

CHEMICAL HERITAGE FOUNDATION

RORY M. MARKS

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Andrea R. Maestrejuan

at

University of Michigan
Ann Arbor, Michigan

on

5, 6 and 7 November 1997

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

ACKNOWLEDGEMENT

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Ann Arbor, Michigan 48109-0531

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INTERVIEWEE

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

Rory Marks
(Signature)

[Signature]
(Signature)

Rory M. Marks
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Carli V. Rogers
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RORY M. MARKS

1952 Born in Sydney, Australia, in March

Education

1973 B.Sc., University of New South Wales

1976 M.B., University of New South Wales

Professional Experience

Saint Vincent's Hospital, Sydney, Australia

1977 Intern

1978 Resident Medical Officer

1981 Clinical Immunology Registrar

Royal Newcastle Hospital, New South Wales, Australia

1979 Medical Registrar

Royal Prince Alfred Hospital, Sydney, Australia

1980 Medical Registrar

University of New South Wales, Sydney, Australia

1982-1986 Fellow in Medicine

University of Michigan, Ann Arbor, Michigan

1987-1989 Postdoctoral Fellow in Pathology

1990-1997 Assistant Professor, Department of Internal Medicine

1998 Associate Professor

University Hospital, Ann Arbor, Michigan

1990-present Attending Physician

Ann Arbor Veterans Administration Hospital, Ann Arbor, Michigan

1997-present Attending Physician

Honors

1973 National Health and Medical Research Council of Australia
Undergraduate Medical Research Scholarship

1982	Medical Postgraduate Scholarship
1987	Neil Hamilton Fairley Overseas Travelling Fellowship
1986	Royal Australasian College of Physicians D.E.V. Starr Overseas Research Fellowship
1991-1995	Pew Scholars Program in the Biomedical Sciences Grant

Selected Publications

- Marks, R.M. et al., 1975. Salmonella enteritis infection in rats: Antigens involved in cell mediated immunity. *Australian Journal of Experimental Biology and Medical Science* 53:315-24.
- Marks, R.M. and R. Penny, 1976. Lymphokine-like activity in the serum of patients with haemopoietic malignancies. *Australian Journal of Experimental Biology and Medical Science* 54:107-10.
- Marks, R.M. et al., 1986. Mast cell granules cause proliferation of human microvascular endothelial cells. *Laboratory Investigations* 55:289-94.
- Marks, R.M. et al., 1988. The effects of scleroderma serum on human microvascular endothelial cells: Induction of antibody dependent cellular cytotoxicity. *Arthritic Rheumatology* 31:1524-34.
- Marks, R.M. et al., 1989. Rapid induction of neutrophil-endothelial adhesion by endothelial complement fixation. *Nature* 339:314-17.
- Dixit, V.M. et al., 1990. Tumor necrosis factor alpha induction of novel gene products in human endothelial cells including a macrophage specific chemotaxin. *Journal of Biological Chemistry* 265:2973-78.
- Lowe, J.B. et al., 1991. ELAM-1-dependent cell adhesion to vascular endothelium determined by a transfected human fucosyltransferase cDNA. *Cell* 63:475-84.
- Chen, Y. et al., 1996. Demonstration of binding of dengue virus envelope protein to target cells. *Journal of Virology* 70:8765-72.
- Chen, Y. et al., 1997. Dengue virus infectivity depends on envelope protein binding to target cell heparin sulfate. *Nature Medicine* 3:866-71.
- Hindmarsh, E.J. and R.M. Marks, 1998. Complement activation occurs on subendothelial extracellular matrix *in vitro*, and is initiated by retraction or removal of overlying endothelial cells. *Journal of Immunology* 160:6128-36.

ABSTRACT

Rory M. Marks was born in Sydney, Australia, the elder of two brothers. His parents had met in the Royal Australian Air Force, during World War II; there his father was an aircraft engineer and his mother a radio operator, but the senior Marks went into the fish business when he left the service. The family lived near the Sydney harbor, and the boys spent as much time as possible at the beach. Rory and his brother attended a rigorous Anglican school where grades were extremely important.

Rory was always interested in how things work, in the elegance of mathematical explanations and the creativity of science. He thought that differential calculus was the most beautiful thing. He also liked to take things apart (and he still does). He took apart the garbage disposal to see how it worked; soon there was garbage all around the foundations of the house, as he had not put the disposal back together correctly.

It was customary to attend college where one lived, so Rory went to the University of New South Wales and lived at home. Unaware that science did not have to mean medicine, he entered the medical school. Classes were large lecture classes, often on video. After his third year he did an optional year of research, working with T-cell immunity to salmonella in rats; he liked his mentors and the other students. He liked the clinical work and liked his boss, Ronald Penny, who was a very good clinician. During Christmas break he went to England, to Ian Clark's lab, then back to med school with Penny; after three or four years in the same lab he chose vascular biology for his field and wanted to go overseas. He went to Children's Hospital in Boston, Massachusetts, to Judah Folkman's lab and learned to grow blood vessel wall cells; then it was back to Australia. Next, he went to Griffith, Australia, a rural area, for his internship, then, no longer satisfied with his work in Penny's lab, he worked with Michael Berndt at a different hospital.

Rory decided that science was best done in the United States, so he took a scholarship to the University of Michigan, working in Peter Ward's lab on oxygen-deprived free radicals in vascular tissue damage. He attended a summer class in molecular biology at Smith College, where he was impressed by a talk given by Vishva Dixit, with whom he now works closely. He grew cells for Dixit, working on complement system. He met Faye Silverstein, who is now his wife. For that reason and because science is better in the United States, he did not want to return to Australia. He is still at the University of Michigan, where he had a breakthrough in his vascular complement fixation (VCF) work after nine years. He continues his interest in tropical diseases and their vascular implications. His wife is also a physician-scientist, a pediatric neurologist, and they are working together on a project concerning angiogenesis.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Andrea R. Maestrejuan, Interviewer, UCLA Oral History Program; B.A., History, University of California, Irvine, 1988; B.S., Biological Sciences, University of California, Irvine, 1988; C.Phil., History, University of California, Riverside.

TIME AND SETTING OF INTERVIEW:

Place: Marks's office, University of Michigan.

Dates, length of sessions: November 5, 1997 (117 minutes); November 6, 1997 (105); November 7, 1997 (97).

Total number of recorded hours: 5.3

Persons present during interview: Marks and Maestrejuan.

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, Maestrejuan held a telephone preinterview conversation with Marks to obtain written background information (curriculum vitae, copies of published articles, etc.) and to agree on an interviewing schedule. She also reviewed prior Pew scholars' interviews and the documentation in Marks'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 general background on the recent history of the biological sciences, Maestrejuan consulted J.D. Watson et al., *Molecular Biology of the Gene*. 4th ed. Menlo Park, CA: Benjamin/Cummings, 1987, and Bruce Alberts et al., *Molecular Biology of the Cell*. 3rd ed. New York: Garland.

The interview is organized chronologically, beginning with Marks's childhood in Sydney, Australia, and continuing through his graduate work at the University of New South Wales, his internship at St. Vincent's Hospital, Sydney, Australia, and his postdoc and the establishment of his own lab at the University of Michigan. Major topics discussed include complement activation and the induction of leukocyte adhesion, Marks's work on dengue virus, and the funding of science.

ORIGINAL EDITING:

Gregory M.D. Beyrer, 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.

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

William Van Benschoten, editor, prepared the table of contents, biographical summary, and interview history.

Ödül Bozkurt, editorial assistant, compiled the index.

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College Years	24
<p>Went to local medical school, University of New South Wales. Large lecture classes, often on video. Liked science but did not know of any practical application except medicine or teaching. Took optional year for elective research. Introduced to immunology. Vacation time in Ian Clark's lab in England. Clinical work under Ronald Penny at St. Vincent's Hospital in Sydney.</p>	
Fellowship Years	35
<p>Fellowship in medicine at University of New South Wales. Mother dies. Father's macular degeneration forces Rory to stay in same lab. Autoimmune diseases become his focus. Allergies also interest him. Finally settles on vascular biology as his field. Worked on cell biology with Michael Berndt at Westmead Hospital.</p>	
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