

## SUNRISE Participants

### The Volgenau School of IT&E

Dr. Rajesh Ganesan, Principal Investigator (PI)  
Dr. Kathryn Laskey, co-PI  
Dr. Kathleen Wage, Faculty Advisor  
Dr. Ariela Sofer, Faculty Advisor

### College of Education and Human Development

Dr. Donna Sterling, co-PI

### College of Science

Dr. Robert Sachs, co-PI  
Dr. Robert Ehrlich, Faculty Advisor  
Dr. Allan Falconer, Faculty Advisor

### Graduate Fellows

Ms. Christy Henderson - Physics and Astronomy  
Ms. Catherine Sausville - Mathematics  
Mr. David Barr- Physics and Astronomy  
Mr. Joe Cremaldi – Systems Engineering and Operations Research (SEOR)  
Mr. Jon Malachowski – Electrical and Computer Engineering  
Ms. Manisha Shrestha - Biochemistry  
Ms. Melanie Larson – SEOR  
Mr. Matthew Dale - SEOR

Ms. Liya Wang, Project Manager  
Dr. Phil Henning, Project Evaluator

### Fairfax County Public Schools

Ms. Colleen Vaughan, Beech tree (Teacher)  
Ms. Sandra Haley, Lynnbrook (Teacher)  
Ms. Jennifer Orr, Annandale Terrace (Teacher)  
Mr. Ross Baker, Hutchinson (Teacher)  
Ms. Myra Thayer, Science Coordinator, co-PI

### Alexandria City Public Schools

Mr. Mark Walker, Cora Kelley (Teacher)  
Ms. Beverly Welch, Patrick Henry (Teacher)  
Ms. Melissa Hamilton, Curriculum Specialist for Science, co-PI

### Manassas Park City Schools

Ms. Kelly Morris, Manassas Park Elementary (Teacher)  
Ms. Kelly Beatty, Manassas Park Middle (Teacher)  
Dr. Bruce McDade, Associate Superintendent Curriculum and Instruction, co-PI



SUNRISE Team

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The Volgenau School of  
Information Technology and Engineering

## SUNRISE Schools University 'N' (and) Resources In the Sciences and Engineering



Supported by the  
National Science Foundation



<http://sunrise.ite.gmu.edu>  
<http://ite.gmu.edu>

## Program Objective

SUNRISE is a new GK-12 project aimed at partnering Science, Technology, Engineering, and Mathematics (STEM) graduate students ("Fellows") with school teachers from three different school divisions. The objective of this project is to build a unique model of collaboration among elementary and middle schools, school division administration, and GMU to foster systemic efforts in implementing Information Technology (IT) rich STEM content-knowledge into G4-6 education by graduate Fellows, with the potential to fundamentally change the delivery of science instruction and long term professional development of science teachers.

## Program Information

- The Project is led by IT&E with support from College of Education and Sciences at GMU.
- The project duration is 5 years from 2007-12
- The project has partnered with 8 schools in 3 school divisions.
- The schools have a high percentage of students who are English learners, many are on free/reduced lunch, and they are ethnically very diverse with a high percentage of African-Americans and Hispanics.
- Each year, the project begins in summer with two month long training program for the Fellows
- Each Fellow is teamed with a teacher

## Expected Outcomes

- Increased content knowledge for K-12 students and teachers
- Fellows develop skills in pedagogy and classroom management
- More teachers with backgrounds in engineering, math & sciences

- Promote the adoption of GK-12 like activities as an integral part of GMU's graduate programs in STEM
- In the long run....More Engineers, Doctors and Scientists



Polymer Project

## Fellow Activities

- GK-12 Fellows work directly with GK-12 Teachers in the classroom to:
- Connect K-12 learning to scientific methods needed for further study in (science, technology, engineering, and mathematics) STEM disciplines
    - *Lead post-experiment science discussion and relate to real world examples*
  - Serve as role models for K12 Children who are our future STEM professionals
  - Support GK-12 Teachers with content knowledge in engineering, mathematics and the sciences
    - *Curriculum enrichment*
  - Jointly enhance and deliver K-12 science and mathematics instruction- hands on experiments
    - *Serve as resources for teachers in conducting hands-on experiments*
  - Provide individualized instruction and assistance to the students

- Deliver advanced STEM education to G4-6 in topics such as
  - Oceanography
  - Global Positioning Systems
  - Acoustics
  - Sensing technologies: infrared sensors, bio sensors
  - Nanotechnology
  - Protein bonding: polymers
  - Space exploration
  - Simulation

## Benefits

- The opportunities and excitement of the SUNRISE project will
- Allow GMU to become a nationally recognized leader in the infusion of STEM content knowledge into K-12 education
  - Transform graduate education with emphasis on research and teaching
  - Improve communication skills of Fellows
  - Provide professional development to teachers
  - Lay a foundation for more GK-12 type activities in the Volgenau School of Information Technology and Engineering

## Supporting SUNRISE and IT&E

To support the SUNRISE program and other educational outreach initiatives in the Volgenau School of IT&E write a check to IT&E, please make it payable to George Mason University Foundation and send it to:

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The Volgenau School of IT & Engineering  
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