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Jose-Luis Jimenez

What was the 1750, the preindustrial atmosphere, versus now? How much more are the greenhouse gases and the aerosols that bounce the solar radiation back changing the heat budget of the planet? By how much? That's what we call the radiative forcing, . . . the difference in the heat that the earth was getting then versus what it's keeping now. . . . So you keep some heat, then you warm up the planet, right? So it's [the] climate changing.

We know that aerosols affect climate, and we need to understand that. We want to be able to predict what's going to happen in the future, some of the things that we should be doing but are not doing, like cutting carbon dioxide. What impact are they going to have on what pathway we're going to follow, and how are we going to adapt?

Jose-Luis Jimenez is an associate professor of chemistry and a fellow of CIRES (Cooperative Institute for Research in Environmental Sciences) at the University of Colorado, Boulder. Jimenez's work, which uses high-tech, cutting-edge instrumentation, focuses on the measurement of the size, chemical composition, and morphology of aerosols. What do we know about how aerosols affect not only the climate but human health in general? The impact of aerosols on these factors has not been clear historically, but with the help of Jimenez's group new data is being produced and analyzed. Through large-scale, global field studies and in-house programming Jimenez and his team are shedding new light on the processes of our atmosphere.

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Learn more about Jimenez’s global, collaborative research:

- [Jimenez Research Group](#)
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Analyzer

Jimenez was interviewed as part of the [CHF Oral History Program Atmospheric Science Project](#).

What other instruments help scientists sense change in the environment—and how did they develop? Check out CHF’s [methods of sensing change](#).

Watch the five videos above: Jose-Luis Jimenez discusses the potential of data visualization to communicate science; the threat of climate change and the need for long-term thinking; the ways in which political and industry interests influence and sometimes oppose scientific discovery; the ways many types of science work together within atmospheric science; and how visuals help us understand larger concepts tied to smaller details of science. Use the arrows to navigate through the video and images.

NEXT: MURRAY V. JOHNSTON III

Discussion



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Also in this section



RONALD C. COHEN



Ronald C. Cohen is the director of the Berkeley Atmospheric Sciences Center and a professor of chemistry and of earth and planetary sciences at the University of California, Berkeley.



KENNETH J. DAVIS



Kenneth J. Davis is a professor in the Department of Meteorology at Pennsylvania State University. His work bridges physics, instrumentation, chemistry, data analysis, and meteorology: in short, all the topics required to understand the complexity of Earth’s atmosphere.



PETER DECARLO



Peter DeCarlo is an assistant professor in the Department of Civil, Architectural, and Environmental Engineering and the Department of Chemistry at Drexel University. He studies the size and chemical composition of the particulates that affect our air quality and climate.



MURRAY V. JOHNSTON III



Murray V. Johnston III is a professor of chemistry and biochemistry at the University of Delaware. His research focuses on applying mass spectrometry to determine changes in matter, specifically related to problems of atmospheric, environmental, and biological significance.



ALASTAIR LEWIS

We're trying to make sure that the chemicals that are being controlled from emissions are the right ones, and that the technologies that are going to be used are going to be cost-effective, and that the impacts that we're going to get are going to be worth having. Most people can understand that, and actually it's quite easy to demonstrate with experiments how you're going to do that.



DEB A. NIEMEIER



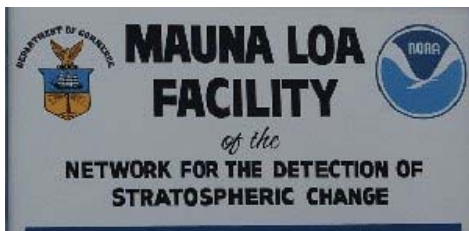
Deb A. Niemeier is a professor in the Department of Civil and Environmental Engineering at the University of California, Davis. Niemeier's research focuses on transportation's effect on air quality and how air-quality policy and transportation are connected.



A.R. RAVISHANKARA



A. R. Ravishankara is the director of the Chemical Sciences Division at NOAA (National Oceanic and Atmospheric Administration) Earth System Research Laboratory in Boulder, Colorado.



PIETER TANS



Pieter Tans is a senior scientist in NOAA's Climate Monitoring and Diagnostics Laboratory.

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