CHEMICAL HERITAGE FOUNDATION

SCOTT W. ROGERS

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

University of Utah
Salt Lake City, Utah

on

19-21 June 2000

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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The following oral history, originally processed at the UCLA Center for Oral History Research, has been reformatted by the Chemical Heritage Foundation. The process involved reformatting the front matter, adding a new abstract, replacing the table of contents, and replacing the index. The paragraph spacing and font of the body of the transcript were altered to conform to the standards of the Oral History Program at the Chemical Heritage Foundation. The text of the oral history remains unaltered; any inadvertent spelling or factual errors in the original manuscript have not been modified. The reformatted version and digital copies of the interview recordings are housed at the Othmer Library, Chemical Heritage Foundation. The original version and research materials remain at the Darling Library, University of California, Los Angeles and at the Bancroft Library, University of California, Berkeley.

REFORMATTING:

Kim Phan, Program Intern, Oral History, Chemical Heritage Foundation. B.A. expected 2011, Anthropology, Cornell University.

David J. Caruso, Program Manager, Oral History, Chemical Heritage Foundation. B.A., History of Science, Medicine, and Technology, Johns Hopkins University; PhD., Science and Technology Studies, Cornell University.

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Oral History Interview Agreement No. 7071004

This Interview Agreement is made and entered into this 12th day of July, 2000 by and between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a California corporation, on behalf of the Oral History Program at the UCLA campus, hereinafter called "University," and SCOTT W. ROGERS, having an address at SLC-VA, Department of Neurobiology and Anatomy, University of Utah, 50 North Medical Drive, Salt Lake City, Utah 84132, hereinafter called "Interviewee."

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about June 19, 2000, and tentatively entitled "Interview with Scott W. Rogers." 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."

In consideration of the mutual covenants, conditions, and terms set forth below, the parties hereto hereby agree as follows:

1. Interviewee irrevocably assigns to University all his copyright, title and interest in and to the Work. This assignment applies to University, its successors, and assigns, for and during the existence of the copyright and all renewals and extensions thereof.

2. By virtue of this assignment, University will have the right to use the Work for any research, educational, or other purpose, including electronic reproduction, that University may deem appropriate.

3. Interviewee acknowledges that he will receive no remuneration or compensation for his participation in the interviews or for the rights assigned hereunder.

4. Interviewee will receive from University, free of charge, one bound copy of the typewritten manuscript of the interviews.

5. To insure against substantive error or misquotation, Interviewee will have the right to review the manuscript before it is put into final form. University therefore will send Interviewee a copy of the edited transcript for review and comment. Interviewee will return transcript and comments to University within 30 days of receipt of the transcript. In the event that Interviewee does not respond within 30 days, University will assume that Interviewee has given full approval of the transcript.

6. All notices and other official correspondence concerning this Agreement will be sent to the following:

If to University: Oral History Program
University of California, Los Angeles
Box 951575
Los Angeles, California 90095-1575

Attention: Director

If to Interviewee: Scott W. Rogers
SLC-VA Department of Neurobiology and Anatomy
University of Utah
50 North Medical Drive
Salt Lake City, Utah 84132

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

INTERVIEWEE

(Signature)

Scott W. Rogers
(Typed Name)

SLC-VA Department of Neurobiology and Anatomy
(Address)

University of Utah

Salt Lake City, Utah 84132

Date 06/19/00

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

(Signature)

Dale E. Treleven
(Typed Name)

Director, Oral History Program
(Title)

Date 7/12/2000

Chemical Heritage Foundation
Oral History Program
315 Chestnut Street
Philadelphia, Pennsylvania 19106

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SCOTT W. ROGERS

1955 Born in Ogden, Utah, on 31 December

Education

B.S., Utah State University
1979 M.S., Utah State University
1986 Ph.D., University of Utah

Research Appointments

1986-1991 Salk Institute for Biological Studies, La Jolla, California
Postdoctoral Fellow

Professional Experience

1991-1993 University of Colorado, Health Sciences Center
Assistant Professor, Department of Pharmacology

1993-present University of Utah, Salt Lake City, Utah
Assistant Professor, Department of Neurobiology

Honors

1994 Klingenstein Fellow
1991-1995 Pew Scholar in the Biomedical Sciences

Selected Publications

Rogers, S.W. et al., 1994. Autoantibodies to glutamate receptor GluR3 in Rasmussen's encephalitis. *Science* 256:648.

Twyman, R.E. et al., 1995. Glutamate receptor antibodies activate a subset of receptors and reveal an agonist binding site. *Neuron* 14:755-62.

Carlson, N.G. et al., 1997. Identification of amino acids in the glutamate receptor subunit, GluR3, important for antibody-binding and receptor activation. *Journal of Biological Chemistry* 272:11295-301.

Carlson, N.G. et al., 1998. Nicotine blocks TNFα-mediated neuroprotection to NMDA by an α-bungarotoxin-sensitive pathway. *Journal of Neurobiology* 35:29-36.

Gahring, L.C. et al., 1998. Autoimmunity to glutamate receptors in Rasmussen's ecephalitis: A rare finding or the tip of an iceberg? *The Neuroscientist* 4:373-79.

Rogers, S.W., 1998. Exploring dinosaur neuro-paleobiology: Computed tomography scanning and analysis of an Allosaurus fragilis endocast. *Neuron* 21:673-79.

Rogers, S.W. et al., 1998. Age-related changes in neuronal nicotinic acetylcholine receptor subunit Alpha-4 expression are modified by long-term nicotine administration. *Journal of Neuroscience* 18:4825-32.

Rogers, S.W., 1999. Allosaurus, crocodiles and birds: Evolutionary clues from spiral computed tomography of an endocast. *The Anatomical Record: The New Anatomist* 257:162-73.

Rogers, S.W. et al., 1999. Inflammatory cytokines IL-1alpha, IL-1beta, IL-6, and TNF-alpha impart neuroprotection to an excitotoxin through distinct pathways. *Journal of Immunology* 163:3963-68.

ABSTRACT

Scott W. Rogers was born and grew up in Ogden, Utah. His father, a meat inspector, and his mother, a housewife, were divorced when Scott was about six years old; his father left the state, and Scott lived with his mother. They belonged to the Presbyterian church, an unusual circumstance in Mormon Ogden, and both felt stigmatized and ostracized, at least to some degree.

Scott has always loved science; in fact, he feels that he was "born with" that love. He was lucky enough to have good science teachers throughout his school years; he took every possible class, even persuading the junior high school authorities that science was a religion, and that those non-Mormons who did not attend the Mormon class each day should be allowed to study their own "religion," science, during that period. He participated in science fairs, and attended the National Youth Science Camps; at the international science fair he took second place and was offered a job by the USDA botany labs. He persuaded them to change the venue to the Forest Service, and he spent summers working in nearby national parks.

He matriculated at Utah State, intending to study botany. He soon found botany boring and, wanting to be "more active in the discovery process" of science, sped up his education to finish in three years. By that time he had become interested in *Drosophila* genetics, and his mother had been diagnosed with advanced breast cancer. In order to be able to care for his mother Scott decided to do a master's degree at Utah State, working in Eldon Gardner's lab. He finished that degree in a year; his mother died soon after his graduation, and his grandmother and a number of other relatives soon after that. He had intended to pursue a PhD at the University of Michigan that fall, but he gave up those plans and spent a year working as a technician at Utah State.

His personal life more settled by then, he entered University of Utah to study human genetics. He found the program not to be on the cutting edge ("Henry Ford" genetics, as he calls it), and went into Martin Rechsteiner's cell biology lab. There he set out to show that protein degradation could occur outside lysosome and could be selective. Rogers there discovered PEST sequences, important to cell regulation. From his master's thesis he got four papers.

As he was considering California Institute of Technology and Harvard University for a postdoc, he was introduced to Lorise Gahring, an immunologist who was considering the very same labs. They liked each other immediately and were married six months later. Meanwhile, their original choices for postdocs did not work out, and Lorise took a postdoc at Scripps Research Institute. Scott found one at the Salk Institutes for Biological Studies, working on nicotinic acetylcholine receptors in Stephen Heinemann's lab. When Michael Hollmann cloned glutamate receptors Rogers began working on both receptors, making antibodies. Often Scott and Lorise worked together, approaching the same problem from their different perspectives.

After about six years they began searching for jobs, wanting tenure-track positions at the same school. They ended up at the University of Colorado Health Sciences Center in Denver, Colorado. While they were there Scott, even though his lab took about a year to get set up, and Peter Ian Andrews discovered that Rasmussen's encephalitis, until then treatable only by removable of a hemisphere of the brain, could be treated as an autoimmune disease, by neutralizing the sufferer's antibodies.

While the Rogerses were at a Neuroscience meeting in California, the entire lab burned down, but at least Scott's serums were preserved in the freezer. This seemed an omen, and the Rogerses left for University of Utah, to take positions at the Veterans Health Administration, in the Eccles Institute of Human Genetics, where in their separate disciplines they studied aging and the immune system, nicotine addiction, etc. For genetic studies Utah's closed and well-documented Mormon society is ideal.

For fun, the Rogerses and their dog go fossil-hunting (a hobby that had to be curtailed when Scott published a paper on an Allosaurus endocast, as the avocation was becoming a vocation) in the Great Basin or Moab or other areas nearby. Scott feels he has met his professional and personal goals; that science offers great "freedom of imagination"; that if it were not for having to write grants, he would be like "a kid in a candy store."

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: Rogers' office, University of Utah.

Dates, length of sessions: June 19, 2000 (132 minutes); June 20, 2000 (149); June 21, 2000 (132).

Total number of recorded hours: 6.9

Persons present during interview: Rogers 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 Rogers 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 Rogers'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 Rogers's childhood in Ogden, Utah, and continuing through his undergraduate work at Utah State University, his graduate work at University of Utah, his postdoc at University of California, San Diego, and the establishment of his own laboratory at University of Colorado Health Sciences Center and University of Utah. Major topics discussed include the impact of Mormonism on his life, his breakthrough work on PEST and protein degradation outside of the lysosome, special problems facing researchers who combine both immunology and neuroscience, his study of

Rasmussen encephalitis, and his paper on dinosaur neurobiology.

ORIGINAL EDITING:

Stephen Wilson, editorial assistant, edited the interview. He 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.

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

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

TABLE OF CONTENTS

INDEX

R

S

T

U