Report and Reflections from Year One of the NSF GK-12 Program at USM

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Graduate STEM Fellows in K-12 Education

The NSF Graduate STEM Fellows in K-12 Education (GK-12) Program supports fellowships and training for graduate students in science, technology, engineering, and mathematics (STEM). Through interactions with teachers and students in K-12 schools, graduate fellows can improve communication and teaching skills while enriching STEM content and instruction for their K-12 partners.
Graduate STEM Fellows in K-12 Education (GK-12)  
www.gk12.org

- National Science Foundation
  - Directorate for Education and Human Resources
  - Division of Graduate Education
- Since 1999, the GK-12 Program has funded over 200 projects in more than 140 universities throughout the U.S. and Puerto Rico.
Graduate STEM Fellows in K-12 Education (GK-12)

Program Goals

**Graduate Students**
Communication, Leadership, Team Building

**K-12 Education**
Enhanced Teaching and Learning

**Higher Education**
Transform Graduate Programs
USM’s GK-12

Molecules to Muscles

Research

Macromolecules
proteins
carbohydrates
nucleic acids

Science Frameworks
Chemistry
Biology

Muscle Operation
nutrition
human physiology
metabolics

Chemistry
Biology
Anatomy
Physiology

Advanced Materials
material strength
physics of sports
soldier protection

Chemistry
Biology
Anatomy
Physiology
Polymer Science
Molecules to Muscles

- Sarah Morgan, PI
- Sabine Heinhorst, co PI
- Sherry Herron, co PI
- Jeff Wiggins, co PI
- Rich Mohn, Evaluator
- Kim Wingo, Director

Polymer Science
Chemistry and Biochemistry
Biology and Science Education
Polymer Science
Educational Research
Speech Communication
Requirements and Benefits

Graduate Students (Fellows)

- For 3rd - 5th year students who are US citizens.
- $30,000 fellowship
- $ teaching materials and conference travel
- Summer course and workshop.
- 10-15 hour time commitment each week of school.
- Mentor Science Fair student.
- Develop and teach an original theme-based lesson.
- Develop and teach a research-based lesson.

Teachers

- $4000 stipend
- Summer workshop
- Assistance in the classroom
- 3-hr graduate course tuition free
- $1000 allowance for conference travel
Workshops
Lesson Implementation
Industry Interactions

Stephen Christensen, Boeing Research and Technology Petal and Hattiesburg High Schools
Elementary School Demos