

PROFESSOR WILLIAM MENKE
LAMONT-DOHERTY EARTH OBSERVATORY OF COLUMBIA UNIVERSITY

CONTACT

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INTERESTS

Research

Structural seismology of the earth's crust and mantle, with special focus on hot spots such as Iceland and continental cratons such as eastern North America

Volcanic processes, and especially magma delivery to, and storage within, crustal magma chambers

Data analysis techniques including time series analysis, inverse theory and tomography

Program Development

Interdisciplinary collaborations for addressing broad earth science problems

Undergraduate earth science education through a systems approach that emphasizes inferences from data

Methods of enhancing ethnic and gender diversity in academic settings

PROFESSIONAL PREPARATION

PhD, 1982, Department of Geological Sciences, Columbia University, Thesis title, *Seismological Studies of the P_n Phase* (Prof. P.G. Richards, advisor).

MS, BS, 1976, Department of Earth and Planetary Sciences, Massachusetts Institute of Technology

APPOINTMENTS

Professor, Columbia University, 1992-present

Chairman, Department of Earth & Environmental Science, Columbia University, 2002-2004

Deputy Director for Education, Lamont-Doherty Earth Observatory of Columbia University, 2002-2004

Associate Chairman, Department of Earth & Environmental Science, Columbia University, 2000-2002

Associate Director for Seismology, Geology and Tectonophysics, Lamont-Doherty Earth Observatory of Columbia University, 1989-1992

AWARDS AND HONORS

Presidential Young Investigator, awarded by the National Science Foundation, 1986

Fellow, American Geophysical Union, 1992

ACCOMPLISHMENTS

Strategic Planning

Responsible for Department's preparing for, and responding to, **External Academic Review** (2001)

Developed Department's **Five Year Plan for Faculty Hiring**, a strategic plan later approved by the Columbia administration that led to the expansion into new research areas (2002)

Wrote white papers on **Attaining Gender Balance** and **Retirements in Science Departments** which analyzed trends, identified problems and proposed solutions, some of which have been subsequently adopted by the Department (2004)

Developed the Department's **Plan for the Next Capital Campaign** document (2004) used by the University in its ongoing fund-raising efforts. Top priority, a new Geochemistry Building, later realized through gift of Gary Comer.

Participated in development of plan to create **LDEO Research Professorships** (2006-2012)

Supervision

- Responsible for a research division of 30 people, including 15 research staff, 10 technical staff and 5 clerical staff (1989-1992)
- Responsible for a faculty of 56 professors, 100 graduate students, 20 undergraduate students and 4 administrative staff (2002-2004)
- Supervisor of 20+ Graduate Students, 1984-present
- Supervisor of 10+ Undergraduate Interns, 1996-present
- Supervisor of 5+ Technical Staff, 1984-present

Hiring and Employment (2002-2004, except where noted)

- Responsible for appointment of faculty search committees and their compliance to university procedures
- Conducted recruitment negotiations with senior recruits
- Conducted retention negotiations with faculty with outside offers (2002-2004, 2010)
- Performed annual merit reviews and recommended merit raises for all faculty
- Prepared tenure review cases for 6 junior faculty members and advocated their cases before the Vice President, Provost and Ad Hoc Tenure Review Committee. All were tenured.
- Oversaw termination of six Biosphere 2 faculty when that facility was shut down by the university (2004)
- Participated in development of Departmental **Faculty Diversity Hiring Plan** and acted as its lead presenter (2006)
- Participated in the development of a **Diversity Target-of-Opportunity Hiring Plan**, which led to the hiring the Department's first female full professor (2006)
- Leader of successful effort to improve **Gender Balance** of faculty (2004-2012)

Financial

- Responsible for Division/Department budget (1989-1992, 2002-2004)
- Solved major faculty funding problem that involving five professors and \$8M (2004)
- Co-responsible, with Division Administrator, for administration of all grants and contracts (totaling \$6M per year) of Division (1989-1992)
- Co-responsible, with Department Administrator, for administration of all Departmental accounts (\$5M per year) and endowments (totaling about \$23M)
- Volunteer treasurer of two local Non Profit Organizations (1995-2004, 2007-present)

Infrastructure

- Developed collaborative proposal between four environmentally-oriented Columbia Departments to construct and occupy "green" Earth Building on Columbia's NY City Campus (2006)
- Negotiated successful \$2.5M renovation of **Main Campus Undergraduate Teaching Facility** and oversaw its design and implementation (2005)

Teaching

- Co-Developer of *Earth Systems Science*, a three-course sequence required of all Departmental undergraduate majors (2002-2004)
- Co-developer of *Frontiers of Science*, a science survey course which is part of the Core Curriculum required of all Columbia College undergraduates (2005)
- Instructor of undergraduate courses, including *Frontiers of Science*, *The Solid Earth System*, *Geophysical Theory I and II*, *Introduction to Seismology*, *Environmental Data Analysis*, *Energy Resources*, *Environmental Hazards and Disasters* and *Dynamics of the Earth System*.
- Instructor of graduate courses, including *Introduction to Seismology*, *Advanced Seismology*, *Quantitative methods of Data Analysis*, *Geophysical Inverse Theory*, and *Seismology Seminar*
- Author/co-author of three textbooks: Menke & Abbott, *Geophysical Theory* (Columbia U. Press, 1989); Menke, *Geophysical Data Analysis: Discrete Inverse Theory* (Elsevier 2012) and Menke & Menke, *Environmental Data Analysis With MATLAB* (Elsevier, 2012)
- Academic advisor to Masters and PhD students, including of Kristina Rodriguez, Mike West, Vadim Levin, Ge Hu, Ned Field and Bryndis Brandsdottir.

Research

- Principal Investigator on 40+ federal grants, 1983-present
- Author and co-author on 100+ peer-reviewed journal articles, 1974-present
- Team Leader of 15+ seismological field expeditions, 1985-present
- Participant in 5 sea-going oceanographic expeditions, 1978-present