

CHEMICAL HERITAGE FOUNDATION

JAMES R. LUPSKI

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Andrea R. Maestrejuan

at

Baylor College of Medicine
Houston, Texas

on

14, 15, and 16 August 1995

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

ACKNOWLEDGEMENT

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INTERVIEWEE

x James R. Lupski
(Signature)

James R. Lupski
(Typed Name)

Baylor College of Medicine

One Baylor Plaza
(Address)

Houston, Texas 77030

x Date August 14, 1995

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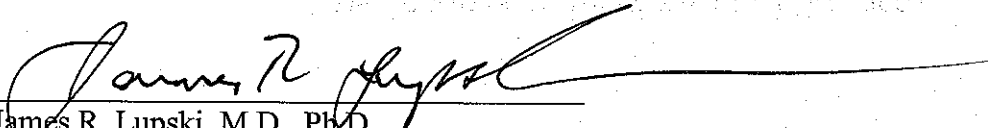
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JAMES R. LUPSKI

1957 Born in Hicksville, New York on 22 February

Education

1979 B.A., New York University
1984 Ph.D., New York University
1985 M.D., New York University

Research Appointments

1985-1986 New York University Medical Center
Research Assistant Professor

1986-1989 Baylor College of Medicine
Research Assistant Professor and Resident

Professional Experience

1989-1992 Baylor College of Medicine
Assistant Professor

1992-1995 Associate Professor

1995-present Cullen Professor of Molecular and Human Genetics and
Professor of Pediatrics

1991-present Various Houston-area Hospitals
Consulting Geneticist, Attending Pediatrician, and
Medical Geneticist

Honors

1987 Inducted into the Hicksville Hall of Fame

1988 Young Investigator Award, American Society for Microbiology
Interscience Conference on Antimicrobial Agents and Chemotherapy

1989 Young Investigator of the Year Award, Abbott Laboratories

1990-1994 Pew Scholar in the Biomedical Sciences

1991 Young Investigator Award, American Federation for Clinical
Research Southern Section

1993 Distinguished Research Award for Outstanding Contributions to the

1994 Understanding of the Genetics of Charcot-Marie-Tooth Disorders,
Charcot-Marie-Tooth Association
Outstanding Alumni Award, Alpha Omega Alpha, New York
University School of Medicine

Selected Publications

- Lupski, J.R. et al., 1982. Cloning and characterization of the *Escherichia coli* chromosomal region surrounding the dnaG gene, with a correlated physical and genetic map of dnaG generated via transposon Tn5 mutagenesis. *Molecular and General Genetics*, 185:120-28.
- Lupski, J.R. et al., 1983. Regulation of the rpsU-dnaG-rpoD macromolecular synthesis operon and the initiation of DNA replication in *Escherichia coli* K-12. *Molecular and General Genetics*, 189:48-57.
- Lupski, J.R. et al., 1983. Localization of a Plasmodium surface antigen epitope by Tn5 mutagenesis mapping of a recombinant cDNA clone. *Science*, 220:1285-88.
- Lupski, J.R. et al., 1984. Specificity of Tn5 insertions into a 36 nucleotide DNA sequence repeated in tandem seven times. *Gene*, 30:99-106.
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- Pentao, L. et al., 1992. Charcot-Marie-Tooth type 1A duplication appears to arise from recombination at repeat sequences flanking the 1.5Mb monomer unit. *Nature Genetics*, 2:292-300.

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- Versalovic, J. et al., 1993. Conservation and evolution of the rpsU-dnaG-rpoD macromolecular synthesis operon in eubacteria. *Molecular Microbiology*, 8:343-55.
- Roa, B.B. et al., 1993. Charcot-Marie-Tooth disease type 1A: Association with a spontaneous point mutation in the PMP22 gene. *New England Journal of Medicine*, 329:96-101.
- Wise, C.A. et al., 1993. Molecular analyses of unrelated Charcot-Marie-Tooth disease patients reveal a high frequency of the CMT1A duplication. *American Journal of Human Genetics*, 53:853-63.
- Roa, B.B. et al., 1993. Dejerine-Sottas syndrome associated with point mutation in the PMP22 gene. *Nature Genetics*, 5:269-73.
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- Chance, P.F. et al., 1994. Two autosomal dominant neuropathies result from reciprocal DNA duplication/ deletion of chromosome 17. *Human Molecular Genetics*, 3:223-28.
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ABSTRACT

James R. Lupski was born and raised on Long Island, New York, one of eight children. He attended a Roman Catholic elementary school but a public high school. Lupski and three of his siblings manifested, at different times and to different degrees, Charcot-Marie-Tooth disease (CMT); James's disease was serious enough to require several surgeries when he was in high school, surgeries that kept him at home for much of his high school years. He became interested in his disease and in genetics and decided he wanted to become a doctor. He also became a professional chess player. He won a full scholarship to New York University (NYU), where he majored in chemistry and biology and minored in mathematics and psychology. In David Schuster's laboratory he tried to isolate brain receptors; and during his summers he worked at Cold Spring Harbor Laboratory, learning to clone genes. Accepted early to NYU Medical School, Lupski then won acceptance to the MD/PhD program. He wrote his doctoral thesis on the macromolecular synthesis operon. The discovery of the gene associated with Huntington's disease inspired him to search for the CMT disease gene. He was courted by Baylor College of Medicine, where he was given a faculty appointment while he was still an intern. At Baylor he set up his own lab and began his research into the genetics of CMT, studying a large family in Louisiana. Lupski eventually patented a diagnostic test for CMT and continues his research on the disease. Lupski continues to teach, to manage his lab, to publish, to consult for private industry, to take out patents, and to balance work and family life with his wife and two daughters.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Andrea R. Maestrejuan, Interviewer, UCLA Oral History Program; B.A., History, University of California, Irvine, 1988; B.S., Biological Sciences, University of California, Irvine, 1988; C.Phil., History, University of California, Riverside.

TIME AND SETTING OF INTERVIEW:

Place: Lupski's office, Baylor College of Medicine.

Dates, length of sessions: August 14, 1995 (155 minutes); August 15, 1995 (190); August 16, 1995 (102).

Total number of recorded hours: 7.45

Persons present during interview: Lupski 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 PewCharitable 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, from 1988 through 1992. In preparing for this interview, Maestrejuan, in consultation with the director of the UCLA Oral History Program and three UCLA faculty project consultants, developed a topic outline to provide an overall interview framework. Maestrejuan then held a telephone preinterview conversation with Lupski to obtain extensive written background information (curriculum vitae, copies of published articles, etc.) and agree on a research and interviewing timetable. Maestrejuan further reviewed the documentation in Lupski's 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 general background on the recent history of the biological sciences, Maestrejuan consulted such works as: J.D. Watson et al., *The Molecular Biology of the Gene*. 4th ed. 2 vols. Menlo Park, CA: Benjamin/Cummings, 1987; Lubert Stryer, *Biochemistry*. 3d ed. New York: W.H. Freeman, 1988; *The Journal of the History of Biology*; H.F. Judson, *The Eighth Day of Creation: Makers of the Revolution in Biology*. New York: Simon and Schuster, 1979; and recent issues of *Science*, *Nature*, and *Cell*. The interview is organized chronologically, beginning with Lupski's childhood illness with Charcot-Marie-Tooth (CMT) disease and his decision to become a scientist and continuing through his education at New York University and Cold Spring Harbor Laboratory and the establishment of his laboratory at Baylor College of Medicine. Major topics discussed include the genetic basis of disease, CMT, science funding, and the training of physician-scientists.

ORIGINAL EDITING:

Kristian London, editor, edited the interview. He 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.

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

Steven J. Novak, senior editor, prepared the table of contents and index. London assembled the biographical summary. Gregory M. Beyrer, editorial assistant, compiled the interview history.

TABLE OF CONTENTS

Early Years	1
<p>Born and raised on Long Island, New York. One of eight children. Roman Catholic elementary school. He and three siblings contract Charcot-Marie-Tooth (CMT) disease, so he becomes interested in genetics and decides to become a physician. Attends public high school. Takes up chess, becomes professional. Several surgeries for CMT disease while in high school.</p>	
College Years	24
<p>Full scholarship at New York University (NYU). Majors in chemistry and biology; minors in mathematics and psychology. Works as laboratory technician. Trying to isolate brain receptors in the David Schuster laboratory. Spends two summers at Cold Spring Harbor Laboratory, learning the new gene cloning technology.</p>	
Graduate Years	35
<p>Early acceptance to NYU Postgraduate Medical School; subsequent acceptance to M.D./Ph.D. program. Works in G. Nigel Godson's lab. Godson's sabbatical in the Frederick Sanger lab investigating the initiation of DNA replication and G₄ phage. Cloning the dnaG gene. Writes his doctoral thesis on the macromolecular synthesis operon. The drudgery of medical school. James R. Gusella's discovery of the Huntington's disease gene inspires. Lupski to search for the CMT disease gene.</p>	
Postgraduate Years	73
<p>Begins medical internship at Baylor College of Medicine. Residency at Baylor College of Medicine. Attempts to publish his research on CMT disease, but is rejected at first; politics of journal acceptance. Clinical reinforcement and inspiration for research. Ralph D. Feigin offers Lupski an accelerated residency</p>	
Working Years	82
<p>Investigates the genetics of CMT in a large family in Louisiana. Confusing results lead to the discovery that CMT can be caused by a duplication of a gene rather than a mutation. How scientific breakthroughs come to be generally accepted. Tendency for important scientific discoveries to be made simultaneously by several labs. Impact of the new recombinant DNA technology and clinical applications. Patents a diagnostic test for CMT. Clinical implications of Lupski's CMT findings. Lupski's current research on CMT. Teaching responsibilities. Managing laboratory personnel.</p>	
General Ruminations	142
<p>Whether ethics should be taught in medical and graduate schools. Gender balance in M.D./Ph.D. programs. Making time for both family and career. Learning to write papers and grant proposals. Dealing with competitors. Differences between the fields of bacterial genetics and human genetics. The worldwide threat of bacterial disease.</p>	
Index	149

INDEX

- _F508, 94, 111
- 2**
2,3 diflouronitrobenzene, 73
- A**
acquired immune deficiency syndrome, 39, 117, 123
AIDS. *See* acquired immune deficiency syndrome
alleles, 65, 67, 90, 98, 99, 103, 104
American Cancer Society, 78
American Society of Human Genetics, 60, 122
American Society of Microbiology, 134
Anderson, Kent L., 69, 126, 128, 143, 147
Aravinda, 96
Arden House, 86
Aspen, Colorado, 58
Athena Diagnostics, 133, 140
autosomal, 15, 84, 88
Avery, Oswald T., 49
- B**
Baltimore, David, 33
Barker, David F., 89, 90
Baton Rouge, Louisiana, 86
Baylor College of Medicine, 33, 58, 81, 83, 85, 96, 127, 135, 136, 137, 139, 140
Baylor College of Medicine Technologies, 136, 137
BCMT. *See* Baylor College of Medicine Technologies
Beaudet, Arthur L., 45, 82
Bejjani, Bassem A., 126, 143
Bellevue Hospital, 117
Boston, Massachusetts, 140
Boyd, Robert N., 28
Britton, Robert A., 77, 120, 125, 127, 143
Brooklyn, New York, 12
Bukhari, Ahmad I., 31, 48, 71, 78
Burgess, Richard R., 122
- C**
CA. *See* cytosine adenine
Cajun, 83, 85, 86, 88, 90
Caskey, C. Thomas, 33, 81, 82, 131
Catholic Christian Doctrine, 24
CCD. *See* Catholic Christian Doctrine
centromere, 88
Chaconas, George, 34, 72
Chakravarti, Aravinda, 92
Charcot-Marie-Tooth disease, 10, 11, 12, 38, 39, 44, 67, 80, 82, 83, 84, 85, 86, 87, 88, 89, 91, 93, 95, 96, 99, 100, 101, 103, 106, 107, 109, 111, 118, 120, 121, 125, 126, 128, 134, 135, 136, 137, 142, 143, 144
Chen, Ken-Shiung, 143
chess, 21, 26, 31, 35, 36
Children's Hospital of Philadelphia, 81
Chinault, A. Craig, 132
chromosome 1, 84, 87, 111, 120
chromosome 17, 87, 88, 89, 125
Clinton, President William J., 67
CMT1A-REP, 144
Cohen, Jeffrey, 36
Cold Spring Harbor Laboratory, 18, 31, 33, 34, 35, 40, 51, 60, 64, 68, 69, 70, 71, 72, 110, 119, 127
Collins, Francis, 66, 92
Columbia University, 11, 12, 24, 25, 80, 86, 87
Crick, Francis H.C., 31, 49
cytogenetics, 36, 100
cytosine adenine, 90, 91, 92, 99, 103
- D**
de Bruijn, Frans, 32, 72, 110
dideoxy sequencing, 32, 71, 74
DNA, 12, 29, 31, 34, 39, 44, 46, 49, 64, 67, 71, 73, 78, 84, 86, 87, 89, 95, 107, 108, 111, 121, 143

dnaG, 71, 73, 74, 76, 77, 119, 121
dopamine, 30
Drosophila, 107
Duchenne muscular dystrophy, 11, 111,
135
Duffy, 84, 86, 120
Duke University, 87, 89, 90, 98

E

Engler, Patti, 129
ethics, 50, 52, 53, 55
eucaryote/eucaryotic, 32
exon, 32

F

Feigin, Ralph D., 81, 83, 112
Fett Jr., Herbert, 11
Fett Sr, Herbert, 12
FISH. *See* fluorescence in situ
hybridization
fluorescence in situ hybridization, 91, 92,
95, 100, 104, 138
fragile X, 107, 109

G

G₄, 73, 76
Garcia, Carlos, 86, 91
gel electrophoresis, 46, 100, 134
gene splicing, 32
genetics, 10, 11, 12, 31, 33, 34, 37, 38, 40,
46, 56, 64, 65, 66, 67, 68, 71, 80, 81, 82,
83, 86, 88, 92, 105, 106, 107, 109, 110,
117, 118, 120, 122, 123, 125, 126, 127,
128, 129, 131, 133, 137, 142, 143, 147
Genica Pharmaceuticals Corporation, 134
Georghiou, Paul R., 131
Gerardi, Gabriella R. (wife), 8, 57, 94,
112, 139
glaucoma, 125
Godson, G. Nigel, 40, 43, 63, 71, 73, 93,
119
Greenwich Village, 25, 35, 58
Gross, Carol A., 121, 122
Gusella, James R., 79, 118

H

haplotype, 94
Harvard University, 45, 120
Hicksville Hall of Fame., 19
Hicksville, New York, 1, 2, 3, 4, 6, 11, 17,
34
Hirschhorn, Kurt, 80
Hirschhorn, Rochelle, 81
Houma, Louisiana, 86
Houston Children's Museum, 108
Houston, Texas, 10, 23, 55, 112, 113, 140
Howard Hughes Medical Institute, 46, 47
Human Genome Project, 65
Huntington's disease, 79, 107, 109, 118,
128

I

Institute for Molecular Genetics, 131
intron, 32

J

Joel, Billy, 19
John Lupski (brother), 5

K

Kennedy's disease, 109
Killian, James M., 85, 91
King, Rodney, 138
Koeuth, Thearith, 128
Kornberg, Arthur, 74
Kuhn, Thomas S., 43, 45, 99
Kunkel, Lou M., 135
Kusnitz, Marc, 29

L

Lafayette, Louisiana, 86
Las Vegas, Nevada, 134
Leber's (congenital amaurosis), 125
Levine, Mrs., 34
Lewin, Benjamin, 93, 94, 96, 97, 102, 103,
107
Lewis, Richard A., 125
Liu, Pentao, 141
Lodz, Poland, 3
Long Island Jewish Hospital, 12

Long Island, New York, 1, 3, 4, 5, 7, 11, 12, 17, 113
Louisiana, 83, 85
Lupski, Alessandra M. (daughter), 20, 22, 57, 60, 115
Lupski, Anna (paternal grandmother), 1
Lupski, Debra (sister), 5
Lupski, Diane (sister), 5
Lupski, Donna (sister), 5, 42
Lupski, Doreen (sister), 5
Lupski, Helen Murray (mother), 1, 108
Lupski, John (paternal grandfather), 1
Lupski, John W. (father), 1, 108
Lupski, Marcella D. (daughter), 20, 57, 60, 115
Lupski, Thomas (brother), 5, 25
Lupski, Timothy (brother), 5

M

M. D. Anderson Cancer Center, 69
Maas, Werner K., 72
MacLeod, Colin M., 49
macromolecular synthesis operon, 76, 93, 121
Mallick, Fred, 137
McCabe, Edward R., 132
McCarty, Maclyn, 49
McClintock, Barbara, 31, 45
McGovern, John, 21
McKusick, Victor A., 65
MDA. *See* Muscular Dystrophy Association
Medical Scientist Training Program, 42
Memorial Sloan-Kettering Cancer Center, 75
Mendelian, 65, 67, 80, 84, 90, 99, 106, 118
Mendelian segregation, 65, 80, 84
microdeletion, 100, 125, 143
Minneapolis, Minnesota, 139
Molecular Basis of Inherited Diseases, 45
Morrison, Robert T., 28
Moseley, Betty, 130
Moses, Robb E., 131
Mount Sinai Hospital, 80
mpoD, 74

MSTP. *See* Medical Scientist Training Program
Mu, 31
Mullis, Kary, 40
Murray, Ada (maternal grandmother), 1
Muscular Dystrophy Association, 48, 86, 89, 96, 126, 137
myelin, 15, 84
Myers, Phyllis, 32
myotonic, 107, 109

N

N protein, 77
Nathans, Daniel, 32
Nathans, Jeremy, 32, 33
National Academy of Sciences, 6, 121
National Cancer Institute, 120, 128
National Institutes of Health, 40, 42, 46, 47, 48, 52, 55, 123, 126, 137, 139, 145
National Retinitis Pigmentosa Foundation, 126
NCI. *See* National Cancer Institute
NEB. *See* New England Biolabs, Inc.
neurofibromatosis, 88
Neurological Institute, 11
New Delhi, India, 119
New England Biolabs, Inc., 32
New Haven, Connecticut, 43, 72
New Orleans, Louisiana, 85, 86
New York Institute of Technology, 25
New York University, 24, 25, 26, 27, 28, 31, 32, 34, 35, 36, 40, 41, 42, 43, 58, 68, 69, 71, 72, 73, 77, 78, 80, 81, 83, 112, 113
NIH. *See* National Institutes of Health
Nobel Prize, 29, 32, 45, 49, 50, 51, 73, 74, 88, 122
Notov, Selma, 24
NYU. *See* New York University

O

Oca-Luna, Roberto Montes de, 90, 99, 138
oncogenes, 32
Oppenheimer, J. Robert, 55
Oregon Health Sciences University, 131

P

Patel, Pragna I., 62, 88, 96, 128, 138
Pauling, Linus C., 106
PCR. *See* polymerase chain reaction
Pew Charitable Trusts, 39, 127
Pew Scholars in the Biomedical Sciences,
20, 39, 40, 46, 47, 52, 55, 56, 57, 65,
108, 126, 129, 140, 142, 143
photoaffinity, 30
Plasmodium vivax, 84
PMP22, 44, 100
polymerase, 40, 74, 88, 122, 125
polymerase chain reaction, 40, 79, 88, 89,
90, 125, 141
Portland, Oregon, 131
Potocki, Lorraine, 143
primase, 74, 76
pulsed-field, 46, 100, 134, 138, 141

R

Reiter, Larry, 111, 128
restriction fragment length
polymorphisms, 80, 87, 88, 89, 90, 92,
103, 122
RFLPs. *See* restriction fragment length
polymorphisms
ribonucleic acid, 73, 74, 122
rifampin, 74
RNA. *See* ribonucleic acid
Roa, B.B., 100
Roberts, Richard, 31
Roche Laboratories, 5
Rockefeller University, 75
Roses, Allen D., 89
rpoD, 121
rpsU, 74

S

Sanger, Frederick, 32, 71, 73, 74
Saucedo-Cardenas, Odila, 90, 99, 138
Saudi Arabia, 125
Schrump, David, 69
Schuster, David, 28, 29, 57
Science-by-Mail, 108
Searching for Bobby Fischer, 35

Seattle, Washington, 81
sigma operon, 121
Simpson, O.J., 138
SMART. *See* Summer Medical and
Research Training Program
Smith-Magenis syndrome, 100, 125, 143
Southern blots, 32, 90, 91, 96, 97, 104
Southern, Edward M., 32
Spence, J.E., 45
St. Louis, Missouri, 81
Stanford University, 45
Stargardt's disease, 125
Stockton, David W., 126, 143
Student Defense League, 58
Sudarsky, Laura, 113
Summer Medical and Research Training
Program, 127

T

Taq polymerase, 125
Texas Advanced Technology Program,
123
Texas Children's Hospital, 81
Texas Heart Institute, 139
thanatology, 112
the Johns Hopkins University, 81, 120
The Structure of Scientific Revolutions, 44
tJohns Hopkins University, 33
transposon, 31, 32, 77, 78, 120
trinucleotide, 88, 107, 109, 110
trisomy 18, 100
trisomy 21, 100
Truman, President Harry S., 55, 86
Tulane University, 85

U

UCLA. *See* University of California at Los
Angeles
UCSD. *See* University of California at San
Diego
UCSF. *See* University of California at San
Francisco
undergraduate research participant, 33,
127
United States Department of Agriculture,
124

University of California at Los Angeles, 132
University of California at San Diego, 81
University of California at San Francisco, 81
University of Utah, 89
University of Washington, 81
University of Wisconsin, 121
URP. *See* undergraduate research participant
USDA. *See* United States Department of Agriculture

V

Van Broeckhoven, Christine, 50, 54, 93, 97, 103, 137
Vance, Jeffrey M., 87, 88, 89, 91, 92, 98, 99, 101, 121
VAW409, 91
Versalovic, James, 76, 127, 147
Veterans Administration medical center, 131

W

Warner, Lanna E., 128
Warsaw, Poland, 3
Washington Square Park, 35, 36

Washington University, 81
Washington, D.C., 1, 35, 81, 120
Watson, James D., 31, 33, 49, 101, 102, 130
Weinstock, George, 110
Westbury, Long Island, 25
Wigler, Michael, 32
Wise, Carol A., 62
Wolf-Hirschhorn syndrome, 81
Wu, Wen-Hsien, 29

X

X-linked, 15, 84, 111

Y

Yale University, 43, 71, 72, 73, 75, 81, 82, 83, 112
Yalow, Rosalyn S., 29
Yanofsky, Charles, 77

Λ

λ phage, 77

Φ

ΦX174, 73