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The Kansas and U.S. Economy requires well-prepared citizens, workers and researchers in Science, Technology, Engineering and Mathematics.

In Kansas Wichita manufactures 70% of the world's general aviation aircraft. The Kansas City metropolitan area is a center of automobile production and printing. Metal fabrication, printing, and mineral products industries predominate in the nine southeastern counties and the state continues to lead in agricultural production.
STEM Faculty at Research Universities

They are innovators in their fields, scientists and engineers who fuel energy, biotechnology, manufacturing, aviation and the agricultural industries and drive our region’s economic engine. Their impact throughout the region is invaluable.
Where are the future STEM leaders going to come from...........

People like:

**Walter Sutton** (Russell, KS) chromosome theory of heredity; using Kansas grasshoppers

**Clyde Tombaugh** (Burdett, KS) discoverer of Pluto

**Jack Kilby** (Great Bend, KS) Nobel prize for integrated circuit
Graduate Teaching Fellows in K-12 Education (GK-12) Program

The National Science Foundation provides funding to graduate students in science, technology, engineering and mathematics (STEM) disciplines to acquire additional skills that will broadly prepare them for professional and scientific careers in the 21st century.
NSF developed the GK-12 program recognizing that, in addition to being competent researchers, STEM graduate students must be able to communicate science and research to a variety of audiences.
Graduate Teaching Fellows in K-12 Education (GK-12) Program

The ideal candidate is interested in personal development and lifelong learning and recognizes the advantage of participating in the GK-12 Program.

Special efforts will be made to recruit Graduate Fellows who are graduates of Kansas City Kansas Public Schools or Topeka Public Schools who can serve as role models to the middle school students of those districts.
KU GK-12 Graduate Fellows

- Fellows will develop enhanced leadership skills and the ability to motivate a group of people toward a common goal.
- Fellows will develop enhanced ability to communicate science and research to a variety of audiences.
- Fellow will develop a broad vision of STEM education in both formal (Grades K-20) and informal environments.
- Fellows will develop their understanding of pedagogy and refine their ability to teach.
- Fellows will develop a broad understanding across STEM fields.
- Fellows will be supported in their research and degree completion.
- Fellows will understand that there are many career pathways in their discipline.
GK-12 Outcomes

The program is specifically designed as an enhancement to the STEM Graduate Studies program. Program goals include:

- Communication of science and engineering to broad audiences
- A deep understanding of teaching and learning in STEM.
- Enhancing instructional skills for future undergraduate and graduate teaching
- Development of rich understanding of research outreach to enhance future research proposals.
Candidates for the GK-12 Graduate Fellowships will complete an application that provides key professional information included in:

- Application Cover Sheet
- Transcripts
- GRE scores
- A statement of interest in the GK-12 program
- Recommendation letter of their graduate program, committee chair.
Graduate Teaching Fellows in K-12 Education (GK-12) Program

It is required by the National Science Foundation that these be active graduate students in the School of Engineering, the natural science and/or mathematics and that they be U.S. Citizens.
So What is Really Required

- The program requires 15 hours a week:
  - One day a week, eight hours plus two hours of travel time, is spent in area middle schools as the scientist mentor working with a collaborating mentor teacher to develop student research.
  - Four hours a week is spent interacting with undergraduate, future teachers on campus through a research methods class.
  - One hour a week is spent in a GK-12 graduate seminar class.

- In the summer, GK-12 Fellows interact with their future mentor teachers through the Middle School Science Academy program over a two week period.

- Travel and presentations at research and GK-12 meetings.

- So what is the Fellowship?
  - The GK-12 Fellowship is $30,000.00 per year (12 months) and in addition covers tuition and travel expense to schools.
For More Information

- **Gk-12 at the University of Kansas**
  http://www.kuscied.org/~kuscied/gk12

- **Center for Science Education at KU**
  http://kuscied.ku.edu

- **National Science Foundation GK-12 project site**
  http://www.nsfgk12.org/
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