MSU INVESTMENT PROPOSAL FOR INSTITUTIONAL PRIORITIES

PROPOSAL OVERVIEW

Title	Ecology Field Research	**Request Date**	12/16
Department	Ecology	**Email**	droberts@montana.edu
Requestor	Dave Roberts	**Phone**	994-5670

STRATEGIC ALIGNMENT

Core Themes and Objectives (check all that apply)

Educate Students

☒ Our graduates will have achieved mastery in their major disciplines

☐ Our graduates will become active citizens and leaders

☐ Our graduates will have a multicultural and global perspective

☒ Our graduates will understand the ways that knowledge & art are created and applied in a variety of disciplines

☒ Our graduates are prepared for careers in their field

☒ We will provide increased access to our educational programs

☒ Communities and external stake holders benefit from broadly defined education partnerships with MSU

Create Knowledge and Art

☒ Students, faculty, and staff will create knowledge and art that is communicated widely

Serve Communities

☐ We help meet a fundamental need of the citizens of Montana by providing degree programs for our students

☒ We help meet the educational needs of the citizens of Montana by providing a wide range of educational opportunities to a variety of students

☐ Our students, faculty, staff, and administrators reach out to engage and serve communities

☐ Our students, faculty, staff, and administrator reach in to build the university community

Integrate Learning, Discovery, and Engagement

☒ Each graduate will have had experiences that integrate learning, discovery and engagement

☒ Outreach activities will educate students and address the needs of the communities we serve

☒ Students, faculty, and staff will create knowledge and art that addresses societal needs

☐ MSU is a community that will be characterized by synergy within and across disciplines, roles and functions.

Stewardship

☒ The public trusts the institution to operate openly and use resources wisely

☐ The faculty and staff are well-qualified and supported

☐ MSU will support Native American students, programs, and communities

☐ MSU will be an inclusive community, supporting and encouraging diversity

☒ Our publicly provided resources are used efficiently and effectively

☒ Natural resources are used efficiently and sustainably

☒ MSU nurtures a culture of resource conservation and ecological literacy among students, faculty and staff

☒ Our physical infrastructure (e.g., building, equipment, open spaces) will be well-maintained and useful

INSITUTIONAL BENEFIT						
Campuses	☒ Bozeman ☐ Billings ☐ Havre ☐ Great Falls ☐ FSTS ☐ Extension ☐ MAES					
Cross Depts	Please List: __LRES, ARNR, PSPP					
TIMEFRAME						
Proposed Dates	Start: Fall Semester 2012 End: Whenever program fees are available to cover expenses					
COST AND REQUIREMENTS						
Funding Type	One-Time ($)	Multi-Year ($)			Base ($)	FTE
		Year 1	Year 2	Year 3		
Personnel (*w/benefits*)					$7500	0.5 GTA
Materials & Supplies	$50,000					
Travel					$20,000	
Contracted Services						
Capital						
Other Operations						
TOTAL	$50,000				$27,500	0.5 GTA

Please comment, if necessary, regarding cost and requirements.

Montana State University takes pride in calling itself the "University of Yellowstone," and promoting the great opportunities our environment provides. Many university publications have quoted Ecology Department Head David Roberts that "… we [MSU] have the best laboratory for ecology and environmental sciences in North America." Nonetheless, due to the costs associated with field exercises we make limited use of the great laboratory that surrounds us.

We have requested (and continue to request when possible) laboratory fees and program fees from the Board of Regents to support our field teaching endeavors. Nonetheless, these fees are much too low, and increased much too infrequently by the BOR to allow us to teach a maximally effective curriculum. In addition, the BOR has eliminated the use of 15-passenger vans as an option to transport students which has effectively doubled our expenses. In the recent past we have transported students in research-funded vehicles, but this is no longer advisable or feasible.

Renting field worthy vehicles costs $85/day or $400/week plus gasoline and expenses to transport students. We would like to increase field laboratories in existing classes (BIOE 370 – General Ecology, BIOE 427 – Aquatic Field Ecology, BIOE 408 Rocky Mountain Vegetation, BIOE 415 Ichthyology, BIOE 475 Mammalogy, BIOE 470 Ornithology, WILD 373 – Wildlife Techniques and BIOE 455 Plant Ecology. Several of these courses have existing lab fees, but they are insufficient to support the best pedagogy in those courses; others currently have no fees.

In addition, we propose to develop field opportunities in conjunction with two new initiatives:

(1) A research field course for Conservation Biology taught with support from the Turner Endangered Species Fund
(2) New field courses taught at a remote environmental education center being constructed by a private foundation for use by Ecology Department courses, among other uses.

In addition to vehicle support we need increased laboratory materials to teach these courses. At present, and in the past, we have taught students in the field using equipment obtained on research grants. Research accountability standards now make that practice ill-advised at best, and clearly unsustainable.

To make the best use of our opportunities , and to best meet the education needs of MSU students we need the opportunity to take students into the field and make use of current professional standards equipment. We are requesting one-time money for radio telemetry equipment, GPS units and GPS collars, mammal live traps, plant collecting supplies, nets, and associated field ecology equipment.

PROPOSAL SCOPE

Describe the Proposal

The Ecology Department teaches numerous laboratory courses that could benefit from increased field educational components. At present, the primary impediment is travel costs and vehicle availability constraints. An additional problem is the misuse of research equipment to support the educational mission of the department. Rather than fund multiple independent requests for specific courses, this request integrates those requests across the department. Courses that would benefit from this investment include:

1) BIOE 370 – General Ecology
2) BIOE 408 – Rocky Mountain Vegetation
3) BIOE 416 – Alpine ecology
4) BIOE 427 – Aquatic Field Ecology
5) BIOE 455 – Plant Ecology
6) BIOO 415 – Ichthyology
7) BIOO 470 – Ornithology
8) BIOO 475 – Mammalogy
9) WILD 373 – Wildlife Techniques

In addition, we are proposing to develop two new courses that make maximal use of regional environmental education laboratories funded by regional foundations and non-profits.

While other academic programs have benefitted from significant laboratory remodels and upgrades (e.g. Gaines Hall renovation of Chemistry and Earth Science laboratories) since our laboratories are largely off-campus and outdoors we have received no such investment in recent decades. The courses that would benefit from this investment are taken by all four B.S. degree options in Ecology (one of the largest majors in Letters and Science) as well as Land Resources and Environmental Sciences, Range Science, and Plant Science among others.

PROPOSAL SCOPE

Describe the broader impacts and benefits of this proposal

The new courses we propose in association with Private Foundation or Non-Governmental Agency support will really open up new opportunities for MSU students and help build relations with large possible benefactors. Collaborative environmental education with these agencies will lead to increased exposure of MSU programs and contributions to the State.

ADDITIONAL INFORMATION

Implementation Plan *(Please describe with timelines)*

We will begin immediate planning for implementation of increased field opportunities starting fall semester 2012. Several of the courses that would benefit from this investment are taught in the fall. In addition, we would begin planning of the new course to be developed in Fall 2012.

Faculty teaching the field courses will be formed into a new departmental committee to manage the best shared use of equipment and vehicle support for field labs in fall 2012.

Assessment Plan *(Please describe with indicators)*

All of the courses that would participate in this investment are part of the regularly taught curriculum and subject to the current ongoing assessment process. The Field Ecology Committee (outlined just above) would be charged with identifying specific learning objectives and indicators for each participating course and updating the course assessments accordingly. In addition, we would augment our senior exit survey to determine the extent to which students felt substantial benefit from participating in the courses with respect to improved job opportunities or graduate school acceptances. We know that field skills are mandatory for both, and that increased field skill development and experience will help on both counts.

If assessed objectives are not met in the timeframe outlined, what is the plan to sunset this proposal?

Nationally across ecology and environmental science programs it is well-established that increased field laboratories increase the quality of education. In the astonishing event that graduates of our program prove not to benefit substantially from the increased field course opportunity we would simply reduce the opportunities to the level that proved optimum for student benefit.

Ecology Field Research

Ecology

SIGNATURES		
Department Head *(please print)*	**Signature** *(required)*	**Date**
David W Roberts		12/16
Dept Head Priority *(please circle one):*	Very High High Medium Low Very Low	
Dean/Director *(please print)*	**Signature** *(required)*	**Date**
Paula Lutz	Paula Lutz	1-3-12
Dean/Director Priority *(please circle one):*	Very High High Medium Low Very Low	
Executive/VP *(please print)*	**Signatures** *(required)*	**Date**
Executive/VP Priority *(please circle one):*	Very High High Medium Low Very Low	