

CHEMICAL HERITAGE FOUNDATION

AMY H. NEWMAN

Transcript of Interviews
Conducted by

Hilary Domush

at

National Institutes of Health
Baltimore, Maryland

on

25 and 26 August 2009

(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 Hilary Domush on 25 and 26 August 2009 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.

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.

b. _____

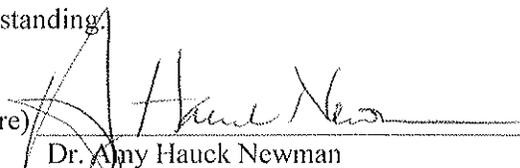
Semi-restricted access. (May view the Work. My permission required to quote, cite, or reproduce.)

c. _____

Restricted access. (My permission required to view the Work, quote, cite, or reproduce.)

This constitutes my entire and complete understanding.

(Signature)


Dr. Amy Hauck Newman

(Date)

7/6/2010

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.



Chemical Heritage Foundation
Oral History Program
315 Chestnut Street
Philadelphia, Pennsylvania 19106



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.

AMY H. NEWMAN

1958 Born in Buffalo, New York on 22 August

Education

1980 B.S., Chemistry. Mary Washington College
1985 Ph.D., Medical Chemistry, Medical College of Virginia, Virginia
Commonwealth University

Professional Experience

National Institute of Diabetes and Digestive and Kidney Diseases,
National Institutes of Health
1985-1988 Postdoctorate, Medicinal/Organic Chemistry, under Kenner C.
Rice

Walter Reed Army Institute of Research
1988-1990 Research Chemist, Applied Biochemistry

National Institute on Drug Abuse Intramural Research Program, National
Institutes of Health
1990-1994 Senior Staff Fellow, Psychobiology Section
1994-1999 Investigator, tenure-track, Psychobiology Section
1999-present Senior Investigator and Chief, Medicinal Chemistry Section
2008-2009 Associate Director for Translational Research
2009-present Acting Deputy Scientific Director

Honors

1980-1981 A.D. Williams Teaching Fellowship, School of Pharmacy, Medical
College of Virginia, Virginia Commonwealth University
1982-1983 Rho Chi Pharmaceutical Sciences Honor Society Graduate Teaching
Assistant of the Year Award
1984 Rho Chi Pharmaceutical Sciences Honor Society
1984 Watts Day Research Original Proposal Award
1985-1987 National Research Service Award, National Institute on Drug Abuse
1986 Committee on Problems of Drug Dependence Travel Award Scholarship
1994 Division of Intramural Research Scientific Director's Award, National
Institute on Drug Abuse

- 1996 National Institutes of Health Director's Seminar Series Invited Lecturer
- 1998 Guest Editor of *Medicinal Chemistry Research*, Special Issue, v.8 (1 & 2)
- 1998 HHS Special Service Award
- 1998 Sato International Memorial Award, Pharmaceutical Society of Japan
- 2004 National Institute on Drug Abuse Director's Award of Merit
- 2006 National Institute on Drug Abuse Director's Award for EEO, Diversity and Quality of Worklife
- 2009 Featured in *National Institutes of Health: Women in Science* by the National Institutes of Health Office of Research on Women's Health
- 2009 First recipient of the National Institute on Drug Abuse/National Institutes of Health Women Scientists Advisory Achievement Award

ABSTRACT

Amy Hauck Newman was raised in Buffalo, New York, one of two sisters. Her mother was an elementary school teacher; her father, a mechanical engineer. She enjoyed school from a young age and was interested in literature, poetry, and the sciences. She wanted to become a pediatrician, although her high school discouraged her from pursuing science. As an undergraduate at Mary Washington College, she majored in chemistry and undertook pre-medical coursework. Most of her peers were women and she found the college to be a very supportive environment; she decided to go to graduate school for medicinal chemistry. Graduate school was challenging, but her program was fairly streamlined, and she finished her degree in four years.

Newman did her postdoctorate with Kenner C. Rice at NIH, where she focused on opiate synthesis and benzodiazepene receptors. Rice was an encouraging mentor, teaching her to write scientifically and to pursue collaborations. Since NIH had few opportunities for permanent positions, she then took a position at Walter Reed Army Institute of Research. At Rice's suggestion, she began researching sigma receptor ligands; she continued to seek collaborators, including Jeffrey M. Witkin at NIH, which eventually led to the opportunity to begin a medicinal chemistry program back at NIH. At NIH she found a work environment supportive of her growing family and she began conducting research on analogues of benztropine—a dopamine transporter ligand like cocaine that does not have cocaine-like effects on the body.

Newman's role as an NIH scientist is to develop the basic science of compounds in the hopes that pharmaceutical companies will continue to develop them into medications. Her lab also conducts research synthesizing amide analogues with an affinity for glutamate receptors, which also play a role in drug abuse. She has intentionally kept her lab small, though has maintained a vigorous research program; she has also taken on additional administrative responsibilities like committees. At the end of the interview Newman discusses balancing her family and career; she comments on science education in the United States; and she shares her frustrations with how the communication of science to the public leads to unrealistic expectations for drug development and with the process of drug development itself. Newman notes how public perceptions of addiction have changed, and hopes that will translate into more attention from pharmaceutical companies. She concludes her interview by reflecting on the types of mentors she has had, and her efforts to be a strong mentor.

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 Pew Biomedical Scholars and Women in Chemistry oral history projects. She also contributes to the podcast *Distillations* and the magazine *Chemical Heritage*.

TABLE OF CONTENTS

Childhood and Undergraduate Education	1
Born in Buffalo, New York. High school science. Mary Washington College. Pre-med with chemistry major. Gender disparity among faculty.	
Graduate Education	10
Interest in medicinal chemistry. Virginia Commonwealth University. Richard Glennon's lab. Networking. Postdoctorate at NIH with Kenner Rice. Extracurricular activities. Marriage.	
Laboratory Career	28
Building a lab at Walter Reed. Tenure track position at NIH. Commuting. Dopamine transporter research. Role of government research in drug development. Research on glutamate receptors. Lab dynamics.	
Administrative Responsibilities	53
NIH career path and structure. Deputy Scientific Director. Committees. Women Scientists Advisory Committee.	
Reflections	61
Balancing childcare and family with career. Science education in the United States. Gap between public's expectations for drug development and reality. Changing perceptions of drug abuse. Mentoring and supportive networks.	
Index	75

INDEX

- #
- γ -aminobutyric acid, 14, 48
- (
- (+)-nalmefene, 22, 23
- (+)-naloxone, 23
- (+)-naltrexone, 23
- 2
- 2,6-dimethoxy-4-methylamphetamine (DOM), 13
- A**
- AA. *See* Alcoholics Anonymous
- Acquired Immune Deficiency Syndrome, 67, 69
- ACS. *See* American Chemical Society
- ADHD. *See* Attention Deficit Hyperactivity Disorder
- AIDS. *See* Acquired Immune Deficiency Syndrome
- Alcoholics Anonymous, 69
- alcoholism, 69
- Allen, Andrew C., 31
- American Chemical Society, 32, 33, 34
- Women Chemists Committee, 73
- American University, 31
- amphetamine, 45
- Attention Deficit Hyperactivity Disorder, 45, 68
- B**
- Baltimore, Maryland, 1, 33, 38, 40, 61, 63
- benzodiazepine, 14, 18, 23, 25
- benzodiazepine receptor, 14, 18, 22, 23, 31, 33
- benztropine, 41, 42, 43, 44, 50
- Bethesda, Maryland, 15, 26, 38, 58, 60
- Bethlehem Steel Corporation, 3
- Brossi, Arnold, 22
- Buenos Aires, Argentina, 31
- Buffalo, New York, 1, 3, 4
- C**
- Calderon, Silvia C., 30, 31, 37, 38, 40, 41
- Cantrell, Thomas S., 31
- Cao, Jian-Jing, 51, 63
- caramiphen, 40
- carbetapentane, 40
- Carroll, F. Ivy, 41
- cholinergic receptor, 33
- Clarkson College of Technology. *See* Clarkson University
- Clarkson University, 7
- cocaine, 40, 41, 42, 43, 45, 46, 47, 69, 70
- College on Problems of Drug Dependence, 32, 35, 43
- Columbia University, 43
- Cooperative Research and Development Agreement, 22
- Crissman, Judith A., 8
- D**
- dextromethorphan, 29, 40
- dopamine, 41, 48, 49
- dopamine receptor, 41, 44, 46, 47, 48, 49
- D2 receptor family, 46, 47, 70
- D2 receptor subtype, 47
- D3 receptor subtype, 46, 47, 48, 51, 66, 70
- D4 receptor subtype, 47
- dopamine transporter, 40, 41, 42, 43, 46, 47, 48, 50
- E**
- Eli Lilly and Company, 35
- F**
- Faden, Alan I., 31
- FDA. *See* U.S. Food and Drug Administration

Fragile X syndrome, 49

G

GBMC. *See* Greater Baltimore Medical Center
Georgetown Medical School. *See* Georgetown University
Georgetown University, 27, 32, 35, 36
Glennon, Richard A., 11, 13, 14, 16, 17, 18, 19, 20, 21, 23, 25, 29, 34
glutamate, 48, 49
Gottesman, Michael M., 58
Graduate Record Examination (GRE), 10, 21
GRE. *See* Graduate Record Examinations
Greater Baltimore Medical Center, 38
Greig, Nigel, 64

H

Haldol. *See* haloperidol
haloperidol, 47, 70
Harrelson, Susan, 57
Hauck, Doris June, 1, 2
Hauck, Richard, 1, 2, 7
Hoffer, Barry J., 55, 57, 72

I

Intramural Research Training Award
fellowship, 9, 15, 21, 51
IRTA. *See* Intramural Research Training Award

J

Johns Hopkins University, 20, 73
School of Medicine, 73
Journal of Biological Chemistry, 25
Journal of Medicinal Chemistry, 18, 23, 25, 30, 46
Journal of Neuroscience, 32, 51

K

Katz, Jonathan L., 36, 37, 38, 40, 55, 62
Kirk, Kenneth L., 31

L

Lake Erie, 3
Leshner, Alan I., 68
Lueddens, Hartmutt W. M., 18, 23
Luedtke, Robert R., 51

M

Mahoney, Bernard L., 6, 10
Margaret Pittman Lecture Series, 60
Mary Washington College, 4, 5, 6, 7, 8, 9, 12
May, Everett L., 21
MCAT. *See* Medical College Admission Test
Medical College Admission Test (MCAT), 9
Medical College of Virginia. *See* Virginia Commonwealth University
mentorship, 9, 16, 26, 31, 54, 60, 71, 72, 73
metabotropic glutamate receptor, 48, 49
subtype 5, 48, 49, 50, 52
methadone, 68, 69
methylphenidate, 45
methylphenyl ethynylpyridine, 49, 50
Michigan State University, 51
Molecular Pharmacology, 23
Montgomery County, Maryland, 66
muscarinic receptor, 29, 43

N

National Institutes of Health, 1, 9, 10, 14, 15, 16, 20, 21, 25, 26, 28, 30, 31, 35, 36, 37, 38, 40, 44, 45, 53, 54, 55, 56, 57, 58, 59, 60, 61, 66, 67, 72
Board of Scientific Counselors, 54, 55
Central Tenure Committee, 55, 58, 59
Internal Promotion and Tenure Committee, 55
Medications Discovery Research Branch, 55
National Cancer Institute, 10, 30
National Institute of Dental and Craniofacial Research, 31

National Institute of Diabetes and Digestive And Kidney Diseases, 26, 30
National Institute on Drug Abuse, 22, 24, 28, 30, 31, 36, 38, 40, 41, 45, 49, 53, 55, 57, 60, 66, 68, 69, 70
National Institute on Drug Abuse-Intramural Research Program, 55, 56, 57, 58, 60
Trans-NIH Mentoring Committee, 60, 71
Women Scientists Advisory Committee, 59, 60, 61, 72
National Research Council, 29, 31
National Research Service Award fellowship, 22
Nature Neuroscience, 43, 44
Neurogen Corporation, 46
Newman, Chris, 27
Newman, Joshua, 61, 64, 65
Newman, Katelyn, 33, 61, 62, 64
Newman, Kelly, 33, 37, 38, 61, 62, 64, 65, 67, 73
NGB 2904, 46
NIH. *See* National Institutes of Health
norepinephrine transporter, 41, 43, 45

P

P2D, Incorporated, 45
Paris, France, 64
Parkinson's disease, 41, 42
Pfizer Incorporated, 70
Pickens, Roy W., 36

R

Research Triangle Institute International, 41
Reserve Officers' Training Corps, 36
Rice, Kenner C., 14, 15, 16, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 53, 72
Richmond, Virginia, 10, 15, 17, 27
Fan, 27
ROTC. *See* Reserve Officers' Training Corps

S

San Antonio, Texas, 14
Schering-Plough Corporation, 46
Schoepp, Darryle D., 48
SciFinder, 15
serotonin, 41
serotonin transporter, 41, 43
sigma receptor, 29, 33, 40, 41
Sigma-Aldrich Company
Research Biochemicals Incorporated, 36
Silver Spring, Maryland, 38, 61
Skolnick, Phil, 14, 18, 21, 22, 23, 24, 25, 29, 31, 72
Society for Neuroscience, 32, 33, 70
St. Louis, Missouri, 33
State University of New York, 4

T

Thurkauf, Andrew A., 31, 46
Tortella, Frank C., 29, 31, 32
Towson University, 61
Towson, Maryland, 38

U

U.S. Food and Drug Administration, 44, 67
United States Army, 36, 40
University of Buenos Aires, 31
University of Buffalo School of Medicine and Biomedical Sciences, 9
University of Copenhagen, 43
University of Illinois, 16
University of Michigan, 36
University of Pennsylvania, 65, 67
University of Virginia, 4
University of Wisconsin, 16

V

Valium, 14
Van Sant, George, 5
Virginia Commonwealth University, 10, 11, 14, 15, 21
Virginia Museum Theater, 27
Volkow, Nora D., 69

W

Wall Street Journal, 73
Walter Reed Army Institute of Research,
28, 29, 30, 31, 32, 33, 35, 36, 40, 72
Washington, D.C., 27, 32, 33, 38, 40, 58,
61, 66
Georgetown, 27
Weill Cornell Medical College, 43
Western Kentucky University, 7

Winter Conference on Brain Research, 63
Wise, Roy A., 57
Wishner, Lawrence A., 6
Witkin, Jeffrey M., 30, 36, 37
Woods, James H., 36, 37
Wyeth Pharmaceuticals, 35

Z

Zou, Mu-Fa, 50, 51, 63