

CHEMICAL HERITAGE FOUNDATION

RUDOLPH E. TANZI

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Andrea R. Maestrejuan

at

Massachusetts General Hospital
Boston, Massachusetts

on

16-18, 24 November 1998

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

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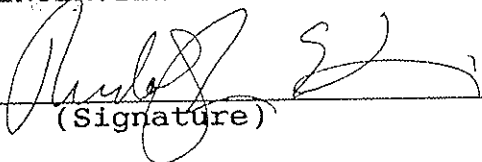
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(Signature)

Rudolph E. Tanzi

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(Title)

Massachusetts General Hospital

(Address)

Charlestown, MA 02129

Date _____

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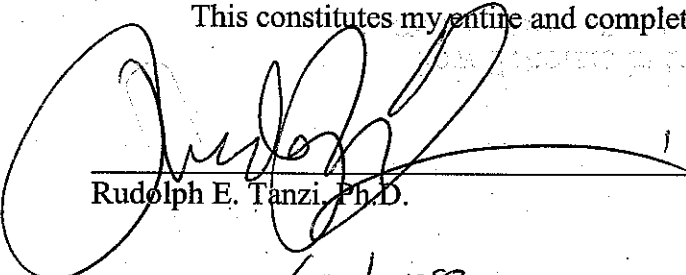
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RUDOLPH E. TANZI

1958 Born in Providence, Rhode Island on 18 September

Education

1980 B.A., University of Rochester
1990 Ph.D., Harvard University

Professional Experience

	Massachusetts General Hospital
1980-1982	Research Assistant, Genetics Unit
1982-1985	Senior Research Assistant
1990-1994	Assistant Geneticist, Neurology
1994-present	Associate Geneticist, Neurology
1995-present	Director, Genetics and Aging Unit
	Harvard University
1990-1992	Instructor, Neurology
1992-1994	Assistant Professor
1993-present	Faculty Affiliate, Neuroscience
1994-present	Associate Professor

Honors

1985	National Research Service Award
1993-1997	Pew Scholar in the Biomedical Sciences
1995	The Metropolitan Life Foundation Award for Medical Research
1996	The Potamkin Prize for Research in Pick's, Alzheimer's, and Related Disorders
1997	Alzheimer's Association T.L.L. Temple Foundation Discovery Award for Alzheimer's Disease Research

Selected Publications

Gusella, J.F. et al., 1983. A polymorphic DNA marker genetically linked to Huntington's Disease. *Nature* 306:234-38.

- Tanzi, R.E. et al., 1987. The amyloid beta protein gene: cDNA cloning, mRNA distribution, and genetic linkage near the Alzheimer locus. *Science* 235:880-84.
- Tanzi, R.E. et al., 1987. The genetic defect in familial Alzheimer's disease is not tightly linked to the amyloid beta protein gene. *Nature* 329:156-57.
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- Sherrington, R. et al., 1995. Cloning of a novel gene bearing missense mutations in early onset familial Alzheimer disease. *Nature* 375:754-60.
- Blacker, D. et al., 1998. Alpha-2 macroglobulin is genetically associated with Alzheimer's disease. *Nature Genetics* 19:357-60.
- Liao A. et al., 1998. Genetic association of an alpha-2 macroglobulin polymorphism and Alzheimer's disease. *Human Molecular Genetics* 7:1953-56.

ABSTRACT

Rudolph E. Tanzi was born in Cranston, a suburb of Providence, Rhode Island, to parents of Italian descent. His father, until he suffered a fatal heart attack in his forties, was a baker in a family-run bakery in an Italian American community, and his mother started her own medical transcription business, in which Tanzi's twin sister, older by five minutes, also worked. Always interested in music, Tanzi began playing the accordion at a young age but soon switched to organ. He continued to play, even playing with some famous rock bands when he was a teenager, and now extemporizes his own music.

His parents wanted him to be a doctor, and he always understood that he would go to college, in spite of his preference for music. Luckily, he was also interested in the history of science; in high school he entered and won a number of important science competitions. He became interested in microbiology, in which he majored at the University of Rochester. In college he entered the Harry Tabor lab, from the beginning preferring research to medicine.

After college he became a technician for James Gusella at Massachusetts General Hospital, helping to identify the Huntington's chorea gene. He stayed there for four years, continuing at night to play "gigs" with his band. Somewhat tired of genetics, he applied to Harvard to study neuroscience. Work on the chromosome implicated in Down Syndrome led him to investigate Alzheimer's disease. He cloned and characterized the amyloid protein precursor (*APP*) gene. He returned to Gusella's lab after publishing several papers. Deciding to remain at Harvard, he has progressed from assistant professor to full professor; he is also the director of the genetics and aging unit at Massachusetts General Hospital. His research into Alzheimer's disease has resulted in the search for the amyloid gene and the discovery of the presenilin 1 and 2 genes. He continues to study the role of alpha-2 macroglobulin (A2M) in Alzheimer's disease; to seek to identify risk factors for Alzheimer's disease; and to look for new methods to discover the causes of AD. He is currently writing a book about Alzheimer's, a book for the layman.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Andrea R. Maestrejuan, Interviewer, UCLA Oral History Program; B.S., Biological Sciences, University of California, Irvine, 1986; B.A., History, University of California, Irvine; M.A., History, University of California, Riverside, 1991; C.Phil., History, University of California, Riverside.

TIME AND SETTING OF INTERVIEW:

Place: Tanzi's office, Massachusetts General Hospital.

Dates, length of sessions: November 16, 1998 (87 minutes); November 17, 1998 (124); November 18, 1998 (101); November 24, 1998 (80).

Total number of recorded hours: 6.55

Persons present during interview: Tanzi 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 preinterview conversation with Tanzi to obtain written background information (curriculum vitae, copies of published articles, etc.) and agree on an interviewing schedule. She also reviewed prior Pew scholars' interviews and the documentation in his 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 technical background, Maestrejuan consulted J.D. Watson et al., *Molecular Biology of the Gene*. 4th ed. Menlo Park, CA: Benjamin/Cummings, 1987; Bruce Alberts et al., *Molecular Biology of the Cell*. 3rd ed. New York: Garland, 1994.

The interview is organized chronologically, beginning with Tanzi's childhood in Providence, Rhode Island, and continuing through his undergraduate work at University of Rochester, his research assistantship at Massachusetts General Hospital, his graduate work at Harvard University, and the establishment of his own lab at Harvard. Major topics discussed include his interest in Eastern philosophy, his identification of the amyloid gene, scientists' ethical responsibilities, and his work identifying late-onset gene defects and risk factors in

Alzheimer's.

ORIGINAL EDITING:

Ji Young Kwon, editorial assistant, 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.

Tanzi reviewed the transcript. He verified proper names and made a number of corrections and additions.

William Van Benschoten, editor, prepared the table of contents and index. Ji Young Kwon assembled the biographical summary and interview history.

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