

*“Special Sessions: To commemorate the 100<sup>th</sup> anniversary  
of the birth in 1906 of Raymond D. Mindlin*



Raymond David Mindlin  
Professor of Civil Engineering  
Columbia University

**Education**

B.A., 1928, Columbia University (also, sprinter on the varsity track team)

B.S., 1931, Columbia University

C.E., 1932, Columbia University (the Illig medal for "proficiency in scholarship")

Ph.D., 1936, Columbia University

He also attended summer courses at the University of Michigan, Department of Engineering Mechanics, organized by Stephen Timoshenko, in 1933, 1934, and 1935. Instructors there included L. Prandtl, R. V. Southwell, and H. M. Westergaard. His initial publication dates from the middle of this period, a solo, full-length paper describing a new type of polariscope for photoelastic analysis. In April of 1935 he published a paper on the torsion of structural beams, with Westergaard.

For his doctoral research, Mindlin set himself a fundamental problem in theoretical elasticity: determining the stresses in an elastic half-space subjected to a sub-surface point load. *Working without any guidance* at Columbia, he succeeded in finding the solution by employing the method of nuclei of strain. The results, nowadays referred to as "Mindlin's problem," represent a generalization of the two classical 19th century solutions respectively associated with the names of Kelvin and Boussinesq, and have become the basis for analytical formulations widely employed in geotechnical engineering.

Dissertation: "Force at a Point in the Interior of a Semi-Infinite Solid"

Columbia University, 1936

(Informal) Advisor: [H. Malcolm Westergaard](#)

(Prof. Daniel Drucker (Brown, Illinois, Florida), Mindlin's first Ph.D. student, confirmed that Mindlin considered Westergaard to be an informal thesis advisor.)

## **Positions**

1936-1938, Research Assistant

1938-1940, Instructor in Civil Engineering

1940-1942, Assistant Professor of Civil Engineering

1942-1945 Applied Physics Laboratory, Silver Spring, Maryland, engaged in naval ordnance work. He played a significant role in the development of the proximity fuse, one of the major achievements in the scientific war effort. For his part in its success he was presented, shortly after the end of the war, with the Presidential Medal for Merit, the highest decoration awarded to civilians.

1945-1947, Associate Professor

1947- Professor

## **Awards**

National Medal of Science (1979)

Presidential Medal for Merit (1946) (the highest civilian decoration of the second World War)

National Academy of Engineering (1966)

National Academy of Sciences (1973)

Fellow, American Academy of Arts and Sciences (1958)

Fellow, ASME (1962), Honorary Member of the ASME (1969)

Fellow, of the Acoustical Society of America (1963)

Honorary D.Sc. degree from Northwestern University (1975)

ASCE: the Research Prize (1958) and the von Karman Medal (1961)

ASME: the Timoshenko Medal (1964) and the ASME Medal (1976)

ASA: the Trent-Crede Award (1971)

Naval Ordnance Development Award (1945)

Army Electronics Command C. B. Sawyer Award (1967)

Columbia University: the Great Teacher Award (1960) and the Egleston Medal (1971)

\* The source of much of this information is: The Collected Papers of Raymond D. Mindlin, edited by H. Deresiewicz, M.P. Bieniek, F.L. DiMaggio, Springer-Verlag, 1989.

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