**Biology Undergraduate Research Experience (BURE) Guidelines**

**A. Purpose**

 The purpose of the fund from the biology department is to encourage student research, creative activity, and student-faculty innovative research projects. The program is the result of Biology Department recognition that there is a need to support student-faculty projects and institutionalize student research. The awards provide flexibility to take advantage of unique opportunities in summer research and creative activity. Declared biology majors or related tracks are eligible to apply for funding.

**B. General Information**

 The funding for Undergraduate Biological Research is to provide highly motivated undergraduates with an opportunity to undertake creative research projects. This research will serve as an aid in enhancing their undergraduate experience in the biological sciences. Over the past several years there has been a dramatic increase in the number of undergraduates interested in research. Recent state budgetary cuts, combined with the fact that the majority of campus research funding is allocated to faculty and graduate research, have made it increasingly difficult for undergraduates to partake in research opportunities.

 This funding enables the student to become a part of the entire research experience, from planning an experiment, writing the proposal, and submitting it to the Biology Department to completing the research and, possibly, preparing the work for presentation and or publication.

**C. Candidate Criteria**

1. Bi-weekly stipend and research money is available as an annual fund to all biology, environmental health, ecology, cell molecular, biology education, biochemistry, and pre-health professions majors (pre-med, pre-vet.) including their related sub-fields.

i) Each student will be required to write a proposal reflecting the nature and relevance of the type of research desired

ii) Candidates must have a sophomore standing with a cumulative GPA of 3.25 or higher.

iii) In addition, the student must be full-time; must have had the minimum of three 200 level biology courses (12 credits or more) and 6 credits or more of chemistry (there will be no exception to these requirements).

2. The student may decide on a research topic in consultation with a Biology research faculty. The student must then gain permission to allow the use of the faculty’s laboratory for the completion of the student’s project prior to writing a proposal. While the faculty member is not to write the proposal for the student, he/she may make suggestions or offer some guidance to the student. Once the student is granted permission from the professor, he/she must have the professor sign and date the Laboratory Authorization Form included in this packet. By signing the Laboratory form, the professor acknowledges that he/she has read and approved the student’s proposal. This form should be attached to the end of the proposal. If facilities are needed outside the cooperating faculty member's lab, prior permission must be obtained.

3. Each candidate must complete the included Cover Page Request Form. This form should be attached to the front of the proposal. The student should include all science courses taken and grade received for each. Any research experience the student has had over the course of his/her undergraduate career should be included.

4. Bi-weekly stipend will be paid for approximately 10 weeks to a maximum of $2,000.

5. $500 additional funds are available for research supplies and/or travel expenses for data

collection.

**D. Line Item Budget**

* Include a line item budget using thetemplateprovided.
* Provide budget notes that explain expenses clearly and show how summary totals were calculated.
* Describe other support, including personal funds.
* Identify the source of any matching funds in the budget notes.

**Budget Limitations**

* No funds may be used for a faculty mentor's salary or for release time during the academic year or travel.
* Student wages will be paid at the hourly rate currently authorized by IUP (approximately $8.00 an hour for undergraduates).

  **Unacceptable Expenses**

* Thesis and Dissertation costs
* Duplicate expenses with state system and other awards
* Guest speakers and related expenses
* Gift cards for research participants
* “Submission,” “application,” and “page print” costs for articles and
* Equipment purchase
* Tuition and associated costs of lessons and study
* Computers, phones, laptops, portable devices such as iPads
* Other items prohibited by relevant state and federal regulations
* Will not fund travel.
1. **Curriculum Vitae or** **Resume**

Include one-page curriculum vitae along with a statement on future career path.

1. All students working in the laboratory must also complete a **Biosafety Exam**. Please contact Dr. Seema Bharathan (bharaths@iup.edu) for time and date.
2. **IRB/IACUC Approval**

If required,research projects must secure IRB or IACUC approval prior to release of funds. However, the committee’s decision to fund the applicant’s work will not depend on IRB or IACUC approval at that time of review. If relevant, applicants may supply a letter from IRB/IACUC chair indicating that IRB/IACUC approval is not necessary (pnealen@iup.edu)

1. **Checklist**

 Download, print, complete, and include the application checklist with your application package

**E. Proposal Guidelines**

1. The student’s proposal should contain the following:

i) Funding Application Check list (**required format**) (1 page)

ii) A title Page (**required format**) with an abstract that succinctly describes the

purpose and significance of the problem (1 page)

iii) Project description including the following information (no more than 6 pages)

a. introduction/background/literature review

b. clearly defined objectives

c. procedures/methods/experimental design

d. appropriate timetable for project completion

e. plans for dissemination

 iv) Itemized budget/appropriate justification of materials needed (**required format**) (1 page)

 v) Biosafety Exam Approval (1 page)

 vi) Laboratory Use Authorization Form (**required format**) (1 page)

 vii) Resume – can be double-sided (1 page)

 viii) IRB/IACUC approval if applicable (1 page)

2. It is strongly suggested that the applicant submit the proposal to his/her research advisor for review.

3. Although an applicant can apply multiple times to secure funding, he/she will receive only one opportunity during the degree program to receive these funds.

4. After submission of the proposal to the Biology Department Office, copies will be distributed to all committee members. This committee consists of three to four biology department faculties.

5. The proposal should be written in the context for an audience with biological background in a clear and concise manner. Proposals that do not follow the guidelines will not be distributed to the committee for review.

6. The method of ranking may be used by the committee. In this case, proposals will be ranked

 according to the quality and clarity of:

a) Title (5 points) b) Abstract (10 points)

c) Objectives (10 points) d) Literature Review (25 points)

e) Methods (20 points) f) Time table (5 points)

g) Expense budget (5 points) h) Originality/creativity (10 points)

i) Mechanics (**Grammar, writing ability, etc**.) (10 points)

j) Title Page (required)

k) Laboratory Use Authorization Form (required)

 **Note: The committee will use its discretion when deciding the method of funding for the**

 **proposals.**

7. The committee will determine the number of projects to be supported with the fund and the

amount of funding granted. The committee’s decision will be communicated to each candidate in a formal letter which will include a statement which reflects the primary reason(s) for approval or disapproval.

8. Candidates granted approval will be further contacted to discuss procedures in establishing his/her research project. Each project can earn a maximum of $2,500.

**F. Deadlines**

i) Amount of funding available should be determined at the start of the academic year.

ii) Deadline for proposals/applications: **Submitted to Biology Department Office by March 1, 2019**

iii) Announcement of Funding: The committee submits names to the Department for faculty approval

and an announcement is made around **March 29, 2019.**

iv) Research to be conducted during the summer sessions (**May 13-August 18, 2019- tentative)**

**G. Manuscript and/or Presentation at a regional, national, or International conference**.

Acceptance of a grant under this program carries the obligation of the candidate (faculty and the student) to submit a manuscript of the project or must present his/her research findings that they have compiled in regional, national, or international meetings. The student must indicate possible presentation venues and audiences in the proposal. When available, conference presenter acceptance rate information must be provided. If approved all publications and/or papers produced as a result of research conducted with financial support from the Indiana University of Pennsylvania’s Fund for Biological Research should acknowledge both I.U.P and the Biology Department as the sources of funding.

A student who has received a BURE Scholarship must provide the committee with a final report clearly describing the outcomes of the funded project.  As support comes with the obligation to publish and/or present at a regional, national, or international meeting, the report must include the title, abstract, and location of the publication/presentation.  Reports are due by May 1st of the following year and will be made available to department faculty on the “O” drive.  Faculty who fail to report by this deadline will not be eligible to advise a student through the BURE program for that year.

If you have any questions, please contact the **Biology office at 724-357-2352**.

**Research Committee**

**Biology Undergraduate Research Experience**

**Applicant Item Check List Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**STUDENT NAME** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The following items must be provided with proposal application**. Please complete form and include this checklist with your proposal application.**

Include page numbers on all proposal items and attach in the order described below.

**Note and explain any exceptions to the items below:**

1. \_\_\_\_ Tile Page (“Application Title Page”) please insert project title, signatures, etc.

(1 page)

2. \_\_\_\_ Abstract (Included in space allocated on front side of application page).

3. \_\_\_\_ Project Description (not more than six pages, double-spaced)

(introduction/background/literature review, clearly defined objectives,

procedures/methods/experimental design, appropriate timetable for project completion, and plans for dissemination)

4. \_\_\_\_ Line item budget (1 page)

 (Include $ requested with specific allocation of expenses, other financial support, personal funds, and matching funds where appropriate.)

5. \_\_\_\_ Biosafety Exam Approval (Appendix)

6. \_\_\_\_ Laboratory Use Authorization Form (Appendix)

7. \_\_\_\_ One-page resume (can be double-sided) (Appendix)

8. \_\_\_\_ IRB/IACUC approval if applicable (Appendix)

**Biology Undergraduate Research Experience**

 **Title Page Request Form**

 **Indiana University of Pennsylvania**

|  |  |
| --- | --- |
| **STUDENT NAME:**  | **MAJOR:**  |
| **TRACK:**  | **EMAIL:**  |
| **BANNER ID:**  | **CUMULATIVE GPA:**  |
| YEAR (Sophomore, Junior, Senior):  |
| PROJECT TITLE:  |
| **AMOUNT REQUESTED: $**  | **CONTRIBUTED BY OTHERS: $**  |
| **RELATED COURSES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Department** | **Title & Course #** | **Grade** | **Writing****Intensive** |
| **1.** |  |  |  |  |
| **2.** |  |  |  |  |
| **3.** |  |  |  |  |
| **4.** |  |  |  |  |
| **5.** |  |  |  |  |
| **6.** |  |  |  |  |
| **7.** |  |  |  |  |

**ABSTRACT:** in the space provided below, present a concise single-spaced summary of the proposed project (50 words) |

**REQUIRED SIGNATURES:**

**APPLICANT\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**FACULTY MENTOR \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DEPARTMENT CHAIR\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**GRANT BUDGET SUMMARY**

**REQUIRED FORMAT**

**Provide summary totals for each budget category in the table below. Provide budget detail in the Budget Notes section. Round off all numbers to the nearest dollar; list only whole dollar amounts.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Project Budget** | **Proposed****Grant** | **University****Contribution** | **Other Matching Funds** | **Totals** |
| **Student Wages** |  |  |  |  |
| **Operating Expenses** |  |  |  |  |
| **Travel** |  |  |  |  |
| **Transportation** |  |  |  |  |
| **Per Diem** | **NO** | **NO** | **NO** |  |
| **Lodging** |  |  |  |  |
| **Other** |  |  |  |  |
| **\*TOTALS** | **\*** |  |  |  |

\*This figure is the total grant amount requested from the Biology Undergraduate Research Experience and must be listed on the title page of the proposal. Check addition carefully.

**Note:** Provide additional information for budget justification in the space below. A maximum of $2,500 is allowed - $2,000 for student wages and $500 for research supplies and/or travel for data collection.

**Biology Undergraduate Research Experience**

 **Laboratory Use Authorization Form**

## This form authorizes the use of my laboratory facilities by:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (name of student) for the period of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (start date) to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(end date) for the purposes of conducting research supported by the Fund for Undergraduate Biological Research. The use of these facilities and its equipment is restricted to the student listed above, and work is to pertain specifically to his/her project being funded. By signing this document I also state that I have read and support the student’s proposal for the project.

**Signature of Professor/Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Room/Laboratory number:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Signature of Student/Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_