

“Reach for the Stars”

Project Abstract

Reach for the Stars is a program that will reach more than 630 students in grades K-6 at Petersburg Elementary School* and their families. This program will train teachers, provide opportunities for student experimentation, involve participation by parents and utilize partnerships with community experts.

Through **Reach for the Stars** teachers and community partners will be trained to fully utilize the existing optical telescope that was purchased with grant funding and housed at Petersburg Elementary School. Once this training has been established students and parents will be invited to participate in learning workshops one evening each month. Local astronomers and teachers will conduct workshops. These sessions will provide hands on opportunities for students, along with their parents, to explore the stars and planets of our solar system. **Reach for the Stars** will also provide opportunities for our students to experience first hand, various careers in space science through visits to the National Radio Astronomy Observatory in Green Bank, West Virginia, as well as the planetarium at Frostburg State University.

The natural progression of **Reach for the Stars** will include the formation of an astronomy club with members of all ages. This organized, student driven, teacher guided instruction will provide ongoing, extended hour learning opportunities to all grade levels.

*Petersburg Elementary School, located in Grant County is designated as a 100% rural county. More than 60% percent of students at Petersburg Elementary School receive free or reduced lunch.

“Reach for the Stars”

Goals and Objectives

The primary goal of **Reach for the Stars** is to help to prepare students to live and work in a world that is increasingly scientific and technical in nature. **Reach for the Stars** will provide training and support for teachers as well as increased opportunities for inquiry based science instruction. The use of speakers, field trips, and hands on activities will provide students with the opportunity to aggressively explore the link between space science and technology.

Reach for the Stars students’ activities will address, at the appropriate grade levels, the West Virginia Instructional Goals and Objectives, National Education Goals, National Science Education Standards and the International Society for Technology in Education Standards. Teachers will be provided with resources to supplement their current curriculum through WVU/NASA Ames IV & V Facility offerings and trainings provided by the staff at Greenbank National Radio Astronomy Observatory. Internet based resources will be identified, compiled and presented to staff by Project RIGHT₂ (Reaching Instructional Goals with Hi-Tech Tools) coordinator.

Reach for the Stars will involve parents and community members as partners in the education process by utilizing their skills and knowledge to support the development of a junior astronomers club. Community leaders have committed to provide leadership and support in this exciting endeavor to help our students “**Reach for the Stars**” both literally and figuratively.

Methods to Implement Project

In the fall of 2000, Green Bank National Radio Astronomy Observatory staff will provide teachers, parents and community partners with multi-faceted training. The first phase of staff development will prepare participants to fully utilize the existing optical telescope at Petersburg Elementary School. Secondly, **STARLAB** training will be the focus of attention so that our students can utilize the **STARLAB** during school hours. In this way, we can ensure that all students will have the opportunity to explore the vast expanse of our universe in an exciting and meaningful manner. Finally, *Hands-On Universe* training will be provided to interested teachers throughout our county. Software necessary to support trained teachers will be purchased as part of this project.

[Name omitted] and [Name omitted], prominent members of the community who have volunteered their time and expertise to support this project, have both agreed to come into the classroom and provide astronomy related, hands-on activities. [Name omitted] and [Name omitted] have agreed to assist with the astronomy club and provide expertise to enhance this project. Julia Colaw math/science/technology instructor and Project RIGHT₂ coordinator will provide technical support and assistance to all staff in utilizing the STARLAB, telescope, and computer software. Mrs. Colaw will also serve as the teacher supervisor for the astronomy club.

A star party will be held as a kick-off activity to encourage participation in the astronomy club. Students and their families will participate in an evening of star related activities and have the opportunity to hear knowledgeable guest speakers. Learning stations including the STARLAB and the optical telescope will be staffed and available for exploration.

Project Evaluation

Evaluation of **Reach for the Stars** success will be tri-fold. The first component of this evaluation will be the completion of planned professional development activities. Once trained, teachers will be able to utilize the STARLAB, Hands on Universe Curriculum, and telescope. Each teacher who participates in this project will document classroom activities utilizing the digital camera, video camera or media coverage. This documentation will be compiled and presented at the WVTEAMS conference and at state level science conferences.

The second part of this evaluation will be to measure the extent of parental involvement in this project. Currently there are no academic clubs or activities meeting after school hours. Through this project we will increase parental involvement and provided extended learning opportunities for students. The facilitator will log participation in after school activities by students, parents and community partners.

The third aspect of evaluation will occur by an examination of standardized test scores of 3rd –6th grade students for the 2000-2001 school year. A successful project will show an increase in science test scores for students involved in this program.

Project Time Line

September 2000	October 2000	November 2000	Dec. 2000	Jan. 2000	Feb. 2000	March 2000	April 2000	May 2000	Aug/ Sept. 2000
Training for teachers and community partners	Star Party Astronomy Club Kick-off	Field trip to Frostburg Planetarium	Astronomy club meeting and activities	Astronomy club meeting and activities	Astronomy club meeting and activities	Astronomy club meeting and activities WV TEAMS presentation	Field trip to Green Bank NRAO	Astronomy club meeting and activities	Evaluate test scores and other data
<p>Year long activities will include: Use of Hands-On Universe software by trained teachers Documentation of Reach for the Stars Activities Media coverage of classroom and school wide activities Presentations to Grant County Board of Education by students</p>									

Budget

Field Trip to Frostburg Planetarium	9 buses @ \$.50 per mile (140 miles) 9 drivers @ \$100 per day per driver	\$630.00 /mileage \$900.00 /drivers
Field Trip to Green Bank National Radio Astronomy Observatory	9 buses @ \$.50 per mile (140 miles) 9 drivers @ \$100 per day per driver	\$630/mileage \$900.00/ drivers
Hands On Universe Software	8 teachers @ \$200.00 per trained teacher	\$1,600.00
Astronomy Star Guide Books	30 books @ \$15.00	\$450.00
Supplies for Star Party activities	Miscellaneous items to conduct a variety of hands – on experiments	\$500.00
Total Requested Budget		\$5,610.00

In - Kind Support

Professional development provided by NRAO staff	3 days of training @ \$800.00 per day	\$2,400.00
STARLAB Rental	1 week @ \$300.00 per week	\$300.00
Community partner volunteers	Approximately 75 hours @ \$20.00 per hour	\$1,500.00
Travel/Accommodation Expenses for presentation of Reach for the Stars at Conferences	Approximately 5 days @ \$150.00 per day	\$750.00
Total In-Kind Budget		\$4,950.00

Project Coordinators

Background Information

[Name omitted] Math/Science/Technology Instructor

Project **RIGHT**₂ coordinator

B.S. Elementary Education / Edinboro University of Pennsylvania

County Technology & Curriculum Team Member

Astronomy enthusiast

[Name omitted] Physician, Astronomer and Community Partner

Graduate of University of Cincinnati

Undergraduate of Ohio State

Lifelong Interest in Astronomy

Started designing his own telescope mirrors at age 9

Taught Astronomy lessons to 4th and 5th grade students in Loudin County, VA (5 years)

[Name omitted] Community Partner and Astronomer

Professor of Physics and Mathematics / Davis & Elkins College 1955-1989

Planetarium Director / Davis & Elkins College 1973-1989

Taught Introduction to Astronomy / Davis & Elkins College 1965-1986

Taught Introduction to Astronomy / Alderson Broaddus (2 summers)