

some degree of responsibility to educate the public on policy issues: “We have retreated into a situation where scientists are in the ivory tower, slaving away, producing great volumes of work that are undigestible or unreadable to the average person. In areas where there are extremely important questions that society needs to respond to, scientists have to step up to the plate. These global change and environmental issues are just right up there. We have an obligation to spend a certain percentage of our time on outreach, participating in the decision making process.” In the areas of climate change and global warming, Professor Dunbar notes, this obligation to participate in the decision making process becomes a responsibility of the scientist to the community at large (and even the world). The consequences of environmental issues such as global warming will be both considerable and widespread, and proposed solutions must be multilateral.

Yet Professor Dunbar believes that the burden of keeping opinion from scientific evidence cannot be absolute, since opinions and preconceptions often guide the direction of scientific inquiry. He provides a pertinent example: “I think it’s incorrect to think that we shouldn’t

use our opinions, as long as our opinions are based on broader understanding. Here’s one example: How much is CO₂ responsible for [global] warming? We’ve known for a hundred years [that] CO₂ in a little beaker or a little flask will absorb more heat than oxygen and nitrogen together without the CO₂. So we have this simple physics-based understanding of this one small phenomenon...it seems to me that at the very minimum, our starting point should be that we should expect that the larger atmosphere should act similarly unless proven to be otherwise. That’s a really important distinction because it shifts the burden not to us to prove that [greenhouse gases] are having an impact but to others as to why they are not having an impact.”

The Future

The Kyoto Protocol represents a victory for scientists in support of policy change regarding the consequences of

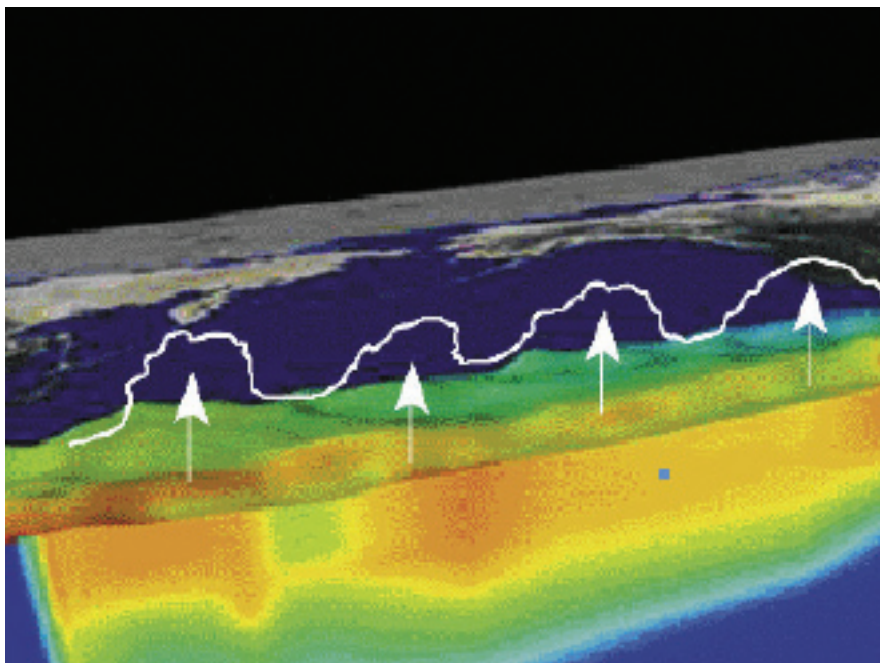
global warming. Though there is currently much debate regarding the actual impact of the protocol in significantly decreasing greenhouse gas emissions, it is nonetheless a long-awaited recognition of human impacts on the environment and an attempt to mitigate the consequences of our actions. The involvement of the international community highlights climate change as a global issue where pollution has become a shared burden on all.

In re-evaluating the Kyoto Protocol, attention has been directed towards developing nations. Industrializing nations are not forced into binding commitments; rather, incentives are being offered to the developing world to avoid pollution altogether. This provision of the Protocol is highly controversial, especially in light of China and India’s

relatively explosive development, and provides yet another opportunity for scientists to play essential roles in policy-making in the near future, not only by providing trends and interpretations of scientific evidence but also by working with experts in myriad fields to fully comprehend the broad implications of policy making.

To prepare scientists for public advocacy roles, Stanford University

will soon implement the Leopold Fellows Program to teach academic scientists how to deal with media and advocacy. The fellows learn how to be effective communicators and influence policy; yet, they also learn not to overstep certain barriers and boundaries. It is this sort of training that will become increasingly crucial for scientists and, in light of the Kyoto Protocol, especially those who realize that environmental issues demand new legislation. The emergence of the program signifies the belief that scientists have an obligation to devote time to informing the public. Hopefully, with time, scientists will realize the persuasive power of sincere advocacy through objective science. **S**



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