CHEMICAL HERITAGE FOUNDATION

# MARK WINEY

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Andrea R. Maestrejuan

at

University of Colorado
Boulder, Colorado

on

14-16 September 1998

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


# Mark Winey

**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 © 1999, 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:

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. T0126 99R

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 MARK WINEY, having an address at Department of Molecular, Cellular and Developmental Biology, University of Colorado at Boulder, Campus Box 347, Boulder, Colorado 80309-0347, hereinafter called "Interviewee."

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about September 14, 1998, and tentatively entitled "Interview with Mark Winey". 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:

Office of Research Administration
University of California, Los Angeles
P.O. Box 951406
Los Angeles, California 90095-1406

Attention: _____

If to Interviewee:

Mark Winey
Department of Molecular, Cellular and Developmental Biology
University of Colorado at Boulder
Campus Box 347
Boulder, Colorado 80309-0347

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

INTERVIEWEE

(Signature)

Mark Winey
(Typed Name)

University of Colorado at Boulder
(Title)

Campus Box 347
(Address)

Boulder, CO 80309-0347

Date 4/14/98

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

(Signature)

Dale E. Treleven
(Typed Name)

Director, Oral History Prpgram

Date 1/27/99

# Pew Scholars in the Biomedical Sciences

Chemical Heritage Foundation Internet Posting Release Form

I, Mark Winey, Ph.D., hereby request that my wishes be followed as per the checked selection below with regards to posting portions of the digital copy of the audio-taped interview of me and the related written transcript on the internet for non-commercial, educational use only.

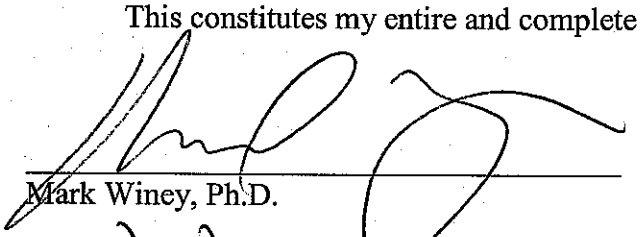
**Please check one:**

a. X **No restrictions for Internet Posting.**
**NOTE:** Users citing this interview for purposes of publication are obliged under the terms of the Chemical Heritage Foundation Oral History Program to obtain permission from Chemical Heritage Foundation, Philadelphia, Pennsylvania.

b. _____ **Semi-restricted Internet Postings** (My review of the material intended to post is required.)

c. _____ **Restricted access.** (Do not post.)

This constitutes my entire and complete understanding.



Mark Winey, Ph.D.

2/21/08

Date


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

**MARK WINEY**

1961 Born in Chicago, Illinois on 14 June

## Education

1983 B.S., Syracuse University
1988 Ph.D., University of Wisconsin-Madison

## Professional Experience

University of Washington, Department of Genetics
1988-1991 Postdoctoral Fellow

University of Colorado, Boulder, Department of Molecular, Cellular, and Developmental Biology
1991-1998 Assistant Professor
1998-present Associate Professor

## Honors

1984-1987 National Institutes of Health Graduate Trainee in Molecular and Cellular Biology
1988-1991 National Institutes of Health Postdoctoral Fellowship
1993-1996 American Cancer Society Junior Faculty Research Award
1993-1997 Pew Scholar in the Biomedical Sciences
1993-1998 National Science Foundation Young Investigator Award

## Selected Publications


Winey, M. and M.R. Culbertson, 1988. Mutations affecting the tRNA-splicing endonuclease activity of *Saccharomyces cerevisiae. Genetics* 118:609-17.

Winey, M. et al., 1991. *MPS1* and *MPS2:* Novel yeast genes defining distinct steps of spindle pole body duplication. *Journal of Cell Biology* 114:745-54.

Winey, M. et al., 1993. *NDC1:* A nuclear periphery component required for yeast spindle pole body duplication. *Journal of Cell Biology* 122:743-51.

Winey, M. et al., 1995. Three-dimensional ultrastructural analysis of the *Saccharomyces cerevisiae* mitotic spindle. *Journal of Cell Biology* 129:1601-16.

Weiss, E. and M. Winey, 1996. The *Saccharomyces cerevisiae* spindle pole body

duplication gene *MPS1* is part of a mitotic checkpoint. *Journal of Cell Biology* 132:111-23.
Hardwick, K.G. et al., 1996. Activation of the budding yeast spindle assembly checkpoint without mitotic spindle disruption. *Science* 273:953-56.
Schutz, A.R. et al., 1997. The yeast *CDC37* gene interacts with *MPS1* and is required for proper execution of spindle pole body duplication. *Journal of Cell Biology* 136:969-82.
Winey, M. et al., 1997. Nuclear pore complex number and distribution throughout the *Saccharomyces cerevisiae* cell cycle by three-dimensional reconstruction from electron micrographs of nuclear envelopes. *Molecular Biology of the Cell* 8:2119-32.
Luca, F.C. and M. Winey, 1998. *MOB1*, an essential yeast gene required for completion of mitosis and maintenance of ploidy. *Molecular Biology of the Cell* 9:29-46.
Chial, H.J. et al., 1998. *Saccharomyces cerevisiae* Ndc1p is a shared component of nuclear pore complexes and spindle pole bodies. *Journal of Cell Biology* 143:1789-1800.
O'Toole, E.T. et al., 1999. High voltage electron tomography of spindle pole bodies and early mitotic spindles in the yeast *Saccharomyces cerevisiae*. *Molecular Biology of the Cell* 10:2017-31.
Jones, M.H. et al., 1999. Yeast Dam1p is required to maintain spindle integrity during mitosis and interacts with the Mps1p kinase. *Molecular Biology of the Cell* 10:2377-91.

## ABSTRACT

**Mark Winey** was born in Chicago, Illinois, where his father was finishing a Master's degree in chemistry at the University of Chicago. Some months later the family moved back to the suburbs of Philadelphia, Pennsylvania, near where both parents had grown up. Mark was followed by two sisters. The elder Winey finished a PhD in chemistry at the University of Pennsylvania, and has worked on the bench at a research laboratory ever since. Mark's mother was at home with her children until they were established in school, at which time she began teaching English in the high school district where Mark and his sisters went to school. She also obtained a degree in counseling, and Mark likes to laugh that she practiced on the kids.

For the most part, the family had a good upper-middle-class life in Bucks County, attending the local public schools and being active in their Presbyterian church. Mark's initial interest in genetics, however, resulted from his younger sister's galactosemia; she was very ill as an infant, and she was eventually sent to the Children's Hospital of Philadelphia (CHOP), where the uncommon genetic trait was diagnosed. CHOP was one of few places where this diagnosis could have been made. When he was in high school Mark, who had always been determined to be a scientist, took many science classes, which he thinks were excellent, and a number of liberal arts classes that he liked as well. His ninth-grade biology teacher cemented his determination to go into biology. During high school he also began his enduring love of the outdoors, spending much time climbing, camping, and hiking; he even held a part-time job at an outdoor-equipment store.

These two interests combined in Syracuse University, where he could major in biology, but where SUNY Stony Brook also had its forestry school. Soon, though, he settled on just biology, working on blue-green algae in James Smith's laboratory. A class in microbiology taught by Ernest Hemphill convinced him that yeast was his research subject, and he maintains that love. Winey met his future wife at Syracuse and developed many friendships there as well.

Yeast took him to graduate school at the University of Wisconsin, where he worked with Michael Culbertson. His love for yeast he explains as having three reasons: it has good genetics; it is a good teaching medium; and it has applications to the study of human disease.

For his postdoctoral work he and his by-then wife, Mary Darlington, went to the University of Washington, where he worked in the Breck Byers laboratory, studying centrosomes, screening for mutations that affect spindle pole body duplications. From Byers' lab he accepted a faculty position at the University of Colorado, taking his work with him. There he continues to do research on MPS1, MPS2, and NDC1; to write grants; to recruit graduate students; teach; and to write papers. He also must balance his work with his wife and three children, and they continue their outdoor activities.

## UCLA INTERVIEW HISTORY

INTERVIEWER:

Andrea R. Maestrejuan, Interviewer, UCLA Oral History Program; 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:** Winey's office, University of Colorado.

**Dates, length of sessions:** September 14, 1998 (94 minutes); September 15, 1998 (105); September 16, 1998 (142).

**Total number of recorded hours:** 5.7

**Persons present during interview:** Winey 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 Winey 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 his 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 and Bruce Alberts et al., *Molecular Biology of the Cell.* 3rd ed. New York: Garland, 1994.

The interview is organized chronologically, beginning with Winey's childhood in Philadelphia, Pennsylvania, and continuing through his undergraduate work at Syracuse University, his graduate work at University of Wisconsin-Madison, his postdoc at University of Washington, and the establishment of his own lab at University of Colorado. Major topics discussed include the impact of his sister's galactosemia on his career choice; his study of tRNA splicing in Michael R. Culbertson's lab; the use of brute force screening to identify unknown genes; Winey's research on *MPS1*, *MPS2,* and *NDC1;* and his use of computer technology in studying cell biology.

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.

Winey 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.

## TABLE OF CONTENTS

# INDEX