

Grant

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Center of Ecological Studies Feasibility Project

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Wildcat Innovation Fund Application

Date: May 8, 2009 **Departments:** Chemistry & Biology

Applicants: Suzanne Williams, Professor and Department Head, Chemistry; swilliam@nmu.edu, 227-1068
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Project Title: Center of Ecological Studies Feasibility Project

Project Description:

Introduction. Northern Michigan University is located in a geographical area that is rich with natural resources. An abundance of unique organisms live in our rugged ecosystems and provide unsurpassed opportunities for environmental studies. NMU has begun to take advantage of these resources by developing courses and programs that tap into investigations of the environment, but much more can be done. We are poised exceptionally well to grab the current interest in conservation and wise use of resources that is part of the mainstream consciousness of most Americans and indeed this was recognized in the Roadmap to 2015. Our center would be unique in that it would *focus on the U.P.* and it would combine ecological and environmental research, conservation practices, and educational opportunities for university students, U.P. youth, and senior citizens. The center would serve as a unifying structure that would link disparate university departments and their personnel in order to provide support for undergraduate and graduate students, research into environmental issues, and community engagement. One of the best parts of this proposed center is that much of the infrastructure already exists at NMU. We have faculty in biology, geography, physics, and chemistry and other departments who already research various aspects of the environment. We have an active Center for Lifelong Learning and the Seaborg Center. All that is needed is a vision and support to bring all of our great on-going work together under a single entity while providing a means to disseminate the information.

The aims of this grant proposal are 1) to determine if such an environmental center is feasible for NMU supported primarily with the existing resources, staff, and facilities, and 2) to put together a plan to create such a center.

Project activities. We will engage in four main groups of activities if this proposal is funded.

1) We will work with two or more students and NMU's Communications Office to develop a comprehensive environmental programs web site. The web site will highlight the on-going ecological, environmental, and alternative energy research that is occurring at NMU as well as student involvement opportunities. The best thing about this web site is that it will provide information about NMU's educational opportunities in environmentally-related topics all in one site. Currently this information is spread among several different departments and is not specific enough to answer some of the common questions prospective students have. Emily Pomeroy, who is a senior biology major, has experience working with Williams already on alternative energy research and is available for fall 09. We would also recruit a student from Art and Design for help with artistic content. Since this project could easily be a service learning endeavor we expect it won't be too difficult to find an interested student. We are also requesting a paid student position to do the bulk of the web site technical creation.

2) We will visit two existing centers, such as the Vermont Center for Ecostudies, and the University of Milwaukee's Center for Great Lakes Studies. During these visits we will examine how institutions run programming. One main aspect of this activity will be to determine the appropriate funding for an effective director of such a center and other support mechanisms for the program.

3) We will engage with faculty in all of NMU's departments who might be interested in contributing to the programming of the center. Given the variety of departments that house environmentally-related projects and courses at NMU we

understand that planning may be difficult at first, but both of us are committed to this project and we think we can get all of the interested parties to the table. One thing that would be quite novel is to develop a course or two in mathematical modeling of complex ecological systems. This type of training is becoming more useful especially when looking at world-wide problems like the effects of global warming. It should lead to graduating students who possess in depth quantitative analysis skills and consequently are more prepared for technical careers.

In order to get the most support from various groups on campus we will hold several general informational sessions as well as a focused retreat for interested faculty and staff. In addition, we will meet with the Seaborg Center, Continuing Education and Center for Lifelong Learning staff and/or Board of Directors to determine how to develop opportunities that are not directly related to college students. Such opportunities might arise from the interests of those non-college students who come to NMU for existing classes/workshops/and Elderhostel tours.

4) We will meet with selected persons in the community who are involved with area youth, especially middle school and high school teachers and also persons who are familiar with outdoor programming such as the local Audubon Society, the local chapter of the Sierra Club, Moosewood Nature Center, etc. We will also seek input from local state and federal agencies working in the area.

This might sound like an ambitious plan for six months, but there are really good aspects of existing programs and centers that can be copied and tweaked to fit our immediate region. We can use the field-tested ideas of others to develop a framework for our plans to create a unique center.

Contributions to Roadmap. The major specific connection to the Roadmap is in **Campus Attributes**. Goal C of this theme, “Enhance the portfolio of academic programs...” gives a directive to consolidate NMU’s variety of environmental science efforts to in order to take advantage of the unique research and educational opportunities in the Upper Peninsula. Establishment of this center would accomplish this directive and could result in the accomplishment of much of the other priorities of goal C. A center for ecological studies at NMU will provide a way to give more exposure to existing environmentally-related courses and programs. It should lead to the creation of new courses and projects as well as providing a means to develop a focused marketing plan that will bring students, directly affecting **recruitment**. Interest is high among students; environmental science majors have increased from 31 students in 2000 to 90 majors today (almost a 200% increase). Similarly, in the two years the alternative energies minor has been offered the enrollment has tripled. **Retention** of students interested in environmental studies should be increased as there will be greater focused support for their programs. In addition, if high school students, community members, and senior citizens are involved in center workshops and as volunteers on research projects NMU may realize some future students either directly or by word-of-mouth. Simultaneously the center will provide a mechanism to bring ecological and related studies to the wider Marquette community resulting in increased **community engagement**. **Revenue generation** should occur once the center is operating. New courses and expanded programs should result in new students paying tuition. Elderhostel programs and summer workshops will have fees associated with them that may generate funds for NMU. Another avenue is that alumni and citizens in the upper Midwest will likely donate money to a conservation/research/education center so donations to NMU should increase. There is precedence for this in the private donations that the Vermont Center for Ecostudies realizes. We are poised to tap into a similar market of donors in the Midwest—people who are concerned about natural resources, energy conservation, and ecological research. **Quality improvement** should occur because we will have a name associated with our curriculum and research projects; this will aid us in recruiting talented faculty and staff, thereby increasing the overall quality of the educational experience. Of course these are all ideas that stem from the creating of a center. If the feasibility study (the goal of this project) shows that such a center is not sustainable by NMU at this time, there still could be revenue gained by the creation of the website that will provide resources for students looking for environmentally-related careers.

Expected outcomes:

We expect to create a new web site that highlights the ecological and environmental work we do at NMU and the interdisciplinary nature of the curriculum as it stands today. This should by itself lead to recruitment of future students. We expect to find with the addition of a director position, such a center is feasible at NMU and we intend to have a completed plan of how to create the center at the end of this project.

Timetable: Six months to complete this project; the majority of the time will be spent on activity 3).

Budget:

Activity	Cost breakdown	Total cost
Release time for 2/3 load, one semester for Williams	8 credits x \$1000 adj pay*	\$8000
Trip to Vermont center (2 nights) two persons	Airfare \$1000; Hotel \$240; Food \$128; rental car \$175	\$1543
Trip to Milwaukee Center for Great Lakes Studies(2 nights) two persons	Personal car; \$ 275 (500 miles @0.55/mile); Hotel \$240; Food \$128	\$643
Campus retreat	Room rental/food/outside speaker	\$1000
Student labor-web site	10 hr/wk/14 wks @ \$7.50/hr	\$1050
Faculty summer stipend for Leonard	\$2000	\$2000
	Estimated costs	\$14,236
	Total request	\$15,000**
	*I have found a term instructor, but we will most likely have to pay a higher rate than regular adjunct pay—as the person will cover lecture courses.	**to cover unexpected changes in fuel or air fare expenses, as an estimation at this time could be fairly crude

Qualifications of applicants: Leonard is a NMU Distinguished Faculty, professor of biology, and the chair of last year's AQIP committee on scholarship. She has over 20 publications, numerous presentations and has acquired almost \$500,000 in grant money over the last 10 years related to the biology and management of freshwater fish. She is clearly an expert in teaching, research, and grant writing, and is recognized on campus as a role model for all of these. Her major role in the AQIP action project demonstrates her organizational skills and ability to coordinate efforts over a broad spectrum of constituencies. She also has community contacts through her work with the national park system, U.S. Fish and Wildlife, MI Department of Natural Resources, and Trout Unlimited.

Williams has been the department head of chemistry for 3.5 years and has demonstrated an ability to work with faculty of diverse backgrounds and research interests. She has also been working with Mike Roy and Fred Joyal to design a laboratory facility for alternative energy research. To coordinate the planned research activities with design of the new facility she has met with alternative energy experts from both academia and business entities and collaborated on a grant with the president of Renewafuel, LLC. Her own research focuses on carbon capture from combustion of biomass using fresh water algae and briquette production of waste office paper as a fuel source. These projects are collaborative efforts with faculty and staff of Engineering Technology, students with an alternative energies minor, chemistry and biology majors, and a professional engineer who is a paid consultant.