

Proposal Concept Form

TEEM UP for K-12

Institution: Western Kentucky University

Team Members (names & e-mails):

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Area of Focus (in-service, pre-service, student outreach, etc.):
In-service

Project Description:

Use project-based learning to increase student interest and achievement in STEM in middle and/or high schools.

1. Needs Assessment (communities served)

- Use existing assessment data to identify general content needs in STEM.
- Use focus group of regional teachers to identify specific content needs and other teacher concerns and interests.
- Communities served: WKU service region and GRREC (school district consortium) members.

2. Project Background / Rationale / Supporting Research

Build upon existing relationships between WKU math, science, engineering, education programs and K-12 schools.

Self-sustaining project after grant funds end.

Flexibility to work in existing school schedules, structures, and curriculum.

Uses combined strengths of university faculty and classroom teachers.

Built on expressed needs of middle/high school teachers for applications of concepts.

Integrates real-world applications in beyond those in existing curricula.

Supporting research: Considerable research available on engineering retention of women and minorities in engineering programs. Also data on K-12 from ASEE, math, and science fields.

3. Project Organization / Management / Partnerships

Project director: administrative matters.

Co-Pi to be determined to oversee content specifics

WKU faculty and classroom teachers for content specialty teams to create initial project-based materials.

WKU, GRREC, specific schools, specific teachers in schools.

4. Specific Objectives

Increase interest in STEM areas for middle/high school students.

Increase teacher knowledge of applications in STEM fields.

5. Marketing Plan

Use GRREC and consultations with regional school district superintendents, principals.

Use existing teacher/faculty networks.

6. Budget / Funding Strategy / Sustainability

Need initial funding for project director (possibly internal WKU funds),

State funds,

NSF,

DOE

Industry.

Long-term sustainability is integration of project-based environment in middle/high schools and implementation of units in WKU pre-service and graduate courses.

7. Timeline

Fall 0x conduct needs assessment, Identify content development teams (WKU faculty and classroom teachers). Begin initial work on creating project-based applications to address needs

Spring 0Y. Members of content development teams field test materials, conduct initial feasibility assessments, revise materials, make plans for summer workshop.

Summer 0Y, Conduct summer workshop for first cadre of STEM classroom teachers in WKU/GRREC region.

Fall 0Y, Implement applications in classrooms with support from development teams, assess effectiveness of projects (utility, implementation, effectiveness, etc). Make plans for student success recognition activities.

Spring 0Z. Recognize students and teachers for success. Assess success of program for expansion, including possibly advanced work with cadre I and/or initial training of cadre II and possibly modifications to existing WKU courses for pre-service teachers.

8. Evaluation / Accountability

Compare current test scores with future scores in targeted areas.

Pre/post student interest inventories.

Teachers surveys of participation.

Implementation rates.