CHEMICAL HERITAGE FOUNDATION

PAUL D. GOLLNICK

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Andrea R. Maestrejuan

at

The State University of New York, Buffalo
Buffalo, New York

on

12-14 October 1998

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.

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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. 70126992

This Interview Agreement is made and entered into this 27th day of January, 1999 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 PAUL D. GOLLNICK, having an address at Department of Biological Sciences, State University of New York at Buffalo, Buffalo, New York 14260, hereinafter called "Interviewee."

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about October 12, 1998, and tentatively entitled "Interview with Paul D. Gollnick". 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:

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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:
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University of California, Los Angeles
P.O. Box 951406
Los Angeles, California 90095-1406

Attention: _____

If to Interviewee:
Paul D. Gollnick
Department of Biological Sciences
State University of New York at Buffalo
Buffalo, New York 14260

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

INTERVIEWEE

Paul Gollnick
(Signature)

Paul D. Gollnick
(Typed Name)

Department of Biological Sciences

State University of New York at Buffalo
(Address)

Buffalo, New York 14260

Date 10-12-98

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

Dale E. Treleven
(Signature)

Dale E. Treleven
(Typed Name)

Director, Oral History Program
(Title)

Date 1/27/99

Pew Scholars in the Biomedical Sciences

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Paul Gollnick

Paul D. Gollnick, Ph.D.

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PAUL D. GOLLNICK

1958 Born in Pullman, Washington on 6 December

Education

1981 B.S., Washington State University
1986 Ph.D., Iowa State University

Professional Experience

Stanford University
1986-1990 Postdoctoral Fellow

State University of New York at Buffalo
1990-1996 Assistant Professor
1996-present Associate Professor

Honors

1986-1989 American Cancer Society Postdoctoral Fellowship
1990 American Heart Society Postdoctoral Fellowship
1993-1997 Pew Scholarship in the Biomedical Sciences

Selected Publications

Gollnick, P. and C. Yanofsky, 1990. $tRNA^{Trp}$ translation of leader peptide codon 12 and other factors that regulate expression of the tryptophanase operon. *Journal of Bacteriology* 172: 3100-3107.

Gollnick, P. et al., 1990. The *mtr* locus is a two gene operon required for transcription attenuation in the *trp* operon of *Bacillus subtilis. Proceedings of the National Academy of Sciences USA* 87:8726-30.

Yanofsky, C. et al., 1991. Physiological studies on tryptophan transport and tryptophanase operon induction in *Escherichia coli. Journal of Bacteriology* 173:6009-17.

Antson, A.A. et al., 1993. The three-dimensional structure of tyrosine phenol-lyase. *Biochemistry* 32:4195-206.

Otridge, J. and P. Gollnick, 1993. MtrB from *Bacillus subtilis* binds specifically to *trp* leader RNA in a tryptophan dependent manner. *Proceedings of the National Academy of Sciences USA* 90:128-32.

Antson, A.A. et al., 1995. The three-dimensional structure of *trp* RNA-binding attenuation protein. *Nature* 374:693-700.

Baumann, C. et al., 1996. Kinetic and thermodynamic analysis of the interaction between TRAP (*trp* RNA-binding attenuation protein) and *trp* leader RNA from *Bacillus subtilis. Journal of Biological Chemistry* 271:12269-74.

Yang, M. et al., 1997. Alanine-scanning mutagenesis of *Bacillus subtilis trp* RNA-binding attenuation protein (TRAP) reveals residues involved in tryptophan binding and RNA binding. *Journal of Molecular Biology* 270:696-710.

Baumann, C. et al., 1997. The *trp* RNA-binding attenuation protein (TRAP) from *B. subtilis* binds to unstacked *trp* leader RNA. *Journal of Biological Chemistry* 272:19863-69.

Xirasagar, S. et al., 1998. RNA structure inhibits the TRAP (*trp* RNA-binding attenuation protein)-RNA interaction. *Journal of Biological Chemistry* 273:27146-53.

Chen, X.-P. et al., 1999. Regulatory features of the *trp* operon and the crystal structure of the *trp* RNA-binding attenuation protein from *Bacillus stearothermophilus.* In press.

ABSTRACT

Paul D. Gollnick was born and mostly raised in Pullman, Washington. For one year when he was about 10 (or else in eighth grade) he and his family lived in Stockholm, Sweden, where his father was on sabbatical. Because his father was a scientist, an exercise physiologist, Paul was, from a young age, disposed to enter science himself. Reinforcing that desire were hours spent helping his father in his father's lab, and a high-school chemistry teacher who also inspired him. Paul's mother was a musician and music teacher but was unable to interest any of her children in music. Paul was not adept at most sports, he says, but he did take up and continues to enjoy golf.

When he was deciding about college, he had to stay in state for financial reasons; he chose Washington State because he believed they had better science programs. He decided to major in biochemistry because he had discovered an interest in biology as well as chemistry and thought that biochemistry nicely combined the two. Biochemistry majors were new around the country at that time, so he felt also that the field would be dynamic and exciting. As an undergraduate he worked in Bruce McFadden's laboratory, producing an enzyme inhibitor. Realizing that working in pure science would require a graduate degree, he entered Iowa State University.

At Iowa State Gollnick had hoped to work with Stanley Cox, who was studying gene expression in HeLa cells, but Cox was not headed for tenure, so Gollnick ended up working for Jack Horowitz. In Horowitz's lab Gollnick worked on nucleic acids and tRNA. Though he was frustrated at having to use the old-fashioned nuclear magnetic resonance technique because Horowitz had declared, "No recombinant DNA in my centrifuge," Gollnick says that, "…in retrospect it was fine." While at Iowa State Gollnick met and married Sandra Oppel, a classmate. Together they went to Stanford, where for four years, Gollnick did postdoc work in Charles Yanofsky's lab and Sandra worked for DNAX. Gollnick's research was going nowhere, so when she left the lab, Mitzi Yukoda gave Gollnick her work on subcloning and sequencing *mtrb*.

With Yanofsky's permission and with TRAP (*trp* RNA-attenuation protein) in hand, Gollnick applied for faculty positions. He accepted an assistant professorship at SUNY Buffalo, and his wife was able to find a job at Roswell Park Cancer Center. Gollnick continues his study of TRAP in *B. subtilis* and his collaborative work with Robert S. Phillips on tryptophanase. He has since become an associate professor and received tenure. Gollnick teaches a great deal and likes it very much. He also continues to publish and to work occasionally at the bench.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Andrea R. Maestrejuan, Interviewer, UCLA Oral History Program; B.A., History, University of California, Irvine, 1988; B.S., Biological Sciences, University of California, Irvine, 1986; M.A., History, University of California, Riverside, 1991; C.Phil., History, University of California, Riverside.

TIME AND SETTING OF INTERVIEW:

Place: Gollnick's office, State University of New York at Buffalo.

Dates, length of sessions: October 12, 1998 (83 minutes); October 13, 1998 (126); October 14, 1998 (130).

Total number of recorded hours: 5.6

Persons present during interview: Gollnick and Maestrejuan.

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, Maestrejuan held a telephone preinterview conversation with Gollnick 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 Gollnick' 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, Maestrejuan consulted J.D. Watson et al., *Molecular Biology of the Gene.* 4th ed. Menlo Park, CA: Benjamin/Cummings, 1987, Bruce Alberts et al.,*Molecular Biology of the Cell.* 3rd ed. New York: Garland, 1994.

The interview is organized chronologically, beginning with Gollnick' s childhood in Pullman, Washington, and continuing through his undergraduate work at Washington State University, his graduate work at Iowa State University, his postdoc at Stanford University, and the establishment of his own lab at State University of New York at Buffalo.

Major topics discussed include subcloning and sequencing of *mtrb;* Gollnick's identification of the *trp* RNA-binding attenuation protein; and the funding of science in the United States.

ORIGINAL EDITING:

Cecily Hurst, 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.

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

William Van Benschoten, editor, prepared the table of contents, biographical summary, and interview history. Hurst compiled the index.

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