



Graduate Research Grants General Instructions to Authors

The Ecosystem Science Center (ESC) announces the availability of research grants for graduate students whose advisors are members of ESC. The grants are intended to give graduate students an opportunity to gain experience in writing competitive grants, and to perform research they would not be able to attempt due to funding limitations. Allowable costs include lab supplies, sample analysis fees, field equipment, travel to research sites and student labor. The research involved should be related to the interests of the Center (<http://ecosystem.mtu.edu/mission.htm>).

There are two Application deadlines each academic year:

The 1st Friday of December & the fourth Friday of March

- Grants are limited to \$1,000 and funds are to be expended within one year of an award.
- A budget listing anticipated expenditures for supplies, travel and personnel must be provided.
- Personnel costs are allowed only for undergraduate labor and are limited to \$500.
- A graduate student is eligible to receive a maximum of one research grant per academic year. Although students are welcome to apply again in subsequent years, graduate students should not count on continued funding from ESC.
- Publications resulting from ESC supported research should formally acknowledge the ESC and posters and presentations of supported research should display the ESC logo (see ESC web site – bottom of resources page on website).

ESC graduate research grants are competitive. The grants will be judged by a panel of 3-4 ESC members on the following criteria: scientific merit, quality of writing, justification for ESC specific dollars, relatedness to ESC mission, and quality of summary report (for previous grants if applicable). Feedback will be given for all proposals that are reviewed. Students who apply in December and are declined funding may re-apply in the spring.

***Note* If you've been awarded an ESC research grant last year, you must fill out a Progress Report before you can be granted any monies for this year. See ESC website for form.**



Detailed instruction for proposal authors

Your proposal should typically include or address all of the following components.

Scientific Merit: The proposed work should make a novel contribution to knowledge or understanding and its scientific merit should be clear to the reviewer, who may not have expertise in your field. Careful attention to the required elements described below for each proposal section will help achieve this goal.

Quality of Writing: The proposals should be clearly written, including well organized sections using proper grammar and spelling.

Proposal Sections:

Title: The title should reflect the subject of the proposal.

Background: The background section should provide the larger scientific context of the proposed work. It should also be clear how the proposed work fits into this context. Assume your audience is intelligent, but has little direct knowledge about your research topic and why it is important. Introduce your study from a broad context then into a narrower context that will link to the specific questions to be asked or hypotheses to be addressed.

Objectives: If the work is part of a larger project, summarize the broader objectives of that project. Also state the specific objectives for the work to be carried out by the funds requested in your proposal. It should be clear that your request is for important additional work. These objectives should clearly arise from the background provided.

Hypotheses/questions: The hypotheses or questions to be addressed in this proposal should be clearly stated, and testable or answerable. They should be clearly in line with the background and objectives.

Methods: The link between hypotheses/questions and methods should be clear. The proposed methods should be appropriate for testing the hypotheses or answering the questions defined above. They should briefly but clearly define the study sites, sampling and analytical techniques to be used. If there are important measurements or analyses related to your research request that are being addressed by a larger project, briefly describe them and how they are supported by the larger project. Otherwise, you risk reviewers asking "why isn't XXX measured?". It is understood that \$1,000 will only fund a small amount of work, but it needs to be clear how it fits in to the larger scheme of some projects. Your methods should primarily describe what you will use the ESC funds for, but background on other activities occurring at the study location can help reviewers as they assess your specific request. The methods should include a timeline for field measurement, lab **and data analysis**, and writing/presentation activities.

Budget and specification of how ESC funds will be used: The budget should be appropriate for the costs of the proposed work. If the proposed work will require more funds than available from the ESC grant, state other sources of funding available, or how the work will be scaled back if other funding is not obtained.

Relatedness to ESC mission: This should be made clear in the Background section of the proposal. Any proposal deemed inappropriate for the ESC will not be reviewed. The ESC mission statement is: "To promote understanding of ecosystem function through education and research at Michigan Technological University." The ESC is designed to advance our understanding of how ecosystems function and how human activities influence ecosystem processes.

Quality of summary report for previous grants if applicable: If you've been awarded an ESC research grant last year, you must fill out a Progress Report before you can be granted any monies for this year. See web- awards and activities page for form. This form must be submitted before the current application. Proposals lacking a summary report will not be reviewed.



Evaluation Guide for Proposals

Panelists, use the electronic scoring sheet provided to assess the following:

Scientific Merit: Is the proposed work likely make a novel contribution and is the scientific merit of the proposal high?

Quality of Writing: Is the proposal clearly written, including well organized sections using proper grammar and spelling?

Proposal Sections:

Title: Is the title concise and does it reflect the subject of the proposal?

Background: Does the background section provide the larger scientific context of the proposed work? Is it clear how the proposed work fits into this scientific context? Are ongoing studies to which the ESC funds are an addition adequately (but briefly) described?

Objectives: If the work is part of a larger project, is it clear what the broader objectives are? Are the specific objectives for the work to be carried out in this proposal clearly stated? Are they in line with the background?

Hypotheses/questions: Are the hypotheses or questions to be addressed in this proposal clearly stated? Are they testable or answerable? Are they in line with the background and objectives?

Methods: Is the link between hypotheses/questions and methods clear? Are the proposed methods appropriate for testing the hypotheses or answering the questions defined above? Do they adequately define the study sites, sampling and analytical techniques to be used? Is sufficient information on other ongoing work at the sites given, where relevant?

Budget and specification of how ESC funds will be used: Is the budget appropriate to cover the costs of the proposed work? If not, are other sources of funding for the work specified? Is it clear how the work can be re-scaled if other needed funding can not be obtained?

Quality of Summary Report for previously-funded research (if applicable): Does the summary report indicate that the funds were used for ESC-related research? Is the report filled out according to instructions?



Graduate Research Grant

Date _____

Submit the signed cover page to Dr. Andrew Burton's mailbox in the forestry building. The proposal may be submitted in hardcopy the same way or electronically as an MS Word document to: ajburton@mtu.edu

1. Name: Print: _____ Signed: _____

2. Major Advisor(s): Print: _____ Signed: _____

3. Title of Research: _____

4. Email : _____

5. Estimated budget request from Ecosystem Science Center:

	Cost	Description/justification
Supplies & Services		
Field Equipment		
Travel		
Personnel		
Total		

6. Previous ESC research grants? Amount Date Received

_____ _____
 _____ _____
 _____ _____

7. Attach proposal with sections outlined in detailed instructions to authors (2 page max, 11 pt font with 1 inch margins). You are allowed one major figure or table beyond the two page limit. This could be used to show a conceptual model, provide preliminary data, or illustrate a sample design or experimental setup. Other smaller figures and tables are permitted but would have to be within the 2 page limit. References should be placed last and use the same font and page margins as the main text. References do not count against the two page limit.