

Bringing a Long-Term Outlook to Policymaking

Rep. Bill Foster, 14th District of Illinois

I am pleased and honored to have Rep. Bill Foster as a guest columnist this month. In an address before an audience of industry, academia, and science groups that advocate for federal research funding, I heard Foster mention the need for a better understanding of statistics in Congress. His specific example was the supply of world oil, a number that typically comes with no mention of the uncertainty in that estimate. His understanding of the need for statistics in policymaking and his experience of being a PhD scientist recently elected to public office make him an ideal guest columnist.

~ Steve Pierson, ASA Director of Science Policy
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Foster

In America, we are not often surprised when our politics turn ugly. Especially in an election year, all hope for honest and informed discussion of national policy is lost when the debate becomes

personal, a cycle of fiery accusations followed by knee-jerk responses. Both legislators and the public, I think, tolerate this type of discourse at their own peril. Our nation currently faces a range of critical challenges—from energy policy to the credit crunch to immigration reform—that must be addressed with clear-eyed and intelligent debate. Now more than ever, there is a need for science, mathematics, and—most of all—statistics to inform and guide the discussion.

My path to the U.S. House of Representatives was anything but typical. Though I was born to two politically active parents (my older sister's middle name is Adlai in honor of the Illinois senator and democratic lion), I initially pursued other interests, first as a businessman, then as a physicist. For 22 years, I worked at Fermi National Accelerator Laboratory, where I participated in the discovery of the Top Quark and later helped design and build the latest of the lab's giant experimental machines. Similar to many of my colleagues, my political involvement ended each morn-

ing when I put down the newspaper, frustrated with our system and leadership in Washington. These frustrations, however, ultimately led to action, and I was elected last March to fill a seat held for 26 years by Dennis Hastert, the former Speaker of the House.

In Congress, as a scientist and businessman, I am positioned to offer unique insight into not only science policy, but also science's implications for today's economic and social challenges. Too often, political debate—even on the floor of the House of Representatives—is characterized by anecdote, not fact, even though virtually no issue we face today lacks a technical element. The effectiveness of proposed alternative fuels, for example, can be determined only once we understand the technology in question and produce an accurate economic reckoning of the costs. Sadly, the rational, scientific reasoning this requires is often absent. I think the prospect for informed debate about technical issues dims when the debaters themselves—yes, members of Congress among them—do not know the difference between the median and the mean. To correct this, we must find new ways to introduce fact-based reasoning into the process, at least as a starting point in the political debate.

We can begin by not only injecting people with greater technical knowledge and proficiency into our bureaucracy, but also by deliberately electing candidates who are willing to take a longer view of solving our nation's problems. It may reflect a fundamental weakness of our system that politicians rarely focus on anything that does not bring a benefit in the

next election. Indeed, a politician known for forward-looking scientific reasoning may actually be putting himself at risk. The payoff for basic scientific research or education in our country does not occur in the next election; it is 10, 30, or 50 years away, and this seldom makes for a good sound bite. Changing the content and style of the debate will not be easy, but it must happen if we are to address this country's most compelling challenges.

We must also elevate and maintain the level of math, science, and economic education in the United States. Both our nation's competitiveness and the health of our democracy depend on it. Students in the social sciences and humanities should learn statistics and understand that this discipline can be a powerful tool for shaping public policy. Mathematicians and scientists must be willing and empowered to enter public life and lead this nation as it faces new and increasingly complex challenges in the coming decades.

And maybe, just maybe, there's a statistician or two out there willing to join me in Congress. ■

Rep. Bill Foster is one of three PhD physicists in Congress, and had a distinguished scientific career during his 22 years at Fermi National Accelerator Laboratory (Fermilab). A fellow of the American Physical Society, he has earned wide recognition for his scientific accomplishments, including the *Rossi Prize of the American Astronomical Society for Cosmic Ray Physics* for the discovery of the neutrino burst from Supernova SN1987a and awards from the Department of Energy and IEEE. He is also a successful businessman, having co-founded ETC, Inc., a theater lighting company that now manufactures more than half of all the theater lighting equipment in the United States.