



E- FRIENDLY FORMAT
SPONSORED BY

SIDEWAYS
NOW PLAYING IN THEATERS

The New York Times
nytimes.com

December 5, 2004

OP-ED COLUMNIST

Fly Me to the Moon

By [THOMAS L. FRIEDMAN](#)

Of all the irresponsible aspects of the 2005 budget bill that the Republican-led Congress just passed, nothing could be more irresponsible than the fact that funding for the National Science Foundation was cut by nearly 2 percent, or \$105 million.

Think about this. We are facing a mounting crisis in science and engineering education. The generation of scientists, engineers and mathematicians who were spurred to get advanced degrees by the 1957 Soviet launch of Sputnik and the challenge by President John Kennedy to put a man on the moon is slowly retiring.

But because of the steady erosion of science, math and engineering education in U.S. high schools, our cold war generation of American scientists is not being fully replenished. We traditionally filled the gap with Indian, Chinese and other immigrant brainpower. But post-9/11, many of these foreign engineers are not coming here anymore, and, because the world is now flat and wired, many others can stay home and innovate without having to emigrate.

If we don't do something soon and dramatic to reverse this "erosion," Shirley Ann Jackson, the president of Rensselaer Polytechnic and president of the American Association for the Advancement of Science, told me, we are not going to have the scientific foundation to sustain our high standard of living in 15 or 20 years.

Instead of doubling the N.S.F. budget - to support more science education and research at every level - this Congress decided to cut it! Could anything be more idiotic?

If President Bush is looking for a legacy, I have just the one for him - a national science project that would be our generation's moon shot: a crash science initiative for alternative energy and conservation to make America energy-independent in 10 years. Imagine if every American kid, in every school, were galvanized around such a vision. Ah, you say, nice idea, Friedman, but what does it have to do with your subject - foreign policy?

Everything! You give me an America that is energy-independent and I will give you sharply reduced oil revenues for the worst governments in the world. I will give you political reform from Moscow to Riyadh to Tehran. Yes, deprive these regimes of the

huge oil windfalls on which they depend and you will force them to reform by having to tap their people instead of oil wells. These regimes won't change when we tell them they should. They will change only when they tell themselves they must.

When did the Soviet Union collapse? When did reform take off in Iran? When did the Oslo peace process begin? When did economic reform become a hot topic in the Arab world? In the late 1980's and early 1990's. And what was also happening then? Oil prices were collapsing.

In November 1985, oil was \$30 a barrel, recalled the noted oil economist Philip Verleger. By July of 1986, oil had fallen to \$10 a barrel, and it did not climb back to \$20 until April 1989. "Everyone thinks Ronald Reagan brought down the Soviets," said Mr. Verleger. "That is wrong. It was the collapse of their oil rents." It's no accident that the 1990's was the decade of falling oil prices and falling walls.

If President Bush made energy independence his moon shot, he would dry up revenue for terrorism; force Iran, Russia, Venezuela and Saudi Arabia to take the path of reform - which they will never do with \$45-a-barrel oil - strengthen the dollar; and improve his own standing in Europe, by doing something huge to reduce global warming. He would also create a magnet to inspire young people to contribute to the war on terrorism and America's future by becoming scientists, engineers and mathematicians. "This is not just a win-win," said the Johns Hopkins foreign policy expert Michael Mandelbaum. "This is a win-win-win-win-win."

Or, Mr. Bush can ignore this challenge and spend the next four years in an utterly futile effort to persuade Russia to be restrained, Saudi Arabia to be moderate, Iran to be cautious and Europe to be nice.

Sure, it would require some sacrifice. But remember J.F.K.'s words when he summoned us to go to the moon on Sept. 12, 1962: "We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win."

Summoning all our energies and skills to produce a 21st-century fuel is George W. Bush's opportunity to be both Nixon to China and J.F.K. to the moon - in one move.