# CHEMICAL HERITAGE FOUNDATION

### **BRIAN D. DYNLACHT**

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview Conducted by

William Van Benschoten

at

New York University New York City, New York

on

19 and 20 August 2004

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

### 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 © 2006, 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.

~ement# 3092304E

I, Brian D. Dynlacht, do hereby give to the Regents of the University of California the series of interviews the UCLA Oral History Program recorded with me beginning on or about August 19, 2004, to be used for any research, educational, or other purpose that the University may deem appropriate. I give these as an unrestricted gift and I transfer to the Regents of the University of California all rights, including the copyright. I understand that I may still use the information in the recordings myself without seeking permission from the University.

I have read the UCLA Oral History Program Use Policy, which outlines the current and likely future uses of interviews donated to the Oral History Program's collection.

Unless otherwise specified below, I place no restrictions on access to and use of the interviews.

Brian Dynlacht 8/20/04

(Signature)

Brian D. Dynlacht

(Typed Name)

New York University School of Medicine, Pathology, MSB, 5, 504, 550 First Avenue, New York New York 10016 (Address)

<u>212.263.6162</u>

(Phone Number)

brian.dynlacht@med.nyu.edu (E-mail Address)

(Date)

The Regents of the University of California hereby acknowledge this deed of gift

<u>um Burnd</u>

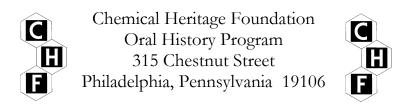
(Director, UCLA Oral History Program)

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:

Brian D. Dynlacht, interview by William Van Benschoten at New York University, New York City, New York, 19-20 August 2004 (Philadelphia: Chemical Heritage Foundation, Oral History Transcript # 0475).



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; and industries in shaping society.

# **BRIAN D. DYNLACHT**

1965	Born in Brooklyn, New York, on 3 September
	Education
1987	B.S., summa cum laude, Molecular Biophysics and Biochemistry, Yale University
1992	Ph.D., University of California, Berkeley
	Professional Experience
	University of California, Berkeley, Berkeley, California
1992-1993	Postdoctorate
1993-1995	Massachusetts General Hospital, Boston, Massachusetts Postdoctorate
	Harvard University, Cambridge, Massachusetts
1995-1999	Assistant Professor, Department of Molecular and Cellular Biology
1999-2002	Associate Professor, Department of Molecular and Cellular Biology
2002-present 2002-present	New York University School of Medicine, New York City, New York Associate Professor, Department of Pathology Director of the NYU School of Medicine Genomics Program
	<u>Honors</u>
1987	Summa cum Laude and Distinction in the Major of Molecular Biophysics and Biochemistry, Yale University
1992	Oncogene Science Award for Outstanding Research in Gene Transcription
1993	Ph.D. thesis selected to represent the University of California, Berkeley in the University Microfilms International Distinguished Dissertation Award Competition
1993-1995	Damon Runyon-Walter Winchell Cancer Fund Fellow
1994-present	Reviewer for the journals Cell, Molecular Cell, Cancer Cell, EMBO Journal, Genes and Development, Genomics, Journal

	of Cell Biology, J. Cell Sci., Mol. Cell. Biol., Mol. Biol. Cell, Nature, Nature Genetics, Nature Medicine, Nature Methods,
	Nature Reviews Cancer, Nature Reviews Molecular Cell
	Biology, Oncogene, Proceedings of the Natl. Acad. Sci., and Science
1996	Ad hoc reviewer: Department of Defense Breast Cancer Research
1770	Award study section
1996-1997	Damon Runyon Scholar Award
1998-1999	Reviewer for the Israel Science Foundation; Textbook reviewer for
	Harcourt/Academic Press.
1998-2000	Chairman, Graduate Admissions Committee for Dept. of MCB, Harvard
1998-2002	Pew Scholar in the Biomedical Sciences
1999	Junior Faculty Search Committee, Dept. of MCB.
1999	Scientific Program reviewer, Wellcome/CRC Institute, University of
	Cambridge, England and for the Association for International Cancer Research (United Kingdom).
1999	
2000-2002	Presidential Early Career Award for Scientists and Engineers (PECASE) Instructor, Gene Expression course, Cold Spring Harbor Laboratory
2000-2002	Ad hoc reviewer: NIH CDF-1 (formerly Mol. Biol.) and NHLBI
2000-2004	study sections
2003	Ad hoc reviewer, NIH, Special Emphasis panel (ZRG1)
2003	Chair, Bioinformatics and Genomics Search Committee
2004-present	Member, NIH CDF-1 (currently MGB) study section
2004-present	Editorial Board, Cell Death and Differentiation
2005	Irma T. Hirschl Career Scientist Award

#### Selected Publications

- B.D. Dynlacht, L.D. Attardi, A. Admon, M. Freeman, and R. Tjian. (1989). Functional analysis of NTF- 1, a developmentally regulated Drosophila transcription factor that binds neuronal cis elements. Genes and Development 3, 1677-1688.
- T. Hoey, B.D. Dynlacht, M.G. Peterson, B.F. Pugh, and R. Tjian. (1990). Isolation and characterization of the Drosophila gene encoding the TATA box binding protein, TFIID. Cell 61, 1179-1186.
- B.D. Dynlacht, T. Hoey, and R. Tjian. (1991). Isolation of co-activators associated with the TATA-binding protein that mediate transcriptional activation. Cell 66, 563-576.
- T. Hoey, R.O.J. Weinzierl, G. Gill, J-L. Chen, B.D. Dynlacht, and R. Tjian. (1992). Molecular cloning and functional analysis of Drosophila TAF1 10 reveal properties expected of coactivators. Cell 72, 247-260.
- R.O.J. Weinzierl, B.D. Dynlacht, and R. Tjian. (1993). Largest subunit of Drosophila transcription factor IID directs assembly of a complex containing TBP and a coactivator. Nature 362, 511-517.
- B.D. Dynlacht, R.O.J. Weinzierl, A. Admon, and R. Tjian. (1993). The dTAFII80 subunit of Drosophila TFIID contains -tr ansducin repeats. Nature 363, 176-179.

- R.O.J. Weinzierl, S. Ruppert, B.D. Dynlacht, N.Tanese, and R. Tjian. (1993). Cloning and expression of DrosophilaTAFII60 reveal conserved interactions with other subunits of TFIID. EMBO J. 12, 5303-5309.
- K. Helin, C-L. Wu, A.R. Fattaey, J. Lees, B.D. Dynlacht, C. Ngwu, and E. Harlow. (1993). Heterodimerization of the transcription factors E2F-1 and DP-1 leads to cooperative trans-activation. Genes and Development 7, 1850-1861.
- B.D. Dynlacht, A. Brook, M. Dembski, L. Yenisch, and N. Dyson. (1994). DNA-binding and trans-activation properties of Drosophila E2F and DP. Proc. Natl. Acad. Sci. 91, 6359-6363.
- B.D. Dynlacht, O. Flores, J.A. Lees, and E. Harlow. (1994). Differential regulation of E2F trans-activation by cyclin/cdk2 complexes. Genes and Development 8, 1772-1786.
- B.D. Dynlacht. (1995). Retinoblastoma protein: Pol I gets repressed. Nature, 374, 114 (solicited "News and Views' article).
- R. Shiekhattar, F. Mermelstein, R. Fisher, R. Drapkin, B.D. Dynlacht, H. Wessling, D. Morgan, and D. Reinberg. (1995). Cdk-activating kinase (CAK) complex is a component of human transcription factor IIH. Nature, 374, 283-287.
- J.W. Harper, S.J. Elledge, K. Keyomarsi, B. Dynlacht, L-H. Tsai, P. Zhang, S. Dobrowolski, C. Bai, L. Connell-Crowley, E. Swindell, P. Fox, and N. Wei. (1995). Inhibition of cyclin-dependent kinases by p21. Mol. Biol. Cell, 6, 387-400.
- J. Koh, G. Enders, B.D. Dynlacht, and E. Harlow. (1995). Tumor-associated alleles of p16 defective in cell cycle inhibition. Nature, 375, 506-510.
- L. Zhu, E. Harlow, and B.D. Dynlacht. (1995). p107 uses a p21/Cip1-related domain to bind cyclin/cdk2 and regulate interactions with E2F. Genes and Development 9, 1740-1752.
- Y. Goldberg, I. I. Nassif, A. Pittas, L-L. Tsai, B.D. Dynlacht, B. Rigas, and S.J. Shiff. (1996). The anti-proliferative effect of sulindac and sulindac sulfide on HT-29 colon cancer cells: Alterations in tumor suppressor and cell cycle-regulatory proteins. Oncogene 12, 893-901.
- I. Sanchez and B.D. Dynlacht. (1996). Transcriptional control of the cell cycle. Curr. Op. in Cell Biol., 8, 318-324 (invited review article).
- J. Chen, P. Saha, S. Kornbluth, B.D. Dynlacht, and A. Dutta. (1996). Novel cyclin-binding motifs are essential for the function of p21/CIP1. Mol. Cell. Biol. 16, 4673-4682.
- B.D. Dynlacht, C. Ngwu, J. Winston, E. Swindell, S.J. Elledge, E. Harlow, and J.W. Harper. (1997). Purification and analysis of CIP/KIP proteins. Meth. Enzym. 283, 230-244.
- M.S. Woo, I. Sanchez, and B.D. Dynlacht. (1997). p130 and p107 use a conserved domain to inhibit cellular cyclin-dependent kinase activity. Mol. Cell. Biol. 17, 3566-3579.
- B.D. Dynlacht. (1997). Transcriptional regulation by cell cycle control proteins. Nature 389, 149-152 (invited review article).
- B.D. Dynlacht, K. Moberg, J. Lees, E. Harlow, and L. Zhu. (1997). Specific regulation of E2F family members by cyclin-dependent kinases. Mol. Cell. Biol. 17, 3867-3 875.
- J. Zhao, B. D. Dynlacht, T. Imai, T. Hori, and E. Harlow. (1998). Expression of NPAT, a novel substrate of cyclin E/cdk2, promotes S phase entry. Genes and Development 12, 456-461
- E. Castano, Y. Kleyner, and B. D. Dynlacht. (1998). Dual cyclin-binding domains are required for p107 to function as a kinase inhibitor. Mol. Cell. Biol. 18, 5380-5391.
- K. Cai and B.D. Dynlacht. (1998). Activity and Nature of p21<sup>WAF1</sup> complexes during the cell

cycle. Proc. Natl. Acad. Sci. 95, 12254-12259.

- J. Ross, X. Liu, and B.D. Dynlacht. (1999). Mechanism of transcriptional repression of E2F by the retinoblastoma tumor suppressor protein. Mol. Cell 3, 195-205.
- L.M. Schang, G.J. Hwang, B.D. Dynlacht, D.W. Speicher, A. Bantly, P.A. Schaffer, A. Shilatifard, H. Ge, and R. Shiekhattar. (2000). Human PC4 Is a Substrate-specific Inhibitor of RNA Polymerase II Phosphorylation. J. Biol. Chem. 275, 607 1-6074.
- Y. Takahashi, J.B. Rayman, and B.D. Dynlacht. (2000). Analysis of Promoter Binding by the E2F and pRB Families In Vivo: Distinct E2F Proteins Mediate Activation and Repression. Genes and Development 14, 804-816.
- B.D. Dynlacht. (2001). Transcriptional regulation of cell cycle progression. In Transcription Factors (ed. J. Locker).
- J. Ross, A.Naar, H. Cam, R. Gregory, and B.D. Dynlacht. (2001). Active repression and E2F inhibition by pRB are biochemically distinguishable. Genes and Development 15, 392-297.
- B. Ren, H. Cam, Y. Takahashi, T. Volkert, J. Terragni, R.A. Young, and B.D. Dynlacht. (2002).
   E2F integrates cell cycle progression with DNA repair, replication, and G2/M checkpoints. Genes and Development 16, 245-25 6.
- J. Rayman, Y. Takahashi, J-H. Dannenberg, S. Catchpole, R. Watson, H. te Riele, and B.D. Dynlacht. (2002). E2F mediates cell cycle-dependent transcriptional repression in vivo by recruitment of a mSin3B/HDAC1 co-repressor complex. Genes and Development 16: 933-947.
- Z. Chen, V. Indjeian, M. McManus, L. Wang, and B.D. Dynlacht. (2002). CP1 10, a Cell Cycle-Dependent CDK Substrate, Regulates Centrosome Duplication in Human Cells. Developmental Cell 3, 339-350.
- E.Y. Lee, H. Cam, U. Ziebold, J. B. Rayman, J.A. Lees, and B.D. Dynlacht. (2002). E2F4- Loss Suppresses Tumorigenesis by Restoring Target Gene Expression and Cell Growth. Cancer Cell 2, 463-472.
- H. Cam and B.D. Dynlacht (2003). Emerging roles for E2F: Beyond the G1/S Transition and DNA replication. Cancer Cell 3, 311-316.
- B. Ren and B.D. Dynlacht (2004). Use of chromatin immunoprecipitation assays in genomewide location analysis of mammalian transcription factors. Methods in Enzymology 376, 304-15.
- D. Skowronska-Krawczyk, M. Ballivet, B. Dynlacht, and J-M. Matter (2004). Dynamic interactions of bHLH transcription factors with chromatin in the developing retina. Development 131, 4447-4454.
- E. Bind, Y. Kleyner, D. Skowronska-Krawczyk, Emily Bien, B. D. Dynlacht, and I. Sánchez. (2004). A novel mechanism for MAPK subcellular localization. Mol. Biol. Cell 15, 4457-66.
- H. Cam, E. Balciunaite, A. Blais, A. Spektor, R. Scarpulla, R. Young, Yuval Kluger, and B. D. Dynlacht (2004). A common set of gene regulatory networks links metabolism and growth inhibition. Molecular Cell 16, 399-411.
- A. Blais and B.D. Dynlacht (2004). Hitting their targets: an emerging picture of E2F and cell cycle control. Current Opinion in Genetics and Development 14, 527-32.
- I. Sanchez and B.D. Dynlacht (2004). New Insights into Cyclins, CDKs, and Cell Cycle Control. Seminars in Cell and Developmental Biology 16, 311-321.

- A. Blais, M. Tsikitis, D. Acosta, R. Sharan, Y. Kluger, and B.D. Dynlacht (2004). An initial blueprint for myogenic differentiation. Genes and Development 19, 553-569.
- A. Blais and B.D. Dynlacht. (2004). Devising transcriptional regulatory networks involved in cell cycle progression and differentiation using ChIP-on-chip. Chromosome Research, 13, 275-288.
- B.D.Dynlacht. (2005). E2F and p53 make a nice couple: converging pathways in apoptosis. Cell Death Diff. 12, 313-314.
- A. Blais and B.D. Dynlacht. (2005). Constructing regulatory networks governing growth and differentiation. Genes and Development 19, 1499-1511.
- E. Balciunaite, A. Spektor, N. H. Lents, H. Cam, H. te Riele, R.A. Young, and B. D. Dynlacht. (2005). Genome-wide analysis reveals distinct roles for E2F4 and pocket proteins in cell proliferation. Mol. Cell. Biol. 25, 8166-8178.
- W. Tsang, L. Wang, Z. Chen, I. Sanchez, and B. D. Dynlacht (2005). p160, a novel protein that specifically binds cyclin A/CDK2 and regulates cell cycle progression. In preparation.
- W. Tsang, A. Spektor, V. Indjeian, J. Salisbury, Z. Chen, D. Luciano, I. Sanchez, and B. D. Dynlacht (2005). CP110 controls a switch that regulates centrosome duplication and genome stability. In preparation.

#### ABSTRACT

**Brian D. Dynlacht** spent much of his youth in Coral Gables, Florida, one of three children. From his youth Dynlacht was impressed by his father, a man who suffered through the Holocaust as a child and survived through the kindness of Polish woman who hid Dynlacht's father from the Gestapo, and by his mother who raised her children while Dylnlacht's father traveled for work. He was fortunate to have several encouraging high school teachers who allowed him to broaden his intellectual interests; an experience in an organic chemistry lab as a high school senior kindled his enthusiasm for science.

Dynlacht chose to attend Yale University for his undergraduate studies; the academic environment at Yale as well as his work in Paul Howard-Flanders's laboratory, further reinforced that he had a real passion for scientific research—specifically molecular biophysics and biochemistry. After completing his undergraduate degree, he moved on to the University of California, Berkeley for his Ph.D.; in Robert Tjian's laboratory, Dynlacht researched transcription factors. After his graduate career, he decided to pursue research on gene regulation and cell-growth regulatory networks in a postdoctoral position at Massachusetts General Hospital with Edward Harlow. While he hoped to return to Berkeley as a professor, he ultimately accepted a faculty position at Harvard University, where his research continued on gene regulation and cell-growth regulatory networks.

After several years, Dynlacht, realizing that New York was a better fit in terms of location, took a faculty position at New York University, specifically at the NYU Cancer Institute. In addition to heading his own lab, he became responsible for overseeing NYU's genomics facility in the Rusk Institute. While his benchwork time has decreased, other tasks, including overseeing his laboratory, writing grants, writing journal articles, reviewing papers, travelling, and, to a lesser degree, teaching, have come to occupy a significant part of his time as a principal investigator.

The interview concludes with Dynlacht's reflections on how his laboratory and research have evolved in the past few years, and how these things might—and should—change in the next five to ten years. Additionally, he talks about broader scientific issues, including the complicated relationship between academic and industrial science, as well as the pros and cons of advanced technology in scientific research. He also expresses his opinions about national scientific policy and how scientists should be—but have not been—included in the discussion of public policy questions. The interview ends with a discussion of how women and ethnic minorities are represented in science, both broadly and at his own institution, as well as the impact that the Pew Scholars Program in the Biomedical Sciences has had on his work.

#### UCLA INTERVIEW HISTORY

#### **INTERVIEWER:**

William Van Benschoten, Interviewer, UCLA Oral History Program; B.A., History, University of California, Riverside, 1990; M.A., History, University of California, Riverside, 1991; C.Phil., History, University of California, Los Angeles, 1995.

TIME AND SETTING OF INTERVIEW:

Place: Dynlacht's office at New York University.

Dates of sessions: August 19 2004; August 20, 2004.

Total number of recorded hours: 5.0

Persons present during interview: Dynlacht 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 Dynlacht to obtain written background information (curriculum vitae, copies of published articles, etc.) and agree on an interviewing schedule. He also reviewed documentation in Dynlacht's file at the Pew Scholars Program office in San Francisco, including Dynlacht's proposal application, letters of recommendation, and reviews by Pew Scholars Program national advisory committee members.

#### **ORIGINAL EDITING:**

Carol 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.

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

Carol Squires prepared the table of contents and TechniType Transcripts compiled the guide to proper names.

#### TABLE OF CONTENTS

Early Years and Starting College
Family background. Father and mother. Older brother. Childhood interests and experiences. Public perceptions about science. Junior high and high school experiences in Coral Gables, Florida. Decision to pursue science as a career. Younger brother. Influential teachers. First laboratory experience at the University of Miami during high school. Qualities of a good teacher. Hobby. Religion. Yale University. College experiences.
College Research, Graduate School, Postdoctoral Work, and Harvard University Research in Paul Howard-Flanders's laboratory during senior year in college. Attends graduate school at the University of California Berkeley. Works for

Attends graduate school at the University of California, Berkeley. Works for Robert Tjian. Typical day in graduate school. Meets future wife. Research in on transcription factors. Most difficult aspect of being a principal investigator. Postdoctoral fellowship in Edward Harlow's laboratory at Massachusetts General Hospital. Postdoctoral research on cell-cycle regulation. Harlow's laboratory management style. Accepts a position at Harvard University. Reasons for leaving Harvard. Current research on gene regulation and cellgrowth regulatory networks. Accepts a position at New York University Cancer Institute.

#### New York University Cancer Institute

Setting up laboratory at New York University Cancer Institute. Broader applications of research. Role in the lab. Teaching responsibilities. Travel commitments. Administrative duties. Funding history. Grant-writing process. Writing journal articles. Laboratory management style. Duties to professional community. Balancing family and career. Leisure activities. New York City. Future research on regulation of cell growth and differentiation. Patents. Industry.

#### Life and Practice as a Scientist

Importance of being familiar with the history of a particular field of research. Conducting scientific research. Competition and collaboration in science. Tenure at New York University Cancer Institute. Criteria in prioritizing research projects. Role of the scientist in educating the public about science. Gender. Pew Scholars Program in the Biomedical Sciences.

#### Index

1

18

55

36

#### INDEX

### A

Affymetrix, 47 American Cancer Society, 47 Amsterdam, Holland, 28

#### B

Baghdad, Iraq, 67 baseball cards, 15 Bellevue Hospital, 69 Biggin, Mark D., 26 bioinformatics, 37, 40, 43, 44, 46 Boston, Massachusetts, 29, 31, 33, 35, 37, 39, 40 Bronx High School of Science, 11 Brooklyn, New York, 1, 8, 9 Burakoff, Steven J., 37 Burkitt's lymphoma, 23 Bush, President George W., 66

### С

Caesar, Caius Julius, 17 Cam, Hugh, 40 Cambridge, Massachusetts, 33, 34, 57, 59 Canada, 28 cell-cycle, 7, 29, 30, 33, 35, 37, 41, 42, 45, 64 ChIP. See chromatin immunoprecipitation chromatin immunoprecipitation, 36 Cicero, Marcus Tullius, 17 Cleveland, Ohio, 15 Cobb, Ty, 15 Cold Spring Harbor Laboratory, 32 collaboration, 35, 36, 43, 64 Columbia University, 33, 40 competition, 16, 26, 63, 64 Coral Gables, Florida, 1, 2, 3, 8, 10, 11, 15, 17.19 Courant Institute, 43 Crothers, Donald M., 20

### D

Damon Runyon Cancer Research Foundation, 47 Deutsch, Irving (maternal grandfather), 3, 16 Deutsch, Lillian (maternal stepgrandmother), 3, 4 DiMaggio, Joe, 15 DNA, 20, 21, 22, 36, 61 Drosophila, 27 Duesberg, Peter, 22 Dynlacht, Janice (mother), 3, 11, 28 Dynlacht, Joseph (brother), 9, 11 Dynlacht, Jozef (paternal grandfather), 2 Dynlacht, Justin (brother), 9, 11 Dynlacht, Rusza (paternal grandmother), 2 Dynlacht, Sigmund (father), 2, 11, 28 Dynlacht, Zdzislaw (father's Polish name), 6

### Е

E2F, 30, 36, 37 Einstein, Albert, 13, 19 Eli Lilly and Company, 11 Esquivel, Carlos, 12 ethics, 66 ethnicity African American, 70 Latino, 70 Europe, 45

### F

Florida, 2, 4, 8 Florida State University, 12 Fort Lauderdale, Florida, 3 France, 45 Frist, Senate Majority Leader William H., 68

### G

gender, 68

genomics, 36, 37, 40, 41, 42, 57 Germany, 28, 45 grants/funding, 25, 29, 35, 39, 42, 44, 46, 47, 48, 50, 52, 53, 56, 63, 65, 66, 71 Great Britain, 45 Greece, 69 Gurian, Helma (maternal great-aunt), 3

### H

Haberman, Ruth (father's cousin), 6 Harlow, Edward, 29, 30, 31, 32, 35, 50, 55 Harvard Medical School, 5, 26 Harvard University, 5, 14, 18, 21, 25, 33, 34, 35, 37, 38, 39, 40, 44, 45, 55, 57, 61, 64, 65, 68 Hebrew, 17, 18 Helman, Rutka (father's cousin's Polish name). See Haberman, Ruth history of science, 60, 61, 65 Hoey, Tim, 27 Holland, 28 Holocaust Martyrs' and Heroes' Remembrance Authority. See Yad Vashem Howard Hughes Medical Institute, 63 Howard-Flanders, Paul, 21

### I

Iraq, 48 Israel, 6, 67 Italy, 28

## J

Japan, 28 Jewish Historical Institute, 6 *Jewish Roots in Poland*, 6 Jews/Jewish/Judaism, 2, 5, 6, 7, 18 bar mitzvah, 18 Holocaust, 2 Jewish Historical Institute, 5, 6, 7 tikkun olam, 18 Torah, 17 Junior Classical League, 16 Kandel, Eric, 40 Kluger, Yuval, 37, 43 Korea, 67 Krugman, Jennifer, 12

# L

Latin (language), 16, 17 Lauder Foundation, 5 Lauder, Ronald S., 5 Livingston, David M., 29, 30 Losick, Richard M., 34

### Μ

Margate, Florida, 15, 16 Maro, Virgilius Publius, 17 Martin, G. Steven, 22 Massachusetts General Hospital, 29, 33 Massachusetts Institute of Technology, 22, 35,64 maturation promoting factor, 29 Miami Beach, Florida, 7 Miami, Florida, 1, 2, 13 Michaelis-Menten's kinetics, 45 Mishra, Bhubaneswar, 44 MIT. See Massachusetts Institute of Technology Montreal, Québec, Canada, 54 Moore, Peter, 20 MPF. See maturation promoting factor

### Ν

National Institutes of Health, 31, 35, 40, 44, 46, 47, 48, 52, 66, 67 National Academy of Sciences, 20, 34 National Cancer Institute, 31 Nazis, 2 NCI. *See* National Cancer Institute New York City, New York, 2, 3, 6, 33, 37, 40, 54, 57, 59 New York University, 35, 37, 39, 43, 44, 46, 64, 68, 69, 70 New York University Cancer Institute, 37, 39, 43, 46, 64

#### K

New York Yankees, 15, 54 Newton, Sir Isaac, 19 NIH. *See* National Institutes of Health Nobel Prize, 34, 66 NYU. *See* New York University

### 0

Oppenheim, Joel, 70

### Р

patent, 58
PCR. *See* polymerase chain reaction
Peterson, M. Gregory, 26
Pew Scholars Program in the Biomedical Sciences, 47, 67, 71
Pittsburgh, Pennsylvania, 9
Poland/Polish, 2, 5, 6
polymerase chain reaction, 27
Pompano Beach, Florida, 1, 3
publish/publication, 36, 40, 63, 65, 66
Pugh, B. Frank, 27

### R

Rayman, Joe, 40 RB. *See* retinoblastoma Reisner, Yale, 6, 7 religion, 17, 18, 66 retinoblastoma, 29, 30, 31, 32, 36, 37 Rockefeller University, 27 Roeder, Robert, 27 Rusk Institute, 43 Ruth, Babe, 15, 16

# S

Sanchez, Irma (wife), 6, 12, 22, 23, 24, 25, 29, 33, 39, 54, 56, 70 *Schindler's List*, 5 Science and Society Institute, 67 Scrabble, 3, 8 Sharp, Phillip A., 30 Sicinski, Peter, 5 Skirball Institute, 69 Stanford University, 33 Steitz, Joan, 20 stem cells, 66, 67 Sweden, 69

### Т

Tanese, Naoko, 27 TATA-binding protein, 26, 27 TBP. *See* TATA-binding protein TBP-associated factors, 27, 28 tenure, 25, 64, 65 TFIID. *See* transcription factor II D Tij. *See* Tjian, Robert Tjian, Robert, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 50, 52, 58, 62 transcription factor II D, 26, 27, 28, 32 Treblinka extermination camp, 2 Tularik, Inc., 33

## U

U.S. Department of Defense, 47, 52 United Kingdom, 54, 67 United States of America, 7, 45, 63 University of California, Berkeley, 21, 22, 23, 24, 25, 29, 32, 33, 34 University of Miami, 12

# V

Veterans Administration Hospital, 69

### W

Warsaw, Poland, 2, 4, 5, 6, 7 Weinberg, Robert A., 22 Weiner, Alan, 20 Weiner, Leon, 12 Whitehead Institute for Biomedical Research, 35 World War II, 2, 6

# Y

Yad Vashem, 6
Yale University, 6, 7, 13, 14, 17, 19, 20, 21, 24, 26, 37, 43, 44, 61
Young, Richard A., 35, 36, 64