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DAVID BALTIMORE

Transcript of Three Interviews
Conducted by

Sondra Schlesinger

at

New York City, New York; Cambridge, Massachusetts; and Boston, Massachusetts

on

7 February 1994, 13 April 1995, 29 April 1995

(With Subsequent Corrections and Additions)

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DAVID BALTIMORE

1938 Born in New York City, New York, on 7 March

Education

1960 B.A., chemistry, Swarthmore College
1964 Ph.D., Rockefeller University

Professional Experience

1963-1964 Postdoctoral fellow, Massachusetts Institute of Technology

1964-1965 Postdoctoral fellow, Albert Einstein College of Medicine

1965-1968 Research Associate, The Salk Institute for Biological Studies

Massachusetts Institute of Technology
1968-1972 Associate Professor of Microbiology
1972-1990 Professor of Biology
1994-1997 Ivan R. Cottrell Professor of Molecular Biology and Immunology
1995-1997 Institute Professor

American Cancer Society
1973-1983 Professor of Microbiology
1994-1997 Research Professor

Whitehead Institute for Biomedical Research
1982-1991 Member
1982-1990 Director

The Rockefeller University
1990-1991 President
1990-1994 Professor

1997-present President, California Institute of Technology

Honors

1970	First recipient of the Gustave Stern Award in Virology
1971	Warren Triennial Prize from the Massachusetts General Hospital
1971	Eli Lilly and Co. Award in Microbiology and Immunology
1974	United States Steel Award in Molecular Biology, National Academy of Sciences
1974	Elected Member of the U.S. National Academy of Sciences
1974	Elected Member of the American Academy of Arts and Sciences
1974	Gairdner Foundation Annual Award
1975	Nobel Prize in Physiology or Medicine
1976	Honorary Doctorate, Swarthmore College, Swarthmore, PA
1978	Elected Member of the Pontifical Academy of Sciences
1980	Elected Fellow of the American Association for the Advancement of Science
1985	Honorary Fellowship, American Medical Writers Association
1987	Elected Foreign Member, The Royal Society (England)
1987	Honorary Doctorate, Mt. Holyoke College, So. Hadley, MA
1987	Honorary Membership, Alpha Omega Alpha Honor Medical Society
1990	Honorary Doctorate, Mt. Sinai Medical Center, New York, NY
1990	Honorary Doctorate, Bard, Annandale-on-Hudson, NY
1990	Honorary Doctorate, University of Helsinki, Helsinki, Finland
1988	Elected Member of the Institute of Medicine
1991	Honorary Member, Japanese Biochemical Society
1992	Fellow, American Academy of Microbiology
1997	Member, American Philosophical Society
1998	Fellow, California Council on Science and Technology
1998	Honorary Doctorate, Weizmann Institute of Science, Israel
1999	Fellow, Association for Women in Science
1999	Honorary Doctorate, Cold Spring Harbor Laboratory

ABSTRACT

David Baltimore begins the series of interviews describing his interest in biology as a high-school student and throughout his college years at Swarthmore. During college, he spent a summer at Cold Spring Harbor where he met Cy Levinthal and Salva Luria, both of whom encouraged him to go to graduate school at MIT. As an undergraduate, Baltimore held an interest in viruses. Knowledge and study of animal virology were still very limited, and when he decided to devote his PH.D. thesis to this topic, he moved to Rockefeller University to join Richard M. Franklin who was working with mengovirus. In his graduate work, he discovered that cultured animal cells infected with mengovirus synthesized an enzyme that catalyzed the synthesis of viral RNA. This was the first example of a virus coding for an RNA-dependent RNA polymerase. He then began working with poliovirus, work that continued for many years. In 1965, Renato Dulbecco asked Baltimore to join him at the Salk Institute for Biological Studies. There he initially focused on the replication of poliovirus RNA. With Mike Jacobson, a graduate student, he also began studying viral protein synthesis. Their work contributed to the recognition of the importance of proteolytic processing in the synthesis of eukaryotic proteins. Baltimore left the Salk Institute after two and a half years and returned to MIT in 1968 as an Associate Professor of Microbiology. He continued to focus his research on poliovirus, but also began work on vesicular stomatitis virus [VSV]. He and his wife, Alice Huang, who at the time was a research associate in his lab, discovered that VSV carried an RNA-dependent RNA polymerase within the virus particle. This work provided the insight that led to his discovery of reverse transcriptase—the enzyme in retroviruses that transcribes DNA from RNA—and won Baltimore the Nobel Prize for Physiology or Medicine in 1975 along with Howard Temin and Renato Dulbecco. Baltimore's work with retroviruses was the beginning of his interest in and work on cancer and tumor biology. In the mid-1970s, Baltimore expanded his research interests into the field of immunology, specifically into the areas of B cell development and antibody diversity. Baltimore concludes the interviews with a discussion of the discovery of reverse transcriptase, and thoughts on his research on poliovirus, retroviruses and immunology at MIT in the 1980s.

INTERVIEWER

Sondra Schlesinger is Professor of Molecular Microbiology at Washington University School of Medicine. She received her Ph.D. in biological chemistry from the University of Michigan and spent three years as a postdoctoral fellow with Professor Boris Magasanik at the Massachusetts Institute of Technology, where she worked on enzyme induction and regulation in bacteria. She joined the faculty at Washington University in 1964, where initially she continued her research in the field of microbial genetics and physiology. In the early 1970s, she began her research work on the structure and replication of animal RNA viruses, which continues to this day. Dr. Schlesinger has over one hundred publications spanning these areas of microbiology. She was President of the American Society for Virology in 1992-1993, at which time she began her present interest and work in the history of virology.

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