

Comment

## Not debatable

Gregory A Petsko

Address: Rosenstiel Basic Medical Sciences Research Center, Brandeis University, Waltham, MA 02454-9110, USA.  
Email: [petsko@brandeis.edu](mailto:petsko@brandeis.edu)

Published: 30 April 2008

*Genome Biology* 2008, **9**:104 (doi:10.1186/gb-2008-9-4-104)

The electronic version of this article is the complete one and can be found online at <http://genomebiology.com/2008/9/4/104>

© 2008 BioMed Central Ltd

I just finished doing my income taxes. It only took me five hours, thanks to some good tax-preparation software that helped me navigate the paper maelstrom of forms and regulations. It's always surprising that it takes as long as it does, considering that the result in my case is usually the same as if I'd used a simple two-line form: line 1 - write down your income; line 2 - send the government the amount in line 1.

I had more time to do my taxes than I thought. I expected to take at least a day or two off this month to be involved in, and then watch, the first US presidential debate ever to concern itself entirely with science. But that debate never came off.

In the interest of full disclosure, I should point out that I am the president-elect of the American Society for Biochemistry and Molecular Biology (ASBMB), one of the scientific societies (along with, among others, the National Academy of Sciences, the Institute of Medicine, and the National Academy of Engineering) backing the call for such a debate. The organizers of Science Debate 2008, which began as a petition for a science debate that has so far been signed by almost 40,000 people, had invited the three remaining major presidential candidates, Democrats Barack Obama and Hillary Clinton, and Republican John McCain, to a debate on Friday, 18th April, in Philadelphia; but they were forced to cancel last week because of poor - almost nonexistent, really - response. Barack Obama declined to attend, while both Hillary Clinton and John McCain did not even bother to reply. The candidates have now been sent new invitations for a debate sometime in early May.

The idea of Science Debate 2008 arose in late 2007; it was the brainchild of a group of six people headed by Larry Krauss, a physicist from Case Western Reserve University in Cleveland, Ohio, US, and screenwriter Matthew Chapman. As reported in [physicsworld.com](http://physicsworld.com) (<http://physicsworld.com/cws/home>), among those to have signed the petition are 80 university presidents, more than 100 representatives from various scientific associations, and over 20 Nobel laureates.

Backers of the debate proposal want the presidential candidates to discuss a number of key issues, including:

Inaccurate media coverage of science (which depends, of course, on which media you're referring to).

Poor science education (this is a problem that appears to have gotten worse lately, probably because of relative indifference on the part of many scientists combined with an aggressive, and effective, campaign by the religious right to insinuate itself into local school boards).

Public scientific illiteracy (obviously directly related to the two previous issues).

The current funding crisis (caused by either flat funding or outright funding cutbacks for research).

Insufficient public policy response to climate change and other environmental issues (note the distinction between 'public policy' and 'public' responses - the public has responded vigorously, both through lifestyle changes and local action; the policy makers in Washington have not).

Government suppression of scientific information and misuse of scientific data (a problem that has become particularly serious during the Bush administration).

Not to mention such minor matters as stem cell research, the impact of genomics, health insurance policy, biodiversity loss, the health of the oceans and the morality of balancing destruction of species against human needs and expenses, clean energy research, biofuels and their effect on the food supply, genetically modified organisms and crops, and educating children to compete in the new, technology-driven global economy and securing competitive jobs.

American science is probably in the worst shape it's been in since the 1970s, and yet the candidates can't be bothered to

air their views on the situation. Of course, they're incredibly busy. But somehow they weren't too busy to discuss faith and morals. That's right, on 13th April, both Barak Obama and Hillary Clinton took time out from their overcrowded schedules to appear at the 'Compassion Forum', an event sponsored by Cable News Network (CNN), at Messiah College in Grantham, Pennsylvania, where they fielded questions about subjects such as whether life begins at conception and whether sexual abstinence should be taught to children in school. As an exercise in pandering to people of faith, a constituency that the Democrats have pretty much ignored in recent elections, it was a big success. Whether any of those in attendance or watching on television were made ill by the sight of the possible next President of the United States trying to seem holier-than-thou (where thou was the other candidate) was not reported.

Shawn Lawrence Otto, the CEO of Science Debate 2008, has stated: "For the last 60 years, science and engineering have been responsible for half the growth in the US economy. But if current trends continue, by 2010 90% of all scientists and engineers will live in Asia. Do the candidates have a plan to keep the American economy strong and to tackle America's major challenges like climate change, energy security, education and healthcare, all of which revolve around science?" If they do, they're not saying.

What are they afraid of? One possibility, of course, is that they are all ignorant about science, and they are afraid to have that ignorance exposed. Another possibility is that they are afraid attending such a 'secular' debate will cost them votes among people of faith, who make up a huge percentage of the US electorate. But a third possibility, and one that I favor, is that they aren't afraid; they simply don't care. They either believe there are more important problems (such as Iraq, the economy, and terrorism) that demand nearly all their attention, or they see scientific issues as the whining of a small, specialized group that usually votes Democratic anyway, no matter what any candidate says.

The argument that science and technology are of vital importance to the economic future of the country is one that has been made often, and is one that many Republicans, interestingly enough, have actually bought (the Republican former Speaker of the US House of Representatives, Newt Gingrich, was one of the best friends science has ever had in Washington). It's also one of the main rationales the Science Debate 2008 folks give for having a science debate. But I think there's another argument that has not been made much, if at all - one that might just get the attention of these oh-so-busy candidates. I think science is absolutely essential to national security.

Some of the biggest national security mistakes the US has made, mistakes that have weakened our ability to defend ourselves, have happened because of the ignorance or willful

misuse of science. The Star Wars missile defense program, a multi-billion dollar white elephant of the Regan Administration that the Bush Administration has revived, was argued against by nearly every leading physicist. Both the Bush Administration in the US and the Blair Administration in the UK either misinterpreted or deliberately misrepresented the technological data on the likely existence of weapons of mass destruction in Iraq. The US is spending vastly more money on research against bioterrorism than it is on ways to prevent simple chemical and radioactive material attacks, despite reams of scientific data indicating that the former is much less likely than the latter. The plan to vaccinate the entire population of the US in the event of an outbreak of avian flu is not supported by any serious public health science; not to mention the fact that it completely ignores the high likelihood of severe, possibly fatal, neurological complications in a significant percentage of those vaccinated. The choice of weapons systems for the 'new, modern' military is often made for reasons that have nothing to do with weapons science. The Bush Administration's disregard for the climate crisis was bolstered by a handful of weak scientific studies, not by the overwhelming weight of the best scientific evidence. We simply cannot have a strong, protected democracy if our political leaders are scientifically ignorant, or if they only pay attention to pseudo-science that supports their ideologies.

So if you have a blog, please write about the refusal of the candidates to debate questions of science. Urge them to have the courage to confront one of the most serious crises of our time: the erosion of the US position as a world leader in science and technology and the increasing marginalization of science in matters of policy. If you know anyone on the staff of any of the candidates, call them and beg them to take this seriously. Write letters to the candidates. Write editorials in your local newspaper. Talk with your friends about it. Sign the petition that Science Debate 2008 has prepared; you'll find it, along with much useful information, on their web site (<http://www.sciencedebate2008.com/www/index.php>). You'll also find suggestions for other ways you can help.

This is not some small special-interest group pleading for a government handout. Science is the engine that drives innovation, the light that shines in the moonless night of ignorance and superstition, and the best hope for solutions to most of the serious problems that plague all people, everywhere. If the presidential candidates don't understand that, then our future may be bleak. I suppose we could debate that point. But that the next US President needs to understand the importance of science, communicate that to the public, and use scientific information properly. That point is not debatable.