

CHEMICAL HERITAGE FOUNDATION

RALPH C. BUDD

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Steven J. Novak

at

University of Vermont
Burlington, VT

on

16-18 October 1994

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



Ralph C. Budd

ACKNOWLEDGEMENT

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INTERVIEWEE

Ralph C. Budd
(Signature)

Ralph C. Budd
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Date 10/16/94

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RALPH C. BUDD

1951 Born in Elizabeth, New Jersey on 25 May

Education

1973 B.A., Cornell University
1977 M.D., Cornell University Medical College

Research Appointments

Dartmouth-Hitchcock Medical Center, Hanover, New Hampshire
1977-1978 Intern
1978-1979 Resident
1979-1980 Clinical Fellow
1979-1981 Senior Resident
1982-1984 Postdoctoral Research Fellow

1981-1982 Tompkins Community Hospital, Ithaca, New York
Attending Physician

1984-1987 Ludwig Institute for Cancer Research, Lausanne, Switzerland
Postdoctoral Research Fellow

1987-1988 Division of Immunology, Department of Medicine, Stanford University
School of Medicine
Postdoctoral Research Fellow

Professional Experience

1988-1989 Division of Molecular Immunology, Genentech
Scientist

1988-1989 Stanford University School of Medicine
Clinical Assistant Professor of Medicine

University of Vermont College of Medicine, Rheumatology and Clinical
Immunology Unit
1989-1992 Assistant Professor of Medicine

1992-present

Associate Professor of Medicine

Honors

1974-1977 Joseph Collins Foundation Scholar, Cornell University Medical College
1983-1986 Arthritis Foundation Postdoctoral Fellow.
1989-1992 RJR Nabisco Research Scholars Award in Immunology
1990-1994 Pew Scholar in the Biomedical Sciences
1991-1994 Arthritis Foundation Biomedical Science Grant

Selected Publication

- Budd, R.C. et al., 1985. Growth and differentiation *in vitro* of the accumulating Lyt-2/L3T4 - subsets in *lpr* mice. *Journal of Immunology*, 135:3704-11.
- Budd, R.C. and K.A. Smith, 1986. Immunoassay for interleukin 2 (IL-2) using monoclonal antibodies to human IL-2. *Bio-Technology*, 4:983-86.
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- Budd, R.C. et al., 1987. Identification of memory cytolytic T lymphocytes in a subset of CD8⁺ cells. *Journal of Immunology*, 138:1009-13.
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- Budd, R.C. et al., 1990. Intact antigen receptor-mediated generation of inositol phosphates and increased intracellular calcium in CD4-CD8 - T lymphocytes from MRL-*lpr* mice. *Journal of Immunology*, 145:2862-72.
- Budd, R.C. et al., 1991. Elevated production of IFN γ and IL4 by mature T cells from autoimmune *lpr* mice correlates with Pgp-1 (CD44) expression. *European Journal of Immunology*, 21:1081-84.
- Budd, R.C. et al., 1992. CD2 expression correlates with proliferative capacity of $\text{I}\text{I}3 + \text{CD}4\text{-CD}8$ - T cells in *lpr* mice. *Journal of Immunology*, 148:1055-64.

Van Houten, N. and R.C. Budd, 1992. Accelerated programmed cell death of MRL-*lpr/lpr* T lymphocytes. *Journal of Immunology*, 149:2513-17.

Budd, R.C. and N. Van Houten, eds., 1994. Lessons from the *lpr* mouse: T lymphocyte development. *Seminars in Immunology*, 6: 1-69.

ABSTRACT

Ralph C. Budd grew up in Middletown, New York, in a close and happy family that included his parents and an older brother. He attended public schools, where he had good teachers who fostered his early interest and ability in science and mathematics. He attended MIT for his freshman year of college, but found it too intense; he transferred to Cornell University, which he very much preferred for academic reasons and because it is in a rural setting. There he continued studying the organ and sang in the University choir, where he met his future wife, Lenore Fritz. While Lenore was still an undergraduate Budd began medical school at Cornell University Medical School in New York City; they married and lived the commuter life for the remaining two years. During his residency at Dartmouth-Hitchcock Medical Center, Budd decided to specialize in rheumatology because it offered insight into many diseases and failings of the human body. He then began postdoctoral work in Kendall A. Smith's lab at Dartmouth College, where he found his medical practice and his research influencing each other, a pattern he continues to maintain. He went to Lausanne, Switzerland, to study T lymphocyte development in lymphoproliferative mice at the Ludwig Institute for Cancer Research. He returned to Stanford University to study immunology in C. Garrison Fathman's lab. He was heavily courted by Genentech and worked there for a year, until market forces forced cutbacks. From the West Coast he went to University of Vermont, where he continues to teach, mentor, review articles and papers, and do research. He believes that basic science is crucial, that attempting to direct results is counterproductive; but he is very interested in potential therapeutic applications of his research; viz. his research into *lpr* mice might provide help for lupus sufferers; and he thinks that *fas* gene studies have potential for sufferers of autoimmune diseases like rheumatoid arthritis. He and Lenore have a son, Graham, who is 10 years old; and a daughter, Laura, who is five years old. The family likes to engage in various outdoor activities and sports. Budd enjoys wine and espresso; he loves classical music, and plays the organ when he can find time.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Steven J. Novak, Senior Editor, UCLA Oral History Program. B.A., History, University of Colorado; Ph.D., History, University of California, Berkeley; M.B.A., UCLA Graduate School of Management.

TIME AND SETTING OF INTERVIEW:

Place: Budd's office, University of Vermont.

Dates, length of sessions: October 16, 1994 (100 minutes); October 17, 1994 (118); October 18, 1994 (86).

Total number of recorded hours: 5

Persons present during interview: Budd and Novak.

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, Novak held a telephone preinterview conversation with Budd to obtain written background information (curriculum vitae, copies of published articles, etc.) and agree on an interviewing schedule. He also reviewed prior Pew scholars' interviews and the documentation in Budd'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, Novak consulted J.D. Watson et al., *The Molecular Biology of the Gene*. 4th ed. 2 vols. Menlo Park, CA: Benjamin/Cummings, 1987 and Bruce Alberts et al., *Molecular Biology of the Cell*. 3d ed. New York: Garland, 1994.

The interview is organized chronologically, beginning with Budd's childhood in Middletown, New York, and continuing through his education at Massachusetts Institute of Technology and Cornell University, his residency and postdoc at Dartmouth-Hitchcock Medical Center, postdocs at the Ludwig Institute for Cancer Research and Stanford University, and the setup of his own lab at the University of Vermont. Major topics discussed include training and mentors, collaborations, lab management, funding, and research on T lymphocytes in *lpr* mice, signal transduction, apoptosis and the *fas* gene, and the role of $\gamma\delta$ cells in Lyme arthritis.

ORIGINAL EDITING:

Vimala Jayanti, editor, 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.

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

Kristian London, assistant editor, prepared the table of contents and interview history. Jayanti assembled the biographical summary. Gregory Beyrer, editorial assistant, compiled the index.

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