

CHEMICAL HERITAGE FOUNDATION

WILMA M. WASCO

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

William Van Benschoten

at

Massachusetts General Hospital
Boston, Massachusetts

on

2, 3, and 4 October 2002

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



Wilma M. Wasco

ACKNOWLEDGEMENT

This oral history is part of a series supported by a grant from the Pew Charitable Trusts based on the Pew Scholars Program in the Biomedical Sciences. This collection is an important resource for the history of biomedicine, recording the life and careers of young, distinguished biomedical scientists and of Pew Biomedical Scholar Advisory Committee members.

This oral history was completed under the auspices of the Oral History Project, University of California, Los Angeles (Copyright © 2007, The Regents of the University of California) and is made possible through the generosity of



**From the original collection at the Center for
Oral History Research, UCLA Library, UCLA.**

The following oral history, originally processed at the UCLA Center for Oral History Research, has been reformatted by the Chemical Heritage Foundation. The process involved reformatting the front matter, adding a new abstract, replacing the table of contents, and replacing the index. The paragraph spacing and font of the body of the transcript were altered to conform to the standards of the Oral History Program at the Chemical Heritage Foundation. The text of the oral history remains unaltered; any inadvertent spelling or factual errors in the original manuscript have not been modified. The reformatted version and digital copies of the interview recordings are housed at the Othmer Library, Chemical Heritage Foundation. The original version and research materials remain at the Darling Library, University of California, Los Angeles and at the Bancroft Library, University of California, Berkeley.

REFORMATTING:

Kim Phan, Program Intern, Oral History, Chemical Heritage Foundation. B.A. expected 2011, Anthropology, Cornell 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.

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Oral History Interview Agreement No. R110582I

This Interview Agreement is made and entered into this 5 day of November, 2002 by and between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a California corporation, on behalf of the Oral History Program at the UCLA campus, hereinafter called "University," and WILMA M. WASCO, having an address at Neurology Department, Massachusetts General Hospital, Building 114, 114 16th Street, Charlestown, Massachusetts 02129-9142, hereinafter called "Interviewee."

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about October 2, 2002, and tentatively entitled "Interview with Wilma M. Wasco. This Agreement relates to any and all materials originating from the interviews, namely the tape recordings of the interviews and a written manuscript prepared from the tapes, hereinafter collectively called "the Work."

In consideration of the mutual covenants, conditions, and terms set forth below, the parties hereto hereby agree as follows:

1. Interviewee irrevocably assigns to University all her copyright, title and interest in and to the Work. This assignment applies to University, its successors, and assigns, for and during the existence of the copyright and all renewals and extensions thereof.
2. By virtue of this assignment, University will have the right to use the Work for any research, educational, or other purpose, including electronic reproduction, that University may deem appropriate.
3. Interviewee acknowledges that she will receive no remuneration or compensation for her participation in the interviews or for the rights assigned hereunder.
4. Interviewee will receive from University, free of charge, one bound copy of the typewritten manuscript of the interviews.
5. To insure against substantive error or misquotation, Interviewee will have the right to review the manuscript before it is put into final form. University therefore will send Interviewee a copy of the edited transcript for review and comment. Interviewee will return transcript and comments to University within 30 days of receipt of the transcript. In the event that Interviewee does not respond within 30 days, University will assume that Interviewee has given full approval of the transcript.
6. All notices and other official correspondence concerning this Agreement will be sent to the following:

If to University:

Oral History Program
University of California, Los Angeles
Box 951575
Los Angeles, California 90095-1575

Attention: Janice L. Reiff


If to Interviewee:

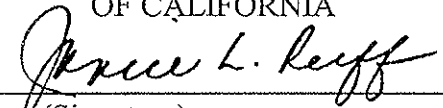
Wilma M. Wasco
Neurology Department
Massachusetts General Hospital
114 16th Street
Charlestown, MA 02129-9142

University and Interviewee have executed this Agreement on the date first written above.

INTERVIEWEE

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

X 
(Signature)


(Signature)

Wilma M. Wasco
(Typed Name)

Janice L. Reiff
(Typed Name)

Neurology Department
(Address)

Interim Director, Oral History Program
(Title)

Massachusetts General Hospital

114 16th Street

Charlestown, MA 02129-9142

X Date 10/2/02

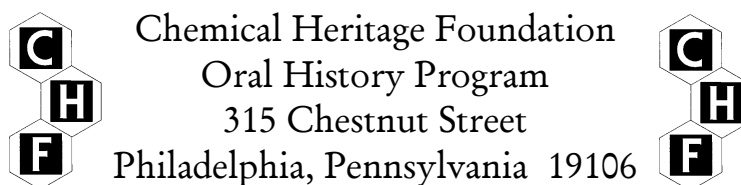
Date 5 Nov 2002

This interview has been designated as **Free Access**.

One may view, quote from, cite, or reproduce the oral history with the permission of CHF.

Please note: Users citing this interview for purposes of publication are obliged under the terms of the Chemical Heritage Foundation Oral History Program to credit CHF using the format below:

Wilma M. Wasco, interview by William Van Benschoten at Massachusetts General Hospital, Boston, Massachusetts, 2-4 October 2002 (Philadelphia: Chemical Heritage Foundation, Oral History Transcript # 0600).



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.

WILMA M. WASCO

1959 Born in Bridgeport, Connecticut, on 18 August

Education

1981 B.S., Biology, University of Connecticut, Storrs, Connecticut
1983 M.S., Molecular Pharmacology, Albert Einstein College of Medicine
1987 Ph.D., Molecular Pharmacology, Albert Einstein College of Medicine

Professional Experience

1987-1991 Massachusetts Institute of Technology
Postdoctoral Fellow, Center for Cancer Research, Department
of Biology

1991-1993 Harvard University
Research Fellow, Department of Neurology
1993-1994 Instructor, Department of Neurology
1994-present Assistant Professor, Department of Neurology

1991-1993 Massachusetts General Hospital
Research Fellow, Neurology Service
1993-present Assistant Geneticist, Neurology Service

Honors

1987 National Research Service Award
1993 Becton-Dickinson Research Fellowship Award
1997-2001 Pew Scholars Program in the Biomedical Sciences Grant
2000 MGH Women's Career Faculty Development Award

Selected Publications

Wasco, W.M. and Orr, G.A. (1984) Function of calmodulin in mammalian sperm: presence of a calmodulin-dependent cyclic nucleotide phosphodiesterase associated with demembranated rat caudal epididymal sperm. *Biochem. Biophys. Res. Commun.* 118:636-642.
Horowitz, J.A., Wasco, W. Leiser, M. and Orr, G.A. (1988) Interaction of the regulatory subunit

- of a type II cAMP-dependent protein kinase with mammalian sperm flagella, *J. Biol. Chem.* 263:2098-2104.
- Paupard, M-C., MacLeod, J., Wasco, W. and Orr, G.A. (1988) Major 56,000 dalton, soluble phosphoprotein in bovine sperm is the regulatory subunit of a type II cAMP-dependent protein kinase, *J. Cell. Biochem.* 37:161-175.
- Leiberman, S.J., Wasco, W., MacLeod, J., Satir, P. and Orr, G.A. (1988) Immunogold localization of the regulatory subunit of a type II cAMP-dependent protein kinase tightly associated with mammalian sperm flagella, *J. Cell. Biol.* 107:1809-1816.
- Horowitz, J.A., Wasco, W., MacLeod, J., Voulalas, P. and Orr, G. A. (1989) Biochemical and immunological characterization of the flagellar-associated regulatory subunit of a type II cAMP-dependent protein kinase, *Arch. Biochem. Biophys.* 270:411-418.
- Wasco, W., Kincaid, R.L. and Orr, G.A. (1989) Identification and characterization of calmodulin-binding proteins in mammalian sperm, *J. Biol. Chem.* 264:5104-5111.
- Bulawa, C.B. and Wasco, W. (1991) Chitin and nodulation, *Nature* 353:710.
- Tanzi, R.E., Romano, D.M., Huang, T.S., Wenniger, J.W. and Wasco W. Prevalence of APP gene mutations in Familial Alzheimer disease (1991), *Bulletin of ClinicalNeurosciences*,56:58-64.
- Tanzi, R.E. , Vaula, G., Romano, D.M., Mortilla, M., Huang, T.L., Tupler, R.G., Wasco, W., Hyman, B.T., Haines, J.L., Jenkins, B.J., Kalaitzidaki, M., Warren, A.C., McInnis, M.G., Antonarakis, S.E., Karlinsky, H., Percy, M.E., Connor, L., Growdin, J., Crapper-Mclachlan, D.R. Gusella, J.F., St. George -Hyslop, P.H. (1992) Assessment of amyloid β -precursor protein in a large set of familial and sporadic Alzheimer disease cases, *Am. J. Hum. Genet.* 51:273-282.
- Wasco, W., Bupp, K., Magendantz, M., Gusella, J.F., Tanzi, R. E. and Solomon, F. (1992) Identification of a mouse brain cDNA that encodes a protein related to the Alzheimer disease-associated amyloid β protein precursor, *Proc. Natl. Acad. Sci. USA*, 89:10758-10762.
- Wasco, W., Brook, J.D. and Tanzi, R.E. (1993) The amyloid precursor-like protein gene maps to the long arm of human chromosome 19, *Genomics*, 15:238-239.
- Wasco, W., Gurubhagavatula, S., Paradis, M., Romano, D.M., Sisodia, S.S., Hyman, B.T., Neve, R.L., and Tanzi, R.E. (1993) Isolation and characterization of the human APLP2 gene encoding a homologue of the Alzheimer's associated amyloid β protein precursor, *Nature Genetics*, 5:95-100.
- Petrukhin, K., Fischer, S.G., Piratsu, M., Tanzi, R.E., Chernov, I., Devoto, M., Brzustowicz, L.M., Cayanis, E., Vitale, E., Russo, J., Matseoane, D., Boukhalter, B., Wasco, W., Gigus, A.L., Loudiansos, J., Cao, A., Sternlieb, I., Evgrafov, O., Parano, E., Pavone, L., Warburton, D., Ott, J., Penchaszadeh, G., Scheinberg, I.H., and Gilliam, T.C. (1993) Physical mapping of the Wilson's disease gene locus. *Nature Genetics*, 5:338-343.
- Tanzi, R.E., Petrukhin, K., Chernov, I., Pellequer, J.L., Wasco, W., Ross, B., Romano, D.M., Brzustowicz, L.M., Devoto, M., Peppercorn, J., Bush, A.I., Sternlieb, I., Pirastu, M., Gusella, J.F., Evgrafov, O., Penchaszadeh, G.K., Honig, B., Edelman, I.S., Soares, M.B., Scheinberg, I.H. and Gillam, T.C. (1993) Identification of the Wilson's disease gene: A copper transporting ATPase with homology to the Menke's disease gene, *Nature Genetics*, 5:344-350.
- Ali, G., Wasco, W., Cai, X-C., Szabo, P., Sheu, K-F., Cooper, A., Gaston, S., Tanzi, R. and

- Blass, J. (1994) Isolation, characterization, and mapping of the human E2k gene to the familial Alzheimer's disease region of chromosome 14, *Somatic Cell and Molecular Genetics*, 20:99-105.
- Bush, A.I., Pettingell, W. H. Jr., Paradis, M.d., Tanzi, R.E. and Wasco, W. (1994) The amyloid 13-protein precursor and its mammalian homologues: evidence for a zinc-modulated heparin-binding superfamily. *J. Biol. Chem.*, 269:26618-26621.
- Sherrington, R., Rogaev, E.I., Liang, Y., Rogaeva, E.A., Levesque, G., Ikeda, M., Chi, H., Lin, C., Li, G., Holman, K., Tsuda, T., Mar, L., Foncin, J.-F., Bruni, A.C., Montesi, M.P., Sorbi, s., Rainero, I., Pinessi, L., Nee, L., Chumakov, Y., Pollen, D., Wasco, W., Haines, J.L., DaSilva, R., Pericak-Vance, M., Roses, A.D., Tanzi, R.E., Fraser, P.E. Fraser, P.E., Rommens, J.M., and St. George-Hyslop, P.H. (1995) Cloning of a novel gene bearing missense mutations in early onset familial Alzheimer disease. *Nature*, 375:754-760.
- Kim, T.-W., Wu, K., Xu, J.-L., McAuliffe, G., Tanzi, R.E., Wasco, W., Black, I.B. (1995) Selective localization of amyloid precursor-like protein 1 in the cerebral cortex postsynaptic density. *Mol. Brain Res.*, 32:36-44.
- Webster, M.-T., Brooker, N., Frances, P.T., Pearce, B.R. Thinakaran, G., Felsenstein, K., Wasco, W., Tanzi, R.E. and Bowen, D. (1995) A novel protein, amyloid precursor like protein 2, is present in human brain and cerebrospinal fluid and conditioned media. *Biochem. J.*, 310:95-99.
- Wasco, W., Pettingell, W., Jondro, P.D., Schmidt, S.D., Gurubhagavatuls, S., Rodes, L., DiBlasi, T., Romano, D., Guenette, S.G., Kovacs, D.K., Tanzi, R.E. (1995) Two novel mutations in the familial Alzheimer's disease gene on chromosome 14:Cys263Arg and Pro264Leu. *Nature Medicine*, 9:848, .
- Levy-Lehad, E., Wasco, W.*, Poorkaj, P., Romano, D.M., Oshima, J., Pettingell, W.H., Yu, C., Jondro, P.D., Schmidt, S.D., Wang, K., Crowley, A.C., Fu, Y.H., Guenette, S.Y., Galas, D., Nemens, E., Wijsman, E.M., Bird, T.D., Schellenberg, G.D., Tanzi, R.E. (1995) Candidate gene for the chromosome 1 familial Alzheimer's disease locus. *Science*, 269:973-977.
- * *The first two authors contributed equally to this publication.*
- Kovacs, D.K., Wasco, W., Witherby, J., Felsenstein, K., Brunel, F., Roeder, R.G. and Tanzi, R.E. (1995) The Upstream Stimulatory Factor Functionally Interacts with the Alzheimer Amyloid 13-Protein Precursor Gene. *Hum. Mol. Genetics*,4: 1527-1533.
- Kovacs, D.M., Fausett, H.J., Page, K.J., Kim, T-W., Mori, R.D., Merriam, D.E., Hoillister, R.D., Hallmark, O.G., Mancini, R., Felsenstein, K.M., Hyman, B.T., Tanzi, R.E. and Wasco, W. (1996) Alzheimer associated presenilins 1 and 2: Neuronal expression in brain and localization to intracellular membranes in mammalian cells. *Nature Medicine*, 2, 224-229.
- Scheuner D., Eckman C., Jensen M., Song X., Citron M., Suzuki N., Bird T.D., Hardy J., Hutton M., Kukull W., Larson E., Levy-Lahad E., Viitanen M., Peskind E., Poorkaj P., Schellenberg G., Tanzi, R.E., Wasco W., Lannfelt L., Selkoe D., Younkin S.. (1996) A1342(43) is increased in vivo by the PS 1/2 and APP mutations linked to familial Alzheimer's disease. *Nature Medicine*, 2:865-870.
- Johnston, J.A., Norgen, S., Ravid, R., Wasco, W., Wingbald, B., Lannfelt, L., Cowburn, R.. (1996) Quantification of APP and APLP2 mRNA in APOE genotyped Alzheimer's disease brains. *Mol. Brain Res.* 43: 85-95.

- Wolozin, B., Iwasaki, K., Vito, P., Kelly, G., Lacana, E, Sutherland, T., Zhao, B., Kusiak, J. Wasco, W. and D'Adamino, L. (1996) PS2 participates in cellular apoptosis: Constitutive activity conferred by Alzheimer mutation. *Science* 274:1710-1713.
- Brezovska, O, Xia, MQ, Page, K., Wasco, W, Tanzi, RE, and Hyman, BT. Developmental regulation of presemilin mRNA expression parallels notch expression. (1997) *J. Neuropathol Exp Neurol.* 56:40-44.
- Suzuki, T., Ando, K., Isohara, T., Oishi, M., Lim, G.S., Satoh, Y., Wasco, W., Tanzi, R.E. Nairn, A.C., Greengard, P., Gandy, S.E., Kirino, Y. Phosphorylation of Alzheimer 13-Amyloid Precursor-like Proteins (1997). *Biochemistry*, 36:4643-4649.
- Kim, T.-W., Pettingell, W.H., Hallmark, O.G., Moir, R.D., Wasco, W., Tanzi, R.E. Endoproteolytic cleavage and proteasomal degradation of presenilin 2 in transfected cells. (1997) *J. Biol. Chem.* 272:11006-11010.
- Andrews NC, Erdjument-Bromage H, Davidson MB, Tempst P, Orkin SH, Barton DE, Arquint M, Roder J, Dunn R, Francke U, Basler K, Oesch B, Scott M, Westaway D, Wälchli M, Groth DF, McKinley MP, Prusiner SB, Weissmann C, Bockman JM, Tateishi J, Kingsbury DT, Borchelt DR, Taraboulos A, Stahl N, Brandner S, Isenmann S, Raeber A, Fischer M, Sailer A, Kobayashi Y, Marino S, Aguzzi A, Büeler H, Lang Y, Bluethmann H, Lipp H, DeArmond SJ, Aguet M, Bush AI, Multhaup G, Moir RD, Williamson TG, Small DH, Rumble B, Pollwein P, Beyreuther K, Masters CL, Pettingell WH, de Paradis M, Tanzi RE, Wasco W, Carlson GA, Ebeling C, Yang S, Telling G. (1997) Identification of Candidate Proteins Binding to Prion Protein. *Neurobiol Dis* 3: 339-355.
- Gomez-Isla T., Wasco W., Pettingell W.P., Gurubhagavatula S, Schmidt S.D., Jondro P.D., McNamara M., Rodes L.A, DiBlasi T., Growdon W.B., Seubert P., Schenk D., Growdon J.H., Hyman B.T., Tanzi R.E. (1997) Novel presenilin 1 gene mutation: Increased 13-amyloid and neurofibrillary changes. *Annals of Neurology*, 41, 809-813.
- McNamara, M.J., Ruff, C.T., Wasco, W., Thinakaran, G. and Hyman, B.T. (1998) Immunohistochemical and in situ analysis of amyloid precursor-like protein 1 and amyloid precursor-like protein 2 expression in Alzheimer's disease and aged control brains. *Brain Res.* 804, 45-51.
- Buxbaum J.D., Choi, E.-K., Luo, Y., Lilliehook, C., Crowley, A.C., Merriam, D.E. and Wasco, W. (1998) Calsenilin: a novel calcium-binding protein which interacts with the presenilins and regulates the levels of a presenilin fragment. *Nature Medicine* 4, 1177-1181.
- Leissring M.A., Yamasake, T.R., Wasco W., Buxbaum J.D., Parker, I. and LaFerla M.A. (2000) Calsenilin blocks presenilin-mediated enhancement of calcium signaling, *Proc. Natl. Acad. Sci, USA* 5890-5893.
- Buxbaum J.D. Lilliehook C., Chan C., Go R.C.P., Bassett S.S., Tanzi R.E., Wasco W., and Blacker D. (2000) Genomic structure, expression pattern, and chromosomal localization of the human calsenilin gene: No association between an exonic polymorphism and Alzheimer's disease *Neruosci Letts* 294: 135-138.
- Choi E.-K., Zaidi N.F., Miller J.C., Crowley A.C., Merriam D.M., Lilliehook C., Buxbaum J.D., Wasco W. (2001) Calsenilin is a substrate for caspase-3 that preferentially interacts with the familial Alzheimer's disease associated C-terminal fragment of presenilin 2. *J. Biol Chem.* 276:19197-19204.
- Osawa M., Tong K.I., Lilliehook C., Wasco W., Buxbaum J.D., Cheng H.Y., Penninger J.M.,

- Ikur M., Ames J.B. (2001) Calcium-regulated DNA-binding and oligomerization of the neuronal calcium sensing protein, calsenilin/DREAM/KChIP3. *J Biol Chem.* 276:41005-41013
- Tekerian T.L. Marshansky V., Merriam D.E., Crowley A.C., Miller, J.S., Chan H., Ausiello, D. Buxbaum J.D., Xia W., Wasco W. (2001). Subcellular localization of presenilin 2 in the early secretory pathway. *Brain Res Mol Brain Res:* 96:14-20.
- Lilliehook, C., Chan, S., Choi, E.-K., Zaidi N.F. Wasco, W., Mattson, M. Buxbaum, J.D. (2002) Calsenilin, a presenilin-interacting neuronal calcium sensor, enhances apoptosis and alters calcium signaling. *Mol Cell Neurosci.* 4:552-9.
- Zaidi N.F., Berezovska O., Choi E.-K., Chan H., Lilliehook C., Hyman B.T., Wasco W. (2002) Biochemical and immunochemical characterization of calsenilin in mouse brain. *Neuroscience. In Press*

ABSTRACT

Wilma M. Wasco was raised in Fairfield, Connecticut—a town about forty-five minutes away from New York City—the oldest of three siblings. Her father was a lawyer and had a profound love of jazz music, also, later in life, he suffered from multiple sclerosis; her mother worked for a telephone company until her children were born and then, when older, pursued an interest in her own artistic expression. Wasco loved to read and play as a child, and for a time took music lessons from a jazz-artist who was a friend of her father. Her family was close-knit: they often took day trips together around the state. After some time in parochial school, Wasco entered the public system for junior high and high schools. She first became interested in science in the eighth grade due to a teacher, Mr. Somaski, but she was still uncertain of what career she wanted to pursue.

She chose to attend the University of Connecticut for her undergraduate degree. Due to registration difficulties she was unable to enroll in science classes until her sophomore year, at which point she took an honors chemistry course, interesting her in science; she chose her major (biology) in her junior year, and only then began taking biology courses. While still an undergraduate she worked for Guillermo Fallar, a neuroscientist, and Ian McClellan, biochemist, in a neurobiology laboratory and she decided to go to graduate school. She wanted to study molecular pharmacology and she applied to and was accepted at Albert Einstein College of Medicine in New York. While there she conducted her thesis research with George A. Orr, with whom she published her first paper, on calmodulin. From New York she moved on to a postdoctoral position at the Massachusetts Institute of Technology, working with Frank Solomon on microtubular-associated proteins, specifically identifying and characterizing amyloid precursor-like protein 1 (APLP1); during her studies she received a National Research Service Award. She then became a Research Fellow in the neurology department at Harvard University and held a joint position with Massachusetts General Hospital, at which time she was working with Rudolph E. Tanzi (Pew Scholar Class of 1993) on cloning amyloid precursor-like protein 1 (APLP1). Wasco remained at Harvard University, becoming an assistant professor researching neuronal cell death in normal and neurodegenerative cells with implications for Alzheimer's disease research, and becoming an assistant geneticist at Massachusetts General Hospital.

The interview ends with Wasco discussing her work on presenilin 2; her research on calsenilin and amyloid precursor-like proteins, the long- and short-term applications of her work; and her opinion of biomedical research funding in the United States. She concludes with thoughts on balancing family and career; the privatization of scientific research; competition and collaboration in science; the national agenda for science; scientists and public policy; science literacy in the United States; and the role of the Pew Scholars Program in the Biomedical Sciences in her work.

UCLA INTERVIEW HISTORY

INTERVIEWER:

William Van Benschoten, Interviewer, UCLA Oral History Program. B.A., History, University of California, Riverside; M.A., History, University of California, Riverside; C. Phil., History, UCLA

TIME AND SETTING OF INTERVIEW:

Place: Wasco's office, Massachusetts General Hospital.

Dates, length of sessions: October 2, 2002; October 3, 2002; and October 4, 2002.

Total number of recorded hours: 5.0

Persons present during interview: Wasco and Van Benschoten.

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, Van Benschoten held a telephone preinterview conversation with Wanda Wasco 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 Wasco's file at the Pew Scholars Program office in San Francisco, including the proposal application, letters of recommendation, and reviews by Pew Scholars Program national advisory committee members.

ORIGINAL EDITING:

Carol L. Squires 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.

Wasco did not review the transcript. Consequently, many proper names remain unverified.

Carol L. Squires prepared the table of contents. Victoria Simmons compiled the

interview history. TechniType Transcriptions compiled the index.

TABLE OF CONTENTS

Childhood	1
<p>Family background. Father's interest in sports. Multiple sclerosis. Siblings. Family outings and interactions. Childhood activities in Girl Scouts. Interest in reading and music. Early schooling at St John Vianney parochial school in Fairfield, Connecticut.</p>	
High School, College, and Graduate School	19
<p>Attends public junior high and high schools. Influential eighth grade science Teacher. Enjoys English classes. Religion. Extracurricular activities in high school. Parental expectations. Attends college at the University of Connecticut. Becomes interested in science while taking an honors chemistry class. Works as an undergraduate with neuroscientist Guillermo Fallar and biochemist Ian McClellan in a neurobiology laboratory. Decides to do graduate work in molecular pharmacology at Albert Einstein College of Medicine. Does her thesis work with George A. Orr. Orr's mentoring style. Publishes first paper on calmodulin while in graduate school.</p>	
Postdoctoral Work and Becoming Faculty	35
<p>Does postdoctoral work on microtubular-associated proteins at the Massachusetts Institute of Technology under Frank Solomon. Receives funding from a National Research Service Award during her postdoctoral fellowship. Solomon's mentoring style. Social life as a postdoctoral fellow. Describes her work identifying and characterizing amyloid precursor-like protein 1 (APLP 1). Collaboration with Rudolph Tanzi on the genetics of Alzheimer's disease. Learns how to be a scientist and manage a laboratory from Tanzi. Becomes a research fellow at Harvard University. Joint position of assistant professor at Harvard Medical School and assistant geneticist at Massachusetts General Hospital. Setting up laboratory. Lab management style. Research projects on APLP and the presenilin genes in Alzheimer's disease.</p>	
Current Research and Duties	59
<p>Current research on calsenilin and amyloid precursor-like proteins. Long- and short-term applications of work. Duties as a principal investigator. Role in the laboratory. Travel commitments. Administrative duties. Funding history. Opinion on biomedical research funding in the United States. Writing journal articles. Duties to professional community. Typical workday. Assesses efforts to achieve professional goals.</p>	
Reflections on Science and Final Thoughts	82
<p>Leisure activities. Balancing family and career. Being a principal investigator and a mother. Future research plans. Patents. Privatization of scientific research. Competition and collaboration in science. National science agenda. Scientists and public policy. Science literacy in the United States. Gender discrimination</p>	

in science at the student and PI levels. Pew Scholars Program in the Biomedical Sciences.

Index

115

INDEX

A

Albert Einstein College of Medicine, 32, 33, 34, 38, 39, 40, 46
Alzheimer's Association, 73
Alzheimer's disease, 33, 36, 42, 43, 45, 46, 47, 49, 52, 58, 59, 60, 61, 62, 64, 65, 66, 68, 69, 74, 75, 91, 92, 96, 98, 99, 102, 106, 113
Alzheimer's Disease Research Center, 73
amyloid, 41, 42, 43, 45, 52, 58, 62, 65, 91
amyloid precursor protein, 42, 43, 45, 47, 52, 58, 65, 66
amyloid precursor-like protein 1, 41, 43, 45, 47, 52, 58, 60, 64, 66, 74, 91, 94
amyloid precursor-like protein 2, 52
Andorra, 22, 23
APLP, 50. *See* amyloid precursor-like protein 1
APP. *See* amyloid precursor protein
Australia, 32, 49

B

Bethesda, Maryland, 80
Bio-Rad, 84, 92
Boston College, 26
Boston, Massachusetts, 6, 26, 37, 38, 40, 74, 86, 88, 104, 106, 111
Bratislava, Slovakia, 2
Bridgeport, Connecticut, 1, 3, 8
Bristol-Myers Squibb, 94
Bronx, New York, 38
Bupp, Keith, 40
Bush, Ashley, 51, 56
Bush, President George W., 101
Buxbaum, Joseph D., 63, 64, 100

C

California, 22
calmodulin, 35, 41
calsenilin, 63, 64, 66, 67, 68, 70, 73, 74, 75,

95, 100

Camilli, Andrew, 100
Canada, 59
Cape Cod, Massachusetts, 86
Chapel Hill, North Carolina, 33
Charlestown Navy Yard, 82
Cheney, Burke, 25
Chicago, Illinois, 78
Choi, En Kien, 78, 79, 104, 105, 106, 107
chromosome 1, 60, 61
chromosome 14, 52, 58, 59, 60
collaboration, 47, 59, 63, 64, 73, 100, 113
competition, 65, 98, 100
Connecticut, 14
cytoskeleton, 41

D

Davies, Peter, 46
DeFiglia, Maryann, 90
DNA, 42, 45, 60, 61, 64, 67, 68, 94, 103
Downstream Regulatory Element
 Antagonistic Modulator, 66, 67, 68
DREAM. *See* Downstream Regulatory Element Antagonistic Modulator

E

Edinburgh, Scotland, 107
electrophysiology, 100
England, 14, 45
epilepsy, 95
ethics, 93, 100
ethnicity, 110
 African American, 110, 111
 Asian, 111, 112
 Latinos, 111
Europe, 22
expressed sequence tag, 60, 94

F

Fairfield County, Connecticut, 1
Fairfield, Connecticut, 1, 3

Fallar, Guillermo, 32
Florida, 14, 106

G

German/Germany, 2, 61, 76
Girl Scouts of America, 14, 15, 16
Goldin, Barbara, 41
Gosh, Avirnan, 67
grants/funding, 37, 39, 50, 69, 70, 73, 74,
75, 76, 80, 89, 92, 95, 98, 101, 105, 112,
113
Gusella, James F., 42, 45, 51, 56, 59, 72, 84,
91, 94

H

Hartford, Connecticut, 10
Harvard Medical School, 51
Harvard University, 50, 57, 72, 74, 105,
107, 108, 112
Horwitz, Jill, 41
Houseman, David E., 45
Hyman, Bradley T., 46, 79
Hyslop, Peter, 59

I

India, 23

J

Johns Hopkins University, 33, 39

K

Katherine Gibbs, 25
KChIP. *See* potassium channel interacting
protein
Kennedy, Senator Edward M., 101
Kim, Dr., 104
Kolata, Gina, 103
Korea, 78, 79, 104, 105, 106
Korean Conflict, 7
Kovacs, Dora M., 63
Kretsch, Mike, 28
Kriwacki, Richard, 29

L

Levy-Lahad, Efrat, 61, 62
Liechtenstein, 23
Los Angeles, California, 83, 107
Lowstein, Robert, 100
Luxembourg, 23

M

Massachusetts General Hospital, 50, 51, 52,
59, 69, 73, 74, 89, 93, 107, 111, 112
Massachusetts Institute of Technology, 37,
40, 84, 108, 111, 112
McClellan, Ian, 32, 49
McCullen, Mia, 111
microtubular associated proteins, 41, 46
chartin, 42
microtubules, 41, 42, 46, 111
Miller, Janice, 107, 108
Missouri, 6
MIT. *See* Massachusetts Institute of
Technology
molecular pharmacology, 33
Mormon, Kelly, 97
Mount Sinai School of Medicine, 64
multiple sclerosis, 7, 28

N

National Institute of Aging, 74, 75
National Institute of Neurological Disorders
and Stroke, 74
National Institutes of Health, 50, 80, 91,
100, 101, 113
National Research Service Award, 39, 42,
43
National Science Foundation, 100
neuroanatomy, 68
neurobiology, 32
neurogenetics, 51
neurology, 51, 52, 56, 68
neuroscience, 21, 32, 49, 74, 96
New Jersey, 3
New York City, New York, 1, 3, 4, 16, 38,
64
New York Mets, 5

New York Times, 102, 103

New Zealand, 49

Newark, New Jersey, 3

Newsweek, 103

NIA. *See* National Institute of Aging

NIH. *See* National Institutes of Health

NRSA. *See* National Research Service Award

O

O'Connell, Mary, 40, 87, 107

Office of Women's Careers, 74

Orr, George A., 34, 35, 36, 38, 40, 77, 78

P

Parkinson's disease, 80

patents, 93, 94, 95, 96

PCR. *See* polymerase chain reaction

Pew Scholars Program in the Biomedical Sciences, 37, 43, 63, 67, 69, 73, 78, 81, 86, 90, 102, 113

plaques, 43

polymerase chain reaction, 97

potassium channel, 67, 92, 100

potassium channel interacting protein, 67, 68

Potter, Hunt, 106

presenilin, 62, 63, 64, 66, 67, 68, 75, 100

presenilin 1, 43, 59, 60, 62

presenilin 2, 43, 59, 60, 61, 62, 63

PS 1. *See* presenilin 1

publish/publication, 35, 36, 48, 61, 79, 95, 99, 102

R

Reback, Bill, 79

religion, 23, 24

(Roman) Catholic, 23, 24

Jesuit, 26

Robins, Phil, 97

Rockefeller University, 64

Romano, Donna, 48

Russia, 60

Ryans, Jasper, 42, 45

S

San Francisco, California, 84

Schellenberg, Jerry, 60, 61

Scotland, 87, 107

Seattle, Washington, 60

serendipity, 91, 95

Shea Stadium, 5

Single Mothers by Choice, 88

Slovakia, 2

Smith, Ann (maternal step-grandmother), 2

Smith, Harry (maternal grandfather), 2

Smith, Mary (maternal grandmother), 2

Solomon, Frank, 37, 38, 39, 40, 41, 42, 46, 78, 91, 97

Somaski, Mr., 20, 21

Spain, 66

spindle, 41

St. John Vianney School, 15, 19

stem-cell, 101, 102, 103

Stonehill College, 26

T

Tampa, Florida, 106

Tanzi, Rudolph, 42, 43, 45, 46, 47, 48, 51, 53, 56, 58, 61, 62, 63, 79, 84, 91, 103

tenure, 89, 98

Texas, 100

Thompson, Emma, 107, 108

Time, 103

Timmely School, 111

Toronto, Ontario, Canada, 59

Tufts University, 100

Tuttle, Jeremy, 49

U

UConn. *See* University of Connecticut

United States of America, 60, 78, 90, 100, 103, 104

University of California, Los Angeles, 33

University of Connecticut, 6, 26, 27, 28, 29, 33, 49, 96

University of North Carolina, 33

University of Washington, 60

V

Vietnam, 27, 107
Volga German, 60
Volga River, 60

W

Walzen, Benjamin, 46
Wasco, Benjamin Smith (son), 13, 54, 81, 86, 87
Wasco, Irene Smith (mother), 1, 8, 19, 38
Wasco, John "Jay" (brother), 5, 11, 19
Wasco, John (paternal grandfather), 2
Wasco, John Kenneth Charles (father), 4, 19, 92
Wasco, Judd (paternal great-uncle), 6
Wasco, Marie (paternal great-aunt), 6, 14
Wasco, Monica (sister), 5, 10, 19

Wasco, Robert (paternal uncle), 5
Wasco, Sister Rose (paternal great-aunt), 6
Wasco, William (paternal uncle), 5
Wasco, Wilma (paternal great-aunt), 4, 6, 14
Wasco, Wilma Von Amerik (paternal grandmother), 1, 2, 3, 6
Washington, D.C., 80
World Book Encyclopedia, 23
World Series, 5, 6
World War II, 7

Y

Young, Ann, 2, 56, 84, 90
Yunen, Oanh, 107

Z

Zaidi, Nykat F., 78, 79, 105, 106