

# 50 years after Sputnik, for science education future is now

BY ALDEMARO ROMERO

When on Oct. 4, 1957, the Soviets launched the first artificial satellite, three major reactions took place in the United States. The first was awe for this scientific achievement; the second was fear that this device could be used for military purposes; and the third was the commitment by the U.S. government to improve science education in the country so we would not lag behind our adversaries of the Cold War.

We beat the Soviets in the race for the moon and also became the world's leader in science and technology (S&T). Yet these days there are signs that the United States is losing its edge in these areas. For example, polls conducted by the National Science Foundation reveal that although the general public regards S&T and scientists in general in high esteem, the same surveys show a great deal of ignorance and misunderstanding about science in this country. Just to give an example, only about half of Americans know that the Earth revolves around the sun once a year.

Other signs are also troubling. The proportion of U.S.-based scientists publishing in top peer-reviewed journals is declining, the Chinese are developing an

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ambitious space program that may place them on the moon before Americans do it again, and other nations are developing aggressive research programs aimed at taking the lead in areas vital to the future of the U.S., from biotechnology, to energy, to informatics.

And this situation may not be a temporary glitch. We see more and more recent high school graduates with poor literacy in basic science. Why is that happening? All signs point at an educational system designed to make students pass a test instead of making sure that their intellectual development is founded on three basic principles: that they actually understand the implications of what they learn, that they develop critical thinking abilities and that they master problem-solving skills.

At this pace we, as a nation, may lose the biggest edge we have had for the last half century — our ability to stay on top as a country in economic development by

means of our scientific and technological progress. We are even seeing how more and more international students are choosing to pursue their college degree in Europe or Australia rather than in the United States as a sign that we are no longer being seen as the logical choice for science education. That weakens our global influence from economics to politics.

What we are facing is a serious leadership issue that has resulted in lack of recognizable goals, visionary planning and appropriate resources to make us an educated society in vital areas — health, energy, food production, environmental issues and new technologies.

In a world ever more complex and rapidly evolving, when it comes to S&T, we need to eradicate mediocrity in science education.

It will be neither easy nor quick but we need to start now. Paraphrasing President John F. Kennedy when explaining the urgency to arrive at the moon before

the Soviets, we should do it not because it is easy but because it is hard, because that goal will serve to organize and measure the best of our abilities and skills.

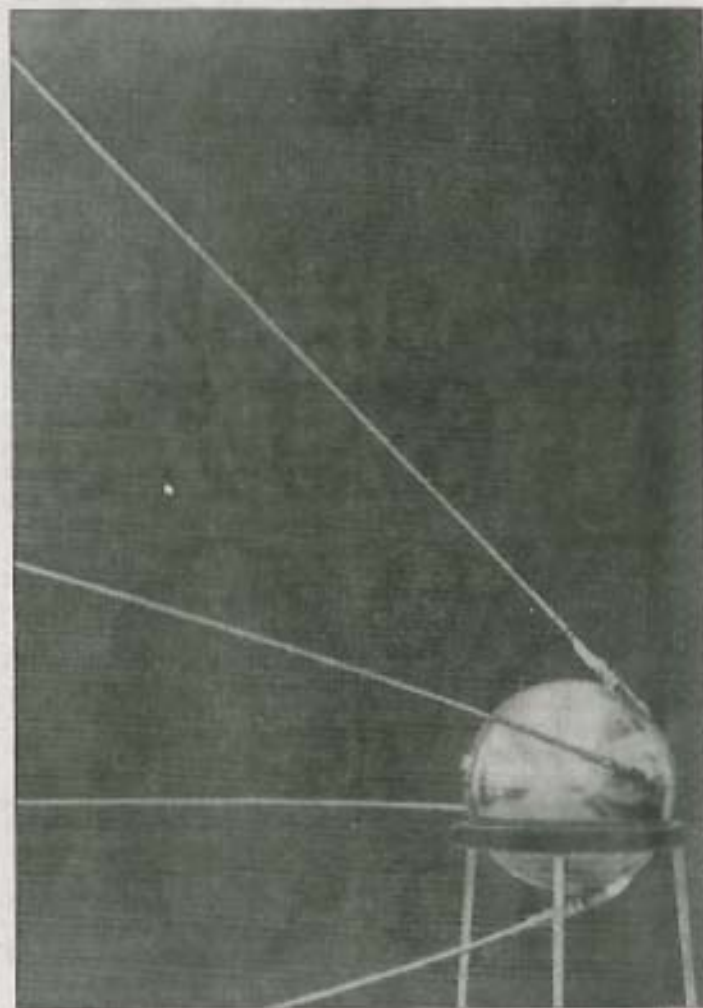
In the same way we made a conscious decision to take the lead in S&T 50 years ago, we need to realize the same vision and develop the same kind of commitment to keep that edge.

The alternatives would be disastrous: a country losing its economic and political weight in the concert of nations, a population more and more ignorant of the issues that affect their health, energy resources, and environmental management, and a place where gossip of the latest scandal of celebrities is more important than our ability to produce citizens who have a full and productive life.

And we do not need another Sputnik to see that would happen if we lose our edge. Many of the greatest civilizations including the Greek, Romans, and Ancient Chinese stopped being great once they became complacent with their cultural advantages.

As the saying goes, the future is now.

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AP PHOTO

This first official picture of the Soviet satellite Sputnik 1 was issued in Moscow Oct. 9, 1957, showing the satellite with its four antennas resting on a pedestal. Working in obsessive secrecy, the Soviets propelled the Sputnik satellite into space on Oct. 4, 1957, making it the first man-made object to reach the limits of the earth's gravity. It also triggered the Space Age and changes to everyday life that people now take for granted.