

Application Instructions and Checklist Murdock College Research Program for Natural Sciences

PRIOR TO PREPARING THE MCRP FOR NATURAL SCIENCES APPLICATION

- Invitations to submit proposals will be sent to all eligible institutions during the early part of summer for a submission deadline on October 1. The invitations will be addressed to the president, the chief academic officer, all relevant department chairs, and the grants administrator. The Natural Sciences program grant application link will be given in the email invitation.
- The Grants Administrator will register as a user and be the submitter for the application in the Submittable grants portal. If your institution is submitting multiple applications, the submitter will need to be a different person for each application, perhaps the Principal Investigator (PI) would be the submitter for a second application, etc. You, as the submitter, will invite specific people as collaborators to the application.
- Using the Natural Sciences Program application link, the Grants Administrator or the PI will complete and submit the Natural Science (NS) Program Eligibility form. If eligible, you will be invited to complete and submit a full application.
- In the application, the submitter will provide the PI's name, academic rank, department, institution, along with all other required information, including the contact information of the institution and the grant administrator and others. The Contact names of the Principal Investigator and the Authorized Institutional Representatives (president, chief academic officer, and grants administrator) are the official signatures and represent the official approval of the proposal and budget by the institution.
- Even though the PI and the grant administrator will work together in developing the application, the submitter for the application will ultimately be responsible to submit the proposal on behalf of the institution.

INSTRUCTIONS FOR COMPLETING MCRP FOR NATURAL SCIENCES APPLICATION

Complete the Project Description, The Future, and Equipment and Facilities, Budget Summary, Education and Experience, Publications by Principal Investigator, History of Support, as requested in the spaces provided online. Space limitations for each item must be followed strictly.

- **PROJECT TITLE OF PROPOSED RESEARCH** - Title should be concise, accurate, and descriptive, and of no more than 250 characters; spell out contractions, acronyms, and chemical symbols.
- **DISCIPLINE / SUBDISCIPLINE** - Enter the discipline and the subdiscipline which best describes the proposed research.
- **PROJECT ABSTRACT** - Enter a brief description of the research project, maximum 150 words, intelligible to

the non-expert; spell out contractions, acronyms, and chemical symbols.

- **THE FUTURE** – Describe the future goals of the project as well as the plan to establish a vibrant research program that include engaging students, regularly presenting at professional conferences and at other institutions, regularly publishing in peer-reviewed journals, and regularly seeking external support from peer-reviewed sources (150 words or less).
- **EQUIPMENT AND FACILITIES** – List major equipment items (150 words or less), with model numbers, and facilities available at your institution that are needed to support this research.
- **DURATION OF REQUESTED GRANT** – Self-explanatory. Unless otherwise requested, all grants are for 3 years. Proposals requesting less than 3 years must include a short rationale in the narrative.
- **BUDGET SUMMARY** – Enter totals here, taken from the Proposed Budget (the Proposed Budget form is the first page of the Proposal Narrative). The Total Project budget Cost must be the sum of the Funding Committed from Institution and the Amount Requested from the Trust.
- **EDUCATION and EXPERIENCE** – Include the following information, not to exceed 250 words; common abbreviations may be used. Each entry should begin on a new line. Entry 1: Undergraduate Degree, Institution, Dates; Entry 2: Master’s Degree, Institution, Dates (if applicable); Entry 3: Ph.D., Thesis title, Advisor Institution, Dates; Entry 4: Post Doc, Advisor, Institution, Dates; and Entry 5: Previous and Current Employment Institutions (rank if appropriate), Dates.
- **For BRIDGE-track NS applicants only** – A Yes/No box is for BRIDGE-track applicants (this is limited to one submission in this category per institution). Once the BRIDGE applicant chooses Yes from the dropdown list, then provide, within the space given, (1) a detailed description of the most recent major federal research grant (Funding agency, Duration, Amount, Title, PI), as well as (2) a brief rationale, up to 150 words, for the institution’s selection of this investigator to apply under this track.
- **PUBLICATIONS BY PRINCIPAL INVESTIGATOR(S)** - List all publications in refereed journals (not to exceed 10 entries, however; each entry should begin on a new line); include titles; proper abbreviated journal names are acceptable; do not include abstracts and talks. Books and book chapters on research topics may be included. Place an asterisk after the names of all undergraduate student co-authors. Currently submitted manuscripts may be included but should be indicated as “submitted” or “accepted.” Spell out contractions, acronyms, and chemical symbols. Up to ten entries; must not exceed 300 characters per entry (must not exceed 500 words for all entries combined); each entry should begin on a new line.
- **HISTORY OF SUPPORT** – List all internal, including start-up, and external support received for the last ten years by the Principal Investigator(s), including applications that are currently pending; for each, provide source, title of the project, amount, period of support, and number of summer weeks obligated by that grant. Identify pending applications with an asterisk [*], and those that duplicate this present proposal with a [D] – must not exceed 150 words.

CONTINUE BY UPLOADING THE PROPOSAL NARRATIVE FORM

The Proposal Narrative will include the following, all in one PDF file, in this order: the completed Proposed Budget and Comments on Budget; the Narrative Description of the Research along with the References [4 pages]; Support letters restricted from significant collaborators; and Special approvals [e.g. animal care and use, human subjects

review . . . etc.]]). Institutions must keep the order of the requested information, as well as and space limitations for each item must be followed strictly. Use no smaller than 11 point font and .75 inch margins.

- **PROPOSED BUDGET** – To complete the Proposed Budget and Comments on Budget section, download the Proposed Budget form and enter the information within the space provided. Stipend requests should be entered separately for faculty and students, by year. (If the institution provides support such as summer room and board for the students, do NOT place these in the PROPOSED BUDGET, but describe them in COMMENTS ON BUDGET.) A request for salary for a technician is not normally allowed but may be entered if the technician is essential for the success of the research; in this case, adequate justification for having a technician must be included in the proposal narrative. The same guideline applies to recent post-baccalaureate researchers.

All equipment items requested should be itemized; a brief rationale for equipment requested should appear under COMMENTS ON BUDGET, and, if appropriate, a more lengthy justification may be included in the NARRATIVE. Institutional cost share provides direct tangible support for the project of at least 20% and is required for the standard NS applicant. For the BRIDGE-track NS applicant, a cost share of one-third (33.33%) is required. Cost share is calculated on the basis of the total project cost. For example, for a total project cost of the standard NS applicant \$87,500, a 20 percent minimum, required cost share is \$17,500, allowing the investigator to request for the maximum of \$70,000 over three years. For BRIDGE-track NS applicant: a total project cost of \$105,000, cost share of \$35,000, and a maximum request of \$70,000. Fifty percent institutional cost sharing is expected for each equipment item in excess of \$1,000. The publication costs line item also requires a 50 percent cost share from the institution. In this situation, the total cost share will become greater than 20 percent. Start-up funds should not be listed as matching funds.

Minor requests under supplies need not be itemized. (Supplies are defined as materials or objects whose individual cost does not exceed \$500, or whose useful lifetime is expected to be less than five years.) If annual supplies exceeds \$1,000 provide a brief breakdown. Requests for travel must be itemized under “Other” and justification provided in COMMENTS ON BUDGET; only travel that is required for the performance of the research may be requested. Indirect costs are not allowed and should not appear anywhere in the budget.

Be sure that requested amounts for stipends fall within Program guidelines. (For students, up to \$4,500 per student per summer for 10 weeks full-time participation; for faculty, up to \$7,500 per summer for 10 weeks full-time participation; both prorated for shorter periods.) Requests of less than 10 weeks each summer must include a justification.

The total Amount Requested to the Trust plus the Funding Committed from the Institution must equal the Budget Total Cost (last column).

- **COMMENTS ON BUDGET** - Rationale should be provided here for special budget requests, including equipment; other institutional financial support for the research that does not appear in the PROPOSED BUDGET may be listed here – must not exceed 600 characters.
- **COMBINED NARRATIVE DESCRIPTION OF THE RESEARCH AND REFERENCES** – (the Narrative Description of the Research and the References are no more than 4 pages combined). NARRATIVE – Provide a well-focused description of your research and its goals, including its importance to the broader research field of which it is a part. Describe in detail the relationship of this research to previous work done by others, its significance, your method and its originality, and any innovative features. Provide argument for the feasibility of the research methods proposed and discuss the role that students will play in the research. (Why should

other research workers in related fields be interested in the results of your work?) This narrative should be directed primarily to the experts who will review the proposal. Bear in mind that hypothesis-driven research is strongly preferred. For discovery projects, include a discussion to demonstrate the kinds and numbers of measurements that will be needed to enable a rigorous statistical and power analysis in the experimental design of the project. The following statistics-based questions are suggested:

1. What is the hypothesis?
2. What specific measurements will be needed to test the hypothesis?
3. What is the magnitude of the effect that will be needed to prove (or disprove) the hypothesis?
4. What is expected variance in the measurements?
5. Given all of this, what sample size will be needed to detect a statistically significant deviation from random?

Diagrams and graphs may be uploaded within the NARRATIVE section but must be in acceptable/high resolution. The maximum length of the Narrative section is 3½ pages. REFERENCES (½ page at the end of the NARRATIVE) A bibliography should be provided only of those works referenced by number in the NARRATIVE.

- **SUPPORT LETTERS** – Provide letters only from collaborators who will contribute significantly to the project, and Special approvals [e.g. animal care and use, human subject review . . . etc.].

UPLOAD THE LETTER OF ENDORSEMENT FROM THE NATURAL SCIENCE DEPARTMENT CHAIR OR SCIENCE DIVISION CHAIR ON THE INSTITUTION'S LETTERHEAD

- **SIGNED COVER LETTER** (PDF document) **from the Natural Sciences Department Chair or the Science Division Chair or Dean/Provost/Vice President for Academic Affairs** explaining how the proposed research will contribute to the advancement of student-faculty collaborative research and science education in the Department and Division.

UPLOAD THE SUGGESTED REVIEWERS LIST (Excel file):

- **SUGGESTED REVIEWERS** – Download, complete, and upload the Suggested Reviewers List (under Project Documents) to provide the suggested reviewers. List at least eight (8) experts who are qualified to review the scientific quality of the proposed research. (At least six must be persons with whom the investigator(s) has not worked professionally.) Describe briefly the type and duration of the relationship for each person who has worked with the investigator. The form will request the following information for the eight (8) experts: (1) Title [eg., Dr.]; (2) First Name; (3) Last Name; (4) Email; (5) Position/Title; (6) Department; (7) Institution; (8) City, ST; (9) Have you worked with this person? [Yes or No]; (10) Describe briefly the type and duration of the relationship for each person who has worked with the investigator.

IRS STATUS

Nonprofit status: Please verify your nonprofit status with the head of your organization.