



Graphic: Scripps Institution of Oceanography at UC San Diego

Teaching the climate change unit last week in my International Environmental Law and Policy class, I found myself so moved that I started crying at the board. My poor students thought I was in distress. I was simply telling the story of the Keeling Curve. That's a daily record of global atmospheric carbon dioxide concentration devised by Charles Keeling and taken from the Mauna Loa Observatory on Hawaii every day starting in 1958.

Consider this: A young scientist makes a new instrument in his post-doc that measures something fundamental about the Earth with a precision and reliability never before possible; takes it to the top of a mountain in the middle of the Pacific so it can see clearly past local variations; uses it to create an image that shows two profound truths in one picture - one about the living Earth, the annual wiggles as the whole Northern Hemisphere terrestrial biota breathes CO<sub>2</sub> in each spring and out each fall; and one about the global scale of human impact, the trend clearly visible even in the first paper in 1960; and continues that work his whole life, which is now carried on by his son.

### Three reflections on this:

How on Earth can people think science is a dry endeavor, not an experience as infused with emotion as the struggle to create great works of art in other forms?

If there are Gods on Mauna Loa, I would hope they are pleased to have such a glorious story and such an alarming message told from their mountain.

Rage at the vandals in power who would discard this important scientific work as wasteful - and by contrast, reminded of the first director of Fermilab, who was challenged in Senate testimony to say whether knowledge the new lab pursued would help defend America from its (then mostly external) enemies. He replied that, no, it would not, but that it represented one of the things that made America worth defending. And in turn, reminded of the comforting words of an Argentine PhD friend, when I was lost in cultural disorientation shortly after first arriving in this country from Canada: "You must remember about the United States of America, that whatever you say about it, the contrary is also true."