CHEMICAL HERITAGE FOUNDATION

YI ZHONG

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

Cold Spring Harbor Laboratory

on

30-31 August and 2 September 1999

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 Pew Biomedical Scholar Advisory Committee members.

This oral history was completed under the auspices of the Oral History Project, University of California, Los Angeles (Copyright © 2001, The Regents of the University of California) and is made possible through the generosity of

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:

Kim Phan, Program Intern, Oral History, Chemical Heritage Foundation. B.A. expected 2011, Anthropology, Cornell University.

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. T0913990

This Interview Agreement is made and entered into this 13th day of September, 1999 by and between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a California corporation, on behalf of the Oral History Program a the UCLA campus, hereinafter called "University," and YI ZHONG, having an address at Center for Learning and Memory, Cold Spring Harbor Laboratory, P.C Box 100, Cold Spring Harbor, New York 11724, hereinafter called "Interviewee.

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about August 30, 1999, and tentatively entitled "Interview with Yi Zhong". This Agreement relates to an and all materials originating from the interviews, namely the tape recordings of the interviews and a written manuscript prepared from the tapes, hereinaft collectively called "the Work."

In consideration of the mutual covenants, conditions, and terms set fort 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 University, its successors, and assigns, for and during the exis..n 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.

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: Yi Zhong
Center for Learning and Memory
Cold Spring Harbor Laboratory
P.O. Box 100
Cold Spring Harbor, NY 11724

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

INTERVIEWEE

(Signature)

Yi Zhong
(Typed Name)

Cold Spring Harbor Laboratory
(Address)

Cold Spring Harbor, NY 11724

Date 8/30/99

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

(Signature)

Dale E. Treleven
(Typed Name)

Director, Oral History Program
(Title)

Date September 13, 1999

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

The Chemical Heritage Foundation (CHF) serves the community of the chemical and molecular sciences, and the wider public, by treasuring the past, educating the present, and inspiring the future. CHF maintains a world-class collection of materials that document the history and heritage of the chemical and molecular sciences, technologies, and industries; encourages research in CHF collections; and carries out a program of outreach and interpretation in order to advance an understanding of the role of the chemical and molecular sciences, technologies, and industries in shaping society.

YI ZHONG

1958 Born in Ji Shou, China on 3 October

Education

1982 B.S., Department of Nuclear Engineering, Tsinghua University
1984 M.S., Department of Biological Sciences and Biotechnology, Tsinghua University
1991 Ph.D., Department of Biological Sciences, University of Iowa

Professional Experience

University of Iowa
1991-1992 Postdoctoral Fellow, Department of Biological Sciences

Cold Spring Harbor Laboratory
1992-1995 Staff Investigator
1995-1997 Senior Staff Investigator
1997-1999 Associate Investigator
1999-present Associate Professor

Honors

1994 Pew Scholar in the Biomedical Sciences
1997 Young Investigator Award, National Neurofibromatosis Foundation

Selected Publications

Zhong, Y., 1995. Mediation of PACAP-like neuropeptide transmission by coactivation of Ras/Raf and cAMP signal transduction pathways in *Drosophila*. *Nature* 375:588-92.

Zhong, Y. and L.A. Pena, 1995. A novel synaptic transmission mediated by a PACAP-like neuropeptide in *Drosophila*. *Neuron* 14:527-36.

The, I. et al., 1997. Rescue of *Drosophila* NF1 mutant phenotype by protein kinase A. *Science* 276:791-94.

Guo, H.F. et al., 1997. Requirement of *Drosophila* NF1 for activation of adenylyl cyclase by PACAP3 8-like neuropeptides. *Science* 276:795-98.

Wright, N.J. and Y. Zhong, 1998. Serotonin-sensitive leakage channel in *Drosophila* central

neurons. *Journal of Neurobiology* 34:83-95.
Hannan, F. and Y. Zhong, 1999. Second messenger systems underlying plasticity at the neuromuscular junction. *International Review of Neurobiology* 43:119-38.
Zhong, Y. et al., 1999. Analysis of C-cadherin regulation during tissue morphogenesis with an activating antibody. *Journal of Cell Biology* 144:351-59.
Zhang, G.I. et al., 2000. Influence of membrane physical state on the lysosomal proton permeability. *Journal of Membrane Biology* 175:53-62.
Sun, Y. et al., 2000. Phylogenetic study of Artemia from China using RAPD and AFLP markers. *Acta Genetica Sinica* 27:210-18.
Zhong, Y. et al., 2000. Guinea-pig sympathetic neurons express varying proportions of two distinct P2X receptors. *Journal of Physiology* 523 :391-402.

ABSTRACT

Yi Zhong was born in Ji Shou, Hunan Province, China, shortly before the Cultural Revolution began. His father had been a sort of director of an Army athletic program and his mother an internist in a government hospital, but when Yi was about eight the Cultural Revolution reassigned his parents, his father to a school for reeducating administrators and his mother to a farm. Yi and his sister and brother lived with their maternal grandparents; their parents visited when they could. Yi feels that he was somewhat isolated as a youngster and sometimes rebellious. At some point the whole family was sent to a farm about forty miles from the grandparents, and they had to walk the whole way there.

Yi felt that his schools were not especially good because education was not valued, except for science classes. He had only basic subjects in school, but because he valued knowledge he studied on his own. He always liked mathematics and physics.

After Yi finished high school he was assigned to a farm to live. There he designed and made a radio, on which he heard about the protesters in Tiananmen Square in 1976, the beginning of the end of the Cultural Revolution. Deng Xiaoping came into power and reestablished the primacy of education, reinstituting entrance to college by examination. Yi was accepted at Tsinghua University in Beijing. He was so excited he left all his possessions at the farm and hitchhiked home, from there taking to Beijing a train so packed he could not even get to the restroom.

In college Yi had no choice of subject but was assigned to study nuclear engineering. There he also first learned about space exploration, music, philosophy, even Chinese novels. Yi went to the movies (where he met his future wife); he played Go and bridge; he tasted his first beer. He met Mu-Ming Poo, who recommended Yi to Chun-Fang Wu at the University of Iowa as a PhD student. When Yi received his bachelor's degree he wanted to change subjects to biology because he found physics hard and biology more intuitive.

Yi suffered severe culture shock when he arrived in the United States. He marveled at Americans' personal freedom, especially because he could determine his own future, not have it assigned to him. He began his work with Aplysia, spending three years analyzing excitability. He was really interested in the brain, however, in learning memory, and switched to *Drosophila*. After finishing his PhD he accepted an offer of his own lab – no postdoc – at Cold Spring Harbor Laboratory. He visits China once or twice a year; he collaborates and intends to set up his own parallel lab there. Yi feels that it has taken him several years and a number of changes (he gets bored) of subject to reach his professional goals. He likes his coworkers at Cold Spring Harbor and their work; he hopes that opening a lab in China will provide more and cheaper manpower and that the two labs can exchange postdocs. He feels that he has three things he still wants to study: the brain; Alzheimer's disease; and learning enhancement. And, he adds, a fourth thing: he wants to write a book about the nervous system of the fly.

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: Zhong's office, Cold Spring Harbor Laboratory.

Dates, length of sessions: August 30, 1999 (106 minutes); August 31, 1999 (101); September 2, 1999 (108).

Total number of recorded hours: 5.25

Persons present during interview: Zhong 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 Zhong 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 Zhong'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 Zhong's childhood in Ji Shou, China, and continuing through his undergraduate and graduate work at Tsinghua University, his doctoral work at University of Iowa, and the establishment of his laboratory at Cold Spring Harbor. Major topics discussed include his childhood during the Cultural Revolution in China, his interest in learning memory in *Drosophila*, and his present work on neural plasticity.

ORIGINAL EDITING:

Ji Young Kwon, 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.

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

William Van Benschoten, editor, prepared the table of contents. Kwon assembled the biographical summary and interview history. Victoria Simmons, editorial assistant, compiled the index.

TABLE OF CONTENTS

INDEX