

SUTEP Grant Proposal
Submitted By: Dr. April Avery-Ferguson
Cullowhee Valley School
2nd Grade Teacher

Project Rationale - should address the need for the project and show a logical connection between the proposed activities and intended outcomes (10 pts.)

Growing up in the mountains of North Carolina has been one of the greatest experiences I could imagine. With the beauty and remoteness of the WNC Mountains there was also the lack of exposure to many of the STEM (Science, Technology, Engineering, and Mathematics) related careers. This lack of exposure continues even today. In the current global economy, I feel that students need to be exposed to the various STEM careers so that they may form a broader foundation for making educated decisions as to what career they would like to pursue. Experts have argued for an increase in STEM education and awareness due to the United States lagging behind in preparation of student for entry into each of these fields. The goal for the proposed STEM Project is to introduce elementary grade students to the various STEM fields and to the possibilities of future study and/or employment within the STEM disciplines. Specifically, students will understand the relevance of the core subjects supporting the STEM fields such as: mathematics, engineering, technology, biology, chemistry, geology, environmental science, and computer science.

Potential for Establishing Viable School/University Collaboration (10 pts.)

This Stem grant would be a means to connect the STEM fields at WCU with the young students at CVS. I have spoken and collaborated with several professors that work in the STEM disciplines at WCU. I have received support from each one. My plan is to continue working with the university faculty: Dr. Tommy Hodges; Dr. Karen Kandl; Dr. Tracie Rice; Dr. Chip Ferguson; and Dr. Bob Houghton. I will continue to expand my STEM faculty connections at WCU so that the project will continue throughout my career here at CVS. I will follow the students as they move through their educational careers in Jackson County Public Schools and determine if their exposure to the STEM fields, at a younger age, influences their decision concerning their career. I also want the students to see the importance of interdisciplinary teamwork. Professors from the university will be able to explain and demonstrate the need to work together even as grown-ups to solve the world's most pressing problems. I have also invited Monica Lin to participate in the CVS STEM program. Monica

is our Chinese exchange teacher who seeks to establish a link and partnership between students at CVS and her students in China so our students may understand the similarities and differences between China and the United States. This global and cultural experience will allow students to understand that other countries have many of the same problems demanding strong minds to develop sustainable solutions, even though the culture and language are very different. This aspect will also demonstrate how people working in the STEM disciplines may collaborate globally to solve some of the world's major problems. (21st Century Learning Skills)

Potential for Enhancing Student Learning and Promoting the Development of 21st Century Skills (10 pts.)

One important aspect of the grant is to create Project- Based Learning Student Teams. The plan is for the students to create collaborative teams (with assistance from me and the assisting professors) based on their individual interest in the STEM fields. They will use their personal strengths (science, technology, engineering, and mathematics) to solve pre-defined problems as a “STEM Team”; teaming and project based learning will provide the environmental context (21st Century Learning Skills). Field trips to the Department of Engineering and technology at WCU will allow the students to meet college students involved in project-based learning and applied research so as to relate their own experiences with how “grown-up” students deal with complex problems they have solved while working in teams as college students. Additionally, the college students will inspire many of my young students to consider work in the STEM disciplines.

Impact – May Include The Extent To Which The Project Will Have An Impact Beyond The Current Academic Year (10 pts.)

Again, my hope is to continue working with the university, specifically, with Dr. Tommy Hodges, Dr. Karen Kandl, Dr. Tracie Rice, Dr. Chip Ferguson, Dr. Bob Houghton, Dr. Melissa Wargo and Dr. Sloan Despeaux to continue the project throughout my career here at CVS. I would like to follow the students (with parental permission) as they move through their educational careers in Jackson County Public Schools and determine if their exposure to the STEM fields at a young age has an influence on their decision regarding their careers.

Detailed Budget

STEM-related Books (2nd Grade Level) \$400

Project-Based Learning Supplies \$300

Printer Ink \$95

Summary of Project

Growing up in the mountains of North Carolina has been one of the greatest experiences I could imagine. With the beauty and remoteness of the WNC Mountains there was also the lack of exposure to many of the STEM (Science, Technology, Engineering, and Mathematics) related careers. This lack of exposure continues even today. In the current global economy, I feel that students need to be exposed to the various STEM careers so that they may form a broader foundation for making educated decisions as to what career they would like to pursue. Experts have argued for an increase in STEM education and awareness due to the United States lagging behind in preparation of student for entry into each of these fields. The goal for the proposed STEM Project is to introduce elementary grade students to the various STEM fields and to the possibilities of future study and/or employment within the STEM disciplines. Specifically, students will understand the relevance of the core subjects supporting the STEM fields such as: mathematics, engineering, technology, biology, chemistry, geology, environmental science, and computer science.

31 October, 2011

Dear April,

I am excited to work with your class at Cullowhee Valley School to introduce your students to the STEM fields. I truly enjoy helping youth learn and become excited about science and related fields (technology, engineering, and math). Please let me know how I can help you.

Sincerely,

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