To: The National Space Community  
From: Joseph N. Pelton, George Washington University, Randy Johnson, Embry-Riddle Aeronautical University, Don M. Flournoy, Ohio University  

Subject: WHITE PAPER ON SPACE EDUCATION

On March 27, 2003, 125 people from over 40 companies, government agencies, professional associations and universities met at the National Space Education Workshop, George Washington University, to review current problems and issues in U.S. space education. The findings and recommendations as well as the results of a national survey on this topic are presented below.

The prime objective of the resulting White Paper is to see that key people in leadership positions in the U.S. Congress, the U.S. Government Executive Branch, professional associations, industry, academia and the press have an opportunity to review this important discussion.

Among the key findings and recommendations, Workshop participants felt we needed:

- greater clarity and vision in defining national space goals and objectives in terms of space exploration and sciences, space and national security, space applications, and future manned space missions.
- more “sizzle” and “intellectual interest” in space by the general public in order to obtain broadly based support for space research and exploration and to attract young people to this field.
- a longer-range vision for space education goals and objectives to address such issues as the information explosion, modern electronic information systems, tele-education, life-long learning, and innovative ways educational institutions can work more effectively with government agencies, professional organizations, museums, and industry.
- innovative approaches to science, technology, engineering and management (STEM) education and training, especially at the primary and secondary educational level. U.S., State and Local Government agencies need to better coordinate their efforts and work together toward this end.
- to recognize that the world of space will become increasingly interdisciplinary, international, intercultural and involve private/public partnerships, giving rise to educational and training needs that are not now a part of any one’s curriculum.
- to sharpen educational programs in the U.S. at virtually all levels, to develop “critical thinking skills and analytic capabilities” set in a problem solving and creative “engineering” context.
- to recognize that declining U.S. educational performance in the science, technology, engineering and math fields is due to the lack of qualified teachers at all educational levels. Efforts to upgrade teachers’ skills, educational backgrounds and general capabilities, such as those pursued by the Space Foundation, must be a high priority. The Space Day program at the National Air and Space Museum also serves as a model.
- to pursue new approaches, such as a 1% to 2% set aside for scientific and engineering related education and training that would be included in new governmental contracts (for space and defense related activities), should be considered for urgent implementation.
- to address the challenges of future space educational needs and STEM related disciplines (via such mechanisms as workshops, surveys, cooperative programs, internships, co-ops, scholarships), new forms of cooperative relationships among interest groups should be encouraged within the U.S. Government and all sponsors and participants of the National Space Education Workshop.
- to work with NASA and other federal and state government agencies to insure that existing space education programming, much of which is of high quality, can gain wider distributed via online and video channels.

We hope you will read the full text of the White Paper and discuss it with friends and colleagues. It is available at: www.clarkeinstitute.com, www.sspi.org and www.spacejournal.org You can contact us as follows.

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