

CHEMICAL HERITAGE FOUNDATION

SETH A. DARST

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

The Rockefeller University
New York City, New York

on

30 April and 1, 3 May 2001

From the Original Collection of the University of California, Los Angeles

ACKNOWLEDGEMENT

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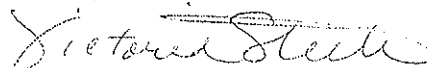
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University and Interviewee have executed this Agreement on the date first written above.

INTERVIEWEE

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA



(Signature)

(Signature)

Seth A. Darst
(Typed Name)

Victoria Steele
(Typed Name)

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Date

5/2/01

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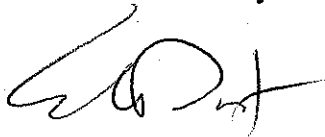
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SETH A. DARST

1960 Born in Alexandria, Virginia on 22 March

Education

1982 B.S., University of Colorado
1984 M.S., Stanford University
1987 Ph.D., Stanford University

Professional Experience

1987-1992 Stanford University
Postdoctoral Fellow, Department of Cell Biology

1992-1997 The Rockefeller University
Assistant Professor, Head of Laboratory

1997-2000 Associate Professor, Head of Laboratory

2000-present Professor, Head of Laboratory

Honors

1990-1996 Lucille P. Markey Award in Biomedical Science

1994-1999 Career Scientist of the Irma T. Hirschl Charitable Trust

1995-1999 Pew Scholar in the Biomedical Sciences

Selected Publications

- Darst, S.A. et al., 1986. Myoglobin adsorption onto crosslinked polydimethylsiloxane. *Journal of Colloid Interface Science* 111:466-74.
- Darst, S.A. et al., 1989. Three-dimensional structure of *Escherichia coli* RNA polymerase holoenzyme determined by electron crystallography. *Nature* 340:730-32.
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- Polyakov, A. et al., 1995. Three-dimensional structure of *Escherichia coli* core RNA polymerase: Promoter recognition and elongation of conformations of the enzyme. *Cell* 83:365-73.

- Malhotra, A., et al., 1996. Crystal structure of an *Escherichia coli* RNA polymerase σ 70 subunit fragment. *Cell* 87:127-36.
- Severinov, K. and S.A. Darst, 1997. A mutant RNA polymerase that forms unusual open promoter complexes. *Proceeding of the National Academy of Science USA* 94:13481-86.
- Zhang, G. and S.A. Darst, 1998. Structure of the *Escherichia coli* RNA polymerase α -subunit N-terminal domain. *Science* 281:262-66.
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ABSTRACT

Seth A. Darst was born in Virginia, where his father was in the Army, but grew up in the Seattle, Washington area, where his father built houses and his mother taught piano. When President Carter's economic policies caused massive inflation and unemployment, Boeing Company let go many workers, and house-building was no longer a profitable business. Darst's father moved the family to Loveland, Colorado, and started another business. Seth and his brother, just a year younger, were "typical" suburban kids, riding bikes, playing baseball, goofing around, sometimes fighting with each other.

Seth's mother taught him to play the piano at an early age, and he became very good. He finished all the classes in his high school early and spent his senior year working for his father. He could not decide at first between music school and engineering school, but the difficulties inherent in a musical career persuaded him to go into chemical engineering at the University of Colorado at Boulder. He had never had to study hard before, but he learned fast in college. By the end of college he had decided that although he did not like the engineering part of chemical engineering, he did not want to go to medical school, so at the last minute he made a few telephone calls and almost accidentally ended up at Stanford University.

A required undergraduate class in biochemistry, taught by Larry Gold and Michael Yarus, had introduced him to the exciting topic of structural biology. At Stanford he worked in Roger Kornberg's lab, continuing his interest in structural biology. Near the end of his master's degree he found electron microscopy and crystallography, his ongoing interests. He was given a Lucille P. Markey Postdoctoral Fellowship, so he was able to remain in Kornberg's lab for an extra two years, just doing what he loved, until he was offered an assistant professorship at Rockefeller University.

Darst's wife, Elizabeth Campbell, was accepted into the graduate program in microbiology at Rockefeller, so the couple and their new daughter moved to New York. Elizabeth finished her PhD and now works in Seth's lab. Seth has progressed through associate professorship to full, tenured professorship, Head of Laboratory. He continues his work in prokaryotic transcription, occasionally traveling to Brookhaven or Argonne National Laboratory. He and Elizabeth balance their work with their family life as well as they can.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Helene L. Cohen, Interviewer, UCLA Oral History Program. B.S., Nursing, UCLA; P.N.P., University of California, San Diego/UCLA; M.A., Theater, San Diego State University.

TIME AND SETTING OF INTERVIEW:

Place: Darst's office, The Rockefeller University, New York.

Dates, length of sessions: April 30, 2001 (93 minutes); May 1, 2001 (99); May 3, 2001 (74).

Total number of recorded hours: 4.4

Persons present during interview: Darst and Cohen.

CONDUCT OF INTERVIEW:

This interview is one in a series with Pew Scholars in the Biomedical Sciences conducted by the UCLA Oral History Program in conjunction with the Pew Charitable Trusts's Pew Scholars in the Biomedical Sciences Oral History and Archives Project. The project has been designed to document the backgrounds, education, and research of biomedical scientists awarded four-year Pew scholarships since 1988.

To provide an overall framework for project interviews, the director of the UCLA Oral History Program and three UCLA faculty project consultants developed a topic outline. In preparing for this interview, Cohen held a telephone preinterview conversation with Darst to obtain written background information (curriculum vitae, copies of published articles, etc.) and agree on an interviewing schedule. She also reviewed prior Pew scholars' interviews and the documentation in Darst's file at the Pew Scholars Program office in San Francisco, including his proposal application, letters of recommendation, and reviews by Pew Scholars Program national advisory committee members. For technical background, Cohen consulted J.D. Watson et al., *Molecular Biology of the Gene*. 4th ed. Menlo Park, California: Benjamin/Cummings, 1987; Bruce Alberts et al., *Molecular Biology of the Cell*. 3rd ed. New York: Garland, 1994; Horace F. Judson, *The Eighth Day of Creation*. New York: Simon and Schuster, 1979; and recent issues of *Science* and *Nature*.

The interview is organized chronologically, beginning with Darst's childhood in Alexandria, Virginia, and continuing through his undergraduate work at University of Colorado, his graduate and postdoctoral work at Stanford University, and the establishment of his own lab at the Rockefeller University. Major topics discussed include his research in the Roger D. Kornberg lab at Stanford, his current research on prokaryotic transcription, and his lab management style.

ORIGINAL EDITING:

Deborah Kolosova, editorial assistant, edited the interview. She checked the verbatim

transcript of the interview against the original tape recordings, edited for punctuation, paragraphing, and spelling, and verified proper names. Words and phrases inserted by the editor have been bracketed.

Darst reviewed the transcript. He verified proper names and made minor corrections and additions.

William Van Benschoten, senior writer, prepared the table of contents. Deborah Kolosova assembled the biographical summary and interview history. Romi Keerbs, editorial assistant, compiled the index.

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