

CHEMICAL HERITAGE FOUNDATION

EDWIN L. FERGUSON

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

The University of Chicago
Chicago, Illinois

on

28, 29 September and 1 October 1999

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

ACKNOWLEDGEMENT

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Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about September 27, 1999, and tentatively entitled "Interview with Edwin L. Ferguson". 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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Attention: Director

If to Interviewee: Edwin L. Ferguson
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University and Interviewee have executed this Agreement on the date first written above.

INTERVIEWEE

Edwin L. Ferguson
(Signature)

Edwin L. Ferguson
(Typed Name)

University of Chicago
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Chicago, Illinois 60637

Date 9/28/99

THE REGENTS OF THE UNIVERSITY
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Date October 22, 1999


Pew Scholars in the Biomedical Sciences
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EDWIN L. FERGUSON

1953 Born in Philadelphia, Pennsylvania on 22 October

Education

1976 B.S., Massachusetts Institute of Technology
1985 Ph.D., Massachusetts Institute of Technology and Woods Hole
Oceanographic Institute

Professional Experience

1986-1987 Columbia University
Postdoctoral Fellow

1987-1992 University of California, Berkeley
Postdoctoral Fellow

1992-1999 University of Chicago, Department of Molecular Genetics
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Assistant Professor
1999-present Associate Professor

Honors

1987-1990 Helen Hay Whitney Foundation
1993-1997 Pew Scholar in the Biomedical Sciences

Selected Publications

Ferguson, E.L. and H.R. Horvitz, 1985. Identification and characterization of 22 genes that affect the vulval cell lineages of the nematode *Caenorhabditis elegans*. *Genetics* 110:17-72.

Ferguson, E.L. et al., 1987. A genetic pathway for the specification of the vulval cell lineages of *Caenorhabditis elegans*. *Nature* 326:259-67.

Shimell, M.J. et al., 1991. The *Drosophila* dorsal-ventral patterning gene *tolloid* is related to human bone morphogenetic protein-1. *Cell* 67:469-81.

Ferguson, E.L. and K.V. Anderson, 1992. *Decapentaplegic* acts as a morphogen to organize dorsal-ventral pattern in the *Drosophila* embryo. *Cell* 71:451-61.

Holley, S.A. et al., 1995. A conserved system for dorsal-ventral patterning in insects

- and vertebrates involving *sog* and *chordin*. *Nature* 376:249-53.
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- Tax, F.E. et al., 1997. Identification and characterization of genes that interact with *lin-12* in *Caenorhabditis elegans*. *Genetics* 147:1675-95.
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- Neul, J.L. et al., 1998. Spatially-restricted activation of the SAX receptor by SCW modulates DPP/TKV signaling in *Drosophila* dorsal-ventral patterning. *Cell* 95:483-94.
- Ferguson, E.L., 1999. How does an organism develop from a single cell? In *World Book 2000, Great Unanswered Questions of Science*. Chicago: World Book Publishing.
- Podos, S. and E.L. Ferguson, 1999. Morphogen gradients: New insights from DPP. *Trends in Genetics* 15:396-402.

ABSTRACT

Edwin L. Ferguson was born and grew up in Philadelphia, Pennsylvania. He was an only child and thinks that, therefore, he was more independent and self-reliant than other children in his neighborhood. His neighborhood was filled with large Roman Catholic families, whose children attended the local Catholic school. As Ferguson says, the Catholic school was the public school. Ferguson attended also for a couple of years, but the school was severely overcrowded and the education poor, so his parents transferred him to an Episcopal school, where he soon became an excellent student.

When he was in high school his father became seriously ill, apparently with Alzheimer's disease, so Ferguson had to assume adult responsibilities. He decided he wanted to attend the Massachusetts Institute of Technology (MIT) to study computer science. His interest in computer science began to wane, but an introductory course in biology grabbed his interest, and a course in genetics taught by David Botstein caused him to major in biology as well as computer science.

After graduation Ferguson spent a year and a half working in computer programming, but he found it increasingly boring. He decided to take an ocean ecology course in a joint program at Woods Hole Oceanographic Institute and MIT, and from there he entered MIT again, this time as a graduate student in biology. He went into H. Robert Horvitz's lab to work on genetics in *C. Elegans*. From there he went to Columbia University with a postdoc in Martin Chalfie's lab, where he did "a little bit of molecular biology."

From there he went to University of California at Berkeley, changing fields from *C. elegans* to *Drosophila*. He worked in Kathryn Anderson's lab, studying dorsal-ventral patterning in *Drosophila*; this had been Anderson's area of study when she was a postdoc in Christiane Nusslein-Volhard's lab at the University of Tübingen, and the work excited Ferguson very much. Also, he was done with worms and wanted to switch to flies.

After about five years at Berkeley, he finished some work with which he was heavily involved and applied for jobs at many schools. He had a number of offers, mostly from medical schools, but settled on the assistant professorship at the University of Chicago. He is now an associate professor there, and he continues to work in developmental genetics, winning a number of awards and publishing many articles.

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: Ferguson's office, University of Chicago

Dates, length of sessions: September 28, 1999 (105 minutes); September 29, 1999 (111); October 1, 1999 (111).

Total number of recorded hours: 5.45

Persons present during interview: Ferguson 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 Ferguson 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 Ferguson'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 Ferguson's childhood in Philadelphia, Pennsylvania, and continuing through his undergraduate work at Massachusetts Institute of Technology (MIT), his graduate work at MIT and Woods Hole Oceanographic Institute, his postdocs at Columbia University and University of California, Berkeley, and the establishment of his own lab at University of Chicago. Major topics discussed include his research on the patterning of the dorsal-ventral axis, his teaching methods and philosophy, and his collaborations and copublications with other labs.

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.

Ferguson reviewed the transcript. He verified proper names and made no corrections or additions.

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

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