

CHEMICAL HERITAGE FOUNDATION

KENNETH H. BRITTEN

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

University of California, Davis
Davis, California

on

24-26 January 2001

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



Kenneth H. Britten

ACKNOWLEDGEMENT

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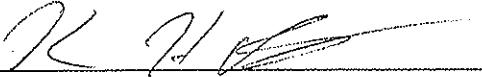
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University and Interviewee have executed this Agreement on the date first written above.

INTERVIEWEE

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA



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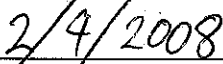
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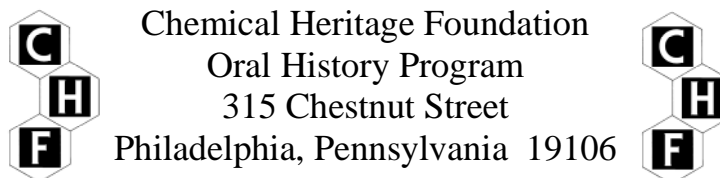
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KENNETH H. BRITTEN

1958 Born in Washington, D.C. on 2 July

Education

1980 B.S., California Institute of Technology
1987 Ph.D., State University of New York, Stony Brook

Professional Experience

1987-1993 State University of New York, Stony Brook
Postdoctoral Fellow

1987-1993 Stanford University
Postdoctoral Fellow

1993-1999 University of California, Davis
Assistant Professor, Center for Neuroscience and Section
of Neurobiology, Physiology, and Behavior

1999-present University of California, Davis
Associate Professor, Center for Neuroscience and Section
of Neurobiology, Physiology, and Behavior

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Stony Brook

1994-1998 Pew Scholar in the Biomedical Sciences

Selected Publications

Newsome, W.T. et al., 1989. Neuronal correlates of a perceptual decision. *Nature* 341:52-54.

Salzman, C.D. et al., 1990. Cortical microstimulation influences perceptual judgements of motion direction. *Nature* 346:174-77.

Britten, K.H. et al., 1991. Effects of inferotemporal cortex lesion on form-from-motion discrimination in monkeys. *Experimental Brain Research* 88:292-302.

Britten, K.H., et al., 1992. The analysis of visual motion: A comparison of neuronal and psychophysical performance. *Journal of Neuroscience* 12:4745-65.

Britten, K.H., et al., 1993. The responses of MT neurons to variable strength stochastic

- motion stimuli. *Visual Neuroscience* 10:1157-69.
- Britten, K.H. et al., 1996. A relationship between behavioral choice and the visual responses of neurons in macaque MT. *Visual Neuroscience* 13:87-100.
- Britten, K.H. and W.T. Newsome, 1998. Tuning bandwidths for near-threshold stimuli in area MT. *Journal of Neurophysiology* 80:762-70.
- Britten, K.H., 1998. Clustering of response selectivity in the medial superior temporal area of extrastriate cortex in the macaque monkey. *Visual Neuroscience* 15:553-58.
- Britten, K.H. and R.J.A. van Wezel, 1998. Electrical microstimulation of cortical area MST biases heading perception in monkeys. *Nature Neuroscience* 1:59-63.
- Britten, K.H. and H.W. Heuer, 1999. Spatial summation in the receptive fields of MT neurons. *Journal of Neuroscience* 19:5074-84.
- Britten, K.H. and R.J.A. van Wezel, 2002. Area MST and heading perception in macaque monkeys. *Cerebral Cortex* (in press).

ABSTRACT

Kenneth H. Britten was born in Washington, D.C. in 1958, the younger of two brothers. His father, Roy J. Britten, was a biophysicist who made notable achievements in the heyday of genetics, working at the Carnegie Institution of Washington and later at the California Institute of Technology. Kenneth Britten's mother, Barbara H. Britten, was primarily a homemaker, but who would later be involved in defending marine environmental causes in Washington, D.C. Due to his father's strong influence and his early appreciation for the outdoors, Britten knew from an early age that he wanted to study biology.

Britten received his B.S. in biology from the California Institute of Technology in 1980. Britten's interest in neuroscience increased greatly as a result of an integrative neuroscience course taught by Jack D. Pettigrew. Research in Mark Konishi's lab led Britten to neuroethology. He then took a year off to travel around the American continent before applying to graduate school. He matriculated into the Department of Neurobiology and Behavior at the State University of New York at Stony Brook, where he studied receptive visual fields in David H. Cohen's lab and received his Ph.D. in neurobiology in 1987.

Britten remained at the State University of New York, Stony Brook to pursue his postdoctoral research in William T. Newsome's lab and later moved with Newsome to his new lab at Stanford University. Britten and Newsome worked together very closely, using psychophysics to map and measure the neuromechanics of perceptive visual fields in primates. It was through these projects that Britten developed his current scientific focus and research. In 1993, Britten was appointed assistant professor in the Department of Neurobiology, Physiology, and Behavior at the University of California, Davis where he received academic tenure as an associate professor in 1999. Since his arrival at the University of California, Davis, Britten has focused on specific areas of extrastriate visual cortex in primates and how they respond to complex visual stimuli.

Throughout his oral history Britten emphasizes the need to remain enthusiastic about one's occupation and the importance of balancing professional responsibilities and free time. He has received several grants, including a fellowship, and most notably a Pew Scholars Program in the Biomedical Sciences grant, which he discusses in the oral history interview.

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: Britten's office at the Center for Neuroscience at the University of California, Davis.

Dates, length of sessions: January 24, 2001 (128 minutes); January 25, 2001 (101); January 26, 2001 (111).

Total number of recorded hours: 5.7

Persons present during interview: Britten 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 Britten 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 Britten'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 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, and 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 Britten's childhood in McLean, Virginia, and continuing through his undergraduate work at California Institute of Technology (Caltech), his graduate work at State University of New York (SUNY) at Stony Brook, his postdoc at SUNY-Stony Brook and Stanford University, and the establishment of his own lab at University of California at Davis. Major topics discussed include his experiences at Caltech and the Jack Pettigrew lab, his decision to pursue a career in neuroscience, his research in the David H. Cohen lab to examine visual physiology in the dorsal thalamus of the pigeon,

and his current research on visual cortex of primates.

ORIGINAL EDITING:

Deborah Kolosova, 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.

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

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

SUPPORTING DOCUMENTS:

The original tape recordings of the interview are in the university archives and are available under the regulations governing the use of permanent noncurrent records of the university. Records relating to the interview are located in the office of the UCLA Oral History Program.

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