

## RETROSPECTIVE

# Stephen Schneider (1945–2010)

Paul R. Ehrlich

Most *Science* readers will know that Steve Schneider was a giant in atmospheric science who made seminal contributions in many areas, ranging from the roles played by cloud feedbacks in the climate system to the impact of aerosol particles in “nuclear winter” scenarios. They will also be aware that he was an indefatigable scientific educator, battling especially to ensure that climate disruption and humans’ role in it were explained properly to the public. They likely know that he was well recognized for his contributions to atmospheric science and public policy. He was awarded a MacArthur Foundation “genius” grant in 1992. He was a contributor to all four of the Intergovernmental Panel on Climate Change (IPCC) reports, and he was co-awarded the Nobel Peace Prize in 2007 for his work on climate change.

A less well-known side of Steve is that he was a stickler for getting the science right, regardless of the politics. When we were doing the nuclear winter studies in the early 1980s, he was constantly working to see that all public statements were as accurate as possible. When he and Starley Thompson reexamined the nuclear winter predictions a few years later, and found them to be less dire, Steve did not hesitate to make the revisions public, which led to the currency of the alternative term “nuclear autumn.” That’s the way he was on all issues. Given new data, he did not hesitate to modify his views.

In the 1970s, we had many discussions of the responsibilities of “public scientists.” We agreed that one must first explain the scientific consensus, then say if you agreed with it (and if not, why not), and then give your personal opinion of what policy choices should be made. Being a scientist does not relieve one of the obligations of a citizen to speak out. In my experience, no scientist felt that obligation more strongly, or showed more dedication and courage in meeting it, than Steve Schneider. To the very last, he worked to educate the public and decision makers, ignoring illness and anonymous death threats from persons who opposed the scientific consensus on climate change.

His interest in the effects of climate dis-

ruption brought him together with Terry Root, a leader in studying its effects on organisms, especially on the distribution and timing of bird migration. Beginning in the 1990s he began to learn all he could about birds, and under Terry’s guidance he quickly became an avid birder. They married and began a long-term collaboration that included influential papers, as well as many bird-watching and environmental exploration expeditions.

Steve also worked with economists and other experts on evaluating the costs and benefits of implementing various solutions to the problems of climate change. He brought attention to efforts that assessed potential impacts of climate change on agriculture, such as drought and soil erosion from flooding, and on public health, such as the spread of tropical disease vectors to higher latitudes.

Steve’s nonscientific enthusiasms, aside from Terry, were many, including bird prints, wine tasting, and good food, accompanied by a fine sense of humor and a love of music. Steve delighted in playing folk songs and rock tunes on his 12-string guitar. He said he started playing as an undergraduate at Columbia in the 1960s when, in his words, “guitar-playing was a substitute for a personality.” He wasn’t shy about singing, despite a less than velvety voice. Steve and Terry hosted many dinners that were followed by spirited guitar-strumming and singing to tunes by Bob Dylan, Simon and Garfunkel, and others. Steve and Stanford environmental economist Larry Goulder collaborated and performed publicly a few original songs as well, including their “Climate Change Blues,” and a warped version of the Beatles’ “When I’m 64.”

In 2001, Steve was diagnosed with mantle cell lymphoma. In his typical fashion, he immediately set out to learn everything about it, ably assisted by Terry. He collaborated

An atmospheric scientist who strove to understand adverse human impacts on climate worked just as hard to educate the general public about them.

with his doctors to design a course of treatment that led to remission. He underwent a bone-marrow transplant, a difficult and painful treatment, but he did more than endure it stoically. Whenever we scrubbed and gowned to visit him in his hospital room, we would

find him sitting up in bed with a computer on his lap and Terry handing him papers, working on e-mail or a manuscript, and ready with a quick joke about his condition.

Knowing him well, I have nonetheless been stunned by the outpouring immediately after his death from fellow scientists and former students testifying to Steve’s generosity in mentoring others. He was always happy to give time to my wife Anne and me, checking our writing on climate for accuracy and explaining fine points of atmospheric physics. I knew how open he was with students, but I didn’t fully realize the scale of his giving. He wrote a book on his medical battle, and

then gave much of his time to counsel others with the ailment. His generosity toward others persisted through years of struggle with a debilitating and eventually deadly disease.

When Anne and I try to sort out our impressions of Steve, his brilliant science doesn’t come first to mind. It’s his rollicking sense of humor, his descriptions of the wine he was serving us, sitting with him and Terry having yak butter tea with the queen of Bhutan, or maybe most of all seeing a tree covered with synchronously flashing fireflies in New Britain when searching for owls with our mutual friend, Tom Lovejoy. Steve was all the usual superlatives—a giant in his field, a wonderful friend, a hero, and more. He was a climate researcher who was also a man for all seasons. His myriad friends will miss him intensely, and so, I’m afraid, will billions of people who never heard of him, whose lives he so determinedly strove to improve.

10.1126/science.1195502



Center for Conservation Biology, Department of Biology, Stanford University, Stanford, CA 94305–5020, USA. E-mail: pre@stanford.edu