

CHEMICAL HERITAGE FOUNDATION

CHRISTOPHER A. BRADFIELD

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Andrea R. Maestrejuan

at

McArdle Laboratory for Cancer Research
Madison, Wisconsin

on

2, 3, and 4 December 1997

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

ACKNOWLEDGEMENT

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Holly Polish, Program Intern, Oral History, Chemical Heritage Foundation. B.A., History, American 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.

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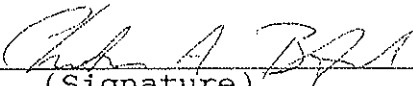
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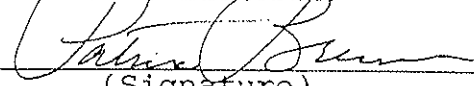
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McArdle Laboratory for Cancer Research
1400 University Avenue
Madison, Wisconsin 53706

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CHRISTOPHER A. BRADFIELD

1958 Born in San Francisco, California, on 6 March

Education

1976 San Francisco State University
1979 A.A., Skyline College
1982 B.A., University of California, Davis
1986 Ph.D., University of California, Berkeley

Professional Experience

1986-1989 University of Wisconsin Medical School, Madison, Wisconsin
Postdoctoral Fellow, McArdle Laboratory for Cancer Research
1996-present Associate Professor of Oncology, McArdle Laboratory for
Cancer Research

1989-1994 Northwestern University Medical School
Assistant Professor of Pharmacology
1994-1996 Associate Professor of Molecular Pharmacology and Biological
Chemistry

Honors

1989 Cancer Research Foundation Young Investigator Award
1992-1996 Pew Scholar in the Biomedical Sciences
1996-2001 Burroughs-Wellcome Scholar in Toxicology

Selected Publications

- Bradfield, C. and L. Bjeldanes, 1984. Effect of dietary indole-3-carbinol on intestinal and hepatic monooxygenase, glutathione S-transferase and epoxide hydrolase activities in the rat. *Food and Chemical Toxicology* 22:977-82.
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- Carver, L. 1994. A yeast expression system demonstrates that hsp90 is essential for Ah-receptor signaling *in vivo*. *Journal of Biological Chemistry* 269:30109-12.
- Swanson, H. and C. Bradfield, 1995. DNA binding specificity and pairing rules of the Ah-receptor, Arnt and Sim. *Journal of Biological Chemistry* 270:26292-302.
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ABSTRACT

Christopher Bradfield grew up in the San Francisco, California, area. His early schooling was in Daly City, California, and he attended high school in Half Moon Bay. He has an older brother and a younger sister. His father obtained his PhD in psychology from University of California, Berkeley, during years of social upheaval, and Bradfield can remember being on campus during those times. Bradfield's mother suffered from cancer for several years during Bradfield's early adolescence, dying when he was in high school. He finished his schooling intending to become a soccer coach.

Bradfield applied to college because his father was a professor and expected his children to go to college. Finally, calling himself a late bloomer, he began to see the value in learning and displayed an aptitude for sciences, which a biology teacher at his community college encouraged Bradfield to pursue. He particularly admires the elegance of scientific solutions. He received a two-year degree from Skyline College and his BA from University of California, Davis. Bradfield ponders the questions of whether scientists are born or made; the role of serendipity in science; and types of intelligence.

Bradfield decided to get a master's degree from University of California, Berkeley and he entered Leonard F. Bjeldanes' lab, where his research involved indentifying indoles; he became so involved in his project that he finished a PhD instead of a master's degree. By then, he had realized that environmental and nutritional issues must be dealt with in the political arena, not simply the laboratory.

Bradfield decided to accept a postdoc in Alan P. Poland's lab at the University of Wisconsin. Under Alan Poland's influence Bradfield flourished, beginning work on the AH purifying proteins. He then accepted an assistant professorship at Northwestern University, where he was unable to do the work he had anticipated, so he moved to McArdle Laboratory for Cancer Research at University of Wisconsin.

Bradfield discusses his concern about the lack of creativity in most science; differences between good and great scientists; his love of laboratory work; his frustration with scientific journals; the status of the "scientific method" in current research. He explains how he decides what research projects the lab should pursue; the present status of his dioxin research and unpublished work on the relationship between dioxin and hypoxia; and doing research at McArdle. He puts forth his views on the best way to structure research institutions and compares the funding of science at McArdle and at Northwestern University.

Bradfield then reverts to the personal, talking about his own funding, his reasons for becoming a scientist; the advantages of not leading research in one's own field; keeping his lab afloat financially; the goals of his dioxin research; his patents; and the impact of his winning the Pew Scholars in the Biomedical Sciences award. Back to the larger picture, he talks about possible breakthroughs in gene therapy and disease intervention; his thoughts on the training of future M.D.'s; dangers of government policy masquerading as science. He finishes with a discussion of his family life.

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: Bradfield's office, McArdle Laboratory for Cancer Research.

Dates, length of sessions: December 2, 1997 (76 minutes); December 3, 1997 (137) ; December 4, 1997 (136).

Total number of recorded hours: 5.8

Persons present during interview: Bradfield 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 pre interview conversation with Bradfield 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 Bradfield'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, 1994.

The interview is organized chronologically, beginning with Bradfield's childhood in the San Francisco area and continuing through his education at the University of California, Berkeley, his postdoctoral work at the McArdle Laboratory for Cancer Research, University of Wisconsin Medical School, and the establishment of his labs at the Northwestern University Medical School and at the McArdle Laboratory. Major topics discussed include the role of creativity in science research, Bradfield's work on dioxin toxicity, and funding in the sciences.

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.

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

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

Ödül Bozkurt, editorial assistant, compiled the index.

TABLE OF CONTENTS

Early Years	1
Childhood in the San Francisco area. Family background. Early schooling in Daly City. Attends high school in Half Moon Bay. Brother's writings. Biology teacher encourages Bradfield to pursue science. Father's influence as a college professor. Influence of the social climate of the sixties. Religion.	
College, Graduate School, and Postdoctoral Years	25
Types of intelligence. Introduction to biology. The ease and elegance of scientific solutions. Role of serendipity in science. Decision to enter the Alan P. Poland lab. Studies nutrition at University of California, Berkeley. Research in the Leonard F. Bjeldanes lab identifying indoles. Daniel E. Gottschling. The difference between good and great scientists. His love of laboratory work. Begins work on the Ah purifying proteins in Poland's lab. Scientific journals. The scientific method in current research. Realization that AHR was not a steroid receptor. Studies dioxin toxicity.	
Faculty Years	58
Current dioxin research. Unpublished work on the relationship between dioxin and hypoxia. Restrictions on the size of Bradfield's laboratory. Well-known scientists at McArdle Laboratory for Cancer Research. Doing research at McArdle. Way to structure research institutions. The funding of science at McArdle and at Northwestern University. Private versus public funding sources in science.	
Final Thoughts	77
Possible breakthroughs in gene therapy and disease intervention. Thoughts on the training of future M.D.'s. Patents and the commercialization of scientific discovery. Family life. The Pew Scholars Program in the Biomedical Sciences.	
Index	96

INDEX

A

acquired immune deficiency syndrome, 37, 40
Agent Orange, 35
AHR. *See* aryl hydrocarbon receptor (AHR)
AIDS. *See* acquired immune deficiency syndrome
AINT/MOP1/HIF, 62
aINT1, 62
Allentown, Pennsylvania, 8
American Cancer Society, 68, 71
Animal Farm, 30
Arizona, 4
ARNT. *See* aryl hydrocarbon receptor nuclear translocator
aryl hydrocarbon receptor (AHR), 31, 32, 33, 37, 40, 42, 44, 47, 49, 50, 54, 56, 58, 61, 62, 63, 64, 77, 78, 88, 89
aryl hydrocarbon receptor nuclear translocator, 32, 47, 48, 58, 62, 63, 90
Azores, 19

B

Baker, Chet, 18
Baltimore, David, 34, 35
Baptists, 25
Baylor University, 43
Benjamin Franklin Junior High School, 11
Big Brother and the Holding Company, 22
Bjeldanes, Leonard F., 36, 43, 44
Boston University, 74
Boutwell, Roswell K., 64
Bradbury, Ray D., 17
Bradfield letter, 38, 53
Bradfield, Abigail (daughter), 25, 41, 79, 91, 92
Bradfield, Jason Sean (half brother), 13
Bradfield, Jennifer Erin (sister), 21
Bradfield, Laura Jean Moss (stepmother), 15
Bradfield, Marie Grace Mulhall (mother), 1,

17, 26

Bradfield, Mary Flanagan (wife), 41, 75, 79, 91
Bradfield, Mildred Bond (paternal grandmother), 4
Bradfield, Robert Harrison (father), 1, 26
Bradfield, Scott Michael (brother), 4, 17, 27
Bradfield, Walter Sylvanus (paternal grandfather), 4
Brown, Michael S., 83
Burroughs-Wellcome Fund, 71
Burton, Danny Lee, 87

C

California, 4, 5, 6, 10, 15, 24
California State University, 10
California State University, Fullerton, 21
California State University, Los Angeles, 22
Carson, Rachel, 35
Carver, Lucy A., 92, 93
Cech, Thomas R., 41
Centers for Disease Control, 35
Chambon, Pierre, 88, 90
Chanel No. Five, 6
Chicago, Illinois, 39, 68, 73, 76, 91
China, 90
circadian rhythms, 40, 59
Cold Spring Harbor Laboratory, 74
Cornell University, 42, 43
cytochrome P₄₅₀, 34, 50
cytochrome P₄₅₀ IID19, 34

D

Daly City, California, 1, 2, 3, 7, 8, 9, 10, 11, 13, 16, 22
Dane County, Michigan, 87
Davis, Angela, 23
DDT, 35
De Paul University, 93
dioxin, 35, 38, 44, 58, 59, 60, 61, 62, 63, 64, 78, 79, 81, 82, 85, 86, 87, 88
DNA, 33, 39, 47, 48, 59, 64

cDNA, 32, 46, 47, 54, 81, 92
Dolwick, Kristine M. Burbach, 46, 92, 93
Door County, Wisconsin, 68
Dower, Alice (maternal aunt), 5
Dower, Ralph (maternal uncle), 6
Down syndrome, 26
Drinkwater, Norman R., 69
Drosophila, 40, 93

E

Edwards Air Force Base, 5
Encyclopedia Britannica, 93
England, 18
Environmental Defense Fund, 86
EPA. *See* U.S. Environmental Protection Agency
erythropoietin, 63, 79
EST. *See* expressed sequence tag
Evans, Ronald M., 58, 62
expressed sequence tag, 47

F

Feinberg Cardiovascular Research Institute, 66, 70
Fred Hutchinson Cancer Research Center, 64, 65, 66
funding, 69, 71, 72, 73, 74, 80
Future Farmers of America, 13

G

Genetical Society of Great Britain, 49
Gibbons, Euell, 44
Golden Gate Park, 2
Goldstein, Joseph L., 83
Gottschling, Daniel E., 39, 40, 66, 94
Grass Valley, California, 5
Greenpeace, 86
Gu, Yi-Zhong, 59

H

Haight-Ashbury, 22
Half Moon Bay High School, 2, 13, 16
Half Moon Bay, California, 2, 10, 15, 19, 37
Hansch, Corwin, 42

Harvard University, 34, 74, 93
Hayakawa, Samuel I., 24
Healy, Bernadine P., 65
HeLa cells, 54
HIF1 α . *See* hypoxia-inducible factor
Hogenesch, John B., 59, 93
Home Alone, 8
Houston, Texas, 12
Howard Hughes Medical Institute, 33, 38, 40, 53, 67, 76, 93
Humboldt State University, 10, 27
Hurley, Lucille S., 36
Hybrizyme Corporation, 89
hypoxia-inducible factor, 48, 50, 62
hypoxia-inducible factor 1 α , 48

I

Imanishi-Kari, Thereza, 51
indoles, 32, 36, 37, 78

J

Jain, Sanjay, 93
Johns Hopkins School of Medicine, 62
Joplin, Janis, 22

K

Korea, 4, 5
Korean War, 4

L

La Crosse, Wisconsin, 68
Lake Merced, 3
Lake Michigan, 66
Lewin, Benjamin, 47
Los Angeles City College, 5
Los Angeles, California, 18
Lutheran, 49

M

Macy's, Inc., 6
Mad Max, 66, 67
Marin City, California, 26
Marin County, California, 1, 2, 9, 16
Marin High School, 16

McArdle Laboratory for Cancer Research, 34, 47, 63, 70, 72, 84
McArdle, Michael W., 68
McKnight, Steven L., 48, 89
Mesa, Arizona, 4
Microsoft Corporation, 76
Miller, Elizabeth C., 64, 66
Miller, James A., 64, 95
Milwaukee, Wisconsin, 65
Minnesota, 44
Monsanto Company, 88
MOP [1-10], 62
Morgantown, West Virginia, 38
Mormonism/Mormon, 4, 5, 24, 25
Moss Beach, California, 3
Mueller, Gerald C., 65
Mulhall, Grace Dower Dowd (maternal grandmother), 1, 17
Mulhall, William (maternal grandfather), 6

N

Narahashi, Toshio, 70
National Academy of Sciences, 48, 64, 77, 86, 94
Award in Molecular Biology, 39
National Cancer Institute, 65, 68, 69, 71, 72, 76
National Endowment for the Arts, 18
National Institute of Environmental Health Sciences, 54, 71, 86, 87
National Institute of Occupational Safety and Health, 38
National Institutes of Health, 50, 53, 67, 69, 72
Research Career Development Award, 72
NCI. *See* National Cancer Institute
Nebert, Daniel W., 44
New Jersey, 45
New York Times, 18, 49
New York University, 91
NIEHS. *See* National Institute of Environmental Health Sciences
NIH. *See* National Institutes of Health
NMR. *See* nuclear magnetic resonance
Nobel Prize, 94

Northwestern University, 32, 33, 46, 59, 61, 63, 65, 66, 67, 68, 69, 70, 72, 73, 74, 76, 77, 80, 82, 83, 88, 90, 91, 92, 94
nuclear magnetic resonance, 32
NYU. *See* New York University

O

O'Neil, Edward H., 73
Oscar Mayer and Company, 76, 91

P

Pacifica, California, 20
PAS (helix-loop-helix), 58, 62, 89
patents, 88, 89, 90
PCR. *See* polymerase chain reaction
Perry, Mary Ellen, 70
Pew Charitable Trusts, 39
Pew Scholars Program in the Biomedical Sciences, 34, 39, 49, 54, 58, 67, 71, 76, 79, 82, 84, 93, 94
Pismo Beach, California, 9
Pitot, Henry C., 65, 66
Poland, Alan P., 34, 37, 38, 40, 41, 44, 45, 46, 48, 50, 55, 57, 60, 64, 65, 68, 77, 80, 81, 83, 86, 87, 88, 95
polymerase chain reaction, 47
Portugal, 19
Potter, Van Rensselaer, 64
Potter-Elvehjem homogenizer, 64
Presbyterian, 49
Prescott, Arizona, 4
Princeton University, 33, 93

R

Reno, Janet, 88
Reynolds, Malvina, 1
Rosbash, Michael, 40
Rosen, Steven T., 67
Ross, Jeffrey, 65

S

Saint Luke's Hospital, 2
Salk Institute for Biological Studies, 63
San Francisco State University, 2, 10, 19,

20, 22, 27
San Francisco, California, 1, 2, 3, 6, 7, 9, 21, 22
San Luis Obispo, California, 1, 9
San Quentin Prison, 27
Schmidt, Jennifer V., 92
Scottsdale, Arizona, 4
Semenza, Gregg L., 62
Silent Spring, 35
Simon, M. Celeste, 67
Skyline College, 10, 19
Small Business Innovation Research Grants, 89
Smith, Rex, 19, 29
Social Security Administration, 28
Society of Toxicology, 44, 50
Stanford University, 30
Sunbeam Corporation, 68
Sweden, 40, 61, 62
Symbionese Liberation Army, 23
Synanon, 23

T

Temin, Howard M., 35, 64, 74
Tennessee State University, 34
tenure, 70, 74, 79
Thornton State Beach, 3
Thurmond, James Strom, 88
Tilghman, Shirley M., 93
trichothecins, 36
Tularik, 89

U

U.S. Army Air Corps, 4
U.S. Congress, 72
U.S. Environmental Protection Agency, 38, 53, 54, 85, 86, 87

UCI. *See* University of California, Irvine
UCLA. *See* University of California, Los Angeles
UCSF. *See* University of California, San Francisco
Union of Concerned Scientists, 86
United States of America, 4
University of Arizona, 46
University of California, Berkeley, 2, 21, 22, 30, 36, 41, 42, 43, 44, 54, 66, 75, 78, 83, 91, 93, 94
University of California, Davis, 3, 19, 20, 21, 24, 33, 35, 36, 41, 42, 43, 83
University of California, Irvine, 18, 22
University of California, Los Angeles, 22
University of California, San Diego, 93
University of California, San Francisco, 2
University of Chicago, 66, 67, 73, 91
University of Connecticut, 18
University of Illinois, 46, 73
University of Kentucky, 43
University of Rochester, 74
University of the Pacific, 63
University of Wisconsin, 34, 42, 68, 72, 89
University of Wisconsin Medical School, 84
Utah, 4, 52

V

Varmus, Harold E., 40, 73, 74
Vienna, Austria, 64
Vietnam War, 4, 23, 35
Volcano, California, 6

W

Wisconsin, 9, 45, 49, 73
Wisconsin Flexible Shaft Corporation, 68
World War II, 4