Robert F. Schmalz

Professor of Geology, Emeritus

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**Education:**

AB (Hon), Physics and Geology, Harvard College (1951).

AM Geology, Harvard University, GSAS, (1955)

PhD Geology, Harvard University (1959)

Dissertation: *“Quantitative Modal Analysis of Fine Grained Sediments by X-ray Diffraction with Application to Sediments of the Peru-Chile Tr*

**Military Experience:**

1955-1957, U.S .Army Chemical Corps, Research chemist (SP-3), Edgewood, Md.

Analytical instrument design; deposition and study of monomolecular films;

Automated enzyme analysis (Restricted).

**Major Interests:**

Low temperature aqueous geochemistry with emphasis on marine precipitites

Coral reefs; Kinetics and diagenesis of carbonate rocks and sediments;

Petroleum geology; Role of surface energy in geologic processes.

Professionally related experience and interests:

Endolithic bacteria in reef rock, Low level radioactive waste management;

Natural radon; Groundwater chemistry; Geochemical applications in archeology, Mantle convection, Water resource management, Wastewater recycling.

**Students:**

I have been retired for more than twenty years, and though active in the field I am not in a position to supervise graduate students. I could serve on MS or PhD Committees (with Department approval) in specialized fields where I have been active since retirement, particularly water resource management & recycling.

**Positions:.**

1951 (summer): Field assistant, U.S.G.S. ‘Phosphoria Project’.

1951-1952: Assistant geologist, American School for Prehistoric Research,

Oued Akarit, Gabes, Tunisia.

1952, 1953 (summers): Field Geologist, New Mexico Bureau of Mines, Three Rivers, NM.

1955, 1957-1958 Research assistant, Woods Hole Oceanographic Institute/Harvard.

1955-1957: Military service (above).

1958 – 1963: Assistant professor of Geology, Penn State University.

1963 -1965: Instructor, Program in Marine Sciences (NSF), Bermuda Biological Station.

1963 -1969: Associate Professor of Geology, Penn State University.

1969-1971: Science Anchor, WPSU daily (Mon-Fri), 30 minute TV program, “*The State of the Weather, the Shape of the World”*

1969 -!991: Professor of Geology, Penn State University.

Chairman, Geology Program, 1971 -1974.

Undergraduate Program Coordinator 1974 -1977.

1991 – Professor of Geology, Emeritus

**Licenses:**

Certified Professional Geologist (A.I.P.G.), #7317.

Professional Geologist License (PA), #78 (currently inactive)

**Honors & Awards:**

Wilson Undergraduate Teaching Award, 1969.

Visiting Lecturer, A.G.I., 1969.

Lindback Award for Distinguished Teaching, 1970.

Society of the Sigma Xi.

Distinguished Lecturer, A.A.P.G., 1976-1977.

Elected Fellow, American Association for Advancement of Science.

Fellow, Geological Society of America.

**Professional Memberships and Related Services:**

American Association for Advancement of Science, Fellow.

American Association of Petroleum Geologists.

American Institute of Professional Geologists.

American Geophysical Union (inactive)

Appalachian Compact Users of Radioactive Isotopes (ACURI).

Steering Committee, 1988- (currently inactive)

Bermuda Biological Station for Research (now called ‘BIOS’).

Trustee, 1967- 1979.

Life Corporation Member.

ClearWater Conservancy (Founding Director)

Geochemical Society (inactive)

Geological Society of America, Fellow.

Society of Economic Paleontologists and Mineralogists.

Pennsylvania Academy of Science.

Editorial Board, 1983-1992.

State College Water Authority, 1979-1999.

Chairman, 1996-1999.

University Area Joint Authority, 1999-2020.

Chairman, 2018-2020.

**Social Clubs and other activities:**

Cosmos Club, Washington, D.C.

Explorers Club, New York (Fellow).

Literary Club, State College.

**Additional Research Interests and fields of professional contributions:**

Convection in the earth’s mantle.

Geochemistry of Recent marine sediments.

Sedimentary geochemistry; kinetics, surface energy, metastability, microprocesses.

Public education in the earth sciences.

**Representative Publications:**

Schmalz, R.F. (1959). A note on the system Fe2O3-H2O. Jour. Geophys. Res., 64,

575-579.

Schmalz, R.F. (1960). Flint and the patination of flint artifacts. Proc. Prehistoric Soc. (London), 26, 44-49.

Schmalz, R.F. (1965). Brucite in carbonate secreted by the red alga, *Gonolithon sp.,*

Science, 49, 993-996.  
 Schmalz, R.F.(with K.E Chave) (1966). Carbonate-seawater interactions. Geochimica et Cosmochimica Acta, 30 (10), 1037-1048.

Schmalz, R.F. (1968). Formation of red beds in modern and ancient deserts. G.S.A. Bul.

79, 277-280.

Schmalz, R.F. (1968). Experimental investigation of evaporite equilibria in a thermodynamically ‘open’ system. Report to the Office of Naval Research, Contract #ONR 1135(04), Washington, D.C.

Schmalz, R.F. (1969). Chapter 9, Geologic factors in disposal site selection. *in* S.K. Majumdar and E.W. Miller, Hazardous and Toxic Waste: Management, Emergency Response and Health Effects, The Pennsylvania Academy of Science, Philadelphia, PA.

Schmalz, R.F. (1970-1972). Water in the Nittany Valley: Report and analysis of water resources of the Nittany Valley, Centre County, Pennsylvania, 4 volumes, prepared for the State College Borough (Water) Authority.

Schmalz, R.F. (1971). Beachrock formation at Eniwetok Atoll, *in* O.P. Bricker, Ed., Carbonate Cementation. Baltimore Md., Johns Hopkins University Press.