

CHEMICAL HERITAGE FOUNDATION

PAMELA BJORKMAN

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Arnold Thackray and Richard Sawyer

at

Coral Gables, Florida

on

6 March 1990

(With Subsequent Corrections and Additions)

ACKNOWLEDGEMENT

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PAMELA J. BJORKMAN

1956 Born in Portland, OR on June 21

Education

1978 BA, Chemistry, University of Oregon
1984 PhD, Biochemistry and Molecular Biology, Harvard University

Professional Experience

1984-1986 Harvard University, Cambridge, MA
Post-doctoral fellow, Biochemistry and Molecular Biology

1987-1988 Stanford University, Stanford, CA
Post-doctoral fellow, Microbiology and Immunology

1989-Present California Institute of Technology, Pasadena, CA
Assistant Professor, Biology

Honors

1969 Gold Medalist, Oregon Museum of Science and Industry
1976 Oregon Heart Association Research Fellowship
1977 Phi Beta Kappa
1977 Vera M. Armstrong Award, University of Oregon
1977 Jack Culbertson Award, University of Oregon
1986 American Cancer Society Postdoctoral Fellowship
1988 Young Investigator Award, Transplantation Society
1989 Pew Scholar Award

ABSTRACT

Pamela Bjorkman grew up in Parkrose, Oregon, a suburb of Portland. Her father was an accountant for a tractor company, and her mother, who had taught English in Bermuda, was a housewife. Bjorkman became interested in science when she took chemistry and physics in high school. She attended Willamette University for a year but then transferred to University of Oregon, as she wanted to be able to pay her own way. While in college she worked in the labs of Larry Church at Reed College and O. Hayes Griffith at the University of Oregon.

Interested in why organisms behave as they do, Bjorkman chose Harvard University's PhD program as the best place to learn biochemistry and molecular biology. She found Don Wiley's lab exciting and fast-paced and became interested in using X-ray crystallography to understand how major histocompatibility complex (MHC) proteins are involved in the immune response to pathogens. Then she had a long period of trying to solve the crystal structure of a MHC protein; she feels this immersion gave her a thorough knowledge of crystallography. Still finishing the crystal structure, she accepted a postdoc at Stanford University in Mark Davis's lab, where she worked producing a T cell receptor that recognizes the MHC protein she studied in graduate school.

Crystallography again in fashion, Bjorkman was recruited to California Institute of Technology. She finds being an assistant professor keeps her away from the bench more than she would like; she must write grants, teach, advise students, and sit on committees. In addition, she and her husband, whom she married while at Stanford and who is a neurobiologist also at Caltech, share the care of their toddler son and other domestic duties.

Bjorkman discusses the difficulties of working while pregnant; of finding two jobs in the same city if not in the same institution and then setting up two new labs while caring for a very young child; of working out duty-sharing arrangements; of the effects on careers of having children. She says she hopes that in ten years she will know how molecules that are involved in immune response function and how T cells interact with their target cells. She feels this will help her answer many immunological questions.

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| <p>Born in Portland, Oregon, one of two children. Father accountant, mother English teacher in Bermuda and then housewife. Religion: Protestant. Grew up in Parkrose, Oregon. Valedictorian of high-school class. Became interested in science during high-school chemistry and physics classes.</p> | |
| College Years | 4 |
| <p>Entered University of Oregon, beginning in math but switching to chemistry. Worked on implications for heart disease of zinc-copper ratios; Larry Church's lab (Reed College). Worked on electron spin resonance in O. Hayes Griffith's lab (University of Oregon). Paid her own way through college.</p> | |
| Graduate School Years | 5 |
| <p>Decided against medical school, went to Harvard University for graduate school. Wanted to learn biochemistry and molecular biology. National Institutes of Health training grant. Trouble solving structure of particular molecule involved in immune response; could not get enough of protein. Feels complete immersion in single X-ray crystallography project gave her thorough understanding of crystallography. Things about Wiley's lab she would emulate. Stayed at Harvard to finish structure.</p> | |
| Postdoctoral Work | 12 |
| <p>Accepted postdoc at Stanford University. Chose Mark Davis's lab to learn molecular biological so could express T cell receptor protein for crystallography. American Cancer Society post-doctoral fellowship. Davis's lab all immunology or molecular biology; learned a great deal of immunology. Davis's management style. Traveled between Harvard and Stanford to finish crystal structure. Worked on another hard problem, but successful; now feels she can lead molecular biology lab. Crystallographers dependent on others for protein. Crystallography provides no mid-experiment publications; all or nothing.</p> | |
| Independent Lab | 16 |
| <p>Accepted job at California Institute of Technology. Now has no time for bench, but has lots of ideas for lab. Light teaching load, lots of startup money and equipment. Spends time writing grants, working on committees, advising students. Married while at Stanford, now has toddler-aged son. Division of domestic labor. Finding two jobs together. Working while pregnant. Duty-sharing philosophy. Effects of children on careers. In ten years hopes to know function of molecules involved in immune response; what T cells' interactions with target cells look like and what they actually do. Hopes to answer many immunological questions.</p> | |
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