisted by any department of the State Government or Central Government.

Name and Signature of Head of Institution

Date:

Place:.....

REMARKS: In regard to research proposals emanating from scientific institutions/laboratories under various scientific departments the Head of the institution is required to provide a justification indicating clearly whether the research proposals falls in line with the normal research activities of the institution or not and if not, the scientific reasons which merit its consideration by DBT.

DEPARTMENT OF BIOTECHNOLOGY

POLICY ON CONFLICT OF INTEREST

**FOR REVIEWERS & COMMITTEE MEMBERS or APPLICANTS or DBT OFFICER ASSOCIATED/
DEALING WITH THE SCHEME/ PROGRAM OF DBT**

Issues of Conflicts of Interest and ethics in scientific research and research management have assumed greater prominence, given the larger share of Government funding in the country's R & D scenario. The following policy pertaining to general aspects of Conflicts of Interest and code of ethics, are objective measures that is intended to protect the integrity of the decision making processes and minimize biasness. The policy aims to sustain transparency, increase accountability in funding mechanisms and provide assurance to the general public that processes followed in award of grants are fair and non-discriminatory. The Policy aims to avoid all forms of bias by following a system that is fair, transparent and free from all influence/ unprejudiced dealings, prior to, during and subsequent to the currency of the programme to be entered into with a view to enable public to abstain from bribing or any corrupt practice in order to secure the award by providing assurance to them that their competitors will also refrain from bribing and other corrupt practice and the decision makers will commit to prevent corruption, in any form, by their officials by following transparent procedures. This will also ensure a global acceptance of the decision making process adopted by DBT.

Definition of Conflict of Interest:

Conflict of Interest means "any interest which could significantly prejudice an individual's objectivity in the decision making process, thereby creating an unfair competitive advantage for the individual or to the organization which he/she represents". The Conflict of Interest also encompasses situations where an individual, in contravention to the accepted norms and ethics, could exploit his/her obligatory duties for personal benefits.

1. Coverage of the Policy:

- a) The provisions of the policy shall be followed by persons applying for and receiving funding from DBT, Reviewers of the proposal and Members of Expert Committees and Programme Advisory Committees. The provisions of the policy will also be applicable on all individuals including Officers of DBT connected directly or indirectly or through intermediaries and Committees involved in evaluation of proposals and subsequent decision making process.
- b) This policy aims to minimize aspects that may constitute actual Conflict of Interests, apparent Conflict of Interests and potential Conflict of Interests in the funding mechanisms that are presently being operated by DBT. The policy also aims to cover, although not limited to, Conflict of interests that are Financial (gains from the outcomes of the proposal or award), Personal (association of relative / Family members) and Institutional (Colleagues, Collaborators, Employer, persons associated in a professional career of an individual such as Ph.D. supervisor etc.)

2. **Specifications as to what constitutes Conflict of Interest.**

Any of the following specifications (non-exhaustive list) imply Conflict of Interest if,

- (i) Due to any reason by which the Reviewer/Committee Member cannot deliver fair and objective assessment of the proposal.
- (ii) The applicant is a directly relative# or family member (including but not limited to spouse, child, sibling, parent) or personal friend of the individual involved in the decision making process or alternatively, if any relative of an Officer directly involved in any decision making process / has influenced interest/ stake in the applicant's form etc.
- (iii) The applicant for the grant/award is an employee or employer of an individual involved in the process as a Reviewer or Committee Member; or if the applicant to the grant/award has had an employer-employee relationship in the past three years with that individual.
- (iv) The applicant to the grant/award belongs to the same Department as that of the Reviewer/Committee Member.
- (v) The Reviewer/Committee Member is a Head of an Organization from where the applicant is employed.
- (vi) The Reviewer /Committee Member is or was, associated in the professional career of the applicant (such as Ph.D. supervisor, Mentor, present Collaborator etc.)
- (vii) The Reviewer/Committee Member is involved in the preparation of the research proposal submitted by the applicant.
- (viii) The applicant has joint research publications with the Reviewer/Committee Member in the last three years.
- (ix) The applicant/Reviewer/Committee Member, in contravention to the accepted norms and ethics followed in scientific research has a direct/indirect financial interest in the outcomes of the proposal.
- (x) The Reviewer/Committee Member stands to gain personally should the submitted proposal be accepted or rejected.

The Term "Relative" for this purpose would be referred in section 6 of Companies Act, 1956.

3. **Regulation:**

DBT shall strive to avoid conflict of interest in its funding mechanisms to the maximum extent possible. Self-regulatory mode is however recommended for stakeholders involved in scientific research and research management, on issues pertaining to Conflict of Interest and scientific ethics. Any disclosure pertaining to the same must be made voluntarily by the applicant/Reviewer/Committee Member.

4. **Confidentiality:**

The Reviewers and the Members of the Committee shall safeguard the confidentiality of all discussions and decisions taken during the process and shall refrain from discussing the same with any applicant or a third party, unless the Committee recommends otherwise and records for doing so.

5. Code of Conduct

5.1 To be followed by Reviewers/Committee Members:

- (a) All reviewers shall submit a conflict of interest statement, declaring the presence or absence of any form of conflict of interest.
- (b) The reviewers shall refrain from evaluating the proposals if the conflict of interest is established or if it is apparent.
- (c) All discussions and decisions pertaining to conflict of interest shall be recorded in the minutes of the meeting.
- (d) The Chairman of the Committee shall decide on all aspects pertaining to conflict of interests.
- (e) The Chairman of the Committee shall request that all members disclose if they have any conflict of interest in the items of the agenda scheduled for discussion.
- (f) The Committee Members shall refrain from participating in the decision making process and leave the room with respect to the specific item where the conflict of interest is established or is apparent.
- (g) If the Chairman himself/herself has conflict of interest, the Committee may choose a Chairman from among the remaining members, and the decision shall be made in consultation with Member Secretary of the Committee.
- (h) It is expected that a Committee member including the Chair-person will not seek funding from a Committee in which he/she is a member. If any member applies for grant, such proposals will be evaluated separately outside the Committee in which he/she is a member.

5.2 To be followed by the Applicant to the Grant/ Award:

- (a) The applicant must refrain from suggesting referees with potential Conflict of Interest that may arise due to the factors mentioned in the specifications described above in Point No. 2.
- (b) The applicant may mention the names of individuals to whom the submitted proposal should not be sent for refereeing, clearly indicating the reasons for the same.

5.3 To be followed by the Officers dealing with Programs in DBT:

While it is mandatory for the program officers to maintain confidentiality, they should declare, in advance, if they are dealing with grant applications of a relative or family member (including but not limited to spouse, child, sibling, parent) or thesis/ post-doctoral mentor or stands to benefit financially if the applicant proposal is funded. In such cases, DBT will allot the grant applications to the other program officer.

6. Sanction for violation

6.1 For a) Reviewers / Committee Members and b) Applicant

Any breach of the code of conduct will invite action as decided by the Committee.

6.2 For Officers dealing with Program in DBT

Any breach of the code of conduct will invite action under present provision of CCS (conduct Rules), 1964.

7. **Final Appellate authority:**

Secretary, DBT shall be the appellate authority in issues pertaining to conflict of interest and issues concerning the decision making process. The decision of Secretary, DBT in these issues shall be final and binding.

8. **Declaration**

I have read the above “Policy on Conflict of Interest” of the DBT applicable to the Reviewer/ Committee Member/ Applicant/ DBT Scheme or Program Officer # and agree to abide by provisions thereof.

I hereby declare that I have no conflict of interest of any form pertaining to the proposed grant *

I hereby declare that I have conflict of interest of any form pertaining to the proposed grant *

* & # (Tick whichever is applicable)

Name of the Reviewer/ Committee Member or Applicant or DBT Officer

(Strike out whichever is not applicable)

(Signature with date)