CHEMICAL HERITAGE FOUNDATION

# GREGORY S. PAYNE

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Neil D. Hathaway

at

UCLA Center for the Health Sciences
Los Angeles, California

on

12, 22, and 27 September and 16 November 1992

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.



**From the original collection at the Center for Oral History Research, UCLALibrary, 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. R921009

This Interview Agreement is made and entered into this 12th day of October, 1992 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 GREGORY S. PAYNE having an address at UCLA Department of Biological Chemistry, Room 33-257 Center for the Health Sciences, Los Angeles, California, 90024-1737, hereinafter called "Interviewee."

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about September 12, 1992, and tentatively entitled "Interview with Gregory S. Payne". 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 : Office of Intellectual Property Administration
University of California, Los Angeles
405 Hilgard Avenue
Los Angeles, California 90024-1406

Attention: Ms. Carli V. Rogers
Copyright Officer

If to Interviewee: Gregory S. Payne
UCLA Department of Biological Chemistry
Room 33-257 Center for the Health Sciences
Los Angeles, California 90024-1737

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

INTERVIEWEE

X _____
(Signature)

Gregory S. Payne
(Typed Name)

UCLA Department of
Biological Chemistry

Room 33-257 CHS
(Address)

Los Angeles, CA 90024-1737

Date 9/22/97

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

_____
(Signature)

Carli V. Rogers
(Typed Name)

Copyright Officer
(Title)

Date October 12, 1992

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

**GREGORY S. PAYNE**

1953 Born in San Francisco, California, on 14 July

## Education

1977 B.S., Cell Biology with honors in Drama, University of Michigan
1982 Ph.D., Biochemistry, University of California, San Francisco

## Professional Experience

University of California, Berkeley
1982-1987 Postdoctoral Fellow, Department of Biochemistry

University of California, Los Angeles, School of Medicine
1987-present Assistant Professor, Department of Biological Chemistry

## Honors

1971-1972 Regents Scholarship, University of Michigan
1977-1978 Regents Scholarship, University of California
1982-1985 Jane Coffin Childs Memorial Fund for Medical Research
1982-1985 American Cancer Society, California division
1988-1992 Pew Scholars Program in the Biomedical Sciences

## Selected Publications


Payne, G.S. et al., 1981. Analysis of avian leukosis virus DNA and RNA in bursal tumors: Viral gene expression is not required for maintenance of the tumor state. *Cell,* 23:311-22.

Payne, G.S. et al., 1982. Multiple arrangements of proviral DNA and an activated cellular oncogene *c-myc* in bursal lymphomas. *Nature,* 295:209-14.

Payne, G.S. and R. Schekman1985. A test of clathrin in protein secretion and cell growth. *Science,* 230:1009-14.

Payne, G.S. and R. Schekman, 1986. The role of clathrin in yeast cell growth and protein transport. In *Yeast Cell Biology,* ed. J. Hicks. New York: Alan R. Liss, Inc.

Payne, G.S. et al., 1987. Genetic and biochemical characterization of clathrin-deficient yeast. *Molecular and Cellular Biology,* 7:3888-98.

Payne, G.S. et al., 1988. Protein transport to the vacuole and receptor-mediated endocytosis by

clathrin-deficient yeast. *Journal of Cell Biology*, 106:1453-61.
Payne, G.S. and R. Schekman, 1989. Clathrin: A role in the intracellular retention of a Golgi membrane protein. *Science*, 245:1358-65.
Payne, G.S., 1990. Genetic analysis of clathrin function in yeast. *Journal of Membrane Biology*, 106:93-105.

## ABSTRACT

**Gregory S. Payne** was born in San Francisco, California, but was raised, after a brief stint in Silver Spring, Maryland, in Ann Arbor, Michigan, the oldest of three siblings. Both of his parents were scientists: his mother had a PhD in physiology, though took time off to raise her children before returning to a professorship in the Departments of Obstetrics and Gynecology and of Biological Chemistry at the University of Michigan; his father received his MD, then went to Walter Reed Army Medical Center to study viruses and to the University of Michigan for postdoctoral work with Thomas Francis, Jr., before accepting a position in the Department of Epidemiology at the university. Excepting the loss of one of his sisters to leukemia, Payne had what he considered a relatively normal childhood, playing with friends, and playing hockey, tennis, and the violin. Payne's parents insisted that he have a well-rounded education; he rarely went to his parents' labs.

He entered the University of Michigan as an undergraduate and took part in an experimental program there called the Residential College. He took all the classes he needed for a degree in biochemistry but he concentrated almost exclusively on theater, particularly by his third year. Under the auspices of writing a senior thesis, Payne went to New York to study theater and then returned to Ann Arbor to look for positions in local theater companies. When nothing came from his search, he decided to get a job at a lab to make some money. He started as a dishwasher, but then was allowed to assist in making preparations for research into the movement of amino acids from the outside to the inside of the cell, specifically growing tumors in mice. He changed his major from theater to biology and decided to go to graduate school.

He matriculated at the University of California, San Francisco in the Department of Biochemistry and Biophysics and did a rotation hybridizing nucleic acids in John D. Baxter's lab, but then moved on to work with Harold E. Varmus and J. Michael Bishop studying RNA tumor viruses, specifically looking at how Rous-associated virus causes tumors. While there he collaborated with chicken geneticist Lyman B. Crittenden and experienced the lab's adoption of Edward M. Southern's blotting technique and other recombinant DNA technologies. From San Francisco Payne went on to a postdoctoral position with Randy Schekman at the University of California, Berkeley, trying to recreate in the test tube the process of transporting a protein from the Golgi apparatus to the vacuole, also developing an interest in clathrin's role in the secretory process. He took a reverse genetics approach, used antibodies to identify clathrin, and discovered that knocking out the clathrin gene did not kill cells, disputing successfully Sandra K. Lemmon and Elizabeth W. Jones's work. He then left Berkeley to start his own lab at the University of California, Los Angeles, researching proteins involved in cell transport.

The interview concludes with his thoughts on the Pew Scholars Program in the Biomedical Sciences grant and the importance of flexible funds; his collaboration with Frances M. Brodsky (Pew Scholar Class of 1988); overcoming skepticism about the significance of yeast analogies; how creative scientists identify the most promising approach and organism to solve a problem; and the relevance of research. At the end of the interview, Payne talks about becoming a principal investigator and a teacher; training his investigators to withstand criticism; the importance of basic science research; the value of competition in science; his mother's career as a scientist.

## 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:** The office of David I. Meyer, UCLA Center for the Health Sciences.

**Dates, length of sessions:** September 12, 1992 (83 minutes); September 22, 1992 (126); September 27, 1992 (124); November 16, 1992 (40).

**Total number of recorded hours:** 6.25

**Persons present during interview:** Payne 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 five-year Pew scholarships, from 1988 through 1992. 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 an in-person preinterview conversation with Payne 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 Payne'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: W.H. Freeman, 1988; *The Journal of the History of Biology;* and H.F. Judson, *The Eighth Day of Creation: Makers of the Revolution in Biology.* New York: Simon and Schuster, 1979.

The interview is organized chronologically, beginning with Payne's childhood and education in Ann Arbor, Michigan, continuing through his work at the University of Michigan, the University of California, San Francisco, and the University of California, Berkeley, and concluding with his career at UCLA. Major topics discussed include research on transcriptional enchancers in tumor viruses, protein transport in the Golgi apparatus of yeast cells, gene knockouts, issues of laboratory management, teaching biology and training scientists, and the role of open-ended research questions in biomedical research.

ORIGINAL EDITING:

Steven J. Novak, editor, edited the interview. He 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.

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

Novak also prepared the table of contents, biographical summary, interview history, and index.

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