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

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# NSF GK-12 GRADUATE STEM FELLOWS IN K-12 EDUCATION



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SEARCH

## PROJECT LOCATOR

Find a GK-12 Project  
by State:

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Fellows Submit STEM Research Abstracts



## WHAT'S NEW

- > InSTEP Program  
Named Business  
Partner of the Year
- > NYU Poly Fellows +  
400 Students +  
Robots = Fun
- > Congressman Miller  
Meets UNC  
Greensboro GK12

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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.

## HIGHLIGHTS

- [Featured](#)
- [GK-12 in the News](#)
- [Opportunities](#)
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# Graduate STEM Fellows in K-12 Education (GK-12)

[www.gk12.org](http://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

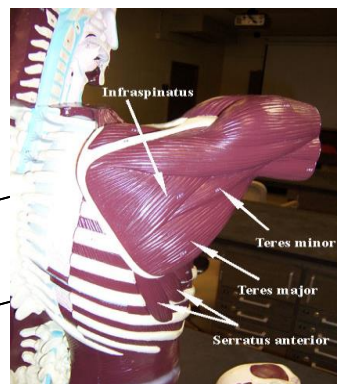


## Higher Education

Transform Graduate  
Programs



## *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  
Polymer Science
- Sabine Heinhorst, co PI  
Chemistry and Biochemistry
- Sherry Herron, co PI  
Biology and Science Education
- Jeff Wiggins, co PI  
Polymer Science
- Rich Mohn, Evaluator  
Educational Research
- Kim Wingo, Director  
Speech Communication

# Requirements and Benefits

## Graduate Students (Fellows)

- For 3<sup>rd</sup> - 5<sup>th</sup> 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

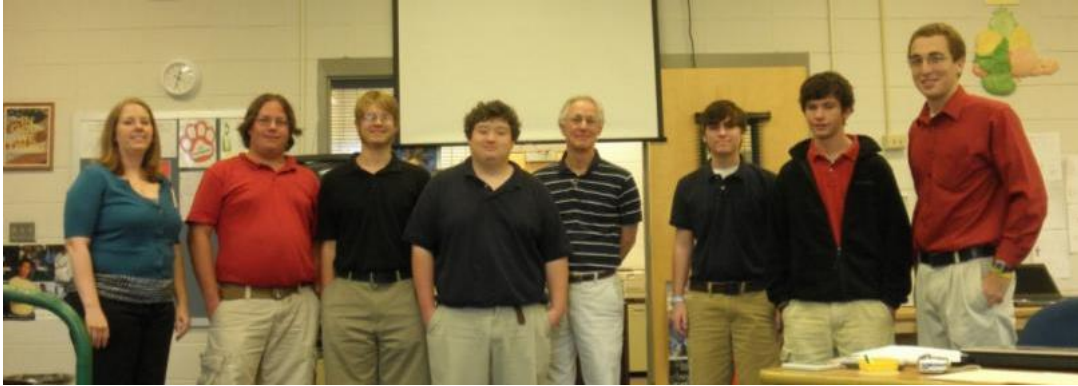
# Workshops





# Lesson Implementation





# Industry Interactions



Stephen Christensen, Boeing Research and Technology  
Petal and Hattiesburg High Schools

# Elementary School Demos

