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Conversations with NIH Statisticians: Interviews with the Pioneers of Biostatistics at the United States National Institutes of Health

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PREFACE

In celebration of 50 years of biometry at the National Institutes of Health (NIH), a conference was held in January 1993 to acknowledge the contributions of those pioneers who laid the foundation in the 1940s and continued, through their seminal contributions, persuasiveness and perseverance, to foster the strong presence of biostatistics at NIH that exists today [5].

Biostatistics first appeared as a recognized discipline at the National Institutes of Health in the years 1946–1948. The Division of Statistical Methods in the United States Public Health Service was established with Harold Dorn as its first Head to support the research of the then new NIH. The degree of formal statistical training of his first recruits (Jerry Cornfield, Sam Greenhouse, Jack Lieberman, Nathan Mantel and Marvin Schneiderman) varied, but their experience in the applications of statistics to problems of biology and medicine was minimal [12, 13]. Within a few years, Sid Cutler, Max Halperin, Bill Haenszel, Harold Kahn, Sam Marcus, Felix Moore and others rounded out the starting team. Morton Kramer headed a statistics group at the separate National Institute of Mental Health.

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To explore the social environment for scientific collaboration at NIH in the early decades and to gain insight into scientific accomplishments [1–4, 6–11, 14], current members of the NIH biostatistical community and two recent "graduates" interviewed eight eminent biostatisticians who were at NIH in the early years and who spent a large part of their careers there. The interviews were conducted over a period of several months in early 1994, using a semistructured set of questions designed to elicit the sociological and humanistic aspects of the development of biometry at NIH.

The edited transcripts of the interviews are presented in order of each alumni's appearance at NIH, except for the first article, which is the text for Sam Greenhouse's talk at the banquet following the NIH conference in January 1993. The interviewees, Nathan Mantel, Marvin Schneiderman, Morton Kramer, William Haenszel, Tavia Gordon, John Bailar and Fred Ederer, represent a broad range of biostatistical and substantive experience from four Institutes at NIH.

Harold Dorn (NIH tenure 1946–1963) was the initial force in the recruitment and the building of a biostatistical presence at NIH (Figure 1), as noted in several interviews that follow. Jerry Cornfield (NIH tenure 1947–1967), hired by Dorn, is characterized by many as a leader who created the theoretical foundation for much methodological research in epidemiology and clinical trials (Figure 2) and whose persuasive influence with physicians and epidemiologists enhanced the prestige of biostatistics at NIH. Unfortunately, both suffered untimely deaths and can only be included in this exposition through the thoughts of their contemporaries.

Many biostatisticians who stayed for a large part of their careers tended to move around to different Institutes to broaden their experience. The initial group of Harold Dorn, Marvin Schneiderman, Jerome Cornfield, Jacob Lieberman, Nathan Mantel and Samuel Greenhouse arrived in about 1946

FIG. 1. *Harold Dorn, circa* 1950.

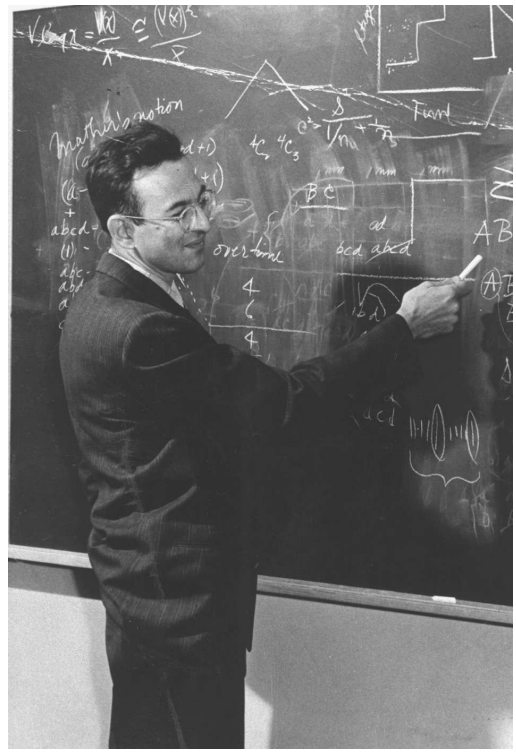

FIG. 2. *Jerome Cornfield, circa* 1950.

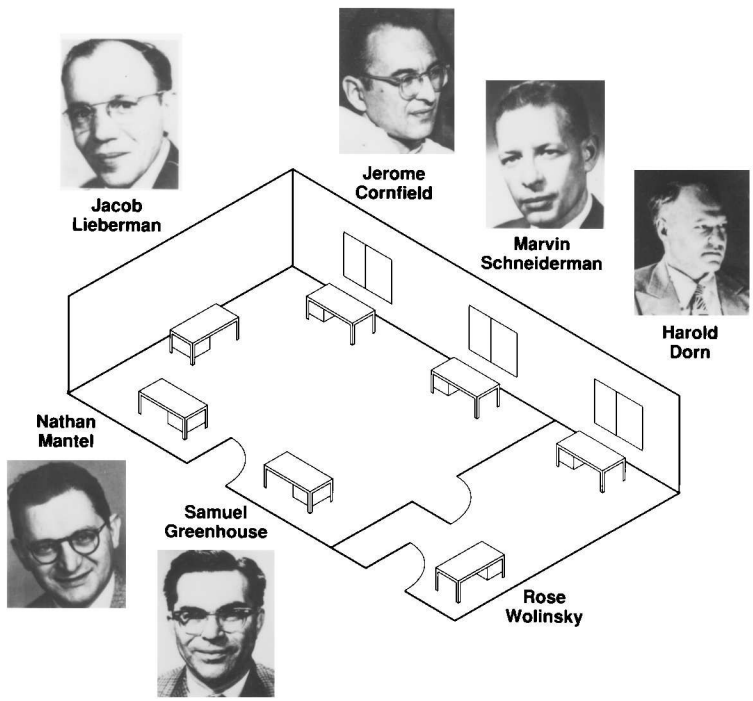

FIG. 3. *In the beginning* (*circa* 1947): *Harold Dorn recruits what was to become the core of biostatistics at NIH. Samuel Greenhouse, Nathan Mantel, Jacob Lieberman, Jerome Cornfield and Marvin Schneiderman join the United States Public Health Service Division of Statistical Methods. The group, housed in Building T-6 on the NIH campus, was technically not at the NIH at first but was quickly transferred into the NIH organizational structure.* (*Rose Wolinsky was the group secretary.*)

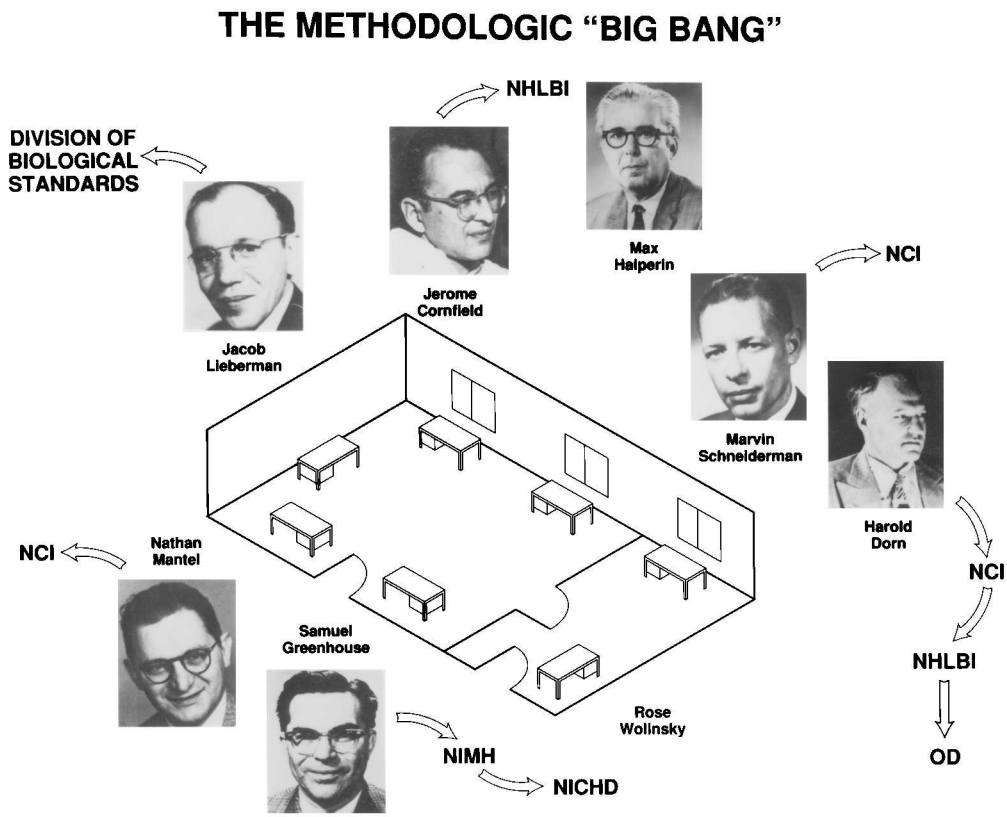

FIG. 4. *The methodologic "Big Bang" (circa* 1947–1948): *the expansion of the National Institutes of Health, creation of new Institutes, increases in staff and development by statisticians of disease-specific interests cause a spin-off of the core group to several Institutes* [*NCI, National Cancer Institute; NICHD, National Institute of Child Health and Human Development; NIMH, National Institute of Mental Health; NHLBI, National Heart, Lung, and Blood Institute* (*formerly NHI, National Heart Institute*); *and OD, Office of the Director, NIH*].

FIG. 5. *Nathan Mantel and Max Halperin,* 1963.

(Figure 3). The first "splitting off" of the individuals came in about 1948, when Max Halperin also arrived (Figure 4). A more detailed listing of the comings and goings of the early arrivals are given in Table 1.

We hope these interviews will help document the accomplishments of these pioneers and how they worked together (Figure 5) and with colleagues in other fields.

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TABLE 1
Chronologic overview of early tenures (entry before 1965) of NIH Biostatisticians (tenure five years or longer)

Statistician	Years	First Institute	Years	Second Institute	Years	Third Institute
Lieberman, Jacob E.	1947–1956	NCI	1957–1962	DRS	1963–1970	NHI
Dorn, Harold	1947–1956	NCI	1957–1959	DRS	1960–1962	NHI
Cornfield, Jerome	1947–1956	NCI	1957–1958	DRS	1960–1967	NHLBI
Moore, Felix	1947–1957	NHI				
Mantel, Nathan	1947–1974	NCI				
Marcus, Samuel C.	1948–1960	NCI				
Greenhouse, Samuel W.	1948–1953	NCI	1954–1966	NIMH	1967–1974	NICHD
Cutler, Sidney J.	1948–1975	NCI				
Schneiderman, Marvin A.	1948–1980	NCI				
Sadowsky, Doris A.	1949–1953	NCI	1954–1979	NINDS		
Kramer, Morton	1949–1975	NIMH				
Kahn, Harold	1950–1951; 1960–1970	NHI	1957–1960	OD	1971–1975	NEI
Halperin, Max	1951–1955	NHI	1955–1958	DBS	1966–1977	NHLBI
Kroll, Bernard H.	1951–1958	NIMH	1959–1982	NINDS		
Loveland, Donald	1951–1959	NCI	1970–1974	NICHD		
Haenszel, William	1952–1976	NCI				
Gordon, Tavia	1954–1958	NHI	1958–1960	NCI	1966–1977	NHLBI
Pollack, Earl S.	1954–1977	NIMH	1977–1985	NCI		
Geisser, Seymour	1955–1961	NIMH	1962–1965	NIAMD		
Bailar, John C., III	1956–1970; 1972–1980	NCI				
Morrison, Donald F.	1956–1963	NIMH				
Ederer, Fred	1957–1964	NCI	1964–1971	NHLBI	1971–1986	NEI
Chiazze, Leonard Jr.	1957–1966	NCI				
Goldberg, Irving D.	1957–1966	NINDS				
Crittenden, Margaret	1958–1961	NCI				
Gurian, Joan M.	1958–1964	NCI	1965–1971	NHLBI		
Gehan, Edmund A.	1958–1967	NCI				
Rosen, Beatrice M.	1958–1981	NIMH				
Deutchberger, Jerome	1959–1968	NINDS				
Myers, Max H.	1960–1986	NCI				
Markush, Robert E.	1961–1966	NHI	1967–1969	NINDS	1970–1974	NIMH
Jackson, Esther C.	1961–1977	NINDS				
Pettigrew, Karen	1961–Present	NIMH				
Schachter, Joseph	1962–1965	NHI	1965–1967	DRS	1971–1974	NIAID
Hawkins, C. Morton	1962–1966	NINDS				
Weiss, William	1962–1984	NINDS				
Seigel, Daniel	1963–1967	NHI	1967–1976	NICHD	1977–1991	NEI
Zelen, Marvin	1963–1967	NCI				
Pettigrew, Hugh	1963–1989	NCI				
Gart, John J.	1965–1991	NCI				

Abbreviations: OD, Office of the Director, NIH; NCI, National Cancer Institute; NHI and NHLBI, National Heart Institute, and National Heart, Lung and Blood Institute; NEI, National Eye Institute; NIAMD, National Institute for Arthritis and Musculoskeletal Diseases; NIMH, National Institute of Mental Health; NICHD, National Institute of Child Health and Human Development; NINDS, National Institute of Neurological Disorders and Stroke; DRS, Division of Research Services; DBS, Division of Biologics Standards.

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