

CHEMICAL HERITAGE FOUNDATION

**SAMUEL M. KUNES**

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview  
Conducted by

Helene L. Cohen

at

Harvard University  
Cambridge, Massachusetts

on

15-17 November 1999

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

## ACKNOWLEDGEMENT

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If to Interviewee: Samuel M. Kunes  
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University and Interviewee have executed this Agreement on the date first written above.

INTERVIEWEE

THE REGENTS OF THE UNIVERSITY  
OF CALIFORNIA

*Samuel M. Kunes*  
(Signature)

*Dale E. Treleven*  
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Date

Nov 16/99

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## SAMUEL M. KUNES

1957 Born in Trenton, New Jersey in December

### Education

1981 B.S., University of Oregon  
1988 Ph.D., Molecular Biology, Massachusetts Institute of Technology

### Professional Experience

1988-1992 Massachusetts Institute of Technology  
Postdoctoral Fellow, Department of Biology

Harvard University, Department of Biochemistry and  
Molecular Biology

1993-1999 Assistant Professor  
1999-present Associate Professor

### Honors

1988 Damon Runyon-Walter Winchell Foundation Scholarship  
1994-1998 Pew Scholars Program in the Biomedical Sciences Grant

### Selected Publications

- Kunes, S. and H. Steller, 1991. Ablation of *Drosophila* photoreceptor cells by conditional expression of a toxin gene. *Genes Development* 5:970-83.
- Kunes, S. et al., 1993. Independent guidance of retinal axons in the developing visual system of *Drosophila*. *Journal of Neuroscience* 13:752-67.
- Kunes, S. and H. Steller, 1993. Topography in the *Drosophila* visual system. *Current Opinions in Neuroscience* 3:53-59.
- Kaphingst, K. and S. Kunes, 1994. Pattern formation in the visual centers of the *Drosophila* brain: Wingless acts via decapentaplegic to specify the dorsoventral axis. *Cell* 78:437-48.
- Huang, Z. and S. Kunes, 1996. Hedgehog, transmitted along retinal axons, triggers neurogenesis in the developing visual centers of the *Drosophila* brain. *Cell* 86:411-22.
- Huang, Z. and S. Kunes, 1998. Signals transmitted along retinal axons in *Drosophila*: Hedgehog signal reception and the cell circuitry of lamina cartridge assembly. *Development* 125:3753-64.

- Huang, Z. et al., 1998. A retinal axon fascicle uses Spitz, an EGF receptor ligand, to construct a synaptic cartridge in the brain of *Drosophila*. *Cell* 95:693-703.
- Kunes, S., 1999. Stop or go in the target zone. *Neuron* 22:639-40.
- Kunes, S., 2000. Axonal signals in the assembly of neural circuitry. *Current Opinions in Neurobiology* 10:58-62.



## ABSTRACT

**Samuel M. Kunes** was born in Trenton, New Jersey, in 1957, the second of four siblings. His father was a public accountant for the state of New Jersey; his mother was a school teacher who later became a social worker. Kunes was mostly uninterested in school as a child and struggled to find direction after high school. His decision to drive across the country after high school graduation brought him to the town of Corvallis, Oregon, where he would begin to realize his academic potential.

Kunes attended Oregon State University until eventually transferring to the University of Oregon where he earned his Bachelor of Science degree in 1981. During this time he discovered his own interest in the sciences and did research at Cold Spring Harbor Laboratory. Kunes then applied to graduate school programs and successfully matriculated into a Ph.D. program at the Massachusetts Institute of Technology where he performed research in David Botstein's lab and Maurice S. Fox's lab. These graduate school years steered Kunes toward the study of genetics, in which field he earned his Ph.D. in 1988. He was awarded a postdoctoral fellowship in Hermann Stellar's lab at the Massachusetts Institute of Technology, where he studied the nervous system development of *Drosophila*, using what was then the very advanced technology of confocal microscopy.

In 1993 Kunes accepted an assistant professorship in the Department of Biochemistry and Molecular Biology at Harvard University and was promoted to associate professor in 1999. His current research at Harvard focuses on tracing the intricate steps and control of axonal development in fruit flies.

Throughout his oral history Kunes points out his aesthetic approach to science and the importance of remaining interested in the craftsmanship of scientific discovery. He has won several awards, including the Damon Runyon-Walter Winchell Foundation Scholarship and a Pew Scholars Program in the Biomedical Sciences Grant.

## 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:** Kunes's office, Harvard University..

**Dates, length of sessions:** November 15, 1999 (97 minutes); November 16, 1999 (86); November 17, 1999 (23).

**Total number of recorded hours:** 3.6

**Persons present during interview:** Kunes 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' 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 Kunes 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, 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 Kunes's childhood in Trenton, New Jersey, and continuing through his undergraduate work at University of Oregon, Corvallis, Oregon; his graduate work and postdoc at Massachusetts Institute of Technology; and the establishment of his own lab at Harvard University. Major topics discussed include the tenure process at Harvard University, issues involved in running a lab, Kune's research on the neurobiology of *Drosophila*, and the management and funding of his lab at Harvard University.

## 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.

Kunes 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. Stephen Wilson, editorial assistant, compiled the index.

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