

## Michael Mayhew

B.A., Mathematics, Ohio State University (1964)

Ph.D., Marine geophysics, Lamont Geological Observatory, Columbia University (1969)

Higgins Fellow/Continental Petroleum Foundation Fellow

2007. American Geophysical Union Excellence in Geophysical Education Awardee

2020. Elected AAAS Fellow, American Association for the Advancement of Science

### **2010- Senior Research Scientist, Science Education Solutions Inc**

Diverse recent initiatives in science education: Co-developed panel-based peer review system for digital educational resources. Edited 4-volume GIS-based high school Earth science curriculum. Wrote case studies for undergraduate-level GIS-based natural hazards curriculum. Co-developed innovative Cafe Scientifique New Mexico program for high school students. Co-director of Teen Science Cafe Network. Co-developed educational games with the theme, "The Nexus of Energy, Climate, and Water."

### **1982-2006. Program Director, Directorate for Geosciences, National Science Foundation**

Program development and management in solid Earth geophysics and geoscience education. Strength in organizing and aligning diverse community interests behind innovative initiatives, with associated skills in securing funds and budget management, strategic planning, collaboration-building, and mentoring.

**Geoscience Education Program:** Established geoscience education program for the directorate. Organized internal support and funding competition, issued program announcement, and managed peer review. Organized community support around this initiative, leading to the development of an extensive national geoscience education community. Other initiatives in educational training of scientists, educational seismology, public geoscience literacy, curricular reform, and geoscience diversity.

Fostered collaboration between the Directorate for Geosciences and the Directorate for Education and Human Resources (EHR), the first such substantive collaboration between an NSF "research" directorate and EHR.

**Digital Library for Earth System Education.** Organized and nurtured community development of DLESE through a confluence of NSF programs in information technology applied to digital libraries (DL-2) and programs in support of geoscience education.

**Geophysics Program (1982-1996).** Management of grants program in geophysics. Networked academic scientists, other agencies, the laboratories, and industry to advance the geophysical sciences.

**GPS Met.** Organized the NSF-led interagency effort to launch the GPS Meteorological Satellite (GPS Met). This highly successful satellite developed by UCAR and JPL scientists and carried aboard a Pegasus launch vehicle "got NSF into the space business" and established a precedent for "smaller-faster-cheaper" access to space.

**UNAVCO.** Brought the nuclear group seeking federal funding for high-precision GPS geodesy to its natural home at NSF, thereafter nurtured the community development of the University NAVSTAR Consortium (UNAVCO) as a facility for supporting GPS research, and acted as program manager for GPS field programs.

**CSEDI.** Organized and nurtured community development of Cooperative Studies of the Earth's Deep Interior (CSEDI). The program, designed to facilitate interdisciplinary collaboration toward solution of the great problems of deep-Earth dynamics, led to rapid advances in the field, and has been a model for subsequent programs.

**1975-1982. NASA Goddard Space Flight Center.** NASA-USGS program for interpretation of satellite magnetic field data (Magsat). Developed methodologies for extraction of weak magnetic anomaly signal

from a noisy data set and inversion to source models. Software became “industry standard” for this type of research. Processing and interpretation of the data, focused on thermal structure and magnetic petrology of the continental lithosphere. Chair of NASA Study Committee for Magsat-B. NASA Magsat Scientific Investigation Team Group Achievement Award.

**1974-1975. University of Massachusetts, Amherst.** Visiting Fellow carrying out research on hydrothermal processes in Yellowstone Lake and on seamount magnetism.

**1973-1974. University of Wisconsin-Milwaukee.** Assistant Professor. Field work, data reduction, and interpretation, Wisconsin/Utah small boat geophysical program, Yellowstone and Jackson Lakes. Party Chief during main data collection season.

**1970-1973, New York University.** Assistant Professor. Visiting Research Associate, Lamont-Doherty Geological Observatory. Appalachian Working Group, U.S. Geodynamics Committee. Consultant, Mobil Oil Corporation. Lead technical paper, AAPG East Coast Offshore Symposium. Compiled all geophysical data for the North American continental margin between Labrador and the Bahamas and made substantive reinterpretations of this data, in particular of a much thicker sedimentary section beneath the outer continental margin; interpretations subsequently confirmed by USGS and industry offshore profiling and drilling.

**1968-1969. Rutgers University-Newark.** Assistant Professor. Research interpreted the structure of the continental margins of the Labrador Sea and demonstrated a plate tectonic history for the Labrador Basin.

**1963-1965 (summers).** U.S. Geological Survey. Mathematician. Field measurements of terrestrial heat flow, data reduction for same, laboratory measurement of thermal conductivity.