

Scientists' Responsibility to Society (*Bull. Amer. Meteor. Soc.*, **90**, p.759)

The letter by Pfeffer (*Bull. Amer. Meteor. Soc.*, **89**, p. 1467) asks for more debate on the role of the AMS in the public policy arena. He is concerned that the Society might become yet another advocacy group. I remember entering this debate in youthful protest long ago (*Bull. Amer. Meteor. Soc.*, **57**, p. 460), when the AMS president Dave Atlas proposed that the society should stick to science and leave policy to others. More than thirty years later, the scientific community still lacks clarity on this difficult issue.

The core objective of the Society is certainly to develop and disseminate knowledge; but knowledge does not exist in a vacuum. On the one hand our knowledge of the complex earth system is very incomplete, and on the other, knowledge and science itself is vulnerable to ideological attack. We have seen this in the former Soviet Union and in the United States in the recent decade.

Pfeffer expresses particular concern about the issue of climate change, which has recently been at the center of this conflict in the US, because it directly involves the interaction of economic policy and the earth system. Environmental scientists have a particular responsibility to explain what we know, clarify what we don't know, defend the science against ideological attack, and to map out the likely consequences of societal action or inaction. The timescales of the earth are long; and the full consequences of the delay in greenhouse gas emission reductions by the US will not be known for generations.

Certainly it is familiar and comfortable for scientists to leave these difficult issues to others; but the climate change issue requires an understanding of earth system science; which many in the policy arena lack.

I have walked the line between science and policy during two years as President of the Vermont Academy of Science and Engineering, trying to help Vermont understand the big scientific picture of climate change as it is transforming this northern state. Ironically, some on the political side suggested they are more comfortable listening to advocacy groups than to scientific reality in all its honesty and complexity. As a matter of scientific ethics, this is our role: to present the uncomfortable reality of a complex earth system, whose stability is now threatened by human industrial society. Many in politics would rather ignore this, because there is so much wealth at stake; and the mismatch between legislative terms and the long timescales of the earth system makes this possible.

If the scientific societies do not present the evidence clearly and forcefully, who will? Should it be left to a struggle between lobbying and advocacy groups who have other agendas and rather limited interest in the integrity of the science? Our democratic political system needs to hear from many voices, not just those with narrow self-interests, whether the fossil fuel lobby, or the many environmental groups, or the proponents of an unregulated global financial system. Society needs to hear also from those who see the big picture, which include the science of the earth and its ecosystems, as well as the profound moral issue of our responsibility for the future of the earth.

Science and society are interwoven. Money for research comes from society and with it comes an obligation to share what we learn with society. The scientific agenda is also set partly by us and partly by the society that funds us – with all its political agendas. When we accept money for research to address issues that confront society, our research is interwoven with those political agendas. As professionals we may be comfortable in our silos, but it is an evasion of our responsibility to both humanity and the earth, if we do not tell the truth as far as we know it, in all its richness and complexity. This includes involvement at the interface between science and policy.

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