CHEMICAL HERITAGE FOUNDATION

CATHERINE HURT MIDDLECAMP

Transcript of an Interview Conducted by

Hilary Domush

at

University of Wisconsin, Madison Madison, Wisconsin

on

10 and 11 December 2008

(With Subsequent Corrections and Additions)

CHEMICAL HERITAGE FOUNDATION Oral History Program FINAL RELEASE FORM

This document contains my understanding and agreement with the Chemical Heritage Foundation with respect to my participation in the audio- and/or video-recorded interview conducted by <u>Hilary Domush</u> on <u>10 and 11</u> <u>December 2008</u>. I have read the transcript supplied by the Chemical Heritage Foundation.

- 1. The recordings, transcripts, photographs, research materials, and memorabilia (collectively called the "Work") will be maintained by the Chemical Heritage Foundation and made available in accordance with general policies for research and other scholarly purposes.
- 2. I hereby grant, assign, and transfer to the Chemical Heritage Foundation all right, title, and interest in the Work, including the literary rights and the copyright, except that I shall retain the right to copy, use, and publish the Work in part or in full until my death.
- 3. The manuscript may be read and the recording(s) heard/viewed by scholars approved by the Chemical Heritage Foundation subject to the restrictions listed below. The scholar pledges not to quote from, cite, or reproduce by any means this material except with the written permission of the Chemical Heritage Foundation. Regardless of the restrictions placed on the transcript of the interview, the Chemical Heritage Foundation retains the rights to all materials generated about my oral history interview, including the title page, abstract, table of contents, chronology, index, et cetera (collectively called the "Front Matter and Index"), all of which will be made available on the Chemical Heritage Foundation's website. Should the Chemical Heritage Foundation wish to post to the internet the content of the oral history interview, that is, direct quotations, audio clips, video clips, or other material from the oral history recordings or the transcription of the recordings, the Chemical heritage Foundation will be bound by the restrictions for use placed on the Work as detailed below.
- 4. I wish to place the conditions that I have checked below upon the use of this interview. I understand that the Chemical Heritage Foundation will enforce my wishes until the time of my death, when any restrictions will be removed.

Please check one:

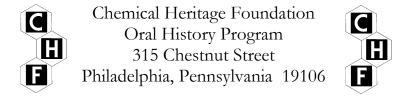
a	No restrictions for access after the following pages are sealed.
	NOTE: Users citing this interview for purposes of publication are obliged
	under the terms of the Chemical Heritage Foundation Oral History Program to
	obtain permission from Chemical Heritage Foundation, Philadelphia,
	Pennsylvania. Pages 22-23 of the transcript are sealed until 2030, or until
	otherwise instructed. The portions of the audio and video corresponding
	to these pages are also sealed until that time.
b	Semi-restricted access. (May view the Work. My permission required to quote, cite, or reproduce.)
c	Restricted access. (My permission required to view the Work, quote, cite, or reproduce.)
This constitutes my	y entire and complete understanding.
	(Signature) Dr. Catherine Hout Med Roy
	Dr. Catherine Hurt Middlecamp

(Date) 12-28-09

This interview has been designated as **Semi Restricted Access**.

One may view the oral history with the permission of CHF. However, the permission of the interviewee is required to quote from, cite, or reproduce the oral history.

Please contact CHF to request permission.



The Chemical Heritage Foundation (CHF) serves the community of the chemical and molecular sciences, and the wider public, by treasuring the past, educating the present, and inspiring the future. CHF maintains a world-class collection of materials that document the history and heritage of the chemical and molecular sciences, technologies, and industries; encourages research in CHF collections; and carries out a program of outreach and interpretation in order to advance an understanding of the role of the chemical and molecular sciences, technologies, and industries in shaping society.

CATHERINE HURT MIDDLECAMP

1972 B.A., Cornell University, Chemistry 1976 Ph.D., University of Wisconsin, Madison, Inorganic Chemistry 1989 M.S., University of Wisconsin, Madison, Counseling Psychology and Counselor Education Professional Experience Knox College 1976-1977 Danforth Teaching Intern, Chemistry Hobart and William Smith Colleges 1977-1979 Assistant Professor, Department of Chemistry University of Wisconsin-Madison 1979-1983 Lecturer, Department of Chemistry 1979-1983 Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present 1989-1993 Program Coordinator, Chemistry, Minority Middle School
1976 1989 M.S., University of Wisconsin, Madison, Inorganic Chemistry M.S., University of Wisconsin, Madison, Counseling Psychology and Counselor Education Professional Experience Knox College Danforth Teaching Intern, Chemistry Hobart and William Smith Colleges Assistant Professor, Department of Chemistry University of Wisconsin-Madison 1979-1983 Lecturer, Department of Chemistry Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Faculty Associate, Department of Chemistry 1988-present 1989-1993 Program Coordinator, Chemistry, Minority Middle School
Knox College 1976-1977 Danforth Teaching Intern, Chemistry Hobart and William Smith Colleges 1977-1979 Assistant Professor, Department of Chemistry University of Wisconsin-Madison 1979-1983 Lecturer, Department of Chemistry 1979-1983 Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present 1989-1993 Program Coordinator, Chemistry, Minority Middle School
Hobart and William Smith Colleges 1977-1979 Assistant Professor, Department of Chemistry University of Wisconsin-Madison 1979-1983 Lecturer, Department of Chemistry 1979-1983 Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present 1989-1993 Program Coordinator, Chemistry, Minority Middle School
Hobart and William Smith Colleges Assistant Professor, Department of Chemistry University of Wisconsin-Madison Lecturer, Department of Chemistry 1979-1983 Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present 1989-1993 Program Coordinator, Chemistry, Minority Middle School
University of Wisconsin-Madison 1979-1983 Lecturer, Department of Chemistry 1979-1983 Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present 1989-1993 Program Coordinator, Chemistry, Minority Middle School
University of Wisconsin-Madison 1979-1983 Lecturer, Department of Chemistry 1979-1983 Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present 1989-1993 Program Coordinator, Chemistry, Minority Middle School
1979-1983 Lecturer, Department of Chemistry 1979-1983 Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
1979-1983 Lecturer, Department of Chemistry 1979-1983 Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
Chemistry and Biology Instructor, Summer Opportunity Program for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
for Minority Students 1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
1979-1988 Associate Director, Chemistry Learning Center 1983-1985 Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
Enrichment Program 1984-1987 Associate Faculty Associate, Department of Chemistry 1985-1989 Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
Associate Faculty Associate, Department of Chemistry Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program Faculty Associate, Department of Chemistry Director, Chemistry Learning Center Director, Chemistry Learning Center Program Coordinator, Chemistry, Minority Middle School
Senior Instructor, Chemistry, Minority Middle School Summer Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
Enrichment Program 1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
1987-1999 Faculty Associate, Department of Chemistry 1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
1988-present Director, Chemistry Learning Center 1989-1993 Program Coordinator, Chemistry, Minority Middle School
1989-1993 Program Coordinator, Chemistry, Minority Middle School
· · · · · · · · · · · · · · · · · · ·
Summer Enrichment Program
2000-present Distinguished Faculty Associate, Department of Chemistry
2004-present Joint governance appointment, Integrated Liberal Studies Program
2009-present Chair, Integrated Liberal Studies Program
University of Illinois, Champaign-Urbana
2004 Visiting Professor, Department of Chemistry

Honors

1971	Phi Beta Kappa
1972-1976	Fellowship for graduate study, Danforth Foundation
1972	Sigma Xi
1993	Norman Basset Award for Outstanding Achievement in Student Services
1996	Wisconsin Alumni Association Award for Excellence in Leadership
1998	University of Wisconsin, Madison Teaching Academy
2000	Pharmacia Award for Excellence in the Teaching of Chemistry
2001	Distinguished member, National Society of Collegiate Scholars
2002	Women Chemists Committee of the American Chemical Society
	Regional Award for Diversity
2003	Fellow, Association for Women in Science
2003	University of Wisconsin System Alliant Energy/Underkofler Excellence in Teaching Award
2003	Fellow, American Association for the Advancement of Science
2003-2004	University of Wisconsin System Teaching Scholar
2006	American Chemical Society Award for Encouraging Women into Careers in the Chemical Sciences
2006	Judith S. Craig Distinguished Service Award, College of Letters & Science
2009	Fellow, American Chemical Society

ABSTRACT

Catherine Hurt Middlecamp was born in Queens, New York, though she grew up in Garden City, New York. Hers was a family of teachers and so Middlecamp wanted to be a teacher as well. She loved school, was active in many sports, and played the piccolo in the band and orchestra. In 1968, she wanted to go to college at Princeton, Harvard, or Yale, but at that time, women were not admitted to these schools. Instead, she selected Cornell University, where women made up about one-fifth of the undergraduate student body. In 1971, when Princeton began to admit women, an administrator attempted to lure Middlecamp away from Cornell, but she was no longer interested. She graduated Phi Beta Kappa from Cornell with a BA and a major in chemistry. She intended to teach high school, but her mentor, Professor James Burlitch, encouraged her to attend graduate school. In addition, she was selected as a Danforth Fellow for graduate study at any institution of her choice.

Middlecamp chose to do her graduate study in chemistry at the University of Wisconsin-Madison (UW-Madison), where she entered Robert West's research lab on organosilicon chemistry. Though only about 15 percent of the doctoral students at UW-Madison were women, women composed about one-third to one-half of West's lab, one of the reasons she selected this group. While working in West's lab, she had the opportunity to teach a real-world chemistry class designed by her advisor. During her college years, she was a social activist, joining with others to speak out against nuclear weapons and the arms race of the Cold War; more than once she was arrested with the Catholic Worker Community of Iowa. Just as she left graduate school, she married.

After finishing her Ph.D., Middlecamp served for a year as a Danforth Teaching Intern at Knox College. In 1977, she took her first faculty position at Hobart & William Smith Colleges. Realizing that she would not get tenure there because of the economic times (and that the woman before her had not gotten tenure), she and her husband moved back to Madison, Wisconsin. There she taught as a lecturer in the Chemistry Tutorial Program for Minority/Disadvantaged students, later named the Chemistry Learning Center; in 1989 she became its Director.

Building on the Robert West course she taught in graduate school, Middlecamp developed (and still teaches) a general chemistry course for non-science majors, *Chemistry in Context*. Students in the course use the textbook of the same name, which was developed as a national curriculum reform project of the American Chemical Society; in 2007, Middlecamp was appointed the Editor-in-Chief of this national curriculum reform project. With a Navajo colleague, she designed and taught the first chemistry course at the UW-Madison to meet the ethnic studies requirement, *Uranium and American Indians*.

In 2003, she sought a faculty line with tenure in the Chemistry department but was turned down. At about the same time, though, she was invited to teach in the Integrated Liberal Studies (ILS) program, a long-standing interdisciplinary certificate program on campus, teaching a course on radioactivity, *The Radium Girls and The Firecracker Boys*. In the ILS Program, Middlecamp found an intellectual and social home (shortly after this oral history interview she was elected as its chair).

The interview concludes with Middlecamp's views on teaching versus research, which she believes is a false dichotomy; what she believes are the many nefarious ways in which women are seen as unserious scholars; the undervaluation and dismissal of women and teaching;

and the inherent difficulties of the tenure system. She talks about her grant from the National Science Foundation—one that seeks, from her perspective, a 21st century science curriculum for a 21st century planet. She also speaks of her Master's degree in counseling psychology and her practice of the martial art of aikido. She believes that as the world becomes ever more interconnected, so must academic disciplines.

INTERVIEWER

Hilary Domush earned a B.S. in chemistry from Bates College in Lewiston, Maine in 2003. Since then she has completed a M.S. in chemistry and a M.A. in history of science both from the University of Wisconsin. Her graduate work in the history of science focused on early nineteenth-century chemistry in the city of Edinburgh, while her work in the chemistry was in a total synthesis laboratory. Hilary is currently Program Associate for Oral History at CHF, where she combines these two divergent academic paths. Her current work focuses on the oral histories related to women in chemistry. She also contributes to the podcast *Distillations* and the magazine *Chemical Heritage*.

TABLE OF CONTENTS

Early Years	1
Childhood in Queens, New York. Family background. Childhood activities. Science-of-the-Month club. School. Wanting to be teacher.	
College Years Matriculated into Cornell University. James Burlitch as mentor. Admissions standards at Cornell. Liked both physics and chemistry. Chose chemistry for major. BA degree because she did not want to be "science nerd". Protesting at Cornell. Conditions for university women in the 1960s. Played piccolo in Princeton University marching band.	11
Graduate School Years Wins Danforth Foundation scholarship. Enters University of Wisconsin-Madisor for PhD. Works in Robert West's lab. Discusses percentages of women in chemistry and in West's lab. Reasons why women do not succeed in chemistry. West's class in real-world chemistry. Cannot play in marching band. History of science classes with Aaron Ihde. Discusses "hippie" culture of times and effect on West's lab. Meets her husband in graduate school.	16 n
After Graduate School Placed by Danforth at Knox College; teaches basic chemistry. Moves to Hobart and William Smith Colleges. No tenured women there, so returns to University of Wisconsin. Worked in and then became director of Chemistry Learning Center. Eventually given course for non-chemistry majors. Drafted to author team for <i>Chemistry in Context</i> . Teaches class to go with book. Importance of writing well. Ethnic studies class. Denied tenure in chemistry; moves to Integrated Liberal Studies (ILS). More discussion of women in chemistry; importance of good teaching vs. research. Obtains National Science Foundation grant for Mobilizing Science, Technology, Engineering, and Mathematics (STEM) Education for a Sustainable Future.	25
General Thoughts Balancing career and family. Aikido instructor. Obtains MS in counseling psychology in order to counsel students. More about women in science. Image of science is reality. Tenure. Levels of teaching. Importance of ability to	64

Index 83

social home. Modeling her perseverance.

communicate, understand, observe in order to teach well. Recruiting for ILS. Complicated world demands integrated disciplines. ILS her intellectual and

INDEX

A

AAAS. See American Association for the Advancement of Science
ACS. See American Chemical Society aikido, 66
Alaska, 52
American Association for the Advancement of Science, 58
American Chemical Society, 10, 37, 38, 39, 56, 58, 59
Arnelle, Derrick, 33
Association for Women in Science, 21
AWIS. See Association for Women in Science

В

Baldwin, Omie, 53
Bender, Eileen, 11
Bender, Harvey, 11
Bentley, Anne K., 32, 40
Berrigan, Daniel, 14, 35
Brown University, 12
Brugge, Doug, 53
Burlitch, James, 10
Bush, President George W., 15, 46, 48

C

California State University, Sacramento, 36
Canada, 33
Carnegie Foundation, 63
Chadderton, Donald, 4
Chemical & Engineering News, 17
Chemical Heritage Foundation, 16, 48
Chemistry in Context, 37, 38, 39, 40, 41, 44, 45, 46, 47, 49, 50, 51, 53, 60, 61, 68, 71
China, 69
Copes, Jane Snell, 29
Corbridge, J. Noel, 4
Cornell Club, 21, 61
Cornell University, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19, 21, 23, 33, 35

Cronon, E. David, 30, 31 Cronon, William J., 30

D

Dahl, June L., 78
Dahl, Larry F., 78
Danforth Foundation, 25, 26, 30, 56
Danforth Graduate Fellowship, 10, 11, 25, 26
Dartmouth College, 12
Darwin, Charles, 57
Deadly Glow, The, 52
Diaz, Emilio, 33
Dineh, 53

\mathbf{E}

El Salvador, 33 Environmental Protection Agency, 47, 49 EPA. *See* Environmental Protection Agency Essenmacher, Gery, 20 Eubanks, Lucy Pryde, 37, 39 Evergreen College, 63

F

Fenske, Richard, 23 Freire, Paulo, 20

G

Gandhi, Mohandas, 24, 33 Garden City High School, 5 Garden City, New York, 1, 13, 25 George C. Pimentel Award, 59

H

Harvard University, 5, 6, 20 Hempstead, New York, 5 Herbert, Sarah, 29 Hess's Law, 32 Hiroshima, Japan, 23 Hobart and William Smith Colleges, 28, 58 Hoffman, Roald, 10 Hooks, Bell, 20 Houston, Texas, 49 Hurt, Shirley Ruger (mother), 2 Hurt, William Spencer (father), 3, 39

I

If You Poison Us, 53 Ihde, Aaron J., 19, 23 Illinois Beach State Park, 11 ILS. See Integrated Liberal Studies Integrated Liberal Studies, 26, 53, 54, 56, 57, 62, 71, 75, 76, 78, 79 Ithaca, New York, 8

K

Kean, Betsy, 12, 17, 20, 30, 32, 33, 34, 35, 57 Kirchoff, Mary, 38 Knox College, 25, 27

\mathbf{L}

Lido Beach, New York, 1, 2 Long Island, New York, 1

\mathbf{M}

MacGregor, Jean, 63
Madison, Wisconsin, 30, 33
Manhattan Project, 52, 63
Martin, William Bryan, 11, 52
Massachusetts Institute of Technology, 12
McNally, Mrs., 4
Meiklejohn, Alexander, 53
Middlecamp, Ralph (husband), 5, 28
Millar, Susan, 63
Minneapolis, Minnesota, 29, 39
MIT. See Massachusetts Institute of
Technology
Mobilizing STEM, 62, 63, 69
Morrill Land-Grant Colleges Act, 6
My Lai, Vietnam, 14

N

Nassau County, New York, 1, 2 National Academies, 63, 64 National Science Foundation, 56, 62, 63 Navajo, 53
New Hyde Park, New York, 1
New York City, New York, 1, 8
New York Times, 29
Nicaragua, 33
Nixon, President Richard M., 13, 14, 15, 25
No Child Left Behind Act, 78
No Exit, 29, 55
Northwestern University, 12, 17
NSF. See National Science Foundation

O

O'Leary, Marion, 30, 36 Obama, President Barack H., 63 Offutt Air Force Base, 33

P

Pew Research Center, 47
Pew Scholars Program in the Biomedical Sciences, 15, 72
Philadelphia, Pennsylvania, 49
Phillips, Margaret F., 32
Piltch, Nancy, 13
polysiloxanes, 24
Princeton Club, 21, 61
Princeton University, 5, 6, 8, 16
Puerto Rico, 33

Q

Queens, New York, 1

R

Radium Girls and the Firecracker Boys, 41, 51, 53
Reserve Officers Training Corps, 24
Rolison, Debra R., 73
ROTC. *See* Reserve Officers Training Corps

S

Sacramento, California, 49 Samaritain, La, 34 Sartre, Jean-Paul, 29, 55 Seven Sisters, 7 Seymour, Elaine, 49, 63 Shakhashiri, Bassam Z., 20 Smithsonian Institute, 15 Society of St. Vincent de Paul, 29 South America, 69 St. Louis, Missouri, 11 Stanford University, 7, 12 Stanitski, Conrad, 37, 39, 45

\mathbf{T}

Talking About Leaving, 49
Taylor, James W., 23
Teller, Edward, 52
tenure, 29, 54, 55, 56, 57, 58, 60, 72, 73, 74, 81
Trutkin, Miss, 4

U

United States Air Force, 23 University of California, Berkeley, 7, 12 University of Colorado, Boulder, 63 University of Illinois, 57 University of Nebraska, 36 University of Pennsylvania, 12 University of Wisconsin-Madison, 1, 12, 16, 17, 21, 28, 36, 44, 51, 66, 73

\mathbf{V}

Vietnam, 13, 14, 23, 25, 58

W

Washington, D.C., 33, 52, 57
Wellesley College, 8
West, Robert C., 17, 18, 20, 21, 25, 30, 37, 39
Wisconsin, 1, 5, 48
Woodward, Robert Burns, 10
Woodward-Hoffman rules, 10

\mathbf{Y}

Yale University, 5, 6

\mathbf{Z}

Zion, Illinois, 11