

CHEMICAL HERITAGE FOUNDATION

**ERIN SCHUMAN**

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview  
Conducted by

William Van Benschoten

at

California Institute of Technology  
Pasadena, California

on

12, 19, and 26 April and 17 May 2000

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

## **ACKNOWLEDGEMENT**

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**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.

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Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about April 12, 2000, and tentatively entitled "Interview with Erin Margaret Schuman". 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."

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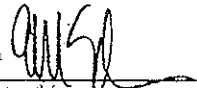
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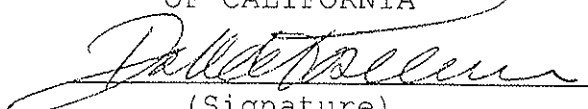
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Howard Hughes Medical Institute  
California Institute of Technology  
Division of Biology 216-76  
Pasadena, California 91125

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INTERVIEWEE

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(Signature)

  
(Signature)

Erin Margaret Schuman  
(Typed Name)

Dale E. Treleven  
(Typed Name)

Howard Hughes Medical Institute  
(Address)

Director, Oral History Program  
(Title)

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Technology

Pasadena, California 91125

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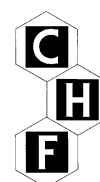
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## ERIN SCHUMAN

1963 Born in San Gabriel, California, on 15 May

### Education

1985 B.A., Psychology, University of Southern California  
1990 Ph.D., Neuroscience, Princeton University

### Professional Experience

1990 Princeton University  
Postdoctoral Fellow

1990-1993 Stanford University  
Postdoctoral Fellow

1993-1999 California Institute of Technology  
Assistant Professor  
1999-present Associate Professor

1997-1999 University of California, Los Angeles, California  
Adjunct Assistant Professor

### Honors

1994-1996 Alfred P. Sloan Research Fellow  
1994-1998 John Merck Scholar  
1995-1999 Pew Scholar in the Biomedical Sciences  
1995 American Association of University Women Emerging Scholar  
1997 Howard Hughes Medical Institute Assistant Investigator

### Selected Publications

Madison, D. and E. Schuman, 1991. LTP: post or pre? A look at the evidence for the locus of long-term potentiation. *The New Biologist* 3:549-57.  
Schuman, E. and D. Madison, 1991. A requirement for the intercellular messenger nitric oxide in long-term potentiation. *Science* 254:1503-6.  
Schuman, E. and D. Madison, 1991. Nitric oxide, intercellular signalling and ADP-

- ribosyltransferase activity in long term potentiation. *Seminars in the Neurosciences* 5:304-13.
- Schuman, E., 1994. Consequences of diffusible signalling: locally distributed synaptic enhancement in hippocampal neurons. *Seminars in Cell Biology* 5:251-61.
- Schuman, E. and D. Madison, 1994. Locally distributed synaptic potentiation in the hippocampus. *Science* 263:532-36.
- Kang, H. and E. Schuman, 1995. Long-lasting neurotrophin-induced enhancement of synaptic transmission in the adult hippocampus. *Science* 267:1658-62.
- Kang, H. and E. Schuman, 1996. A requirement for local protein synthesis in neurotrophin-induced synaptic plasticity. *Science* 273:1402-6.
- Kantor, D. et al., 1996. Adenovirus-mediated inhibition and rescue reveals a role for endothelial nitric oxide synthase in hippocampal long-term potentiation. *Science* 274:1744-48.
- Schuman, E., 1997. Growth factors sculpt the synapse. *Science* 275:1277-78.
- Schuman, E., 1999. Neurotrophin regulation of synaptic transmission. *Current Opinion in Cell Biology* 9:105-9.
- Murase, S. and E. Schuman, 1999. The role of cell adhesion molecules in synaptic plasticity and memory. *Current Opinion in Cell Biology* 11:549-53.



## ABSTRACT

**Erin M. Schuman** was born in San Gabriel, California, though spent most of her childhood in Huntington Beach, the oldest of three siblings; her mother was a teacher at a Catholic school. She was a “serial hobbyist” with interests in painting, softball, dancing, and reading and she attended Catholic schools from the time she was a teenager.

Schuman matriculated at the University of Southern California (USC), initially interested in pursuing law and deciding to major in political science, but ultimately switching her major to psychology. She worked regularly as an undergraduate, including stints as a waitress, though found the time to complete an honors thesis with Laura Baker studying memory in twins. She decided to go to graduate school for her doctoral studies, having to choose between the University of California, Irvine and Princeton University, ultimately selecting the latter because of Joseph Farley’s work on learning in memory using invertebrate systems. She followed Farley to Indiana University when he left, though returned to Princeton to complete her thesis in Gregory A. Clark’s lab. She then accepted a postdoctoral position at the Daniel V. Madison laboratory at Stanford University studying long-term neuronal potentiation, culminating in a series of papers on synaptic transmission (two of which appeared in *Science*). From there Schuman accepted a position at California Institute of Technology (Caltech), studying decentralized production of proteins at the dendrites and, more recently, synaptic feedback mechanisms and cadherins, and having the opportunity to collaborate with Masatoshi Takeichi and Norman A. Davidson.

The interview concludes with Schuman discussing the advantages and disadvantages of competition in science; the issue of accountability to those who fund scientific research; sexism; the article-writing process; co-teaching courses with her husband, Gilles Jean Laurent; and balancing family and career.

## UCLA INTERVIEW HISTORY

### INTERVIEWER:

William Van Benschoten, Interviewer, UCLA Oral History Program; BA, History, University of California, Riverside, 1990; M.A., History, University of California, Riverside, 1992; C.Phil., History, University of California, Los Angeles, 1995.

### TIME AND SETTING OF INTERVIEW:

**Place:** Schuman's office, California Institute of Technology.

**Dates, length of sessions:** April 12, 2000 (65 minutes); April 19, 2000 (89); April 26, 2000 (90); May 17, 2000 (77).

**Total number of recorded hours:** 5.35

**Persons present during interview:** Schuman and Van Benschoten.

### CONDUCT OF INTERVIEW:

This interview is one in a series with Pew Scholars Program in the Biomedical Sciences conducted by the UCLA Oral History Program in conjunction with the Pew Charitable Trusts's Pew Scholars Program 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, Van Benschoten held a telephone preinterview conversation with Schuman to obtain written background information (curriculum vitae, copies of published articles, etc.) and agree on an interviewing schedule. He also reviewed prior Pew scholars' interviews and the documentation in Schuman's file at the Pew Scholars Program office in San Francisco, including her proposal application, letters of recommendation, and reviews by Pew Scholars Program national advisory committee members.

The interview is organized chronologically, beginning with Schuman's childhood in Newport Beach, California, and continuing through her undergraduate work at University of Southern California, her graduate work at Princeton University, her postdoc at Stanford University, and the establishment of her own lab at California Institute of Technology. Major topics discussed include her difficult relationship with her graduate adviser, her research on synaptic transmission and protein production at the dendrites, and politics and sexism in the scientific community.

### 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.

Schuman reviewed the transcript. She verified proper names and made a number of corrections and additions.

William Van Benschoten, editor, prepared the table of contents. Kwon assembled the biographical summary and interview history. Deborah Truitt, editorial assistant, compiled the index.

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