the legacy project

Franklin Owens

Many vocational education, technology education, and now technology and engineering education leaders have made their mark on our profession. Their legacy is something that members of the profession enjoy and have a responsibility to continue and build upon.

This is the ninth in a series of articles entitled "The Legacy Project." The Legacy Project focuses on the lives and actions of leaders who have forged our profession into what it is today. Members of the profession owe a debt of gratitude to these leaders. One simple way to demonstrate that gratitude is to recognize these leaders and some of their accomplishments. The focus in this issue will be on Franklin Owens.

What was it about your background and interests that drew you to become one of the strongest supporters of technology, science, and engineering education programs in Washington, DC?

Short answer: (1) my education, (2) previous work experiences, and (3) a desire to develop NASA's education program into a model of how to inspire and attract students into science, technology, engineering, and mathematics (STEM) professions.

My undergraduate and graduate education gave me a foundation and insight into the technology and career education fields. My first job teaching technology and my next as a university researcher in the development of a career education curriculum for middle school students built upon that foundation and provided some expertise in the understanding of science and engineering and in the process of career selection. Next, the opportunity to work at the NASA Langley Research Center and see firsthand the people and processes behind scientific discovery and engineering innovation, instilled within me the desire to translate this fascination to the educational community. Only after more time and numerous career changes was I able to reach a policy position within NASA that afforded me the opportunity to advocate the importance of STEM education within the federal government, the administration, and nationally.

by
Johnny J Moye, DTE and
Franklin Owens

Franklin Owens

FCO Consulting, (2008-Present)

Place of Birth: Arlington, VA

Married to: Rebecca B. Owens

Degrees:

1974: Master of Science in Education, Virginia Tech

1971: Bachelor of Science in Education, Industrial Arts, Virginia Tech

Occupational History:

Associate Executive Director, National Science Teachers Association, 2004-2008

Senior Policy Advisor, Office of Education, NASA HQ, 2002-2004

Director, Education Division, NASA HQ, Washington, DC, 1991-2002

Deputy Director, Education Division, NASA HQ, Washington, DC, 1985-1991

Chief, Resources and Management Branch, NASA HQ, Washington, DC, 1982-1985

Employee Development Specialist, Training and Educational Services Branch, NASA Langley Research Center, Hampton, VA, 1978-1982

Research Associate, College of Education, Virginia Tech; on loan to the NASA Langley Research Center Education Office, 1977-1978

Research Associate, College of Education, Virginia Tech, 1974-1977

Technology Teacher, Roanoke County Public Schools, 1971-1974

During your decades in various administrative levels of NASA's educational programs, you made a tremendous impact on the field of technology and engineering education. What were you trying to accomplish, not only for technology and engineering, but for other subjects such as mathematics, science, social studies, etc.?

While I appreciate the inference, I was only the conductor for a very large and talented orchestra during that period of time.

As I progressed within my career at NASA from an individual performer, a program manager, a manager of people, a manager of managers, to a senior executive, the importance of NASA's mission, the uniqueness of NASA facilities, and the complexity and expertise of our workforce became ingrained within me. It was this three-legged stool that guided me internally in assisting and directing NASA's Education Program during the years 1986-2002. Externally, this was a time when education was on the national agenda, with calls for the U.S. to be "first in the world in science and engineering," national reports like "A Nation at Risk," national standards being developed in K-12 curriculum areas, and questions by Congress as to the federal government's proper role in education.

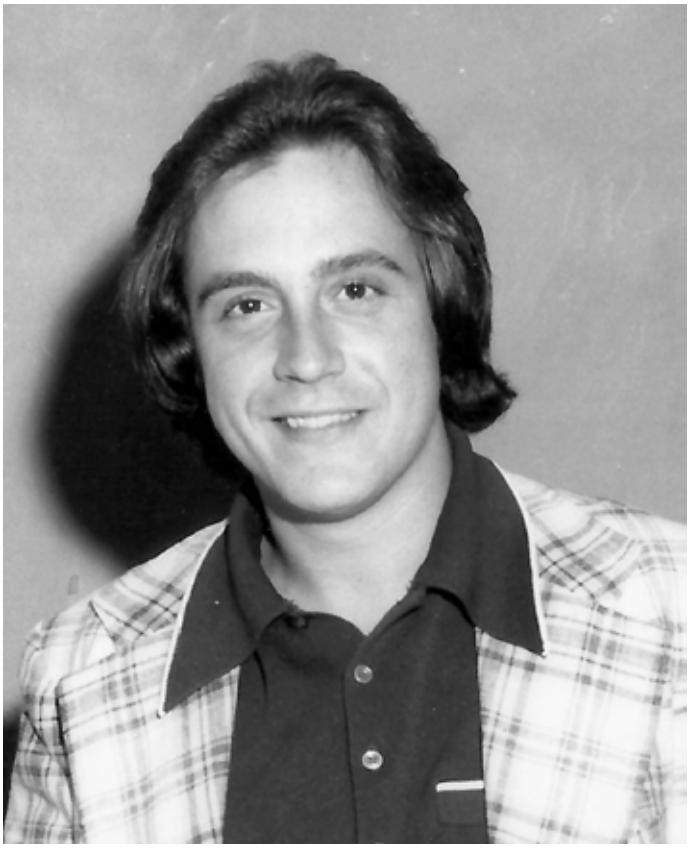
The challenge, therefore, was twofold: ensuring that NASA's educational efforts supported future scientific and technical workforce requirements while also using our unique capabilities to promote excellence in America's educational system by involving the educational community in all of NASA's endeavors.

At the precollege level, we initially sought out partnerships with the leadership of professional education associations representing technology, science, and mathematics. Our task was to better understand the agenda of each association and how NASA might bring its unique resources (mission, facilities, and workforce) to support that agenda. As our efforts grew, we broadened our collaboration with the associations representing reading, geography, and guidance. These collaborations resulted in professional development experiences for teachers, guidance counselors, and school administrators, the development of supplementary curriculum materials, and student involvement programs.

At the higher education level, NASA traditionally had strong research collaborations with colleges and universities throughout the nation. With increased emphasis on our minority university research and education efforts and the congressionally mandated Space Grant College and Fellowship Program, NASA broadened its reach to both populations and institutions heretofore not associated with the NASA mission, resulting in more undergraduate and graduate fellowships, research collaborations, and outreach to the precollege community.

Evaluation studies suggested that these efforts implemented in all 50 states, DC, and Puerto Rico involved over 300 million students/teachers/administrators annually, maintaining a customer excellence rating of 4.65 on a 5-point scale. Perhaps equally important, education became a focus, not an afterthought in all NASA activity.

How did you involve technology educators over the years as you were advancing NASA initiatives (e.g., numerous FL workshops, NASA General Session Speakers, Teacher in Space, Standards implementation workshops, etc.)?



NASA's educational efforts support future scientific and technical workforce requirements while also using our unique capabilities to promote excellence in America's educational system by involving the educational community in all of NASA's endeavors. Early on we realized that central to, and components of, the future scientific and technical workforce were precollege teachers and teacher educators. Additionally, engineering was represented by technology education in the K-12 curriculum. Therefore, involving technology educators in the NASA mission became one important focus of our precollege efforts.

From a policy perspective, it was important to engage the leadership of ITEA (ITEEA) in internal NASA meetings to help our educational leadership and staffs understand both the content and direction of technology education. This included inviting ITEA (ITEEA) senior leadership to be members of advisory committees, working groups, and internal task forces. Also, ensuring that technology teachers were recognized and specifically mentioned in all education announcements of opportunities was a critical policy standard. From a professional development perspective, we worked with ITEA (ITEEA) leadership to identify and invite technology teachers to participate in NASA workshops at the NASA centers, launch conferences, and other NASA-sponsored state-based professional development opportunities. From a curriculum standpoint, funding the development of technology standards (mirroring those developed in math and science) was critical. Once developed, supporting standards implementation workshops and developing standards-based NASA content curriculum support materials reinforced the introduction of the technology standards.

You are given credit for initiating the idea that there was a big need for what was later known as the Technology for All Americans Project and the technological literacy standards. Why was there such a need, and what really happened to allow this project to get the support of NASA and the National Science Foundation?

In February, 1991, The Federal Coordinating Council for Science, Engineering, and Technology, Committee on Education and Human Resources, released it first report, titled "By the Year 2000: First in the World." This report accompanied the President's FY 1992 Budget outlining how the Federal Government could contribute to meeting the National Education Goals for "mathematics and science." As a NASA representative to this comprehensive intergovernmental effort, it became apparent to me there was a need to encourage and facilitate curriculum reform emphasizing the development of education standards. During the 90s we saw the development of the National Council for the Teaching of Mathematics (NCTM) math standards and the National Research Council's science standards. Policymakers at the federal and state levels always talked about the importance of "math, science, and technology," yet there was broad confusion when using the term technology. Most believed the term was about computers and software, not how ITEEA later defined it as "how people modify the natural world to suit their own purposes." At NASA, an exploration agency built upon innovation through technology, we believed that technology was a subject that was equally as important as math and science at the precollege level, and needed the attention and academic rigor to define its content as had been started with math and science. ITEA (ITEEA) was the logical choice to lead this technology standards endeavor.

What big successes, other than the technological literacy standards, did you and your colleagues have at NASA that changed the way that we look at education?

Involvement…involving students and educators in the NASA mission.

Going back to the beginning of NASA in 1958, the idea of involving the educational community in our mission became a necessity as our nation began to define aeronautics and space exploration. One of the first NASA Administrators, James Webb, created the Sustaining University Program in the early 60s that funded universities to train and engage graduate students in NASA-interested disciplines. While, throughout the years, NASA maintained a close working relationship and research programs

with universities, with the implementation of the Space Transportation System/Space Shuttle program in the early 80s we believed it important to involve students and their teachers at the precollege level. This organizational philosophy translated into hundreds of programs that engaged students of all levels, precollege teachers, and teacher educators in NASA missions and activities. Examples included providing national opportunities for students to design and fly an experiment on the Shuttle, opportunities for students and teachers/faculty to design an experiment using seeds flown in orbit, in-depth teacher workshops at NASA centers, and teacher and student participation in space and Earth Science, aeronautics, and human space flight missions. Perhaps the most important statement NASA made about involving educators in the NASA mission was the Teacher-in-Space Program and its follow-on Educator Astronaut Program.

We have seen this organizational philosophy of K-12 student and teacher involvement replicated in other science and technology government agencies and in aerospace and non-aerospace industries.

Thank you Mr. Owens for your service to our great nation and to the technology and engineering profession. The Legacy Project has now interviewed nine very influential leaders. It is beneficial for current (and future) leaders to read about the issues that existed and how they were addressed "back in the day." In a few months the next interview will appear in this journal. If you have a suggestion of a leader to recognize, contact the author with that person's name and contact information.

Johnny J Moye, DTE *recently retired from his position as a Supervisor of Career and Technical Education at Chesapeake Public Schools, Chesapeake, VA. He can be reached at johnnyjmoye@gmail.com.*

Franklin Owens *was a technology teacher, Virginia Tech Research Associate, NASA Langley, Virginia Resources and Management Branch Director and now heads FCO Consulting.*

Be sure to check out the full compliment of Legacy Project articles that are posted on the ITEEA website at www.iteea.org/LegacyProject/44141.aspx#tabs.aspx.