

education and public outreach

Space Science Enterprise education and public outreach goals center on sharing the results of our missions and research programs with wide audiences and using space science discoveries as vehicles to improve teaching and learning at all levels. This is a deliberate expansion of the traditional role of the Enterprise in supporting graduate and postgraduate professional education, a central element of meeting our responsibility to help create the scientific workforce of the future. Our commitment to education now includes a special emphasis on pre-college education and on increasing the general public's understanding and appreciation of science, mathematics, and technology.

treach

Our policy for achieving our education and public outreach goals and objectives is to incorporate education and public outreach as an integral component of all of our activities, both flight missions and research programs. Contributing to education and outreach is the collective responsibility of all levels of Enterprise management and of all participants in the space science program. We focus on identifying

and meeting the needs of educators and on emphasizing the unique contribution space science can make to education and the public understanding of science. Our approach facilitates the effective participation of space scientists in education and outreach activities. Enterprise efforts are a significant element of NASA's overall education program and are aligned with the Agency's efforts to ensure that participation in

NASA missions and research programs is as broad as possible.

The two main elements of our education and public outreach program are support to education in the Nation's schools and informal education and public outreach that benefits both young people and adults.

With limited resources, high leverage is key to building a national pro-

Education and Outreach Implementation Approach

- Integrate education and outreach into Enterprise flight and research programs
- Encourage a wide variety of education and outreach activities
- Help space scientists participate in education and public outreach
- Optimize the use of limited resources by channeling individual efforts into highly leveraged opportunities
- Develop high quality education and outreach activities and materials having local, state, regional, and national impact
- Ensure that the results of our education programs and products are catalogued, archived, and widely disseminated
- Evaluate our activities for quality, effectiveness, and impact



Space science brings together inquiring minds of all ages.

gram that contributes both to improving teaching and learning at the pre-college level and to increasing the scientific literacy of the general public. The Enterprise achieves this leverage in **pre-college education** by building on existing programs, institutions, and infrastructure and by coordinating activities and encouraging partnerships with other ongoing education efforts. Such ongoing efforts include those inside NASA and within other Government agencies, and those being undertaken by non-governmental education organizations. We complement the very large investments in education being made by school districts, individual States, and other Federal

agencies, particularly by the National Science Foundation and the Department of Education. This entails establishing alliances with education-oriented professional societies, state departments of education, urban school systems, education departments at colleges and universities, and organizations that produce science materials intended for national distribution. Our efforts support local, state, and national efforts toward standards-based systemic reform of science, mathematics, and technology education. We use existing dissemination networks and modern information technology to make information and education programs and materials easily accessible.

The other main element of our program, enhancing the general public's understanding of science, develops new connections with **informal education and public outreach organizations** of many different types across the country. Alliances have been established with science museums and planetariums, as well as producers of public radio and television programs.

We will continue to explore new possibilities for partnerships and to experiment with new ways to bring the results of the space science program to teachers, students, and the public. For example, we will expand current partnerships and create new alliances with organizations such as the Boys and Girls Clubs of America, Girl Scouts of America, 4-H Clubs, professional societies for scientists and educators, public libraries, and rural museums.

We have made significant progress in these areas since the previous Enterprise Strategic Plan was released in 1997. We have embedded funded education and public outreach programs in all of our mission and research programs, established dozens of local, regional, and national partnerships, and established a national support network of education and outreach forums and brokers-facilitators (fully described in a separate Enterprise education and public outreach implementation plan).



The Space Weather Center exhibit introduces visitors to space weather and how it affects everyday life. An interactive exhibit, it incorporates near real-time data from NASA missions currently studying the Sun and near-Earth space. (The exhibit is a partnership of the Space Science Institute and NASA Goddard Space Flight Center.)

New education and public outreach efforts will build on these activities and accomplishments. For example, we will:

- Emphasize collaborations with science museums and planetariums. Collectively, these institutions attract more than 100 million visitors per year. They have enormous experience in developing and presenting public education programs. They also have the resources for creating such programs and are playing an increasingly important role in working with the formal education system. We plan to build on strong mutual interests between the Space Science Enterprise and the museum and planetarium community.
- Take advantage of the high technology nature of much of

the Space Science Enterprise's program to develop new materials and new programs in technology education. Many of the technologies being developed for our science program are also of great interest to the public, and we will explore ways to bring our technology as well as our science to the public.

- Develop, in collaboration with the NASA Office of Equal Opportunity Programs, new opportunities for underserved and underutilized groups to participate in space science missions, research, and education and outreach programs.
- Evaluate our education and outreach products and programs for quality and effectiveness. We must understand who our programs are reaching and what impact they are having, both on the formal education

system and on the general public's understanding of science. We will continue to improve our efforts based on regular feedback.

- Be alert for special events and particularly promising opportunities in our scientific program to bring space science to the public and to use space science to improve science, mathematics, and technology education at all levels. For example, our planned long-term program of Mars exploration provides an opportunity to literally "bring the American public along for the ride" and become genuine participants in the adventure of exploring another planet.

The full variety and scope of the Enterprise's current and planned education and outreach activities are described in our 1996 report "Implementing the Office of Space Science Education/Public Outreach Strategy." Our systemic approach, based on a long-term commitment to partnership with existing education and public outreach institutions, is making a significant and durable contribution to education and public understanding of science, mathematics, and technology.