

CHEMICAL HERITAGE FOUNDATION

EARL K. MILLER

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

William Van Benschoten

at

Massachusetts Institute of Technology
Cambridge, Massachusetts

on

26 and 27 August 2004

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

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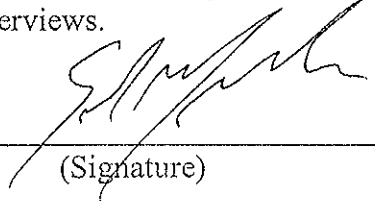
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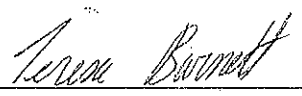
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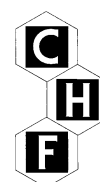
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Earl K. Miller

1962 Born in Columbus, Ohio, on 30 November

Education

1985 B.A. with honors, Psychology, Kent State University
1987 M.A., Psychology and Neuroscience, Princeton University
1990 Ph.D., Psychology and Neuroscience, Princeton University

Professional Experience

1990-1995 National Institute of Mental Health, Laboratory of Neuropsychology
Intramural Research Fellow

1983-1985 Kent State University
Research Assistant

1985-1989 Princeton University
Assistant in Instruction
1985-1990 Research Assistant
1989-1990 Lecturer

1995-1999 Massachusetts Institute of Technology
Assistant Professor of Neuroscience, Department of Brain and
Cognitive Sciences,
1996-1999 Associate Member, Center for Learning and Memory
1999-2002 Associate Professor of Neuroscience, Department of Brain and
Cognitive Sciences
2000-present Director of Graduate Studies in Brain and Cognitive Sciences
2001-present Associate Director, The Picower Institute for Learning and
Memory
2002-2003 Professor of Neuroscience, The Picower Center for Learning and
Memory and Department of Brain and Cognitive Sciences
2003-present Picower Professor of Neuroscience, The Picower Center for
Learning and Memory and Department of Brain and Cognitive
Sciences

1999-present RIKEN-MIT Neuroscience Research Center
Investigator

Honors

1985	Phi Beta Kappa
1985	Graduate summa cum laude with honors, Kent State University
1986	National Institutes of Health Predoctoral Training Fellowship
1987	National Research Service Award Predoctoral Fellowship
1996	Alfred P. Sloan Research Fellow
1996	Whitehall Foundation Fellowship
1996	McKnight Scholar Award
1996	Pew Scholar Award
1998	John Merck Scholar Award
1999	Class of 1956 Career Development Professorship
2000	National Academy of Sciences Troland Research Award
2000	Society for Neuroscience Young Investigator Award
2002	Elected to The International Society for Behavioral Neuroscience
2003	Picower Professorship (endowed chair)
2005	Elected Fellow, American Association for the Advancement of Science

Selected Publications

- Histed, M.H. and Miller, E.K. "Microstimulation of frontal cortex can reorder a remembered spatial sequence" Public Library of Science Biology, in press.
- Freedman, D.J., Riesenhuber, M., Poggio, T., and Miller, E.K. "Experience Dependent Sharpening of Visual Shape Selectivity in Inferior Temporal Cortex" Cerebral Cortex, in press.
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ABSTRACT

Earl K. Miller was born and raised in a suburb of Cleveland, Ohio, one of two siblings—the other being his identical twin. His mother was a homemaker; his father an accountant. As a child, Miller was interested in science and continuously performed well in science classes in school.

He entered Kent State University in Kent, Ohio, originally pursuing a degree in biology (and undertaking pre-medical coursework). After taking advice to do research in order to better his chances of getting into medical school, Miller volunteered to work in Richard M. Vardaris's psychology lab for his senior thesis. Vardaris was doing work on memory in the hippocampus, and, as Miller noted, once he started doing experiments and collecting neurophysiology data, he “fell in love” with research; Miller switched his major to psychology so that Vardaris could be his advisor. He matriculated at Princeton University for his graduate studies, ultimately working in the laboratory of Charles G. Gross studying the visual cortex, though his research in neuroscience evolved from object recognition to cognition; during this time Miller met his wife, a psychologist who later worked for the American Psychological Association. From Princeton Miller undertook postdoctoral work with Robert Desimone at the National Institutes of Health, transitioning from studying vision to studying the cognitive operations that operate on sensory information; he had a number of publications in top tier journals come out of this work. He moved to Cambridge, Massachusetts upon accepting a position at the Massachusetts Institute of Technology; he focused his lab on cognitive neuroscience and executive brain control.

The remainder of the interview with Miller focuses on what he believes are the practical applications of his research; the future of his research in cross-translational neurophysiology (from gene to system level); and his professional responsibilities. The interview concludes with his thoughts on the peer-review process; the Pew Scholars Program in the Biomedical Sciences; competition and collaboration in science; experimenting on living animals; and the privatization of scientific research.

UCLA INTERVIEW HISTORY

INTERVIEWER:

William Van Benschoten, Interviewer, UCLA Oral History Program. B.A., History, University of California, Riverside; M.A., History, University of California, Riverside; C. Phil., History, UCLA

TIME AND SETTING OF INTERVIEW:

Place: Miller's office, Massachusetts Institute of Technology.

Dates, length of sessions: August 26, 2004 and August 27, 2004.

Total number of recorded hours: 3.0

Persons present during interview: Miller and Van Benschoten.

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, Van Benschoten held a telephone preinterview conversation with Miller to obtain written background information (curriculum vitae, copies of published articles, etc.) and agree on an interviewing schedule. He also reviewed documentation in Miller's file at the Pew Scholars Program office in San Francisco, including Miller's proposal application, letters of recommendation, and reviews by Pew Scholars Program national advisory committee members.

ORIGINAL EDITING:

Carol Squires 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.

***Miller reviewed the transcript. He verified proper names and made [no/minor/a number of/extensive] corrections and additions.**

Carol Squires prepared the table of contents and TechniType Transcripts compiled the guide to proper names.

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