

Design of a Science TLC, Stage I: Preliminary Inquiry

Professional Development Grant Application

Narrative:

Project Purpose Statement: The goal of this project is to obtain preliminary information regarding incoming Stout students' high school preparation for college level science courses. The long-term objective of this project is to develop a science teaching and learning center (Science TLC) to support students who have a weaker background in the physical sciences so that they may reach their academic and career goals.

Background: Traditionally, UW-Stout has served a population of students that are academically weaker in the physical sciences than students attending more competitive institutions; however, as UW-Stout's reputation as Wisconsin's Polytechnic has grown along with the engineering, science and math programs, the population of students is evolving. As faculty who teach entry-level physical science courses for engineering and science students, we have noted that there is a growing disparity between students in their academic readiness for these courses. This disparity creates an issue for both faculty and students. Faculty need to deliver rigorous course content to prepare students for their continuing science and engineering education and challenge students with a strong science background. Unfortunately, many students with a weaker background struggle significantly in these courses and may even drop the course and change their major. Because of the mission and tradition of UW-Stout, we believe it is important that we continue to support students with a weaker academic background and facilitate their success in science and/or engineering programs. To this end, we are proposing to develop a Science Teaching and Learning Center (Science TLC).

In order to successfully develop a sustainable Science TLC, we will need to 1) understand the needs of the struggling students and 2) obtain funding for support of the center. This initial grant proposal is to converse with local high school physics and chemistry teachers in order to understand the needs of struggling students. This information will subsequently be used to collect data for use in an external grant proposal to fund the Science TLC.

Objective: The short-term objective is to obtain preliminary information regarding UW-Stout students' preparation for college level science courses. The information will be gathered by visiting and conversing with local physics, chemistry and other math and physical science teachers.

Project Description: For the high school visits, an interview tool will be developed that will facilitate gathering information about course offerings for freshman through senior students, science requirements and enrollment numbers, as well as the level of course content. Subjective questions about student preparation for college-level science courses and interest in the STEM fields will be included as well. Through discussions with the science teachers, we hope to also gain insight into how local universities and faculty can promote student interest in obtaining college degrees and the STEM fields.

The three principle outcomes denoting success of this project are 1) a written summary of conversations with local high school teachers, 2) IRB approval for a more formal data gathering procedure, and 3) an expanded project scope including further discussions and/or collaboration with UW-Stout's Math TLC, our science outreach programs and/or a sociologist.

As noted above, this grant proposal is the first step in a new SoTL project for both principal investigators and as such, funding of this grant is supporting the professional development of both senior faculty members.

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Budget Narrative:

Expenses: The project is anticipated to run for one academic year of 36 weeks (180 days). The majority of the expenses will go to ground transportation for travel to rural high schools within a 50 mile radius of UW-Stout. The twelve high schools planned are listed in the table below.

Memorial High School	\$49	Colfax High School	\$39
Meals: 2 people x .25 days @ \$40/day=\$20		Meals: 2 people x .25 days @ \$40/day=\$20	
Mileage: R/T 54 miles @ \$.53/mile=\$29		Mileage: R/T 36 miles @ \$.53/mile=\$19	
Chippewa Falls High School	\$51	River Falls High School	\$62
Meals: 2 people x .25 days @ \$40/day=\$20		Meals: 2 people x .25 days @ \$40/day=\$20	
Mileage: R/T 58 miles @ \$.53/mile=\$31		Mileage: R/T 78 miles @ \$.53/mile=\$42	
Regis High School	\$49	Hudson High School	\$68
Meals: 2 people x .25 days @ \$40/day=\$20		Meals: 2 people x .25 days @ \$40/day=\$20	
Mileage: R/T 54 miles @ \$.53/mile=\$29		Mileage: R/T 89 miles @ \$.53/mile=\$48	
North High School	\$46	Somerset High School	\$77
Meals: 2 people x .25 days @ \$40/day=\$20		Meals: 2 people x .25 days @ \$40/day=\$20	
Mileage: R/T 48 miles @ \$.53/mile=\$26		Mileage: R/T 106 miles @ \$.53/mile=\$57	
Eleva-Strum High School	\$67	Bloomer High School	\$59
Meals: 2 people x .25 days @ \$40/day=\$20		Meals: 2 people x .25 days @ \$40/day=\$20	
Mileage: R/T 88 miles @ \$.53/mile=\$47		Mileage: R/T 72 miles @ \$.53/mile=\$39	
Osseo-Fairchild High School	\$71	Menomonie High School	\$1
Meals: 2 people x .25 days @ \$40/day=\$20		Mileage: R/T 2 miles @ \$.53/mile=\$1	
Mileage: R/T 95 miles @ \$.53/mile=\$51			

Budget Justification: Twelve trips are estimated and costs are mileage, meals and time for each. Each is within a 50 mile radius of Menomonie. The mileage has been calculated for round trip. One meal per trip for each of two participants has been added. One hour of staff time has been allocated to each PI per trip. Though some of the trips may take up to four hours each, only an hour of expertise should be required. That expertise is in the form of preparing interview questions for the teachers, identifying teachers, conducting the interview and summarizing the conversations. Incidental labor (setting up appointments, finding contact information for teachers, *etc.*) is also included.

PERSONNEL		
Marcia Miller-Rodeberg, PI: 12 trips @ 1 hr		\$541.67
Actual 2016-17 AcYr Base @ \$65,000		
Marlann Patterson, co-PI: 12 trips @ 1 hr		\$479.03
Actual 2016-17 AcYr Base @ \$57,484		
Total Personnel		\$1,021
Fringe Benefits		
Faulty / Staff	40.0%	\$409
Total Fringe Benefits		\$409
Total Personnel and Fringe		\$1,429
NON PERSONNEL		
Travel: (PI-s and/or student)		\$637
Total Direct Costs		\$2,067
Indirect Costs		\$729
Fringe allowable rate of 35.27%		
Total Project Request		\$2,795