

CHEMICAL HERITAGE FOUNDATION

JOHN J. NGAI

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

University of California, Berkeley
Berkeley, California

on

1-3 February 2000

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



(Courtesy of Kirstie Tweed)

John J. Ngai

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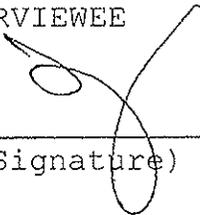
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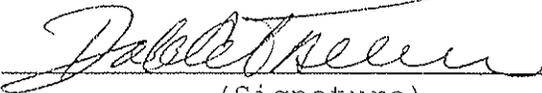
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(Signature)

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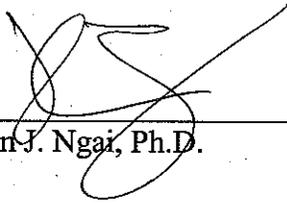
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JOHN J. NGAI

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1980 B.A., Pomona College
1987 Ph.D., California Institute of Technology

Research Appointments

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Postdoctoral Fellow, Division of Biology

Professional Experience

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Associate

1992-1995 University of California, Berkeley
Class of 1933 Assistant Professor of Neurobiology,
Department of Molecular and Cell Biology

1995-1998 University of California, Berkeley
Assistant Professor

1998-present University of California, Berkeley
Associate Professor

Honors

1988-1991 Howard Hughes Fellow of the Life Sciences Research Foundation
1993-1996 McKnight Scholars Award in Neuroscience
1994-1998 Pew Scholar in the Biomedical Sciences

Selected Publications

- Ngai, J. et al., 1990. Localization of newly synthesized vimentin subunits reveals a novel mechanism of intermediate filament assembly. *Cell* 60:415-27.
- Goulding, E.H. et al., 1992. Molecular cloning and single-channel properties of the cyclic nucleotide-gated channel from catfish olfactory neurons. *Neuron* 8:45-58.
- Chess, A. et al., 1992. Molecular biology of smell: Expression of the multigene family encoding putative odorant receptors. *Cold Spring Harbor Symposium on Quantitative Biology* 57:505-16.
- Ngai, J. et al., 1993. The family of genes encoding odorant receptors in the channel catfish. *Cell* 72:657-66.
- Ngai, J. et al., 1993. Coding of olfactory information: Topography of odorant receptor expression in the catfish olfactory epithelium. *Cell* 72:667-80.
- Vassar, R. et al., 1993. Spatial segregation of odorant receptor expression in the mammalian olfactory epithelium. *Cell* 74:309-18.
- Barth, A.L. et al., 1996. Asynchronous onset of odorant receptor expression in the developing zebrafish olfactory system. *Neuron* 16:23-34.
- Brunet, L.J. et al., 1996. General anosmia caused by a targeted disruption of the mouse olfactory cyclic nucleotide-gated cation channel. *Neuron* 17:681-93.
- Barth, A.L. et al., 1997. Noncoordinate expression of odorant receptor genes tightly linked in the zebrafish genome. *Neuron* 19:359-69.
- Dynes, J.L. and J. Ngai, 1999. Pathfinding of olfactory neuron axons to stereotyped glomerular targets revealed by dynamic imaging in living zebrafish embryos. *Neuron* 20: 1081-91.
- Lin, D.M. and J. Ngai, 1999. Development of the vertebrate main olfactory system. *Current Opinion in Neurobiology* 9: 74-78.
- Specca, D.J. et al., 1999. Functional identification of a goldfish odorant receptor. *Neuron*, in press.

ABSTRACT

John J. Ngai, the youngest of three children, was born in New York City and grew up in Teaneck, New Jersey. His parents, who had left China after World War II, were both doctors, his father in anesthesiology, his mother in pharmacology. Other relatives, also in medical and scientific fields, left China for Canada, Taiwan, or Europe, and John visited those in Taiwan several times as a child, sometimes staying with his grandparents for six months. His mother also took the children to Sweden when she was on sabbatical, and it was there that John started first grade. Though he did not like school particularly, finding it uninspiring, he always liked science. He began eighth grade in a school in Taiwan, coming back in the middle of the year. He had not done outstandingly well academically, and he says he tended to “goof off”, so his parents decided to send him to a private high school. When he began Fieldston School he discovered that his classmates were intelligent, motivated, and hard-working, and he became so himself. He had excellent science teachers and decided that he wanted to go into medicine.

He was accepted into Pomona College, a good school with very good science, and, importantly, away from home. His grandfather had a friend in the administration, so the school was acceptable to his parents, and off he went. He loved school at last, doing science as much as possible. He met Lisa Brunet there; after several years of cross-country commuting, they married and now have two daughters. Meanwhile, his biology teacher was leaving as Ngai approached his senior year; he sent John to Elias Lazarides at Caltech to ask for a place in his lab. There he wrote his senior thesis, which won the Vaile Prize for the best senior thesis.

He began graduate school at Harvard but spent only a year there, returning to Lazarides' lab at California Institute of Technology. Lazarides worked his students very hard; they took no classes, just worked in the lab and had journal clubs. Ngai also traveled to New York City often to see his family and his fiancée. When he finished his PhD he accepted a postdoc at Columbia, in Richard Axel's lab, working on olfaction.

During his five years at Columbia, John married Lisa and they had one child and another on the way. At this point he had to decide between job offers from Rockefeller University and University of California at Berkeley. Berkeley was the easy choice, so they all moved back to California; there Lisa's PhD is put to work in John's lab; she is largely responsible for having developed an anosmic mouse, a breakthrough that has been patented. His lab is also studying smell in zebrafish.

John is now head of the graduate program of the Neuroscience Institute. He was on a search committee, he has study sections, and he teaches a fairly heavy load, all in addition to running his lab; writing grants; spending time with his daughters; and visiting his family in New York. Occasionally he lets his mind wander by watching television or playing around on his computer. Mostly, though he spends his time trying to understand the brain circuitry that controls the sense of smell.

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: Ngai's office, University of California, Berkeley.

Dates, length of sessions: February 1, 2000 (107 minutes); February 2, 2000 (125); February 3, 2000 (75).

Total number of recorded hours: 5.1

Persons present during interview: Ngai 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'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, Cohen held a telephone preinterview conversation with Ngai 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 Ngai'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; 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 Ngai's childhood in Teaneck, New Jersey and continuing through his undergraduate work at Pomona College, his graduate studies at Harvard University and California Institute of Technology, his postdoctoral work at Columbia University, and the establishment of his own laboratory at University of California, Berkeley. Major topics discussed include his early schooling in Teaneck, New Jersey, his tutelage under Elias Lazarides, his decision to accept a position at University of California, Berkeley, and the evolution of his research.

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.

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

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

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