



Geological Society of America's Teacher Advocate Program

Geoscience Teaching Resources and Experiences

Background

School teachers, after parents, are the most influential people through which our children learn. They provide our children not only with the tools that they will need to survive in our ever changing and technological advancing society, but they also provide students with values about subjects and topics that they present in their classrooms.

Teachers do not do this in a random and illogical progression. They use specific educationally based curriculum to ensure that our children get a balanced education. However, within these curricula there is scope for teachers to expand upon subjects for which they have enthusiasm and passion.

In the current educational environment of “No Child Left Behind’ and other policies, teachers’ enthusiasm and passion is sorely compromised. In fact, many of the teachers of Earth science in the USA do not have the proper training, background, or resources to teach the course. But given the right encouragement, knowledge, and resources, passion and enthusiasm can easily be ignited.

We need to ensure that we spark excitement and fervor about Earth in our educators so that they will promote to our children the importance of and an interest in Earth science. We can do this by sharing our passion and enthusiasm through providing teachers with exciting Earth science resources and experiences.

As each teacher will see many hundreds of students throughout any year, their influence as an advocate for Earth science is enormous. If we can provide them with the right materials and experiences, then they will do all the hard work in preparing society, through their students, for the future challenges to which Earth science will contribute.

Students will also take these Earth science experiences home, further influencing their families and broaden the impact into the wider community.

Providing teachers with the right materials and experiences is the key to helping them become our advocates, and so using Earth science educators who have been in the classroom and yet who have a fundamental understanding of the nature of Earth science is necessary for the success of any program.

The Geological Society of America operates a program to meet this need and we are seeking support and partnerships to increase its impact.

Geological Society of America

The Geological Society of America (GSA), founded in 1888, is a nonprofit organization dedicated to the advancement of the geosciences. GSA is an expanding global membership society with more than 20,700 members in more than 85 countries.

The Society's primary activities are organizing scientific conferences and publishing scientific literature. Other activities include disbursing research grants, honoring outstanding scientific contributors with medals and awards, assisting teachers in geoscience education, and fostering public awareness of geoscience issues.

GSA has an Education and Outreach group which operates a wide range of programs to raise awareness of Earth science in the community.

Program Goals

The Geological Society of America's Teacher Advocate Program (TAP) goal is to promote geoscience to school students and their families through active and enthusiastic teacher advocates. It will do this by:

- Providing up-to-date, curriculum-linked, exciting geoscience teaching resources to school teachers across the USA and beyond which are developed by people with recent classroom teaching experience and
- Providing teacher activities in which they experience the importance, relevance, and wonder of geoscience through first-hand contact with geoscience in the field or laboratory.

Current Program Resources

The TAP program currently operates with a staffing level of 0.30 full-time equivalent and an operating budget of around \$30,000. Two GSA staff members, both who are trained geologists and have taught face-to-face in schools, work on the program. Most operational funding comes from the sale of developed resources and support through the GSA Foundation.

What have we done so far?

TAP was commenced in February 2003 with the initial plan of creating a cadre of excellent teaching resources on CD-ROM for middle-high school teachers that covered a range of basic earth science topics. So far, the following topics have been developed and released for teachers as part of the *Explore Earth Science* series:

Plate Tectonics
Volcanoes
Geologic Time
Climate Change

Cross Sections
Silicate Minerals
Science of Gold
Earthquakes

Tsunami
Fossils
Weathering & Erosion
Earth Cycles

Caves and Karst
Energy
Forensic Geology

In addition we have developed a poster on basic rock types and a series of CD-ROMs with cut-out models of aspects of geoscience (*Geology on Paper Series*). We also actively maintain an education section of the GSA Web site that contains lesson plans, links to lesson plans, and links to resources for geoscience teachers.

In recognition of the low level of minority participation in Earth science careers, we have also developed editions of our most popular resources that contain Spanish translations of the teacher guides. This will allow teachers to share the material with parents of Spanish-speaking families. In this way we hope to encourage the parents, as well as their children, to consider Earth science as an exciting and worthwhile career option.

The second phase of TAP has been to operate teacher training sessions at teacher conferences around the nation. This started in earnest in 2006. So far 1,325 teachers have undergone training and they estimate that they will use the program materials with over 132,000 students over the next school year. We have sold and freely distributed over 12,000 of these CDs (600 in November 2007 alone) which, according to statistics reported by these teachers, indicates an impact to over **1.1 million students** across the nation.

The program also includes the maintenance of a Web site featuring earth science lesson plans, links to lessons, and links to resources. The site is hugely popular among earth science teachers, who contribute to the content, and receives well over 30,000 hits per year.

The program has also taken some small groups of teachers on field trips to Hawaii, Iceland, Costa Rica and Namibia in association with partners. This aspect of the program is funded fully by the teacher participants who may obtain grants from their school districts and other sources to attend. Evaluations of teachers who attend these trips show that the teachers who have these experiences are become some of geosciences strongest advocates in the classroom.

Increasing the impact

There is no doubt that the impact of this program is through teacher training and field-based experiences. We believe that if we could extend the program so that we could operate teacher training sessions at all the major state science teacher conferences, as well as the national and regional National Science Teachers Conventions, we could easily increase the number of teachers trained to over 3,000 and have a student usage rate of over 300,000 a year.

Likewise, if it was possible to subsidize teachers to attend field-based workshops, we believe that we could strongly influence more teachers to be advocates for our science and form a core group that could be used to initiate a change in the way Earth science is seen at their local, regional, and state level.

What does the Program need to increase the impact?

To increase the impact of this remarkable program, GSA is seeking \$200,000 a year for five years.

This funding would be used to:

1. Employ another team member to work on operating teacher workshops and assist in the development of new teaching resources.
2. Travel to teacher conferences around the nation and operate teacher professional development sessions/workshops.
3. Support teachers to attend field-based trips through subsidizing travel costs.

Contributions

Specifically in 2008, we will be seeking donors to help us increase the number of teacher meetings we can attend and CDs we can distribute at no charge. We also hope to create more resources that teachers are asking us for, such as our Teacher CDs (i.e., glaciers, rocks and minerals, geologic evolution) or a rock cycle poster which will include the environments of rock formation as well as the mechanisms. The program would benefit greatly from any single or long-term contributions from donors who care about the Earth science education in this nation.

What about sponsor recognition?

In addition, if individual or corporate sponsors wish to make a substantial contribution to this program, they will be recognized in the following ways:

Program Patron (\$200,000 a year for five years)

- Joint naming rights i.e. GSA – Company Teacher Advocate Program.
- Prominent Logo (equal to GSA) on all written and electronic materials given to teachers and their students
- Prominent Logo/name (equal to GSA) on all display materials at the major teacher meetings attended.
- Company promotional materials included in teacher packages for field experiences.
- Opportunity for a company speaker to give a brief presentation at teacher workshops.

Program Sponsor (\$100,000 - \$75,000 a year for five years)

- Logo on all written and electronic materials given to teachers and students
- Logo/name on all display materials at the major teacher meetings attended.
- Company promotional materials included in teacher packages for field experiences.

Program Supporter (\$50,000)

- Name on all written and electronic materials given to teachers and students
- Name on all display materials at the major teacher meetings attended.

Thank You!

We hope you will consider becoming part of the Teacher Advocate Program to help encourage and assist teachers of Earth science all over the nation.

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