

Commentary

Among science-debate questions put to candidates

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The Pennsylvania state primary is looming, and scientists are planning for presidential candidates to hold a debate on science-related issues April 18 at the Franklin Institute (<http://www.sciencedebate2008.com>).

The scientists have a point. Even though science-related issues are crucial to so many aspects of modern American life, they are grabbing virtually none of the national limelight. We are far from the days of a president like Thomas Jefferson, a scientist-statesman without peer in U.S. history, distinguished as an agronomist, astronomer, botanist, meteorologist, paleontologist and inventor.

A leader more like Jefferson surely would see we are in the midst of a scientific and technological revolution, facing both daunting challenges and incredible opportunities. America's most pressing problems — energy dependence, economic development, climate change, health care, education, national security and foreign

policy — all involve science to crucial degrees.

And science can be involved in addressing those problems. Think of Pennsylvania and its current 4.8 percent unemployment rate. Bringing that rate down will involve bringing more and better science education and research jobs to regions previously focused on factories.

A successful president thus needs to be science-minded. Voters deserve candidates who can answer core science-related questions crucial to our future. Here's the start of a presidential questionnaire.

National Security: The U.S. government has spent billions of dollars on advanced missile-defense systems and now plans to update our nuclear weapons and accelerate development of space-based weapons. Advocates say such advanced technologies are essential to national security. Critics say efforts could provoke global instability and a new nuclear-arms race. What is your view of the best uses of science and technology to help protect citizens?

Climate Change: Leading scientists from 130 countries declared last year that the evi-

dence for human-caused global climate change is "unequivocal" and that we are heading down an increasingly dangerous path. Do you agree? If so, how would you reduce greenhouse-gas emissions and help people adapt to global warming? If you don't agree, what scientific data support your view?

Stem-Cell Research: U.S. surveys show that most respondents believe stem-cell research could someday lead to treatments for a range of illnesses, and they favor researchers' use of human embryos left over after in-vitro fertilization processes. Would you support federal funding for research that used such embryos? If not, what should be done with embryos destined to be discarded?

Education: A comparison of 15-year-olds in 30 wealthy nations found that average science scores among U.S. students ranked 17th, while average U.S. math scores ranked 24th. Should the No Child Left Behind Act be modified to prepare U.S. students better for the 21st-century workforce? Could national science standards improve U.S. students' performance?

Science and Engineering Workforce: Business and science leaders worry that America won't produce enough good scientists, engineers and technicians to compete in the future innovation economy. How would you inspire students and recruit them?

Adult Scientific Literacy: According to the National Science Board, only one-third of Americans believe that evolution is well-supported by scientific evidence. One-third of men and more than half of

women do not know that the Earth revolves around the sun. To what extent, in your view, does scientific illiteracy pose a problem? What would you do to address it?

Space Exploration: Is money being well-spent on America's space program? What goals should the program pursue? Do you favor human missions to the moon and Mars?

Enhanced Humanity: Improved nutrition, health care, and the appropriate use of genetic tech-

nologies might push the human life-span past 120 years. Meanwhile, tiny "nanobots" might someday be implanted into our bodies to repair cell damage. What role should the government play in this research, and what regulations, if any, would you propose?

Want to know what the candidates have said so far about science and technology? Visit <http://election2008.aaas.org>.

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