

CHEMICAL HERITAGE FOUNDATION

MARTYN D. GOULDING

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

Salk Institute for Biological Studies
San Diego, California

on

9-11 January, 2001

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

ACKNOWLEDGEMENT

This oral history is part of a series supported by a grant from the Pew Charitable Trusts based on the Pew Scholars Program in the Biomedical Sciences. This collection is an important resource for the history of biomedicine, recording the life and careers of young, distinguished biomedical scientists and of Pew Biomedical Scholar Advisory Committee members.

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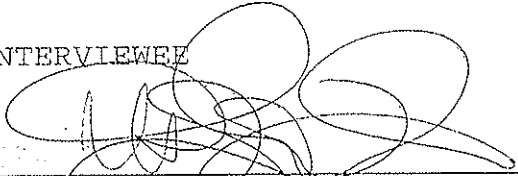
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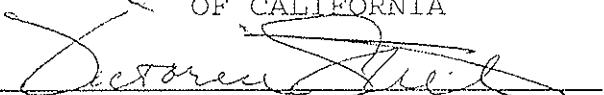
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THE REGENTS OF THE UNIVERSITY
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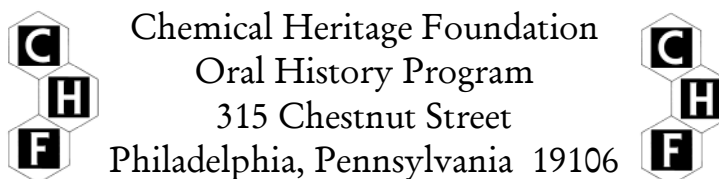
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MARTYN D. GOULDING

1958 Born in Auckland, New Zealand on 17 April

Education

1982 B.S., Auckland University
1988 Ph.D., Auckland University

Professional Experience

1988-1991 Max Planck Institute for Biophysical Chemistry, Göttingen, Germany
Postdoctoral Fellow

1991-1992 University of London, London, England
Guy's Hospital, Senior Research Fellow

1992-present The Salk Institute for Biological Studies, San Diego, California
Assistant Professor

1992-present University of California, San Diego, San Diego, California
Adjunct Professor, Department of Biology

Honors

1993-1997 Pew Scholars Program in the Biomedical Sciences Grant

Selected Publications

- Goulding, M. et al., 1991. *PAX-3*, a novel murine DNA binding protein expressed during early neurogenesis. *European Molecular Biology Organization* 10:1135-47.
- Chelepakis, G. et al., 1991. The molecular basis of the undulated *PAX-1* mutation. *Cell* 66:873-84.
- Goulding, M. et al, 1993. Signals from the notochord and floor plate regulate the region-specific expression of two *PAX* genes in the developing spinal cord. *Development* 117:1001-17.
- Goulding, M. et al., 1994. Regulation of *PAX-3* in the dermomyotome and its role in muscle development. *Development* 120:957-71.
- Daston, G. et al., 1996. *PAX-3* is necessary for migration but not differentiation of limb muscle precursors in the mouse. *Development* 122:1017-27.
- Bang, A.G. and M. Goulding, 1996. Regulation of vertebrate neural cell fate by transcription

- factors. *Current Opinions in Neurology* 6:10-17.
- Bang, A.G. et al., 1997. Induction of *PAX-3* in the neural plate requires an early signal from posterior mesoderm. *Development* 124:2075-85.
- Maroto, M. et al., 1997. Ectopic *PAX-3* activates *MyoD* and *Myf-5* expression in both embryonic mesoderm and in neural tissue. *Cell* 89:139-48.
- Burrill, J. et al., 1997. *PAX-2* is expressed in multiple spinal cord interneurons, including a population of *En1* + interneurons that require *PAX-6* for their correct specification. *Development* 124:4493-503.

ABSTRACT

Martyn D. Goulding was born in 1958 in Auckland, New Zealand; the eldest of five siblings. His father was a blue-collar worker, originally from the Fiji Islands, who would later open his own plumbing manufacturing company. Goulding's mother suffered from increasing disabilities caused by polio during her childhood, and she worked several jobs intermittently. His family attended church regularly, as his maternal grandfather was a church minister; an experience which he credits as one of his most positive influences. Through high school and other influences Goulding came to appreciate science and medicine and decided to apply to medical school.

Goulding attended Auckland University Medical School with the original intention of earning an M.D. degree. His first laboratory experience with Raymond K. Ralph, however, gave him a newfound interest in research and he decided to switch to a Ph.D. program. Goulding stayed on in Ralph's lab studying the role of cyclic AMP in tumor cell growth regulation for which he earned a Bachelor of Science degree; he then did research on c-fos and other oncogenes to earn a Ph.D. He also met and married his wife, Yolanda Leenders, during his time at Auckland University. In 1988 Goulding began as a postdoctoral fellow in Peter Gruss's lab at the Max Planck Institute for Biophysical Chemistry, in Göttingen, Germany. During his time in Gruss's Lab, Goulding focused his research on PAX genes and their role in notochord development. He then spent some time in England, where he was a senior research fellow at Guy's Hospital, and spent five months doing research at the University of Nottingham.

In 1992 Goulding was appointed Adjunct Professor of Biology at the University of California, San Diego and was also appointed Assistant Professor at the Salk Institute for Biological Studies in San Diego, California. His current research concentrates on spinal chord interneurons and the genes and transcription factors which during development are crucial to the appropriate growth and function of these interneurons .

Throughout his oral history Goulding emphasizes that the goal of any true researcher should be to seek the truth, and cautions against financially motivated research. He has received the Pew Scholars Program in the Biomedical Sciences Grant, which he discusses in the oral history.

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: Goulding's office, the Salk Institute for Biological Studies, San Diego, California.

Dates, length of sessions: January 9, 2001 (109 minutes); January 10, 2001 (115); January 11, 2001 (103).

Total number of recorded hours: 5.2

Persons present during interview: Goulding 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 Goulding 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 Goulding'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 Goulding's childhood in Auckland, New Zealand, and continuing through his undergraduate and graduate work at University of Australian University, his postdoc at Max Planck Institute for Biophysical Chemistry, and the establishment of his own lab at the Salk Institute for Biological Studies. Major topics discussed include his decision to pursue research science rather than medicine, his study of cancer biology in the Raymond K. Ralph laboratory, and his current research on interneurons in the ventral spinal cord.

ORIGINAL EDITING:

Victoria Simmons, 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.

Goulding did not review the transcript and therefore some names have not been verified.

William Van Benschoten, senior writer, prepared the table of contents. Victoria Simmons assembled the biographical summary and interview history. Gail Ostergren, editor, compiled the index.

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