

CHEMICAL HERITAGE FOUNDATION

HELEN M. BERMAN

Transcript of an Interview
Conducted by

David N. Berol

at

New Brunswick, New Jersey

on

11 February 2000

(With Subsequent Corrections and Additions)

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HELEN M. BERMAN

1943 Born in Chicago, Illinois, on 19 May

Education

1964 A.B., chemistry, Barnard College
1967 Ph.D., crystallography, University of Pittsburgh

Professional Experience

1967-1969 NIH Traineeship in Biochemical Crystallography, University of Pittsburgh
Fox Chase Cancer Center
1969-1973 Researcher
1973-1978 Assistant Member
1978-1986 Associate Member
1982-1989 Director, Research Computer Facilities
1986-1989 Senior Member
1972-1974 Research Collaborator, Department of Chemistry, Brookhaven National Laboratory
1985-1993 Adjunct Professor of Chemistry, University of Pennsylvania
1992-1997 Adjunct Professor of Crystallography, University of Pittsburgh
Rutgers State University of New Jersey
1989-1999 Professor II, Department of Chemistry and Chemical Biology
Member, Waksman Institute
2000 Board of Governors Professor of Chemistry and Chemical Biology

Honors

1996 Fellow, American Association for the Advancement of Science
2000 Distinguished Service Award, Biophysical Society
2001 Fellow of the Biophysical Society

ABSTRACT

Helen M. Berman begins the interview by discussing her scientific education and how a laboratory internship with Barbara W. Low, while studying at Barnard University, influenced her decision to go into the field of crystallography. After receiving her doctorate at the University of Pittsburgh, Berman went to work for the Fox Chase Cancer Center, where she researched nucleic acid crystallography and drug nucleic acid interactions. Twenty years later, she moved to Rutgers, The State University of New Jersey and expanded her program to include protein crystallography.

Since Berman first entered the field, she was convinced that archiving protein structures and studying their sequences would allow researchers to predict future protein structures, instead of relying on theoretical calculations. In the interview, Berman describes how she shared her views with the leading crystallographer of the period at the 1971 protein crystallography conference at Cold Spring Harbor. Soon after, she began working with Walter C. Hamilton and Edgar Meyer to establish the Protein Databank [PDB] at Brookhaven National Laboratory. At the same time, Crysnet was developed to enable researchers to work on big calculations remotely, from another computer. Berman was the program's prototype user.

Next, Berman talks about the problems that the PDB had in getting researchers to submit their structures. A controversy developed because scientists were afraid of losing control of their work—many did not want to share information. To deal with the different opinions on data deposition, guidelines were developed and agreed to by a consensus. Berman also goes into the crystallographic community's dissatisfaction with the PDB in the late 1980s and early 1990s. To improve its efficiency, funding agencies decided to have researchers compete for funding with different grant proposals. Brookhaven hired Berman's old friend and colleague Joel L. Sussman to stabilize the PDB. He ended up, however, competing against Berman twice for funding and control of the database. Sussman won the first competition, but in 1998, Berman became head of the PDB, which moved from Brookhaven to Rutgers. Berman now successfully manages the database and applies the most modern technology to keep it running smoothly.

INTERVIEWER

David Berol received his Ph.D. in history from Princeton University in 2000. The title of his thesis was "Living Materials and the Structural Ideal: The Development of the Protein Crystallography Community in the 20th Century." Berol is currently an environmental writer for Eastern Research Group.

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