

obtain, and advance in a job; how to make, invest, budget, and spend money; how to run a company; and how to start and operate a business. Conventional subjects of reading, writing, arithmetic, and science would be incorporated into the curriculum as they fit the overall structure. Students would be encouraged to get jobs as early as possible and integrate their practical experience into the course.

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No simple cause and effect for glacial melt

The spectacular Back Scatter image “Black Soot and Tibetan Glaciers” (PHYSICS TODAY, February 2010, page 72) is accompanied by a commentary suggesting that black soot from industry on the surrounding subcontinent is warming the lower atmosphere, darkening the glaciers’ surface, and dramatically increasing absorption of solar radiation and the rate of melting. The rate of accretion or ablation of mountain glaciers may be as much a result of precipitation as of surface temperature. Increasing the Himalayan massif’s surface temperature would just as likely enhance the Southeast Asian monsoons and bring more snowfall to the glaciers, thus causing them to grow rather than decay. In considering the complex feedback processes linking the surface to the atmosphere, it is dangerous to speculate on the net result.

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Scientific declarations best left to scientists

Prestigious scientific societies, I have believed since my undergraduate days, exist to serve and promote science. But pronouncements concerning global warming issued by the Royal Society and the American Physical Society in 2007 indicate that some societies appear set on usurping science. To quote Thomas Huxley, “Belief, in the scientific sense of the word, is a serious matter, and needs strong foundation.” That strong foundation can be provided only by the profound examination of nature

by individual scientists and peer assessment of those examinations. For a committee, however distinguished its membership, to pontificate on scientific matters is not only hubris, it is dangerous. Let individual scientists speak and let committees be silent.

The Royal Society and the American Physical Society published endorsements in 2007 of the belief that there is global warming and that it is caused by human-generated carbon dioxide. Those pronouncements were made despite the scientific difficulties of obtaining a reliable quantitative measurement of global warming and of establishing a rigorous causal connection to man-made CO₂ in the atmosphere.

The media does not involve itself directly with scientific literature; it relies on the popular expositions of scientists and, mistakenly but understandably, on pronouncements of scientific societies. But those societies have no authority concerning scientific truth or falsehood. That is the business of individual scientists. It was not the Royal Society that gave the world its first account of gravity, it was Isaac Newton.

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Teaching amid the research obsession

In his review of Joseph Hermanowicz’s book *Lives in Science: How Institutions Affect Academic Careers* (University of Chicago, 2009), Robert Hilborn remarks, “The most important lesson [of the book] is that the science community’s obsession with research as the sole reason for recognition and reward leads to frustration and dissatisfaction when reality fails to match expectations. And that, as the sociologists would put it, ‘leads to anomie’” (PHYSICS TODAY, January 2010, page 48). Although that statement essentially describes my career in physics, I still find it shocking. How can brilliant people be so stupid?

According to the *Random House Dictionary*, 2nd edition (1987), anomie—derived from the Greek word for lawlessness—is a sociological term meaning “a state or condition of individuals or a society characterized by a breakdown or absence of social norms and values, as in the case of uprooted people.” Uprooted people have an understandable excuse. What excuse can

the physics community offer?

The obsession with research as the sole measure of an educator’s worth came close to ruining my career but for the intercession of a few farsighted colleagues in the University of Minnesota physics department who came to my aid and helped me get some recognition and at least some improvement in salary. Today, after decades of work and dedication on my part, and after 10 years of retirement, I am considered a master volunteer teacher in the Osher Lifelong Learning Institute, and I had a similar reputation throughout most of my tenure at the university.

The research obsession is both self-reinforcing and self-destructive. The eroding state of science and science education in the US today is at least partly due to that misguided and harmful attitude in our universities. It has disfigured the humanities into useless imitations of some kind of quantitative science and has made the exact sciences a shadow of what they ought to be as part of liberal education and knowledge. It’s tragic that at a time when science should be setting the standard for truth and understanding, science academics and administrators are too preoccupied with their own self-advancement to play the valuable and important leadership role.

My case is a small example of the problem. My department didn’t recognize the value of my talents and skills, which it could have used in “selling” physics to the lay community. I could have been a central player in efforts to popularize, explain, and spread understanding of physics.

Teaching physics has been so undervalued for so many years that its denigration has become a serious, even self-destructive problem for science and society. Now, when we need science and scientists most, the populace has little understanding of the value of either, and even ridicules science on a regular basis. What have we wrought?

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Notes on Strangest Man

I had just finished reading Graham Farmelo’s biography, *The Strangest Man: The Hidden Life of Paul Dirac, Mystic of the Atom* (Basic Books, 2009), when the December 2009 issue of PHYSICS TODAY arrived, with the interesting review by Babak Ashrafi on page 52. Although I