

CHEMICAL HERITAGE FOUNDATION

YOLANDA SANCHEZ

The Pew Scholars Program in the Biomedical Sciences

Transcript of Interviews
Conducted by

David J. Caruso

at

Dartmouth College
Hanover, New Hampshire

on

29 and 31 July 2008

(With Subsequent Corrections and Additions)

ACKNOWLEDGMENT

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 Scholars Program in the Biomedical Sciences Advisory Committee members.

This oral history is made possible through the generosity of



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-recorded interview conducted by David Caruso on 29 and 31 July 2008. I have read the transcript supplied by Chemical Heritage Foundation.

1. The audio recording, corrected transcript, photographs, 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 audio recording(s) heard 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.
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) _____

Yolanda Sanchez
Yolanda Sanchez

(Date) _____

07/01/09

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

One may view the oral history.
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
Center for Oral History
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.

YOLANDA SANCHEZ

1962 Born in El Paso, Texas on 16 September

Education

1987 BS, Biology, University of Texas, El Paso
1996 PhD, Biology, University of Texas, Houston

Professional Experience

1994-1998 Baylor College of Medicine
Postdoctorate, Biochemistry

1997-2000 University of Texas M. D. Anderson Cancer Center
Postdoctorate, Laboratory Medicine

1998-2004 University of Cincinnati, College of Medicine
Assistant Professor
2004-2006 Associate Professor with Tenure

2006-present Dartmouth College Medical School
Associate Professor

Honors

1985 NIH/NIGMS MARC Scholarship and Grant Recipient
1987 Summa Cum Laude Graduate at the University of Texas, El Paso
1987 University Honors, University of Texas, El Paso Honors Program
1987 Biology Department Honors with Senior Honors, University of Texas, El Paso

1988 NIH/NIGMS Minority Access to Research Careers (MARC) Predoctoral Fellowship Recipient
1988 Young Investigator Travel Grant Recipient, "Gene Regulation and Oncogenes" Conference, American Association for Cancer Research

1995-1997 NIH/NIGMS NRSA Postdoctoral Fellowship Recipient
2001 Career Development Award, Department of Defense Breast Cancer Program
2001 Pew Scholar in the Biomedical Sciences

ABSTRACT

Yolanda Sanchez was born in El Paso, Texas, but grew up in Ciudad Juárez, Mexico. She was one of five children whose father was an architect, now a teacher, and a housewife. Sanchez spent a year in New Zealand, improving her English and beginning to establish her independence. Her interest in science began in high school, where she did well in math and chemistry, loved biology, and did some research on *Achyla recurva*. Her parents valued education, but their daughters (who were told they could not marry until they had finished a degree) were allowed to go to college only locally, so Sanchez chose University of Texas at El Paso (UTEP) and was awarded a Minority Access to Research Careers (MARC) grant. She worked on tumor suppressor genes and became interested in cell cycle and DNA repair. She chose Ann Killary's lab at the University of Texas at San Antonio (UTSA), moving with Killary's lab to the University of Texas at Houston, where she worked on microcell-mediated chromosome transfer. She married another scientist during this time and stayed in the lab for another year while waiting for her husband to finish his degree. For a postdoc Sanchez went to Stephen Elledge's lab at Baylor University to work on the cell cycle in yeast. She published three papers there, including a *Science* paper on Rad53 kinase, and found Chk1 in yeast and humans.

Sanchez and her husband, Craig Tomlinson, accepted positions at the University of Cincinnati. She received a good startup package and found congenial colleagues as well as the possibility of collaborators. She was able to bring with her what she had worked on in Elledge's lab, but she still found the transition to being PI difficult in some ways, especially because of the intrusion of politics into her lab management and into publishing. In her lab she emphasized teamwork and toughness.

Next Sanchez moved to an associate professorship at Dartmouth College, where her husband became head of the genomics core. She spends less time in the lab but hopes to be able to spend more time there in the future. She believes that basic science is crucial for medicine and that National Institutes of Health allocates funding inappropriately against basic science.

Sanchez discusses her Pew Scholars application topic (DNA damage and repair) and scholarship, the money it afforded her, potential and realized collaborations, and the Pew meetings. Her lab receives annual income from a patent; she talks about that patent and patents in general; she believes that patents help protect innovation. Sanchez compares her experience of religion in science in both Mexico and the United States. She describes her experiences with education of laymen, including the politics often involved in that education. She discusses balancing home life with work life and, although her husband is very supportive, she advocates for government-mandated and government-provided child care. Sanchez concludes her interview with a call for ethics classes and a greater emphasis on ethics in the practice of science.

INTERVIEWER

David J. Caruso earned a BA in the history of science, medicine, and technology from Johns Hopkins University in 2001 and a PhD in science and technology studies from Cornell University in 2008. Caruso is the director of the Chemical Heritage Foundation's (CHF) Center for Oral History, president of Oral History in the Mid-Atlantic Region, and the book review editor for the *Oral History Review*. In addition to overseeing all oral history research at CHF, he also holds an annual training institute that focuses on conducting interviews with scientists and engineers, he consults on various oral history projects, like at the San Diego Technology Archives, and is adjunct faculty at the University of Pennsylvania, teaching courses on the history of military medicine and technology and on oral history. His current research interests are the discipline formation of biomedical science in 20th-century America and the organizational structures that have contributed to such formation.

TABLE OF CONTENTS

Early Years	1
<p>Born in El Paso, Texas; raised in Ciudad Juárez, Mexico. Family background. Interest in science in high school. Year as exchange student in New Zealand. Religion also important. Good at math, chemistry, loves biology; some lab research. Volunteer work. Family's influence in choice of career.</p>	
College and Graduate School Years	13
<p>Sanchez attends University of Texas at El Paso. Begins in psychology, anthropology, decides on biology, then bioscience. Minority Access to Research Careers (MARC) grant. Works on tumor suppressor genes; interest in newly-discovered cell cycle and DNA repair conjunction. Ann Killary's lab at UT San Antonio for graduate school, later to UT Houston. Microcell-mediated chromosome transfer. Killary's lab size, composition. Competition with other labs. Marries. Louise Strong's advice for postdoc.</p>	
Postgraduate Years	32
<p>Wants to work on cell cycle in model organism; Stephen Elledge's lab at Baylor University. Three papers. <i>Science</i> paper on Rad53 kinase in yeast; team effort. Chk1 in yeast and humans. Long hours at lab; husband supportive. Back-and-forth writing for papers with Elledge. Other Pew Scholars in lab with her.</p>	
First Job	40
<p>Two-body problem. University of Cincinnati. Good startup package, congenial colleagues, potential collaborations. Negotiates with Elledge on what she could take with her. Experiences the "politics" for first time. Toughness and teamwork in her lab. Teaching to community. Lab composition; writing with students. Politics of publishing; anonymity of reviewers and authors.</p>	
Moving to Dartmouth College	50
<p>Dartmouth's attitude toward couples; husband also offered job. Sanchez's other duties; much less time in lab. Mentoring; differences among students. MD/PhD student relates research to human disease. Importance of basic science for medicine.</p>	
General Observations	55
<p>Pew Scholarship. Application process, help from other Pew Scholars, friends. Topic: how protein senses DNA damage; whether it helps repair DNA damage. Importance of Pew money. Collaborations and competition aided by Pew. Students in science: fewer? Foreign? Loves her work, thinks of it as her dream. Patents and her lab's income. How patents help science. Religion and science in United States and Mexico. Science education; politics and science education. Balancing home life with work. Discussion of ethics. Impossibility of exact replication. Science as a community.</p>	
Index	75

INDEX

- A**
- Achyla recurva*, 9
- C**
- Canada, 9, 14
Cell, 33
Cincinnati, Ohio, 43, 47
Ciudad Juárez, Chihuahua, Mexico, 1, 8
collaboration, 40, 60, 62, 63, 64
competition, 31, 44, 63, 64, 65, 74
Cornell University, 13
Cortez, David K., 40
- D**
- Dartmouth College Medical Center, 1, 42, 46, 52, 56, 62, 72, 73
DNA, 6, 21, 26, 37, 38, 57, 58, 59, 60, 65, 67, 71
Ducy, Patricia F., 42, 70
- E**
- El Paso, Texas, 1
Elledge, Stephen J., 21, 30, 31, 34, 36, 37, 38, 39, 40, 44, 48, 50, 56, 67
Escuela Preparatoria El Chamizal, 1
- G**
- Genes & Development*, 41, 50
grants/funding, 4, 9, 13, 20, 23, 30, 31, 42, 43, 44, 45, 46, 47, 49, 51, 52, 54, 57, 59, 60, 63, 64, 65, 66, 67, 70, 71, 73, 75
- H**
- Hanover, New Hampshire, 1, 13
Harvard University, 42
Hogan, Deborah A., 62
Houston, Texas, 23, 24, 25, 26, 27, 28, 53
Howard Hughes Medical Institute, 40, 57
Hunter College, 22
- J**
- Johns Hopkins University, 19, 74
- K**
- Killary, Ann M., 25, 29, 35
kinase
- Chk1, 36, 38, 57
Rad53, 35
- M**
- Merck & Company, 68
Mexico, 1, 2, 3, 4, 7, 10, 11, 12, 15, 16, 20, 68
Molkentin, Jeffrey D., 57
Monson, Ellen K., 57
- N**
- National Institutes of Health, 9, 20, 47, 55, 59, 60, 63, 65
Nature Cell Biology, 50
Naylor, Susan L., 29
Nevins, Joseph R., 52
New York City, New York, 13
New Zealand, 1, 5, 9, 10, 11, 12, 13, 14
NIH. *See* National Institutes of Health
- O**
- O'Neil, Edward H., 68
O'Toole, George A., 62, 73
- P**
- patent, 66, 67, 68
Pereira, Elizabeth, 49
Pew Scholars Program in the Biomedical Sciences, 1, 4, 30, 36, 40, 45, 55, 56, 60, 62
Piwnica-Worms, Helen, 40
publish/publication, 26, 37, 38, 50, 51, 52, 62, 64, 65, 76
- R**
- Ramirez, Juan, 6
religion, 2, 5, 68, 69
- S**
- Sanchez, Pablo (brother), 2
Sazer, Shelley, 33
Science, 31, 35
Sharp, Z. David, 26
Strong, Louise C., 33
- T**
- Talamantes, Frank J., 24
Tan, Song, 61
Tomlinson, Craig R., 32

U

United States of America, 1, 3, 4, 5, 8, 9, 10, 14, 15, 17,
20, 23, 24, 61, 65, 68, 70
University of California, Santa Cruz, 13, 20, 22, 24, 38
University of Cincinnati, 28, 42, 43, 46, 47, 52, 53, 56, 63,
68, 70, 71, 72, 73, 75, 76
University of Texas at El Paso, 15
University of Texas at San Antonio, 22, 23, 25, 26, 28, 29

University of Texas M.D. Anderson Cancer Center, 22, 28

V

Van Doren, Mark, 74

W

Wood, Matthew, 54, 55