

CHEMICAL HERITAGE FOUNDATION

CHENG-MING CHIANG

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Andrea R. Maestrejuan

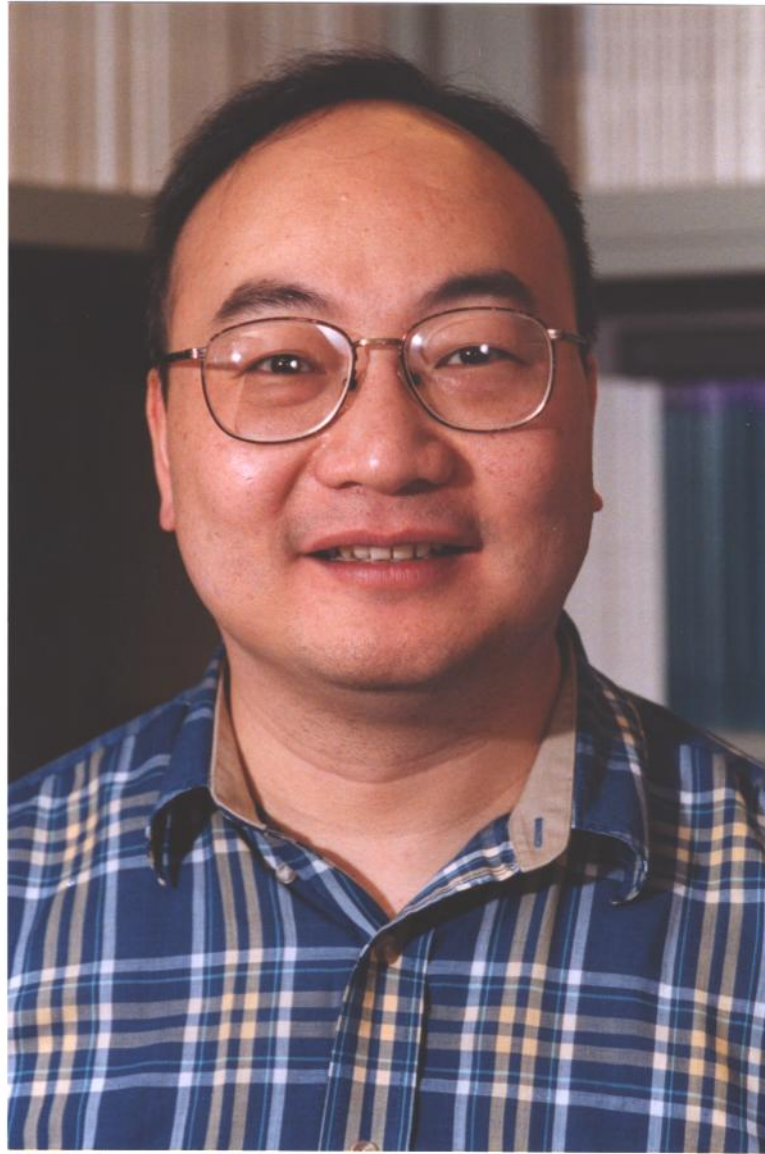
at

Case Western Reserve University
Cleveland, Ohio

on

1, 2, and 3 April 2003

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



Cheng-Ming Chiang

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.

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Oral History Interview Agreement No. RO61103F

This Interview Agreement is made and entered into this 11 day of June, 2003 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 CHENG-MING CHIANG, having an address at Department of Biochemistry, Case Western Reserve University, 10900 Euclid Avenue, W409, Cleveland, Ohio 44106-4935, hereinafter called "Interviewee."

Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about April 1, 2003, and tentatively entitled "Interview with Cheng-Ming Chiang. 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 his 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 he will receive no remuneration or compensation for his 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

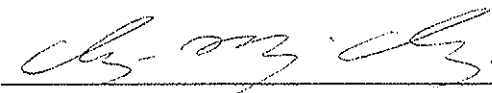
Attention: Janice L. Reiff

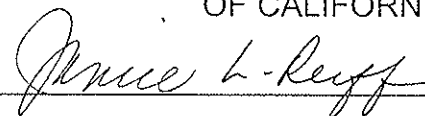
If to Interviewee: Cheng-Ming Chiang
Department of Biochemistry
Case Western Reserve University
10900 Euclid Avenue, W409
Cleveland, Ohio 44106-4935

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

INTERVIEWEE

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

X 



(Signature)

(Signature)

Cheng-Ming Chiang

Janice L. Reiff

(Typed Name)

(Typed Name)

Department of Biochemistry
(Address)

Interim Director, Oral History Program
(Title)

Case Western Reserve University

10900 Euclid Avenue, W409

Cleveland, Ohio 44106-4935

X Date 4/1/03

Date 13 June 2003


Pew Scholars in the Biomedical Sciences
Chemical Heritage Foundation Internet Posting Release Form

I, Cheng-Ming Chiang, Ph.D., hereby request that my wishes be followed as per the checked selection below with regards to posting portions of the digital copy of the audio-taped interview of me and the related written transcript on the internet for non-commercial, educational use only.

Please check one:

- a. _____ **No restrictions for Internet Posting.**
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 Internet Postings** (My review of the material intended to post is required.)
- c. _____ **Restricted access.** (Do not post.)

This constitutes my entire and complete understanding.



Cheng-Ming Chiang, Ph.D.

March 13, 2008

Date

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

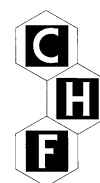
One may view, quote from, cite, or reproduce the oral history with the permission of CHF.

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:

Cheng-Ming Chang, interview by Andrea R. Maestresjuan at Case Western Reserve University, Cleveland, Ohio, 1-3 April 2003 (Philadelphia: Chemical Heritage Foundation, Oral History Transcript # 0460).



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.

CHENG-MING CHIANG

1961 Born in Taipei, Taiwan, on 2 September

Education

1984 B.S., Department of Agricultural Chemistry, National Taiwan University

1991 Ph.D., Department of Biochemistry, University of Rochester

Professional Experience

1991-1992 University of Rochester
Postdoctoral Fellow, Department of Biochemistry

1992-1995 Rockefeller University
Postdoctoral Associate, Laboratory of Biochemistry and Molecular Biology

1995-2000 University of Illinois at Urbana-Champaign
Assistant Professor, Department of Biochemistry

2000-present Associate Professor, Department of Biochemistry

Honors

1991 Walter Bloor Award, University of Rochester

1991 Wallace O. Fenn Award, University of Rochester

1993-1995 Helen Hay Whitney Foundation Postdoctoral Fellow

1993-1995 Aaron Diamond Foundation Postdoctoral Fellow

1996-2000 Pew Scholar in the Biomedical Sciences

1997-1999 Basil O'Conner Starter Award from the March of Dimes Birth Defect Foundation

2000-2004 Mt. Sinai Health Care Foundation Scholar

Selected Publications

Rotenberg, M.O., C.-M. Chiang, M.L. Ho, T.R. Broker, and L.T. Chow. 1989. Characterization of cDNAs of spliced HPV- 11 E2 mRNA and other HPV mRNAs recovered via retrovirus-mediated gene transfer. *Virology* 172: 468-477.

- Chiang, C.-M. and H.-Y. Sung. 1990. Two 5'-phosphodiesterase isozymes from the barley rootlets. *J. Chinese Agricultural Chemical Society* 28: 237-245.
- Chiang, C.-M., T.R. Broker, and L.T. Chow. 1991. An E1M^{E2}C fusion protein encoded by human papillomavirus type 11 is a sequence-specific transcription repressor. *J. Virol.* 65: 3317-3329.
- Chiang, C.-M. 1991. Isolation and characterization of human papillomavirus type 11 cDNAs that encode transcription and episomal DNA replication regulatory proteins. PhD Thesis. University of Rochester School of Medicine and Dentistry.
- Chiang, C.-M., M. Ustav, A. Stenlund, T.F. Ho, T.R. Broker, and L.T. Chow. 1992. Viral E1 and E2 proteins support replication of homologous and heterologous papillomaviral origins. *Proc. Natl. Acad. Sci. USA* 89: 5799-5803.
- Chiang, C.-M., G. Dong, T.R. Broker, and L.T. Chow. 1992. Control of human papillomavirus type 11 origin of replication by the E2 family of transcription regulatory proteins. *J. Virol.* 66: 5224-5231.
- Chiang, C.-M., T.R. Broker, and L.T. Chow. 1992. Properties of bovine papillomavirus E1 mutants. *Virology* 191: 964-967.
- Chiang, C.-M., L.T. Chow, and T.R. Broker. 1993. Identification of alternatively spliced mRNAs and localization of 5' ends by polymerase chain reaction amplification. In *Methods in Molecular Biology, Vol. 16: PCR Protocols: Current Methods and Applications* (Ed. B.A. White), pp 189-198, Humana Inc.
- Chiang, C.-M. and R.G. Roeder. 1993. Expression and purification of general transcription factors by FLAG epitope-tagging and peptide elution. *Peptide Res.* 6: 62- 64.
- Chiang, C.-M., H. Ge, Z. Wang, A. Hoffmann, and R.G. Roeder. 1993. Unique TATA-binding protein-containing complexes and cofactors involved in transcription by RNA polymerases II and III. *EMBO J.* 12: 2749-2762.
- Kashanchi, F., G. Piras, M.F. Radonovich, J.F. Duvall, A. Fattaey, C.-M. Chiang, R.G. Roeder, and J.N. Brady. 1994. Direct interaction of human TFIID with the HIV-1 transactivator Tat. *Nature* 367: 295-299.
- Martinez, E., C.-M. Chiang, H. Ge, and R.G. Roeder. 1994. TATA-binding protein-associated factor(s) in TFIID function through the initiator to direct basal transcription from a TATA-less class II promoter. *EMBO J.* 13: 3115-3126.
- Chiang, C.-M. and R.G. Roeder. 1995. Cloning of an intrinsic human TFIID subunit that interacts with multiple transcriptional activators. *Science* 267: 531-536.
- Hoffmann, A., C.-M. Chiang, T. Oelgeschläger, X. Xie, S.K. Burley, Y. Nakatani, and R.G. Roeder. 1996. A histone octamer-like structure within TFIID. *Nature* 380: 356-359.
- Oelgeschläger, T., C.-M. Chiang, and R.G. Roeder. 1996. Topology and reorganization of a human TFIID-promoter complex. *Nature* 382: 735-738.
- Ge, H., E. Martinez, C.-M. Chiang, and R.G. Roeder. 1996. Activator-dependent transcription by mammalian RNA polymerase II: in vitro reconstitution with general transcription factors and cofactors. *Methods Enzymol.* 274: 57-71.
- Wu, S.-Y. and C.-M. Chiang. 1996. Establishment of stable cell lines expressing potentially toxic proteins by tetracycline-regulated and epitope-tagging methods. *BioTechniques* 21: 718-725.
- Wu, S.-Y. and C.-M. Chiang. 1998. Properties of PC4 and an RNA polymerase II complex in directing activated and basal transcription in vitro. *J. Biol. Chem.* 273: 12492-12498.

- Wu, S.-Y., E. Kershner, and C.-M. Chiang. 1998. TAFII-independent activation mediated by human TBP in the presence of the positive cofactor PC4. *EMBO J.* 17: 4478-4490.
- Kershner, E., S.-Y. Wu, and C.-M. Chiang. 1998. Immunoaffinity purification and functional characterization of human transcription factor IIIH and RNA polymerase II from clonal cell lines that conditionally express epitope-tagged subunits of the multiprotein complexes. *J. Biol. Chem.* 273: 34444-34453.
- Wu, S.-Y., M.C. Thomas, S.Y. Hou, V. Likhite, and C.-M. Chiang. 1999. Isolation of mouse TFIID and functional characterization of TBP and TFIID in mediating estrogen receptor and chromatin transcription. *J. Biol. Chem.* 274: 23480-23490.
- Hou, S.Y., S.-Y. Wu, T. Zhou, M.C. Thomas, and C.-M. Chiang. 2000. Alleviation of human papillomavirus E2-mediated transcriptional repression via formation of a TATA binding protein (or TFIID)-TFIIB-RNA polymerase II-TFIIF preinitiation complex. *Mol. Cell. Biol.* 20: 113-125.
- Gudima, S., S.-Y. Wu, C.-M. Chiang, G. Moraleda, and J. Taylor. 2000. Origin of hepatitis delta virus mRNA. *J. Virol.* 74: 7204-7210.
- Wu, S.-Y. and C.-M. Chiang. 2001. Expression and purification of epitope-tagged multisubunit protein complexes from mammalian cells. *Current Protocols in Molecular Biology*, Unit 16.22.1-16.22.17.
- Hou, S.Y., S.-Y. Wu, and C.-M. Chiang. 2001. Update to: Establishment of Stable Cell Lines Expressing Potentially toxic Proteins by tetracycline-Regulated and EpitopeTagging Methods. In *Cloning and Expression Vectors for Protein Studies* (Quinn Lu and Michael P. Weiner, Editors), pp. 195-203. BioTechniques Books, Eaton Book Publishing.
- Zhou, T. and C.-M. Chiang. 2001. The intronless and TATA-less human TAFII55 gene contains a functional initiator and a downstream promoter element. *J. Biol. Chem.* 276: 25503-25511.
- Wu, S.-Y. and C.-M. Chiang. 2001. TATA-binding protein-associated factors enhance the recruitment of RNA polymerase II by transcriptional activators. *J. Biol. Chem.* 276: 34235-34243.
- Fukuda, A., J. Yamauchi, S.-Y. Wu, C.-M. Chiang, M. Muramatsu, and K. Hisatake. 2001. Reconstitution of recombinant TFIID that can mediate activator-dependent transcription. *Genes Cells* 6: 707-719.
- Zhou, T. and C.-M. Chiang. 2002. Sp1 and AP2 regulate but do not constitute TATAless human TAFII55 core promoter activity. *Nucleic Acids Res.* 30: 4145-4157.
- Hou, S.Y., S.-Y. Wu, and C.-M. Chiang. 2002. Transcriptional activity among high and low risk human papillomavirus E2 proteins correlates with E2 DNA binding. *J. Biol. Chem.* 277: 45619-45629.
- Denko, N., K. Wernke-Dollries, A.B. Johnson, E. Hammond, C.-M. Chiang, and M.C. Barton. 2003. Hypoxia actively represses transcription by inducing negative cofactor 2 (Dr1/Drap1) and blocking preinitiation complex assembly. *J. Biol. Chem.* 278: 5744-5749.
- Wu, S.-Y., T. Zhou, and C.-M. Chiang. 2003. Human Mediator enhances activator-facilitated recruitment of RNA polymerase II and promoter recognition by TATA-binding protein (TBP) independently of TBP-associated factors. *Mol. Cell. Biol.* 23: 6229-6242.
- Guermah, M., K. Ge, C.-M. Chiang, and R.G. Roeder. 2003. The TBN protein, which is essential for early embryonic mouse development, is an inducible TAFII implicated in

- adipogenesis. *Mol. Cell* 12: 991-1001.
- Hu, X., Y. Chen, M. Farooqui, M.C. Thomas, C.-M. Chiang, and L.-N. Wei. 2004. Suppressive effect of receptor-interacting protein 140 on coregulator binding to retinoic acid receptor complexes, histone-modifying enzyme activity, and gene activation. *J. Biol. Chem.* 279: 319-325.
- Van Tine, B.A., L.D. Dao, S.-Y. Wu, T.M. Sonbuchner, B.Y. Lin, N. Zou, C.-M. Chiang, T.R. Broker, and L.T. Chow. 2004. Human papillomavirus (HPV) origin-binding protein associates with mitotic spindles to enable viral DNA partitioning. *Proc. Natl. Acad. Sci. USA* 101: 4030-4035.
- Chakravarty, K., S.-Y. Wu, C.-M. Chiang, D. Samols, and R.W. Hanson. 2004. SREBP1 c and Sp 1 interact to regulate transcription of the gene for phosphoenolpyruvate carboxykinase (GTP) in the liver. *J. Biol. Chem.* 279: 15385-15395.
- Thomas, M.C. and C.-M. Chiang. 2004. E6 oncoprotein represses p53-dependent gene activation via a novel mechanism independently of inducing p53 degradation. *submitted*.
- Wu, S.-Y., S.Y. Hou, H. Erdjument-Bromage, P. Tempst, and C.-M. Chiang. 2004. Brd4 links chromatin targeting to transcriptional silencing. *in preparation*.
- Wu, S.-Y., S.Y. Hou, and C.-M. Chiang. 2004. Concomitant recruitment of multiple chromatin transcription cofactors by human papillomavirus E2 protein. *in preparation*.

ABSTRACT

Cheng-Ming Chiang was born and raised in Taipei, Taiwan, the second youngest of four siblings, and the first to attend college. Chiang was raised by his mother who worked as a taxi driver in Taiwan for over twenty years. With two older siblings in high school and a full-time, working mother, Chiang devoted his time at home to his studies and minding his younger brother. He went through the Taiwanese educational system without much consideration for his future career, though with an interest in science. He decided he wanted to go to college and took entrance exams with the intention of attending National Taiwan University.

Uninterested in re-taking exams in order to enter a doctorate of medicine program, and considering his burgeoning interest in science, Chiang decided to become a student in what he considered to be the best department at National Taiwan University, the Department of Agricultural Chemistry. While an undergraduate he had the opportunity to learn biochemical and cell biological techniques in labs, including column chromatography, sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE), and mammalian cell culture; Chiang decided he wanted to become a scientist. Upon graduating Chiang began his two years of military service, during which time he started to prepare for a graduate education in the United States. After his stint in the military, and while applying to doctoral programs, he spent one year as a lab technician at National Taiwan University studying human papillomavirus. He matriculated at the University of Rochester in New York and continued research on human papillomavirus with Thomas R. Broker and Louise T. Chow, specifically performing molecular biology mapping through RNA splicing of variants by retrovirus-mediated gene transfer in human papillomavirus type 11, all the while adjusting to American culture. He finished his degree in just over three years, and his thesis not only won the best thesis award in the department of biochemistry, but also the best thesis award for the entire medical school. From Rochester Chiang went on to Rockefeller University for a postdoctoral fellowship with Robert G. Roeder to study protein biochemistry: purifying human transcription factor IID using retrovirus-mediated gene transfer and the FLAG-epitope tag; he and his wife were expecting the birth of their daughter shortly after the start of Chiang's position. After his fellowship he accepted a position at the University of Illinois Urbana-Champaign and then moved on to Case Western Reserve University, researching the biochemical aspects of human papillomavirus gene regulation.

Throughout the interview Chiang compares his time and education in the United States to his time in Taiwan, also providing some historical perspectives on Taiwanese history as he lived it. The interview ends with a discussion of a wide variety of topics that include his laboratory and mentoring; racial discrimination in science; his wife's career and balancing family and career; training students in basic science; politics in publishing scientific papers; and the role of the Pew Scholars Program in the Biomedical Sciences in helping him establish his lab during its early years when funding was critical.

UCLA INTERVIEW HISTORY

INTERVIEWER:

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

TIME AND SETTING OF INTERVIEW:

Place: Chiang's office, Case Western Reserve University.

Dates, length of sessions: April 1, 2003; April 2, 2003; April 3, 2003

Total number of recorded hours: 6.0

Persons present during interview: Chiang 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' 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 Cheng-Ming Chiang 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 Cheng-Ming Chiang'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 that 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.

Chiang reviewed the transcript. He verified proper names and made minor corrections and additions.

Squires prepared the table of contents. Victoria Simmons assembled the interview history. TechniType Transcriptions compiled the guide to proper names.

TABLE OF CONTENTS

Early Years	1
Family background. Parents. Siblings. Growing up in Taipei, Taiwan. Religion. Junior and senior high school years in Taipei. Educational system in Taiwan. Influential teachers. Interest in science during high school.	
Undergraduate and Graduate Years	27
Department of Agricultural Chemistry at National Taiwan University. Undergraduate research in biochemistry and cell culture. Career in research. Parental expectations. Military service after attending college. Work on human papillomavirus as a research technician at National Taiwan University Hospital. Decides to attend graduate school in the United States. Thomas R. Broker and Louise T. Chow. University of Rochester. Doctoral research in molecular biology mapping RNA splicing variants by retrovirus-mediated gene transfer in human papillomavirus type 11.	
Postdoctoral and Faculty Years	36
Postdoctoral fellowship in Robert G. Roeder's laboratory at Rockefeller University. His wife. Birth of his daughter. Balancing family and career. Impact of the Pew Scholars Program in the Biomedical Sciences grant on his work. Postdoctoral research in protein biochemistry purifying human transcription factor IID using retrovirusmediated gene transfer and the FLAG-epitope tag. Competition and collaboration in science. His wife's career. Position at University of Illinois, Urbana-Champaign. Setting up his laboratory. Teaching Responsibilities. The tenure process at the University of Illinois.	
The Practice of Science and Final Thoughts	71
The process of writing journal articles. Current research on the biochemical aspects of human papillomavirus gene regulation. Move to Case Western Reserve University. Tenure at Case Western Reserve University. Broader applications of his work. Patents. Privatization of research. Ethnic issues in science. Training students in basic science. Politics in publishing scientific papers.	
Index	104

INDEX

A

Aaron Diamond Foundation, 84
ABC Unit. *See* atomic bomb, biological warfare, and chemical warfare
Academia Sinica, 97
ACS. *See* American Cancer Society
Alzheimer's disease, 88, 100
American Cancer Society, 41, 70, 71, 74, 84
American Heart Association, 70, 71, 74, 84
atomic bomb, biological warfare, and chemical warfare, 27

B

Berk, Arnold J., 45, 49, 50, 51
biochemistry, 19, 20, 32, 37, 43, 45, 69, 77, 78, 80, 81, 101
Biomedical Sciences Training Program, 95
Brandeis University, 26, 43
Broker, Thomas R., 25, 29, 31, 33, 34, 39, 42, 65
Buddhism, 6
Burley, Stephen K., 48, 87

C

Case Western Reserve University, 1, 24, 27, 63, 65, 68, 69, 76, 77, 78, 88, 90, 94, 100
Caucasian, 32, 89, 90, 91, 92, 93, 94, 97
CCG1/TAF250, 53
Chen, Jin-Long, 52
Chen, Rui-Hwa, 28
Cheng, Fu-Mei (mother), 1, 21, 32, 40
Cheng, Shinta, 29
Chiang, Alison (daughter), 30, 38, 40, 92, 94, 97, 102
Chiang, Che Cheng (father), 2
Chiang, Chi-Ming (brother), 1, 4
Chiang, Ching-kuo, 7
Chiang, Chung-Ming (brother), 1, 3
Chiang, Claire (daughter), 30, 94, 97
Chiang, Hsiu-Lien (sister), 1

Chiang, William (son), 30, 40, 41, 94, 97
Chin, Michael T., 35
China, 2, 7, 8, 13, 92, 93, 94, 95
Chow, Louise T., 10, 25, 29, 31, 33, 34, 39, 42, 46, 65, 99
chromatin, 9, 53, 60, 81
chromatography, 19, 55
Cleveland Clinic, 100
Cleveland, Ohio, 33, 38, 85, 92
Cold Spring Harbor Laboratory, 34, 52
Columbia University, 96
Costa Rica., 7
COX. *See* cyclooxygenase
cyclooxygenase, 36

D

Dallas, Texas, 37
DeJong, Jeff, 45
developmental biology, 15, 80
DH5 α , 46
DNA, 20, 30, 37, 43, 48, 49, 53, 86
cDNA, 50
Drosophila, 53

E

E. coli, 46, 55
England, 95

F

feng shui, 3
FLAG epitope tag, 50, 51, 52, 54, 55, 85
forestry, 10, 15
France, 95
Fred Hutchinson Cancer Research Center, 37

G

Ge, Hui, 45, 55
gene regulation, 20, 37, 43, 54, 61, 71, 75, 77, 78
Genes, 30

Germany, 36, 86, 95
Graduate Record Examination, 22, 24, 25, 28
GRE. *See* Graduate Record Examination
Greece, 96

H

Harvard Medical School, 54
Harvard University, 28, 54, 60, 72, 76, 77, 87, 90
HA-tag. *See* hemagglutinin-tag
Helen Hay Whitney Foundation, 58
hemagglutinin-tag, 50, 51
HIV. *See* human immunodeficiency virus
Hoffmann, Alexander, 48, 50, 51, 53
Hou, Samuel Y., 95
Howard Hughes Medical Institute, 75, 77
HPV. *See* human papillomavirus
Huang, Der-Long, 13
human immunodeficiency virus, 56, 84
human papillomavirus, 25, 33, 34, 58, 75, 78, 84, 88
 type 11, 34
 type 16, 33, 34
 type 18, 33, 34

I

IBM
 Taiwan IBM, 5
immunodepletion, 56
India, 66, 89, 98
Indiana University, 65
Institution of Biological Chemistry, 97
Italy, 95

J

Jaehning, Judith, 65
Japan, 2
Japanese, 2, 14, 44, 45, 48, 89
Johns Hopkins University, 57

K

Kadonaga, James T., 60
Kaur, Parminder, 89

Kershnar, Eric, 66, 89, 95
Kingston, Robert E., 54
Kornberg, Arthur, 55, 71

L

Lee, Sheng-Chung, 25, 43
Lee, Yuan-Tseh, 97
Lehninger, Albert L., 57, 69
Lewin, Benjamin, 30
Likhite, Varsha, 66
Los Angeles, California, 3

M

Martinez, Ernest, 48
Massachusetts Institute of Technology, 28, 60, 64, 76, 77, 87, 90
material transfer agreements, 84, 86
McKnight, Steven L., 37
Memorial Sloan Kettering Cancer Center, 67
MIT. *See* Massachusetts Institute of Technology
Municipal Chien-kuo Senior High School, 15, 16

N

National Academy of Sciences, 40, 75, 77, 83, 93, 99
National Institutes of Health, 41, 59, 61, 70, 71, 73, 74, 76, 78, 79, 95
National Taiwan University, 16, 18, 19, 25
New York City, New York, 33, 38, 39, 46, 50
NIH. *See* National Institutes of Health
Nobel Prize, 34, 43, 60, 72, 77, 83, 93, 97, 99
Northern blot, 25, 37

O

Oelgeschläger, Thomas, 48
Orlean, Peter A.B., 78

P

P'enghu Island, 8, 22

PAGE, 19, 56
SDS-PAGE, 56
patent, 36, 85, 86
PC4. *See* positive cofactor 4
PCR. *See* polymerase chain reaction
Pew Scholars Program in the Biomedical Sciences, 1, 7, 28, 41, 54, 61, 68, 70, 72, 75, 77, 96
pol II-holoenzyme, 58
polyacrylamide, 19
polymerase chain reaction, 34
positive cofactor 4, 58
Principles of Biochemistry, 57
Ptashne, Mark, 72

R

racism, 90, 91
Reinberg, Danny F., 75
retrovirus, 34, 45, 49, 50, 54, 85
Rhodes, Cheryl R., 36
RNA, 20, 34, 53, 55, 58
Rochester, New York, 29, 30, 35, 36, 38, 39, 43, 46
Rockefeller University, 37, 41, 43, 45, 76, 87, 90
Roeder, Robert G., 37, 40, 42, 43, 44, 45, 46, 47, 48, 49, 51, 53, 54, 55, 56, 57, 59, 60, 63, 64, 65, 66, 72, 75, 81, 83, 85, 90
Rosenfeld, M. Geoffrey, 93, 95
Rotenberg, Mitch O., 34

S

Shapiro, David J., 78
Sigler, Paul, 77
Sigma-Aldrich Co., 85
Sinn, Eric, 45
sodium fluoride, 64
Southern blot, 25, 37
SRB, 53, 58
Stanford University, 90
Stryer, Lubert, 69

T

TAF15, 48, 53

TAF20, 48, 53
TAF55, 53
Taipei, Taiwan, 1, 2, 3, 5, 6, 14, 15, 23, 38, 84
Taiwan, 2, 4, 5, 6, 7, 9, 13, 18, 21, 22, 24, 28, 29, 35, 37, 39, 42, 52, 69, 89, 90, 95, 96, 102
TATA-binding protein, 48, 50
TBP. *See* TATA-binding protein
TCA. *See* tricarboxylic acid
tenure, 41, 58, 70, 72, 73, 74, 77, 79, 80, 91, 96
Test of English as a Foreign Language, 22, 24, 28
TFIID. *See* transcription factor IID
Thanos, Dimitris, 96
Thomas, Mary C., 25, 29, 31, 42, 48, 65, 89, 95
thyroid hormone receptor-associated polypeptides, 53
Tjian, Robert, 37, 44, 47, 49, 52, 53, 54, 55, 60, 75, 93
TOEFL. *See* Test of English as a Foreign Language
transcription factor IID, 44, 45, 46, 48, 49, 50, 51, 52, 53, 55, 56, 57, 58
TRAP. *See* thyroid hormone receptor-associated polypeptides
tricarboxylic acid, 20

U

United States Military Academy at West Point, 22
United States of America, 7, 9, 10, 11, 15, 20, 22, 25, 26, 28, 29, 30, 31, 39, 40, 43, 89, 92, 93, 95, 96, 102
University of California, Berkeley, 28, 37, 60, 76, 77, 87, 90, 97
University of California, Davis, 26, 43
University of California, Los Angeles, 45, 49, 103
University of California, San Diego, 93
University of California, San Francisco, 76
University of Illinois, 33, 49, 60, 65, 66, 68, 73, 76, 77, 89

University of Rochester, 32, 34, 36, 42, 51,
90
University of Texas Southwestern Medical
Center, 37
University of Washington, 37
Urbana-Champaign, Illinois, 33, 38, 49, 60,
65, 66, 76, 77, 80, 97

W

Wall Street Journal, 64
Watson, James, 99

Weintraub, Harold, 37
Wiesel, Torsten N., 64
Wu, Shwu-Yuan (wife), 32, 40, 55, 61, 66,
79, 88, 97, 102

Y

Young, Donald A., 36, 39

Z

Zhou, Tianyuan, 93, 95