CHEMICAL HERITAGE FOUNDATION

GARY KARPEN

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

Salk Institute for Biological Sciences
La Jolla, California

on

15-17 August 2000

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

ACKNOWLEDGEMENT

This oral history is part of a series supported by a grant from the Pew Charitable Trusts based on the Pew Scholars Program in the Biomedical Sciences. This collection is an important resource for the history of biomedicine, recording the life and careers of young, distinguished biomedical scientists and of the Pew Scholars Program in the Biomedical Sciences Advisory Committee members.

From the original collection at the Center for Oral History Research, UCLA Library, UCLA.

The following oral history, originally processed at the UCLA Center for Oral History Research, has been reformatted by the Chemical Heritage Foundation. The process involved reformatting the front matter, adding a new abstract, replacing the table of contents, and replacing the index. The paragraph spacing and font of the body of the transcript were altered to conform to the standards of the Oral History Program at the Chemical Heritage Foundation. The text of the oral history remains unaltered; any inadvertent spelling or factual errors in the original manuscript have not been modified. The reformatted version and digital copies of the interview recordings are housed at the Othmer Library, Chemical Heritage Foundation. The original version and research materials remain at the Darling Library, University of California, Los Angeles and at the Bancroft Library, University of California, Berkeley.

REFORMATTING:

Marnie Berkowitz, Consultant to the Chemical Heritage Foundation. B.A., Classical Languages and Literatures, University of Minnesota; Ford Foundation Fellowship, Classical Languages and Literatures, University of Chicago.

David J. Caruso, Program Manager, Oral History, Chemical Heritage Foundation. B.A., History of Science, Medicine, and Technology, Johns Hopkins University; PhD., Science and Technology Studies, Cornell University.

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Oral History Interview Agreement No. I 0914023

This Interview Agreement is made and entered into this 14th day of September, 2000 by and between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a California corporation, on behalf of the Oral History Program at the UCLA campus, hereinafter called "University," and GARY H. KARPEN, having an address at Molecular Biology and Virology Laboratory, The Salk Institute for Biological Studies, 10010 North Torrey Pines Road, La Jolla, California 92037, hereinafter called "Interviewee."

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about August 15, 2000, and tentatively entitled "Interview with Gary H. Karpen". This Agreement relates to any and all materials originating from the interviews, namely the tape recordings of the interviews and a written manuscript prepared from the tapes hereinafter collectively called "the Work."

In consideration of the mutual covenants, conditions, and terms set forth below, the parties hereto hereby agree as follows:

1. Interviewee irrevocably assigns to University all his copyright, title and interest in and to the Work. This assignment applies to University, its successors, and assigns, for and during the existence of the copyright and all renewals and extensions thereof.

2. By virtue of this assignment, University will have the right to use the Work for any research, educational, or other purpose, including electronic reproduction, that University may deem appropriate.

3. Interviewee acknowledges that he will receive no remuneration or compensation for his participation in the interviews or for the rights assigned hereunder.

4. Interviewee will receive from University, free of charge, one bound copy of the typewritten manuscript of the interviews.

5. To insure against substantive error or misquotation, Interviewee will have the right to review the manuscript before it is put into final form. University therefore will send Interviewee a copy of the edited transcript for review and comment. Interviewee will return transcript and comments to University within 30 days of receipt of the transcript. In the event that Interviewee does not respond within 30 days, University will assume that Interviewee has given full approval of the transcript.

6. All notices and other official correspondence concerning this Agreement will be sent to the following:

If to University: Oral History Program
University of California, Los Angeles
Box 951575
Los Angeles, California 90095-1575

Attention: Director

If to Interviewee: Gary H. Karpen
Molecular Biology and Virology Laboratory
The Salk Institute for Biological Studies
10010 North Torrey Pines Road
La Jolla, California 92037

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

INTERVIEWEE

X Gary Karpen
(Signature)

Gary H. Karpen
(Typed Name)

The Salk Institute for
Biological Studies
(Address)

10010 North Torrey Pines Road

La Jolla, California 92037

Date 8/16/00

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

Dale E. Treleven
(Signature)

Dale E. Treleven
(Typed Name)

Director, Oral History Program
(Title)

Date 9/14/00

Chemical Heritage Foundation
Oral History Program
315 Chestnut Street
Philadelphia, Pennsylvania 19106

GARY KARPEN

1956 Born in New York City, New York on 5 November

Education

1978 B.S., Brandeis University
1987 Ph.D., University of Washington

Professional Experience

1987-1991 Carnegie Institution of Washington, Department of Embryology
Postdoctoral Fellow

1997-present Salk Institute in the Biological Sciences, Department of Genetics
Associate Professor

Honors

1993-1997 Pew Scholar in the Biomedical Sciences

Selected Publications

Karpen, G.H. and G. Schubiger, 1981. Extensive regulatory capabilities of a *Drosophila* imaginal disk blastema. *Nature* 294:794-47.

McKee, B.M. and G.H. Karpen, 1990. *Drosophila* ribosomal RNA genes function as an X-Y pairing site during meiosis. *Cell* 61:61-72.

Karpen, G.H. and A.C. Spradling, 1992. Analysis of subtelomeric heterochromatin in the *Drosophila* minichromosome Dp1 187 by single P-elements insertional mutagenesis. *Genetics* 132:737-53.

Tower, L.T. et al., 1993. Preferential transposition of *Drosophila* P elements to nearby chromosomal sites. *Genetics* 133:347-59.

Le, M.-H. et al., 1995. Islands of complex DNA are widespread in *Drosophila melanogaster* centric heterochromatin. *Genetics* 141:283-303.

Murphy, T. and G.H. Karpen, 1995a. Interactions between the nod-plus kinesin-like gene and extra-centromeric sequences are required for transmission of a *Drosophila* minichromosome. *Cell* 81:139-48.

Murphy. T. and G.H. Karpen, 1995b. Localization of centromere function in a *Drosophila* minichromosome. *Cell* 82:599-609.

Karpen, G.H. et al., 1996. Centric heterochormatic and the efficiency of achiasmate meiotic disjunction in *Drosophila* females. *Science* 273, 118-22.
Sun, X. et al., 1997. Molecular structure of a functional *Drosophila* centromere. *Cell* 91:1007-19.
Adams, M.D. et al., 2000. The genome sequence of *Drosophila melanogaster*. *Science* 287: 2185-95.

ABSTRACT

Gary Karpen was born in New York City but grew up in Norwood, New Jersey. His older sister became an astrophysicist and his younger brother an MD/PhD who does both research and clinical work. His father joined the army at the age of 17 to fight in World War II, coming home severely wounded. Forgoing the GI Bill, Gary's father did not go to college but went into his father's construction business. When he was in his 50's Mr. Karpen sold his business, got an education degree, and became a teacher of high-school shop. Karpen's mother was a college graduate and eventually got a PhD in library science. Karpen's grandparents were Orthodox Jews, so his family was observant, though tending more toward Conservative Judaism, and being Jewish was very important in Karpen's youth.

In junior high school Karpen had an excellent biology teacher who fired his interest in that subject. In high school Karpen also liked French and English, particularly enjoying reading classical science fiction. He says he procrastinated and did not work especially hard, but he was nevertheless assigned to the honors track. Because Brandeis was strong in pre-med and because Karpen loved biology, he decided to apply for early acceptance, successfully, as it turned out. There he discovered that the "tinkering" he and his father had done together over the years resolved into a love of solving puzzles, of figuring out how things worked or fit together, and he knew he did not want to practice medicine but to be a researcher.

From Brandeis he went to the University of Washington to be a technician in Gerold Schubiger's lab. He spent three years in this position before crossing the bridge to the genetics department for graduate school, where he worked in Larry Sandler's and Charles Laird's labs, transforming ribosomal genes into flies. He also met and married Monica Medina, and they had their first child during these years.

From Seattle the Karpens went to Washington, D.C., where Karpen had accepted a postdoc at the Carnegie Institution of Washington, working on centromeres in Allan Spradling's lab. Another child, a daughter, made her appearance during this time.

After his postdoc, Karpen took a position at the Salk Institute for Biological Studies in La Jolla, California. There he established his own lab, and he teaches the occasional course. He continues quite happily to work on heterochromatin chromosome inheritance and centromere identity; to explore his Jewish heritage; to seek funding; to publish his work; to mentor the people in his lab; and to hang out with his children.

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: Karpen's office, at the Salk Institute for Biological Studies, La Jolla, California

Dates, length of sessions: August 15, 2000 (118 minutes); August 16, 2000 (108); August 17, 2000 (118).

Total number of recorded hours: 5.7

Persons present during interview: Karpen 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 Karpen 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 Karpen'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; and 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 Karpen's childhood in New York City and continuing through his undergraduate work at Brandeis Universisty, his graduate work at University of Washington, his postdoc at Carnegie Institution of Washington, and the establishment of his own lab at Salk Institute in the Biological Sciences [sic], La Jolla, California. Major topics discussed include his early schooling, his project in the Laird lab of transforming ribosomal genes into flies, and his current research on heterochromatin, chromosome inheritance, and centromere identity.

ORIINAL EDITING:

Stephen Wilson and Deborah Truitt, editorial assistants, edited the interview. They 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 editors have been bracketed.

Karpen did not review the transcript and therefore some names have not been verified.

William Van Benschoten, senior writer, prepared the table of contents. Deborah Truitt, editorial assistant, assembled the biographical summary and interview history. Gail Ostergren, editor, compiled the index.

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