CHEMICAL HERITAGE FOUNDATION

DAVID J. JULIUS

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Neil D. Hathaway

at

The University of California, San Francisco
San Francisco, California

on

20, 23, 27, and 31 July 1993

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.

This oral history was completed under the auspices of the Oral History Project, University of California, Los Angeles (Copyright © 1997, The Regents of the University of California) and is made possible through the generosity of

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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. R010703D

This Interview Agreement is made and entered into this 7 day of January, 2003 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 DAVID J. JULIUS, having an address at Department of Cellular and Molecular Pharmacology, University of California, San Francisco, Box 0450, HSW 1201G, 513 Parnassus Street, San Francisco, CA 94143-0450, hereinafter called "Interviewee."

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about July 20, 1993, and tentatively entitled "Interview with David J. Julius. 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 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: Janice L. Reiff

If to Interviewee:

David J. Julius
Department of Cellular and
Molecular Pharmacology
University of California
San Francisco
Box 0450, HSW 1201G
513 Parnassus Street
San Francisco, CA 94143-0450

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

INTERVIEWEE

X _____
(Signature)

David J. Julius
(Typed Name)

Department of Cellular and Molecular Pharmacology
(Address)

University of California, San Francisco

San Francisco, CA 94143-0450

X Date 12/06/02

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

Janice L. Reiff
(Signature)

Janice L. Reiff
(Typed Name)

Interim Director, Oral History Program
(Title)

Date 7 January 2003

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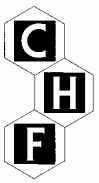

DAVID J. JULIUS

1955	Born in Brooklyn, New York on 4 November

Education

1977	B.S., Massachusetts Institute of Technology
1984	Ph.D., University of California, Berkeley

Research Appointments

1984-1987	Postdoctoral Fellow, Institute of Cancer Research, Columbia University

Professional Experience

1987-1989	Associate, Howard Hughes Medical Institute, College of Physicians and Surgeons, Columbia University
1989-present	Assistant Professor, University of California, San Francisco

Honors

1976	Eloranta Research Fellow, Massachusetts Institute of Technology
1981	University of California Graduate Studies Award
1984-1987	Fellow, Jane Coffin Childs Memorial Fund for Medical Research
1990-1994	Pew Scholar in the Biomedical Sciences

Selected Publications

Julius, D.J. et al., 1979. Isomeric specificity of aminoacylation of wheat germ transfer ribonucleic acid and the specificity of interaction of elongation factor Tu with aminoacyl transfer ribonucleic acid. *Biochemistry,* 18:604-9.

Julius, D.J. et al., 1983. Yeast alpha-factor is processed from a larger precursor polypeptide: The essential role of a membrane-bound dipeptidyl aminopeptidase. *Cell,* 32:839-52.

Julius, D.J. et al., 1984. Glycosylation and processing of prepro-alpha-factor through the yeast secretory pathway. *Cell,* 36:309-18.

Julius, D.J. et al., 1984. Isolation of the putative structural gene for the lysine-arginine-cleaving endopeptidase required for processing of yeast prepro-alpha-factor. *Cell,* 37:1075-89.

Julius, D.J. et al., 1988. Isolation of a functional cDNA clone encoding the rat serotonin 1c

receptor. *Science,* 241:558-64.
Julius, D.J. et al., 1988. Functional expression of the 5HT1c receptor in neuronal and non-neuronal cells. In *Cold Spring Harbor Symposia on Quantitative Biology: Molecular Biology of Signal Transduction,* 53:385-93.
Julius, D.J. et al., 1989. Ectopic expression of the serotonin 1c receptor and the triggering of malignant transformation. *Science,* 244:1057-61.
Julius, D.J. et al., 1990. The 5HT2 receptor defines a family of structurally distinct but functionally conserved serotonin receptors. *Proceedings of the National Academy of Sciences,* 87:928-52.
Julius, D.J., 1990. Serotonin receptors: Signal transduction and cell growth. In *The Alfred Benzon Symposium 29: Neuropeptides and Their Receptors,* eds. T.W. Schwartz, L.M. Hilsted, and J.F. Rehfeld. Copenhagen: Munksgaard, 285-98.
Julius, D.J., 1991. Molecular biology of serotonin receptors. *Annual Review of Neuroscience,* 14:335-60.
Tecott, L.H. and D. Julius, 1993. A new wave of serotonin receptors. *Current Opinion in Neurobiology,* 3:310-15.

ABSTRACT

David J. Julius was born and grew up in the Brighton Beach section of Brooklyn, New York, where he lived with his parents and two brothers, one older and one younger. His father was an engineer and his mother an elementary-school teacher. Julius attended the local grammar school, but he tested into Peter Stuyvesant High School in Manhattan. He commuted there for a year before deciding that though the social and entertainment life in Manhattan surpassed those in Brooklyn, he preferred to go to the local high school, Abraham Lincoln High School. He was interested early in the sciences, although he did not particularly enjoy school. He attended Massachusetts Institute of Technology, where he received his BS in 1977. He then obtained his PhD from University of California at Berkeley in 1984. He was a postdoctoral fellow at the Institute of Cancer Research at Columbia University; he then was an associate at the Howard Hughes Medical Institute at Columbia University. In 1989 he was appointed assistant professor at the University of California at San Francisco, where he remains. He is the winner of a number of awards, including the Pew Scholar in the Biomedical Sciences award, and has published many papers. Julius's major areas of interest include yeast genetics, the secretory pathway, *Xenopus* and *Aplysia*, neurobiology, electrophysiology, mouse genetics, and the serotonin receptor. He is married to Holly A. Ingraham.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Neil D. Hathaway, Interviewer, UCLA Oral History Program. B.A., English and History, Georgetown University; M.A. and C.Phil., History, UCLA.

TIME AND SETTING OF INTERVIEW:

Place: Julius's office, University of California, San Francisco.

Dates, length of sessions: July 20, 1993 (85 minutes); July 23, 1993 (90) ; July 27, 1993 (75) ; July 31, 1993 (109).

Total number of recorded hours: 6

Persons present during interview: Julius and Hathaway.

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.

In preparing for this interview, Hathaway, in consultation with the director of the UCLA Oral History Program and three UCLA faculty project consultants, developed a topic outline to provide an overall interview framework. Hathaway then held a telephone preinterview conversation with Julius to obtain extensive written background information (curriculum vitae, copies of published articles, etc.) and agree on a research and interviewing timetable. Hathaway further reviewed the documentation in Julius'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 general background on the recent history of the biological sciences, Hathaway consulted such works as: J.D. Watson et al., *The Molecular Biology of the Gene.* 4th ed. 2 vols. Menlo Park, CA: Benjamin/Cummings, 1987; Lubert Stryer, *Biochemistry.* 3d ed. New York City, New York: W.H. Freeman, 1988; *The Journal of the History of Biology;* H.F. Judson, *The Eighth Day of Creation: Makers of the Revolution in Biology.* New York City, New York: Simon and Schuster, 1979; and recent issues of *Science, Nature,* and *Cell.*

The interview is organized chronologically, beginning with Julius's childhood and education in Brooklyn and continuing through his undergraduate education at Massachusetts Institute of Technology, graduate work at University of California, Berkeley, postdoc at Columbia University, and the establishment of his own laboratory at University of California, San Francisco. Major topics discussed include yeast genetics, the secretory pathway,

Xenopus and *Aplysia,* neurobiology, electrophysiology, mouse genetics, and the serotonin receptor.

ORIGINAL EDITING:

Vimala Jayanti, editor, 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.

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

Steven J. Novak, senior editor, prepared the table of contents. Jayanti drew up the biographical summary. Kristian London, assistant editor, assembled the interview history. Gregory M. Beyrer, editorial assistant, compiled the index.

TABLE OF CONTENTS

INDEX

L

M

N