

H. TRACY HALL
BIOGRAPHICAL SKETCH

December 1965

Hall, Howard Tracy

Current Address:

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Office, Rm C-327 Administration Bldg., Brigham Young University, Provo,
Utah 84601; Phone (801) 374-1211, Ext. 2120.

Born:

Ogden, Utah, 20 Oct. 1919 (Parents: Howard and Florence Tracy Hall).

Married:

To Ida Rose Langford, 24 September 1941 in Salt Lake City, Utah.

Children:

Sherlene, Howard Tracy, Jr., David Richard, Elizabeth, Virginia, Charlotte,
Nancy.

Education:

B.S. 1942, M.S. 1943, Ph.D. 1948 (Physical Chemistry) University of Utah.
Special wartime training, 11 months in electronics at Bowden College, M. I. T.,
Harvard and Honolulu Naval Base while an Ensign, U.S. Navy, 1944-1946.

Employment:

1955----, Director of Research and Professor of Chemistry, Brigham Young
University, Provo, Utah. Present Assignments: Responsible for all research
and creative endeavor at Brigham Young University comprising 12 colleges
and 60 departments. BYU, with some 20,000 students, is the nation's largest
church-owned university. Administration of all outside research grants and
contracts and the university's own research funds. Responsible for patent matters,
government security, university machine shops, solicitation of outside research
funds, and for the High Pressure Data Center. In addition, is nominal director
of high pressure research on campus which involves 10 faculty and 20 students.
Conducts personal research program, supervises thesis work of several stu-
dents and occasionally teaches classes.

1948-1955, Research Associate, General Electric Research Laboratory,
Schenectady, New York.

1942-1944 & 1946, Chemist, U.S. Bureau of Mines, Salt Lake City, Utah.

1940-1942, Chemical Analyst, Sperry Flour Mills, Ogden, Utah (part time)

1939-1940, Photographer, Checketts Photo, Ogden, Utah.

Military Service:

Engin, U.S. Navy, 1944-1946.

Consulting:

1957-----, for various industrial and governmental organizations.

Honorary Positions:

President, Utah Academy of Sciences, Arts and Letters, 1960-1961.

Chairman, Salt Lake Section, American Chemical Society, 1959.

Fellow, American Association for the Advancement of Science, 1960-----.

Editorial Board, "Inorganic Chemistry," 1961-1964.

Editorial Board, "The Review of Scientific Instruments," 1966-----.

Awards:

1965, The National Association of Manufacturer's "Modern Pioneers in Creative Industry Award," The Waldorf Astoria, New York City, Dec. 2.

1965, The American Chemical Society, Salt Lake Section's "Utah Award," U. of Utah, Salt Lake City, December 9.

1965, The Brigham Young University's "James E. Talmage Scientific Achievement Award," Baccalaureate Exercises, Provo, Utah, May 27.

1964, Third Annual "Olin Matheson Lecture," Yale University, New Haven, Conn., April 22.

1964, First "Annual Faculty Lecture," Brigham Young University, Provo, Utah, April 8.

1962, The American Society of Tool and Manufacturing Engineers "Research Medal."

1959-1963, Alfred P. Sloan Foundation Research Fellow.

Other Honors:

Featured in the Man Made Diamond Exhibit, Federal Science Building, Seattle World's Fair (1962) and also in the Smithsonian Institution diamond exhibit in Washington, D. C.

Professional Societies:

American Chemical Society, American Association for the Advancement of Science, The American Physical Society, The Mathematical Association of America, Sigma Xi, Phi Kappa Phi, Timpanogos Club of Utah.

Major Scientific Achievements:

1. The first synthesis of diamond (1954). This feat had eluded scientists for over 150 years.
2. The first high pressure, high temperature apparatus, "The Belt." (1000, 000 + atmospheres, simultaneously with 2000 + °C.) (1953).
3. Determination of the first melting curve under high pressure, high temperature conditions (for Germanium) (1954).
4. The second high pressure, high temperature apparatus, "The Tetrahedral Press," which circumvented the proprietary interest that prevented use of the Belt for research after leaving General Electric's employ (1956).

5. The first high pressure, high temperature X-ray diffraction apparatus (with J. Dean Barnett) (1962).
6. Discovery of the first pressure-induced phase change from a close-packed to non-close-packed structure (FCC to BCC in Ytterbium at 40 kb.), (with J. D. Barnett and Leo Merrill) (1963).
7. The determination of the nature of the "resistance cusp" in cesium. This intriguing problem had remained unsolved since discovery of the cusp by P. W. Bridgman in 1951 (with Leo Merrill and J. Dean Barnett) (1964).
8. The concept of "Periodic Compounds" (1965).