CHEMICAL HERITAGE FOUNDATION

PETER F. DECARLO

Transcript of an Interview
Conducted by

Hilary Domush and Jody A. Roberts

at

Drexel University
Philadelphia, Pennsylvania

on

10 and 11 April 2013

(With Subsequent Corrections and Additions)

CHEMICAL HERITAGE FOUNDATION
Center for Oral History
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(Date) 3/31/2014

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Center for Oral History
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PETER F. DECARLO

1979	Born in West Lafayette, Indiana, on 25 March

Education

2001	BS, *cum laude*, University of Notre Dame, Biochemistry
2007	PhD, University of Colorado, Atmospheric Science

Professional Experience

Paul Scherrer Institute, Switzerland

2008-2010	Postdoctoral Researcher

American Association for the Advancement of Science, Washington, DC

2010-2011	Science and Technology Policy Fellow hosted at US EPA

Drexel University, Philadelphia, PA

2011-present	Assistant Professor, Department of Civil, Architectural, and Environmental Engineering
2012-present	Assistant Professor, Department of Chemistry

Honors

1997	Bausch and Lomb Honorary Science Award
2002	University of Colorado Program in Atmospheric and Oceanic Sciences Fellowship
2005-2007	EPA STAR Graduate Research Fellowship
2007	Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS) IX participant
2008-2010	NSF International Research Postdoctoral Fellowship
2009	Sheldon K. Friedlander Award for Outstanding Doctoral Dissertation from American Association for Aerosol Research
2010-2011	AAAS Science Policy Fellowship

ABSTRACT

Peter DeCarlo grew up in West Lafayette, Indiana, the second of three children. His father is a professor of electrical engineering at Purdue University, and his mother is a kindergarten teacher. Both sisters also have advanced degrees. DeCarlo attended West Lafayette's excellent public schools which offered high school students joint classes with Purdue. He loved chemistry, first becoming interested in pharmaceutical chemistry, which led to a major in biochemistry at the University of Notre Dame, where he received a top-notch undergraduate education. Paul Hallquist, a teacher and mentor, recommended a summer internship at American Cyanamid Company where DeCarlo learned mass spectrometry. After graduation he spent a year in Kenya, during which time he was admitted to the University of Colorado's atmospheric and oceanic sciences department. There he joined Jose-Luis Jimenez's research group and participated in his first field project, MCMA-2003 (Mexico City Metropolitan Area), in Mexico, learning the theory, design, and use of the aerosol mass spectrometer (AMS), and enjoying the excitement and the stress of field work. DeCarlo's next project was in Canada, researching the transport of pollution around the world. He then returned to Mexico for MILAGRO (Megacity Initiative: Local and Global Research Observations), a large project requiring extensive cooperation, collaboration, and coordination.

Having completed the requirements for his PhD, DeCarlo accepted a postdoctoral award from the National Science Foundation to work on chamber studies at the Paul Scherrer Institute in Switzerland. During this time, he also did fieldwork in Spain, France, and Switzerland. Wishing to return to the United States and having become interested in science policy, DeCarlo accepted a fellowship from the American Association for the Advancement of Science, working in the US Environmental Protection Agency. He met his future wife during this time. Eager to return to scientific research, he accepted an assistant professorship at Drexel University in Philadelphia, Pennsylvania.

DeCarlo's research plans include characterizing and developing the mini AMS made by Aerodyne Research, Inc. He remains involved in the Global Alliance for Clean Cookstoves as such stoves, which are widely used around the world, burn solid fuel and produce black carbon. Aerodyne has produced a new soot particle AMS which DeCarlo uses for his black carbon work. He has begun to do atmospheric research on the Marcellus Shale in Pennsylvania and compares the gains from and costs of natural gas and coal. His students' projects include a study of indoor-outdoor pollution, a study of indoor air quality, and black carbon research.

DeCarlo discusses the difficulties inherent in large atmosphere studies, including differences in approaches and data reporting, as well as cultural and temporal differences. He finds his relatively small branch of the MS community collaborative and friendly. He wants to improve the visual representation of science data as a way to increase people's enthusiasm for and understanding of his work. He laments the lack of sufficient funding for science in general and for new satellites and long-term field studies in particular, and decries science illiteracy, especially among policy makers. He talks about the possibility of instruments for ordinary citizens and emphasizes that atmospheric science is not meteorology.

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